1. Machine Sketches

If your invention is a machine or an article, your sketches should contain enough views to show every feature of the invention, but you don't have to show every feature that's old and known in the prior art. For example, if you've invented a new type of pedal arrangement for a bicycle, one view can show your pedal arrangement in gross view without detail. Other views can show your pedal arrangement in detail, but you don't have to include any views showing the bicycle itself in detail, since it isn't part of your invention. If one figure of your drawing shows a sectional or side view of another figure, it is customary to provide cross-section lines in the latter figure; these lines should bear the number of the former figure. Look at prior-art patents to see how this is done. See the example in Fig 8E.

If your machine is complicated, you should show an exploded view of it, as in Fig. 8D.

2. Chemical Composition Sketches

If your invention is a chemical composition, the PTO won't generally require drawings unless your invention is a material that has a nonhomogeneous composition (internally differentiated through layering, for example), in which case you should show it in cross-section detail. Also, if a step-by-step process is involved, the PTO will require a flowchart, even though the process is fully described in your specification (see the next section). The reason: so examiners, judges, and future searchers will be able to understand your patent more rapidly. Benzene rings and other molecular diagrams can usually be presented in the specification.

3. Computer, Chemical, or Mechanical Process Sketches

If your invention includes a process of the electronic-computer, chemical, or mechanical type, you should, as stated, provide a flowchart (or a program listing for software inventions—see Section G above). This flowchart must show the separate steps involved, each described succinctly in a different block. If your blocks are connected, they should all be labeled as one figure; if disconnected, they should be labeled as separate figures. As before, each figure should be labeled—for example, Fig. 1, Fig. 1A, Fig. 1B, Fig. 2, Fig. 3, etc.

If you desire, you can try providing a short title after each figure, giving a general description of the part of your invention shown in the figure, just as you would do if you were writing a scientific article for an engineering magazine or textbook. However, PTO drafting personnel often object to such titles for some unknown reason. If this occurs, you'll have to delete the titles (white out the titles on the originals of your drawing or delete the titles on your computer drawings) and send in new photocopies or computer files.

If you believe it will help in understanding your invention, you may (and should) include a drawing of the prior art as one figure of your drawings. This figure must be labeled "prior art" to indicate that it isn't part of your invention.

I. Drafting the Specification

Once you've reduced your invention to sketches, it's time to begin drafting the specification portion of your patent application. Review the specifications of your prior-art patents—or the sample "spec." at the end of this chapter—to find out how they're written. Your specification should be written as one continuous document with separate sections, each with a heading, the way this book is written.

1. Drafting Tips

Here are some general rules to keep in mind when drafting your specification.

Avoid Legalese

I've been told many times by inventors that they couldn't possibly prepare their own patent application because they don't know "the correct legal terms to use." You'll be pleased to learn that legalese is not favored by the PTO and is undesirable, since it makes your writing stilted, less clear, and harder to understand. In short, you should *not* try to write like a lawyer or use any legalese. Nothing reads as awkwardly as when a layperson tries to use legalese. The only legal requirements for a patent specification are that it be a full, clear, concise, and complete description of how to make and use the invention. (The claims, however, should be written with extreme clarity and precision, and to do this you may have to use a few "saids" and "wherebys," but I'll explain this fully in Chapter 9.)

Legal terminology was created by lawyers to make their writing less understandable and more obscure, so as to befuddle and confuse laypersons. This makes the law seem esoteric and impenetrable to all but the properly anointed. Happily, the law is moving away from these practices and is opening its doors to laypersons. So don't let any imaginary legal barriers deter you.

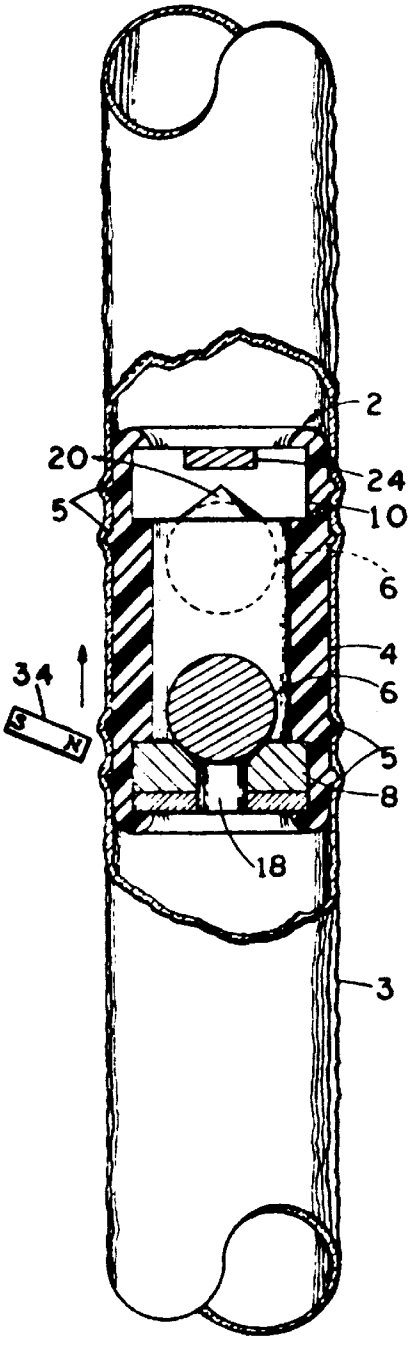


FIG. 1

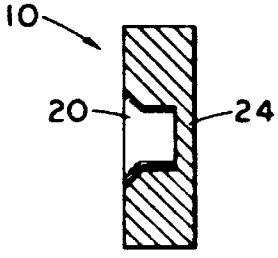


FIG. 4

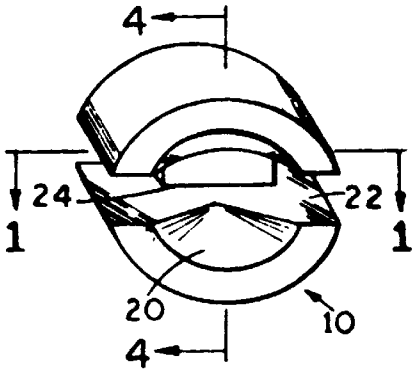


FIG. 3

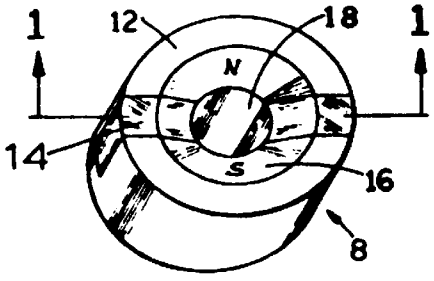


FIG. 2

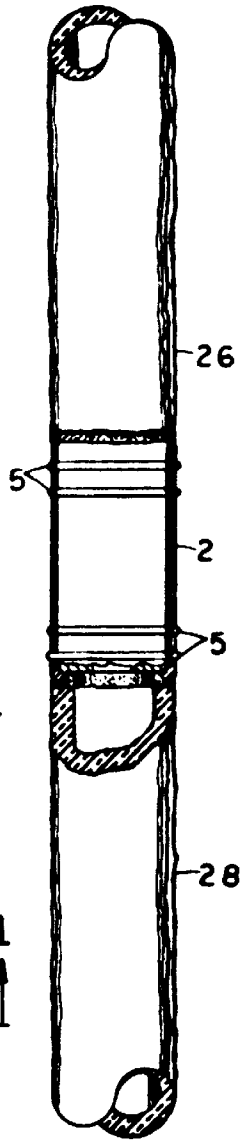


FIG. 5

Fig. 8E—Views With Cross-Section Lines

"Two things are required from every specialized treatise: It should clarify its subject and, more importantly, it should tell us how and by what methods we can attain it and make it ours."

—Longinus

Use Short and Simple Sentences

It's best to write your description in short, simple sentences, with short paragraphs. Each paragraph should generally be shorter than 200–250 words, or one page (double-spaced), and should relate to one part or subpart of your invention. The Cybernetics Institute has found that short sentences communicate best. Also, they found that 50% of adults can't understand a sentence longer than 13 words anyway. Don't worry about the quality or style of your writing or the beauty of your language. Your main goal is to include all points of substance of your invention and make your description clear and understandable. There's an especially good legal reason for this: If a disclosure isn't clear, a court will interpret it narrowly. (Personally, I find that, whenever writing is less than clear, a reader interprets things in a manner other than the writer intended.) If you get stuck and don't know how to phrase a description of a part or an operation, here's a helpful trick: Simply pretend you're describing your invention aloud to a close friend. Remember what you said (or make an audio recording) and write it down or use voice recognition software to get a written record. Then go back and polish the language. If you attack the job in small chunks or in piecemeal fashion, it usually will go much easier.

Write Clearly

Write clearly, not only so you can be understood, but also so that you will not be misunderstood.

Avoid Grammar and Spelling Errors

Although the PTO's examiners aren't very concerned with grammar and spelling errors you should avoid them in your application and all of your correspondence. You will get more respect from your examiner, potential licensees, or a judge. Proofread or use a spelling and grammar checker. Here are some examples of common grammar errors that I found in redacting patent applications:

Wrong: "lever 202's left end."

Right: "the left end of lever 202."

Wrong: "connected to switch 502 wires."

Right: "connected to the wires leading to switch 502."

Most writing tends to be less formal and even sloppy now because many people do a lot of informal texting and emailing. However a patent application (and any other legal document), should be formal, perfect, and crystal-clear, because any flaw, error, solecism, ambiguity, vagueness, or unintelligibility will be attacked or looked upon with disdain by anyone who reads the application, such as an examiner, a potential licensee, a judge, or an adversary.

Use Copious Headings

Also, if you use copious subheadings (such as "Fig. 1—Description of Handlebar Attachment"; "Fig. 2—Front Fork Detail"; "Fig. 10—Operation of Derailleur"; etc.) throughout your specification (as I've done in this book), most people will find it far easier to read. This allows them to take in the information in separate, small, inviting chunks that are easy to digest one at a time. Refer to the specification at the end of this chapter (Fig. 8G) to see examples of headings in an application.

"Getting started is the worst part."

—Roberta Pressman

If you have trouble getting started, don't worry; many writers have blocks from time to time, and lots of inventors initially (and erroneously) lament, "I could never write my own patent application." The words of Lao-Tse will encourage you:

"A journey of a thousand miles begins with a single step."

An anecdote that will help is the children's story of a newly manufactured clock that couldn't bring itself to start when told it would have to tick 31,536,000 times per year; it was too daunting a job. However, when its maker cleverly pointed out to it that it would have to tick only once per second, it didn't seem so bad. So the clock started and has been going ever since.

If you still feel daunted, it will help you to know that virtually all inventors who have trouble getting started suffer from *lack of will,* not *ability.* I had a client who came to the U.S. from Hong Kong with little money or English, but with a great invention and tremendous drive. He wrote and filed his own application and got a valuable patent, after I fixed his English. If he could do it, surely you, with probably a much better command of English, can do so also.

"Your 'I will' is more important than your I.Q."

—Marva Collins

If you feel that you can't write adequately, I suggest that you give it your best shot and then have a writer, college English major, high school English teacher, etc., edit your draft.

CAUTION

Avoid Negative, Restrictive, or Wishy-Washy Statements That Could Be Used Against You Later. When you write, be especially careful not to include anything that an adversary could later use against you to invalidate or narrow your patent. For example, never say that any novel part of your invention is similar to something that is already known, that the novelty of your invention is solely in a certain part, that something "might" work, that something is always better or necessary or critical, or that something is not done or constructed in a certain way. If your patent is ever involved in litigation, any adversary will use such statements against you in court.

Avoid "Patent Profanity"

Here are some words and phrases that patent attorneys avoid using, or use with caution, to avoid having a judge limit your invention; one wag has called these words "patent profanity." They include: *absolutely, always, beneficial, crucial, critical, desirable, eliminate, essential, every, hypothetical, important, invention, key, maximize, minimize, means, must, necessarily, necessary, never, obviously, only, peculiar, preferred, preferred embodiment, present invention, require(s)(d), special, superior, surprisingly, the invention,* and *very important.*

Common Misconception: If you put any specific feature of your invention, such as a preferred size, a preferred material, a preferred shape, etc., in your specification, the scope of your invention will be limited to this feature, so any device that lacks this specific feature will not infringe.

Fact: The scope of an invention is determined almost entirely by the claims and not by specifics that are included in the specification. If you do recite any specific feature in a claim, that claim will be limited to this specific feature, but if the specific feature is stated in the specification, it will help provide an adequate disclosure. The patent laws, rules, court decisions, and practitioners actually require and recommend that the specification include as many specifics of the invention as possible, especially in critical areas, so no one will ever be able to validly attack the adequacy of the specification for failure to teach how to make and use the invention. However when stating the specifics of an invention in the specification, it's important to (1) state that these are what you presently contemplate for this embodiment but that other values, dimensions, etc., can be used, and (2) include as many variations as you can envision. For example, "I presently contemplate for this embodiment that the lever have a rectangular cross section 2 mm by 4 mm and be 4 cm long and made of austenitic steel. However it can have different cross sections, such as oval, triangular, circular, etc., and different sizes and materials, such as high-carbon steel, titanium, polycarbonate, etc." Never refer to "the invention"—only to this embodiment. Also never state that any embodiment is preferred; instead just list the embodiments as the first, second, third, etc.

Now let's get to the nitty-gritty of preparing the specification portion of a patent application.

Make an Outline Before Starting

Prior to starting, in order to guide your path, you will find it helpful first to make an outline, which should be the same as the headings set out below. However, you may want to make the Description and Operation headings more specific and/or break them into several more specific headings each, in accordance with your figures and specific situation. I have provided a skeleton patent application in Fig. 8F which you should copy into a word processor to get you started.

2. The Parts of the Specification

There are also some commonsense rules governing the best presentation of each of the separate parts of your specification. I'll briefly discuss each of these. Only the sections with a "PPA" superscript are needed to file a Provisional Patent Application. (See Chapter 3.)

a. Title [PPA]

Have your title reflect the essence of your invention without being too long (about 500 characters maximum) or so specific that it's narrower than your invention's full scope, including all of its embodiments. For example, if your invention is a foot pedal but the mechanism can be used as a handhold, don't call it "Foot Pedal"; call it "Hand or Foot Pedal" or the like. On the other hand, don't pick a title so broad—such as "Electrical Apparatus"—as to be essentially meaningless. A look at some recently issued patents in your field should give you a good idea of how specific to make your title.

b. Cross-Reference to Related Applications

In this section refer to any PPA that you've filed, to any parent applications (see Chapter 14), or to any technically

Patent Application of

_____

for

_____

[Title]

Cross-Reference to Related Applications (if applicable) _____

Federally Sponsored Research (if applicable) _____

Sequence Listing or Program (if applicable) _____

Background—Prior Art

Previously _____

Summary

In accordance with one embodiment, _____

Drawings—Figures

Fig 1. is _____

Drawings—Reference Numerals (optional)

10 _____

Detailed Description—First Embodiment—Figs. ____

Operation—First Embodiment—Figs. ____

Description—Alternative Embodiment—Figs. ____

Operation—Alternative Embodiment—Figs. ____

Conclusion, Ramifications, and Scope

Accordingly the reader will see that, according to one embodiment of the invention, I have provided _____ .

While the above description contains many specificities, these should not be construed as limitations on the scope of any embodiment, but as exemplifications of various embodiments thereof. Many other ramifications and variations are possible within the teachings of the various embodiments. For example, _____ .

Thus the scope should be determined by the appended claims and their legal equivalents, and not by the examples given.

..... page break .....

Claims:

1. _____

..... page break .....

Sequence Listing: (if applicable)

..... page break .....

Abstract: _____

Fig. 8F—"Skeleton" Patent Application

related application and incorporate it by reference just in case you need to rely on anything in it. For example, if you've filed a PPA, type, "This application claims the benefit of PPA Ser. Nr. xx/xxx,xxx, filed 20xx xxx xx by the present inventors, which is incorporated by reference." If the application is a continuation-in-part of an earlier application, type, "This application is a CIP of Ser. Nr. xx/xxx,xxx, filed 20xx xxx xx by the present inventor, which is incorporated by reference." If you want to refer to a technically related case, type—for example—"This application uses the frammis vane disclosed in my patent x,xxx,xxx, granted xxxx xxx xx, which is incorporated by reference."

You can omit this part if you don't have any related applications.

c. Federally Sponsored Research

If your invention was made under a government contract, include the required contract clause here. You can omit this part if you don't have any Federally Sponsored Research.

d. Sequence Listing or Program

If you've included a CD-ROM to provide a program listing, refer to it here. If your invention uses a biological sequence, refer to it here and state where it can be found. You can omit this part if you don't have any Sequence Listing or Program.

e. (1) Background—Discussion of Prior Art

Here, discuss the problem that your invention definitely solves, the way the problem was approached previously (if it was approached at all), and then list all the disadvantages of the old ways of doing it. Your application will be more interesting if you can write this section as a story describing the history of the field and its sorry state up to the present. For example, you can start as follows: "Originally bicycles were made with a fixed transmission ratio. This made pedaling up hills difficult. This problem has been partially solved by the implementation of derailleur mechanisms, but these had and still have significant problems." Then list the derailleurs that were used in the past and their disadvantages. Again, look at prior-art patents to get an idea of what was done. If you can, tell why prior-art people failed to solve the problem and why a solution is needed. But be sure that every prior-art approach you discuss was definitely known, because by listing approaches in the prior art section you are making a full admission that all of such approaches are old.

Beware of admitting that any problem in the prior art was recognized. If it wasn't recognized and you state otherwise you will deprive yourself of credit for recognizing the problem and enable the examiner or an adversary to cite more prior art against you. If you do want to list a problem that you found, give yourself credit for recognizing it—for example, "I have found that derailleurs often broke down because their linkages were too flimsy." Don't say what the prior art can't do because this can make your invention or the problem that you discovered look obvious.

I suggest you cite all prior-art U.S. patents, published patent applications, foreign patent publications, and non-patent literature in a four-part table, in the same format as on the PTO's Information Disclosure Statement (IDS) form, PTO/SB/08a. Then discuss (knock) these references later in narrative paragraphs. This makes it easier for the examiner to review your prior art and for you to fill out your IDS later. See an example in the specification of the sample application, Fig. 8G below.

While the PTO doesn't want needlessly derogatory remarks about the inventions of others, you should, as much as possible, try to "knock the prior art" here in order to make your invention look as good as possible. Keep your statements factual (for example, "The derailleur in patent 3,456,789 to Prewitt, 1982 May 3, had a limited number of discrete gear ratios") and not opinionated (don't say, "Prewitt's derailleur was an abject failure"). If applicable, tell why prior-art people didn't think of any solution before and why a solution is needed. Do not discuss any detailed structure or operation of any prior art in this section (unless you provide a suitable figure—see next paragraph), since detailed mechanical discussions without the benefit of drawings will be incomprehensible to most people. Occasionally, you may have such a completely unique invention that there's really no prior art directly germane to your invention. If so, just state the general problem or disadvantage your invention solves.

If you've provided a prior-art figure, you can discuss (and knock!) it here. Use reference numerals to refer to the individual parts of the prior-art device. Alternatively you may discuss (and knock) your prior-art figure in the "Description of Invention" section.

You must also file an Information Disclosure Statement (see Chapter 10) listing all of the prior-art publications (including U.S. patents and published patent applications) you're aware of, together with copies of any non-U.S. patent publications.

If your invention doesn't solve a specific problem—for example, it's a new game or toy—you won't be able to state any problem that your invention solves. However, you still can discuss the closest prior games or toys and mention some faults or disadvantages of them.

Since this is a discussion of the prior art, you should not discuss your invention or any of its advantages here.

f. (2) Advantages

Although it is optional, you may list the advantages of your invention. I like to include this since it helps sell the invention to the examiner or a judge who may rule on your patent. However it's important not to use language that a court may consider limiting; don't use the words "invention" or "objects," and use weasel words so you don't paint yourself into a corner. First, state that the advantages are for "one or more aspects." Second list the advantages that are the reverse of the disadvantages listed in the prior-art section, then any additional advantages you know, followed by a catch-all sentence. Here's a condensed example incorporating all of the foregoing: "Thus several advantages of one or more aspects are that the computer is lighter or faster. Other advantages of one or more aspects are that the computer is more attractive. These and other advantages of one or more aspects will become apparent from a consideration of the ensuing description and accompanying drawings." Be sure that each advantage that you list is fulfilled by at least one aspect of your invention.

g. Summary

The PTO's Rules 73 and 77 state that the specification "should" contain a summary of the claimed invention, and Rule 72 requires an abstract of the entire specification. In practice, many patent attorneys omit the summary, since the abstract, as well as the claims, already provides one. Also if the summary focuses on one embodiment, the courts may limit your invention. On the other hand, a summary will describe the forest before you describe the trees and program your examiner to more readily understand what follows. For that reason, I favor a summary. If you choose to include one, be sure to write it broadly. Indicate that it describes one embodiment of the invention and don't get specific in your description. Your summary can simply paraphrase your main claim (see Chapter 9) or can be a short description (one or two sentences) of the essence of your invention. Your summary should not be longer than about one page, double spaced. PTO rule 73 (37 CFR 1.73) states that the summary may include the object of the invention. However, you should never refer to any object of the invention, since some courts have used a statement of an object to limit the invention. Instead you can refer to advantages, but always state that they are for one or more aspects and not for "the invention." Also make sure your advantages are not too narrow. I like to put the advantages in a separate section to help sell the invention.

h. Drawings PPA

Here, provide a series of separate paragraphs, each *briefly* describing a respective figure of your drawing—for example, "Fig. 1 is a perspective (or plan, side, exploded, or rear) view of a first embodiment"; or, "Fig. 2 is a view in detail of the portion indicated by the section lines 2—2 in Fig. 1." Do not include any reference numerals, specific parts, or any other details in this section—just a brief overall description of each figure.

i. Drawings—List of Reference Numerals

Although the PTO doesn't require or even recommend a separate list of the reference numerals and the names of their respective parts in an application, I strongly advise that you include such a list in a separately headed section. (I've provided one sample specification at the end of the chapter.) Why? There are three very important reasons for providing the list:

- to help you to keep your reference numerals straight—that is, to avoid using the same number for different parts
- to help you to keep your nomenclature straight—that is, to avoid using different terms for the same part, and
- to provide a very visible and easy-to-find place where examiners, searchers, and others who read your application or patent can go to instantly identify any numbered part on your drawings.

I find it helpful to compile this list in a separate word-processing window or on a separate sheet of lined paper as I write the patent application, and then incorporate the list in the text. I've provided a suitable worksheet as Form 8-1 in Appendix 7. Also, to keep confusion at a minimum, I advise that you never use single-digit reference numerals, and that you begin your numbers with a number higher than your highest-numbered drawing figure. For example, if you have Figs. 1 to 12 of drawings, begin your reference numerals with number 20.

One inventor I know uses three-digit reference numbers throughout. The first digit represents the figure number, so that the parts of Fig. 1 would be 110, 112, etc. The parts in Fig. 2 would be 210, 212, etc. If Fig. 2 has a part that is also in Fig. 1, the reader would instantly know that this part (that is, part 110) was first introduced in Fig. 1. Also this enables any reader of the specification to go directly to the drawing figure where this part is introduced.

Lastly, I advise that you use even-numbered reference numerals when you write the application. In this way, if you later have to add another reference number, you can use an odd number and put it between two logically related even

numbers. (See the list in the sample specification at the end of the chapter.)

j. Detailed Description PPA—First Embodiment—Figs. 1–xx

Here you should describe in great detail the static physical structure of the first embodiment of your invention (not how it operates or what its function is). If this embodiment is a process, describe the procedures or machinery involved in it. Begin by first stating what the figure under discussion shows generally—for example, "Fig. 1 shows a perspective view of one version of my widget." Then get specific by describing the main parts and how they're connected. (These main parts can form the basis for your claims, as we'll see in Chapter 9.) Then get more specific: Describe each main part in detail and all of the sub- or component parts in detail.

Start with the base, frame, bottom, input, or some other logical starting place of the embodiment. Then work up, out, or forward in a logical manner, numbering and naming the parts in your drawing as you proceed. Use the part names that you previously wrote on your sketches.

To number the parts, write a number near each part and extend a lead line from the reference number to the part to which it refers. Don't circle your reference numerals, since a PTO rule prohibits this. The lead lines should *not* have arrowheads—for example, a bicycle grip might be designated "22———." However, to refer to a group of parts as a whole—for example, a bicycle, use an arrowhead on the lead line, thus, " 10———>." If you have several closely related or similar parts, you can give them the same reference number with different letter suffixes or primes to differentiate, such as "arms 12a and 12b," "arms 12L (left) and 12R (right)," or "arms 12 and 12'." You should not use a reference numeral to designate the embodiment of a whole figure; instead just say " … the widget of Fig. 1."

Although you may think that the patent examiner won't need to have parts that are clearly shown in the drawing separately described in detail, all patent attorneys provide such a description. This is part of a repetition technique that is used to familiarize the examiner with the invention and set the stage for the operational description and the claims (Chapter 9). When you mention each part twice, once in the description and again in the operation discussion, the first mention will initially program your reader to relate to the part so that the reader will really understand it the second time around, when it counts. This is the same technique as is used in the lyrics of blues songs, where the first two lines are always restated to enhance communication. Another reason to describe and name each part and each detail is to form a basis for the claims: All terms used in the claims are supposed to be first used in the specification.

Another good technique is to use several different equivalent names for a part the first time you refer to it in order to provide one with which your reader will be familiar—for example, "connected to base 10 is a strut, pylon, or support 12." Then pick one name and use it consistently thereafter.

As stated, before you begin a description of any figure, refer to it by its figure number—for example, "Fig. 1 shows an overall view of the can opener of the first embodiment." Then as you come to each part or element, give it a separate reference number—for example, "The can opener comprises two handle arms 10 and 12 (Fig. 1) that are pivotally attached at a hinge 14." It is essential always to keep your reader apprised of which figure you are discussing.

Also, always try as much as possible to discuss one figure at a time. However, where several figures show different views of an embodiment, you can refer to several figures at once—such as "Figs. 1 and 2 show plan and elevational (front) views of a scissors according to one embodiment. The scissors comprises first and second legs 12 and 14, the second leg being best shown in Fig. 2." However, again don't refer to too many figures at once, and always keep your reader advised as to which figure is under discussion.

Discuss every part shown in your drawings in detail and be sure to use consistent terminology and nomenclature for the parts in the drawing. For example, if gear 44 is shown in Fig. 8 and also in Fig. 11, label it with the same reference numeral "44" in both figures. However, if the gear is even slightly different in Fig. 11, it must have a different reference numeral, such as, "44a," "44π," or "44bis." Fill out the Drawing Reference Numerals Worksheet (Form 8-1) as you write, to keep your numerals and nomenclature consistent. If you use a word processor, I suggest you refer to each part by a number only and then, consistent part names—such as, you can write "44 is connected to 36" and later change "44" to "widget 44" and "36" to "base 36" throughout your specification.

Lastly, be sure to detail all the interconnections or mountings between parts—for example, "Arm 14 is joined to base 12 by a flange 16."

TIP

Dem Bones. To understand the technique commonly used to describe the parts and their interconnections, think of the song, "Dem Bones." The song details virtually every bone-to-bone connection in the body in logical order—for example, "The knee bone's connected to the thigh bone, the thigh bone's connected to the hip bone." In a similar

manner, your description should also detail every part-to-part interconnection, even if you think the reader would find it obvious from your drawing.

TIP

Don't Be Secretive. Suppose your invention uses some special or exotic parts, techniques, or relationships, but you don't want to describe these because such information is valuable and you want to keep it as a trade secret and not give it away to potential copiers and competitors. Unfortunately, you can't be secretive. You must include complete detailed descriptions of these, including dimensions, relationships, materials, and sources of supply, as applicable, in this section in order to comply with the "full disclosure" statute (35 USC 112). Putting in such specifics will not limit your invention in any way since the claims (next chapter) will determine its scope. However, failing to include these specifics can render your patent application fatally flawed if they are necessary for one skilled in the art to make and use the invention.

TIP

Write the Prior Art Section Carefully. If your invention is an improvement to a prior-art (PA) device, don't describe the PA device in detail in the PA section and state, in the description of your invention, that your device improves upon the PA device by making the following change(s): _____ _____ . This will isolate your changes, making it easier for an examiner or future adversary to invalidate your patent by showing a reference with just the changes. Instead describe the PA device generally in your PA section and then, in the description of your invention, describe your whole device in detail and in a manner different from the description of the PA device. This will make it much more difficult for anyone to invalidate your invention.

Including details and dimensions at crucial places can also prove vital later if you have to rely on these in order to support and distinguish your claims over a close prior-art reference cited by the examiner. Thus, it's almost axiomatic in patent law that you should make your specification as long, specific, and detailed as possible, and your main (independent) claims as short, broad, and general as possible. If you're tempted to skip the details, remember that a few strokes on a keyboard now can save you from losing many thousands of dollars later. Be especially sure to expand your discussion in the areas where you feel that your invention is novel over the prior art.

Despite my admonitions to include full details, you'll be relieved to learn that common sense prevails: you don't need to supply full blueprints or a full list of dimensions, materials, etc. for your invention. The specification need only be detailed enough for a PHOSITA to make and use it, even if some experimentation and design work is required. The standard is that a skilled artisan should be given adequate guidance so that there is no need to exercise any inventive facilities to realize the invention. See MPEP 2164.06 for more on this subject.

TIP

Selecting and Arranging the Right Words Is Key to Good Writing. The following is reprinted with thanks by permission of Leslie A. Gordon, Esq., and the Bar Association of San Francisco:

The key to good writing is "variety, rhythm, and balance," according to my graduate journalism text. In addition to selecting the right words, arranging them optimally can add emphasis and improve readability.

Put the subject, verb, and object close together. The subject is the "doer" of the sentence; the verb is the main action; the object (if any) is the recipient of the action.

1. MEDIOCRE: Lisa, encouraged by her science teacher, applied to MIT. *(Subject and verb are separated.)*
   BETTER: Encouraged by her science teacher, Lisa applied to MIT.
2. MEDIOCRE: My dog walker, because he was sick Monday, could not exercise my bulldog
   BETTER: Because my dog walker was sick Monday, he could not exercise my bulldog. *(Subject and verb are together.)*

   Put modifying words near what they modify. A modifier is a word or words that explain, describe, or qualify another.
3. UNCLEAR: Concerned about the possibility of salmonella, the cutting boards were washed. (Since cutting boards don't get concerned, this sentence must be rewritten to avoid a dangling modifier.)
   BETTER: Concerned about the possibility of salmonella, the chefs washed the cutting boards.

   Be especially mindful of modifiers like "only" or "always" because placement can significantly change the meaning. For example:
   - Only Ann called Dave a louse.
   - Ann only called Dave a louse.
   - Ann called only Dave a louse.

   Begin and end with punch words. The beginning and end of sentences are more emphatic than the middle. So place words you want to stress—usually the subject, object or verb—at the front or the back.

4. MEDIOCRE: The defendant died two months later while visiting New York. (Emphasizes location.)
   BETTER: The defendant died while visiting New York two months later. (Emphasizes time.)
   BEST: Two months later, while visiting New York, the defendant died. (Emphasizes the main point.)

If you're uncertain which words carry the most punch, read your sentences aloud.

Use of "A," "The," and "Said"

Although the articles "a" and "the" are two of the most common and elementary words in the American language, many writers often use them improperly.

The articles "a" and "an" are indefinite articles, i.e., they do not refer to any definite or already known thing. Example: "I bought a car."

The articles "the" and the legal word "said" are definite articles, i.e., they refer to a definite or already known thing. Example: "I bought the car that we saw yesterday."

When you first introduce something, your reader is not familiar with it, so always introduce it with an indefinite article. Example: "The device has a handle 10 that is connected to an ax head 12."

When your specification refers again to something that has already been introduced, your reader is familiar with it, so always use a definite article "the." For example, if the parts have already been introduced, say, "The lever and the handle are made of plastic."

If you are referring to the parts by their number, or if they're plural, you often don't need to use "the." Examples: "Lever 10 and handle 12 are made of plastic," or "Levers such as this are well known."

In claims (see Chapter 9) the same rules apply, except that you should use "the" to refer to a part that has not been expressly mentioned but is implied and "said" to refer to a part by the exact name by which it has already been recited. For example, if the claim has already recited a tabletop comprising a flat sheet and four elongated legs, say, "… said legs being attached to the underside of said tabletop."

Never use "a" to refer to an already-introduced part. For example, if a lever has been introduced, do not subsequently say, "A lever is connected to the handle."

Never introduce something with "the." For example, if a lever has not been introduced, do not say, "The lever is made of plastic."

Common Misconception: If you put a specific feature of your invention, such as a preferred size, a preferred material, a preferred shape, etc., in your specification, the scope of your invention will be limited to this feature, so any device that lacks this specific feature will not infringe.

Fact: The scope of an invention is determined mainly by the claims and far less by specifics that are included in the specification. If you do recite any specific feature in a claim, that claim will be limited to this specific feature, but if the specific feature is stated in the specification, it will help provide an adequate disclosure. The specific feature should not be stated in a limiting manner, however. Wrong: "The lever of my invention is made of nylon." Right: "I contemplate that the lever of this embodiment be made of nylon, but other materials are also suitable." The patent laws, rules, court decisions, and practitioners actually require and recommend that the specification include as many specifics of the invention as possible, especially in critical areas, so no one will ever be able to validly attack the adequacy of the specification for failure to teach how to make and use the invention. However, again, when stating the specifics of an invention in the specification, it's important to (1) state that these specifics are what you presently prefer for this embodiment, and (2) include as many variations as you can envision—for example, "I presently contemplate that the lever of the embodiment of Fig. 1 have a rectangular cross section 2 mm by 4 mm and be 4 cm long and made of austenitic steel. However it can have different cross sections, such as oval, triangular, circular, etc., and different sizes and materials, such as high-carbon steel, titanium, polycarbonate, etc."

Avoid technical language, Greek letters, and subscripts, insofar as possible, but if you use any technical terms, be sure to define them for any lay judge or young examiner who may read your application. One patent litigator has suggested drafting all patent applications for a judge with a degree in political science, English, or government—that is, try to make your description as nontechnical as possible, without eliminating any crucial details. If you do have a technical invention, such as a computer, biotechnical, electronic, chemical, medical, or complex mechanical invention, start your explanation from ground zero, assuming your reader, who may be a new examiner or a judge with a degree in political science, knows nothing about the field. Then explain the field of the invention, the problem you solve, and any technical information your reader will need to understand it. You don't need to write a complete textbook, but you should provide a full guide from ground zero to the level of the invention. I recommend that, for any reasonably complex invention, you include a glossary of technical

and other terms of the invention and make the definitions as broad as possible. You can put the glossary in its own section after the Drawing Figures section.

Trademarks

If any material, substance, or component of your invention is a trademarked product, you should refer to it by its generic name, without using the mark—unless the mark is necessary for full identification. For example, if you have a hook-and-loop fastener, you can say, "hook-and-loop fastener 20 holds tab to base 14." It is not necessary to use either of the marks *Velcro* or *Latchlok*, since H&L fasteners are well known. The same holds true for the trademark *Teflon*—use PTFE instead. However, if the product is not common, you can use its mark, provided you use it properly. This means capitalizing the mark, identifying it as a trademark, using the mark as an adjective with a generic descriptor, and identifying the owner of the mark—such as "Ajax™ developer, manufactured by Goldberger Graphics of San Francisco." If the trademarked product is crucial and you're going to recite it in your claims, and you don't know its composition, see "Trademarked Chemical Note" in Section F, above. (If you have your own (new) trademark for your invention, you should not use it in your specification.)

Claiming Copyright in a Program, Specification, or Drawing

If you want to put a copyright or mask work notice in the specification or drawings to provide notice that you claim copyright in the program listing, mask work, or other written material in the specification, you may do so since Rule 71(d) (37 CFR 1.71(d)) permits this. Rule 71(e) states that the notice shall be the first paragraph in the specification and the form of the notice shall read as follows:

A portion of the disclosure of this patent document contains material which is subject to (copyright or mask work) protection. The (copyright or mask work) owner has no objection to the facsimile reproduction by anyone of the patent document or the patent disclosure, as it appears in the Patent and Trademark Office patent file or records, but otherwise reserves all (copyright or mask work) rights whatsoever.

NOTE

Computer Programs Note. As stated in Section G above, if your invention involves a computer program, include a program listing in ASCII format or a detailed flowchart with a detailed explanation as to how to configure the computer to perform the required function and interrelate with any other elements to yield the claimed invention. If the listing is 300 lines or fewer (72 characters per line), it can be submitted as part of the specification, or as part of the drawings. In either case, the listing should be a very black, camera-ready copy. If the printout is to be submitted on drawing sheets, these should be of the proper size (U.S. or international; see Chapter 10), with each sheet including a separate figure number (Fig. 1, Fig. 2, etc.; or Fig. 1-A, Fig. 1-B, etc.). If the printout is to be submitted as part of the specification, it must be on the same size sheets. The printout should be positioned just before the claims if it has more than 60 lines of code.

If your program is longer than 300 lines, and you are filing by EFS-Web (strongly recommended), you may submit it as an attachment as an ASCII text file, with the program(s) clearly identified and referenced in the specification. Only one copy is needed.

If you are filing your application on paper, it must be submitted on two CDs (original and duplicate), as an appendix. It will not be printed with the patent, but will be referred to in the patent. You may use CD-ROMs or CD-Rs with your files in ASCII format. Each CD should be in a hard case in an unsealed, unpadded, mailing envelope, accompanied by a transmittal letter. The letter (and a separate paragraph in the specification) must list the machine format (IBM-PC, Macintosh, etc.), the operating system compatibility (MS-DOS, MS-Windows, Macintosh, Unix, Linux, etc.), and a list of files on the CD (including their names, size in bytes, dates of creation, etc.). The discs must be labeled "Copy 1" and "Copy 2" and the letter must state that the discs are identical. The standards for CD-ROMs are contained in Rules 96 and 52(e) (37 CFR 1.52e)—(see Appendix 2, Resources: Government Publications, Patent Websites, and Books of Use and Interest), available at all Patent and Trademark Depository Libraries and over the PTO's website (see Appendix 5, Mail, Telephone, Fax, and Email Communications With the PTO) or in any law library.

k. Operation PPA

After you complete the static description of your main or preferred embodiment, you should then describe in extensive detail the operation or function of the entire machine or system, and then the individual parts covered in your description. Refer to each part by its name and reference numeral, and be sure to include the working or function of every part. Your invention may be of such a nature that it may not be possible to include a physical

description and an operational description in separate sections. However, you'll find that this mode of description works generally for most inventions, and you should try to adhere to it since it will force you to be complete and comprehensive. Your operation section should not introduce any part or use any reference numeral that was not introduced in the description section. Again, always keep your reader apprised as to which figure is under discussion. At the end of or in the Operation section, stress the advantages of your invention—for example, "Thus, since the lever is bent in this embodiment it avoids the jamming that some prior-art couplings experienced." Just say what your invention can do and not what it can't do because this will denigrate your invention and give your adversaries ammunition to attack it.

l. Description and Operation of Alternative Embodiments PPA

If your invention includes several embodiments and ramifications, you should first fully describe the structure of the most preferred or most basic embodiment. (However, never call it a "preferred" or "main" embodiment.) Then, describe its operation in a separate section immediately following the structural description. In this way, your reader or examiner will get a full understanding of one embodiment of the invention, including its operation.

Then describe each additional important embodiment—those embodiments that you feel have a good chance of being commercially implemented. Describe these additional embodiments in the same manner, but more briefly, since you only need detail the differences over the first embodiment. Thus, several sets of description/operation sections will result. For example, "Fig. 1—Description of Motor," "Operation of Motor," "Fig. 2—Description of Hand Version," "Operation of Hand Version." You must include a highly detailed description of each and every part of your invention, together with a highly detailed description of the operation of each part and its relation to the other parts.

I emphasize that you should describe, draw, and claim specifically all reasonably important embodiments and ramifications so that you'll have more support for broader claims (see Chapter 9). Also, if an infringer is making or selling a ramification, you'll be able to show the judge that you specifically showed that ramification in your application. Infringement is supposed to be determined mainly by the wording of your claims. However, as a practical matter, judges are psychologically influenced in your favor if your specification and drawings show and discuss the very embodiment that is being infringed.

If you are aware of less important embodiments and ramifications, you can describe these in the Ramifications section, discussed below, without drawing or claiming them specifically.

TIP

Medical Devices and Drugs. If your invention is a medical device or drug, you don't need to supply proof of efficacy if it's obvious that it will work and be safe. For instance, if your invention is a drug that is close or analogous to an existing drug that is already recognized as safe and efficacious, you don't need further proof. But if your invention is a drug that is substantially different from anything on the market, and it's not apparent that the drug will be safe and efficacious, you must be prepared to prove those things. Applications for patents on drugs often are referred to the FDA, which has its own requirements, but in cases where the drug or device isn't radically different, declarations by experts regarding safety and efficacy will usually be accepted by the PTO.

m. Conclusion, Ramifications, and Scope

After you finish your detailed description of the invention's operation, add a "Conclusion, Ramifications, and Scope" section to sum things up and to remind the judge who sees your patent that the claims control. Here's an example:

> "*Thus the reader will see that at least one embodiment of the can opener provides a more reliable, lightweight, yet economical device that can be used by persons of almost any age ….* [Keep selling it!]
>
> [Some inventors have provided arguments for unobviousness here, but I advise against this. Just state the advantages without discussing unobviousness.]
>
> *"While my above description contains many specificities, these should not be construed as limitations on the scope, but rather as an exemplification of one [or several] embodiment(s) thereof. Many other variations are possible. For example* [then continue with brief description of possible variations that aren't important enough to show as ramifications in the drawing].
>
> *"Accordingly, the scope should be determined not by the embodiment(s) illustrated, but by the appended claims and their legal equivalents."*

In the first paragraph quoted above, the advantages of the invention are restated and summarized to hammer home the great value of your invention. But don't refer to "the invention" here—just the embodiments—and avoid absolute terms, for example, state that it is "more reliable" rather than "completely or highly reliable." In the "for example" portion of the second quoted paragraph, include

a brief description of any alternative embodiments you can think of and that (as stated) you didn't consider important enough to show in the drawing and describe in detail in your description. I usually put exotic, untested embodiments, as well as minor variations in color, size, and materials in the broadening paragraph. It's very desirable to include as many ramifications as possible in order to get your claims, especially "means" clauses, interpreted as broadly as possible. The courts will interpret a patent in a narrower manner if it describes a single embodiment only. (See Chapter 9 on drafting claims for a discussion of "means" clauses and their relationship to the specification.)

Thus you should go through the entire application and, for each element of the inventive device or method, state in the ramifications paragraph whether that element can be:

- eliminated or duplicated
- changed in size (made smaller or larger)
- made of a different material
- made in a different shape
- made of a different color
- connected or associated with its adjacent elements in a different manner
- given a different mode or function of operation—for example, suction rather than blowing, or
- made integrally or separately (modular or in sections).

It's very important to be as comprehensive as possible when describing ramifications because the recent decisions of the court have tended to interpret claims narrowly, unless the infringed device is described or mentioned in the specification.

Look at the sample specification at the end of this chapter to see how this is done.

That's just about all there is to drafting the specification portion of your application. What's left, you ask? The small matter of "Claims," that's what. I'll tell you how to write these in the next chapter.

n. Sequence Listing PPA

If you provide a sequence listing of a nucleotide or amino acid sequence on paper, you should include this heading and the listing on a separate sheet after your claims and before your abstract. If you have no sequence listing, don't include the sheet or this heading.

o. Abstract

Your abstract should be drafted on a separate sheet, after the claims. However, it will be printed on the first page of your patent and appears right after the sample specification of Fig. 8G, since the claims have been saved for the next chapter. The abstract is relatively easy to do once you've done the specification, and since it's very closely related to the specification, I'll cover it here.

The abstract should be put on a new page with the heading "Abstract." To do the actual abstract, write one paragraph providing a concise summary of the specification in no more than 150 words. Spend enough time writing the abstract to make it concise, complete, clear, and as broad (nonlimiting) as possible. This is because the abstract is usually the part of an application that's read first and most frequently consulted. Look at the abstracts of several of your prior-art patents to get an idea of what's involved. To be concise, your abstract should not include throat-clearing phrases like "This invention relates to," but rather, should get right into it and state—for example, "An improved bicycle pedal mechanism having…, etc." Also don't limit your abstract to the invention or one embodiment; rather refer to other embodiments and never "the invention." If you think you may file the application in other countries, you should include reference and figure numbers in the abstract (with each one in parentheses) to comply with the international rules. International filing is covered in Chapter 12. It's also desirable to include some advantages of one or more embodiments in the abstract.

J. Review Your Specification and Abstract Carefully

After you've completed your draft, review it carefully to be sure you've included everything about your invention you can think of. Also, be sure that there is no possible ground for anyone to say that you haven't included enough to teach one skilled in the art how to make and use your invention or that there's anything in the specification that a court can use against you to limit your invention. Also make sure whatever you write is clear and unambiguous because if it's possible to do so, some reader will always interpret anything you write to mean something other than what you intended. You may have to go through two, three, or more drafts to get it right. Be sure to compare your specification with those of other recent patents in the field so that yours is at least as complete as theirs. Allow yourself plenty of time—for example, a few days to do the drawings, a few days to write the introductory parts of your specification, and a few days to do the static description. In this way you won't feel pressured and thus you'll be able to do a better, more readable, more legally adequate job. Because the drafting of an excellent patent application is admittedly a difficult and tiring task, you may be tempted, after finishing the draft, to file it right away and not to check it carefully.

I strongly urge you not to do this and to wait a day or two and check it carefully; you'll be grateful that you waited.

"Don't do your work in haste. Later on, the public won't ask whether it was completed in three days, but whether it's accurate and complete."

—Anonymous

"The secret of joy in work is contained in one word—excellence. To know how to do something well is to enjoy it."

—Pearl S. Buck

"Every minute of preparation lost means extra hour of struggle."

—Earl Derr (author of Charlie Chan)

CAUTION

Many prior-art patents are not properly described under today's demanding standards, so don't absolutely rely on them as a standard. Instead, follow the guidelines of this chapter. After you complete the draft of your specification, I recommend that you show it to a coworker, relative, or friend. Have them double-check that: It clearly teaches how to make and use the invention, it sells your invention and states all of its advantages, it is logical, free of errors (grammatical and technical), it is clearly written, and it doesn't tend to limit your invention.

If You Use an Attorney

If you're fortunate enough to be able to hire an attorney (or agent) to prepare your patent application, don't blindly accept whatever the attorney gives you to sign, since even the best attorneys make mistakes and omit important things at one time or another. All attorneys do better work when they have a critical client. Carefully review the attorney's work in detail, making sure the application is well and clearly written, clearly teaches how to make and use the invention, discloses all possible ramifications, isn't limiting, contains broad main claims, and has a spectrum of claims. (I discuss claims in the next chapter.) You're paying the attorney a lot of money, so you deserve a high-quality product. You should get another attorney if your attorney won't listen to your suggestions.

K. Checklist for Your Patent Application Draft

After reviewing many patent applications prepared by laypersons, I've come up with three lists of the most common errors and areas generally needing improvement. The first list (in two parts) follows; it covers the preliminary drawings and draft specification. Before you go on to the claims (Chapter 9) or to the finaling process (Chapter 10), I suggest that you check this list carefully and make any needed corrections in your work. The specification checklist includes many grammar and punctuation rules that I see inventors violate frequently.

L. Specification of Sample Patent Application

The application shown below is reproduced in final form, ready for filing in the PTO. However, your application will be in draft form after completing this chapter.

M. Summary

The specification must describe how to make and use the invention in full, clear, concise, and exact terms. The patent application should also "sell" the embodiments of the invention by stressing their advantages in the Operation and Conclusion sections. But don't include anything that could be used to limit your invention or that could be used against you.

Any layperson who can write a detailed description in conjunction with drawings will be able to write a competent patent application. A patent application should contain certain prescribed headings and additional informative headings.

When your application is received in the PTO it will be processed and put in a file by clerical personnel and later reviewed by drawing reviewers and then an examiner.

Prior to doing your drawings and writing the application you should review your papers and make full preparations. For inventions that use software, the application should have a detailed flowchart or a listing. Do rough drawings first and provide a name for every part. Then draft the specification according to an outline and without legal terms, using short, simple sentences.

Provide a static description of each embodiment before describing its operation and sell the invention throughout. Follow the checklists for the preliminary drawings and specification draft.

Checklist for Preliminary Drawings

- ☐ Every significant part in the drawings has its own reference numeral.
- ☐ Every unique part has a different reference numeral—that is, the same reference numeral is never used to indicate different parts. (Suffixed numbers (10, 10'; 10A, 10B, etc.) can be used for different parts.)
- ☐ The same reference numeral is always used to indicate the same part when such part is shown in different Figs.; that is, two different numerals are never used to indicate the same part.
- ☐ Arrowheads are not used on any lead line, unless it refers to an entire assembly of elements.
- ☐ The drawings show enough details of your invention to enable it to be fully and readily understood by a lay judge.
- ☐ The reference numerals start with a number higher than your highest Fig. number.
- ☐ Even reference numerals (10, 12, etc.) are used so you can add more numerals in sequence later, if needed.
- ☐ The Fig. details and reference numerals are large enough to be easily read.
- ☐ Separated parts of any figure are joined by projection lines (see Fig. 8D) or a large bracket (unless there is only one figure on the sheet).
- ☐ A descriptive label is placed on or near each component whose function is not apparent. (If the component's function is understandable as shown, you aren't allowed to label it.)
- ☐ The drawings show every part and modification that you intend to include in your claims. (See Chapter 9.)
- ☐ No dimensions are used on drawings (unless essential for the invention).
- ☐ Each figure has a separate number. Suffixed figure numbers (Fig. 1-A, Fig. 1-b; Fig. 1, Fig. 1') are okay.
- ☐ Separate figures are not connected by any line.
- ☐ Exotic or special parts are labeled—for example, "saturated transistor"; "gray water"; "electric conduit."
- ☐ Perspective (isometric) views, rather than engineering (top, side, bottom) views, are used wherever possible.
- ☐ Any figures that show a prior-art device are so labeled.
- ☐ A reference number is not used for an entire figure.
- ☐ A sectional view is indicated by two arrows with crossbars on the main view, numbered with the number of the sectional view. If, within a subsidiary figure, you show an enlarged view of an area of a main figure, draw a circle around the area in the main figure and label the circle with the figure number of the subsidiary figure.

Checklist for Draft of Specification—Writing in General

- ☐ No sentence is over about 13 words (unless really necessary or unless two independent clauses are used).
- ☐ No paragraph is longer than about 150–200 words or about half a page.
- ☐ A heading is supplied for approximately every two pages of discussion.
- ☐ Each discussion relates to and explains only its heading.
- ☐ Adjacent paragraphs are connected by transitions, and no paragraph is longer than about one page, double-spaced.
- ☐ Every sophisticated term is defined clearly.
- ☐ The description is written in simple, nontechnical terms, insofar as possible, so that a lay judge can understand it.
- ☐ All writing is clear, reads smoothly, and is logical.
- ☐ Unisex personal pronouns (he, his, hers, etc.) aren't used exclusively; your examiner may be of the opposite sex.
- ☐ No sentence is started with a number.
- ☐ Every reference numeral is preceded by a noun ("lever 21").
- ☐ A comma isn't used between subject and verb. (Wrong: "Lever 24, is connected to brace 26.")
- ☐ A comma is used at all natural pauses.
- ☐ Don't omit "Oxford" comma: "He ate bread, ham, and eggs." (Comma indicates the ham and eggs aren't mixed.)
- ☐ All possessives are apostrophized, except "its."
- ☐ Loose, informal writing isn't used.
- ☐ The Specification has been carefully checked for spelling and grammar errors.
- ☐ A descriptive noun ("lever") rather than a general term ("part") is used for every element.
- ☐ A group of words serving as a single adjective is hyphenated—for example, "impact-resistant glass."
- ☐ No sentence fragments are used. (Wrong: "Because the gear is made of nylon.")
- ☐ Writing is proofread carefully.
- ☐ The indefinite article "a" (rather than "the") is used to introduce parts in the specification.
- ☐ The definite article "the" isn't used to refer to a part by its name and reference numeral.
- ☐ Already introduced parts are not referred to with the article "a."
- ☐ Every part is referred to by a consistent name throughout. (Multiple alternative names should be used to introduce the part.)
- ☐ Your writing does not contain "flab" phrases such as "It will be noted that." (Flab slows reader's pace and detracts from drama and strength of work.)
- ☐ The writing doesn't change voices (active to passive, or vice versa) in a paragraph, and you use the active voice as much as possible. *(Wrong:* "The second gear is turned by the first gear." *Right:* "The first gear turns the second gear.")
- ☐ The discussion discusses one Fig. at a time, insofar as possible, and doesn't jump from figure to figure too much.
- ☐ Your reader is always kept clearly advised which figure is under discussion.
- ☐ "Fig." (rather than figure) is used throughout to speed reading.

Checklist for Draft of Specification—Specification

- ☐ The title indicates the essence of your invention without being longer than 500 characters.
- ☐ The Background—Prior Art section does not mention your invention.
- ☐ All detailed technical discussions refer to a drawing Fig. (most humans can't comprehend abstract technical discussions).
- ☐ Each prior-art approach you discuss is knocked.
- ☐ When any patent or prior-art reference is referred to, the inventor's or author's name(s), the patent number, or publication and page, and its issue date are included.
- ☐ The Drawing Description section has just one short sentence for each Fig.
- ☐ A List of Reference Numerals section is included.
- ☐ Every reference numeral on the drawings is used in the specification and every reference numeral in the specification is on the drawings.
- ☐ The same reference numeral is not used for two different parts. (Suffixed numerals—10, 10A, 10' for different parts—are okay.)
- ☐ The description and the operation of the invention are discussed in separate sections.
- ☐ Overall or main parts and overall operation are described before describing details of parts and operation.
- ☐ If any part mentioned in the specification isn't shown in the drawings (for example, because it's conventional), state this. (For example, "Output 24 of generator 22 is connected to a conventional storage battery (not shown).")
- ☐ You don't refer to your device as "the invention"; you're specific. (Wrong: "My invention thus …" Right: "The emodiment of my can opener thus…")
- ☐ Ramifications are discussed after the first embodiment and its operation is explained.
- ☐ A separate "Summary" section is provided (optional) in general terms.
- ☐ Wishy-washy descriptions ("a plastic brace might work here") are eliminated; all descriptions are firm, sure, and positive.
- ☐ The specification doesn't contain any "Patent Profanity" (see Section I.1. above).
- ☐ The dimensions, exemplary materials, relationships, and/or sources of supply are stated for all exotic or critical parts in a nonlimiting manner—for example, "at present I contemplate the use of nylon for the bevel gear, but other materials are suitable."
- ☐ For ease of reading, a shorter term is used when you refer again to a part with a long name. For example, First time: "A liquid-overflow check valve 12." Second time: "Valve 12."
- ☐ Generic terms, rather than trademarks, are used if possible. Each trademark used is identified as such, typed in caps, used with a generic noun, and its owner is indicated.
- ☐ No legal words, such as "said" or "means," are used in the specification or abstract.
- ☐ Metric (or metric followed by British) dimensions are used.
- ☐ All possible novel features of each embodiment are discussed in great detail with dimensions, materials, shapes, interconnections, etc. in a nonlimiting manner, so as to provide language to support any claims that might be directed to this feature.
- ☐ The Description and Operation sections contain enough detail to enable your invention readily to be built, understood, and used. Every part of each embodiment is discussed, its purpose is stated, and the overall operation of the invention is explained.
- ☐ If a best mode is indicated, it is done in a nonlimiting manner. The application does not contain any statements that could be used against you to narrow or invalidate your invention.
- ☐ The Operation section does not introduce any part.
- ☐ A Conclusion, Ramifications, and Scope section is provided at the end of the specification to repeat the advantages, discuss all possible alternatives (less important embodiments and ramifications), and to indicate that the claims control.
- ☐ The Abstract is broad and nonlimiting, without listing too many advantages.
- ☐ The Abstract has a reference numeral in parentheses "(12)," after each named part, for possible foreign filing.
- ☐ You have had another person check the draft for completeness, accuracy, and clarity.
- ☐ Include a glossary with broad definitions of the terms used in your specification if it's at all complex.

A2-KoppeLam.SB

your disc and file # (optional)

Note: Dimensions and layout are indicated for typing or printing on letter-size paper (8.5" x 11") so that, if foreign filing is later desired (see Chapter 12), photocopies made directly on A4 paper will have the proper format for foreign filing. If foreign filing is not likely to be desired, legal or letter-size paper with the usual margins (always provide at least a 1" top margin for hole punching), 1.5 or double line spacing, and page numbers at bottom or top can be used.

8-9 cm top margin on p. 1

Patent Application of

Lou W. Koppe

for

PAPER-LAMINATED PLIABLE CLOSURE FOR FLEXIBLE BAGS

2.5 cm left margin

Printout should have minimum 1.5 line spacing (4 lines/inch) but is shown with denser spacing since this example is shown on a reduced scale.

Cross-Reference to Related Applications

This application claims the benefit of provisional patent application Ser. No. 60/123,456, filed 2003 Aug 9 by the present inventor.

description of and knocking of prior art

Background—Prior Art

2.8–3.8 cm right margin on 8.5" x 11" paper

The following is a tabulation of some prior art that presently appears relevant:

U. S. Patents

Patent Number	Kind Code	Issue Date	Patentee
4292714	B1	1981-08—9	Walker
2981990	B1	1961-05-22	Balderree

U. S. Patent Application Publications

Publication Nr.	Kind Code	Publ. Date	Applicant
200712345678	A1	2007-07-21	Paxton

Foreign Patent Documents

Foreign Doc. Nr.	Cntry Code	Kind Code	Pub. Dt	App or Patentee
883771	GB	B2	1961-12-24	Britt et al.

Nonpatent Literature Documents

Himmelfarb, L. W., *Bread Baker* magazine, "Clips for bread bags come in various colors" (May 2009)

Fig. 8G—Specification of Sample Patent Application

2.5 cm top margin

continue knocking the prior art

Grocery stores and supermarkets commonly supply consumers with polyethylene bags for holding produce. Such bags are also used by suppliers to provide a resealable container for other items, both edible and inedible.

Originally these bags were sealed by the supplier with staples or by heat. However, consumers objected since these were of a rather permanent nature: the bags could be opened only by tearing, thereby damaging them and rendering them impossible to reseal.

Thereafter, several types of closures were designed to seal plastic bags in such a way as to leave them undamaged after they were opened. Walker discloses a complex clamp which can close the necks of bags without causing damage upon opening; however, these clamps are prohibitively expensive to manufacture. Balderree shows a closure which is of expensive construction, being made of PTFE, and which is not effective unless the bag has a relatively long "neck."

Thus if the bag has been filled almost completely and consequently has a short neck, this closure is useless. Also, being relatively narrow and clumsy, Balderree's closure cannot be easily bent by hand along its longitudinal axis. Finally, his closure does not hold well onto the bag, but has a tendency to snap off.

Although twist closures with a wire core are easy to use and inexpensive to manufacture, do not damage the bag upon being removed, and can be used repeatedly, nevertheless they simply do not possess the neat and uniform appearance of a tab closure, they become tattered and unsightly after repeated use, and they do not offer suitable surfaces for the reception of print or labeling. These ties also require much more manipulation to apply and remove.

Several types of thin, flat closures have been proposed—for example, in U.K. patent 883,771 to Britt et al. (1961) and U.S. patents 3,164,250 (1965), 3,417,912 (1968), 3,822,441 (1974), 4,361,935 (1982), and 4,509,231 (1985), all to Paxton. Although inexpensive to manufacture, capable of use with bags having a short neck, and producible in break-off strips, such closures can be used only once if they are made of frangible plastic since they must be bent or twisted when being removed and consequently will fracture upon removal. Thus, to reseal a bag originally sealed with a frangible closure, one must either close its neck with another closure or else close it in makeshift fashion by folding or tying it. My own patent 4,694,542 (1987) describes a closure which is made of flexible plastic and is therefore capable of repeated use without damage to the bag, but nevertheless all the plastic closures heretofore known suffer from a number of disadvantages:

Fig. 8G—Specification of Sample Patent Application (continued)

(a) Their manufacture in color requires the use of a compounding facility for the production of the pigmented plastic. Such a facility, which is needed to compound the primary pigments and which generally constitutes a separate production site, requires the presence of very large storage bins for the pigmented raw granules. Also, it presents great difficulties with regard to the elimination of the airborne powder which results from the mixing of the primary granules.

(b) If one uses an extruder in the production of a pigmented plastic—especially if one uses only a single extruder—a change from one color to a second requires purging the extruder of the granules having the first color by introducing those of the second color. This process inevitably produces, in sizable volume, an intermediate product of an undesired color which must be discarded as scrap, thereby resulting in waste of material and time.

(c) The colors of the closures in present use are rather unsaturated. If greater concentrations of pigment were used in order to make the colors more intense, the plastic would become more brittle and the cost of the final product would increase.

(d) The use of pigmented plastic closures does not lend itself to the production of multicolored designs, and it would be very expensive to produce plastic closures in which the plastic is multicolored—for example, in which the plastic has stripes of several colors, or in which the plastic exhibits multicolored designs.

(e) Closures made solely of plastic generally offer poor surfaces for labeling or printing, and the label or print is often easily smudged.

(f) The printing on a plastic surface is often easily erased, thereby allowing the alteration of prices by dishonest consumers.

(g) The plastic closures in present use are slippery when handled with wet or greasy fingers.

(h) A closure of the type in present use can be very carefully pried off a bag by a dishonest consumer and then attached to another item without giving any evidence of such removal.

Summary

summary paraphrases main claim

In accordance with one embodiment a bag closure comprises a flat body having a notch, a gripping aperture adjacent the notch and a layer of paper laminated on its side.

Fig. 8G—Specification of Sample Patent Application (continued)

Advantages

Accordingly several advantages of one or more aspects are as follows: to provide bag seals that are not permanent and that can be resealed, that do not damage bags, that are relatively inexpensive, that can be used on bags with a relatively short neck, that can be bent without breaking, that are neat and have a uniform appearance, that can be easily manufactured in color with designs, that will accept printing and hold it well against smudging, that do not slip in one's fingers, and that give evidence when removed. Other advantages of one or more aspects will be apparent from a consideration of the drawings and ensuing description.

Drawings—Figures

one short sentence for each figure

In the drawings, closely related figures have the same number but different alphabetic suffixes.

Figs 1A to 1D show various aspects of a closure supplied with a longitudinal groove and laminated on one side with paper in accordance with one embodiment.

Fig 2 shows a closure with no longitudinal groove and with a paper lamination on one side only in accordance with another embodiment.

Fig 3 shows a similar closure with one longitudinal groove in accordance with another embodiment.

Fig 4 shows a similar closure with a paper lamination on both sides in accordance with another embodiment.

Fig 5 shows a similar closure with a paper lamination on one side only, the groove having been formed into the paper as well as into the body of the closure in accordance with another embodiment.

Figs 6A to 6K show end views of closures having various combinations of paper laminations, longitudinal grooves, and through-holes in accordance with other embodiments.

Figs 7A to 7C show a laminated closure with groove after being bent and after being straightened again.

Figs 8A to 8C show a laminated closure without a groove after being bent and after being straightened again.

Fig. 8G—Specification of Sample Patent Application (continued)

Patent Application of Lou W. Koppe for "Paper-Laminated
Pliable Closure for Flexible Bags" continued
Page 5

Drawings—Reference Numerals

10	base of closure	12	lead-in notch
14	hole	16	gripping points
18	groove	20	paper lamination
22	tear of paper lamination	24	corner
26	longitudinal through-hole	28	neck-down
30	side of base opposite to bend	32	crease

DETAILED DESCRIPTION—FIGS. 1A AND 1B—FIRST EMBODIMENT

static description of figures

One embodiment of the closure is illustrated in Fig 1A (top view) and Fig 1B (end view). The closure has a thin base **10** of uniform cross section consisting of a flexible sheet of material which can be repeatedly bent and straightened out without fracturing. A layer of paper **20** (Fig 1B) is laminated on one side of base **10**. In one embodiment, the base is a flexible plastic, such as poly-ethylene-tere-phthalate (PET—hyphens here supplied to facilitate pronunciation)—available from Eastman Chemical Co. of Kingsport, TN. However, the base can consist of any other material that can be repeatedly bent without fracturing, such as polyethylene, polypropylene, vinyl, nylon, rubber, leather, various impregnated or laminated fibrous materials, various plasticized materials, cardboard, paper, etc.

At one end of the closure is a lead-in notch **12** which terminates in gripping points **16** and leads to a hole **14**. Paper layer **20** adheres to base **10** by virtue either of the extrusion of liquid plastic (which will form the body of the closure) directly onto the paper or the application of heat or adhesive upon the entirety of one side of base **10**. The paper-laminated closure is then punched out. Thus the lamination will have the same shape as the side of the base **10** to which it adheres.

The base of the closure is typically 0.8 mm to 1.2 mm in thickness, and has overall dimensions roughly from 20 mm x 20 mm (square shape) to 40 mm x 70 mm (oblong shape). The outer four corners **24** of the closure are typically beveled or rounded to avoid snagging and personal injury. Also, when closure tabs are connected side-to-side in a long roll, these bevels or roundings give the roll a series of notches which act as detents or indices for the positioning and conveying of the tabs in a dispensing machine.

Fig. 8G—Specification of Sample Patent Application (continued)

Patent Application of Lou W. Koppe for "Paper-Laminated
Pliable Closure for Flexible Bags" continued
Page 6

A longitudinal groove **18** is formed on one side of base **10** in Fig 1. In other embodiments, there may be two longitudinal grooves—one on each side of the base—or there may be no longitudinal groove at all. Groove **18** may be formed by machining, scoring, rolling, or extruding. In the absence of a groove, there may be a longitudinal through-hole **26** (Fig 6L). This through-hole may be formed by placing, in the extrusion path of the closure, a hollow pin for the outlet of air.

Operation—Figs 1, 6, 7, 8

operational description of figures

The manner of using the paper-laminated closure to seal a plastic bag is identical to that for closures in present use. Namely, one first twists the neck of a bag (not shown here but shown in Fig 12 of my above patent) into a narrow, cylindrical configuration. Next, holding the closure so that the plane of its base is generally perpendicular to the axis of the neck and so that lead-in notch **12** is adjacent to the neck, one inserts the twisted neck into the lead-in notch until it is forced past gripping points **16** at the base of the notch and into hole **14**.

To remove the closure, one first bends it along its horizontal axis (Fig 1C—an end view—and Figs 7 and 8) so that the closure is still in contact with the neck of the bag and so that gripping points **16** roughly point in parallel directions. Then one pulls the closure up or down and away from the neck in a direction generally opposite to that in which the gripping points now point, thus freeing the closure from the bag without damaging the latter. The presence of one or two grooves **18** or a longitudinal through-hole **26** (Fig 6L), either of which acts as a hinge, facilitates this process of bending.

The closure can be used to reseal the original bag or to seal another bag many times; one simply bends it flat again prior to reuse.

As shown in Figs 1C, 7B, and 8B (all end views), when the closure is bent along its longitudinal axis, region **30** of the base will stretch somewhat along the direction perpendicular to the longitudinal axis. (Region 30 is the region which is parallel to this axis and is on the side of the base opposite to the bend.) Therefore, when the closure is flattened again, the base will have elongated in the direction perpendicular to the longitudinal axis. This will cause a necking down **28** (Figs 1D, 7C, and 8C) of the base, as well as either a telltale tear **22**, or at least a crease **32** (Figs 7A and 8A) along the axis of bending. Therefore, if the closure is attached to a sales item and has print upon its paper lamination, the fact that the closure has

Fig. 8G—Specification of Sample Patent Application (continued)

been transferred by a dishonest consumer from the first item to another will be made evident by the tear or crease.

Figs 7A and 8A show bent closures with and without grooves, respectively. Figs 7C and 8C show the same closures, respectively, after being flattened out, along their longitudinal axes, paper tear **22** being visible.

Figs 2-5—Additional Embodiments

Additional embodiments are shown in Figs 2, 3, 4, and 5; in each case the paper lamination is shown partially peeled back. In Fig 2 the closure has only one lamination and no groove; in Fig 3 it has only one lamination and only one groove; in Fig 4 it has two laminations and only one groove; in Fig 5 it has two laminations and one groove, the latter having been rolled into one lamination as well as into the body of the closure.

Figs 6A-6B—Alternative Embodiments

There are various possibilities with regard to the relative disposition of the sides which are grooved and the sides which are laminated, as illustrated in Fig 6, which presents end views along the longitudinal axis. Fig 6A shows a closure with lamination on one side only and with no groove; Fig 6B shows a closure with laminations on both sides and with no groove; Fig 6C shows a closure with only one lamination and only one groove, both being on the same side; Fig 6D shows a closure with only one lamination and only one groove, both being on the same side and the groove having been rolled into the lamination as well as into the body of the closure; Fig 6E shows a closure with only one lamination and only one groove, the two being on opposite sides; Fig 6F shows a closure with two laminations and only one groove; Fig 6G shows a closure with two laminations and only one groove, the groove having been rolled into one lamination as well as into the body of the closure; Fig 6H shows a closure with only one lamination and with two grooves; Fig 6I shows a closure with only one lamination and with two grooves, one of the grooves having been rolled into the lamination as well as into the body of the closure; Fig 6J shows a closure with two laminations and with two grooves; Fig 6K shows a closure with two laminations and with two grooves, the grooves having been rolled into the laminations as well as into the body of the closure; and Fig 6L shows a closure with two laminations and a longitudinal through-hole.

Fig. 8G—Specification of Sample Patent Application (continued)

Patent Application of Lou W. Koppe for "Paper-Laminated
Pliable Closure for Flexible Bags" continued
Page 8

Advantages

From the description above, a number of advantages of some embodiments of my paper-laminated closures become evident:

(a) A few rolls of colored paper will contain thousands of square yards of a variety of colors, will obviate the need for liquid pigments or a pigment-compounding plant, and will permit the manufacturer to produce colored closures with transparent, off-color, or leftover plastic, all of which are cheaper than first quality pigmented plastic.

(b) With the use of rolls of colored paper to laminate the closures, one can change colors by simply changing rolls, thus avoiding the need to purge the extruder used to produce the closures.

(c) The use of paper laminate upon an unpigmented, flexible plastic base can provide a bright color without requiring the introduction of pigment into the base and the consequent sacrifice of pliability.

(d) The presence of a paper lamination will permit the display of multicolored designs.

(e) The paper lamination will provide a superior surface for labeling or printing, either by hand or by machine.

(f) Any erasure or alteration of prices by dishonest consumers on the paper-laminated closure will leave a highly visible and permanent mark.

(g) Although closures made solely of plastic are slippery when handled with wet or greasy fingers, the paper laminate on my closures will provide a nonslip surface.

Figs 7A and 8A show bent closures with and without grooves, respectively. Figs 7C and 8C show the same closures, respectively, after being flattened out, along their longitudinal axes, paper tear 22 being visible.

Conclusion, Ramifications, and Scope

repeat advantages—keep selling it!

Accordingly, the reader will see that the paper-laminated closures of the various embodiments can be used to seal a plastic bag easily and conveniently, can be removed just as easily and without damage to the bag, and can be used to reseal the bag without requiring a new closure. In addition, when a closure has been used to seal a bag and is later bent and removed from the bag so as not to damage the latter, the paper lamination will tear or crease

Fig. 8G—Specification of Sample Patent Application (continued)

and thus give visible evidence of tampering, without impairing the ability of the closure to reseal the original bag or any other bag. Furthermore, the paper lamination has the additional advantages in that:

additional ramifications

• it permits the production of closures in a variety of colors without requiring the manufacturer to use a separate facility for the compounding of the powdered or liquid pigments needed in the production of colored closures;

• it permits an immediate change in the color of the closure being produced without the need for purging the extruder of old resin;

• it allows the closure to be brightly colored without the need to pigment the base itself and consequently sacrifice the flexibility of the closure; it allows the closure to be multicolored since the paper lamination offers a perfect surface upon which can be printed multicolored designs;

• it provides a closure with a superior surface upon which one can label or print;

• it provides a closure whose labeling cannot be altered or erased without resulting in telltale damage to the paper lamination; and

• it provides a closure which will not be slippery when handled with wet or greasy fingers, the paper itself providing a nonslip surface.

broadening paragraph

Although the description above contains many specificities, these should not be construed as limiting the scope of the embodiments but as merely providing illustrations of some of several embodiments. For example, the closure can have other shapes, such as circular, oval, trapezoidal, triangular, etc.; the lead-in notch can have other shapes; the groove can be replaced by a hinge which connects two otherwise unconnected halves, etc.

Thus the scope of the embodiments should be determined by the appended claims and their legal equivalents, rather than by the examples given.

[CLAIMS FOLLOW, STARTING ON A NEW PAGE, BUT ARE PRINTED IN THE NEXT CHAPTER]

Fig. 8G—Specification of Sample Patent Application (continued)

start abstract on new page, after claims and sequence listing, if supplied

Patent Application of Lou W. Koppe for "Paper-Laminated
Pliable Closure for Flexible Bags" continued
Page 13

Abstract: One embodiment of a thin, flat closure for plastic bags and of the type having at one edge a V-shaped notch (**12**) which communicates at its base with a gripping aperture (**14**). The base (**10**) of the closure is made of a flexible material so that it can be repeatedly bent, without fracturing, along an axis aligned with said notch and aperture. In addition, a layer of paper (**20**) is laminated on one or both sides of the closure. The axis of the base may contain one or two grooves (**18**) or a through-hole (**26**), either of which acts as a hinge to facilitate bending. Other embodiments are described and shown.

insert reference numerals in parentheses for possible foreign filing

if there is sequence listing, then insert it on a separate page titled, "SEQUENCE LISTING"

Fig. 8G—Specification of Sample Patent Application (continued)

see Fig. 10B for permitted drawing sizes

1/3

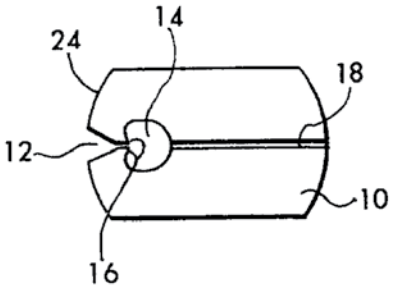


FIG.1A

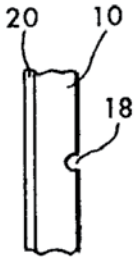


FIG.1B

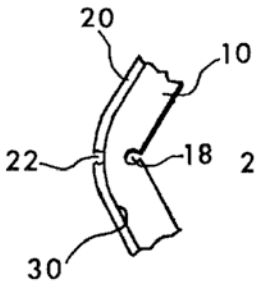


FIG.1C

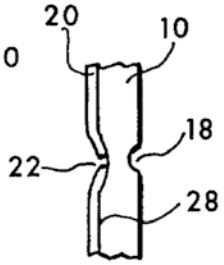


FIG.1D

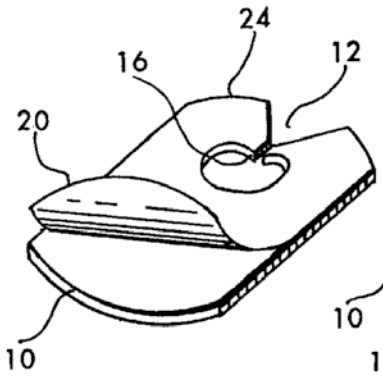


FIG.2

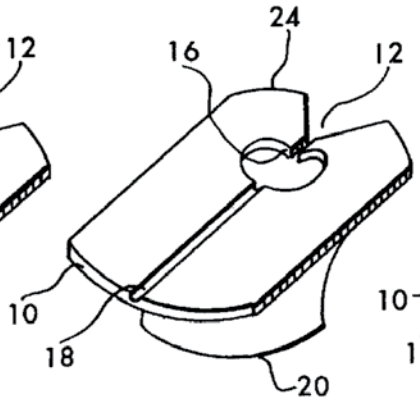


FIG.3

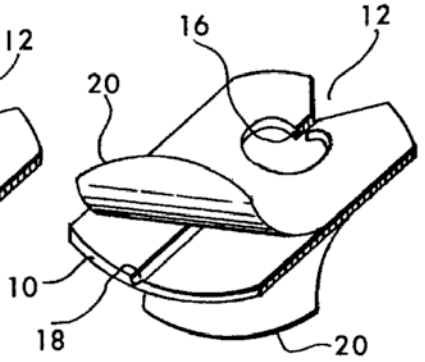


FIG. 4

Fig. 8G—Specification of Sample Patent Application (continued)

2/3

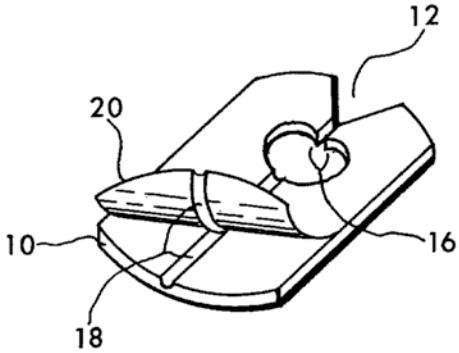


FIG.5

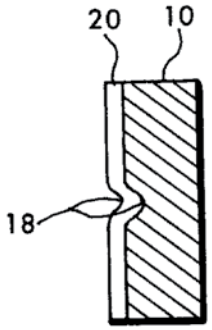


FIG.6D

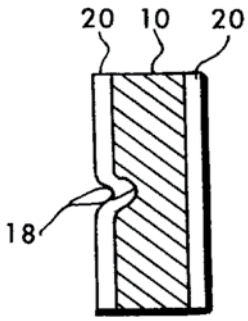


FIG.6G

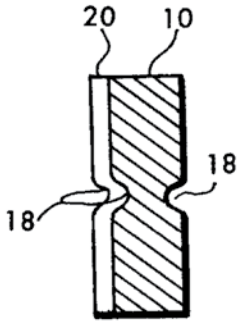


FIG.6I

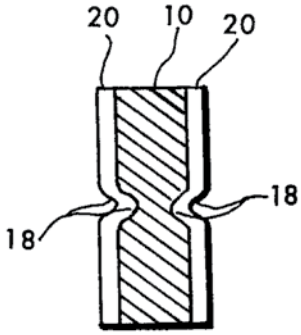


FIG.6K

Fig. 8G—Specification of Sample Patent Application (continued)

3/3

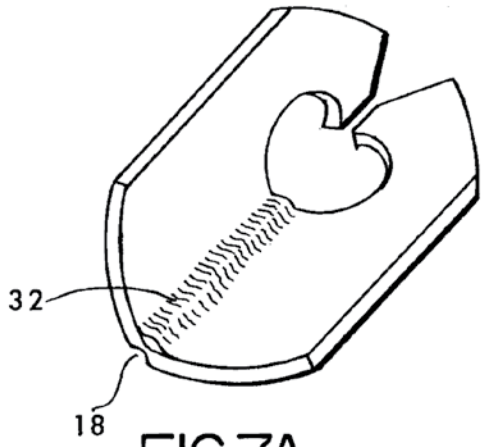


FIG.7A

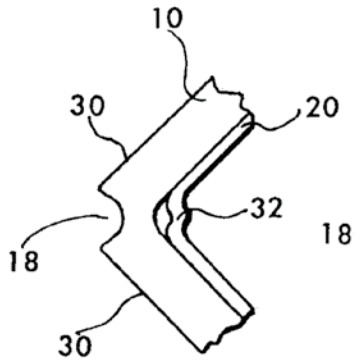


FIG.7B

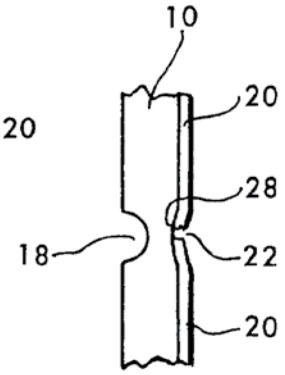


FIG.7C

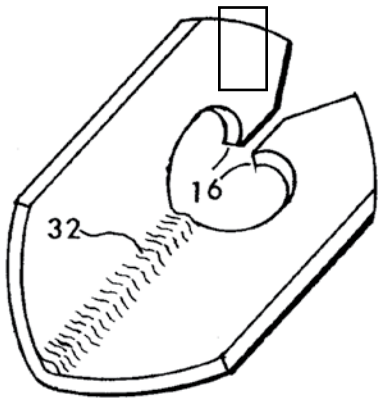


FIG. 8A

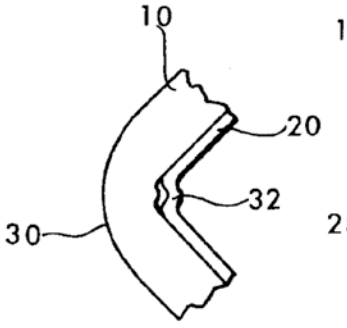


FIG.8B

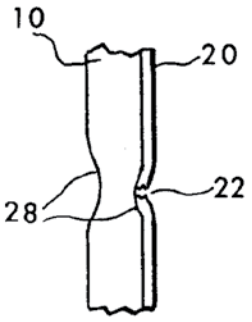


FIG.8C

Fig. 8G—Specification of Sample Patent Application (continued)

CHAPTER 9

Now for the Legalese—The Claims

Inventor's Commandment 13

In your patent application, write at least one main (independent) claim. Make this claim as broad as the prior art permits by (1) reciting as few elements as you can, and (2) using the broadest possible terms for such elements, to make it as difficult as possible for others to avoid infringing such claim.

Inventor's Commandment 14

In your patent application, write (1) one or two alternative independent claims, making these as broad as possible, and different from your first independent claim so that you have apparatus, means, and method independent claims, where possible, and (2) follow each independent claim with as many dependent claims as necessary to recite all of the significant additional features of your invention, thereby providing backup for each independent claim and a range of coverage.

Inventor's Commandment 15

Every term used in the claims should have an antecedent basis—that is, a previous reference—in the specification, preferably by being defined broadly. Every feature recited in the claims must be shown in the drawings and discussed in the specification. The claims must be clearly written and without ambiguity. Every term must be clear, and, if a term is recited more than once, it should be preceded by "said" (or "the"), followed by the same term used the first time.

A. What Are Claims?

If you don't yet know what patent claims are, or have never read any, you're in for a surprise. The word "claim" in the patent context is definitely a term of art. A "claim" is not what the common dictionary definitions recite—it's not a demand for something due, a title to something in the possession of another, or that which one seeks or asks for. Rather, a "claim," in the arcane world of patents, is a very formally worded sentence fragment contained in a patent application or patent. Claims recite and define the structure, or acts, of an invention in very precise, logical, and exact terms. They serve as tools to determine whether an invention is patentable over the prior art and whether a patent is infringed. Just as a deed recites the boundary of a real estate parcel, and a criminal statute defines what acts are punishable by fine or imprisonment, patent claims recite the "bounds" or scope of an invention for the purposes of dealing with the PTO and possible infringers. In other words, claims are the nitty-gritty of patents. While the specification must teach how to make and use the invention, the claims must define its scope.

While claims are literally sentence fragments, they are supposed to be the object of the words "I [or We] claim." They are actually interpreted, when in a patent application, as saying to the examiner, "Here is my definition of my invention. Please search to see whether my invention, as here defined, is patentable over the prior art and unobvious." In a patent, claims are interpreted as your own little statutes that say to the public, "The following is a precise description of the elements of this invention; if you make, use, or sell anything that has all of these elements, or all of these elements plus additional elements, or that closely fits this description, you can be legally held liable for the consequences of patent infringement."

Since there are only five statutory classes of inventions (see Chapter 5), every claim must define something that is classifiable into one of these five classes. Thus there are: (1) process or method claims; (2) machine claims; (3) article or article of manufacture claims; (4) composition of matter claims; and (5) claims reciting a new use of any of the previous four statutory classes. Again, the line between (2) and (3) is blurred. Fortunately, as mentioned in Chapter 5, you don't have to do the classifying unless the PTO decides that your invention doesn't fit within any class at all.

If all of this sounds a bit formidable, don't let it throw you; it will become quite clear as we progress, after you see some examples. What's more, when it comes to claims, every layperson who "prosecutes" (handles or controls) a patent application has a safety net: So long as you can convince the patent examiner that you have a patentable invention, the examiner is required by law to write at least one claim for you, for free. I discuss this, along with several aids to claim drafting, in Section G of this chapter.

But a word of caution. If you're tempted to skip this chapter and solely rely on the examiner, you can't. You must provide at least one claim in your application to obtain a filing date. In addition (and even if you use a patent attorney), familiarity with the information I provide here is essential to securing the strongest and broadest possible patent on your invention. So I urge you to approach this

chapter as if there were no safety net. Take this chapter as I present it, in small, easy-to-digest chunks, and you'll have no trouble. If you don't understand something the first time, go back again so you'll be further down on the learning curve where you'll see things much more clearly.

Common Misconception: If the devices described in the prior art have disadvantages, and a patent application describes an invention that overcomes such disadvantages, the applicant will automatically be entitled to a patent.

Fact: In addition to describing an invention that is different and superior to the prior art, the application must contain claims that define the invention in a proper way (a) so that it is physically novel over the prior art, and (b) so that such physical novelty is also unobvious over the prior art—that is, it produces new and unexpected results.

B. The Law Regarding Claims

The law (statutes and PTO rules) concerning claims is written in only the most general and vague terms. Accordingly, I'll be turning to the real world of everyday practice to help you understand the actual requirements for drafting claims. Before I do, however, let's at least take a brief look at the statutes and rules.

1. Legal Requirements for Patent Claims

The only pertinent statute comprises the last five paragraphs of our old friend, Section 112 of the patent laws (35 USC 112), which states:

2. *The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as the applicant's invention.*
3. *A claim may be written in independent or, if the nature of the case admits, dependent form.*
4. *Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers….*
5. *A claim in multiple dependent form shall contain a reference, in the alternative only, to more than one claim previously set forth and then specify a further limitation of the subject matter claimed. A multiple dependent claim shall not serve as a basis for any other multiple dependent claim. A multiple dependent claim shall be construed to incorporate by reference all the limitations of the particular claim in relation to which it is being considered.*
6. *An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.*

Paragraph 2 is the one that mandates the use of claims in patents. It also means that the claims must be specific enough to define the invention over the prior art ("particularly pointing out") and also should be clear, logical, and precise ("distinctly claiming"). This sentence is the most important part of Section 112 and is cited by patent examiners almost daily because of the frequency with which they reject claims for lack of clarity or for some other similar reason.

Paragraphs 3 to 5 define independent and dependent claims (more on this later) and make it clear that a dependent claim incorporates all the limitations of the claim to which it refers. Paragraph 5 refers to multiple dependent claims, but since they require a stiff surcharge and since examiners don't like them, I recommend that you don't use them.

Paragraph 6 was enacted to overrule two famous Supreme Court decisions (*G.E. v. Wabash,* 304 U.S. 371 (1938) and *Halliburton v. Walker,* 329 U.S. 1 (1946)). These decisions held certain claims invalid on technical grounds, specifically for "functionality at the point of novelty" because they expressed the essence of an invention in terms of its novel function, rather than reciting the specific structure that performed the novel function. In other words, they contained a broad expression such as "means for hardening latex" rather than a specific expression like "a sulfur additive." Congress enacted this paragraph to enable patent applicants to continue to claim their inventions more broadly. Under paragraph 6, if a claim uses the word "means" for performing a function, it must be construed to cover the structure, material, or acts described in the specification, and their equivalents. That is, if a claim recites "means for conveying rotational energy from said pedals to said rear wheels" and the specification describes a link chain for performing this function, the "means" claim will be construed by the PTO and the courts to cover the link chain and any equivalents, such as a driveshaft, a gear train, etc. (*In re Donaldson Co., Inc.*, 29 USPQ 2d 1845 (CAFC 1994).)

2. Rules of Practice

In addition to Section 112, claims are governed by the PTO's "Rules of Practice." PTO Rule 75 (37 CFR 1.75), parts b, d.1, and e to i add these additional requirements:

> *b. More than one claim may be presented provided they differ substantially from each other and are not unduly multiplied….*
> *d.1 The claim or claims must conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description….*
> *e. Where the nature of the case admits, as in the case of an improvement, any independent claim should contain in the following order: (1) a preamble comprising a general description of all the elements or steps of the claimed combination that are conventional or known, (2) a phrase such as "wherein the improvement comprises," and (3) those elements, steps, and/or relationship that constitutes that portion of the claimed combination that the applicant considers as the new or improved portion.*
> *f. If there are several claims, they shall be numbered consecutively in Arabic numerals.*
> *g. The least restrictive claim should be presented as claim number 1, and all dependent claims should be grouped together with the claim or claims to which they refer to the extent practicable.*
> *h. The claim or claims must commence on a separate sheet.*
> *i. Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation.*

Part b requires that the claims differ substantially from each other and not be too numerous. In practice, minimal differences will suffice. The rule prohibiting numerous claims is more strictly enforced. If more than about 20 claims are presented, there should be some justification, such as a very complex invention or numerous embodiments. Also, there are substantial charges for each independent claim over three and each claim (independent or dependent) over 20—see Appendix 4, Fee Schedule.

Part d.1, enforced only sporadically, requires that the terms in the claims should correspond to those used in the specification. It has often been said that the specification should serve as a dictionary for the claims. While examiners don't often enforce this rule, most attorneys believe it is very important to follow in view of recent court decisions that tend to narrow the scope of claims.

Part e, a newcomer, was introduced to require that claims be drafted, insofar as practicable, in the German or "*Jepson*" style (from a famous decision of that name). The *Jepson*-type claim is very easy for examiners to read and understand. It puts the essence of the invention into sharp focus by providing in the first part of the claim an introduction that sets forth the environment of the invention—that is, what is already known, and in the second part, or body of the claim, the essence of the invention—that is, the improvement of the current invention. In practice, I've never seen this part of Rule 75 enforced. Most patent attorneys recommend that you avoid use of the *Jepson*-type claim since, by isolating the novel part of the invention, it's easier to invalidate.

Parts f, h, and i are self-explanatory and part g means that the broadest claims should be number 1, all dependent claims should be together and under their independent claim, and the elements or steps of a claim should be in separate paragraphs. More information is provided in Section J of this chapter.

C. Some Sample Claims

As mentioned, claims boil the invention down to its essence. In their broadest sense, they eliminate everything nonessential to the invention. In fact, many inventors first realize what their invention truly is when they write or see a claim to it, especially after the claim has been rejected in the patent prosecution process. Conversely, you won't be able to draft an adequate claim unless you have a clear understanding of your invention. Although not a patent attorney, the great theatrical producer David Belasco showed that he understood the principle behind claims well when he said, "If you can't write your idea on the back of my calling card, you don't have a clear conception of your idea."

And claims are difficult to write just because they are so short. Blaise Pascal once concluded a letter to a friend as follows: "I have made this letter a little longer than usual because I lack the time to make it shorter." Nevertheless, don't get discouraged; if you follow the step-by-step, four-part procedure I give later, you'll find that writing claims is not too much more difficult than writing the specification.

In the following sections, I provide some hypothetical simple claims and some actual ones. Patent applications containing the hypothetical claims would now be rejected since the "inventions" they define are obviously old and in the public domain. A few of the claims—the "method of putting" and the "new use" claim—are from patents.

1. Process or Method Claims: Conventional Process, Software Process, Business Method, and Manual Method

In this section, you'll see examples of various method claims—one to a conventional process, one to a software-based process, one to a business method, and one to a manual method. Note that these claims recite a series of steps (or individual operations), rather than a series of hardware elements as in an article claim. Note also that the software, business method, and manual method claims are similar in construction, which shows you that these processes are generally claimed the same way as any other process.

a. Conventional Process

For the conventional process, assume that you just invented sewing and want to claim the process. Here's how you'd do it.

A method for joining two pieces of cloth together at their edges, comprising:

a. providing said two pieces of cloth and positioning them together so that an edge portion of one piece overlaps an adjacent edge portion of the other piece, and

b. passing a thread repeatedly through and along the length of the overlapping portions in sequentially opposite directions and through sequentially spaced holes in said overlapping adjacent portions,

whereby said two pieces of cloth will be attached along said edge portions.

Note that the first part of this claim contains a title, preamble, or genus, which states the purpose of the method but doesn't use the term "sewing," because sewing is the invention and is assumed to be new at the time the claim is drafted. The claim contains two steps, a and b, that state in sequence the acts one would perform in sewing two pieces of cloth. Note that each clause begins with an "—ing" word (gerund). The claim also contains an optional "whereby" clause at the end to point out to the examiner or a judge the advantage of the process. Finally, note that the claim is single-spaced and is formatted in paragraphs with a hanging indent so that the second and subsequent lines are indented. This is the way claims are printed in patents, but when you type them in your patent application you should us the hanging indent with single or 1.5 line spacing. You can "hang" a paragraph in Microsoft Word by placing your cursor in the paragraph and pressing Control-T.

b. Software Process

For the software process, assume that you've just invented a word processor and want to claim the word insertion feature (which we now all take for granted) as a method. Here's how you'd do it.

A method of inserting additional characters within an existing series of characters on a display, comprising:

a. providing a memory which is able to store a series of characters at an adjacent series of addresses in said memory,

b. providing a character input means which a human operator can use to store a series of characters in said memory at said respective adjacent series of addresses,

c. storing said series of characters in said memory at said adjacent series of addresses,

d. providing a display which is operatively connected to said memory for displaying said series of characters stored in said memory at said adjacent series of addresses,

e. providing a pointer means which said operator can manipulate to point to any location between any adjacent characters within said series of characters displayed on said display,

f. providing a memory controller which will:

1. direct any additional character which said operator enters via said character input means to a location in said memory, beginning at an address corresponding to the location between said adjacent characters as displayed on said display, and

2. causing all characters in said series of characters which are stored in said memory at addresses subsequent said location in said memory to be transferred to subsequent addresses in said memory so that said additional character will be stored in said memory at said location and before all of said subsequent characters,

whereby said display will display said additional character within said series of characters at said location between said adjacent characters, and a writer can add words within existing body of text and the added words are displayed in an orderly and clean fashion without having to reenter said existing body of text.

Note that the preamble of this claim states the purpose of the method. The series of steps in the body of the claim first state or lay out the hardware of the computer (the memory, the display, etc.) as a series of "providing" clauses, since a method claim is not supposed to state hardware directly, that is, if this claim recited simply "a memory,"

rather than "providing a memory," the examiner in the PTO would object to it as an improper hybrid claim because it recited both hardware and method steps. More on this later. Finally, note that the end of this claim also contains a "whereby" clause which states the internal function of the claimed method, and an overall, external, and meaningful result or function of the method. The whereby clause is not considered when the examiner determines novelty but helps sell the method to the examiner, as well as to any judge who has to decide on the validity or infringement of this claim.

c. Business Method

For the business method, assume that you've just invented a procedure for checking the "creditworthiness" of a customer. Now you want to write a claim to this as a business method. Here's how you might write a suitable claim for a credit-checking process.

A method of passing on the creditworthiness of a customer comprising:

a. *providing a form for said customer to complete, said form having spaces in which said customer must indicate a plurality of credit accounts and a plurality of credit references,*
b. *investigating each of said credit accounts and credit references and compiling a score from 1 to 100, for each account and reference, with 1 indicating a minimal credit rating and 100 indicating a maximal or excellent credit rating,*
c. *averaging all of said scores to compile an overall average,*
d. *rejecting said customer if said overall average is below a predetermined value and accepting said customer if said overall average is above said predetermined value.*

This claim would almost certainly be rejected as drawn to nonstatutory subject matter under the *Bilski* decision (see Section G13, below) since (1) it isn't tied in a substantial way to a particular machine or apparatus, or (2) it doesn't transform an article into a different state or thing. However I provide it here to illustrate a true business method claim in case *Bilski* is legislatively overruled or broadened. (To make this claim statutory you would add a "providing a computer" to the claim and recite that the computer performs the steps.)

d. Manual Methods

A golfer invented a new way of putting that emphasizes the golfer's dominant hand and claimed this as a manual process (U.S. Pat. No. 5,616,089). Here's how he did it.

A method of gripping a putter comprising the steps:

a. *gripping a putter grip with a dominant hand;*
b. *placing a non-dominant hand over an interior wrist portion of the dominant hand behind a thumb of the dominant hand;*
c. *resting a middle finger of the non-dominant hand on the styloid process of the dominant hand;*
d. *pressing a ring finger and a little finger of the non-dominant hand against the back of the dominant hand;*
e. *pressing the palm of the non-dominant hand against a forward surface of the putter grip as the non-dominant hand squeezes the dominant hand.*

A cat owner invented a new way of exercising a cat using a laser. Some opined that this invention is ridiculous and obvious. Evidently the examiner didn't think so (U.S. Pat. No. 5,443,036). Here's the main claim.

A method of inducing aerobic exercise in an unrestrained cat, comprising:

a. *directing an intense coherent beam of invisible light produced by a hand-held laser apparatus to produce a bright, highly focused pattern of light at the intersection of the beam and an opaque surface, said pattern being of visual interest to a cat; and*
b. *selectively redirecting said beam out of said cat's immediate reach to induce said cat to run and chase said beam and pattern of light around an exercise area.*

2. Machine Claims—Conventional and Software Machines

Here are examples of two machine claims, one to a conventional machine and one to a software-based machine. Note that both claims recite a series of hardware elements, rather than a series of steps as in the process claims. Note also that both claims are similar in construction, indicating again that a software machine is generally claimed the same way as any other machine.

a. Conventional Machine

For the conventional machine, assume now that you've just invented the automobile. Here's how to claim it.

A self-propelled vehicle, comprising:

a. *a body carriage having rotatable wheels mounted thereunder for enabling said body carriage to roll along a surface,*
b. *an engine mounted in said carriage for producing rotational energy, and*

c. means for controllably coupling rotational energy from said engine to at least one of said wheels,
whereby said carriage will be self-propelled along said surface.

This claim again contains a title in the first part. The second part or body contains three elements, the carriage, the engine, and the transmission. These elements are defined as connected or interrelated by the statement that the engine is mounted in the carriage and the transmission (defined broadly as "means for controllably coupling …") couples the engine to at least one wheel of the carriage. Again, the "whereby" clause recites the advantage of the hardware elements of the preamble and clauses a, b, and c.

b. Software Machine

For the software machine, let's make it easy and continue to assume that you've just invented a word processor and want to claim the word insertion feature as a machine. As I'll explain below, to obtain maximum coverage, it's best to provide both method and machine claims for an invention, if it's possible to do so. Here's the machine claim to the word processor.

A machine for inserting additional characters within an existing series of characters on a display, comprising:
a. a memory which is able to store a series of characters at an adjacent series of addresses in said memory,
b. a character input means which a human operator can use to store a series of characters in said memory at said adjacent series of addresses,
c. a display which is operatively connected to said memory for displaying said series of characters stored in said memory at said adjacent series of addresses,
d. a pointer means which said operator can manipulate to point to any location between any adjacent characters within said series of characters displayed on said display,
e. a memory controller which will:
1. direct any additional character which said operator enters via said character input means to a location in said memory, beginning at an address corresponding to the location between said adjacent characters as displayed on said display, and
2. cause all characters in said series of characters which are stored in said memory at addresses subsequent to said location in said memory to be transposed to subsequent addresses in said memory so that said additional characters will be stored in said memory at said location and before all of said subsequent characters,
whereby said display will display said additional characters within said series of characters at said location between said adjacent characters, and a writer can add words within the existing body of text and the added words are displayed in an orderly and clean fashion without having to reenter said existing body of text.

Note that this machine claim is essentially the same as the above method claim on word processing, but our machine claim contains only directly recited hardware elements and no method steps. It's simply an alternative way of reciting the word processing invention. As I'll discuss below, it's desirable to provide as many different ways to claim an invention as possible, just as it would be desirable to go into battle with as many different weapons as possible (rifle, pistol, knife, grenade, destroyer, fighter plane, guided missile, etc.), since you never know which one will help you win the battle.

3. Article of Manufacture Claim

You've done it again! Here's a claim to the pencil you've just invented.

A hand-held writing instrument comprising:
a. elongated core-element means that will leave a marking line if moved across paper or other similar surface, and
b. an elongated holder surrounding and encasing said elongated core-element means, one portion of said holder being removable from an end thereof to expose an end of said core-element means so as to enable said core-element means to be exposed for writing,
whereby said holder protects said core-element means from breakage and provides an enlarged means for holding said core-element means conveniently.

This claim, like the machine claim, contains a preamble and a body with two elements: (a) the "lead" and (b) the wood. As before, the elements of the body are associated; here the wood ("elongated holder") is said to surround and encase the lead ("elongated core"). The "whereby" clause at the end of the claim states the purpose and advantage of the lead and its holder.

4. Composition of Matter Claim

Now, great inventor that you are, you've come up with concrete. Here's your claim.

A rigid building and paving material comprising a mixture of sand and stones, and a hardened cement binder filling the interstices between and adhering to sand and stones, whereby a hardened, rigid, and strong matrix for building

and paving will be provided.

This claim, although not in subparagraph form, still contains a preamble and a body containing a recitation of the elements of the composition (sand, stones, and cement binder), plus an association of the elements (sand and stones are mixed and binder fills volume between and adheres to sand and stones). Again, the whereby clause drives home the advantages of the components.

The height of claim brevity was reached (and will never be exceeded) in two composition of matter patents in 1964 when the PTO issued patents 3,156,523 and 3,161,462 to the late Dr. Glenn T. Seaborg, on two new elements, *americium* and *curium*. The claim for U.S. Patent No. 3,156,523 (americium) read simply,

1. *Element 95.*

The claim for U.S. Patent No. 3,161,462 (curium) read,

2. *Element 96.*

5. New Use Claim

Someone discovered that pigs put on weight faster if aspirin is added to their diet. Here's how to claim it.

A method for stimulating the growth of swine comprising feeding such swine aspirin in an amount effective to increase their rate of growth.

This claim recites the newly discovered use of aspirin and the purpose of the new use in a manner that defines over and avoids the known, old use of aspirin (analgesic). Note that it is a method claim (as all new-use claims must be). This is because aspirin per se is old and thus must be claimed more narrowly, as a new use.

Now that you've read a few claims, I suggest you try writing a practice claim or two of your own to become more familiar with the process. Try a simple article or machine with which you are very familiar, such as a table, chair, pen, etc. Write the preamble and then the body. To write the body, first list the elements or parts of the article or machine, and then associate or interconnect them. Don't worry too much about grammar or style, but try to make the claim clear and understandable.

D. Common Misconceptions Regarding Claims

In my experience, inventors' misconceptions about claims are more widespread than in any other area of the patent law, except possibly for the misconception regarding the "Post Office Patent" explained in Chapter 3. Consider some of the following.

Common Misconception: The more claims that the PTO (Patent and Trademark Office) allows in your patent application, the broader your scope of coverage.

Fact: The scope of your monopoly is determined by the wording of your claims, not their number. One broad claim can be far more powerful than 50 narrow claims.

Common Misconception: If you want to get broad coverage on a specific feature of your invention, you should recite that specific feature in your claims.

Fact: If you recite a specific feature of your invention in a claim, that claim will be limited to that feature as recited, and variations may not be covered—for example, if you have a two-inch nylon gear in your apparatus and you recite it as such in a claim, the claim may not cover an apparatus that uses a one-inch gear, or a steel gear. The best way to cover all possible variations of your gear is to recite it simply as a "gear," or better yet, "rotary transmission means."

Common Misconception: To cover a specific feature of your invention per se, you need merely recite it in a dependent claim.

Fact: As stated in the statute quoted in Section B, above (35 USC 112, ¶ 4), a dependent claim is construed (and reads) as if it incorporated all of the limitations of the claim to which it refers. Thus if your independent claim (#1) recites a telephone having a connecting cord and your dependent claim reads, "The telephone of Claim 1 wherein said connecting cord is coiled," the dependent claim doesn't claim the coiled cord per se, but rather the coiled cord in *combination with the telephone*. More on this later in Section J, below.

Common Misconception: If a claim doesn't recite a specific feature of your invention, then this feature is necessarily not covered. For example, if your invention includes a two-inch nylon gear and you fail to recite it specifically in a claim, then anyone who makes your invention with this gear can't infringe your patent.

Fact: The fact that a feature isn't recited doesn't mean that it isn't covered. An absurd example will make this clear. Suppose your invention is a bicycle and you show and describe it with a front wheel having 60 spokes. You don't mention the spokes at all in a claim; you simply recite a "front wheel." Any bike that has all of the limitations of the claim will infringe it. Thus a bike that has any "front wheel" will infringe, whether it has zero or 600 spokes.

As I'll explain from time to time, to infringe a claim, an accused apparatus must have at least all of the elements of the claim; if it has more elements than recited in the claim, it still infringes, but if it has fewer, then it doesn't infringe. Claim limitations are thus interpreted using Boolean logic, similar to computer search terms, as explained in Chapter 6, Section H.

Common Misconception: The more features of your invention you recite in a claim, the broader that claim will be. (Stated differently, the longer a claim is, the broader it is.)

Fact: As will be apparent from the previous misconceptions, the less you recite in a claim—that is, *the fewer the elements you recite—the broader the claim will be*. This seeming paradox exists because an accused infringing device must have all the elements of a claim to infringe. Thus, the fewer the elements specified in a claim, the fewer the elements an accused infringing device needs to have to infringe. Put differently, infringement is generally easier to prove if a claim is made shorter or has fewer elements. "To claim more, you should recite less" is a Boolean concept that is difficult for most inventors to absorb, but that you should learn well if you want to secure the broadest possible coverage. Again, see Computer Searching in Chapter 6, Section H, for further clarification of this point.

E. One Claim Should Be as Broad as Possible

As stated in Inventor's Commandment 13, there are two ways to make a claim broader: (1) *minimize* the number of elements; and (2) *maximize* the scope of these elements. Let's see how this works.

1. Minimize the Number of Elements

Take our automobile claim, above, which recites three elements, a, b, and c—that is, the wheeled carriage, the engine, and the transmission. If an accused machine contains just these three elements, it will, of course, infringe.

If the accused machine has these three plus a fourth, such as a radio, which we'll label d, it will still infringe.

But if our accused machine contains only elements a and b, the carriage and engine, it won't infringe, since it simply doesn't contain all of the claimed elements, a, b, and c.

If a claim contains many, many elements, say a to m, only devices with all 13 elements, a to m, will infringe. If the maker of the device eliminates just one of the 13 elements, say g, the device will *not* infringe. Thus, it's relatively easy to avoid infringing a claim with many elements.

If a claim contains only two elements, a and b, any device with these two elements will infringe, no matter how many other elements the device has. The only way to have the device avoid infringement is to eliminate either element a or element b, a relatively difficult task.

Thus, it should be very clear that the *fewer the elements in a claim, the harder the claim will be to avoid*, that is, the broader it will be and the more devices it will cover. Therefore, when drafting a main or independent claim to your invention, it will behoove you to put in as few elements of your invention as possible. (You do have to include sufficient elements so that the claim recites an operative, complete assemblage that is novel and unobvious over the prior art. More on this in Sections F and G, below.)

2. Recite Each Element as Broadly as Possible

With regard to the second way of broadening a claim, that is, reciting existing elements more broadly, consider a few examples. Suppose an invention involves a chair. The chair can be drafted broadly as "a seat" or narrowly as a four-legged maple chair with a vinyl-covered padded seat and a curved plywood back. Obviously, a three-legged plastic stool would be "a seat," and it would infringe the broadly recited element, but would miss the narrowly recited maple chair by a country mile. In electronics, "controllable electron valve" is broader than "vacuum tube" or "transistor." In machinery, "rotational energy connecting element" is broader than "helically cut gear" or "V-belt."

Another way to broaden your claim is to try to anticipate what an infringer or a competitor might do to attack your patent; then cover this in the claims by eliminating it or broadening it. For example, suppose you invented a furnace that uses a blower to force air into the combustion chamber and your claim recites, "a blower for forcing air from outside said furnace into said combustion chamber." But you realize that a competitor may use a blower to draw air from the combustion chamber and thereby cause the combustion chamber to draw outside air in. Since your claim would not cover this variation, you should broaden the limitation in question to, "a blower for causing outside air to enter said combustion chamber" and also amend the specification (for example, in the ramifications section) to state that the blower may alternatively be arranged to draw air from the combustion chamber and thereby cause the combustion chamber to draw outside air in.

One way of reciting elements broadly is to take advantage of paragraph 6 of Section 112 by reciting an element, wherever possible, as "means" plus a specific function. In this way, any device or means that performs the function and is the equivalent of the supporting structure in the

specification would infringe. For example, "means for conveying rotational energy" is broader than a drive belt and covers gears, pulleys, and drive shafts if these are the equivalent of a belt, which they will be determined to be if you've mentioned them in the specification. "Amplifying means" is broader than and covers such items as transistor amplifiers, tube amplifiers, and masers.

If you do use the word "means" in a claim, Section 112 requires that the claim recite a "combination"—that is, two or more elements or parts. Claims that recite a single element are not supposed to use the word "means" to describe the single element, since this is considered too broad—for example, "17. Means for providing a continuously variable speed/power drive for a bicycle" would be an example of a prohibited "single means" claim. However, you can effectively obtain practically the same breadth of coverage by adding an immaterial second element to the claim to make it a combination claim. Thus, "17. In combination, a bicycle having a pedal mechanism and means for providing a continuously variable speed/power drive for coupling rotational energy from said pedal mechanism to a wheel of said bicycle" would satisfy Section 112.

Courts have recently been construing "means" clauses narrowly, so you should also include claims with "structural" (nonmeans) clauses; these clauses can be expanded under the "doctrine of equivalents" (Chapter 15, Section J).

To sum up, while you should write your specification as specifically and with as much detail as possible (Chapter 8), you should make the substance of your main claims as general (broad) as possible by (1) eliminating as many elements as is feasible and (2) describing (reciting) the remaining elements as broadly as possible. In other words, make your specification specific and long and your main claims general and short.

F. The Effect of Prior Art on Your Claim

Now that you've learned how to make your claims as broad as possible, it's time for the bad news. What is "possible" has generally much less breadth than you'd like. This is because each claim must define an invention that is patentable over the prior art. Remember the issues of novelty and unobviousness? Well, they (especially unobviousness) are an ever-present factor always to be considered in claim drafting.

1. Novelty

Let's go back to Section 102, which deals with novelty (Chapter 5). A claim must define an invention that is novel over the prior art. It must recite something that no single reference in the prior art shows—that is, it must contain something new or novel. Your claim must recite novel hardware (or a novel process step) in a positive, structurally supported, unequivocal manner. For example, reciting "a wheel for providing lateral stabilization" won't adequately define over a prior-art wheel that doesn't provide lateral stabilization, since the function isn't supported by novel structure. The remedy: Recite the novel structure that does provide the stabilization—such as a guide for the wheel, or a "means" for providing stabilization.

Just as a claim can be made broader by eliminating elements and reciting the existing elements more broadly, it can be made narrower in order to define novel structure (1) by adding elements, or (2) by reciting the existing elements more narrowly.

For an example of adding elements, suppose a prior-art reference shows a machine having three elements—A, B, and C, and your claim recites these three elements A, B, and C. Your claim would be said to lack novelty over the prior art and would be rejected or held invalid under Section 102. But if you added a fourth element, D, to the claim, it would clear the prior art and would recite a novel invention (but not necessarily a patentable one, because of the unobviousness requirement). (If the prior art were an in-force patent that *claimed* elements A, B, and C, and your *device* had elements A, B, C, and D, it *would* infringe for reasons given in Section E1, above. However, the PTO is never concerned with infringements, so you don't need to worry about this issue in a patent application.)

For an example of reciting existing elements more narrowly, suppose the prior art shows a machine having the same three elements—A, B, and C. You could also clear this prior art and claim a novel invention by reciting in your claim elements A, B, and C′, where C′ would be the prior-art element C with any change that isn't shown in the prior art. For example, if the prior art shows element C as a steam engine, and you recite a gasoline engine (C′), you've obviated any question of lack of novelty (though probably not obviousness).

In sum, although you'd like to be able to eliminate as many elements as possible and recite all of your elements as broadly as possible, you will usually have to settle for less because there will always be prior art there to make you toe the line of novelty.

2. Unobviousness

As I've stressed, novelty isn't enough. Under Section 103 the claims must define an invention that in addition to being novel, must also be unobvious to one having ordinary skill in the art. Or to use the paraphrase of the law from Chapter 5,

the novel feature(s) of the invention defined by each claim must have one or more new features that are important, significant, and produce valuable, unexpected new results. Thus, when you have to narrow a claim to define over the prior art, you must do so by adding one or more elements or by reciting existing elements more narrowly, and you must be sure that the added or narrowed elements define a structure or step that is sufficiently different from the prior art to be considered unobvious. More on this in Chapter 13.

For the last bit of bad news, note that if the wording of a claim has several possible interpretations, the examiner is entitled to use any one, including the one least favorable to you, in determining whether the claim clears the prior art.

Now that I've given you the bad news, I suggest you ignore it at this stage. You should try to write your main claim(s) as broadly as possible while keeping in mind the prior art that you've uncovered. In case of doubt, you should err on the side of too much breadth, since you can always narrow your claims later if your examiner thinks they're too broad. Conversely, if your examiner allows your narrow claims on your first office action (rare), you'll find it very difficult to broaden them later.

G. Technical Requirements of Claims

As stated, in addition to defining adequately over the prior art, each claim must also be worded in a clear, concise, precise, and rational way. If the wording of a claim is poor, the examiner will make a "technical" (non–prior-art) rejection under Section 112. It is this technical aspect of drafting claims that most often serves as a stumbling block to the layperson. To put it candidly, claims, like laws, are not written to be easily understood; they should be written so they cannot be misunderstood. Yet claim drafting really won't be that hard if you:

- study the sample claims listed later in this chapter, plus those of a few patents, to get the basic idea
- use the four-step method (preamble-element-interconnections-broaden) set out in Section H, below, and
- are conversant with the appropriate terminology associated with your invention's elements.

Remember also that you needn't write perfect claims when you file the application. Why? Because if you have a patentable invention, you can have the examiner write them for you. A provision of the *Manual of Patent Examining Procedure,* Section 707.07(j), states:

> "*When, during the examination of a pro se [no attorney] case, it becomes apparent to the examiner that there is patentable subject matter disclosed in the application [the examiner] shall draft one or more claims for the applicant and indicate in office action that such claims would be allowed if incorporated in the application by amendment.*
>
> *"This practice will expedite prosecution and offer a service to individual inventors not represented by a registered patent attorney or agent. Although this practice may be desirable and is permissible in any case where deemed appropriate by the examiner, it will be expected to be applied in all cases where it is apparent that the applicant is unfamiliar with the proper preparation and prosecution of patent applications."*

You do have to at least give it a try, since you must file at least one claim with your application to get a filing date. But, as indicated, this claim need not be well written or narrow enough for patent coverage. Instead, during the ensuing prosecution stage, you can ask the examiner to write claims for you pursuant to this section if you feel yours aren't adequate. The examiner is bound to do so if your invention is patentable.

If you do choose this option, be sure the examiner's claims are broad enough, since it isn't in the examiner's own interest to write broad claims for you. As with any other claim, ask yourself if any elements of the examiner's claim can be eliminated or recited more broadly and still distinguish adequately over the prior art. If so, amend it as I suggest in Chapter 13, Section E.

Also remember that many patent attorneys and agents will be willing to review your specification and drawings or draft your claims at their regular hourly rates. But use this as a last alternative, since most patent attorneys in private practice charge $100 to $400 per hour. If possible, you should choose a company-employed patent attorney or a retired patent attorney who works at home, since such attorneys' rates will usually be one-half to one-third of those charged by their downtown counterparts. See Chapter 6, Section E, for how to find patent attorneys and agents.

Now that you know there's help out here, let's look at some of the basic rules covering the drafting of claims.

1. Use Proper Antecedents and Be Precise

Your claims must be precise, logical, and determinate. One of the most common reasons for claim rejections is the improper use of articles, such as "a," "the," and "said." Generally, the first time you recite an element, use the indefinite article "a," just as you would if you were speaking to someone who is not familiar with your device—for example, "I just bought a car." If you refer to the same element again using exactly the same words to describe it,

use the extremely definite article "said"—for example, "… said car has a burglar alarm." "Said" actually means, in patent law, "the following part, which in this claim (or its parent claim) is previously recited in exactly the following words:" If you refer to an aspect of an element by using different, but implicitly clear words, use the definite article "the" just as you would do in ordinary speech—for example, "The auto was expensive." Here's an example showing how "a," "said," and "the" are properly used in a claim to a table.

An article of furniture for holding objects for a sitting human, comprising:

a. ***a** sheet of rigid material having sufficient size to accommodate use by a human being for writing and working,*
b. ***a** plurality of elongated support members of equal length,*
c. ***said** support members being joined perpendicularly to **the** undersurface of **said** sheet of rigid material at spaced locations so as to be able to support **said** sheet of rigid material in **a** horizontal orientation.*

Note that the first time any element is mentioned, the article "a" is used, but when it's referred to again by its original designation, "said" is used. When another aspect of it is referred to with a different (but clear) designation—that is, the undersurface of the table—"the" is used.

In addition to being precise in the use of articles, you should avoid ambiguous or missing references. For example, if "said elongated lever" is used in a claim and no "elongated lever" has previously been recited in these exact words, a non sequitur has occurred and the PTO will reject the claim for indefiniteness due to a "missing antecedent." The solution is to recite the elongated lever earlier in the claim or to change "said elongated lever" to "an elongated lever." Or, if the same element is positively recited twice, such as "a lever" … "a lever," the claim is unclear. The solution is to change the second "a lever" to "said lever."

In a dependent claim (see Section J, below), the antecedent can be provided in the dependent claim itself, the referent claim which the dependent claim depends from (whether independent or dependent), or any lower-numbered referent claim which the first referent claim depends from. Thus, if claim 3 is dependent on claim 2, which is in turn dependent on claim 1, an antecedent for "said lever" in claim 3 can be provided in either claims 1 or 2.

TIP

Computer Hint. To help provide proper antecedents, it's very helpful to use a computer and a word-processing program with a "windows" function so that you can display the first part of your claim (or your main claim if you're writing dependent claims) in one window and the latter part of your claim (or the dependent claim you're writing) in a second window. In this way, you'll be able to refer continuously to the higher-numbered (referent) claim to make sure your current writing corresponds.

Vagueness and indefiniteness can also occur if you use abbreviations—such as, "d.c." (say "direct current"); relative terms without any reference—such as, "large" (say "larger than…" or "large enough to support three adults"), or vague, casual language, such as "strong," "suitable," "standard," etc.

2. Use Only One Capital, One Period, and No Dashes, Quotes, Parentheses, Trademarks, or Abbreviations

Amateurs violate this rule so often that a friend who has a foreign patent translation agency and who wants to show he's professional includes the following blurb in his ad flyer: "We promise never to include more than one period or capital letter in any translated claim, no matter how long it is." While it may be hard for you to accept, and while it may seem silly, the rules are that the only capital letter in a claim should be the first letter of the first word, the claim should contain a period only at its end, and there should be no dashes, quotes, or parentheses, trademarks, or abbreviations. (You may use capitals, periods, and parentheses for the lettered subparagraphs of a claim, for instance, "A." or "(A)"; also, hyphens ("hand-held") are okay, but dashes ("—" or "--") are not. (The PTO will allow a second capital in a dependent claim when the word "Claim" is capitalized.))

3. Use Means Clause to Avoid Functionality of Claim

The technical error of "functionality" occurs when elements of the claim are recited in terms of their advantage, function, or result rather than in terms of their structure. The remedy is to recite the elements of the claim as "means" or a "device" for performing the function or achieving the result.

For example, here are some typical improper functional claims actually written by a layperson.

7. *An additive for paints that makes the paint dry faster.*
8. *A belt buckle that does not tend to snag as much.*

Both of these claims would be rejected under Section 112 because they don't particularly point out and distinctly claim the invention since they recite what the invention *does* rather than what it *is*.

The remedy: Use "means" or "device" clauses and also recite the general composition or structure of the additive or buckle. But remember that the claim must be to a combination; a single "means" claim won't pass muster. Thus, even if Claim 7 were written as follows, it would violate Section 112.

7. Additive means for paints for making them dry faster.

Here's how the above two claims can be properly rewritten to pass muster under Section 112.

7A. paint composition comprising:
- *a. a paint compound comprising an oil-based paint vehicle and a suspended pigment in said vehicle, and*
- *b. additive means admixed with said vehicle for decreasing the drying time of said paint compound and*
- *b'. a volatile solvent admixed [etc.].*

8A. belt buckle comprising:
- *a. a catch comprising two interlocking rigid parts that can be attached to opposite ends of a belt, and*
- *b. anti-snag means for preventing said interlocking parts from snagging on cloth when placed adjacent said interlocking parts and*
- *b'. a shield for preventing [etc.].*

A moment's reflection will show you that claiming your invention in terms of its unique structure, rather than its results, effects, or functions, makes logical sense. This is because a monopoly, to be precise and to have reasonable limits, must be defined in terms of its structure, rather than the result such structure produces. In other words, if you recited "a belt buckle that doesn't snag" you would be claiming a result only, so that any belt buckle that fulfilled this result would infringe, regardless of its structure. This "functional" type of claim would accordingly be considered unreasonably broad and therefore would have to be narrowed and made more explicit by the addition of some additional structure or a means clause in order to make it more commensurate with the invention.

However, there's now a downside to using "means plus function" clauses: Under the pertinent statute (35 USC § 112, ¶ 6) and court decisions, a means plus function clause is supposed to be interpreted according to the corresponding structure or material described in the specification and the equivalents of such structure or material. Thus, a means plus function clause is not supposed to be interpreted literally to cover every possible means that fulfills the function of the means, but only according to the corresponding structure or material in the specification and its equivalents. Thus, in addition to a means plus function claim, it's best to include one or more independent nonmeans claims which are as broad as possible without using means plus function language.

Of course, while both of the above claims (as I revised them) would pass Section 112, they would not be novel or patentable under Sections 102 or 103, since they recite nothing new according to our present state of knowledge.

Means Must Be Supported

Recent court decisions (for example, *Biomedino, LLC v. Waters Technologies Corp.*, 490 F.3d 946, 950 (Fed. Cir. 2007)) have emphasized the importance that every means and even every nonmeans component in the claims, whether for software or hardware inventions, is clearly described and identifiable in the specification. If any component isn't clearly identifiable, I would add a sentence at the appropriate part of the specification, such as follows:

"Thus units xxx and yyy constitute a means for …."

If the means is part of a software program, identify the part or object of the listing and state that it constitutes a means for ….

4. Be Complete

Each claim must stand on its own—that is, it must recite enough elements to make a working, complete device in accordance with its recognized status in its art. For example, you can recite a light bulb per se (without reciting the entire lamp) since light bulbs are a well-known item of commerce. But a claim to just the glass envelope of a light bulb would probably be rejected as incomplete, since it won't do anything on its own and isn't a recognized item of commerce. The remedy for failing to include enough elements is simply to add the needed elements. Examiners and attorneys frequently disagree as to whether a claim is incomplete, the examiner wanting the claim narrowed by the addition of elements and the attorney wanting it to remain broad, that is, not to add any more elements.

5. Keep Language Straightforward and Simple

Properly drafted claims use a minimum number of words to delineate the essence of the invention. Excess wordiness of a claim, termed "prolixity" by the PTO, is a frequent error committed by beginners. The remedy is to reword the claim in more compact language.

6. All Elements of Invention Must Logically Interrelate and Interconnect

Each of the elements in a claim must be logically related and connected to the other elements. When the elements of an invention don't appear to cooperate and to be connected in a logical or functional sense, the PTO will reject the claim. This is a more substantive type of rejection, since it's often directed at the underlying invention rather than simply the way the claim is drafted. For example, if you claim the combination of a waffle iron and tape recorder, these elements don't cooperate and hence your claim would be rejected as drawn to an aggregation. But the elements don't have to work at the same time to cooperate; in a typewriter, for example, the parts work at different times but cooperate toward a unitary result.

Wrong: A foot pedal device, comprising: an elongated element, a spring, and a hinge. [Elements aren't connected together.]

Right: A foot pedal device, comprising: an elongated element, a spring, and a hinge having a pair of leaves, said elongated element being connected to one of said leaves, said spring being mounted on said hinge so that it urges said leaves to be folded adjacent each other. [Elements are connected together.]

7. Old Combination and Aggregation

Formerly, claims drafted in terms of an old or well-known combination, such as an automatic transmission and an automobile, where the invention was in the transmission, were rejected on the ground of "old combination," but this rejection has been eliminated. However claims drafted to a combination of elements that don't cooperate toward a common end, such as a washing machine and a telephone, can be rejected on the ground of aggregation. But the elements do not have to function simultaneously to cooperate: A typewriter is a good example of elements (keys) that don't function simultaneously but do cooperate.

8. Use Only Positive Limitations

In the past, all negative limitations (for example, "non-circular") were verboten, but now only those that make the claim unclear or awkward are proscribed. However, because many examiners still wince when they see negative limitations in claims, it's best to avoid them by reciting what the invention is, rather than what it isn't. For instance, instead of saying, "said engine connected to said wheels without any transmission," say "said engine connected directly to said wheels." You are permitted to recite holes, recesses, etc.; see "Voids" in the Glossary of Useful Technical Terms for a list of "hole-y" words.

9. Use Proper Alternative Expressions

Most disjunctive expressions—that is, those using "or" or the like—were formerly considered indefinite, but under MPEP 2173.05(h) are now permissible, even if two different things are meant. Thus the following expressions are acceptable: "wherein R is A, B, *or* C"; "made entirely *or* in part of"; and "iron, steel, *or* any other magnetic material."

Markush Group Claims

Another, sophisticated way to write a claim for an invention with two or more elements is to recite the disjunctive elements by using a *Markush* group. A *Markush* (from a decision with that name) group is a series of related elements joined by "and," which follows these magic words: "*Selected from the group consisting of.*" Thus, a tube or a transistor could be recited in one claim as follows: "Said amplifying circuit containing a device *selected from the group consisting of* tubes and transistors."

10. Avoid Too Many Claims

If you've put in too many similar claims, even though you've paid for them, you'll have to eliminate some to make the examiner's job easier. If you ever have more than 20 claims, the invention should be complex enough or have enough ramifications to justify them and the claims should differ substantially.

11. Make Sure Claims Correspond With Disclosure

First, the literal terms or words of the claim must be present somewhere in the specification. If they aren't, the remedy is to amend the specification by adding the exact terms used in your claims, or to amend the claims by eliminating those terms that aren't literally in the specification. This requirement is especially important in view of patent court decisions that have narrowly interpreted terms not defined or described in the specification. As stated, it's useful to provide a glossary in the specification that broadly defines all important terms. Second, any operation, structure, or result recited in a claim must be clearly and completely described in the "spec."

12. Make Sure Claims Are Supported in Drawing

Under Rule 83, the drawings must show every feature recited in the claims. If they don't, amend either the drawing or the claims. A broad recitation in a claim, such as "fuel atomizing means," can be supported by specific hardware, such as a carburetor, in the drawings. But remember that you can't add any new matter to an application once it's on file. So be sure to include all possibly relevant details of your invention in your drawings and spec. before you file. For example, if an examiner rejects a claim that recites "fuel atomizing means" for lack of support in the drawings, you can overcome this rejection by adding a box labeled "fuel atomizing means" to the drawings. You can't add a carburetor unless your spec. mentions a carburetor, since this would be verboten new matter.

13. Claim Computer Program With Hardware

If your invention involves (or actually is) a process that involves a computer program or algorithm (a set of instructions for a computer) or a business or Internet process, then your claims must recite a process that either (1) is tied in a substantial way to a particular machine or apparatus, or (2) transforms an article into a different state or thing. (*Bilski v Kappos*, U.S. Supreme Court, 130 S.Ct. 3218, 2010 Jun 28.)

Here's an example of some "program" claims drafted to recite enough practical results to pass muster; these claims go about as far as one can go in claiming programs.

> 9. *A process of operating a general purpose data processor of known type to enable said data processor to execute formulas in an object program comprising a plurality of formulas, such that the same results will be produced when using the same given data, regardless of the sequence in which said formulas are presented in said object program comprising the steps of:*
>
> a. *examining each of said formulas in a storage area of said data processor to determine which formulas can be designated as defined*
> b. *storing, in the sequence in which each formula is designated as defined, said formulas that are designated as defined, and*
> c. *repeating steps a and b for at least undefined formulas as many times as required until all said formulas have been designated as defined and have been stored; thereby producing the same results upon sequential execution of said formulas stored by said process when using the same given data, regardless of the order in which said formulas were presented in the object program prior to said process.* (Pardo & Landau, U.S. Pat. No. 4,398,249; 1983.*)*

Note, the claim recites an algorithm itself, but the algorithm performs useful and practical computer functions and that the claim recites hardware so as to comply with *Bilski*. Here's another program claim that was held to be Statutory Subject Matter (SSM).

> *A method of using a computer processor to analyze electrical signals and data representative of human cardiac activity by converting said signals to time segments, applying said time segments to a high-pass filter, using said computer processor to determine the amplitude of said filter's output, and comparing said amplitude to a predetermined value.*

In all claims above, the claimed process or hardware is more than an algorithm per se. This is because claiming an algorithmic function per se would cover an abstract idea. However, the courts have held that the mere fact that a claim contains or is directed to an algorithm will not make it objectionable so long as the algorithm is recited in the context of hardware—that is, (1) it is tied in a substantial way to a particular machine or apparatus, or (2) it transforms an article into a different state or thing.

Finally, here's a claim that was held to be Statutory Subject Matter, even though it merely recited a computer programmed to manipulate mutual fund price data, since such manipulation produced a useful, concrete, and tangible result.

> 1. *A data processing system for managing a financial services configuration of a portfolio established as a partnership, each partner being one of a plurality of funds, comprising:*
>
> a. *computer processor means* [a personal computer including a CPU] *for processing data;*
> b. *storage means* [a data disk] *for storing data on a storage medium;*
> c. *first means* [an arithmetic logic circuit configured to prepare the data disk to magnetically store selected data] *for initializing the storage medium;*
> d. *second means* [an arithmetic logic circuit configured to retrieve information from a specific file, calculate incremental increases or decreases based on specific input, allocate the results on a percentage basis, and store the output in a separate file] *for processing data regarding assets in the portfolio and each of the funds from a previous day and data regarding increases and decreases in each of the funds' assets and for allocating the percentage share that each fund holds in the*

portfolio;

e. *third means* [an arithmetic logic circuit configured to retrieve information from a specific file, calculate incremental increases and decreases based on specific input, allocate the results on a percentage basis, and store the output in a separate file] *for processing data regarding daily incremental income, expenses, and net realized gain or loss for the portfolio and for allocating such data among each fund;*

f. *fourth means* [an arithmetic logic circuit configured to retrieve information from a specific file, calculate incremental increases and decreases based on specific input, allocate the results on a percentage basis, and store the output in a separate file] *for processing data regarding daily net unrealized gain or loss for the portfolio and for allocating such data among each fund; and*

g. *fifth means* [an arithmetic logic circuit configured to retrieve information from specific files, calculate that information on an aggregate basis, and store the output in a separate file] *for processing data regarding aggregate year-end income, expenses, and capital gain or loss for the portfolio and each of the funds.*

The bracketed portions of this claim did not form part of the claim, but were added by the court to show the corresponding parts of the specification that each means was construed to represent, pursuant to the *Donaldson* decision, in Section B, above. (This claim is from *the State Street Bank and Trust Co. v. Signature Financial Group, Inc.* case and Boes U.S. Pat. No. 5,193,056; 1993, Court of Appeals for the Federal Circuit, July 1998. The CAFC distinguished this case in *Bilski*, but nevertheless the claim still recites enough hardware to comply with *Bilski*.)

Note that even if a claim recites a process with a computer, the claim will not be regarded as statutory subject matter unless the claim (1) ties the invention in a substantial way to a particular computer, or (2) recites the transformation of an article into a different state or thing.

Being in a Statutory Class Is Not Enough

Even though a claim recites statutory subject matter, it still must pass the other tests to be patentable. That is, claims still have to particularly point out and distinctly claim the invention, be supported by the specification, and define novel and unobvious subject matter. Also, all "means plus function" language still must have clear supporting structure in the specification.

14. Recite Each Element Affirmatively as Subject of Its Clause

For maximum clarity, the elements of your invention should be affirmatively and directly recited; don't bring them in by inference or incidentally—for example, say "A transmission comprising: (a) a gear, (b) a shaft, (c) said gear being mounted on said shaft" [etc.], and not "A transmission whose gear is mounted on its shaft." In other words, each significant element of the claim should be recited for the first time (introduced) in a positive, affirmative manner, preferably with the word "a," so it's the subject of its clause, and not with wording that makes it part of the object or assumes that the reader already knows that it's there. This rule is especially important for do-it-yourselfers to follow in order to write clear and understandable claims.

15. Include Structural Support in Recitation of Operation

Assume a claim recites "a lever connected to move said pendulum to and fro at the same rate as said lights flash." The movement of the pendulum at this special rate is too much for the lever to do all by itself. In other words, there's not enough structural support for the operation recited. The remedy? Recite either (a) enough structure to do the job or (b) use a "means" clause. Here are examples of both methods.

a. *a photoresponsive electromechanical circuit terminating in a lever that is connected to said pendulum and is arranged to move said pendulum at the same rate as said lights flash.*

b. *means, including a lever connected to said pendulum, for moving said pendulum at the same rate as said lights flash.*

16. Recite Each Element Affirmatively, Followed by Its Shape or Function

Do not follow any element with the function of any other element.

Right:

a container for holding said beans

Right:

a container having a cylindrical shape

Wrong:

a container which receives said beans individually at a speed of 40 cm/second or greater.

Right:

a container having a cylindrical shape,
means for shooting said beans individually at a speed of 40 cm/second or greater into said container.

17. Format

As stated in PTO Rule 75(i) (37 CFR 1.75(i), quoted above), if the claim has several elements or steps, each should be in a separate paragraph with the first line of the paragraph hanging out to the left for maximum clarity, as is done in printed patents and in the claims in Section 13 above.

18. Precede Every Function by an Affirmative Recitation of the Element That Performs That Function

Don't recite any function without preceding the function with an affirmative recitation of the element that performs the function.

Wrong:

said beans being shot individually at a speed of 40 cm/second or greater into said container.

Right:

means for shooting said beans individually at a speed of 40 cm/second or greater into said container.

or

a gun for shooting said beans individually at a speed of 40 cm/second or greater into said container.

19. Make Sure Relative Terms Are Not Ambiguous

Generally the PTO will hold that a claim with a relative term, such as "small," "large," "close," etc., is indefinite—that is, it fails to particularly point out and distinctly claim the invention under Section 112, Par. 2. However if the relative term is such that it would normally be understood by a person having ordinary skill in the art (PHOSITA), the Patent Court has held that the PTO should accept it. *Power-One v. Artesyn Tech* (CAFC 2010 Mar 31). In this case a claim that stated that a regulator was "near" a load was held to be unambiguous to a PHOSITA because the description stated that the regulator was to be placed close enough to the load so that the system will operate properly and thus no specific distance was needed.

H. Drafting Your Main (Independent) Claim

As indicated above, there are two basic types of claims: "independent" and "dependent." "Independent claims" are those that don't refer to any preceding claim; they stand alone. Examples of independent claims are all of those given in the preceding sections of this chapter. Note that these claims don't refer back to any preceding claim and each defines a complete, operative invention by itself.

"Dependent claims," which will be covered in the next section, refer back to a preceding or "parent" claim (this preceding claim can either be independent or dependent). A dependent claim recites narrower subject matter than its preceding claim in either of the two standard ways—that is, either by adding an additional element(s) or defining one or more elements of the preceding claim more narrowly.

The reasons for providing dependent claims will be covered in the next section also; the main point to remember here is that your independent claims are the important ones, since they're the basic and broadest definitions of your invention. If a dependent claim is infringed, its independent or parent claim(s) must also be infringed. If an independent claim is infringed, however, that's enough to win the case. You don't have to worry about your dependent claims.

To draft an independent claim, the easiest and most direct way to do it is to follow these four basic steps:

1. Write a preamble giving the name or title of the invention, or the problem which it solves.
2. List the elements (or steps) of the claim.
3. Interconnect the elements or steps.
4. Broaden the claim as much as possible but not so much that it reads on the prior art.

The claim can be structured so that the elements of the claim appear together, followed by the interconnections. Or, each element can appear in conjunction with its interconnection(s) to adjacent elements. Most patent attorneys use the latter method—see Claims 2, 3, and 4 in Section C, above, for examples—but you may find it easier to recite the interconnections separately. An exception is process claims, where you'll find it easier to directly associate each step with its predecessor.

Start by writing your first claim without regard to breadth—that is, just get a preamble written, set down the elements of the invention, and interconnect them, paying no attention to how broadly you can recite the invention. In other words, just define your invention as you believe necessary to "get it all down" in a complete manner.

Then, see how many elements (or steps) you can eliminate and how many remaining elements you can broaden so that the result maintains sufficient structure and yet does not tread on the prior art too much. Remember

that the broadest way of defining any element is by using "means-plus-a-function" language. Don't forget to refer to your prior-art patents for examples. And when you are finished, try to make the claim even broader by thinking of ways that an infringer might change your invention while still using your inventive concepts and see if you can broaden the claim to cover these changes, while still defining an invention that is patentable over the prior art.

To provide a real example that everyone can understand, let's assume you've just invented a table. Since you've already written your specification, you have a name for each part of your invention, so that chore is already behind you. If you believe your part names leave something to be desired, you can get additional part names from your prior-art search patents, the Glossary of Useful Technical Terms at the end of this book, or any visual dictionary (see Appendix 2, Resources: Government Publications, Patent Websites, and Books of Use and Interest), or in a thesaurus (in a book or computer). All that remains now is to provide a title or preamble. List the parts, interconnect them, and then broaden your claims.

1. The Preamble

To write the preamble, you can name the statutory class of the claim (recommended in view of recent court decisions) or pick a name or title for the whole unit or the problem that it solves, remembering that you can't use the word "table" since it hasn't been invented until now. To have the preamble recite just a statutory class, it should simply read, "A machine, comprising:"; An article, comprising:"; "A method, comprising:"; "A composition, comprising:"; or "A new use, comprising:." To have the preamble recite a title for the whole unit, you can say, "An article of furniture, comprising:" or "A work station device, comprising:." To have the claim recite a function, you can recite, "A support for holding objects to be handled by a sitting human." I've used "an article of furniture" in the sample claim since it would be hard to construe this too narrowly.

2. The Elements

Next, to list the parts of the table, I'll start with the largest, most visible part, the top, and then add the smaller, less apparent parts, the legs. Since the table's just been invented, we'll assume that the words "top" and "legs" are still unknown, but even if they were known, it's not wise to use "top" anyway, since it's a notoriously vague homonym (it can mean anything from a hat to a bottle cap to a toy). To define the top, then, we need a more meaningful term or phrase. Let's suppose we've made a model of our invention and have used a large sheet of chipboard for the top. All we need to do at this stage is to say so; thus our first and most basic element becomes "(a) a large sheet of chipboard."

Suppose our model table has four legs and we've made them of six-cm diameter circular oak dowels, each 65 cm long. Then our legs would be recited simply as "(b) four oak dowels, each having a circular cross section 6 cm in diameter and each 65 cm long." Our elements are now all recited—wasn't that easy!

3. Interconnections

Lastly, we have to interconnect the legs to the top, an easy task. Suppose our legs are joined at the underside of the top using four metal flanges, attached at the four corners of the top with each having a cylindrical portion with female threads, and with the top sections of the legs having mating male threads that are screwed into the respective flanges so that the legs extend at right angles to the top. Merely recite the flanges positively and add an interconnection clause as follows.

> *c. four flanges, each having means for attachment to one side of said sheet of chipboard and each having a cylindrical portion with female threads, and*
> *d. said four flanges being attached to one side of said sheet of chipboard at four respective corners thereof and said four oak dowels having male threads on a top section thereof and being screwed into the cylindrical portions of said respective flanges so that said dowels extend from said sheet of chipboard at right angles.*

Eureka! It's done. You've written a complete independent claim.

Here's how it looks.

11. An article of furniture, comprising:
a. a large sheet of chipboard,
e. four oak dowels, each having a circular cross section 6 cm in diameter and each 65 cm long, and
f. four flanges, each having means for attachment to one side of said sheet of chipboard and each having a cylindrical portion with female threads, and
g. said four flanges [etc.].

Note, that I always recite the elements and their interconnections in lettered subparagraphs. The PTO now requires this format, where possible, since it's easier to analyze than a continuous paragraph. Also, I format paragraphs with a hanging indent style, just as the claims are printed in patents.

Is there anything wrong with this claim? Yes! As you probably will have realized by now, this claim is far too

narrow—that is, it has many elements and each of these is recited too specifically. In fact it even recites specific dimensions, which you don't generally even need in the specification. Thus the claim as written would be easy to avoid infringing: all that an infringer would have to do is to use plywood instead of chipboard, use four pine dowels instead of oak, etc. Let's broaden it then.

Remember, you broaden a claim by (1) eliminating elements where possible, and (2) reciting the remaining elements as broadly as possible.

Going through the claim to eliminate elements, we see that the top can't be eliminated since it's an essential part. However, we don't need to recite four legs—we can eliminate one of these since three legs will support the top. But better yet, we can even use the word "plurality" since this covers two or more legs. (The term "plurality" means more than one. Used here, it is an example of how you'll sometimes need to search for a word or phrase that most broadly describes a particular element. Even though two may not be sufficient to support a top, the PTO will usually not object to this word in this context. We could even go further and eliminate the recitation of legs entirely by reciting "support means," but this would include solid supports, such as in a chest or bureau, which would not be suitable for table-type uses.) Lastly, we can eliminate the flanges, since these aren't essential to the invention and since there are many other possible ways of attaching legs to a table top.

Next, let's go through the claim to see which elements can be recited more broadly. First, the top. Obviously "a large sheet of chipboard" is a very narrow recitation since plywood, solid wood, metal, and plastic tops would avoid infringement. A broad recitation would be "a large sheet of rigid material," but, as stated above, the word "large" is frowned upon by the PTO as too vague to satisfy Section 112. So let's make the top's size more specific. Since we're interested in providing a working surface for humans, let's merely specify that the top is "a sheet of rigid material of sufficient size to accommodate use by a human being for writing and working."

Next the legs. Obviously, the recitation of four circular oak dowels with specific dimensions is very limiting. Let's eliminate the material, shape, and dimensions and recite the legs as merely "a plurality of elongated support members of substantially equal length." This covers square, round, triangular, and oval legs, regardless of their length or material.

Lastly, instead of the flanges (that we've eliminated as unnecessary) to join the legs to the top, let's use "means" (to make it as broad as possible) as follows: "means for joining said elongated support members at right angles to the underside of said top at spaced locations so as to be able to support said top horizontally."

The result would look like this.

11. *An article of furniture, comprising:*
    a. *a sheet of rigid material of sufficient size to accommodate use by a human being for writing and working*
    b. *a plurality of elongated support members of equal length, and*
    c. *means for joining said elongated support members at right angles to the underside of said sheet at spaced locations so as to be able to support said sheet horizontally.*

Obviously, Claim 11 is now far broader than our first effort. Your first independent claim should be as broad as possible, but of course, you can't make it so broad that it lacks novelty or unobviousness. Thus, when you eliminate as many elements as possible, and when you broaden the remaining elements in the manner just described, keep in mind that you must leave enough structure or acts to define your invention in a novel manner and so that the novelty is unobvious.

Put differently, writing claims is like walking on a fence: You can't sway too far on the side of specificity or you'll fall onto the side of worthlessness and you can't sway too far onto the side of breadth or you'll fall onto the prior art. To obtain the broadest possible coverage, you should not draft your main claim primarily to cover your invention; rather draft it as broadly as possible with at least some thought of clearing the prior art, then go back and make sure that it at least covers your invention.

Some patent attorneys compare the writing of their first claim to passing through a wall of fire. However, I have found that if I follow the above four steps—(1) write a preamble, (2) recite the elements, (3) interconnect them, and (4) broaden the claims—the going is relatively painless. In case of doubt, err on the side of breadth at this stage, since you can always narrow your claims later, but you may not be able to make them broader if the application's allowed on the first Office Action.

I. Other Techniques in Claim Writing

Now that you understand the basics, here are some other tricks you may want to use when writing your claims. Obviously, not all apply all of the time, but you will probably find that at least several can be used to improve your claim writing.

- **Weasel Words.** Use "weasel" words like "substantially," "about," or "approximately" whenever possible—that is, whenever you specify a dimension or any other specific parameter—to avoid limiting your claim to the specific

dimension specified. The renowned judge, Learned Hand, who wrote many famous patent decisions, once opined that judges should read the modifier "substantially" into every claim, even if it's not already cited. However, I strongly recommend that you don't rely on a judge to broaden your claim for you, but rather do it yourself when you first write the claim.

- **Antecedents.** Provide a proper antecedent in the beginning of your claim for every term you use in the latter part of the claim. For example, in Claim 11 in the preceding part, the clause "the underside of said sheet" near the end of the claim has no clear antecedent in the beginning of the claim and thus might be objected to by some examiners. The claim would be better if clause a were amended by adding, "said sheet having an underside" to provide unequivocal support for the underside phase later. Conversely, if you recite an element and recite the same element again, you must use the article "said" (some attorneys now use "the") before the second occurrence. If you want to recite two similar elements in different parts of the claim, you should use the article "a" or "an" to introduce both elements, but you must use different adjectives to clearly differentiate the levers—for example, "a *prying lever* connected to …; and a *force-transmitting* lever positioned on …."
- **"Whereby" Clause.** At the end of your claim, I recommend adding a "whereby" clause to specify the advantage or use of the invention to hammer home to the examiner, or anyone else who reads your claim, the value of your invention. Thus in Claim 11, above, you should add at the end of this claim, "whereby a human can work, eat, and write in a convenient seated position." "Whereby" clauses don't help to define over the prior art, but they do force the examiner to consider the advantages (Section 103 features) of your invention and thus help to get the claims allowed. However, don't make the whereby clause too narrow or a court may construe it against you.
- **Reference Numbers.** You may put the drawing's reference numerals in your claims after the appropriate elements. Although this is required in some foreign jurisdictions, practitioners in the U.S. seldom do it unless the elements of the claim aren't clear.
- **Recesses.** If your invention has an opening, hole, or recess in its structure, you may, as stated, recite the hole directly as such, even though it isn't tangible. For example, the recitation "said member having a hole near its upper end" is permissible. See Appendix 3 (Glossary of Useful Technical Terms) for a list of recesses.
- ***Jepson* Claims.** With regard to the rarely enforced Rule 75(e) (quoted in Section B2, above) requiring the use of the *Jepson* style (a preamble containing old elements and body of claims containing improvements of your invention), most patent attorneys recommend that claims *not* be cast in this style unless the examiner requests it or unless the examiner is having trouble understanding exactly what your inventive contribution is. The reason for this is that a *Jepson* claim isolates and hence minimizes your improvement, making it easier to invalidate. If you do claim in the *Jepson* format, draft your preamble so that it includes all the elements or steps and their interconnections that are already known from the prior art; then add a "cleavage" clause such as "the improvement comprising" or "characterized in that"; and then recite the elements of your invention and their interconnections.
- **Predetermined.** Examiners prefer the word "predetermined." I recommend you use it whenever possible to indicate that something has a size, thickness, length, quality, etc., without limiting the claim to any specific dimension or quality. For example, "said member having a predetermined cross-sectional shape" and "said valve arranged to open when a predetermined gas pressure is developed."
- **Consisting versus Comprising.** A claim that recites a group of elements can be made "open" or "closed." An open claim (the normal case) will cover more elements than it recites, whereas a closed claim is limited to and will cover only the elements it specifically recites. To make a claim open, use "includes" or "comprising"—for example, "said machine *comprising* A, B, and C." In this case, a machine with four elements A, B, C, and D will infringe. To make a claim closed (rarely done), use "consist" or "having only"—for example, "Said machine *consisting* of A, B, and C." In this case, a machine with elements A, B, C, and D will not infringe, since, in patent law, the word "consist" is interpreted to mean "having only the following elements."
- **A Plurality Of.** Also, whenever you recite several units of anything, preface your recitation with "a plurality of"—such as, "a plurality of holes in said hose."
- **Less Is More.** Remember that, because of the Boolean "less is more" rule in interpreting claims, it's not necessary to recite a specific feature in your main claim in order to cover that feature in combination with the other elements of your invention. For example, once I drafted a claim for a client where one embodiment of her invention had a fingerlike support. Not seeing the finger in the main claim, she asked me, "Did you claim the finger?" I then explained to her

that since the main claim didn't recite the finger, the main claim was broad enough to cover her invention with or without the finger.

- **Is It Sketchable?** After drafting your claim, you or a friend should be able to make enough sense out of it to sketch your invention. If this isn't possible, the claim is unclear and needs to be reworked.
- **Special Terms.** You can use any technical or descriptive terms that you feel are reasonably necessary to define or describe your invention—the claim does not have to be limited to any special "legalese." One patent attorney I know had a devil of a time defining (to the satisfaction of the examiner) a convex transistor structure with a nubbin on top until he simply called it "mammary-shaped."
- **Method Claim.** If possible, provide a method claim to cover your invention; you usually can do this if there's any dynamic operation involved in the invention. Most machines and electrical circuits can be claimed in terms of a method. Method claims are usually broader than apparatus claims, since they're not limited to any specific hardware.
- **Gerunds in Method Claims.** Each substantive clause of a method claim must usually start with an "—ing" or gerund word, such as "attaching," "heating," "abrading," etc. If you want to recite some hardware in a method claim, use "providing"—such as, "providing a central processor." (Don't say "comprising the steps of" in a method claim since claims that recite "step" may tend to be interpreted less broadly.)
- **Label Means.** If you do recite any "means," it's desirable to label the means with a nonfunctional adjective in order to provide a mnemonic aid in case you need to refer to the means later. For example, "first means," "second means," etc. Also, the "means" must be followed by or be modified by a function or some

Patent Attorney Words

If you get stuck and don't know how to phrase something, usually one of the "patent attorney words" below will help.

a (used to introduce a part)
about (used to fudge a specific quantity)
at least (used to hammer home that more elements can be used)
contiguous (used to indicate elements are touching)
device for (interpreted like "means for")
disposed (used to indicate a part is positioned in a particular place)
further including (used in dependent claims to add additional parts)
heretofore (used to refer back to something previously recited)
indicium (used to recite something that a human can recognize, such as a mark or a sound)
means for (used to claim something broadly, in terms of its function, rather than specific hardware)
member (used to recite a mechanical part when no other word is available)
multitude (used to recite a large, indefinite number)
pivotally (used to indicate that a part is rotatably mounted)
perimeter (perimetric, perimetrical, permetrically—refers to a border around something)
plurality (used to introduce more than one of an element)
predetermined (used to state that a part has a specific parameter)
providing (used to recite a part in a method claim)
releasably (indicates something can be released from a position)
respectively (used to relate several parts to several other parts in an individual manner)
said (used to refer to a previously recited part by exactly the same word)
sandwiching (used to indicate that one part is between two other parts)
selected from the group consisting of (used in a *Markush* claim to create an artificial group)
slidably (used to indicate that two parts slide with respect to each other)
so that (used to restrict a part to a defined function)
substantially (used to fudge a specific recitation)
such that (used to restrict a part to a defined function)
surrounding (used to indicate that a part is surrounded)
the (used to refer to a previously recited part by a slightly different word)
thereby (used to specify a result or connection between an element and what it does)
thereof (used as a pronoun to avoid repeating a part name)
urging (used to indicate that force is exacted upon a part)
whereby (used to introduce a function or result at the end of a claim)
wherein (used in a dependent claim to recite an element (part) more specifically)

For names of components, see Glossary of Useful Technical Terms in Appendix 3.

structure. For example, "first means for printing" (means plus function); "second means comprising a doctor blade" (means plus structure).

- **Padding.** Lastly, many patent attorneys recommend that a claim not be too short. A claim that is short will be viewed adversely (as possibly overly broad) by many examiners, regardless of how much substance it contains. Thus, many patent attorneys like to "pad" short claims by adding "whereby" clauses, providing long preambles, adding long functional descriptions to their means clauses, etc. The trick here, of course, is to pad the claim while avoiding a charge of undue prolixity under Section 112.

You'll find that a well-written claim is like a well-written poem. Each has a beautiful symmetry, order, and logic.

J. Drafting Dependent Claims

In Section H, I pointed out that there are two basic types of claims—independent claims (these stand on their own) and dependent claims (these incorporate an entire preceding claim, which can be an independent or dependent claim). A dependent claim is simply a shorthand way of writing a narrower claim—that is, a claim that includes all the elements of a preceding claim, and/or recites one or more additional elements or recites one or more elements of the preceding claim more specifically.

1. Reasons for Writing Dependent Claims

If an independent claim is broader, you may wonder why you need dependent (narrower) claims—especially since the independent claim must be infringed if its dependent claim is infringed. Below are eight good answers to that question:

1. **Backup.** Dependent claims are by definition always narrower than the claims on which they depend. You may accordingly be wondering, "If my broad independent claim covers my invention, why do I need any more claims of narrower scope?" True, if all goes well, your broad claim will be all you'll need. However, suppose you sue an infringer who finds an appropriate prior-art reference that neither you nor the PTO examiner found and that adversely affects the validity of ("knocks out") your broad claim. If you've written a narrower claim you can then disclaim the broad claim and fall back on the narrower claim. If the narrower claim is patentable over the prior art, your patent will still prevail. Thus the dependent claims are insurance in case of broad claim invalidity. Each claim, whether independent or dependent, is interpreted independently for examination and infringement purposes. If the claim is dependent, it's interpreted as if it included all the wording of its parent (incorporated) claim or claims, even if the incorporated claim is held invalid. Dependent claims are crucial in order to recite all of the significant subsidiary elements of your invention. A feature that doesn't seem significant now can prove to be crucial later. One inventor I know (Morrie) submitted a large set of dependent claims to recite every less-important feature of his invention that he could think of, including one that recited that a certain flap was bendable. He got a patent and was involved in a licensing negotiation where the infringer found an earlier patent that showed his complete invention, except for the bendable flap. While the earlier patent invalidated most of Morrie's claims, fortunately he was able to rely on the still-valid dependent claims that recited the bendable flap to conclude a licensing deal, albeit at a lower rate than he originally wanted.
2. **Reification and Differentiation of Broad Claims.** Dependent claims are useful to explain, reify (make real), and differentiate (broaden) some of the broad, abstract terms in your independent claims. For instance, if you recite in a claim "additive means," many judges may not be able to understand what the "additive means" actually covers, but if you add several dependent claims that state, respectively, that the additive means is benzine and toluene, they'll get a very good idea of what types of substances the "additive means" embraces. If your main claim recites a new parlor game, adding a dependent claim that recites that the game is simulated on a computer will make it clear that the main claim covers more than computer simulations, that is, it covers board versions too. (Don't forget to show the computer version in your drawings and discuss it in your specification.) This independent-claim broadening function of dependent claims is called "differentiation" and is most effective if you recite just one element in the dependent claim.
3. **Provide Spectrum of Coverage.** Narrower claims can be used to provide a range, spectrum, or menu of proposed coverage from very broad to very narrow so that your examiner can, by allowing some narrower claims and rejecting the broader ones, indicate the scope of coverage the examiner's willing to allow.
4. **Prevent Premature Final Action.** Providing dependent claims of varying scope and approaches forces the examiner to make a wider search of your invention on the first examination. This will prevent the examiner from citing new prior art against your application on the second Office Action, which usually must be made

"final." (See Chapter 13.) Thus, you should include every possibly novel feature (or novel combination of features) of your invention in your dependent claims.

5. **Provide Broader Base for Infringement Damages.** By providing dependent claims that add more elements, you define your invention (in these claims) as a more comprehensive structure, thereby providing a broader base upon which a judge can calculate infringement damages.
6. **Provide a Specific, Descriptive Recitation.** This reason is slightly different than Item 2 above. If the recitation in the independent claim is broad and abstract, such as, "urging means for …," I strongly recommend that you provide dependent claims with a descriptive, definite recitation (for example, "wherein said urging means is a coil spring") to hit the nail on the head, or provide a specific hardware recitation so a judge won't have to use his or her imagination.
7. **Preserve Right to Rely Upon Doctrine of Equivalents.** Traditionally patent owners have been able to rely on a "Doctrine of Equivalents" (DoE) to effectively expand a claim beyond its literal wording if it didn't cover an infringing device. However, the U.S. Supreme Court in *Festo v. Shoketsu*, 122 S.Ct. 1831 (2002), held that a patentee who amended (narrowed) a claim when it was before the PTO may no longer be able to rely on the DoE. (See Chapter 13 for a more detailed explanation.) To preserve your right to rely on the DoE, draft as many dependent claims as possible to cover all aspects of your invention. In this way you'll have some claims that won't have to be amended (narrowed) if the PTO cites relevant prior art against these claims, and thus you'll preserve your right to use the DoE to expand these claims if necessary.
8. **Litigators Prefer Them.** Litigators prefer narrower and more specific claims (provided they cover the infringing device) because they provide a broader base for infringement damages—see Item 5 above—and are more difficult to invalidate since they read on less prior art. Furthermore, it's easier for a litigator to prove infringement since the claim is less abstract and recited the specific structure that is infringed—see Item 6 above.

2. The Drafting

For the reasons above, when you're satisfied with your first, basic, and broadest independent claim, you should write as many dependent claims as you can think of. Each dependent claim should begin by referring to your basic claim, or a previous dependent claim, using its exact title.

EXAMPLE:

Independent claim:

1. *A cellular telephone having a hinged body and a coiled antenna.*

Improper dependent claim:

2. *The hinged body of claim 1 wherein said hinge has five knuckles.* [The preamble or beginning of the claim does not correspond with claim 1 and there's no antecedent for "said hinge."]

Proper dependent claim:

2. *The cellular telephone of claim 1 wherein said hinged body includes a hinge with five knuckles.*

If the dependent claim recites one or more elements of the independent claim more narrowly, it should use the word "wherein"—for example, "The bicycle of Claim 1 wherein"—and then continue by reciting one or more elements of the independent claim.

Note that a dependent claim does not narrow the scope of any previous claim from which it depends; it merely provides an alternative, narrower recitation in a shorthand manner.

If the dependent claim recites additional elements, it should use the words, "further including"—for example, "The bicycle of Claim 1, further including ..."—then continue by reciting the additional feature(s) of your invention. The additional features can be those you eliminated in broadening your basic claims and all other subsidiary features, including all combinations and permutations of such features of your invention you can think of. The features recited more narrowly or the additional elements recited by the dependent claims can be specific parameters (such as materials and temperatures) or other specifics of your invention (such as specific shapes, additional elements, or specific modes of operation). Refer to your prior art patents for guidance on how to draft these.

Note that a dependent claim must either recite the elements of its parent claim more specifically, or recite additional elements. It may not change any element to a different type or kind. Thus if the parent claim is an apparatus claim, each of its dependent claims must recite additional structure or recite some previously recited structure more specifically. For example, if your parent claim recites "1. A house made of red bricks," its dependent claim can say "2. The house of Claim 1 wherein said bricks are made of clay" (recites bricks more specifically) or "2. The house of Claim 1, further including a layer of paint over said bricks" (recites additional structure). The dependent claim can't say "2. The house of Claim 1 wherein said bricks are yellow." A method claim may not be made

dependent upon an apparatus claim and vice versa, but most examiners will allow an apparatus claim that is dependent upon a method claim.

If the parent claim is a method claim, each of its dependent claims must recite an additional step, or recite a previously recited step (or structure in such a step) more specifically. For example, suppose your parent, independent claim recites:

1. *A method of heating comprising irradiating a foodstuff in a chamber with microwaves.*

You can provide a dependent claim which recites one element of claim 1 (the microwaves) more specifically as follows:

2. *The method of Claim 1 wherein said microwaves have a frequency of 2250 megahertz.*

Alternatively (or in addition) you can provide a dependent claim which recites an additional step as follows:

2A. *The method of Claim 1, further including freezing said foodstuff after it is irradiated.*

Or as another alternative (or in addition) you can combine both dependent claims to provide a narrower dependent claim as follows:

2B. *The method of claim 1 wherein said microwaves have a frequency of 2250 megahertz and further including freezing said foodstuff after it is irradiated.*

You can see that many variations and permutations are possible. Although I used letter suffixes to distinguish the above claims, you must use numbers for each set of your claims (an independent and its dependents). An independent apparatus claim (means or structural) requires that you recite a part or a series of parts. In a claim that is dependent upon an apparatus claim you must recite an additional part or modify a previously recited part. In an independent method claim you must recite a step or a series of steps. In a claim which is dependent upon a method claim you must recite an additional step or modify a previously recited step or part.

Here are some dependent claims for Claim 11 (set out in Section H, above). Note that each dependent claim either recites an additional element or recites an already recited element more specifically.

11. *An article of furniture (etc.).*
    12. *The article of furniture of Claim 11 wherein said sheet of rigid material is made of wood.*
        13. *The article of furniture of Claim 12 wherein said sheet of rigid material of wood is made of chipboard.*
        14. *The article of furniture of Claim 13 wherein said sheet of chipboard has a rectangular shape.*
    15. *The article of furniture of Claim 11 wherein said means for joining comprises a set of flanges, each of which joins a respective one of said support members to the underside of said sheet of rigid material.*
        16. *The article of furniture of Claim 15 wherein each of said flanges is made of iron and includes a cylinder with female threads and wherein one end of each of said elongated members has male threads and is threadedly mated with the female threads of a respective one of said flanges.*
    17. *The article of furniture of Claim 11, further including a layer of a rigid plastic laminate bonded to a top side of said sheet of rigid material.*

Note that a dependent claim may be dependent upon the parent claim or another dependent claim. I advise making almost all dependent claims directly dependent upon an independent claim, (rather than another dependent claim), since this will make the dependent claims broader: a dependent claim that depends from another dependent claim incorporates the other dependent claim and the independent claim from which the other dependent claim depends. A dependent claim should be numbered as closely as possible to the number of its parent claim (independent or dependent). Note also how I've made a physical indication of claim dependency by indenting (nesting) each dependent claim under its parent claim(s) as shown above. This is optional, but makes things clearer for you and the examiner. Also, you should always skip a line between claims (we didn't do it here in order to conserve space).

Multiple Dependent Claims

A dependent claim may be made directly dependent upon several previous claims. This is called "multiple dependent claiming" (MDC) and is common in Europe. Example: "3. The widget of claims 1 or 2 wherein …". However I recommend that you do not use MDC since the PTO's examiners dislike the practice, there's a stiff surcharge for the privilege, and for fee purposes each MDC counts as the number of claims to which it refers. (See Appendix 4, Fee Schedule.)

A dependent claim will be read and interpreted by examiners and judges as if it incorporated all the limitations of its parent claim(s). Thus suppose your independent and dependent claims read, respectively, as follows:

18. *A rifle having an upwardly curved barrel.*
    19. *The rifle of Claim 18 wherein said barrel is made of austenitic steel.*

The dependent claim (19) will be treated independently, but with Claim 18 incorporated, so that it effectively reads as follows:

19. *A rifle having an upwardly curved barrel, said barrel being made of austenitic steel.*

TIP

Use Only Significant Limitations. You can make your dependent claims as specific as you want, even to reciting the dimensions of the tabletop, its color, etc. However, extremely specific limitations like this, while possibly defining an invention that is novel over the prior art (Section 102), do not recite unobvious subject matter (Section 103), so they'll be of little use to fall back on if you lose your independent claim. Thus, you should mainly try to use *significant* limitations in your dependent claims—that is, limitations that an infringer might use if he or she made your invention.

You should draft dependent claims to cover all possible permutations of the subsidiary features of your invention. For example, suppose you've invented a telephone and some of the dependent features are that it has (a) a musical ringer, (b) a coiled cord, and (c) a stand. You can provide three dependent claims with features a, b, and c, respectively. Then write four more dependent claims with features a and b, a and c, b and c, and a, b, and c, if you think these combinations are feasible.

Although most of your dependent claims should have just a single element (to obtain maximum claim differentiation), you should try to draft at least one dependent claim with as many parts as possible so as to provide as broad a base as possible for maximizing infringement damages. Also try, insofar as possible, to draft at least one claim to cover parts of the invention whose infringement would be publicly verifiable, rather than a nonverifiable factory process or machine.

As with independent claims, you should not make your dependent claims purely "functional"—that is, each dependent claim should contain enough physical structure to support its operational or functional language. Here are some examples.

Wrong:

17. *The bicycle of Claim 16 wherein said derailleur operates with continuously variable speed-to-power ratios.* [This claim has no structure to support its operational limitation.]

Right:

17. *The bicycle of Claim 16 wherein said derailleur contains means for causing it to operate with continuously variable speed-to-power ratios.* [The "means" limitation is a recitation of structure that supports the operational limitation.]

Right:

17. *The bicycle of Claim 16 wherein said derailleur contains a cone-shaped pulley and a belt pusher for causing it to operate with continuously variable speed-to-power ratios.* [The pulley and pusher constitute structure that supports the operational limitation.]

If your independent claim recites a means plus a function, your dependent claim should modify the means and not the function. For example, assume an independent Claim 20 recites, "variable means for causing said transmission to have a continuously variable gear ratio." Here are the right and wrong ways to further limit this "means" in a dependent claim.

Wrong:

21. *The transmission of Claim 20 wherein said continuously variable gear ratio ranges from 5 to 10.*

Right:

21. *The transmission of Claim 20 wherein said variable means is arranged to provide ratios from 5 to 10.*

Common Misconception: If a dependent claim recites a specific feature of your invention, say a two-inch nylon gear, your invention will be limited to this gear, so that if any copy of the invention uses a one-inch gear, or a steel gear, it won't infringe on your patent.

Fact: Although the copy won't infringe the dependent claim, it will infringe the independent claim so long as it isn't limited to this specific feature. And as long as even one claim of a patent is infringed, the patent is infringed and you can recover as much damages (money) as if 50 claims were infringed.

Common Misconception: If a dependent claim recites a feature or element of the invention, it will protect this feature per se.

Fact: A dependent claim must be read to include all of the features of its referent claim (preceding or independent claim to which it refers). Thus it will not cover the feature it recites per se, but rather will cover that feature in combination with all of the elements of its referent claim.

Common Misconception: The limitations in a dependent claim will narrow its independent claim.

Fact: The independent claim is interpreted independently of its dependent claims and the latter never narrow the former although they can make the independent claim broader by claim differentiation.

Claims of Different Scope

The concept of claims of different scope (independent and dependent) is confusing to most inventors. Here's another way of explaining it, if you still don't understand.

An *independent claim* (IC) is one that *doesn't* refer back to any previous claim. For example, "*1. A telephone comprising (a) a base, (b) a handset, and (c) a rotary dial,*" is an example of an IC.

To write another independent claim like Claim 1 (C1), but which is narrower than C1 by reciting a base of black plastic, simply repeat all of Claim 1 and add that the base is black plastic. For example, "*2. A telephone comprising (a) a base of black plastic, (b) a handset, and (c) a rotary dial,*" is an example of a second IC which is narrower than C1.

However, there's an easier, shorter, and cheaper way to avoid repeating all of C1 each time: Simply write a claim that refers to the IC 1 so as to incorporate all of it by reference, and then state one or more additional elements, and/or recite one or more elements of the incorporated claim more specifically. Such a shorthand claim is called a *dependent claim* (DC). A DC is thus one that refers back to and incorporates all of a preceding claim and adds or modifies one or more limitations to recite the invention more narrowly. For example, "*2′. The telephone of Claim 1 wherein said base is made of black plastic,*" is a dependent claim which has the same scope as C2. C2′ will be interpreted as if it included *all* of the subject matter of C1, *together with the additional subject matter in C2′*.

It follows that to infringe a DC, a device must have all of the elements of the DC, *plus all of the elements of the incorporated claim*.

Thus, adding a DC to recite a specific feature of your invention won't broaden or narrow your coverage; it will just provide another, yet more precise, missile. The eight reasons for including DCs are in Section J.

Also note that a DC can refer back to a preceding claim, and the preceding claim can in turn refer back to a further preceding claim. To infringe such a *third-level DC*, the device must have *all* of the elements of *all three claims* in the chain.

If you still don't get the principle of broad and narrow claims, here are three simple claims that everyone can understand:

1. *A house that has a sloping roof with a gable.*
2. *The house of Claim 1 wherein said gable has a dormer.*
3. *The house of Claim 2 wherein said dormer has eight panes of glass.*

Claim 1 is very broad: It will cover any house that has a sloping roof with a gable. Thus it may cover, say 30 million houses in the United States. Claim 2 is of intermediate scope; since it incorporates all of Claim 1 and has additional verbiage, making it longer than Claim 1. However Claim 2 is narrower in scope since it is limited to houses with sloping roofs that have a gable with a dormer. Thus it will cover fewer houses, say ten million in the U.S. Claim 3 is still longer than Claim 2, but is far narrower since it is limited to houses with sloping roofs that have a gable with a dormer with eight panes of glass. Thus it will cover fewer houses still, say one million houses in the United States.

Note that I made the number of the independent claim (#1) bold and I indented the dependent claims to indicate the dependency so that each dependent claim is nested under its referent claim. This is optional but desirable since it makes the claims clearer. As indicated above in Section G1, if you're working on a computer, use its "windows" function (if available) to keep your independent claim displayed while you write your dependent claims.

K. Drafting Additional Sets of Claims

After you've written your first independent claim (IC) and all the dependent claims you can think of (all numbered sequentially), consider writing another set of claims (an IC and a set of dependent claims) if you can think of a substantially different way to claim your invention. See the prior-art patents and the sample set of claims at the end of this chapter (Fig. 9A) for examples of different independent claims on the same invention. Your second set of dependent claims can be similar to your first set; a word processor with a block copy function will be of great aid here. Writing more sets of claims will not always give your invention broader coverage, but will provide alternative weapons to use against an infringer. That is, writing a second set of claims is like going into battle with a sword as well as a gun. Also, writing more sets of claims will give your examiner additional perspectives on your invention. That is, your chances of getting your examiner to bite will be increased if you present many flavors to choose from.

In the example above (Claim 11), I might start my second IC with the legs instead of the top and I might try to define the top and legs differently—for example, instead of "elongated members," I might call the legs "independent support means." Instead of calling the top a "sheet of rigid material," I might call it a "planar member having paralleled, opposed major faces."

Here are still other ways to write a different IC: (1) Rewrite one of the dependent claims from your first set in independent form; (2) wait a few days and write an IC again, with independent thought; (3) write the IC by reciting the elements of the first IC in reverse or inverse order; and (4) if your first IC has any "means" clauses, make your next IC a structure (apparatus) claim (no means clauses), or vice versa; (5) If your invention uses any unique supplies, blanks, or starting elements, or accessories, it is wise to provide claims to these also. For example, if you've invented a unique paper cup which is made from a unique starting blank, provide independent claims to both the cup and the blank.

Another valuable way to write a different IC is to provide a method (process) claim if your first IC is an apparatus claim, or vice versa; you're usually allowed to have both method and apparatus claims in the same case. You should always include an independent method claim if possible, since a method claim is usually not limited to specific hardware and thus affords broader coverage. Every step of each independent method claim must be an action step, for instance, "providing …." or "heating …." If your invention is a product and the process of making it is novel, or if it uses an intermediate construction in the process, you should claim the process and the intermediate construction.

Note that each independent claim must stand by itself: It may not refer to, incorporate, be based in any way on, or use referents from any previous claim. Even if claim 1 recites "a first lever" you may not recite, in a second independent claim, say claim 10, "a second lever" unless a first lever has already been recited earlier in claim 10. Similarly even if claim 1 recites "a wheel," claim 10 may not recite "said wheel" unless "a wheel" has been recited earlier in claim 10. The basic filing fee entitles you to up to three ICs and 20 total claims. I generally try to use up my allotment by writing three ICs and three sets of five to seven dependent claims each. However, if I feel that I can write a fourth, substantially different IC and the cost can be borne by my client, I will add it, plus more dependent claims. The PTO now charges a substantial additional fee for each IC over three, and for each claim (independent or dependent) over 20.

On the other hand, for relatively simple inventions, I may not be able to think of any substantially different ways to write an IC, so I may submit only one, plus a few dependent claims. I advise you generally not to submit more than the number of claims permitted for your basic filing fee—that is, three ICs and 20 total claims—unless the complexity of your invention justifies it, or you have some other good reason. Don't make your case like one published application (U.S. Pub. Pat. Appn. 20030100451): It has 7,215 claims!

L. Checklist for Drafting Claims

Below is the second part of the application checklist that I started in Chapter 8.

M. Summary

Claims define the invention in logical and precise terms. They are sentence fragments beginning with the words "I claim" and are provided at the end of a patent application.

The patent statute and rules regarding claims require that they (a) be clear and unambiguous, (b) be independent or dependent, (c) must use terms from the specification, and (d) should be phrased in a two-part form (prior art plus improvement). Claims can also have elements expressed in "means-plus-function" form.

Every claim should be classifiable into one of the five statutory classes of invention: machine, article, composition, process (method), or new use. Software or business claims are usually process claims, but can be machine claims. The number of claims is not as important as their breadth and the specific features of the invention need not be recited in a claim to be covered.

For a device to infringe a claim, it must meet all of the elements of the claim. Claims can be made broader by eliminating elements or broadening existing elements, but each claim should define a novel and unobvious invention over the prior art. When an element is first introduced in a claim, the article "a" should be used, but when the element is referred to again the article "the" or "said" should be used.

A "means clause" in a claim covers the hardware in the specification and its equivalents. A patent application should have means, nonmeans (apparatus), and method independent claims, if possible.

Each independent claim should be followed by a set of dependent claims. Each dependent claim must recite additional element(s) or recite the existing elements more narrowly (specifically). Claims must be logical, complete, unambiguous, and every element in every claim must be shown in the drawings. All method claims must (1) be tied in a substantial way to a particular machine or apparatus, or (2) recite the transformation of an article into a different state or thing.

Checklist for Draft Claims

- ☐ Grammatical articles are used properly in the claims: "a" or "an" to introduce any singular part, "the" to refer to a part a second time when using a different (but clearly implied) term as before, and "said" only to refer to a part using the IDENTICAL term as before.
- ☐ Two articles together, such as "the said," aren't used.
- ☐ Every part and feature in every claim is shown in the drawings and discussed in the specification.
- ☐ No claim uses any disjunctive ("or") expression (except to recite two equivalent parts or a disjunctive function of a machine).
- ☐ No claim uses any naked functional clause; all claims contain a structural recitation or "means" to support every functional recitation.
- ☐ A memory aid is recited adjacent each "means," for example, "first means"; also, each "means" is followed by "for ..." plus some function or structure.
- ☐ For each unique "means" followed by a function in the claims, the specification describes some hardware or an element which implements or provides the function for such means, using the same words as used in the claim to describe the function.
- ☐ "Consisting" isn't used in any claim (except if you want to say "having only").
- ☐ No claim uses any abbreviation, dash, parentheses, or quote.
- ☐ No term is used for the first time in any claim.
- ☐ The subparagraph form is used in long claims for ease of reading.
- ☐ Each claim has just one capital letter (two if "claim" is capitalized in a dependent claim) and one period (except lettered paragraphs), and no parentheses (except lettered paragraphs, quotes, or abbreviations).
- ☐ All significant parts are affirmatively recited in the claims as the subject and not the object of a clause.
- ☐ The main (independent) claim is made as broad as possible by reciting minimum number of elements and by generalizing existing elements (without reading on prior art).
- ☐ No vague, loose, or casual language is used in any claim.
- ☐ Space between adjacent claims is greater than space between adjacent lines of a claim.
- ☐ No dependent claim recites an additional function unless "means" or structure is specified to support such structure.
- ☐ All parts recited in claims are connected.
- ☐ All claims recite enough parts to provide a complete assemblage.
- ☐ You haven't submitted over 20 total or over three independent claims unless the case is very complex or extra claims are justified.
- ☐ No independent claim refers to any other claim and all dependent claims refer to a previous claim in line 1 or line 2.
- ☐ You've filed enough dependent claims to cover all features and permutations and you've filed second and third sets of claims (with differently phrased independent claims) if possible.
- ☐ You've included an independent method claim and a set of dependent method claims, if possible.
- ☐ Every dependent claim starts with either:
  "The _____ of Claim x wherein ..." (to provide a separate recitation of an element(s) of the parent claim in a narrower fashion), or,
  "The _____ of Claim x further including ..." (to provide a separate recitation of the element(s) of the parent claim, plus a recitation of one or more element(s)).
- ☐ No dependent claim is used to substitute a different part for any part recited in the parent claim. Each dependent claim recites an element(s) of the parent claim in a narrower fashion, and/or recites one or more element(s), in addition to those recited in the parent claim.
- ☐ No dependent claim recites a method limitation if its parent claim is an apparatus claim.
- ☐ In order to comply with the *Bilski* decision, all process claims recite a process centered on hardware—that is, the process either (1) is tied in a substantial way to a particular machine or apparatus, or (2) transforms an article into a different state or thing.
- ☐ The same element isn't recited more than once in any claim unless the second and later recitations use "said" before the element.
- ☐ You've included a set of claims (one independent and several dependent) with means plus function clauses and a set without means plus function clauses.
- ☐ Each independent claim has a set of several dependent claims to provide backup.
- ☐ Every possible novel or significant feature of the invention is recited in the claims to (hopefully) provide some claims that will not have to be canceled or narrowed.
- ☐ At least one dependent claim has as many elements or parts of the inventive apparatus as possible, providing a larger base for infringement claims and greater damages.
- ☐ Method limitations and apparatus limitations aren't used together in any single claim or in any *Markush* group.

start claims on new page

Printout should have minimum 1.5 line spacing (4 lines/inch) but is shown with denser spacing since this example is shown on a reduced scale.

Patent Application of Lou W. Koppe for "Paper-Laminated Pliable Closure for Flexible Bags" continued
Page 10

first independent claim

Number of each independent claim is bold

CLAIMS: I claim:

1. In a bag closure of the type comprising a flat body of material having a lead-in notch on one edge thereof and a gripping aperture adjacent to and communicating with said notch, the improvement wherein said bag closure has a layer of paper laminated on one of its sides.

Skip a line between claims—omitted here to conserve space.

2. The bag closure of claim 1 wherein said body of material is composed of polyethyleneterephthalate.

3. The bag closure of claim 1 wherein said body is elongated and has a longitudinal groove which is on said one side of said body and extends the full length of said one side, from said gripping aperture to the opposite edge.

optional indent for dependent claims

4. The bag closure of claim 3 wherein said groove is formed into and along the full length of said lamination.

5. The bag closure of claim 1 wherein said body is elongated and has a longitudinal groove which is on the side of said body opposite to said one side thereof and extends the full length of said one side, from said gripping aperture to the opposite edge.

6. The bag closure of claim 1 wherein said body is elongated and has two longitudinal grooves which are on opposite sides of said body and extend the full lengths of said sides, from said gripping aperture to the opposite edge.

7. The bag closure of claim 6 wherein the groove on said one side of said body is formed into and along the full length of said lamination.

8. The bag closure of claim 1 wherein said body has a paper lamination on both of said sides.

9. The bag closure of claim 8 wherein a groove is on one side of said body and extends the full length of said one side, from said gripping aperture to the opposite edge.

10. The bag closure of claim 8 wherein two grooves, on opposite sides of said body, extend the full lengths of said sides, from said gripping aperture to the opposite edge.

Fig. 9A—Specification of Sample Patent Application

11. The bag closure of claim 10 wherein said grooves are rolled into and along the full lengths of said laminations, respectively.

12. The bag closure of claim 1 wherein said paper lamination is colored.

13. The bag closure of claim 1 wherein said body is elongated and has a longitudinal through-hole.

14. A bag closure of the type comprising a flat body of material having a lead-in notch on one edge thereof, a gripping aperture adjacent to and communicating with said notch, characterized in that one of its sides has a layer of paper laminated thereon.

15. The bag closure of claim 14 wherein said body of material is composed of polyethyleneterephthalate.

16. The bag closure of claim 14 wherein said body is elongated and has a longitudinal groove on said one side of said body and which extends the full length of said one side, from said gripping aperture to the opposite edge.

17. The bag closure of claim 14 wherein said body is elongated and has a longitudinal groove which is on the side of said body opposite to said one side thereof and extends the full length of said one side, from said gripping aperture to the opposite edge.

18. The bag closure of claim 14 wherein said body is elongated and has two longitudinal grooves which are on opposite sides of said body and extend the full lengths of said sides, from said gripping aperture to the opposite edge.

19. The bag closure of claim 14 wherein said body has a paper lamination on both of said sides.

20. The bag closure of claim 19 wherein a groove is on one side of said body and extends the full length of said one side, from said gripping aperture to the opposite edge.

21. The bag closure of claim 19 wherein two grooves, on opposite sides of said body, extend the full lengths of said sides, from said gripping aperture to the opposite edge.

22. The bag closure of claim 14 wherein said paper lamination is colored.

Fig. 9A (cont'd)—Specification of Sample Patent Application

23. The bag closure of claim 14 wherein said body is elongated and has a longitudinal through-hole.

24. A method of closing a plastic bag, comprising:

(a) providing a bag closure of the type comprising a flat body of material having a lead-in notch on one edge thereof, a gripping aperture adjacent to and communicating with said notch, and a layer of paper laminated on one of its sides,

(b) providing a plastic bag and inserting contents into said plastic bag,

(c) twisting said plastic bag so that it forms a neck portion to hold said contents from falling out of said plastic bag,

(d) inserting said bag closure onto said neck portion of said plastic bag so that said neck portion of said plastic bag passes said lead-in notch and into said gripping aperture,

whereby said bag closure can be easily marked to identify and/or price said contents in said plastic bag.

25. The method of claim 24 wherein said flat body of material is composed of polyethyleneterephthalate.

26. The method of claim 24 wherein said layer of paper is colored.

Fig. 9A (cont'd)—Specification of Sample Patent Application

CHAPTER 10

Finaling and Mailing Your Application

Inventor's Commandment 16

Before signing any document, whether in the patent field or elsewhere, read it carefully and be sure that you understand and agree to it fully. After signing, obtain and be sure to save an identical copy of what you signed.

Inventor's Commandment 17

Avoid Fraud on the PTO: In addition to making a full disclosure of your invention in your patent application, promptly tell the PTO, in an Information Disclosure Statement, about any pertinent "prior art" or other material facts concerning your invention of which you are aware or of which you become aware.

Inventor's Commandment 18

Except for the actual application (which you can mail or file via the Internet), you can and should Web-file or fax all papers to the PTO to avoid loss in the mail. When you Web-file or fax to the PTO, be sure all blanks on all forms are completed, all forms and documents are signed, a Credit Card Payment Form is completed or included, if needed, all pages are present, and the document is timely sent. If you do mail any papers, follow the admonitions for Web-filing or faxing (you may pay by check as well as a credit card) and always include a receipt postcard addressed to you with all of the paper(s) listed on the back of the card.

Inventor's Commandment 19

Orderly File: Prepare and maintain file folders for (1) Official Papers and (2) Correspondence. Include a copy of every paper you send to or receive from the PTO in the Official Papers file. Include a copy of every paper you send to or receive from anyone other than the PTO in the Correspondence file. Write the date received on every incoming paper, and date and make sure your address and phone number is on every outgoing paper.

Now that you've drafted your patent application, it's time to put it in final form. Since the PTO places great emphasis on thoroughness, this chapter is, accordingly, filled with many picky details. In the event you want to rebel and simply pass over those requirements that are inconvenient, remember that the PTO has many rules with which you must comply. In addition, your patent examiner has discretion to approve or reject your application. An application that fully meets the requirements and standards of the PTO will have much smoother sailing than one that doesn't. If you fail to comply with certain rules—for example, you forget to enclose a declaration or a check—the PTO will impose substantial monetary penalties.

Fortunately, while you must pay attention to detail, meeting the PTO's requirements and standards is relatively easy if you've followed my suggestions in the previous chapters. Because you've reviewed a number of patents in the same field as your own, you'll be familiar with the standards for writing the specification and claims (Chapters 8 and 9). Because you've prepared preliminary drawings (Chapter 8) in basic conformance with the rules for final drawings, putting them in final form will not involve great difficulty. Because you've analyzed all relevant prior art known to you and can distinguish it from your invention, you are in a good position to follow through with your application to a successful completion (Chapter 13).

Electronic Filing Note: The PTO has implemented an electronic filing system called *EFS-Web* that enables patent application filing via the Internet. While it's gratifying to file an application online, it will take you several *extra* hours to learn and use the EFS-Web system. You must prepare the application as if you were going to file by mail (except that you can eliminate a few forms), convert all papers into PDF files, and fill out various forms online. If you file via EFS-Web the filing fee is less. Also, it may be worth your time to become a registered eFiler with the PTO, which will require additional work and red tape. Since you already have to do a lot of learning to file a patent application, the extra time to learn and use EFS-Web may discourage you. Nevertheless, because of the lower cost and numerous advantages of electronic filing, I still recommend that first-time filers file by EFS-Web. However, if you're not game for a new adventure, or don't have the time, or are too exhausted from the substantive preparation of your application to learn some extra procedures, I provide full instructions for mail filing as well as filing by EFS-Web in this chapter.

A. The Drawing Choices

You have two basic choices for your drawings. You can file the application with:

- *formal drawings* (generally CAD drawings or other computer-created drawings or xerographic copies of ink drawings done with instruments on Bristol board or Mylar film and in accordance with all the rules), or
- *informal drawings* (generally xerographic copies of good pencil or ink sketches, which include all the details of the invention).

Further, in each case the drawings can be filed in either:

- the U.S. letter size (8½" x 11"), or
- the A4 international size (210 mm x 297 mm or (8¼" x 11 1/16").

Should you submit formal or informal drawings? I strongly recommend that, if at all possible, you submit formal drawings. However, if cost and time are important considerations, you can file informal drawings. If you do, the PTO usually will require you to file formal drawings before they will examine your application. If they neglect to object to the informal drawings after filing, they will do so when the application is allowed (see Chapter 13, Section I). At that time you will have to pay an issue fee and file any required corrected drawings within three months. Also, if you want to file abroad, you'll have to prepare formal drawings on A4 size paper approximately 11 months after filing.

As far as the choice of the U.S. or international sizes is concerned, if you have ink drawings and have any serious thoughts about filing abroad, it's better to use the international (A4) size, since you can make good photocopies, file these for your U.S. application, and later use the originals (or another good set of copies) for the international application. (I discuss foreign filing in Chapter 12.) If you do make paper drawings in the U.S. size and later decide to foreign file, you can still make A4 copies by using a scanner, photocopier, or a patent drawing service in the Arlington, or Alexandria, Virginia, area (about $20 a sheet).

If necessary to illustrate the invention properly—that is, if color is an essential part of the invention—color photos or color drawings may also be used. File three sets of color photos or drawings in one of the two permitted sizes with:

1. a petition explaining why color is necessary; use the format of the petition of Fig. 10U (Form 10-9 in Appendix 7) but change the title. For example, write "Petition Explaining Why Color Is Necessary" and change the body of the form to provide an explanation
2. the petition fee (see Appendix 4, Fee Schedule), and
3. a statement in the specification just below the title reading as follows: "The file of this patent contains at least one color drawing. Copies of the patent with color drawings will be provided by the PTO upon payment of necessary fee."

Black and white photos may no longer be used for patent drawings, unless necessary to illustrate the invention, for example, to show a photomicrograph of a composite material. File one set of black and white photos in one of the two permitted sizes on double-weight photographic paper or mounted on Bristol board. You must also file a petition explaining why black and white photos are necessary. No fee is needed.

All photos must be of sufficient quality that all details can be reproduced in the printed patent and the photos must illustrate all features of the invention, just as ink or CAD drawings must do.

B. PTO Rules for Drawings

The PTO has a number of rules for preparing formal drawings. Even if you plan to submit informal drawings, the rules should be followed as much as possible so that much of the work will already be done when you later need to submit formal drawings. For step-by-step instructions and examples on how to implement these rules, see *How to Make Patent Drawings*, by Jack Lo and David Pressman (Nolo).

When your drawings arrive at the PTO, whether with your application or after allowance, your drawings are inspected by the PTO's drawing inspectors. If they find that any of your drawings are informal or in violation of any of the above rules, they will fill out and insert a drawing objection sheet in your file. A copy of this (shown in Fig. 10A) will be sent to you before or with your first Office Action or after allowance. (See Chapter 13.) You must correct the drawings before the patent will be examined or before a patent can issue; the drawings are "corrected" by substituting new drawings. Thus, you should keep the originals of your drawings and send in good copies. Then if you have to correct the drawings, you can correct your originals and then send in new copies.

The most common drawing defects are listed on the drawing inspector's sheet (Fig. 10A). These and other frequently encountered defects are as follows:

- Lines are pale.
- Paper is poor.
- Numerals are poor.
- Lines are rough, blurred, or matrixy (zig-zag).
- Copier marks are on the drawing.
- Shade lines are required.
- Figures must be numbered.
- Heading space is required.
- Figures must not be connected.
- Crisscross or double line-hatching is objectionable.
- Arrowheads are used on lead lines for individual parts.

Dec 1950 28

Form PTO 948 (Rev. 10-93) U.S. DEPARTMENT OF COMMERCE - Patent and Trademark Office Application No. 07/883567

NOTICE OF DRAFTSPERSON'S PATENT DRAWING REVIEW

PTO Draftpersons review all originally filed drawings regardless of whether they are designated as formal or informal. Additionally, patent Examiners will review the drawings for compliance with the regulations. Direct telephone inquiries concerning this review to the Drawing Review Branch, 703-305-8404.

The drawings filed (insert date) 9/27/95, are
A. ___ not objected to by the Draftsperson under 37 CFR 1.84 or 1.152.
B. ✓ objected to by the Draftsperson under 37 CFR 1.84 or 1.152 as indicated below. The Examiner will require submission of new, corrected drawings when necessary. Corrected drawings must be submitted according to the instructions on the back of this Notice.

1. DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings:
Black ink. Color.
___ Not black solid lines. Fig(s)_____
___ Color drawings are not acceptable until petition is granted.

2. PHOTOGRAPHS. 37 CFR 1.84(b)
___ Photographs are not acceptable until petition is granted.

3. GRAPHIC FORMS. 37 CFR 1.84 (d)
___ Chemical or mathematical formula not labeled as separate figure. Fig(s)_____
___ Group of waveforms not presented as a single figure, using common vertical axis with time extending along horizontal axis. Fig(s)_____
___ Individuals waveform not identified with a separate letter designation adjacent to the vertical axis. Fig(s)_____

4. TYPE OF PAPER. 37 CFR 1.84(e)
___ Paper not flexible, strong, white, smooth, nonshiny, and durable. Sheet(s)_____
___ Erasures, alterations, overwritings, interlineations, cracks, creases, and folds not allowed. Sheet(s)_____

Transparent objectionable Figs 1, 3

5. SIZE OF PAPER. 37 CFR 1.84(f): Acceptable paper sizes:
21.6 cm. by 35.6 cm. (8 1/2 by 14 inches)
21.6 cm. by 33.1 cm. (8 1/2 by 13 inches)
21.6 cm. by 27.9 cm. (8 1/2 by 11 inches)
21.0 cm. by 29.7 cm. (DIN size A4)
___ All drawing sheets not the same size. Sheet(s)_____
___ Drawing sheet not an acceptable size. Sheet(s) _____

6. MARGINS. 37 CFR 1.84(g): Acceptable margins:

Paper size		
	21 cm. X 27.9 cm. (8 1/2 X 11 inches)	21 cm. X 29.7 cm. (DIN Size A4)
	2.5 cm. (1")	2.5cm.
	.64 cm. (1/4")	2.5 cm.
	.64 cm. (1/4")	1.5 cm.
	.64 cm. (1/4")	1.0 cm.

Margins do not conform to chart above.
Sheet(s)_____
___Top (T) ___ Left (L) ___Right (R) ___Bottom (B)

7. VIEWS. 37 CFR 1.84(h)
REMINDER: Specification may require revision to correspond to drawing changes.
___ All views not grouped together. Fig(s)_____
___ Views connected by projection lines. Fig(s)_____
___ Views contain center lines. Fig(s)_____

Partial views. 37 CFR 1.84(h)(2)
___ Separate sheets not linked edge to edge. Fig(s)_____
___ View and enlarged view not labeled separately. Fig(s)_____
___ Long view relationship between different parts not clear and unambiguous. 37 CFR 1.84(h)(2)(ii) Fig(s)_____

Sectional views. 37 CFR 1.84(h)(3)
___ Hatching not indicated for sectional portions of an object. Fig(s)_____
✓ Hatching of regularly spaced oblique parallel lines not spaced sufficiently. Fig(s)_____
___ Hatching not at substantial angle to surrounding axes or principal lines. Fig(s) 3
___ Cross section not drawn same as view with parts in cross section with regularly spaced parallel oblique strokes. Fig(s)_____
___ Hatching of juxtaposed different elements not angled in a different way. Fig(s)_____

Alternate position. 37 CFR 1.84(h)(4)
___ A separate view required for a moved position. Fig(s)_____

Modified forms. 37 CFR 1.84(h)(5)
Modified forms of construction must be shown in separate views. Fig(s)_____

8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i)
___ View placed upon another view or within outline of another. Fig(s)_____
___ Words do not appear in a horizontal, left-to-right fashion when page is either upright or turned so that the top becomes the right side, except for graphs. Fig(s)_____

9. SCALE. 37 CFR 1.84(k)
___ Scale not large enough to show mechanism without crowding when drawing is reduced in size to two-thirds in reproduction. Fig(s)_____
___ Indication such as "actual size" or "scale 1/2" not permitted. Fig(s)_____
___ Elements of same view not in proportion to each other. Fig(s)_____

10. CHARACTER OF LINES, NUMBERS, & LETTERS. 37 CFR 1.84(l)
✓ Lines, numbers & letters not uniformly thick and well defined, clean, durable, and black (except for color drawings). Fig(s)_____

11. SHADING. 37 CFR 1.84(m)
___ Shading used for other than shape of spherical, cylindrical, and conical elements of an object, or for flat parts. Fig(s)_____
___ Solid black shading areas not permitted. Fig(s)_____

12. NUMBERS, LETTERS, & REFERENCE CHARACTERS. 37 CFR 1.84(p)
___ Numbers and reference characters not plain and legible. 37 CFR 1.84(p)(1) Fig(s)_____
___ Numbers and reference characters used in conjuction with brackets, inverted commas, or enclosed within outlines. 37 CFR 1.84(p)(1) Fig(s)_____
___ Numbers and reference characters not oriented in same direction as the view. 37 CFR 1.84(p)(1) Fig(s)_____
___ English alphabet not used. 37 CFR 1.84(p)(2) Fig(s)_____
___ Numbers, letters, and reference characters do not measure at least .32 cm. (1/8 inch) in height. 37 CFR(p)(3) Fig(s)_____

13. LEAD LINES. 37 CFR 1.84(q)
___ Lead lines cross each other. Fig(s)_____
___ Lead lines missing. Fig(s)_____
___ Lead lines not as short as possible. Fig(s)_____

14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.84(t)
___ Number appears in top margin. Fig(s)_____
___ Number not larger than reference characters. Fig(s)_____
___ Sheets not numbered consecutively, and in Arabic numerals, beginning with number 1. Sheet(s)_____

15. NUMBER OF VIEWS. 37 CFR 1.84(u)
___ Views not numbered consecutively, and in Arabic numerals, beginning with number 1. Fig(s)_____
___ View numbers not preceded by the abbreviation Fig. Fig(s)_____
___ Single view contains a view number and the abbreviation Fig.
___ Numbers not larger than reference characters. Fig(s)_____

16. CORRECTIONS. 37 CFR 1.84(w)
Corrections not durable and permanent. Fig(s)_____

17. DESIGN DRAWING. 37 CFR 1.152
___ Surface shading shown not appropriate. Fig(s)_____
___ Solid black shading not used for color contrast. Fig(s)_____

ATTACHMENT TO PAPER NO. 9 REVIEWER CBK DATE 10/25/95

Applicant's Copy

Fig. 10A—Draftsperson's Drawing Objection Sheet
Although the PTO form still refers to four sizes of paper, new rules only allow two sizes: 8½" x 11" and A4.

- Parts in section must be hatched.
- Solid black is objectionable.
- Figure legends are placed incorrectly (for example, inside figure or vertically when drawing is horizontal).
- Drawing has mounted photographs.
- Drawing contains extraneous matter.
- Paper is undersized or oversized.
- Margins are too small.
- Lettering is too small.
- Figures contain dimension lines.
- The sheets contain wrinkles, tears, or folds.
- Both sides of the sheet are used.
- Margin lines have been used.
- Sheets contain too many erasures.
- Sheets contain broken lines to illustrate regular parts of the invention.
- Sheets contain alterations, interlineations, or overwritings.
- Sheets contain unclear representations.
- Sheets contain freehand lines.
- Sheets contain figures on separate sheets that can't be assembled without concealing parts.
- Sheets contain reference numerals that aren't mentioned in the specification.
- Sheets contain the same reference numeral to designate different parts.
- Figures aren't separately numbered.
- Drawings contain dimensions.

C. Doing Your Own Drawings

Many inventors sensibly choose to prepare their own patent applications instead of hiring a patent attorney or agent to do it for them. However, these same inventors frequently conclude that preparing the drawings is beyond their ability and turn the job over to a professional draftsperson. This can be costly. The typical draftsperson charges $75 to $150 per sheet of patent drawings (each sheet may contain several figures or separate drawings). Since most patent applications have between two to ten sheets of drawings, an inventor can sometimes shell out up to $1,500 for drawings.

Fortunately, patent drawings, like the application itself, are frequently susceptible to a self-help approach. To be sure, you'll need to learn some PTO rules and a certain learning curve is involved. However, the result will not only save you a lot of money over many patent applications, but also:

- You will be able to prepare promotional brochures for marketing your invention to prospective manufacturers or customers.
- You will be able to render your invention more accurately than a hired professional, because you know your invention best. By doing your own drawings, you do not have to take the time to make someone else understand your invention, or have to send the drawings back and forth for corrections.
- You will have the great satisfaction of properly completing the entire patent application by yourself—an impressive accomplishment for an inventor.

How to Make Patent Drawings, also published by Nolo, provides detailed guidance on making the drawings yourself. There are two methods for making patent drawings: pen and ruler, and computer-aided drafting (CAD). (You may not use photos unless necessary to illustrate an invention that involves fine details.)

You can file your application with either informal or formal drawings, as stated in Section A above. If you are submitting "informal" drawings, the copies need not be perfectly clean and neat, but if you choose the formal route, the copies must be very clean and neat, and all lines must be sharp and black. You don't have to notify the PTO which type of drawing you're filing; they'll notify you if the drawings are inadequate. Full details about both U.S. and A4 sizes and the margin requirements are shown in the diagrams of Fig. 10B, below. (The typed specification sheets must have different margins—see Section E, below.)

If you decide to use international-size drawings, you'll find that some copiers now have A4 size paper and settings. If the copier does accommodate A4 paper, make copies on legal size sheets and trim them to A4 size (210 mm x 297 mm) (8¼" x 11¹¹⁄₁₆"). To get the margins right, you'll probably have to experiment a bit with the position of your original on the copier platen. (What's the reason for the odd dimensions of the the A4 size? This international standard, used by most of the world except the United States, is based on the principle that the height-to-width or aspect ratio of all pages is the square root of two. If you cut or fold any A4 sheet parallel to its shorter side into two equal pieces, then the resulting page will have the same aspect ratio. This system enables paper to be cut and page dimensions to be matched more accurately. The odd dimensions of A4 paper occur because an A1 sheet is purposely made one square meter in area (841 x 1,189 mm with an aspect ratio of $1:\sqrt{2}$) so that after 4 bisecting cuts as above, the pieces each become 210 x 297 mm.)

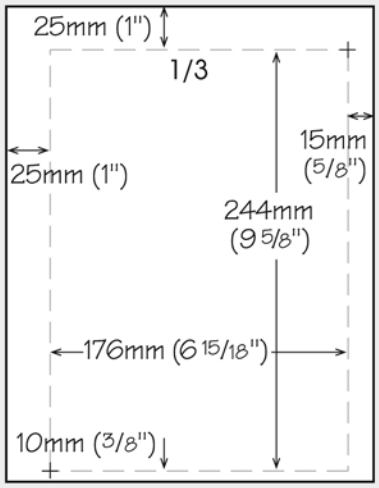
Even if you file informal drawings, you must include everything necessary in your drawings, since you won't be able to add any "new matter" (any new technical information that is not present in your original sketches) after you file. Be sure to study the drawings of the patents uncovered in your patentability search (Chapter 6) to get an idea of what's customarily done for your type of invention, and to better understand the PTO rules.

I recommend that you make your drawings as comprehensive and meaningful as possible, almost to the point that most people can fully understand the invention by looking at the drawings alone. This is because most people are picture, rather than word, oriented and thus can understand an invention far more readily from drawings because they are a lower level of abstraction than text.

For example, in electronic schematics, try to arrange the parts so that:

- the signal progresses from left to right
- the input sources and output loads are clearly indicated
- transistor states are indicated (that is, NNC = normally nonconductive; NC = normally conductive)
- signal waveforms are shown, and
- circuits are labeled by function (for example, "Schmitt Trigger").

In chemical and computer cases, I suggest you use a flowchart, if possible. In mechanical cases, I suggest you use exploded views, perspective views from several directions, and simplified perspective "action" views, showing the apparatus in operation and clearly illustrating its function. In other words, do the drawings so completely that they "speak" to their reader.

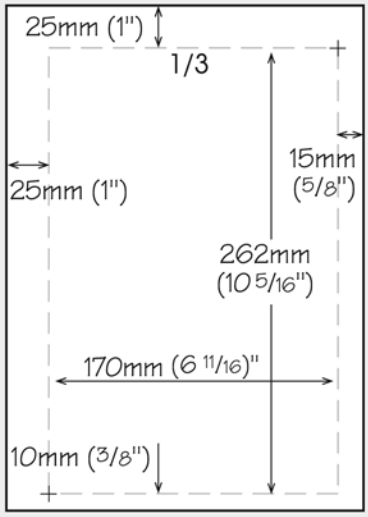


U.S. Letter Size
(8.5" x 11" or 216mm x 279mm)

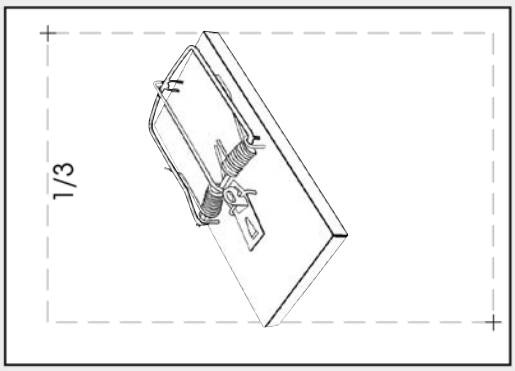
Notes:

Metric to inch conversion numbers are not exact but are copied from Rule 84(f)&(g). In case of doubt, always use a wider margin (smaller sight).

Margin lines should not be used but are shown as broken lines to indicate the margin and "sight" sizes. Visible crosshairs (targets) should be put in either pair of opposite corners and should be about 1.5 cm (0.5") long. (The crosshairs are shown on these two sheets in the lower left and upper right corners.)



A4 Size
(8¼" x 11 11/16" or 210mm x 297mm)



Layout for Landscape Orientation
(Not Preferred)

Fig. 10B—The Two Permitted Drawing Sizes

Summary of PTO Drawing Rules

1. **Need for Drawings:** Drawings (or only a single drawing) must be filed whenever necessary to understand the invention.
2. **Flowcharts:** Flowcharts should also be included whenever useful for an understanding of the invention.
3. **Must Show Features Claimed:** The drawings must show every feature recited in the claims.
4. **Conventional Features:** Conventional features that are not essential for an understanding of the invention, but are mentioned in the description and claims, can be shown by a graphical drawing symbol or a labeled rectangular box. For example, a motor can be shown by an encircled "M," and a CPU in a computer can be shown by a rectangle labeled "CPU."
5. **Improvements:** When your invention consists of an improvement in an old machine, the drawing should show the improved portion disconnected from the old structure with only so much of the old structure as is necessary to show how your improvement fits in. For example, if you've invented a new taillight for a bicycle, show the bicycle itself with the new taillight (without detail) in one figure labeled as "prior art." Then show just the portion of the bike where the taillight is mounted in detail in another figure, together with details of the mounting hardware.
6. **Paper:** The filed drawings (xerographic copies if filing in paper) should be on paper that is flexible, strong, white, smooth, nonshiny, and durable. Ordinary 20 pound bond is acceptable. You should do the originals on Mylar film, vellum, or hard, rather than soft, Bristol board; this is available in most good art supply stores. Strathmore Paper Co. makes excellent patent drawing boards in both U.S. and A4 sizes (about $1 per sheet), but you can get your sheets more economically by buying larger sheets of hard Bristol board and cutting them to the proper size. If you're using CAD, do the originals on regular bond and, since additional originals are so easy to make, send the originals to the PTO. (Keep your disk copy and a backup of your drawing file!) If filing by EFS-Web and you've made the drawings on paper, scan the drawings to PDF. If you've made the drawings in the computer, convert the computer files to PDF using CutePDF (or any other PDF conversion program) and file the PDFs online.
7. **Lines:** The main requirement for all drawings is that all lines must be crisp and perfectly black. For paper copies, a good photocopy on good quality bond paper is usually used and the lines should be crisp and sharp. A good xerographic copy from a dark-penciled original will be accepted. Jagged slant lines from a dot matrix printer or bitmapped drawing program are forbidden for formal drawings. For EFS-Web filers, the same sharp, black lines are required on PDF versions.

   Lines the PTO Recognizes on Drawings:

   Normal Lines: Use a solid thin line (_____) to show regular parts and a thick solid line (▬▬▬) to show a shadowed edge—see Rule 14—or hatching a cross-section.

   Hidden Lines: This is a dashed line (– – – – – – – –) to show a part behind another part—see Fig. 8C.

   Projection Lines: This is composed of alternating long dashes and dots (— . — . — .) and is used to connect exploded parts—see Fig. 8D.

   Phantom Lines: Similar to a projection line, but which uses two dots instead of one (— .. — .. — ..); this is used to show an alternate position of a movable part, or on an adjacent structure which is not part of the invention.
8. **White Pigment:** The use of white pigment (for example, White Out™, Liquid Paper™) to cover lines is now acceptable, provided all lines are sharp and black.
9. **Uniform Size:** All drawing sheets in an application must be exactly sized in the same U.S. letter or A4 size. Fig. 10B shows these two sizes.
10. **Invisible Margins:** The margins must not contain any lines or writing; all writing and lines must be in the remaining "sight" (drawing area) on the sheet. Margin border lines are forbidden, but crosshairs (about 1 cm long) should be drawn over two opposite (catercorner) margin corners.
11. **No Holes:** The drawing sheets should not contain any holes.
12. **Instrument Work:** All lines must be made with drafting tools or a CAD computer program. Copies made by a laser printer must be very dense, sharp, uniformly thick, and black. Fine or crowded lines must be avoided. Solid black areas are not permitted. Freehand work must be avoided unless necessary.
13. **Hatching:** Parts in section must be filled with slanted parallel lines (hatching) that are spaced apart sufficiently so that they can be distinguished without difficulty. Crisscross and double-line hatching is forbidden.

Summary of PTO Drawing Rules (continued)

14. **Shading:** Objects can be shaded with surface and edge shadings so that the light appears to come from the upper left at a 45-degree angle. Thus the shade sides of all objects (the right and bottom) should be done with heavier lines. Surface shading should be open. On perspective views, the closest edges should be made heavier. Edge and surface shading is mandatory in design patent applications, and optional in utility patents.
15. **Scale:** The scale should be large enough to show the mechanism without crowding when the drawing is reduced to two-thirds of its original size for reproduction. Detailed parts should be shown on a larger scale, and spread out over two or more sheets if necessary, to accomplish this, but the number of sheets should not be more than necessary.
16. **Figures:** The different views should be consecutively numbered figures, for example, "Fig. 1A," "Fig. 1B," "Fig. 2," etc. Each figure should be separate and unconnected with any other figure. If possible, you should number the figures consecutively on consecutive sheets. However, if you want to arrange the figures in non-consecutive order to use space efficiently, that's okay, albeit less desirable.
17. **Reference Numerals and Lead Lines:** Numbers must be plain, legible, carefully formed, and not encircled. They should be at least 3.2 mm ($^1/_8$") high. When parts are complex, they should not be placed so close that comprehension suffers. They should not cross or mingle with other lines. When grouped around a part, they should be placed around the part and connected by lead lines to the elements to which they refer. They should not be placed on hatched or shaded surfaces unless absolutely necessary; if then, they should be placed in a blank space in the hatching or shading. (Numerals are preferred to letters.) Arrowheads should not be used on lead lines, but if a numeral refers to an entire assembly or group of connected elements, its lead line can have an arrowhead, or it can be underlined to distinguish it from the lead lines of numerals that refer to a single part.
18. **No Duplication of Reference Numerals:** The same part in different figures must always be designated by the same reference numeral. Conversely, the same reference numeral must never be used to designate different parts. Numbers with primes and letter suffixes are considered different numbers.
19. **Graphic Symbols:** These can be used for conventional parts, but must be defined in the specification. For instance, if you use an encircled "M" for a motor, the specification should say, for example, "A motor, represented in Fig. 2 by an encircled 'M.'" Conventional symbols, such as those approved by the IEEE, ASA, etc., or from any standards or symbols book, can be used. Arrows should be used to show direction of movement, where necessary.
20. **Descriptive Matter:** The rules state that descriptive matter on the drawings is not permitted. I vehemently oppose this rule, since the use of descriptive matter on drawings makes them far more meaningful, and since textbooks, magazine articles, etc., all use drawings with ample descriptive matter. Unfortunately, this rule is being enforced now, so just put the figure number and nothing else under each figure—for example, "Fig. 1," and not "Fig. 1—Apparatus in Ready State."

    The Rules do permit (and even require) legends to be used within rectangular boxes, on flowcharts, piping (plumbing) lines, or wherever else additional clarity is highly desirable. If used, the descriptive matter lettering should be as large as, or larger than, the reference numerals.
21. **Views:** The drawings should have as many views (figures) as are necessary to show the invention. The views may be plan, sectional, exploded, elevational, or perspective; detailed larger-scale views of specific elements should be employed. Engineering views (such as front, side, bottom, or back) should not normally be used if perspective views can adequately illustrate the invention. If exploded views are used, the separated parts of the same figure must be joined by assembly lines or embraced by a bracket. (See Fig. 8D.)

    A large machine or schematic or flowchart can be extended over several sheets, but the views should be arranged to be easily understandable and so that the sheets can be assembled adjacent each other to show the entire machine. Never place one figure within another unless the view is the only one on the sheet.
22. **Sectional and Enlarged Views:** The plane upon which a sectional view is taken should be illustrated in the general view by a broken line, the ends of which should be designated by numerals corresponding to the figure number of the sectional view with arrows indicating the direction in which the sectional view is taken. For example, suppose your Fig. 1 shows a left-side front

Summary of PTO Drawing Rules (continued)

view of your carburetor and Fig. 2 shows a cross-sectional front of the back half of the carburetor on a plane vertically bisecting the carburetor into front and back halves. In this case, Fig. 1 should contain a broken vertical line spaced halfway from left to right with arrows pointing to the right at the top and bottom of this line; the arrows should each be labeled "2" to indicate the section is shown in Fig. 2. To show an area of a main figure in an enlarged view, encircle the area in the main figure and indicate the circled area with the number of the figure of the enlarged view—that is, if your main figure is Fig. 1 and the enlarged view is to be Fig. 1A, designate the circled area of Fig. 1 with a lead line numbered "1A"

23. **Moving Parts:** To show two positions of a movable part, show its main position in full lines and its secondary position in phantom lines, provided this can be done clearly. If not, use a separate view for the secondary position. (See Item 7, above, for how to do a phantom line.)
24. **Modifications:** Show modifications in separate figures, not in broken lines.
25. **No Construction Lines:** Construction lines, center lines, and projection lines connecting separate figures are forbidden. However, projection lines to show the assembly of parts in an exploded view in one figure are permitted. (See Fig. 8D.)
26. **Position of Sheet:** All views (figures) on a sheet must have the same orientation, preferably so that they can be read with the sheet upright (that is, in portrait orientation with its short side at the top) so the examiner won't have to turn the sheets or the file to read the drawing. However, if views longer than the width of the sheet are necessary for the clearest illustration of the invention, the sheet can be turned to a landscape orientation, that is, on its side so that its short side and the appropriate top margin is on the right-hand side. The orientation of any lettering on a sheet must conform with the orientation of the sheet, except that the sheet number and number of sheets separated by a slash (1/2) must always be at the top. (See Fig. 10B.)
27. **OG Figure:** One figure should be a comprehensive view of the invention for inclusion in the *Official Gazette*, a weekly publication of the PTO that shows the main claim and drawing figure of every patent issued that week.
28. **No Extraneous Matter:** No extraneous matter—that is, matter that is not part of the claimed invention or its supporting or related structures—is permitted on the drawings. However, you can (and should) place additional matter, such as a hand on a special pistol grip, if necessary to show use or an advantage of the invention. Also, you should put the sheet number and total number of sheets ("1/4, 2/4," etc.) below the top margin, in centered numerals that are larger than the regular reference numerals. If the center space is occupied, the sheet number should be placed to the right.
29. **No Wrinkled Sheets:** If you're filing by mail, the sheets should be sent to the PTO with adequate protection so that they will arrive without wrinkles or tears. You should send the sheets flat, between two pieces of corrugated cardboard within a large envelope, but they can also be rolled and sent in a mailing tube, provided they don't wrinkle. Never fold patent drawing sheets or typed sheets of the specification.
30. **Phantom Lines:** Parts that are hidden, but that you want to show, for example, the inside of a computer, should be shown in phantom lines—that is, broken lines. (See Rule 7 above.) Reference numeral lead lines that refer to phantom parts should also be broken, in accordance with standard drafting practice. Broken lines must never be used to designate a part of the actual invention, unless to illustrate a phantom part or a moved position of a part.
31. **Identification on Back:** So that the PTO can identify and utilize the drawings in case they get separated from the file, you should include the title of the invention, and the first inventor's name and telephone number on the back of each sheet, at least 1 cm down from the top. Use a label or sticker if necessary to prevent this information from showing through to the front.

1. Making Drawings Manually

I will discuss making drawings by hand first because this method is older, having been used for hundreds of years. Making drawing manually requires the ability to work with India ink or a pencil that can make sharp lines and drafting instruments and will require at least several hours of learning time and practice.

a. Informal Drawings

To make informal drawings, I recommend that you select from and use the techniques in Subsection b (Formal Drawings) below, except that everything is done in pencil, preferably on Mylar film, since this can be repeatedly and easily erased without damaging the film. (Vellum is a less-preferable alternative and Bristol board is a third alternative.) After you've made your penciled drawings (be sure to include all details, since, as stated, you can't add any new matter later), make photocopies on 20- or 24-pound bond to include with your patent application. Keep the penciled originals, since you'll need these to make your formal drawings later, which the PTO usually will require you to file before examination or after it allows your application.

b. Formal Drawings

The traditional or old way of making formal patent drawings is manually, with pen, ruler, and other instruments. A set of instruments can be assembled relatively inexpensively, and making simple drawings is fairly easy. However, pen and ruler allow little room for mistakes, because, except for very small marks, it is very difficult to correct misplaced ink lines. Nevertheless, with careful planning of drawing positioning (layout), and great care in laying down ink lines, drawing with pen and ruler is still a viable technique. However, few professional patent draftspersons still make drawings this way.

The necessary tools include pencils for preliminary sketches, ink drafting pens (also known as technical pens) for drawing ink lines, straight rules for drawing straight lines, triangles for drawing angled lines, templates for drawing certain standard shapes, French curves for drawing curves, an optional drafting table, and Mylar (best) or Vellum film or Bristol board. Pen and ruler may be used to make patent drawings in the following ways:

i. Drawing From Scratch

You can draw an object by visualizing in detail what it should look like, carefully sketching that image on the film or board with a pencil, correcting it until it looks about right, and finally inking over the pencil lines. The sketch of a telephone is illustrated in Fig. 10C. You must have some basic drawing skills to draw from scratch.

ii. Tracing

Tracing is much easier than drawing from scratch. An obvious method is to trace a photograph of an object that you wish to draw, as shown in Fig. 10D. You can also trace an actual, three-dimensional object by positioning a transparent drawing sheet on a transparent sheet of glass or acrylic, as shown in Fig. 10E, looking at the object through the glass, tracing the lines of the object on the film, and photocopying the tracing onto a sheet of paper. Tracing requires very little skill other than a steady hand.

iii. Drawing to Scale

You can also draw by scaling—that is, measuring and then reducing or enlarging—the dimensions of an actual object to fit on a sheet of paper, and drawing all the lines with the scaled dimensions. For example, if an object has a height of 50 cm and a width of 30 cm, you can reduce those dimensions by 50%, so that you would draw it with a height of 25 cm and a width of 15 cm to fit on the paper, as shown in Fig. 10F. All other dimensions of the object are scaled accordingly for the drawing. Making a drawing that looks right is easier by drawing to scale than by drawing based on only a mental image.

After making your ink drawings on film or Bristol board, make good photocopies on good-quality 20- or 24-pound bond paper for submission to the PTO. Keep the originals in case you have to make changes later.

2. Drawing With a Computer

CAD (computer-aided drafting or design) allows you to produce accurate drawings even if you consider yourself to have little or no artistic ability. In fact, no drawing skills in the traditional sense are needed at all. Furthermore, CAD enables you to correct mistakes as easily as a word processor enables you to edit words in a document. Even if you discover a mistake after you've printed a drawing, you can easily correct the mistake and print a new copy. To use CAD, you will need some computer skills, but if you know how to type letters on your computer, you can easily learn how to draw with it.

You will need either a PC (IBM-compatible) or a Mac, an ink jet or laser printer, a CAD program, an optional scanner, and an optional digital camera. A computer may be used to make patent drawings in the following ways.

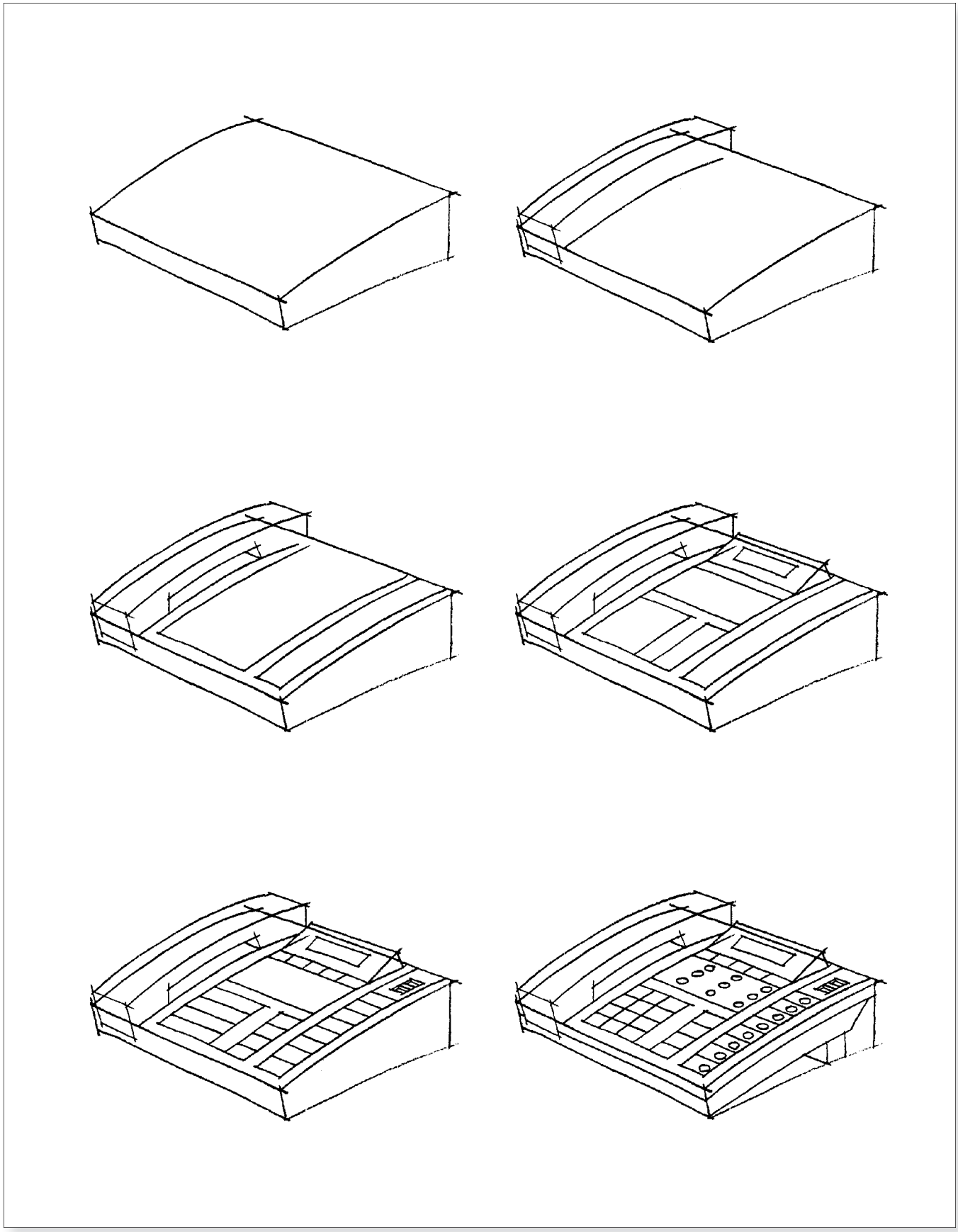


Fig. 10C—Sketching Techniques

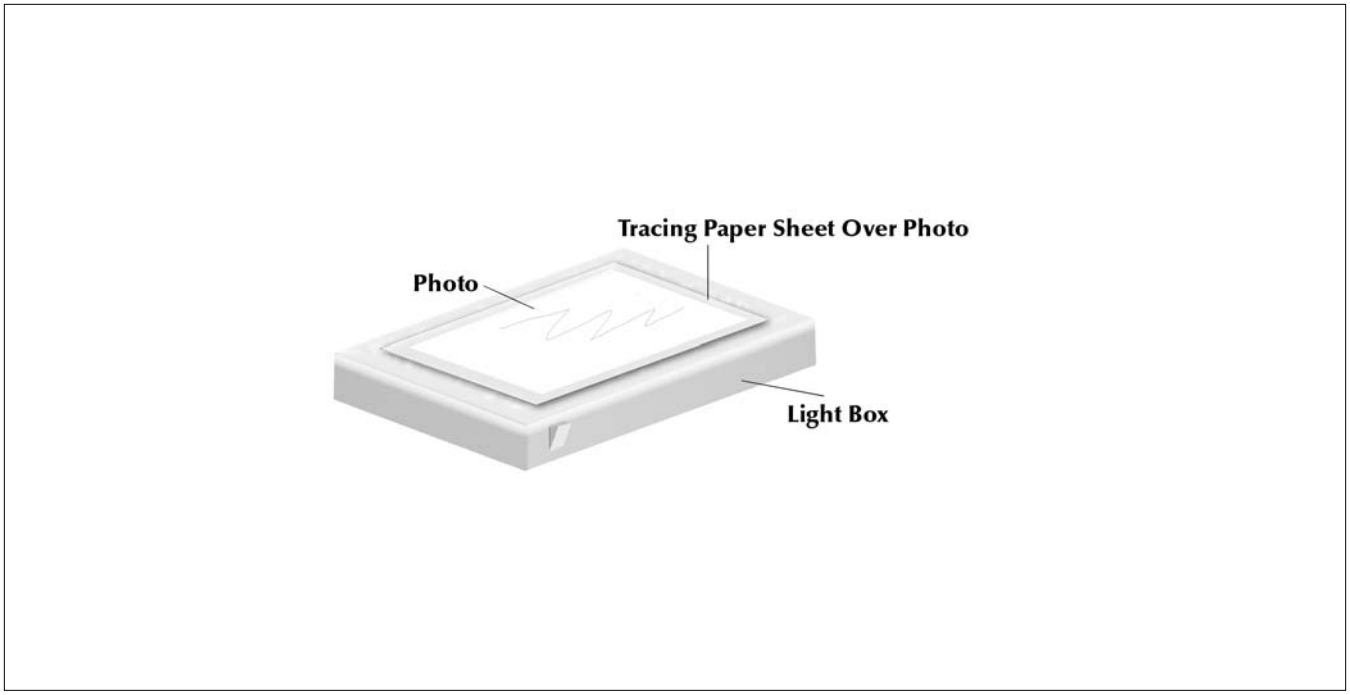


Fig. 10D—Tracing a Photo

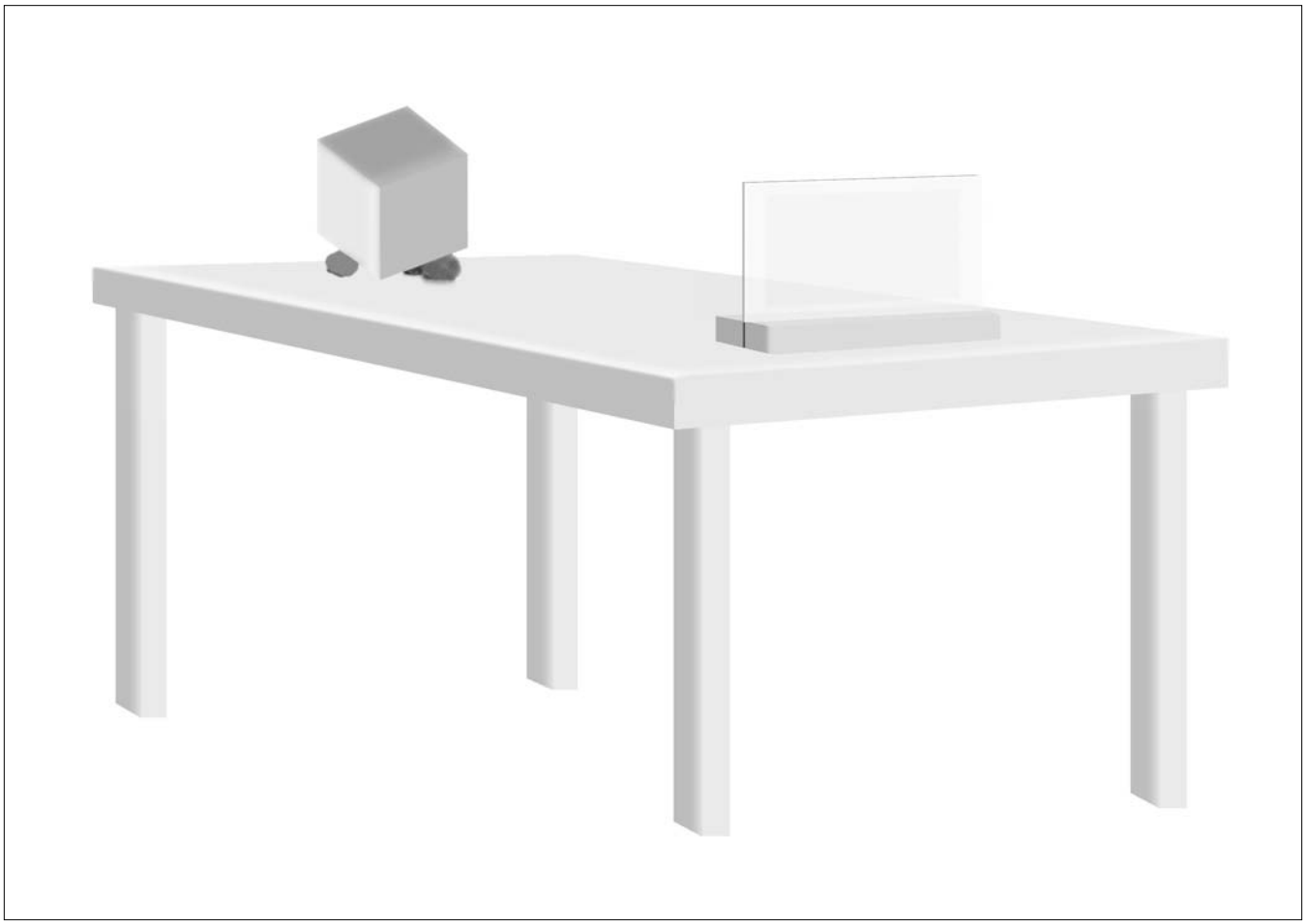


Fig. 10E—Tracing Large Object on Long Table

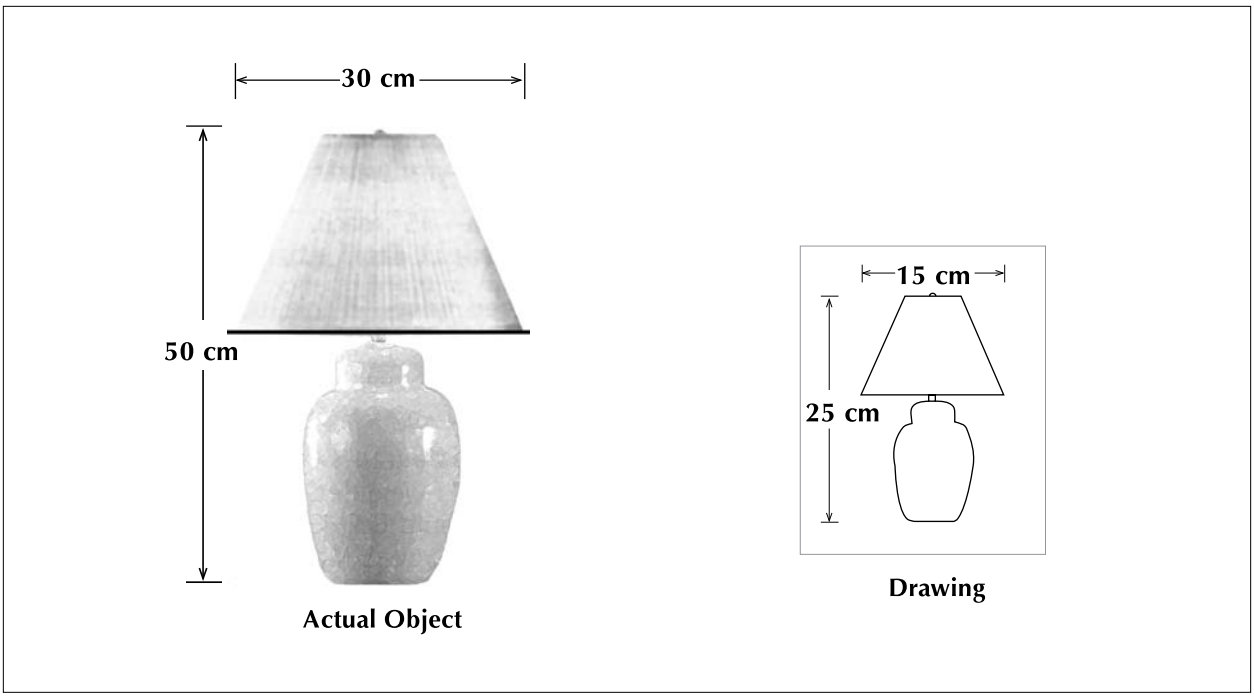


Fig. 10F—Drawing to Scale

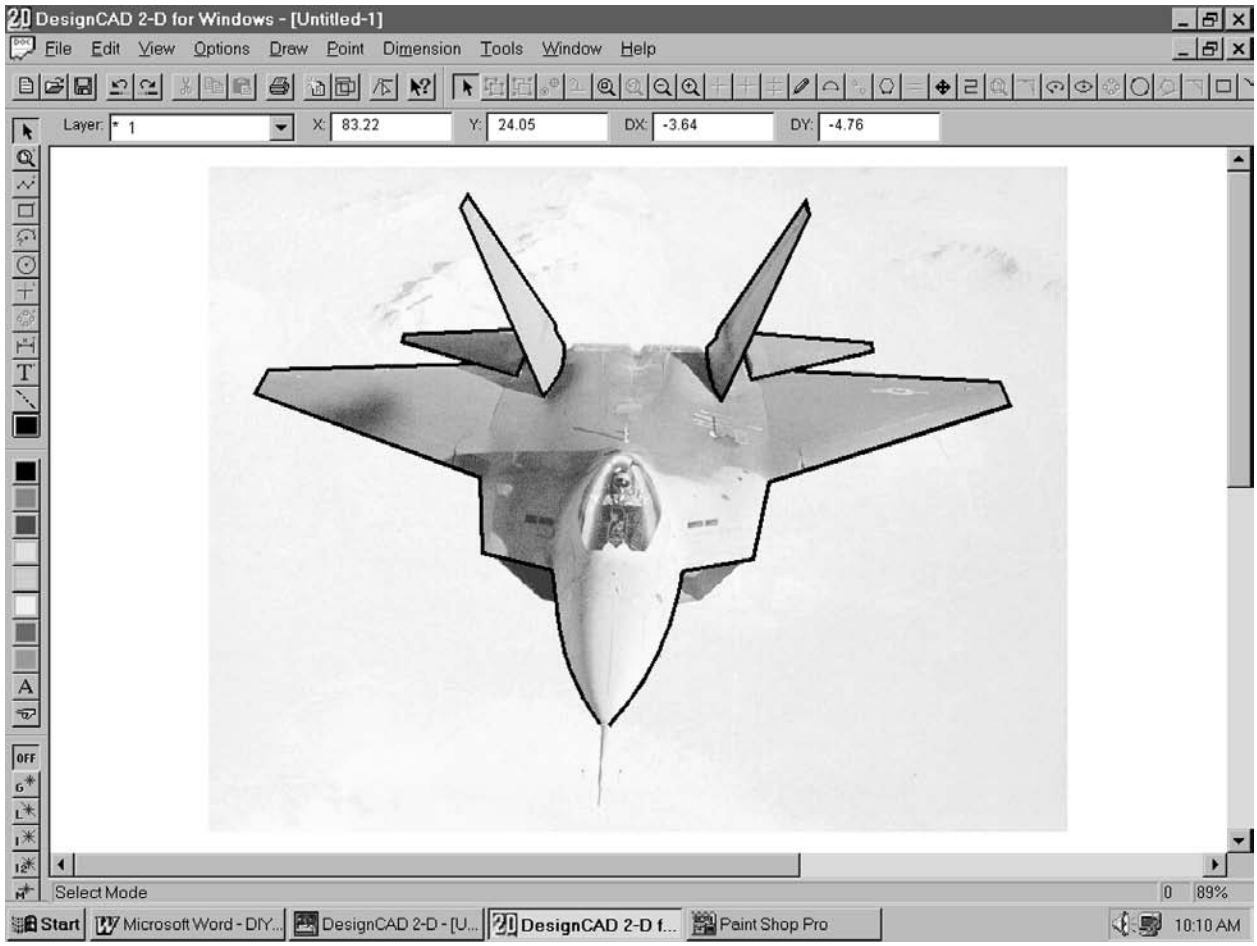


Fig. 10G—Tracing a Photo on a Computer

a. Tracing

If you have a scanner, you can scan a photograph of an object, import (load) the scanned image into a CAD program, and trace it easily, as shown in Fig. 10G, a traced photo of an aircraft (the black outlines are the tracing lines which are difficult to see in a black-and-white book). If you have a digital camera, you can take a photograph of the object and download (transfer) the image directly into your computer through a cable, without having to print and scan the photograph. Once it is in your computer, tracing the image is very easy. Since you use a mouse instead of an ink pen, you don't even need a steady hand.

b. Drawing From Scratch

A 3D (three-dimensional) CAD program enables you to construct an accurate, 3D representation of your invention within the computer, such as the pipe fitting shown in Fig. 10H. A 3D model is typically built by using and modifying basic geometric building blocks, such as boxes, cylinders, planes, and custom-defined shapes. You may create each part with specific dimensions, or you may simply draw a shape that looks about right. You can easily rotate the finished model to see it from any angle. You can also easily zoom in or out to adjust the viewing distance. Once you are satisfied with the view, you can print it as a line drawing (a drawing of dark lines on a light background). Therefore, you can make professional-looking drawings with a computer, even if you consider yourself to be a terrible artist.

3. Photography

Almost everyone has some degree of familiarity with photography. Obviously, a camera can take an accurate photograph or "drawing" of an object. While photographs may no longer be submitted as patent drawings (except in rare cases—see Section A above), they may be converted into acceptable line drawings by tracing them, by scanning them, or with a digital camera. Their images may be copied directly into and manipulated and cleaned up with a CAD program. Although photography spares you from having any drawing skills, you must have some photographic skills

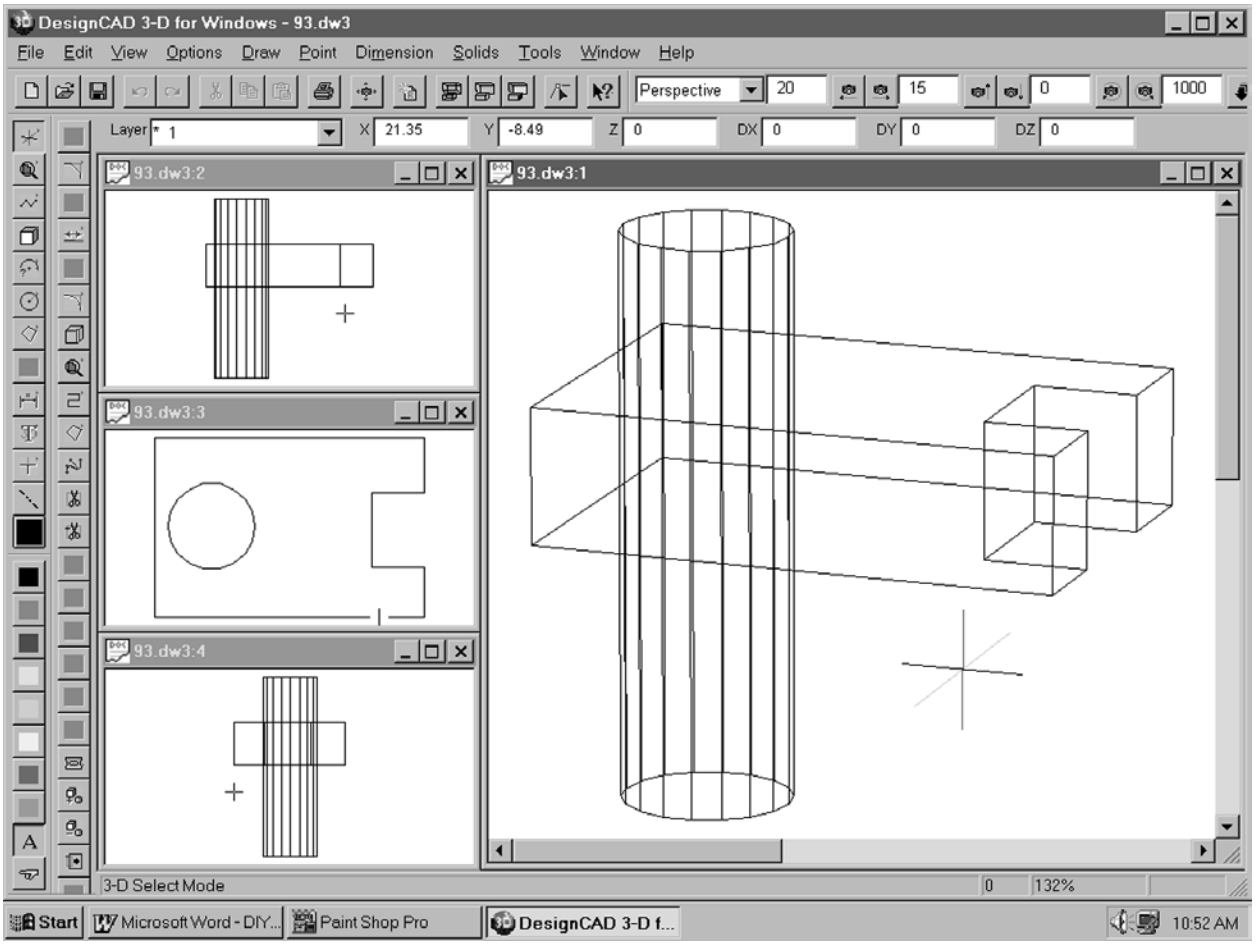


Fig. 10H—Building a 3D CAD Model

to take clear pictures, including a basic understanding of lighting and exposure. To take an accurate photograph, you will need a high-resolution camera with a selectable aperture, zoom and macro (close-up) lenses, and a tripod.

CAUTION

Although the PTO has not published anything official, current practice indicates that the PTO may not be rigidly enforcing its drawing rules. As a result some patents are issuing with sloppy drawings. I recommend that you file well-executed drawings, however, since these will avoid making a negative impression on your examiner or on any judge who may have to rule on your patent.

D. Consider Using a Professional Patent Draftsperson

If you don't feel competent to do your own drawings, you'll want to hire someone to do them for you. You can locate people who specialize in preparing patent drawings by letting your fingers do the walking through the nearest metropolitan area yellow pages. Look under the heading "Drawing Services," which should list several patent drafters. While expensive (about $30 to $50 per hour, or $75 to $150 per sheet), these people should do the job correctly the first time with CAD or in India ink on Bristol board. Also, you can use a "starving artist" who's proficient in the medium to be used (such as India ink or CAD), and reads and understands the rules thoroughly. Finally, if you don't mind working with someone at a distance, you can find many professional patent draftsmen on the Internet (search for "patent drawings"), in inventor magazines, and in the *Journal of the Patent and Trademark Office Society.*

E. Finaling Your Specification—For Paper Filing

Like the older manual drawing system, I will discuss the older paper filing system first and then how to file via the newer EFS-Web system. Even though filing by EFS-Web requires some learning I believe that the advantages of Web filing outweigh the learning task. Briefly the advantages of filing via EFS-Web are: ability to file from anywhere in the world that has Web access, a cheaper filing fee, no need to print out the specification and make file copies, no need to go to the post office to Express Mail the application and pay the Express Mail fee, no need to include a receipt postcard, no need for a transmittal letter, fee transmittal, credit card payment form or check, no need to wait several weeks to get a receipt postcard back to learn whether the application was filed okay, no risk of loss in the mails, etc. Note that if you file your application on paper, the PTO will still convert it to electronic format in their data processing system anyway because they are virtually a no-paper office now. Although I strongly recommend filing by EFS-Web I urge you to read the following sections on paper filing because these contain certain requirements and will give you more background and an understanding and appreciation of electronic filing.

Before putting them in final form, you (and perhaps an acquaintance of yours) should reread your specification, claims, and abstract, to make sure your writing is clear, complete, understandable, and free of grammatical and spelling errors. Another alternative is to prepare the application, then engage in a different activity such as a boat ride, and review the application the following day. Make sure that the main substantive requirements (as discussed in Chapters 8 and 9) are satisfied.

Try to do a perfect job with your patent application, because doing so will make a better impression on the examiner and anyone else, such as a judge or potential licensee, who reads it. Remember that any flaws or faults in the application will be seized upon by the examiner, whose job is to find flaws. The less excuse you give your examiner to find objections, the smoother will be the sailing of your application in the PTO.

Another, albeit nonlegal reason for striving for perfection was well stated by Pearl S. Buck:

> *"The secret of joy in work is contained in one word—excellence. To know how to do something well is to enjoy it."*

As with your drawings, you must format your specification, claims, and abstract on either U.S. or A4-size paper. All sheets (whether filing on paper or by EFS-Web) must be of the same size, free of holes, and have 2.5 cm (1") top, bottom, right, and left margins. Use 1.5 or double spacing and number the sheets at the top or bottom, in the center, and inside the margin. (All correspondence that you send to the PTO at any time should always be 1.5 or double-spaced; never use single spacing and never type on both sides of a sheet.)

If you think you may later want to file corresponding foreign applications, one way to minimize work is to type your application on U.S. letter-size paper with proper margins, so that if photocopied onto A4 size paper it will have the proper A4 margins. To do this print out or type the application on letter-size or computer paper (8.5" x 11"). Use a 1" left margin, 6.2" line width, 1" top margin, and a bottom margin of 0.3", so that the last line is almost at the bottom of the page. Save the original for possible later use in making an A4 version for an international application.

Alternatively, since modern word processing programs enable easy reformatting, it's easy to reformat a file for an A4 printout. Use a conventional typeface (do not use script) in at least 12-point type. Dot matrix printers are okay so long as the printout, or its photocopy, is clearly readable. You should not justify (line up the right margin of) your typing, since unjustified printing (as in this book) is much easier to follow.

You must start your claims and abstract on new pages, with the abstract on the last sheet, *after* the claims. The title should go on the first page. Don't submit an application on easily erasable paper, or on paper that has white pigment covering any typewritten lines, since these are not considered permanent, unaltered records. If you're not a good typist, and you don't have a word processor, one solution is to type your application on easily erasable paper or regular paper, cover the errors with white pigment, or erase them, type in the corrections, and then make bond paper photocopies of your typewritten original for submission to the PTO.

If, after putting your specification in final form, you find you must make a few minor changes (one or two words in a few places), it's okay to do so, provided you make these changes neatly in ink—in handwriting—and date and initial the margin adjacent to each change *before* you sign the application.

1. Typing and Filing Application on A4 Paper

Alternatively, you can type and file your U.S. application on A4 paper (or in an A4-formatted PDF), following the proper requirements for such matters as margins and line spacing (the abstract page). A4 paper (Hammermill #10303-6) can be obtained from a printer's supply house. Also, you can cut it yourself or have it cut for you. If you cut it yourself, the sheets should be 210 by 297 mm ($11^{11}/_{16}$" x $8^{1}/_{4}$") in size, with top margins 2 to 4 cm, left margins of 2.5 to 4 cm, and bottom and right margins of 2 to 3 cm, with sheets numbered consecutively at the top and typed with 1.5 line spacing—that is, four lines per inch or per 2.5 cm. Keep the originals and file an A4 xerographic copy. As stated, the PTO isn't very strict about format, but if you later file a PCT application (discussed in Chapter 12) these measurements must be followed to comply with WIPO (and EPO) requirements.

You don't have to file your drawings and your typewritten papers on the same size sheets; the drawings can be on A4 paper and the typewritten pages on U.S.-size paper, or vice versa. However, all drawing sheets must be the same size, as must all typed sheets. Never use both sides of a sheet, either for drawings or for the specification. A neatly typed specification will certainly make a very favorable impression on your examiner. If you can do your application with a laser printer with larger heading fonts, the result will be most impressive. As mentioned earlier, if you don't own a laser printer, consider using one at a copy center.

Some inventors have prepared their applications to look like patents, complete with narrow, single-spaced columns and cited references. Don't do this; your application should look like the sample in Chapter 8. When it issues the patent, the PTO will supply and print the list of references cited, your name, and all other data that normally goes on the abstract page.

The PTO suggests that you number all paragraphs (not including headings) of your application as follows: [0001], [0002], etc. (Include the brackets; don't use parentheses.) Since any changes must now be done by replacing entire paragraphs, such numbering will facilitate amendments. Fortunately, this is optional.

TIP

Minimize the potential for disaster by not placing cups of coffee or other beverages at your desk while handling your final papers.

2. Name All True Inventors and Only True Inventors

In the application and several of its forms, you're required to name the applicants or inventors. For example, the first page of the application lists the names, and Form 10-1 (Patent Application Declaration) must be signed by the inventors (see Figs. 10I (A and B) discussed below).

While anyone can apply for a patent, the named applicant(s) must be the true inventor(s) of the invention. So, if you discover an invention abroad or that your deceased uncle invented, you aren't allowed to apply to patent it in your name. If you've conceived the invention (as defined by the claims) entirely on your own, there are no coinventors. If you've invented it with someone else, both of you should be named as "joint inventors." But be sure that both of you actually are joint inventors. If somebody other than you played a significant role in conceiving the invention, review Chapter 16, Section B, for a more detailed discussion on inventorship.

PTO Rule 45 states that each joint inventor must have contributed something to at least one claim of the application. However, joint inventors need not have worked together or at the same time, their contributions need not be equal, and each need not have contributed to every claim

Doc Code: Oath
Document Description: Oath or declaration filed

PTO/SB/01 (04-09)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☑ Declaration Submitted With Initial Filing OR ☐ Declaration Submitted After Initial Filing (surcharge (37 CFR 1.16(f)) required)

Attorney Docket Number	Goldberger-Briskin
First Named Inventor	M. Goldberger
COMPLETE IF KNOWN	
Application Number	
Filing Date	
Art Unit	
Examiner Name	

I hereby declare that: (1) Each inventor's residence, mailing address, and citizenship are as stated below next to their name; and (2) I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention titled:

Food Chopper with Convoluted Blade

(Title of the Invention)

the application of which

☑ is attached hereto

OR

☐ was filed on (MM/DD/YYYY) _____ as United States Application Number or PCT International Application Number _____ and was amended on (MM/DD/YYYY) _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified application, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

Authorization To Permit Access To Application by Participating Offices

☐ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified patent application is filed to have access to the above-identified patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

[Page 1 of 3]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Fig. 10IA—Completed Declaration for Patent Application (Form 10-1A in Appendix 7)

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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DECLARATION — Utility or Design Patent Application

Direct all correspondence to: ☐	The address associated with Customer Number:		OR ☑	Correspondence address below

Name: Mildred Goldberger

Address: 1901 Kennedy Blvd.

City	State	Zip
Philadelphia, PA		10103

Country	Telephone	Email
US	215-555-0362	

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available. Petitioner/applicant is advised that documents which form the record of a patent application (such as the PTO/SB/01) are placed into the Privacy Act system of records DEPARTMENT OF COMMERCE, COMMERCE-PAT-7, System name: *Patent Application Files*. Documents not retained in an application file (such as the PTO-2038) are placed into the Privacy Act system of COMMERCE/PAT-TM-10, System name: *Deposit Accounts and Electronic Funds Transfer Profiles*.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

NAME OF SOLE OR FIRST INVENTOR:	☐ A petition has been filed for this unsigned inventor
Given Name (first and middle [if any]): Mildred	Family Name or Surname: Goldberger

Inventor's Signature	Date
Mildred Goldberger	11/11/2011

Residence: City	State	Country	Citizenship
Philadelphia	PA	US	US

Mailing Address: 1901 Kennedy Blvd.

City	State	Zip	Country
Philadelphia	PA	19103	US

☑ Additional inventors or a legal representative are being named on the 1 supplemental sheet(s) PTO/SB/02A or 02LR attached hereto

[Page 3 of 3]

Fig. 10IB—Completed Declaration for Patent Application (Form 10-1A in Appendix 7)

PTO/SB/02A (07-07)
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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

DECLARATION

ADDITIONAL INVENTOR(S)
Supplemental Sheet
Page _____ of _____

Name of Additional Joint Inventor, if any:	☐ A petition has been filed for this unsigned inventor		
Given Name (first and middle (if any))	Family Name or Surname		
Nathan	Briskin		
Inventor's Signature *Nathan Briskin*			Date 11/11/2009
Philadelphia Residence: City	PA State	U.S. Country	U.S. Citizenship
1919 Chestnut St. Mailing Address			
Philadelphia City	PA State	19103 Zip	U.S. Country

Name of Additional Joint Inventor, if any:	☐ A petition has been filed for this unsigned inventor		
Given Name (first and middle (if any))	Family Name or Surname		
Inventor's Signature			Date
Residence: City	State	Country	Citizenship
Mailing Address			
City	State	Zip	Country

Name of Additional Joint Inventor, if any:	☐ A petition has been filed for this unsigned inventor		
Given Name (first and middle (if any))	Family Name or Surname		
Inventor's Signature			Date
Residence: City	State	Country	Citizenship
Mailing Address			
City	State	Zip	Country

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Fig. 10IC—Completed Declaration for Patent Application (Form 10-1A in Appendix 7)

of the application. Under no circumstances should you name your financier, your boss, or anyone else who was not an actual inventor. If you are not a U.S. citizen or are living outside the U.S., your rights are as good as a U.S. citizen-resident. The PTO will correspond with you in any country. If you're filing from abroad, you may bypass U.S. mail delays by filing from and using a U.S. correspondence address or by filing via EFS-Web.

If joint inventors receive a patent, under Section 262 of the patent statutes, each joint patentee or owner of a patent can practice the invention without accounting to the other owners. Since this can be unfair, I have provided a Joint Owners' Agreement (Form 16-2, discussed in Chapter 16, Section C) to protect each owner. I strongly recommend that all joint owners sign this form to prevent injustice later.

Also, under PTO Rule 48, if the claims are changed or cancelled so that the original joint inventorship is no longer correct, the inventor who is improperly listed should be removed from the application. To record and preserve the contributions of the respective inventors, I have provided a Statement of Respective Contributions form as Form 16-1 (also discussed in Chapter 16, Section C). All joint applicants should fill out this form and sign and keep a copy so that inventorship can be changed with confidence later.

3. The Essential and Optional Parts of Your Application

A basic patent application filed by mail consists of a set of minimal but necessary parts. (I've marked with an asterisk those elements not required when using the EFS-Web filing system. For more information, read Section F.) However, for the reasons indicated below, you may wish to file additional or optional parts with your application. The following is a list of the minimal and necessary parts and also the additional and optional parts to get you familiar with them before I discuss them in detail later.

i. Minimal and Necessary Parts

- **Receipt Postcard.*** This is stamped by the PTO and returned to you to let you know when your application was filed and its serial number.
- **Patent Application Transmittal Letter.*** This tells the PTO what parts you're sending for your patent application.
- **Fee Transmittal.*** This makes it easy for the PTO to compute and verify your filing fee.
- **Credit Card Payment Form, Check, or Money Order.*** This pays your fees to the PTO.
- **Drawings.** These are required if the invention can be illustrated with a drawing.
- **Specification, Including Claims, and Abstract.** These parts are discussed in detail in Chapters 8 and 9.
- **Patent Application Declaration.** This states who the inventors are, that they've read the application, that they will disclose all material information, and that they understand that they can be charged with perjury if they lie on this form.

ii. Additional and Optional Parts

- **Request for Claim Drafting by Examiner Under MPEP 707.07(j).** This asks the examiner to draft claims for you if your application contains allowable subject matter.
- **Nonpublication Request (NPR).** This instructs the PTO not to publish your application (all applications are normally published 18 months after filing unless they've issued before then) so as to save you the publication fee and preserve your trade secret rights. If you foreign file the application, you must file a revocation of the NPR within 45 days of the date you foreign-file. If you're filing by EFS-Web, the NPR is included on the Application Data Sheet (ADS).
- **Assignment and Transmittal.** This transfers ownership of your application to another individual or company.
- **Information Disclosure Statement, PTO Forms PTO/SB/08 (A and B), and Copies of Any Non-U.S. Patent References.** This cites prior art of which you are aware.
- **Application Data Sheet, PTO Form PTO/SB/14.** This provides data about the application and the inventors. If you file via EFS-Web the PTO can extract your data from this form electronically, thereby obviating errors.

This book provides copies of actual PTO forms, most of which are now available in editable PDF format and can be completed and printed on your computer. (The PTO prefers that inventors use PTO forms.)

CAUTION

Although most PTO forms provided in PDF format can be completed and printed on your computer, the free Adobe Acrobat Reader program which you need to display and complete these forms currently does not permit saving any completed PDF forms. Therefore, you should always print out any PDF forms you have prepared, since the information you enter on the forms will be lost once you turn off your computer. Alternatively you can save a computer file of a completed PDF form by "printing" it to a new PDF using the free CutePDF program and printing out the new PDF.

4. Completing the Patent Application Declaration

Each patent application must be accompanied by a patent application declaration (PAD), which is a written statement under oath. Since the PAD is essential, I'll discuss it first, even though it's placed after the application when it's transmitted to the PTO. The other forms are important, but not absolutely essential, so I'll discuss them below. A PAD form is provided as Form 10-1A, and a completed example is provided above in Fig. 10I (A, B, and C).

While completing the PAD is a straightforward process, you should not treat it lightly. Rather, you should read and review it very carefully before you sign. If anyone can prove that you signed the declaration knowing that any of its statements were false, your patent can be held invalid. In fact, I've seen so many inventors sign PADs without reading or keeping a copy that I've provided Inventor's Commandment 16 at the beginning of this chapter. This advises you to read, understand, make sure you agree with, and keep a copy of all documents you sign.

You can view and complete the PAD on your computer, a typewriter, or with a pen (do it neatly). If you want to use the computer, go to the PTO's forms website (www.uspto.gov/web/forms/index.html), open the editable version of Form PTO/SB/01, and refer to Fig. 10I (A and B). Complete the form as follows:

Attorney Docket Number. No entry is needed, but if you prefer you may use any reference characters or names you wish to help you locate your patent application file.

First Named Inventor. Type the name of the sole inventor or the first inventor if there's more than one.

Leave the Application Number, Filing Date, Art Unit, and Examiner Name blank.

Declaration Submitted With Initial Filing. Check this box.

Title of the Invention. Type the title in this large box.

Under "the specification of which," check the box before "is attached hereto."

Leave all other blocks on the first page (Form 10-1A) blank.

Complete the second page of Form 10-1A (Fig. 10IB) as follows:

If you want the PTO to correspond with someone other than an inventor, check the box after "direct all correspondence to" and the box before "Correspondence address below." In the next four lines, complete the name, address, phone, and fax (if any) of any noninventor who is to receive correspondence. (If you have several applications on file at the PTO, you may want to get a Customer Number, which enables you to use a number instead of your address. You can apply for a Customer Number using PTO Form SB/125.)

If you want the PTO to correspond with an inventor, check the box after "Correspondence address below" and the PTO will send all correspondence to Sole or First Inventor.

While every joint inventor must sign most papers that are sent to the PTO, the PTO will correspond with one inventor only. Therefore you should list the inventor who is most available (or who has best access to a photocopier or scanner) in the top section of part two of the form.

In the bottom section of the form, complete the given name, family name, city (or county), state, and country of legal residence, citizenship, and mailing address of the sole or first inventor. Leave the date blank (unless you know the date it will be signed). Non-U.S. citizens have the same rights as U.S. citizens. The PTO will correspond with them no matter where they are and they don't have to be represented by an attorney in the U.S.

If there is more than one inventor, open and complete an additional sheet—Form PTO/SB/02A (see Fig. 10IC).

Note the wording on the first page of the PAD, which states that you have read and understand the specification and claims. If you haven't written the specification and claims, you should carefully read and understand them. Failure to do this can cause you embarrassment and may even result in fines for perjury.

The next sentence on page 1 of the PAD states that you acknowledge a duty to disclose information of which you are aware and that is material to the examination of the application. This provision is designed to impress upon inventors their duty to disclose (to the PTO) any information that could affect the examination or validity of the application. This means you must disclose to the PTO all relevant prior art that you have uncovered, any disadvantages of your invention of which you are aware, or any other act you think the examiner would want to be aware of when examining the application. Normally, all of this information will be provided in your Information Disclosure Statement (see Section G below). This disclosure requirement is very important and courts have, as mentioned, held patents invalid for "fraud on the PTO" when inventors have neglected this duty. Thus I've made it an Inventor's Commandment.

Finally, note the statement in the middle of page 2 of the PAD. This states that everything on the form is true and that you are liable for perjury, and the patent application and any resulting patent may be held invalid, if you knowingly lie. Each inventor should then sign and date the appropriate "Inventor's Signature" spaces in the middle and bottom sections of page 2 of the PAD.

CAUTION

The PTO rules are very strict in requiring that you should not sign the PAD until the entire application is completed. If the PTO finds out that you signed it before it was completed, or if you made any changes to the application after you signed the PAD, your application can be stricken or rejected entirely. If you need to make any changes to the application after it's finaled, you can do so neatly in ink, provided you date and initial each change and you do this before you sign the PAD. You can also make changes by amendment(s) after the application is filed (see Chapter 13), provided you don't add new matter to the application.

Claiming the Benefit of a PPA

If you have filed a Provisional Patent Application (PPA) and wish to claim the benefit of its filing date, you *must* do so in the "CROSS REFERENCE TO RELATED APPLICATIONS" section of your specification—as I have done in the sample specification included in Chapter 8.

5. Complete the Transmittal Letter and Fee Transmittal, Payment, and Postcard

Now it's time to prepare the routine paperwork necessary to actually send your patent application to the PTO. Here's how to do it.

a. Prepare the Transmittal Letter

The transmittal letter (Form 10-2; PTO/SB/05) should be completed as follows (see Fig. 10J for an example of a completed form):

Attorney Docket No. and **First Inventor:** Complete as you did with the PAD (see Section E, above).

Title: Complete as you did with the PAD (see Section E4, above).

Express Mail Label: If you use Express Mail (I strongly recommend it—see Section E8, below) to mail your application, type or write the Express Mail number from the post office's Express Mail Label here.

Box 1: Check Fee Transmittal Form and complete this form (Form 10-3) as explained below.

Box 2: Check this Small Entity Box if you qualify for a Small Entity (SE) fee. An individual or individuals qualify for SE fees if they haven't assigned (transferred) or licensed the invention (and they have no obligation to assign or license the invention) to a for-profit company with over 500 employees. (The PTO no longer requires that you file SE declarations.)

Box 3: "Specification" is used here in the statutory sense, meaning the specification (written description), including the claims and abstract (see Chapters 8 and 9). Check this box and type the total pages of all of these parts of your application.

Box 4: Check this box (unless your application has no drawings) and indicate the total number of drawing sheets.

Box 5: Oath or Declaration. Type the number of pages of your declaration. Your declaration should be two pages unless you have additional sheets for more than two inventors. Check Box A, since you're submitting a new application.

Box 6: Application Data Sheet. The PTO's fillable Application Data Sheet form (PTO/SB/14) can be saved to your computer. In case you don't have Internet access I provide Form 3-4 in Appendix 7. Filing this form is optional but it helps the PTO's clerical personnel maintain all the data about your application in one place.

Boxes 7, 8, 10, 11, 13, 15, and 18: Leave these blocks blank unless you're providing a computer program on a CD, a biosequence, a translation, a preliminary amendment, a certified copy based on a foreign filed application, or a continuing application (see Chapter 14).

Box 9: If you're filing an assignment with the application—see Section H below—check this box.

Box 12: If you're supplying an Information Disclosure Statement with the application (see Section G), check this box. Otherwise you must file your IDS within three months. If your IDS cites any foreign or nonpatent references, check the "Copies of citations attached" box. You don't have to send U.S. patent references to the PTO.

Box 14: Check this box and don't forget to complete and include a return receipt postcard—see Section 3.

Box 16: Nonpublication Request (NPR). I recommend that you file an NPR (Form 10-7; PTO/SB/35) and check this box. (If you file an ADS—see Item 6 above—you don't need to file a separate IDS if you check the "Request Not to Publish" on page two of the ADS form.) Don't file an NPR if you definitely will be foreign filing (or unless you want an early publication of your application to be able to use against infringers—see Chapter 15 for more information). If you check this box but later decide to foreign file, be sure to revoke your NPR within 45 days—use Form PTO/SB/36. If you don't file an NPR, your application will be published electronically 18 months after filing (if it hasn't issued by then), or sooner if you request it, and you will have to pay a stiff publication fee (see Appendix 4, Fee Schedule) when you pay the issue fee. The fee can be particularly unfair if, as sometimes happens, the patent issues within a few weeks of publication. Another reason for filing an NPR is that when your application is published, your prosecution history will

PTO/SB/05 (08-08)
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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	Goldberger-Briskin
First Inventor	M. Goldberger
Title	Food Chopper with Convolute Blade
Express Mail Label No.	DP123456789US1US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: **Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450**

1. ☑ **Fee Transmittal Form** (e.g., PTO/SB/17)
2. ☑ **Applicant claims small entity status.** See 37 CFR 1.27.
3. ☑ **Specification** [*Total Pages* 12] Both the claims and abstract must start on a new page *(For information on the preferred arrangement, see MPEP 608.01(a))*
4. ☑ **Drawing(s)** (*35 U.S.C. 113*) [*Total Sheets* 2]
5. **Oath or Declaration** [*Total Sheets* 2]
   a. ☑ Newly executed (original or copy)
   b. ☐ A copy from a prior application (37 CFR 1.63(d)) *(for continuation/divisional with Box 18 completed)*
      i. ☐ DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) name in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☐ **Application Data Sheet.** See 37 CFR 1.76
7. ☐ **CD-ROM or CD-R** in duplicate, large table or Computer Program *(Appendix)* ☐ Landscape Table on CD
8. **Nucleotide and/or Amino Acid Sequence Submission** *(if applicable, items a. – c. are required)*
   a. ☐ Computer Readable Form (CRF)
   b. Specification Sequence Listing on:
      i. ☐ CD-ROM or CD-R (2 copies); or
      ii. ☐ Paper
   c. ☐ Statements verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

9. ☐ **Assignment Papers** (cover sheet & document(s))
   Name of Assignee_____
10. ☐ **37 CFR 3.73(b) Statement** *(when there is an assignee)* ☐ **Power of Attorney**
11. ☐ **English Translation Document** *(if applicable)*
12. ☑ **Information Disclosure Statement** (PTO/SB/08 or PTO-1449) ☐ Copies of citations attached
13. ☐ **Preliminary Amendment**
14. ☑ **Return Receipt Postcard** (MPEP 503) *(Should be specifically itemized)*
15. ☐ **Certified Copy of Priority Document(s)** *(if foreign priority is claimed)*
16. ☑ **Nonpublication Request** under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent.
17. ☐ Other:_____

18. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:*

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: .....

Prior application information: *Examiner* _____ *Art Unit:* _____

19. CORRESPONDENCE ADDRESS

☐ The address associated with Customer Number: ☐ *OR* ☑ Correspondence address below

Name	Mildred Goldberger				
Address	1901 Kennedy Blvd.				
City	Philadelphia	State	PA	Zip Code	19103
Country	USA	Telephone		Email	

Signature	Mildred Goldberger	Date	23 MAR 2011
Name (Print/Type)	Mildred Goldberger	Registration No. (Attorney/Agent)	

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Fig. 10J—Utility Patent Application Transmittal (Form 10-2 in Appendix 7)

*Use latest fees—See Appendix 4, Fee Schedule.

be open to the public on the PTO's Public PAIR site. You may find this undesirable since it will give competitors and potential infringers a peek at your prosecution strategy and arguments before your patent issues. If you check the NPR box and later file abroad and you don't revoke your NPR and notify the PTO of such foreign filing within 45 days (use Form PTO/SB/36), your application will be regarded as abandoned unless you pay a stiff fee and declare that delay was unintentional. To fill out the NPR, merely fill in the name of the first inventor, the title, the docket number, and the date. The first inventor should sign it and print their name under the signature. You must file the NPR with the application; if you file it later it will be in vain.

Common Misconception: If the PTO publishes your patent application, this indicates that it believes your invention is patentable.

Fact: If you don't file an NPR at the time of filing the application, the PTO will publish your application 18 months later, regardless of its patentability.

Box 17: Other: If you attach any other documents, check this box.

If you're not sure your claims are entirely proper and would like the examiner to write claims for you if they find allowable subject matter, type "Request Under MPEP Section 707.07(j)" and file the Request (Form 10-8). (I recommend this.)

Box 18: Check the box before "Correspondence address below" and complete the next four lines as you did with the PAD (see Section E, above).

In the next-to-last line type the name of the inventor who is to receive correspondence from the PTO. This inventor should sign and date the bottom lines.

PPA: The form does not contain any box to refer to any PPA that you've filed. (Do not use Box 18 to refer to a PPA.) You should claim the benefit of any PPA that you've filed in the "CROSS REFERENCE TO RELATED APPLICATIONS" section of the specification, as explained in Chapter 8, Section I. Be sure to include the serial number and filing date of your PPA. You must file your regular patent application (RPA) within one year of your PPA's filing date if you want to claim the benefit of your PPA. If the last day of the one-year period falls on a weekend or holiday, you may file your Regular Patent Application (RPA) on the next business day after the weekend or holiday. The RPA must name at least one inventor who has been named in the PPA. If you file the application without a PPA claim in your specification, you must amend the specification within four months from your RPA's filing date or 16 months from your PPA's filing date.

b. Fill Out Fee Transmittal and Pay by Credit Card or Check

Fill out the Fee Transmittal (Form 10-3 or PTO/SB/17) by completing the name of the first (or only) inventor and docket number at the top right. Form 10-3 includes the fees as of this edition. Note, that the PTO usually raises its fees on October 1 of each year, so if you're filing after October 1, check for current fees at the PTO website. The PTO also changes its form PTO/SB/17 each October 1, so you can download the most current version of that, as well. See Fig. 10K for an example of a completed Fee Transmittal.

A. Fill out the First Named Inventor and Attorney Docket No. boxes in the upper right corner as before.
B. Check "Applicant claims small entity status" box if you qualify. You qualify for small entity status if you haven't assigned or licensed (or are not obligated to assign or license) the invention to a for-profit company with over 500 employees. See PTO Rule 27 (37 CFR 1.27).
C. Fill in the "Total Amount of Payment" box. (Do this last after you calculate the total.)
D. Check the appropriate Check, Credit Card, or Money Order box.
    1. Basic Filing, Search, and Examination Fees: Add the Small Entity fees in the "Utility" line and type the total ($545 on this form) in the rightmost column. You must pay all three fees together.
    2. Excess Claim Fees: The Basic Filing Fee entitles you to file up to three independent claims and 20 total claims, assuming that each dependent claim refers back to only one preceding claim (independent or dependent). If you don't have more than 20 total and three independent claims, you can leave this section blank.

        If you're filing over 20 total claims, three independent, or a multiple dependent claim (not recommended) fill out these blanks. Enter the total number of claims (independent and dependent) in the blank under "Total Claims." Subtract 20 from this figure, enter the difference under "Extra Claims," and type the fee for each extra total claim over 20 (Large or Small Entity) from the list in the upper right of this section under "Fee ($)," and type the product under the "Fee Paid ($)." If you have more than three independent claims, enter the total number of independent claims under "Indep. Claims," subtract 3 from this figure, enter the difference under "Extra Claims," type the fee for each extra independent claim over three (Large or Small Entity) from the list in upper right part of

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Effective on 12/08/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL
For FY 2009

☑ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 759.00

Complete if Known	
Application Number	
Filing Date	
First Named Inventor	M. Goldberger
Examiner Name	
Art Unit	
Attorney Docket No.	Goldberger-Briskin

METHOD OF PAYMENT (check all that apply)

☐ Check ☑ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

☐ Deposit Account Deposit Account Number: _____ Deposit Account Name: _____

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, **except for the filing fee**

☐ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☐ Credit any overpayments

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES Fee ($)	FILING FEES Small Entity Fee ($)	SEARCH FEES Fee ($)	SEARCH FEES Small Entity Fee ($)	EXAMINATION FEES Fee ($)	EXAMINATION FEES Small Entity Fee ($)	Fees Paid ($)
Utility	330	165	540	270	220	110	545.00
Design	220	110	100	50	140	70	
Plant	220	110	330	165	170	85	
Reissue	330	165	540	270	650	325	
Provisional	220	110	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee ($)	Small Entity Fee ($)
Each claim over 20 (including Reissues)	52	26
Each independent claim over 3 (including Reissues)	220	110
Multiple dependent claims	390	195

Total Claims	Extra Claims	Fee ($)	Fee Paid ($)
24 - 20 or HP =	4 x	26 =	104

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims	Extra Claims	Fee ($)	Fee Paid ($)
4 - 3 or HP =	1 x	110 =	110

HP = highest number of independent claims paid for, if greater than 3.

Multiple Dependent Claims Fee ($)	Multiple Dependent Claims Fee Paid ($)

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $270 ($135 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee ($)	Fee Paid ($)
_____ - 100 =	_____	/ 50 = _____ (round **up** to a whole number)	x _____	= _____

4. OTHER FEE(S)

	Fees Paid ($)
Non-English Specification, $130 fee (no small entity discount)	
Other (e.g., late filing surcharge): _____	

SUBMITTED BY

Signature	Mildred Goldberger	Registration No. (Attorney/Agent)	Telephone 215-555-0362
Name (Print/Type)	M. Goldberger		Date 11/11/2011

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Fig. 10K—Fee Transmittal (Form 10-3 in Appendix 7)

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Credit Card Payment Form

(Do not submit this form electronically via EFS-Web)

Please Read Instructions before Completing this Form

Credit Card Information

Credit Card Type:	☑ Visa ☐ MasterCard ☐ American Express ☐ Discover
Credit Card Account #:	2175-3210-1497-3218
Credit Card Expiration Date (mm/yyyy):	05/2011
Name as it Appears on Credit Card:	Mildred Goldberger
Payment Amount (US Dollars): $	545 *(The PTO may change this amount if incorrect)*
Cardholder Signature: Mildred Goldberger	Date (mm/dd/yyyy): 11/11/2011

Refund Policy: The USPTO may refund a fee paid by mistake or in excess of that required. A change of purpose after the payment of a fee will not entitle a party to a refund of such fee. The USPTO will not refund amounts of $25.00 or less unless a refund is specifically requested and will not notify the payor of such amounts (37 CFR 1.26). Refund of a fee paid by credit card will be issued as a credit to the credit card account to which the fee was charged.
Service Charge: There is a $50.00 service charge for processing each payment refused (including a check returned "unpaid") or charged back by a financial institution (37 CFR 1.21 (m)) .

Credit Card Billing Address

Street Address 1:	1901 Kennedy Blvd.		
Street Address 2:			
City:	Philadelphia		
State/Province:	PA	Zip/Postal Code:	19103
Country:	US		
Daytime Phone #:	215-555-0362	Fax #:	

Request and Payment Information

Description of Request and Payment Information:
Patent Application Filing Fee

☑ Patent Fee	☐ Patent Maintenance Fee	☐ Trademark Fee	☐ Other Fee
Application No.	Application No.	Application No.	IDON Customer No.
Patent No.	Patent No.	Registration No.	
Attorney Docket No. Goldberger-Briskin		Identify or Describe Mark	

If the cardholder includes a credit card number on any form or document other than the Credit Card Payment Form or submits this form electronically via EFS-Web, the United States Patent and Trademark Office will not be liable in the event that the credit card number becomes public knowledge.

Fig. 10L—PTO's Credit Card Payment Form (Form 10-4 in Appendix 7)

this section under "Fee ($)," and type the product under the "Fee Paid ($)."

I recommend that you do not file any Multiple Dependent Claims (MDCs) since the fee is high and examiners don't like them. However, if you do file any MDCs, enter the fee from the right side of this section in the MDC boxes. The fee is also in Appendix 4 and at the PTO's website.

3. Application Size Fee: If your specification and drawings exceed 100 pages, fill in the boxes in this section.

   Note that the fees for extra claims and MDCs are very high now.

4. Other Fee(s): Normally you won't have any additional fees at this stage, so you won't have to enter anything in the Other Fees section. However, if you want to obtain a somewhat speedier processing of your application, file a "Petition to Make Special" (see Section I below). If your petition requires a fee, type "Pet. Special" after "Other Fee" and include the amount in the "Other" box. If you're enclosing an assignment (see Section H below), type "Asgt. Recordal." on the blank line.

Total the amounts in Sections 1 to 4 and enter the sum in the "Total Amount of Payment" box at the top left of the form.

Finally, sign and print the corresponding inventor's name and phone number in the next-to-last line of the form and enter your phone number and sign and type the date on the last line.

The PTO accepts payment by credit card, check, or money order. If you pay by credit card, use the PTO's Credit Card Payment Form (CCPF—Form 10-4 in Appendix 7 or PTO Form 2038) in conjunction with the Fee Transmittal. The PTO will not accept debit cards or check cards that require the use of a personal identification number as a method of payment. Complete the CCPF as in Fig. 10L. Fill in all credit card information, including the amount to be charged to your credit card and your signature. Complete the Credit Card Billing Address. That information is required for verification of your credit card account. Under "Request and Payment Information," complete the "Description of Request and Payment Information" with a short statement of what you are paying for. In the present case, since you're paying a patent filing fee, write "Patent Application Filing Fee." Circle "Patent Fee" and write your docket number.

If paying by check or money order, make payment to Commissioner for Patents for the total amount, and attach it to the transmittal letter.

CAUTION

Be sure you have enough credit reserve in your credit card account or money in your checking account to cover the charge. If your payment bounces, you'll have to pay a stiff surcharge. (Note that if the PTO makes any fee or other errors, they are never penalized.)

Unfortunately, the PTO does not discount its fees for the needy, handicapped, or aged, or allow such individuals to postpone their fees.

c. Postcard

As stated in Inventor's Commandment 18 at the beginning of this chapter, you should enclose a receipt postcard with every paper you mail to the PTO. Those few attorneys who still file by mail use receipt postcards because the PTO receives many thousands of pieces of mail each day and occasionally loses some. It may be months before you receive any reply to a paper you've sent to the PTO, so you'll want to be assured it arrived safely.

Fig. 10M indicates how an application receipt postcard should be completed. Note that the back of the card contains the inventors' names, title of invention, the number of sheets of drawing, the number of pages of specification, claims, and abstract, the Patent Application Declaration, including the number of pages and date it was signed, the Patent Application Transmittal, the Fee Transmittal, CCPF or the check number and amount, and the NPR. Leave space at the bottom of the back of the card for the PTO to affix its date and Serial Number sticker. Occasionally, receipt postcards get lost because of their size and inconspicuous color. I have had better results by using colored (bright red) postcards.

Patent application of Mildred Goldberger and Nathan Briskin for "Food Chopper With Convolute Blade" consisting of two sheets of drawing, 12 pages of specification, claims, and abstract, Patent Application Declaration (2 pp., signed 2011 Nov 11), Patent Application Transmittal, Fee Transmittal, Credit Card Payment Form, Nonpublication Request, and Information Disclosure Statement received for filing today:

Fig. 10M—Completed Back of Receipt Postcard to Accompany Patent Application

The PTO will affix a sticker to your application postcard receipt with the date your papers arrived and the serial

number assigned to your application and mail it back to you as soon as they open your letter (which can take two weeks).

If you're filing from abroad, be sure that your return postcard has sufficient U.S. postage. You can confirm the postcard postage to any nation at the U.S. Postal Service website (www.usps.gov) and you can usually buy U.S. stamps abroad at a philatelic store.

6. Maintain an Orderly File

I often consult with "pro se" inventors (that is, those who have prepared and filed their own patent applications). Usually they bring me their "application" in the form of a sloppy, loose stack of mixed-up—and occasionally missing—papers. You'll avoid this problem, and the serious trouble it can get you into, if you'll heed Inventor's Commandment 19, shown at the beginning of this chapter, which admonishes you to mount all official papers (those sent to and received from the PTO) in a separate folder. It's good practice to write the date received on every paper you receive connected with your invention and also date every outgoing paper.

You should have a two-part folder or jacket for (a) your application, and (b) correspondence to and from the PTO. Keep your prior-art references in a large envelope loose inside the folder. To avoid confusion, I recommend that you keep other nonofficial papers concerning your invention in a separate folder.

7. Assembly and Mailing of Your Application—Final Checklist

Congratulations. You're now ready to mail your patent application to the PTO, unless you want to include an Information Disclosure Statement (Section G), an Assignment (Section H), and/or a Petition to Make Special (Section I). If you do want to include any of these with your application (optional), consult the indicated sections, complete your paperwork, and then come back to this point.

Assemble in the following order—and carefully check—the following items, which are the third part of the checklist I started in Chapter 8; please do this carefully and methodically, as "haste makes waste," especially when applying for a patent.

I suggest that you file a good photocopy of your signed application and keep the original of your application. In this way you can make copies later if the application is lost in the mail, or if you need to send them to manufacturers when you market your invention. (See Chapter 11.)

Staple the pages of the specification, claims, abstract, and declarations together. Attach the drawings with a paper clip or other temporary fastener. Only one copy need be filed.

If you mail the application by Express Mail, the papers should be transmitted in an Express Mail envelope. If the application doesn't have more than about eight pages, you should include one or two sheets of cardboard or internal envelopes to protect the drawing from bending.

You may send the application to the PTO by first-class mail, but if it's lost in the mail, you will lose your filing date I strongly recommend that you use Express Mail (see next section).

8. Using Express Mail to Get an Instant Filing Date

I strongly recommend you send your application to the PTO by Express Mail (EM). This will provide strong protection against loss of your application, secure full legal rights in case it is lost, give you an "instant" filing date (the date you actually mail your application), and will enable you to make absolutely sure your application is on file before the one-year period expires if a PPA was filed or the invention was put on sale, sold, or published. You must use "Express Mail Post Office to Addressee" service and you must indicate that you're using this service by completing the EM section at the top of your transmittal letter (Form 10-2, Fig. 10J). Type the EM number in the box at the top right, fourth line of Form 10-2.

The PTO's Rule 10 (37 CFR 1.10) states, in effect, that mailing any paper to the PTO by EM, with the EM number on the transmittal letter, is the same as physically delivering the paper directly to the PTO. Thus you can consider and call your application "patent pending" as soon as the postal clerk hands you the EM receipt, and your filing date will be the date on this receipt, provided all papers of the application are present and are properly completed. Since postal clerks often don't press hard enough when they date the EM receipt, I recommend you ask the clerk to stamp the receipt also with their rubber date stamp. If you've followed the final checklist above, your application will now be properly on file, i.e., patent pending.

CAUTION

You should NOT send your application by registered mail, certified mail, or private courier (Federal Express, etc.), and you should NOT use any "Certificate of Mailing" (Chapter 13). This is because Rule 10 does not give applicants any advantages if they use these methods of transmission. If you use any of these, your filing date will be the date the application is actually received at the PTO and you'll have no rights if your application is lost.

Final Checklist for Filing a Patent Application by Mail

- ☐ Return Receipt Postcard addressed to you with all papers listed on back.*
- ☐ If you are paying the filing fee by a check or money order, make it out for the correct filing fee (basic fee plus fee for any excess claims).* Make sure you have adequate funds on deposit or available on your credit card.
- ☐ Transmittal Letter and Fee Transmittal properly completed and signed.*
- ☐ If you are paying the filing fee using a Credit Card Payment Form, be sure it is made out for the correct filing fee (basic fee plus fee for any excess claims).* Make sure your credit limit is not in jeopardy.
- ☐ Drawing sheets all present; drawings clear, complete, and understandable. Drawings show every feature in claims. The sheet number and total number of sheets (e.g. "1/3") is on the front (below top margin) and your name is on the top back. Originals of drawings (or disk file if CAD used) kept in safe place.
- ☐ Specification, Claims, and Abstract included; description of invention clear and complete, all reference numbers, dates, spelling, and grammar double-checked, and claims drafted per Chapter 9.
  - ☐ Typing is clear and readable and 1.5 or double-spaced; use any normal font, 12-point minimum size.
  - ☐ Application is prepared in form for making proper A4 copies later if foreign filing contemplated (optional).
  - ☐ Top (above page numbers) and left margin is at least 2.5 cm on all pages.
  - ☐ No sentence is longer than about 13 words, paragraphs are not longer than about a half a page, and a heading is supplied about every two pages.
  - ☐ Claims are separated by an extra line.
  - ☐ Claims and abstract start on new pages.
  - ☐ No changes made after application signed.
- ☐ Patent Application Declaration (PAD) completed, signed, and dated in ink. (The PTO will accept a PAD, or virtually any other document which has a photocopy of your signature. However, you must always be able to produce the ink-signed original.)
- ☐ Parts are assembled in above order and copies are made for your file.
- ☐ Information Disclosure Statement, Forms 10-5 and 10-6 (A and B) with references attached if you're filing it with your application (see Section G below). Otherwise IDS must be sent within three months.
- ☐ Petition to Make Special, Form 10-9 and Supporting Declaration (optional to speed application processing; see Section I below).
- ☐ Assignment and transmittal letter (optional—see Section H below).
- ☐ Envelope addressed to:
  Mail Stop Patent Application
  P.O. Box 1450
  Alexandria, VA 22313-1450*
- ☐ If there are joint inventors, all should complete, sign, and date multiple copies of a Joint Owners' Agreement (Form 16-2; Chapter 16, Section C) and each inventor should keep an original. Do not file this with the PTO.
- ☐ Have another person check your papers for compliance with these rules.

* Not applicable for EFS-Web filings.

9. Receipt That Application Was Received in PTO

About two to four weeks after you send your application to the PTO, you'll get your postcard back, with the filing date of your application, and also with a bar code sticker indicating an eight-digit serial number (for example, "11/123,456") that has been assigned to your application. Within about a week to a month after that (sometimes longer), you should get an official filing receipt back from the PTO indicating that your application has been officially filed. Check the information on the filing receipt carefully and let the OIPE (Office of Initial Patent Examination) know if there are any errors.

If for any reason your application is incomplete or deficient, the PTO will not regard it as officially "filed" but rather as "deposited." The OIPE (Office of Initial Patent Examination) of the PTO will send you a letter stating the deficiency in your application and telling you to promptly remedy it. However, if you follow all the instructions in this chapter, including the checklist on the previous page, carefully, you'll get your filing receipt in due course.

Once you get the filing receipt, your application is officially "patent pending." As discussed in Chapter 7, unless you want to keep your invention a trade secret, (in case your patent application is eventually disallowed), you may publish details of your invention or market it to whomever you choose. You will not lose any legal rights in the U.S. or Convention or treaty countries (see Chapter 12). If you manufacture anything embodying your invention, you should mark it "patent pending" and keep your application, serial number, and filing date confidential to preserve rights in non-Convention countries and prevent access by potential copiers. As stated, if you mailed your application by Express Mail and you faithfully followed the checklists, you may refer to your invention as "patent pending" as soon as you get the EM receipt.

F. Finaling Your Specification for EFS-WebFiling

The PTO's Electronic Filing System using the Internet (EFS-Web) enables patent applications, amendments, and other documents to be filed electronically over the Internet. However, it requires some time to master, as well as time for conversion of documents to the Portable Data Format (PDF). But its advantages are so great that even if you're filing just one application, it is worth the effort. As stated, its advantages are: You can (1) file an application anytime and from anywhere that has Internet access, (2) obtain instant confirmation of receipt of documents by the PTO, (3) send an application to the PTO without having to go to the post office to get an Express Mail receipt, (4) file with confidence because you will get an instant acknowledgment without having to prepare a postcard or wait for a postcard receipt, (5) pay a reduced filing fee—see Fee Schedule in Appendix 4, and (6) file an application without having to prepare an application transmittal, a fee transmittal, receipt postcard, or check or Credit Card Payment Form (CCPF).

Become a Registered eFiler (If Time Permits)

If you plan on filing electronically and if you can wait several weeks to file, I recommend you become a registered eFiler. You'll have to deal with red tape, including filling out a form to obtain a customer number, sending a notarized certificate to the PTO, obtaining access codes, and calling the PTO to confirm, but as a registered eFiler you'll be able to track your application's progress and file additional documents or corrections. To register go to www.uspto.gov/ebc/index.html, click "Register Now," and follow the detailed instructions. If you can't wait several weeks, you can use EFS-Web to file an application as an unregistered eFiler and register later.

The PTO now has an optional "e-Office Action" service whereby they will send all correspondence to up to three of your email addresses in lieu of postal mail. To guard against lost emails, they will send a postcard reminder if the email is not opened within a week. This service can be useful if you're traveling, your mail is unreliable, or you want to get correspondence quickly. If you're a registered eFiler you can sign up for this service at www.uspto.gov/patents/ebc. Then click "Private PAIR," sign in with your Digital Certificate and Password, click and open "View Customer Number Details," click "Request Customer Data Change[s]," and select "Receive Correspondence Notification via e-Mail."

If you're ready to file electronically, take the following steps:

- **Prepare the Application as Usual:** Before you go online, prepare the entire application as instructed in Chapters 8 to 10, except omit the Application Transmittal form, Fee Transmittal form, Receipt Postcard, and check or CCPF. Sign the Declaration as usual.
- **Convert Your Application to PDF Format:** Convert all documents of the application (Drawings, Specification, including any Claims and Abstract), to PDF documents in your computer. There are many programs available (some of them free) that can convert documents to

PDF format. In addition some programs—for example, newer versions of Microsoft *Word*—come with PDF-conversion as a built-in feature. At some loss of detail you can also scan the documents directly to PDF files. Some scanners, such as the Canon LiDE series, come with enabling software. You may want to scan each document to a separate multipage PDF file and give it a descriptive name, for example, Dwgs.pdf and Spec.pdf. In any case, all PDF documents submitted via EFS-Web must have a minimum resolution of 300 DPI and a white background. Put all of the PDF application computer files into a separate PDF Application Holding Folder with a suitable name (for example, Derailleur RPA PDFs).

- **Prepare a PDF Data Sheet:** Find the fillable and savable EFS Application Data Sheet (ADS) (PTO Form SB/14) by going to www.uspto.gov/ebc, then click EFS-Web Unregistered eFilers, then Electronic Filing, then eFiling Forms, or go directly to www.uspto.gov/ebc/portal/efs/US_ADS_Form_SB_14.pdf. If you have a PC, right-click the SB/14 form listing and select "Save Target As …" and save the form on your desktop. This will enable you to fill in the form, save it with the data you filled in, and revise it later if necessary. If you fill it online, you won't be able to do this. After you've saved Form SB/14 to your desktop, check Highlight Required Fields. The program will then automatically fill in the header blanks. Check "Request Not to Publish" (recommended) but remember to revoke your Nonpublication Request (NPR) if you foreign file later. Then, save the completed form using a suitable name, such as Data.pdf, in your PDF Application Holding Folder with your other PDF application forms.

Yes, There Is a Way to Save the Fillable PDF Declaration Form

Other than PTO/SB/28, some of the forms you may use for EFS-Web filing may state, "You cannot save data typed into this form. Please print your completed form if you would like a copy for your records." How can you obtain a PDF copy of a completed form? Instead of filling it in online, printing it, and scanning it to PDF, I recommend that you install the free file converter CutePDF Writer (or any other PDF creation program with a print-to-PDF feature) and then, after you fill in the Declaration Form online, open the printer window and select in the Name window CutePDF Writer (or other PDF printer, if you're using a different program). Then click and save a PDF file of the Declaration form.

- **Sign On:** Go to www.uspto.gov/ebc/index.html. If you haven't registered as an eFiler, click on EFS-Web Unregistered eFilers and fill in your name and email and the type of application (Provisional) and click Continue. If you have registered, click on EFS-Web Registered eFilers. Then fill in your Digital Certificate and Password, which you already have. You can recover the Digital Certificate by browsing to Program Files/USPTO in your computer and opening the file with your name and an .epf suffix, for example, John Smith.epf. Click Authenticate and then certify your identity, select New application, and the type of application, and click Continue. If you get stuck at any time, call the PTO's Electronic Business Center at 866-217-9197.
- **Application Data:** On the Application Data page fill in the title of the invention, a docket number for the application of your choosing (optional, but a suitable docket number can be something like "Krypton Derailleur"), and your name and Customer Number or address. It's best to copy this data electronically from your Data Sheet so that everything will be consistent. (Even if you're not registered you can obtain a Customer Number, which will take a few days but will save you from having to type your address each time.) Click Continue.
- **Attach PDF Files:** In the Attach Documents page click the Browse button and find your PDF Application Holding Folder which contains the PDF files of your application. Select one of your PDF application files, e.g., the Data file, click open, and you should see it in the Files To Be Submitted box adjacent the Browse button. Then open the Category pull-down menu adjacent the middle window and select Application Part. Then open the rightmost pull-down menu and select Application Data Sheet. (Make sure the No button opposite Does your PDF file contain multiple documents is checked because it's more difficult to work when everything is in one PDF document.) Then click the Add File button and another row of three windows will open. Repeat the above steps for each of your other PDF application files (that is, Dwgs.pdf, Spec.pdf, and Dec.pdf), selecting the Document Description in the third window for each. When you've attached all of the PDF files in your PDF Application Holding Folder, click the Upload & Validate button at the bottom.
- **Review Documents:** After a few minutes, you'll eventually get a Review Documents page, which should show all of the documents you've attached. Make sure your entire application (drawings, specification, data sheet, and Declaration) are there and there are no

errors. If any errors are indicated, you'll have to go back and fix them. Occasionally, the PTO's server may reject one or more PDF documents for technical reasons—for example, the document contains nonembedded fonts or it has been scanned in gray format. If the PTO's server rejects your PDF because of embedded fonts or another fatal error, it will post a red inverted triangle (▼) next to the name of the file. Many of these problems can be eliminated by recreating the PDF—that is, open your PDF creation program and convert the document a second time to a new "image" PDF. If you convert the PDF to an image PDF the server may object to it using a yellow inverted triangle, which indicates that the error isn't fatal, in which case you can proceed. It merely means that the PTO will have to copy your data manually into their data processing system. Sometimes the PTO's server (computer) will fatally reject a PDF because you saved it using a newer version of a PDF Reader program that the PTO's system doesn't support, e.g., Adobe Reader 9.4; in this case you will have to remove this version from your computer and download an earlier version, e.g., Adobe Reader 8.2 When there are no fatal errors click Continue.

- **Calculate Fees:** On the Calculate Fees page, select your entity size, which will usually be Small Entity. Check and complete all the applicable boxes on the form and then click the Calculate button. (The Search, Filing, and Examination fees must all be paid at once.)
- **Submit Application:** This page will list all of your PDF files, a Fee-Info.pdf file, and the filing fee. If everything is okay, click the Submit button at the bottom to bring up a Congratulations! page with an assigned Application Number, Confirmation Number, and Total Fees due. Click the YES! I want to pay now button at the bottom.
- **Review Fees and Select Payment Method:** Unless you have a PTO Deposit Account or are set up for EFT, select Charge Credit Card, then the Start online payment process to bring up the payment page. Fill out the blanks and click the Confirm button at the bottom.
- **Acknowledgment Receipt:** If everything is okay you'll get an Acknowledgment Receipt, which is analogous to the receipt postcard that was used for mailed filings. The Acknowledgment Receipt will list the Application (Serial) Number, the Confirmation Number, and the application data and parts that you've filed. Congratulations! You've bypassed the post office, filed an application electronically, and have gotten an instant filing acknowledgment. Select Print This Page to print the page for your records. In due course you'll get an official filing receipt by mail, as usual.

Enhanced First Action Interview Pilot Program for Registered eFilers

If you are a registered eFiler, you may wish to avail yourself of a new program which the PTO is testing. Under the Enhanced First Action Interview Pilot Program applicants will have an opportunity to interview their examiner after the examiner makes a search. The goal of the program is to dispose of application early without the need for Office Actions and amendments. Under the program, the examiner will send a first Office Action (examination report) and you will study it and the references cited and request an interview with the examiner and hopefully negotiate whatever claim amendments and other changes will put the application in condition for allowance. If you and the examiner cannot come to any agreement, then prosecution will revert to the normal procedure. If you feel confident enough to study the references in an Office Action, redraft your claims, and handle an interview, I recommend you enter the program. The program is on a trial basis but may be extended or implemented permanently. To see the PTO's notices with the full details go to the PTO's home page (www.uspto.gov) and enter "First Action Interview Pilot Program" in the search box. To enter the program you must be a registered eFiler and you must file a request on Form PTO/SB/413C.

- **IDS:** As stated in the next section, you must generally file an IDS (Information Disclosure Statement) within three months after filing if you know of any relevant prior art. If you're a registered eFiler you can file an IDS online. Bring up a fillable IDS form by going to www.uspto.gov/ebc, then click EFS-Web Unregistered eFilers, then Electronic Filing, then eFiling Forms. Open the SB/08a form, check Highlight required fields, and fill them out. The program will automatically fill in the header blanks. Then save the completed form using a suitable name, such as IDS.pdf, and file it online in a similar manner as you filed the PDFs of the application. If you're unregistered you'll have to fax or mail the IDS. Remember that you don't have to accompany the IDS with copies of any U.S. patents or published patent applications, but you do have to accompany it with copies of any foreign patents (with an explanation of relevance) and copies of any nonpatent prior art (referred to as Non-Patent Literature (NPL)).

- **Assignments:** If you want to file an assignment, you must do this through a separate part of the PTO's website. After you complete your electronic filing and have your Acknowledgment Receipt, or after you receive your official filing receipt by mail, fill in the Serial Number of your application on the assignment, and complete and sign the rest of the assignment. Then convert the signed assignment to PDF and go to http://epas.uspto.gov and follow the instructions.

Designs: To file a design application via EFS-Web, prepare it as instructed below, except omit the postcard, Design Application Transmittal, Fee Transmittal, and CCPF or check. Do prepare the drawings, preamble, specification, and claim, and prepare and sign and date the declaration as instructed above and save these documents as PDF files. Then proceed as in steps 1 to 14 above.

G. File the Information Disclosure Statement Within Three Months

The PTO's rules impose on each patent applicant a "duty of candor and good faith" toward the PTO. This means that all inventors (and attorneys) have a duty to disclose to the PTO information (prior art and any other information such as relevant litigation) of which they are aware. The information must be of the type that might influence the patent examiner in deciding on the patent application. (This duty is embodied in Inventor's Commandment 17, and discussed in Section G above.) To comply with the "prior art" part of Inventor's Commandment 17, all applicants should submit an Information Disclosure Statement (IDS) at the time of filing the application or within the following three months. It's not enough to cite the prior-art references in the Prior Art section of your specification. You must cite them on a PTO/SB/08 form and supply copies of non-U.S. patent references to the PTO.

Even if it weren't required, it's to your advantage to file an IDS and to list as many relevant prior-art references as possible in order to have them considered and noted by the examiner. In this way they will be listed as "References Cited" in the patent. This creates a presumption that the claims of your patent are patentable over these references—that is, you'll have put these references behind you. You may file the IDS with your application but I suggest that you file the IDS afterward; this will prevent overload while preparing your basic application.

The IDS actually consists of an IDS cover letter (Form 10-5 or PTO form SB/21) and the actual IDS (Form 10-6 (A and B) or PTO/SB/08 (A and B), on which you list the prior art. A filled-in sample is provided in Figs. 10O, 10P, and 10Q. (If you file via EFS-Web—discussed in Section F—you should first fill out the PTO/SB/08 form and make PDF copies of any non-U.S. patent references (known as Non-Patent Literature or NPL). You will not need a cover letter because the EFS-Web form provides its own cover letter.)

The IDS should list all prior-art references known to the inventors (and any assignees) that are relevant to the patentability of the application. These should include all the references you discovered in your patentability search (see Chapter 6), plus any other prior art of which you're aware, including even your own papers. In addition, the inventors must include with the IDS a copy of each cited non-U.S. patent reference and a discussion of the relevance of any non–English-language references to the invention. You must cite all references even if you discussed them in the prior-art section of your patent application. (If you aren't aware of any prior art, don't file an IDS.) You should remove all marks and notes from any references that you send to the PTO. If you have compiled a very large number of references, list only those that are truly relevant (about 20 or so) and don't include any cumulative (duplicative) references.

If you cite a significant number of irrelevant references, a court may hold that you tried to deceive the PTO by burying the relevant references with a large number of irrelevant references.

As a general rule, if you are not sure whether a reference is relevant enough to cite, it's best to cite it. It doesn't cost anything to cite an additional reference and the penalty for not citing a relevant reference is severe—your patent can be held invalid. One way to determine whether a reference is relevant enough to cite as prior art in your IDS is to consider not citing it in your IDS and then assume you get a patent. Further assume that you sue an infringer and they find out through discovery that you knew about the reference. If the infringer then cites the reference to the judge and charges you with fraud on the PTO for not citing it, would a reasonable judge be likely to consider that the reference was relevant enough that you should have cited it to avoid fraud on the PTO?

Note that the PTO's Rule 56 states that applicants should examine the following to be sure that they disclose all relevant prior art:

1. Prior art cited in search reports of a foreign patent office in a counterpart application.
2. The closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

The PTO considers that information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and (a) it establishes, by itself or in combination with other information, a *prima facie* (on first sight) case of unpatentability of a claim; or (b) it refutes, or is inconsistent with, a position the applicant takes in (i) opposing an argument of unpatentability relied on by the Office, or (ii) asserting an argument of patentability.

A *prima facie* case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification. This is done before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

As mentioned, you can send the IDS with your application instead of taking advantage of the three-month grace period. In this event, the names of the inventors and title of your invention are the only information you need to put at the top of Form 10-5. Don't fill out the Certificate of Mailing at the bottom of the form. If you send it after your application is filed, you'll know the serial number, filing date, and group art unit, and can insert them. Also, you should fill out the Certificate of Mailing at the bottom of the form.

The blanks in Forms 10-5 and 10-6 are self-explanatory. Information about the Art Unit (requested in the upper right-hand corner of Form 10-6) is on your filing receipt. Before each patent number in the Foreign Patent Documents section, you may use a two-letter international country code, as indicated. The most common county codes are FR (France), JP (Japan), CN (China), GB (United Kingdom), CA (Canada), EP (Europe), and DE (Germany). In the right-hand column, headed "Pages, Columns …," you can list any places in the document that you feel are particularly relevant, but this is optional since the pertinent rules (Rules 97 and 98) require that you merely cite the documents.

If you include any non–English-language reference on Form 10-6, Rule 98(a)(3) requires that you also provide a concise explanation of its relevance on a separate paper or in the specification. I recommend that you also state how your invention, as claimed, differs physically from this reference(s). State the relevance of any non-English references, and any discussion as to how your invention differs, on Form 10-5. Fig. 10O provides an example.

If you send in the IDS with the application, note this on the postcard and transmittal letter that you send with your application and don't fill out the Certificate of Mailing at the bottom of Form 10-5. If you send it in after the application is filed, send it with a separate postcard and fill out the Certificate of Mailing. Again, address the front of the card to you; the back should read as in Fig. 10N. If you file the application by EFS-Web and include the IDS, you don't have to send the PTO a postcard. The acknowledgment receipt you receive will list the IDS. If you file by EFS-Web and you're a registered eFiler (or become one later), you can file the IDS via EFS-Web after you get your official filing receipt. If you file by EFS-Web and you're not a registered eFiler, you will have to mail the IDS and cover sheet with a receipt postcard.

If you haven't followed my instructions in Chapter 6—that is, you haven't made a search and are not aware of any prior art—as stated, you don't have to file an IDS. The PTO won't deny or delay your application if you don't file an IDS. However, if they (or an infringer whom you later sue for patent infringement) discover that you knew of relevant prior art and didn't file an IDS, your patent application or patent can be held invalid for "fraud on the PTO." This is so even if the examiner discovers the reference you withheld and cites it in a regular Office Action. (See Fig. 10A.) In one case, a Dallas patent law firm neglected to disclose some relevant prior art to the PTO in its client's patent application. The client got a patent and sued on it but because of the cloud the nondisclosed art cast on the patent, it had to settle the suit for far less than it would have gotten if the firm had disclosed the prior art to the PTO. The client then sued the firm and a jury awarded the client $72 million in damages for the firm's omission!

Suppose you are aware of information other than prior art that may be material to patentability—for example relevant litigation, an assertion by another person claiming to be an inventor, or a sale of a product embodying the invention before the filing date (but not before your date of invention). You have a duty to disclose this information also. You can do this with a narrative statement on a form such as Form 10-5. Also, be sure to state why the information does not negate the patentability of your invention.

Information Disclosure Statement, Form PTO/SB/08 (A and B), and *[insert number]* References in patent application of *[insert name(s) of inventor(s)]*, Serial No. _____, Filed _____

received for filing today:

Fig. 10N—Back of Postcard for Sending IDS After Filing

In the United States Patent and Trademark Office

Serial Number: 11/123 456

Appn. Filed: 2011 Nov 11

Applicant(s): M. Goldberger & N. Briskin

Appn. Title: Food chopper with convolute Blade

Examiner/GAU: / 3240

Mailed: 2011 Dec 13, Thu

At: Philadelphia, PA

Information Disclosure Statement Cover Letter

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Attached is a completed Form PTO/SB/08(A&B) and copies of any non-U.S. patent references cited thereon.
Following are comments on any non-English-language references pursuant to Rule 98:

Rasmussen shows a fruit peeler with a bent guide for controlling the thickness of the fruit as it is being peeled. **Gillet** shows a knife mounted parallel to a space with knife that can be tilted out or in to adjust the spacing of its edge.

None of the references shows a knife for making a cut of controlled depth wherein a flat-bladed knife with an elongated sharpened edge with an outward protrusion attached to the blade that is spaced back from the edge for limiting the depth of cut that can be made by said edge when it is used to **cut** in a direction **perpendicular** to the plane of the blade, as it is recited in independent claims 1 and 17, and hence their dependent claims 2 to 11 and 18 to 20.

To the contrary, all of the references show guides that are mounted generally parallel to the blade for limiting the thickness of the **peel** that can be cut by the blade when it is used to peel in a direction **parallel** to its plane.

Also, none of the references show any blade having a substantially right-angle bend parallel to its direction of elongation, as it is recited in independent claim 12 and its dependent claims 13 to 16.

Very respectfully,

Applicant(s): Mildred Goldberger
Nathan Briskin

Enc.: PTO/SB/08(A&B)

c/o: M. Goldberger, Applicant Pro Se
1901 Kennedy Blvd.
Philadelphia, PA 19103

Telephone: 215-555-0362

Certificate of Mailing

I certify that this correspondence will be deposited with the United States Postal Service as first class mail with proper postage affixed in an envelope addressed to: "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" on the date below.

Date: 20 11 Dec 13 Mildred Goldberger, Applicant

Fig. 10O—Completed IDS Cover Letter (Form 10-5 in Appendix 7)

PTO/SB/08a (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 2

Complete if Known	
Application Number	11/123,456
Filing Date	2011 Nov 11
First Named Inventor	M. Goldberger
Art Unit	3240
Examiner Name	
Attorney Docket Number	Goldberger-Briskin

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A	US- 21,695	10-15-1858	Oot	
	B	US- 602,758	11-11-1898	Landers	p4, 11.21-22
	C	US- 2,083,368	8-9-1937	Gambino	
	D	US- 2,968,867	10-11-1961	Wolff	
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
	E	DK-69,640	5-22-1949	Rasmussen	p2, ll. 13-17	
	F	FR-1,029,924	3-23-1953	Gillet		

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Fig. 10P—Information Disclosure Statement (Form 10-6A in Appendix 7)

PTO/SB/08b (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 2 of 2

Complete if Known	
Application Number	11/123,456
Filing Date	2011 Nov 11
First Named Inventor	M. Goldberger
Art Unit	3240
Examiner Name	
Attorney Docket Number	Goldberger-Briskin

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	G	PHILLIPS, Food Comminuting, Restaurant News, April 1959, Food Press, Willow Grove, PA	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.
1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.
This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Fig. 10Q—Information Disclosure Statement (Form 10-6B in Appendix 7)

US00D404074S

United States Patent [19]

Sarriugarte et al.

[11] **Patent Number: Des. 404,074**

[45] **Date of Patent: **Jan. 12, 1999**

[54] **CARD, PLACARD, OR RIGID PICTURE HOLDER**

[76] Inventors: **Jon Sarriugarte**; **Sina Hanson**, both of 2601 Adeline St., Oakland, Calif. 94607

[**] Term: **14 Years**

[21] Appl. No.: **69,268**

[22] Filed: **Mar. 21, 1997**

[51] **LOC (6) Cl.** **19-02**

[52] **U.S. Cl.** **D19/90**; D20/43; D19/86; D6/313

[58] **Field of Search** D6/313; D11/121; D20/43; D19/65, 75, 78, 86, 87, 90, 91, 95, 99, 100; 211/69.1–69.9, 181.1; 40/606, 659, 642.02; 248/229.26, 175, 475.1, 623; 5/246, 252, 256

[56] **References Cited**

U.S. PATENT DOCUMENTS

D. 26,320	11/1896	Arkin	D19/86
D. 27,364	7/1897	Hill et al.	D20/43
D. 32,692	5/1900	Muth	D20/43
D. 178,356	7/1956	Galef	D19/86
D. 203,185	12/1965	Leaboldi	D19/87
D. 247,265	2/1978	Ledebuhr	D20/43
3,474,555	10/1969	McCaffrey	40/659
3,721,414	3/1973	Yoder	248/175

Primary Examiner—Martie K. Holtje
Attorney, Agent, or Firm—David Pressman

[57] **CLAIM**

The ornamental design for a a card, placard, or rigid picture holder, as shown and described.

DESCRIPTION

FIG. **1** is a front elevational view of a card, placard or rigid picture holder showing our new design, the rear view being substantially a mirror image thereof;
FIG. **2** is a right side elevational view;
FIG. **3** is a left side elevational view;
FIG. **4** is a top plan view; and,
FIG. **5** is a bottom plan view thereof.

1 Claim, 3 Drawing Sheets

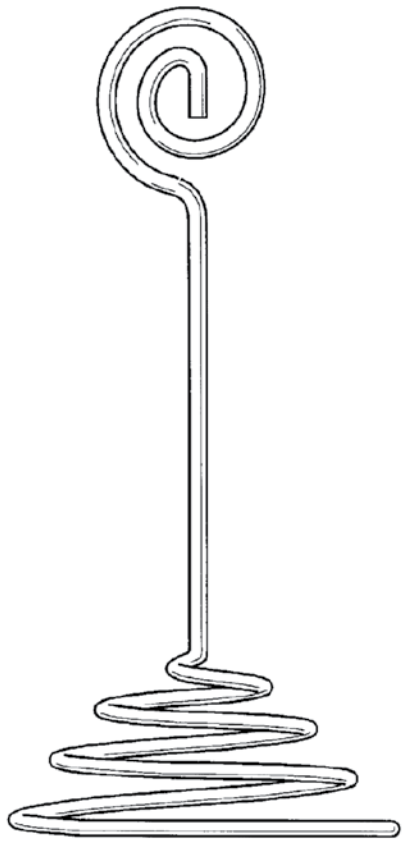


Fig. 10R—Sample of Design Patent

H. Assignments

As I mentioned, a patent application must be filed in the name or names of the true inventor or inventors of the invention claimed in the patent application. The inventors then become the applicants for the patent, and the law considers that they automatically own equal shares of the invention, the patent application, and any patents that may issue on the application (Chapter 16, Section B). However, inventorship can be different from ownership. Often all or part of the ownership of the invention and the patent application must be transferred to someone else, either an individual or a legal entity, such as a corporation, a partnership, or an individual. To make this transfer, the inventor(s) must "assign" (legally transfer) their interest. The assignment transfers ownership (or part of it) from the inventor(s) to another entity. However, inventorship remains the same after an assignment is made. (Directions and forms for completing the assignment are in Chapter 16, Section E.)

If you have assigned the application to another and you want to send the assignment to the PTO for recording (highly advised), you can either send it in with the patent application or at any time afterward. I prefer to send in assignments later, after I get the postcard receipt back, when I know and can add the serial number and filing date of the application to the assignment. This will make the two documents (the assignment and the application) correspond to each other more directly. In this case, you can add the serial number and filing date to the assignment in the spaces indicated. Then prepare an Assignment "Recordation Form Cover Sheet" (Form 16-4 or PTO 1595). In space 1, the conveying parties are the inventor applicants. In space 2A, the receiving party is the assignee—the person or organization to whom you're assigning the application. The Internal Address is the mail stop or apartment number if any, in the assignee's building. In space 3, the Conveyance is an assignment and the execution date is the date you signed the assignment. In space 4, the Application Number is the Serial Number of your patent application. I recommend that you also type the filing date. If you don't know these numbers yet, just fill in the execution (signing) date of your PAD. If you're assigning a patent, fill in the patent number and issue date in space 4B. "Additional numbers attached [ ] Yes [ ] No" should be checked to indicate whether or not you've listed additional cases on an attached sheet. The remaining blocks are self-explanatory. Make sure to include the recordation fee (see Appendix 4, Fee Schedule).

If you wish to send the assignment in with your patent application, complete the Recordation Form Cover Sheet (Form 16-4), check the "Assignment Papers" (box 9 on Form 10-2), and on Form 10-3 type "Assignment Recordal" after "Other" in Section 3. Include the fee on this line and in your total at the top of the form.

If an assignment of a patent application has been recorded and it is referred to in the issue fee transmittal form (see Chapter 13), the PTO will print the patent with the assignee's interest indicated. However, even if you fail to indicate the assignment on the issue fee transmittal, so that the patent doesn't indicate the assignment, the assignment will still be effective if it has been recorded.

If an assignment has been made, and as a result there are two or more owners of the patent application, then the owners should consider signing a Joint Owners' Agreement (Form 16-2). See the reasons for the JOA in Chapter 16, Section C.

I. Petitions to Make Special

If you need to have your patent issue sooner than the normal course of one to three years, you can—in certain cases—have it examined ahead of its normal turn. There are two basic ways to get your examination expedited: (1) by filing a simple "petition to make special" (PTMS) based on (a) old age, (b) poor health, (c) environmental enhancement, (d) conservation of energy, or (e) countering terrorism, or (2) by filing a more complicated PTMS Under the Accelerated Examination Program (PTMSUAEP). Unless you have a specific need for the early examination or issuance of a patent—for example, an infringement is occurring and you need a patent to get capital for manufacturing the invention, or the technology is rapidly becoming obsolete, or you're contemplating foreign filing—most patent professionals agree that there is usually little to be gained in filing a PTMS. (One reason to avoid the PTMSUAEP is that is estimated to take 12 hours to prepare.) The simple PTMS may be granted for the following reasons:

- Applicant's age is 65 or greater, or
- Applicant's health is such that he or she might not be available to assist in the prosecution of the application if it were to run its normal course
- The subject matter of this application will materially enhance the quality of the environment
- The subject matter of this application will materially contribute to the development or conservation of energy resources
- The subject matter of this application will materially contribute to countering terrorism.

The more complicated PTMSUAEP may be granted for the following reasons:

Design Patent Application—Preamble, Specification, and Claim

Mail Stop Design
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

PREAMBLE:

The petitioner(s) whose signature(s) appear on the declaration attached respectfully request that Letters Patent be granted to such petitioner(s) for the new and original design set forth in the following specification. The filing fee of $ 230 , 3 sheets of drawings, a patent application declaration, fee transmittal, a credit card payment form or check, and a return receipt postcard are attached.

SPECIFICATION:

The undersigned has (have) invented a new, original, and ornamental design entitled "Clothes Hanger" of which the following is a specification. Reference is made to the accompanying drawings which form a part hereof, the figures of which are described as follows:

CROSS-REFERENCE TO RELATED APPLICATIONS: None

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH: None

DRAWING FIGURES:

Fig. 1 is a front, elevational view of my new clothes hanger
Fig. 2 is a left-side view of the clothes hanger
Fig. 3 is a perspective view of the clothes hanger
Fig. 4 is a rear view of the clothes hanger.

CLAIM: I (We) Claim:
The ornamental design for a Clothes hanger, as shown.

Express Mail Label # EH160200231US **; Date of Deposit 20** 11 Sept 8

Fig. 10S—Completed Design Patent Application (Form 10-10 in Appendix 7)

*Use latest fees—see Appendix 4, Fee Schedule.

- Manufacturer Available: A manufacturer is available—that is, a person or company exists that will manufacture the invention provided the patent application is allowed or a patent issues.
- Infringement Exists: Someone is making, using, or selling the invention covered by the patent application and you need a patent to sue the infringer or get the infringer to pay you royalties.
- Environmental Quality Will Be Enhanced: Your invention conserves natural resources and/or keeps the air, water, or landscape pristine.
- Energy Savings Will Result: The invention provides a way to use energy more efficiently, thereby conserving natural resources.
- Recombinant DNA Is Involved: Public policy favors the full and rapid exploitation of recombinant deoxyribonucleic acid.
- Superconductivity Is Advanced: Public policy favors the exploitation of this phenomenon.
- Relates to HIV/AIDS or Cancer: Self-explanatory.
- Counters Terrorism: You have a counterterrorism invention, such as an explosive detector, an aircraft security system, or a vehicle barrier or disabler.
- Biotechnology Will Be Advanced by a Small Entity: You can get a case made special if you're (a) a small entity, (b) your invention relates to biotechnology, (c) your invention is a major asset owned by you or the assignee of the application, and (d) the development of biotechnology will be significantly impaired if examination of the application is delayed.
- Search Was Made: If you've made a search and submitted an Information Disclosure Statement—as you're supposed to do anyway (see Section G above)—you can get the case made special, because the examiner's task is made easier by your search.

If you are filing a simple PTMS based on the condition of your health or age, you can use Form 10-9, below. Otherwise, you must follow the rules in the new PTMSUAEP, described below.

1. The New PTMSUAEP System

In 2007, the USPTO introduced a complex, time-consuming PTMS process known as the Accelerated Examination Program (AEP). AEP (PTMSUAEP) requires that you file electronically using EFS-Web and that you file Form SB/28 at the same time. You can find Form SB/28 at the EFS website (www.uspto.gov/ebc). Click "eFile/EFS-Web Unregistered eFilers," then "Electronic Filing," then "eFiling Forms." The PTO estimates that Form SB/28 will take 12 hours to complete.

Why does it take so long? First, you must make a search, then prepare an Information Disclosure Statement citing the references in the search. You must also identify the limitations of the claims that are disclosed in the references, how the claims are patentable over the references, discuss the utility of the invention, list references that may be disqualified as references because they came from the same organization (see 35 USC 103(c)), state where each limitation of the claims finds support in the specification, detail the search that was made, including where it was made, and state the reason for accelerated examination.

The application may not include more than three independent and 20 total claims and must claim one invention only. The fee for the PTMSUAEP is stated in Rule 17(h) (see Fee Schedule in Appendix 4); this fee is in addition to the EFS-Web filing fee. However, according to Rule 102(c), no PTMS fee is needed if the invention will enhance the quality of the environment, conserve energy, or counter terrorism. The PTO will endeavor to process your entire application to patent in less than 12 months.

For more information, see the Notice in the *Official Gazette* of 2006 July 18. The PTO has provided samples of Request for Expedited Examination (www.uspto.gov/web/patents/accelerated).

If you've already filed, it's too late to file a PTMSUAEP in your pending application, but you can circumvent this restriction by filing a continuation application and filing the PTMSUAEP in the continuation.

Unless absolutely necessary, I strongly advise you not to file a PTMSUAEP, because it forces you to make very restrictive statements and admissions that could severely cripple any patent that you get if you ever need to use it in licensing or in court. Also, if your search overlooks relevant prior art, and the examiner also misses it, a court could possibly invalidate your patent for inequitable conduct. If you want to make your application special based upon your health or age, the procedures outlined in Section I2, below, are still valid and you may file a petition using this section and Form 10-9.

2. Simple PTMS Filings Based on Health, Age, Environment, Energy, or Terrorism

The procedure described below may be used to file a PTMS if one of the first five reasons cited in Section I, above, is applicable.

In the United States Patent and Trademark Office

Appn. Number: 11/123,456

Filing Date: 2011 Dec 3

Applicant(s): Goldberger, David

Examiner: Hayness / GAU 654

Mailed: 2011 Dec 3

At: San Francisco

Declaration in Support of Accompanying Petition to Make Special

Reason I—Applicant's Health Is Poor

In support of the accompanying Petition to Make Special, applicant declares as follows: *

1. I am the applicant in the above-identified patent application.

2. On Aug 15, 2010 I had a massive heart attack and was hospitalized in St. Francis Hospital in San Francisco for 6 days.

3. My cardiologist, Dr. Weakened Ticker of 909 Hyde St., Suite 2702, San Francisco, advised me during an office visit on Sep 26, 2010 that I had continuing heart failure and angina and would likely live only about a year from now. Attached is a certificate from Dr. Ticker to this effect.

4. By reason of my terminal health condition, I respectfully request that this application be made special so that I may be able to enjoy the benefit of a patent on my invention while I am alive.

5. I further declare that all statements made herein of my own knowledge are true and that all statements made upon information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application and any patent issuing therefrom.

Very respectfully,

David Goldberger

David Goldberger

Applicant

1919 Chestnut Street
Philadelphia, PA 19103
215-237-6639

Fig. 10T—Completed Declaration to Accompany PTMS

*This (and all other papers sent to the PTO) should always be typed with 1.5 or double spacing.

CAUTION

These are the only five reasons for which you may use PTMS Form 10-9. If you choose any other reason, your petition will be dismissed.

If you are filing a PTMS based on any of these five reasons, you may use PTMS Form 10-9 (Fig. 10S, below). You will also need to file a supporting declaration (SD). This can be filed with the application or at any time afterwards. The supporting declaration that accompanies the PTMS should be in the format of Fig. 10R with the introductory paragraph and the last paragraph left intact. The remaining paragraphs must be tailored to your situation and give detailed facts (MPEP 708.02) in support of the reason for the petition. Here are some suggestions:

- If your PTMS is based on age, merely state that you're over 65 and give your birth date. If you file by EFS-Web, you file form PTO/SB/130 with the application (or afterwards), and you need not file any supporting PTMS declaration.
- If your PTMS is based on poor health, environmental enhancement, conservation of energy, or countering terrorism give detailed facts or reasoning in support of your main reason, as I have done in Fig. 10R. Attach photocopies of such documents to your SD if they are relevant and label each document with a sequential exhibit number—for example, Exhibit A, Exhibit B—and explain it in detail in the declaration.

If you file your PTMS with the application, you should refer to it in your transmittal letter and your postcard receipt. In this case, you won't be able to include the PTO filing data on the PTMS. Don't fill out the Certificate of Mailing at the bottom of the form. If you file it later, fill out the Certificate of Mailing and add the application filing data to the PTMS, as I have done in Fig. 10S. As always, don't forget the postcard receipt. If you file the PTMS via the Web, the PTO's server will grant it automatically, but if you file it by mail, you'll receive a letter from the PTO stating that your petition has been granted and the examiner in charge of your application has been instructed to examine it ahead of turn. You should then receive an Office Action (see Chapter 13) several months sooner than normal.

Patent Prosecution Highway—Expedited Examination of Applications Filed From Abroad

In addition to the above two basic ways to get your application examined ahead of turn, you can also have your application examined ahead of turn in the USPTO if you first filed your application in a foreign patent office and then filed a U.S. application claiming priority of your earlier-filed foreign application. In order to enter this program in the USPTO, the foreign patent office must have officially allowed at least one claim in the first-filed or foreign application. If you want to enter this program you must file a request on a PTO/SB/20/xx form and comply with the other requirements indicated on the form. (The letters "xx" represent the country or jurisdiction code of the foreign country; e.g., if you first filed in the EPO, use form PTO/SB20/EP.) All forms are available on the PTO's forms page. For further details, see the notice at www.uspto.gov/patents/init_events/pph/index.jsp. (In addition to enabling applicants who first file abroad to have their application made special in the PTO, applicants who first file in the USPTO and thereafter file in a foreign patent office can have their application made special in the foreign patent office with a reciprocal procedure under the Patent Prosecution Highway program. To have your application made special in a foreign country your foreign patent agent must file an analogous request in the foreign patent office.)

J. Filing a Design Patent Application

As I've indicated in Chapter 1, Section B, a design patent covers the ornamental or aesthetic appearance, rather than the internal structure, function, composition, or state of an invention. Fig. 10R shows an example of the front (abstract) page of a design patent. You may file both a design patent application and a separate utility patent application on the same device, but of course, they should not cover the same feature of the device. The utility patent application should cover only the structure (or a method) that makes the device or invention function or operate. The design patent application should cover an entirely separate "invention," namely, the ornamental (aesthetic) external (nonfunctional) appearance of something. For example, you can file a utility patent application on a computer program (provided it's associated with some hardware), its circuitry, its keyboard

mechanism, or its connector structure, and a design patent application on the shape of the computer's case.

Design patent applications are very easy to prepare, except for the drawings. If filing by mail, a design patent application consists of:

- A design Patent Application Transmittal (Form 10-11 or PTO/SB/18)
- A fee Transmittal (Form 10-3 or PTO/SB/17)
- The fee by check, money order, or CCPF (see Form 10-3, Appendix 4, Fee Schedule, or check the PTO website)
- A Drawing or Drawings in black-line format.
- A Specification (Form 10-10) having the following five elements:
  - Preamble (should state the nature and intended use of the design)
  - Cross-Reference to Related Applications† (should state any related applications you have (or will) file)
  - Statement Regarding Federally Sponsored Research† (used when the design was made under a government contract)
  - Drawing Figures (describe each drawing figure briefly)
  - Claim (state "I claim the ornamental design for (title of your design) as shown.")
- A PAD (Form 10-1 or PTO/SB/01)
- A receipt postcard
  - You may also file an Application Data Sheet (ADS) (Form PTO SB/14) but this is optional if filing by mail.

† If this section is not applicable, you may eliminate it or add the phrase "Not Applicable"

A design application specification with the five elements, above, is provided as Form 10-10 and a completed version is provided as Fig. 10S.

If you believe that your invention has a unique ornamental appearance that is significantly different from anything heretofore designed, you can file a design patent application on it.

Although not 100% kosher, some inventors file a design application on the external appearance of a utility invention that is unpatentable in the utility sense, and that has unfinalized or trivial novelty in the design sense. They do this mainly to be able to truthfully and legally state for a few years that the invention is "patent pending."

The first step in completing a design application is to prepare drawings in the same format as for a regular patent application. (See Section A, above.) However, the drawings for the design application should show only the exterior appearance of your invention; no interior parts or workings should be shown and no reference numerals are used. The drawings of a design patent application, whether formal or informal, must be done with good surface and edge shading; see Fig. 10R.

If your invention is a computer-generated symbol (such as an icon like a trash can or a type font), you can file a design patent application on it, but you must show more than just the symbol per se. This is because the pertinent statute (35 USC 171) requires that the design be "an article of manufacture" and the PTO does not consider a computer symbol, per se, as an article. The solution? Simply include a computer display (monitor or display panel) in your drawing and show the computer-generated symbol on the display. Both the symbol and the display should be drawn in solid lines.

Usually only one embodiment of a design is permitted. If you have several embodiments or versions of your design, you can include these all in one application. But if the examiner feels they don't all relate to the same inventive concept, you'll be required to restrict the application to one embodiment. In this case, you can file a divisional application(s) on the other embodiment(s), provided you do so before the original application issues. (See Chapter 14 for divisional applications.)

It's important to remember that drawings of your design application should have enough figures to show all of the details of the external surface of your design. A company I once worked for had an important design patent on a TV set held invalid because the design patent's drawings failed to show the rear side of the TV set.

Once you've made your drawings (in formal or informal form) fill out Form 10-10 as indicated in Fig. 10S. The title of your design can be very simple and need not be specifically directed toward your invention. For example, "Bicycle" is sufficient. Each view of the drawing should be separately indicated. For example, "Fig. 1 is a front perspective view of my bicycle. Fig. 2 is a side view," etc.

Note that the design application has one claim only, and to write that claim you need merely fill in the blank on Form 10-10 with the title of your design. In the event that you offer more description—for example, you elaborate on figures more than merely stating the type of view—then, at the end of your claim, add the words, "and described."

Fill out the fee transmittal (Form 10-3) (the amount is on the form, in Appendix 4, and at the PTO's website). Also complete the PAD (Form 10-1). (The SED Statement is on the fee transmittal.) No transmittal letter is needed since Form 10-10 inherently provides a transmittal letter.

The design application with the drawings, form, declaration, and receipt postcard, should be sent to the PTO in the same manner as your regular patent application. Be sure to keep an identical copy of your design application, including its drawings.

In the United States Patent and Trademark Office

Serial Number: 11/123,456
Appn. Filed: 2011 Dec 3
Applicant(s): Goldberger, David
Appn. Title: Wind Generator Using Stratus Rotor, Etc.
Examiner/GAU: Hayness / 654

Mailed: 2011 December 3
At: San Francisco

Petition to Make Special

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicant hereby respectfully petitions that the above application be made special under MPEP Sec. 708.02 for the following reason; attached is a declaration in support thereof:

- ☑ Applicant's Health Is Poor
- ☑ Applicant's Age Is 65 or Greater

Very respectfully,

Applicant(s): David Goldberger

Attachment(s): Fee if indicated and supporting Declaration

Applicant(s):

c/o: David Goldberger
119 Walnut St.
San Francisco, CA 94123
Telephone: 415-722-0362

Certificate of Mailing

I certify that this correspondence will be deposited with the United States Postal Service as first class mail with proper postage affixed in an envelope addressed to: "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" on the date below.

Date: 20 11 December 3 David Goldberger, Applicant

Fig. 10U—Completed Petition to Make Special (Form 10-9 in Appendix 7)

To file a design application by EFS-Web, you need the specification (Form 10-10), drawings, PAD (Form 10-1 or PTO/SB/01), and an Application Data Sheet (ADS) (Form PTO SB/14). Fill out the specification (Form 10-10) and PAD as indicated previously, and the ADS as indicated below. Convert all documents to PDF.

Expediting a Design Application: The Design Rocket Docket

An applicant can now get a design application expedited rapidly under the PTO's new "Rocket Docket" procedure, but at a stiff price. I recommend that you buy a design rocket docket procedure only if you are selling or are about to sell at least $50,000 worth of something which has a valuable design and you expect it to have a short life in the marketplace. You must first make a thorough preliminary search. Then prepare the application as usual, being sure to include formal drawings and include the IDS forms and references. Then add a completed Rocket Docket Form ("Request for Expedited Examination of a Design Patent Application," Form 10-12 or PTO/SB/27) and the petition fee. The fee is on Form 10-3 and also in Appendix 4 and at the PTO website. The blanks on Form 10-12 are self-explanatory. On the three lines in the middle of the form, type the classes and subclasses where you made the search. On the "Related Applications" line in the middle of the form type the serial numbers and filing dates of any related design applications or patents you own. Send everything to Box: EXPEDITED DESIGN, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

NOTE

Design Patent Applications. Design patent applications, declarations, drawings, and receipt postcards should be sent to the PTO using the following address:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

The same address should be used for subsequent mail communications with the PTO regarding your application.

You'll receive your receipt postcard back in a week or two, and you'll receive a filing receipt a month or so thereafter. If you're aware of any prior art, don't forget to file an Information Disclosure Statement (see Section G, above) within three months of your filing date. You must attach copies of any non-U.S. patent references. If the prior art is not in English, the IDS should merely discuss how the appearance of your design differs from such prior art. If the prior art is in English, the IDS need not discuss such prior art.

NOTE

Plant Patent Applications. I haven't covered plant patent applications, since they're extremely rare and specialized. If you do want to file a plant application, it will be easy to do if you familiarize yourself with this chapter and PTO Rules 161 to 167 (37 CFR 1.161-7).

K. Summary

You may now file your application electronically via the PTO's EFS-Web System as well as mail. The EFS-Web system will involve extra work but the filing fee will be lower.

Use either the U.S. or A4 paper size when finaling the drawings. File formal drawings if possible, since the PTO requires formal drawings before it will examine the application. The drawing rules require that every figure be in clear black lines with proper margins and numbered figures and a reference numeral for every part. The drawings should show every feature of the invention you intend to claim. Ideally, the drawings should almost explain the invention itself, so as to communicate your invention better to the examiner or a judge. Nowadays it is possible to do your own drawings using computer-assisted drawing (CAD) software. (Formerly drawings had to be done in India ink, which was difficult to use.) Professional patent drafters are also widely available. One way to make CAD drawings is to use a digital photo and trace the outline.

The specification, claims, and abstract can be typed on A4- or U.S.-size paper. Strive for perfect work, since that will create fewer obstacles as your application moves through the PTO.

Only the actual and correct inventors should be named in the application. The essential parts of an application filed by mail are the Postcard, Transmittal Letter, Fee Transmittal, Check or Credit Card Payment Form, Drawings, Specification, Claims, and Abstract, and Patent Application Declaration. You may also wish to file a Request for Claim Drafting by the Examiner, a Nonpublication Request, an Assignment and its Cover Sheet, and/or an Information Disclosure Statement (IDS), the PTO/SB/08 form, and copies of the non-U.S. patent references. To file by EFS-Web, you need to file only the drawings, specification,

declaration, and application data sheet; everything else is handled on the PTO's site.

Take the Declaration seriously. No changes should be made after it's signed.

If filing by mail, always include a receipt postcard with the application, which the PTO will return with the Filing Date and Serial Number. It's best to mail your application by Express Mail to get an instant filing date and have protection in case of loss in the mail.

If you are aware of prior art and circumstances relevant to patentability, be sure to file the IDS (with attachments) within three months to advise the PTO of that information. If the application will be owned by anyone other than the inventor(s), prepare and file an assignment. You can petition to make any application special (examined ahead of turn) in a simple manner if your reason is advanced age or poor health. If your reason is other than age or health, you must file a complex petition at the time of filing (although we advise against it since you have to make potentially damaging admissions). Usually there's not much advantage in making an application special in either case.

Design patent applications are easy to prepare, once the drawings are completed. Any applicant can have a design application examined quickly under an expedited procedure ("Rocket Docket") by submitting a special petition with a stiff fee and copies of a search.

CHAPTER 11

How to Market Your Invention

Inventor's Commandment 20

Try to market your invention as soon as you can after filing your patent application; don't wait until your patent issues. Favor successful companies that are close to you and small in size, and that already make and sell items as close to yours as possible.

Inventor's Commandment 21

If you want your invention to be successful, pursue commercial exploitation with all the energy that you can devote to it, and use every avenue available.

Inventor's Commandment 22

Never pay any money to any invention developer unless the developer can prove to you that it has a successful track record—that is, most of its clients have received more income in royalties than they have paid in developer fees.

The Project Team Approach

If you already know how your invention will be marketed, or you work for a corporation that plans to handle this task, you can skip this chapter and continue reading about obtaining patent coverage. Also, if you would rather spend all your time at your workbench and not have to deal with marketing, a good way to go is to put together a "project team," as suggested by Richard White in *The Entrepreneur's Manual*. Your project team should consist of several persons with diverse skills, such as an inventor, a manufacturing expert, a marketing expert, a person to handle the legwork, a model maker, etc. Chapter 12 deals with obtaining patents in other countries and Chapter 13 with getting the U.S. PTO to grant your patent.

In this chapter I make an important detour from the central task covered by this book—obtaining a valid and effective patent on your invention. The reason for this sudden turn is simple. In the usual course of events, you'll have an interval (six months to two years) after you file your patent application before you need to either consider foreign filing or reply to an Office Action from the PTO. I strongly recommend that you use this interval to get your invention out on the market. This advice is so important that I've included it as Inventor's Commandment 20 at the beginning of this chapter.

RESOURCE

For more information on licensing your invention, consult *Profit From Your Idea*, by Richard Stim (Nolo.)

"Out on the market?" you ask. Shouldn't you keep your invention, and the fact that you've filed the application, secret? The answer is, "No." In fact, once you file a patent application (including a Provisional Patent Application; see Chapter 3, Section H) on your invention, you may show it to whomever you think might be interested in buying or licensing it with minimal risk of having someone scoop you on your invention.

This is because it would be very difficult for someone to steal your invention when you're the first to file a patent application on it. A patent thief would have to:

- file another application (the filing date would necessarily be substantially later than yours due to the preparation time), and
- get into a patent priority contest with you (called an "interference"—see Chapter 13, Section K), and be able to win it. It's unlikely that this will happen, because the thief's later filing date would make the thief a "junior party" with a large burden of proof. You would also be able to prove that the thief "derived" the invention from you if you keep records of those to whom you reveal your invention. Moreover, the thief would have to commit perjury (a serious felony) by falsely signing the Patent Application Declaration (Chapter 10). Of course, if you plan to maintain the invention as a trade secret, you should take the proper precautions (Chapter 1, Section Q). At any rate, inventions are seldom stolen in their early stages, before they're commercially successful.

Your next question might be: Why try to sell or license your invention before a patent has been issued? While there are advantages to selling an already-patented invention, generally it's best to try to sell or license your invention as soon as possible after filing your patent application. This is because prospective corporate purchasers of your invention will want time to get a head start on the competition and to have the time the patent is in force coincide with the

time the product's actually on the market. Also, you'll be able to offer the manufacturer the right to apply for foreign patents; this right will be lost once your patent issues. The lack of prestige that a pending patent has as compared to an already issued patent can be compensated for by a favorable search report showing that there's no strong prior art—that is, that a patent is likely to issue on your invention.

A. Perseverance and Patience Are Essential

As Paul Sherman, then N.Y. Asst. Attorney General, said in his excellent article, "Idea Promoter Control: The Time Has Come" (*Journ. Pat. Off. Soc.*, 1978 April, p. 261), "It is a failing of our system that there are no recognized avenues for amateur inventors to have their ideas evaluated and presented to manufacturers." Even if you get a patent, it will almost certainly be totally worthless unless it covers a commercially exploited invention. In fact, millions of patents have issued on inventions that were never successfully commercialized. None of these patents ever yielded a nickel to their owners.

To get your invention into commercial production, you'll have to persevere. There's no magic solution to the invention marketing process. As noted toy inventor Paul Brown says, "You almost have to be obsessed with your invention to get it going." Or put another way, Emerson's famous adage about building a better mousetrap would have been better written, "If you build a better mousetrap, you'll still have to beat a path to many doors to get it sold." This brings us to Inventor's Commandment 21, regarding perseverance, which you should now reread.

Even though you believe you've got the greatest thing since sliced bread, the money won't start flowing in that quickly in most cases. It takes time to develop, market, and sell a product. Consider the following quote:

> *"There is no reason anyone would want a computer in their home."*
>
> ***–Ken Olson, President, Digital Equipment Corp., 1977***

Chester Carlson, a patent attorney and the inventor of xerography, may have exaggerated somewhat, but he wasn't too far off base when he said:

> *"The time scale of invention is a long one. Results do not come quickly. Inventive developments have to be measured in decades rather than years. It takes patience to stay with an idea through such a long period.*
>
> *"In my case, I am sure I would not have done so if it were not for the hope of the eventual reward through the incentives offered by the patent system."*

Unfortunately, the marketplace is not rational or linear. An inferior product can be successful and a superior product can be a failure, depending upon how it's promoted.

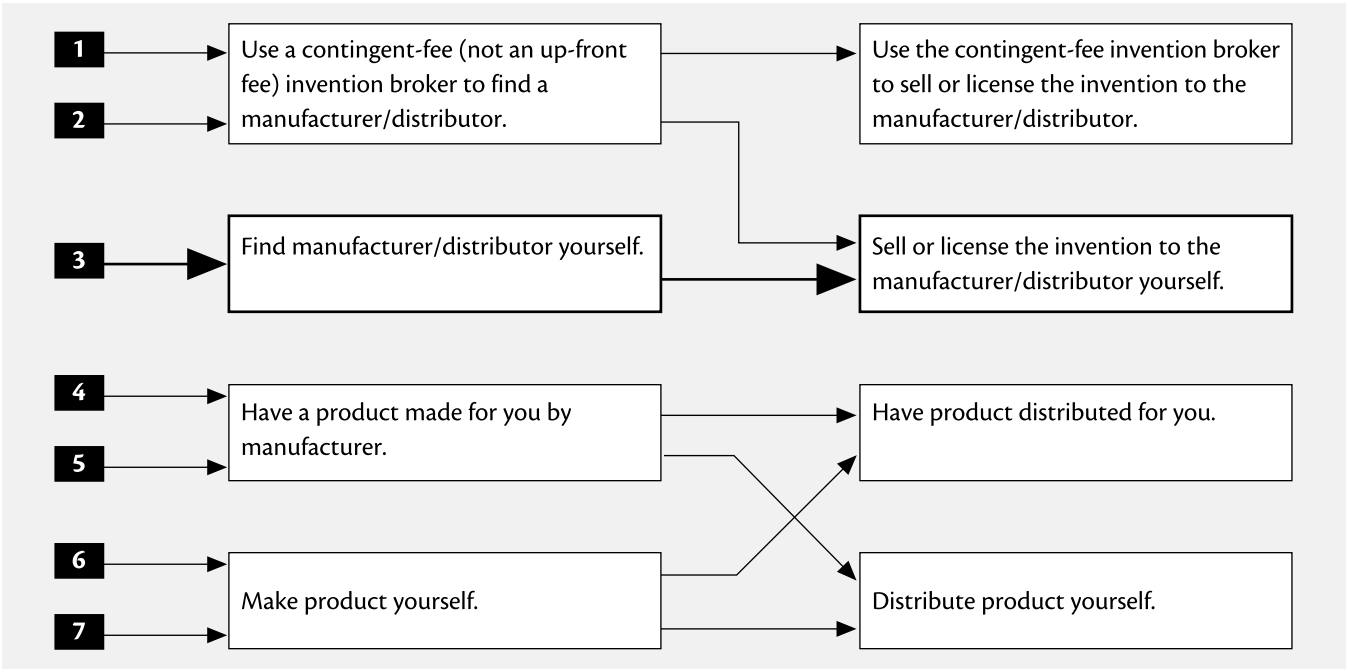


Fig. 11A—Alternative Ways to Profit From Your Invention

B. Overview of Alternative Ways to Profit From Your Invention

As you can see from the chart of Fig. 11A, there are seven main ways or routes for the independent inventor to get an invention into the marketplace and profit from it—Routes 1 to 7. These choices involve increasing difficulty and work for you. Before we go on, I recommend you study this carefully to become familiar with the various possible routes to success. I also recommend that most inventors use Route 3, and have accordingly highlighted this route.

1. Route 1: Using a Contingent-Fee Intermediary

Some organizations that market or develop inventions for inventors are legitimate and honest. Many others are illegitimate and dishonest; they exist solely to exploit inventors, regardless of the harm caused. There is an easy way to tell the difference. Virtually all of the dishonest ones require up-front money before they will undertake to develop or promote your invention. Virtually all honest ones represent you on a contingent fee basis and do not require an up-front fee. In this section, I will discuss dealing with honest contingent-fee invention brokers (CFIBs) and will advise you regarding the up-front-fee types, which I call FBIEs (Fee-Based Inventor Exploiters).

Starting at the top, Route 1 involves getting a contingent-fee invention broker or intermediary to find a suitable manufacturer/distributor for you and then using the broker to represent you in the sale or license of your invention.

Don't confuse a CFIB with fee-based "invention developers," "invention promoters," and the like: A CFIB is a firm that will represent you and try to market your invention by selling or licensing it for a percentage of your rights, the "contingent-fee basis." Unlike the dreaded fee-based inventor-exploiters (or FBIEs; see "Don't Use a Fee-Based Inventor-Exploiter," below) CFIBs do not charge a fee for their services. They are generally considered to be reputable, honest, and provide a legitimate service for a fair form of compensation.

Obviously, Route 1 is the easiest possible path, since the CFIB will do all of the work for you. However, it's neither that difficult to find suitable manufacturer/distributors (Section D, below) if they exist, nor to present your invention to them once you locate them (Section G, below). Thus, I recommend that you consider handling this task yourself. No one can sell an invention as sincerely and with as much enthusiasm and conviction as you, the true inventor. Also, you'll get 100% of the benefits and won't have to share the fruit of your creativity with a salesperson. Finally, companies will respect you more if you approach them directly; if you approach them through an intermediary, they'll think less of you and your invention. Why? They may think that you don't have the ability or initiative to approach them yourself.

If you do use a CFIB, you should be concerned about two main possibilities for harm:

1. loss of your invention rights through theft or communication to a thief, and
2. loss of time and hence other opportunities.

The first possibility isn't great because you've already got a patent application on file. However, the second possibility is very real, and you should accordingly verify the efficacy of any CFIB beforehand. Unfortunately, about the only surefire way to do this is by word-of-mouth. Check with a patent attorney, an inventors' organization, or some of the CFIB's clients if your own associates are unable to provide you with a lead.

Once you're satisfied with the CFIB's honesty and references, you should next investigate the contract they offer you to be sure you don't lose time needlessly. Thus, the contract should specify that the CFIB will perform substantial services, such as identifying the prospective manufacturers, preparing an invention presentation or demonstration, building and testing the invention, submitting your invention to the prospects, negotiating a license or sales agreement for you, etc. And most important, the agreement should set a time limit for the CFIB to succeed—that is, get you a firm offer to buy, license, or get your invention on the market in product form. I feel that a year is reasonable; 18 months is about the maximum you should ever consider. Make sure that if the CFIB fails to succeed in the allotted time, all of your rights will be returned to you, together with all of the CFIB's research, presentation documents, models, etc.

Some organizations that claim to be CFIBs include AmericaInvents.com, BigIdeaGroup.net, InventorsPublishing.com, Innovation Village (www.innovationvillage.com), and Natwich LLC, (www.natwich.com). In the medical field San Francisco Science (www.sfmed.com) develops medical technologies. ThinkFire.com (www.thinkfire.com) specializes in patent brokerage and licensing. However, before you engage any of these companies, please be sure that they will not charge you an up-front fee and that any contract they offer you is fair. I strongly recommend against paying an up-front fee because any organization that charges an up-front fee is an FBIE. You can find other CFIBs through inventors' organizations. (For a listing of inventor organizations, go to www.InventorsDigest.com/connect/orgs.html.) Also, when negotiating license agreements, attempt to have all of your royalties sent directly to you (and the CFIB's portion

Don't Use a Fee-Based Inventor-Exploiter

There are other firms, which I call fee-based inventor-exploiters (FBIEs), that you should generally avoid like the plague. Paul Turley of the FTC reported that of 30,000 people who paid such FBIEs a fee, not one ever received any payback. These companies or organizations run ads in newspapers, magazines, radio, and TV, stating something like "Inventions and Ideas Wanted!" They will commonly first send you an "inventor's kit" that includes a disclosure form similar to my Form 3-2 and that promises to "evaluate" your invention for free or for a relatively small fee (say $200 to $600). The evaluation almost always is glowingly positive. Then they'll ask for a relatively large fee—$1,000 to $5,000 and up—using very high-pressure sales tactics. They'll promise to do "market research" and try to sell your invention or have it manufactured. They sometimes also take a percentage (for example, 20%) of your invention.

Generally, FBIEs will do little more than write a brief blurb describing your invention and send it to prospective manufacturers in the appropriate fields. Their efforts are virtually 100% unsuccessful, as reported in the article "Patent Nonsense," in the *Wall Street Journal*, 1991 Sept 19, and on the TV program "20/20" on 1995 Jun 6. In other words, FBIEs make their money from inventors, not inventions (S.P. Gnass). For this reason I recommend you not use an invention promoter unless you find one that can establish a successful track record—that is, a record of bringing a significant percentage of its clients more royalties than the fees it charged them.

As a result of federal legislation (35 USC 297), FBIEs must now make certain disclosures to prospective customers. If they don't, they can be sued for false statements or material omission. The invention promoter must disclose to you in writing:

- the total number of inventions evaluated by the FBIE for commercial potential in the past five years, as well as the number of those inventions that received positive evaluations; and the number of those inventions that received negative evaluations
- the total number of customers who have contracted with the FBIE in the past five years, not including customers who have purchased trade show services, research, advertising, or other nonmarketing services from the invention promoter or who have defaulted in their payment to the FBIE
- the total number of customers known by the FBIE to have received a net financial profit as a direct result of the invention promotion services provided by such invention promoter
- the total number of customers known by the FBIE to have received license agreements for their inventions as a direct result of the invention promotion services provided by such invention promoter, and
- the names and addresses of all previous FBIE companies with which the invention promoter or its officers have collectively or individually been affiliated in the previous ten years. This statute also enables defrauded customers to recover $5,000 minimum in damages and sometimes triple damages against an FBIE who violates it.

In other words, these requirements should tell you about the experience, track record, volume of services, and the effectiveness of the firm. A word to the wise: Despite this strict statute and its penalties, many FBIEs still operate at full steam and still defraud inventors of millions of dollars annually. They do this in spite of the disclosures that the above statute requires them to make by telling prospective customers something like, "This means nothing—we're required to show you this. Don't worry about this but look at the bright side: We'll prepare a great color presentation and present your invention to industry and they'll be clamoring for it and you'll make a lot of royalties and will be able to retire, etc. etc."

Note that the PTO does not investigate complaints or participate in legal proceedings against invention promoters. The PTO will accept complaints, forward these complaints to the FBIEs, and make the complaints and responses publicly available on the PTO's Independent Inventor website.

To learn what you will need to file a complaint, visit the PTO website (www.uspto.gov/web/forms/2048a.pdf) for a complaint form (PTO Form SB/2048). Complaints should be mailed to the following address:

United States Patent and Trademark Office
Mail Stop 24, P.O. Box 1450
Alexandria, VA 22313-1452

If you've paid an FBIE money and feel that you've been victimized, or if you are considering paying money to one, an "Inventor Angel" who may be able to help is Penny Ballou in Las Vegas (702-435-7741, or email her at InventSSN@aol.com).

To learn more about FBIEs, go to www.inventnet.scam.html or www.inventorfraud.com.

Here's a couplet to consider regarding fee-based invention promoters:

A fee-based promoter is a business to shun;
My advice is simple: Take your money and run!

sent to the CFIB). That can head off accounting issues that sometimes result when all the payments must run through the CFIB.

In addition, many universities now have invention marketing departments that exist primarily to market the technology developed in the universities' research labs, but they also take ideas from outsiders on a contingent-fee basis. Check with your local colleges.

2. Route 2: Partial Use of an Intermediary

Route 2 (a seldom-used path) is the same as Route 1, except that here you use a broker to find prospects and then you take over and do the selling. Contingent-fee brokers won't accept this type of arrangement, since they'll want to control the sales negotiations. However, there are many inventor assistance companies that will provide you with product evaluation, illustration, advertising, packaging design, market research, and product testing services for a fee; one such organization is Synergy Consultants (www.synergyusa.com). If you feel that your strong suit is in presenting and selling, and that sales research is for someone else, you can pay a broker or market researcher (either CFIB or fee-based) to research possible purchasers. Then go out and present your invention yourself.

3. Route 3: Finding a Manufacturer and Distributor Yourself

Route 3 is the path I most favor and which most independent inventors use. Here you do your own research and selling. If you succeed, you'll get 100% of the rewards and you'll control the whole process, yet you won't be bothered with manufacturing or distributing.

4. Route 4: Having Your Invention Manufactured and Distributed for You

Route 4 is a viable alternative for some relatively uncomplicated products. Here you have your invention manufactured for you—a Far Eastern manufacturer will usually be cheapest—and then use U.S. distributors to sell the product. Of course, you have the headaches of supervising a manufacturing operation, including such items as quality control and red tape associated with importing. But, if you succeed, you'll keep much of the manufacturing profit for yourself.

5. Route 5: You Distribute

In Route 5, you handle distribution as well as supervising manufacturing. More profit, but more headaches and work.

6. Route 6: You Manufacture

In Route 6, you really get into it; you have to do the manufacturing yourself, with all of its headaches (see Section J), but you'll get a lion's share of the profits, if there are any.

7. Route 7: You Manufacture and Distribute

Last, and most difficult, in Route 7 you do it all yourself—manufacturing and distributing. While you get all of the profits, you'll have all of the headaches, as explained in Section J. Successful inventor Robert G. Merrick advocates this route in his excellent book, *Stand Alone, Inventor*! (Lee).

Because, as I said, Route 3 makes the most sense for most independent inventors, I devote the bulk of this chapter to finding a manufacturer/distributor to build and market your patent. (If you want to pursue the possibility of manufacturing and distributing your invention, I've included an overview of potential resources in Section J, below, to help you do this.)

C. Be Ready to Demonstrate a Working Model of Your Invention to Potential Customers

Assuming that you choose Route 3, the best way to get a manufacturer or others to "buy" your invention is to demonstrate an actual working model. Pictures and diagrams may convey an idea and get a message across, but the working model is the thing that will make believers out of most people and show them that your invention is real and doable, and not just chicken scratchings on paper.

"Products sell; ideas don't."

–David Kewit, Patent Agent

So, if you haven't made a model before, do your best to make one now, even if it has to be made of cardboard or wood. One essential is to make your model or prototype as simple as possible. Simplicity enhances reliability, decreases cost, decreases weight, and facilitates salability, both to a manufacturer and to the public.

If you're not handy, hopefully you can afford to have a professional model maker or artisan build the model, or you may have a handy friend or relative. Where can you find model makers? Ask your local inventors' organization. (See Chapter 2, Section F.) If that fails, an inventor's magazine, *Inventors Digest* (see Appendix 2, Resources: Government Publications, Patent Websites, and Books of Use and Interest), has ads in every issue from model makers. Another obvious place is in your nearest metropolitan area yellow pages

under "Model Makers." Also try "Machine Shops" and "Plastics—Fabricating, Finishing, and Decorating." One service, eMachineShop (www.emachineshop.com), will supply you with free software which you can use to draw your part and click to have them custom-make it for you. Idea Corporation (www.ideaproductdesign.com), designs and makes prototypes for inventors and their companies.

In addition, your local college or community college may have a design and industry department that may be able to refer you to a model maker. If you live near an industrial plant that employs machinists or model makers, perhaps you can get one of these employees to moonlight and do the job for you—put a notice on the plant's bulletin board, call, or ask around.

If you do use a model maker and you disclose critical information, including dimensions, materials, suppliers, or other data you consider to be proprietary (a trade secret), it is best to have the model maker sign a Consultant's Work Agreement (Form 4-3) before you turn over your drawings or other papers. Follow the instructions in Chapter 4 to fill out this form. I also suggest that you add a confidentiality legend to any drawings or descriptions you turn over to your model maker. Such a legend can be made in rubber-stamp or sticker form or can be typed on the drawings, and should read as follows:

> *"This drawing or description contains proprietary information of [your name] and is loaned for use only in evaluating or building an invention of [your name] and must be returned upon demand. By acceptance hereof, recipient agrees to all of the above conditions. © 20xx [your name]."*

After you've made a working model, you should take at least one good photograph of it. The photograph should be of professional quality—if you are not a good photographer, have a professional do it, and order several views if necessary. Have at least 50 glossy prints made of the photo, possibly with several views on one sheet. Then write a descriptive blurb about your invention, stating the title or the trademark, what it is, how it works, its main advantages and selling points, plus your name, address, telephone number, and the legend "Patent Pending." Don't get too bogged down in detail, however. In other words, make your write-up snappy and convincing. Then have it typed or printed and have at least 50 copies made to go with the photographs.

If you can't build a real working model, you can build a "virtual prototype" (computer simulation). For an explanation of this process see Jack Lander's article, "Virtual Prototyping: Alive and Well," in *Inventors Digest*, July/August 2003.

D. Finding Prospective Manufacturers/Distributors

The next step is to compile an initial listing of manufacturers who you believe could manufacture and distribute your invention profitably. You should keep your marketing notes, papers, and correspondence in a separate file from your patent application (legal) file. Your initial list should comprise all the manufacturers who meet the following four criteria:

- they're geographically close to you
- they already manufacture the same or a closely related product
- they're not too large, and
- they're anxious to get new products out.

Nearby or local manufacturers who already work in your field are best. If they manufacture your invention, you can monitor their progress, consult with them frequently, and take any needed action more easily if anything goes wrong. Obviously, it's a big help to deal with a company that has experience with devices similar to yours. They already know how to sell in your field, are aware of competitive pricing policies, can make your invention part of their existing product line—which allows them to keep sales costs low—and presumably want new models related to their existing products in order to keep ahead of the competition. If the manufacturer is not in a closely allied line, both the seller and the product will be on trial, so why start with two strikes against you?

The reasons for avoiding giant manufacturers are these:

1. Smaller manufacturers are more dependent on outside designers. In other words, most don't have a strong inbred prejudice against inventions they did not invent themselves (see the "NIH" Syndrome in Section E, below).
2. You can contact the decision makers or the owners of the company directly, or more easily.
3. Decisions are made more rapidly because the bureaucracies are smaller.
4. You are less likely to be required to sign a waiver form (see "The Waiver," in Section F, below).
5. Giant companies have more access to patent lawyers and, hence, a greater tendency to try to "get around" your invention by investigating and trying to invalidate your patent or trying to avoid infringing it. Medium and small companies, on the other hand, will be more interested in your invention's profit potential and its effect in the marketplace.

Obviously, you shouldn't use companies that are so small that they don't have enough money to finance the

manufacture of your invention or market it adequately. Companies with sales of about $10 million to $100 million are best (unless you have enormous market potential).

To find companies meeting the above criteria, start by first considering people you know. Which one of them is likely to have contacts in the field of your interest? Put them to work for you and you may be amazed that with a few phone calls you can get just the introduction you need.

If this doesn't work, try looking in your appropriate local stores for manufacturers of closely allied products that are already on the shelves. You'll know for sure that these companies have a successful distribution and sales system or operation.

Also, check the library for books listing local manufacturers (such as the *California Manufacturers Register*) and check national resources such as the *Thomas Register* or *Dun's Million Dollar Directory.* In addition, check the ads in pertinent trade and hobby magazines. Lastly, stock advisory services, such as *Value Line Investment Survey, Standard & Poor's, Hoover's,* and *Moody's,* supply excellent information about companies. Get the names of the company presidents, vice presidents, directors of engineering, marketing, etc. Find out all you can about each company you select; know its products, sales and corporate history, profitability, and factory location(s).

If your invention is in the gadget category and you believe it would appeal to the affluent, try Hammacher Schlemmer, a specialty store and mail-order house at 147 East 57th Street, New York, NY 10022. Outfits like this develop and sell a wide variety of gadget exotica, both through their catalogs and over the counter. They receive thousands of ideas for inventions each year, accept some of these, and arrange to have them produced by manufacturers. Many items that they financed and had manufactured, or first sold as strictly luxury gadgets, have become commonplace in American homes. For example, the steam iron, the electric razor, the pressure cooker, the blender, the humidifier, the electric can opener, the high-intensity lamp, the microwave oven, the automatic-drip coffee maker, the nonfogging shower mirror, the electrostatic air purifier, etc., were first introduced by these kinds of firms. (Another firm is JS&A, but they don't develop or manufacture any products.) Also, trade fairs or shows—such as The Gift Show—are good places for you to wander about, looking for prospective manufacturers. Talk to the people who run the exhibits to get a feel for the companies, whom to contact, and what their attitude toward outside inventions is.

If your invention is a new automotive tool, Lisle Corp., 807 East Main Street, Clarinda, IA 51632, actively seeks such inventions. Write them for their Invention Disclosure Agreement. Homax Products, www.homaxproducts.com, 800-729-9029, wants home improvement inventions. Kraco Enterprises, Inc., 505 East Euclid Avenue, Compton, CA 90224, 800-678-1910, is looking for new automotive products. Hog Wild Toys, 107 SE Washington Street, Portland, OR 97214 (contact Dana Cuellar at dana@hogwildtoys.com), is looking for novel toys and gifts. The toy store, F.A.O. Schwartz, also looks for novel toys and gifts, and has "toy auditions" in New York City (go to www.FAO.Com and search for "Toy Audition"). The Bohning Co., Ltd., 7361 North 7 Mile Road, Lake City, MI 49651 (contact Karen Abrahamson at abrhamsn@freeway.net), is seeking new plastic products to manufacture. If you have a new exercise or fitness machine, consider NordicTrack, 104 Peavey Road, Chaska, MN 55318. If you have something suitable for the Disney Store, write to Moshe Dabah at (MDabah@ChildrensPlace.com). Millennium Marketing Group, Ltd., (www.patentmovers.com), places patented and patent pending products and technologies.

If you can't find any U.S. companies, try foreign ones. Sadly, many U.S. firms are complacent or tight. They've refused to undertake new ventures that foreign firms have jumped at, which can work to your advantage as an inventor.

E. The "NIH" Syndrome

Before presenting your invention to any manufacturer, two possible impediments should be kept in mind:

- the "NIH" (Not Invented Here) syndrome, and
- the common insistence that you give up many of your legal rights by signing a waiver (Section F, below).

Generally, the larger the manufacturer, the greater the chances of encountering one or both of these impediments.

The NIH syndrome is an unwritten attitude that handicaps inventors who submit their ideas to a company, no matter how meritorious such ideas may be. Put simply, many companies have a bias against any outsider ("the enemy") or any outside invention because it was "not invented here." This attitude prevails primarily because of jealousy. The job of the corporate engineering department is to create new and profitable products for their company. If an engineering department were to recommend an outside invention, it would almost be a tacit admission that the department had failed to do its job in solving a problem and coming up with the solution the outside inventor has found.

How can you overcome the NIH syndrome? First, realize that it's more likely to exist in larger companies, or companies with extensive engineering departments. Second, when forced to deal with engineering departments or any

department in a company where the NIH syndrome may be present, always remember that the more your invention appears to be a logical extension of ideas already developed within the company, the better your chances of acceptance will be.

F. The Waiver and Precautions in Signing It

Most inventors affected with the paranoia part of the "Paranoia/Greed/Laziness Syndrome" (see Chapter 2, Section G) are afraid to show their invention to anyone, even after they've filed a patent application. The truth is, however, that most companies are far more afraid of you suing them for taking your invention than they are interested in stealing it. Most companies with access to legal advice will require you to sign their agreement (called a "waiver"), under which you give up a number of important rights that you would otherwise possess under the law. The reason for this waiver is that many companies have been sued by inventors claiming violation of an implied confidentiality agreement, or an implied agreement to pay if all or any part of the invention is used. Even though the company's own inventor may have come up with the invention independently of the outside inventor, many companies have lost these suits or were forced to compromise because of the uncertainties and expenses of litigation.

The waiver itself usually requires you to give up all your rights, except those which you may have under the patent laws. Specifically, the waiver typically asks you to agree that:

1. The company has no obligation to pay you if they use your idea.
2. The company isn't bound to keep your idea in confidence.
3. The company has no obligation to return any paper you submit.
4. The company has no obligation whatever to you, except under the patent laws.

Many companies add many other minor provisions, which are not significant enough to discuss here. The effect of the waiver is that you have no rights whatever against the company if they use your invention, except to sue them for patent infringement if and when you get a patent.

The usual procedure, if you send a letter mentioning your idea to the company, is for the company to route your letter to the patent or legal department, which will send you a form letter back stating their policy and asking you to sign the waiver before they agree to review your idea. Once you do so, the patent or legal department will approve your submission for review and send it to the appropriate engineering manager of the company.

Since you may not get a patent, since the company may use a variation of your idea that may not be covered by any patent you do get, and since you would like to have the company keep your submission in confidence, it's best to avoid signing any waiver if at all possible. For this reason, you should, at least initially, concentrate on smaller companies. The smaller the company, the less likely they are to make you sign a waiver. In fact, the best sort of relation you can have with a company to which you submit your ideas is to have them sign an agreement that you have drafted. Many small companies actually want to review outside inventions and are willing to sign a proprietary-submission agreement.

If the company is willing, or if you can swing it (say, by touting the commercial potential of your invention, being dramatic, establishing a rapport with the research people, etc.), have the company sign a Proprietary Submission Agreement such as the following:

Proprietary Submission Agreement

X Company agrees to review an invention from *[your name]* for a new and improved *[describe invention],* to keep in confidence such invention and all papers received, to return upon request all papers submitted, and to pay *[your name]* a reasonable sum and royalty to be settled by future negotiation or arbitration if X Company uses or adopts such invention.

If a company won't sign the above agreement, you can make it a bit more palatable by eliminating the last clause regarding the payment of a reasonable fee and royalty. Even with the last clause eliminated, you're in a very good position if you've gotten them to sign. If the company still refuses to sign your agreement, you can add the following clause:

The foregoing shall not obligate X Company with respect to any information which X Company can document (a) was known to it prior to receipt from me, either directly or indirectly, or (b) which is now or hereafter becomes part of the public domain from a source other than X Company.

If you can't get them to sign even this, you're still in a pretty good position legally if you can get them to review

your invention without any agreement being signed by either side.

If all else fails and you do have to sign a waiver before the company will look at your invention (that's what will usually happen), it's not all that bad, since you do, at least, have a pending patent application. And most companies are far more afraid of you suing them (for taking your invention) than they are interested in stealing your invention. Now you can understand why I emphasized the need to file your patent application before submitting your invention to any company. If you sign the waiver, your position won't be seriously jeopardized if your patent issues. However, if you're submitting an invention to a company without having first filed a patent application (Box B of the Invention Decision Chart from Chapter 7), it's very important that you try to get the company to sign the above Proprietary Submission Agreement or, failing that, try to submit it without signing their waiver.

If you do have to sign a waiver, try to make sure the company is a reliable and fair one and read the waiver carefully, or have an attorney do so, to make sure you retain your patent rights and that it's fair. Also, it's important to insist, by means of a separate letter, that the company make its decision within a given time, say six months, or else return all of your papers to you. This is because many companies, especially large ones, can take many months or years to make a decision if you let them, which may interfere with your efforts to market the invention to others.

Note that the above choices provide a continuum of safety when presenting your invention to a company: On one end of the continuum you take a very high risk of theft of your invention if you sign a waiver without filing a patent application, while on the other end, you will be fairly well protected if you have the company sign a Proprietary Submission Agreement like the one above. However, there's no such thing as a completely safe submission, so always be prepared for some risk and minimize it as much as possible.

To the extent you are uncertain about whether signing a waiver is a good idea under the circumstances, a consultation with a patent attorney might be wise. On the other hand, don't let the waiver prevent you from showing your invention to a reputable manufacturer that promises to give you a decision in a reasonable time. As long as your patent is pending and eventually issues, you'll have reasonably strong rights.

G. The Best Way to Present Your Invention to a Manufacturer

The best and most effective way to sell your invention to a manufacturer is personally to visit the decision maker in the company you elect and demonstrate a working model or prototype of your invention (or present drawings of it if you have no working model). To accomplish this, write a brief, personal, friendly, and sincere letter to the president of the company, saying that you have a very valuable invention you believe would be profitable for the company's business and that you would like to make an appointment when convenient to provide a brief demonstration. You can disclose the general area of your idea, but don't disclose its essence until you can present it properly. Keep the initiative by stating that you will call in a few days. Follow through accordingly. Here's an example:

Mr. Orville Billyer
President, Billyer Saw Co.
[etc.]

Dear Mr. Billyer:

I'm employed as an insurance agent, but in my spare time I like to tinker. While building a gun rack, I thought of and have perfected a new type of saw fence which I believe can be produced at 60% of the cost of your A-4 model, yet which can be adjusted in substantially less time with greater accuracy. For this reason, I believe that my fence, for which I've applied for a patent, can be a very profitable addition to your line. I'll call you in a few days to arrange a demonstration of my invention for you in your plant.

Most sincerely,
Marjorie Morgenstern
Marjorie Morgenstern

They may ask you to sign their Waiver form (see Section F above) and submit your materials in writing, but try your best (by stressing the advantages of your invention and how much money they'll make) to bypass the Waiver and make an appointment for a personal presentation.

When you come to the demonstration, be prepared! Set up your presentation well in advance. Practice it on friends. Explain the advantages of your invention first: how it works, how it will be profitable for their business, and why it will sell. Make sure your model works. Also, prepare

appropriate and attractive written materials and photos for later study by the decision maker.

In your presentation and written material, it's wise to cover the "Three Fs"—Form, Fit, and Function.

Form is the appearance of your invention. Stress how it has (or can have) an attractive, enticing appearance.

Demonstrate how your invention fits with other products, or with the environment in which it is to be used. If your invention is a highly functional device, such as a saw fence, show and tell how it fits onto a table saw. If it's a clock, show (or present attractive pictures showing) how it looks attractive on a desk or coffee table.

Function is what your invention does, how it works, what results it attains. Demonstrate and discuss its function and its advantage here. Mention all of the advantages from your Positive and Negative Factors Evaluation (Form 4-1, Appendix 7). In addition, be prepared to discuss such items as cost of manufacture, profit, retail price, competition, possible product liability, and product life. Review all of the positive and negative factors from the list in Chapter 4 to be sure you've covered all possible considerations.

During the verbal part of your presentation, it's wise to use diagrams and charts, but keep your model, written materials, and photos hidden from view. Otherwise, the people you're trying to sell to will be looking at these instead of listening to you. Then, at a dramatic moment, bring out your model and demonstrate how it works. Don't apologize if your model is a crude or unattractive prototype, but radiate enough confidence in yourself and your invention that they will overlook any lack of "cosmetics." If you can't bring or show them your model for any reason, a videotape, filmstrip, drawing, diagram, or slide presentation that shows the three F's will be a viable, though less desirable way, to show the invention.

If possible, make them think that the invention is basically their idea. You can do this by praising their related product line and then showing how your idea compliments theirs, or by enthusiastically endorsing any reasonable suggestion they make for your idea.

At the end of your verbal presentation, produce your written materials and pictures for study (either then and there or at a later time). If they're interested in the invention, be prepared to state your terms and conditions. (See Chapter 16, Section G.) If they're really serious and ask for it, you can show them your patent application without your claims, but only with the understanding that it won't be copied and will be returned to you. You shouldn't offer the claims, prior art from your search, serial number, or filing date, unless you're asked. If you're relying on a Provisional Patent Application for your patent pending status, then you won't have drafted your claims yet, and you also may not have conducted a patentability search.

If you've done your best and still get a rejection, don't accept it blindly and walk away with your tail between your legs, but turn it into an asset for next time. Talk to the executives about it and learn exactly why they decided not to accept your idea so that in the future you'll be better prepared to answer and overcome the disadvantage that blocked your initial acceptance.

Assuming the company is interested, you shouldn't blindly or automatically accept it as your patron. Rather, you should evaluate the company to which you're demonstrating your invention just as they're evaluating you and your invention. For example, if the company seems to lack energy or vision, don't go with them. Also, you should check out the company with their local Better Business Bureau to see if they have a clean record. After all, you're risking a lot, too, when you sign up with a company. If the company doesn't promote your invention enthusiastically and correctly, it can fail in the market, even if it's the greatest thing to come down the pike in 20 years.

TIP

Don't Be Afraid of Simultaneous Submissions. If you're aware of several prospective companies that you feel might be interested, I recommend that you approach all of the companies simultaneously; otherwise, you'll waste too much time. If several companies "bite" concurrently, you'll be in the enviable position of being able to choose your licensee. (Some companies do ask that you not submit your invention to anyone else while they're looking at it; you should honor this request.)

H. Presenting Your Invention by Correspondence

Another way to present your invention is by correspondence. Because letters are easy to file and forget, and because any salesman will tell you a personal presentation is a thousand times more likely to make a sale, I strongly advise against submitting an invention to a manufacturer by correspondence if you can avoid it. Try your utmost to arrange a personal demonstration with a working model as described in the previous section. Nevertheless, if you do have to resort to correspondence, don't let your efforts slacken.

Your letter should always be addressed to a specific individual. Find the president's name from the directories mentioned in Section D above. If you receive an expression

of interest from the company, you will probably be faced with the waiver question. My comments in the previous discussion cover how to handle this problem. Before you send a model, get an advance written commitment from the company that they'll return it within a given time. You should send your model by certified, insured mail, return receipt requested, and make follow-up phone calls as appropriate. The book, *Made to Stick,* by C. and D. Heath, tells how to compose a "sticky" message—one that the recipient will remember. The key is to present your message as a simple unexpected, credible, concrete, and emotional story.

I. Making an Agreement to Sell Your Invention

If you sell your invention to a manufacturer/distributor, the next step is to sign an agreement of some sort with the manufacturer. The question thus arises, what will be the terms of the agreement, exactly what will you sell them, and for how much? There are many possibilities. These are covered in Chapter 16, which deals with ownership and transfer of patents rights.

J. Manufacturing and/or Distributing the Invention Yourself

For reasons stated earlier, manufacturing and/or distributing a product embodying your invention yourself—unless you already have manufacturing experience, a plant, and/or distribution facilities—is very difficult. Besides, you can spend your time more effectively selling your invention or patent application, rather than dealing with manufacturing and product-marketing problems.

If you do plan to manufacture and/or distribute your invention yourself (Routes 6 or 7), I strongly suggest that you learn about the subject thoroughly beforehand so you will know what is involved and which pitfalls to avoid. The best place to obtain literature and reading material is your local SBA (Small Business Administration) office, which has scads of literature and aids available to apprise you of the problems and pitfalls. They even have a service that allows you to obtain the advice of an experienced executive free; ask for a "Counseling Request from Small Business Firm" form. Nolo publishes an excellent book, *How to Write a Business Plan,* by Mike McKeever, which tells potential businesspeople how to assess the costs of a proposed business, how to draft a business plan, and how to obtain sufficient start-up money.

1. Financing the Manufacture of Your Invention

Financing any manufacturing venture of your own is a separate and formidable problem. If you have an untried and unsold product, most banks will not lend you the money to go ahead. However, if you can get orders from various local firms, the bank may lend you the money. Thus a local test-marketing effort on a limited scale may be desirable.

For obtaining money to finance untried products, read, *All I Need Is Money*, by Jack Lander (Nolo), for a good treatment of this subject. Generally you'll need a money lender who's willing to take risk. Such a person is usually termed a "venture capitalist" (VC). A VC will lend you money in exchange for shares or a portion of your enterprise. Pratt's *Guide to Venture Capital Sources* (listed in Appendix 2, Resources: Government Publications, Patent Websites, and Books of Use and Interest) is the most popular source of VCs, but most libraries have other VC resources. A comprehensive list of venture capital resources and related information can be found at the Venture Capital Resource Library (www.vfinance.com) and at Clickey.com (www.clickey.com) where you should search using the term "venture capital." Also the Venture Capital Hotline, 408-625-0700, will provide you with a list of suitable VCs for a fee (about $75). However, VCs won't lend you money on the same terms a bank would. Because of the higher risks they take, they demand a much larger return—namely a piece of the action. Also, they'll want to monitor your company and exercise some degree of control, usually by putting their people on your board of directors. A thorough discussion of the pros and cons of working with venture capitalists can be found in the Nolo book, *How to Write a Business Plan,* mentioned earlier. While most VCs are companies or partnerships, sometimes wealthy individuals finance inventions, so if you have a rich uncle or know of a suitable patron, include them on your list.

A recent development in the VC field is the "Incubator VC." This is a VC that provides several different inventors with offices, labs, and/or a manufacturing area in a special building, called an "innovation center." For example, in San Francisco, Pier 38 provides space for numerous incubators. Also the VC may provide technical, financial, and marketing consultation, as well as other services, until each nurtured enterprise is ready to leave the "nest." The sources in the preceding paragraph, as well as inventors' organizations (Chapter 2, Section F), will give you the names of Incubator VCs; they are sponsored by academia, state and federal governments, and private organizations.

2. Prepare a Business Plan

To obtain venture capital to start a business based on your invention, you'll have to prepare a business plan—a presentation that tells all about your invention, the market for it, and how you plan to use the money. Again, *How to Write a Business Plan* is also recommended for this purpose. Other sources for guiding your business plan writing are the SBA (www.sba.gov), Business Plan Pro (www.bplans.com), and Business Owner's Toolkit (www.toolkit.com)

3. Distribution Through Mail Order or the Internet

Mail order is often an easy way for an individual to distribute an invention, whether the inventor makes it or has it made. An excellent guide is *How I Made $1,000,000 in Mail Order,* by E. Joseph Cossman (Prentice-Hall). Once your mail order operation starts bringing in some cash, you can branch out and try to get some local, then regional, then state, and then (hopefully) national distributors who handle lines similar to yours.

There are two principal ways to contact your potential customers:

- magazine/media advertising, and
- direct mail advertising.

If you're interested in the latter, order the *Dunhill Marketing Guide to Mailing Lists* from Dunhill International List Company, Inc., 444 Park Avenue South, New York, NY 10016.

You can also try to use a mail order distributor. Many mail order houses will, if you send them a production sample and they like it and feel you can meet their demand, buy your production. There are 15,000 mail order houses in the U.S. and they depend upon novelty and Mom-and-Pop suppliers, as well as large manufacturers. They'll put in their own ads, manufacture, and distribute their own catalog, and thus are valuable intermediaries for many garage-shop manufacturers. Walter Drake & Sons, Colorado Springs, CO 80940, is one of the largest, but you can obtain the names of many others by looking for ads in *Redbook, House Beautiful, Better Homes and Gardens, Apartment Life, Sunset, Holiday*, etc. These mail order firms are always looking for new gadgets, and most of their products come from small firms. While many of them will purchase quantities of your product outright, some will want to take them on consignment, which means they do not pay you until and unless they sell it themselves.

The Internet also provides a vast marketplace for marketing a device, but getting potential customers to your site can be difficult. One solution is to offer your device on eBay or to set up a store at Yahoo.com or Msn.com. See Section 5, Publicity, below, for other ideas.

How to Get Funding From a Venture Capitalist

Ari Zoldan, CEO of Quantum networks, a venture capital (VC) firm, provided some tips for soliciting VCs in a 2008 issue of *Popular Science*. Among his suggestions:

- Don't send a letter and don't email. Call the CEO and pitch your invention briefly. Be sure to sell both your product and your skills and expertise.
- Look for a VC that will be actively involved.
- Review the VC's track record and funding.
- Don't be intimidated by VCs and never give the VC a majority control of your company.
- Get the VC to sign a nondisclosure agreement (Form 3-1 in Appendix 7) and always bring a business plan and prototype to your meeting.

4. Utilize Government Services

If your invention is or can be used in a product that the federal government might purchase, contact the General Services Administration, Federal Supply Service, (800-488-3111 or www.gsa.gov). Tell them that you're offering a product that you feel the government can use. They'll send you appropriate forms and instructions. Also, don't neglect your corresponding state and local purchasing agencies.

If you have an energy-related invention, the Department of Energy may give you a research grant if the National Bureau of Standards gives it a favorable evaluation. Contact the U.S. Department of Energy, e-center (http://e-center.doe.gov).

5. Publicity

Publicity will sometimes be of great aid to you before you get your invention into production, and is invaluable once it's on the market. Assuming it's not yet on the market and you're either looking for a manufacturer or distributor, or thinking of manufacturing or distributing it yourself, publicity can cut both ways. As stated, many manufacturers like to get a secret head start on their competition and thus

won't be too interested if your invention has already been disseminated to the public.

If you're going to make and sell it yourself, I believe you should wait until you've got the product out before you try to publicize it. Why? The public's memory span is short, so they'll be likely to forget about your product by the time you get it on sale. My advice is to not seek publicity until a product with your invention is almost or actually on the market, unless you've tried unsuccessfully, after substantial efforts, to get it on the market.

Assuming you're ready for publicity, one way to get it (at a price) is to hire a public-relations or marketing research firm to promote your invention for you. There are many reputable firms that can come up with many creative and valuable ideas for a fee. However, since the cost of public-relations services is very high, I don't recommend it unless you can bear the cost without difficulty.

Many magazines will feature new ideas free if you send them a clear, understandable, professional-quality photo or drawing of your invention, plus a brief, clear, and understandable description of it. They may even write a full-length feature about your invention if they think it's interesting enough. Suitable magazines are *Popular Science, Mechanics Illustrated, Popular Electronics, Better Homes and Gardens, Pageant, Parade, Playboy, This Week, True Story, Jet, Outdoor Life, House and Garden, House Beautiful, Outdoor Living, Changing Times, McCall's, Apartment Life, Argosy,* and *Sunset*. You can obtain the addresses of those you think are relevant from *Ulrich's International Periodicals Directory* in your local library.

The magazine *Advertising Age* has a feature called "Idea Marketplace" in each issue in which they publicize new inventions gratis. Write to them at Crown Communications, Inc., 740 Rush Street, Chicago, IL 60611, sending a picture and brief description of your invention. Thomas Publications, 1 Pennsylvania Plaza, New York, NY 10119, has a bimonthly called *Technology Mart* that offers a similar service, as does *Dental X Change*, http://dentalXchange.com, and the "Form + Function" column of the *Wall Street Journal*, by John Pierson.

Review the trade magazines in the field of your invention for other ideas.

Nolo also publishes an excellent book, *Marketing Without Advertising*, by Michael Phillips and Salli Rasberry; its title is self-explanatory.

Other sources of publicity and possible sale or licensing opportunities are exhibits, trade fairs, and business shows. I don't recommend that you use these, since I've heard only a few success stories from exhibitors. On the other hand, I have heard of many more cases where foreign or domestic manufacturers copy good inventions and hope to make a quick killing or avoid any pertinent patents. But if you feel that you may get a bite from this type of exposure, try one—the cost is usually a few hundred dollars. You'll be given a table or booth, or equivalent space to demonstrate your invention at the fair or show. Naturally, your exhibit should be attractive and interesting, and it is preferable to have a working model or very good literature available in connection with your invention. There are exhibition-service companies that will prepare a display exhibit for you for a fee. Also, several of the Contingent-Fee Invention Brokers listed above have exhibition areas. The following site lists over 50,000 trade shows held annually in the U.S.: www.tscentral.com.

Don't overlook the media (radio, TV, newspapers, and magazines) as an excellent source of free publicity, which most experts say is the best kind. Many local radio and TV stations feature talk shows whose hosts are always looking for interesting guests; some stations even have shows in which new inventors can demonstrate or discuss their inventions. One syndicated show is *Million Dollar Idea* (www.milliondollarideashow.com). To find other shows and get on them, call your local stations, ask what talk shows they have and which might be interested in interviewing an inventor with a hot new product, and who the appropriate producers are. Then send the producers a press kit or letter describing your invention and why it and you would be of interest to the show's listeners.

One of the best ways to get media publicity (and concomitant interviews) is to dream up or pull a stunt. For example, if you've invented a new bicycle drive mechanism, you might enter and win a local bike race, or sponsor some type of contest (which you can win!).

Lastly, don't overlook a new phenomenon—invention stores that sell newly invented products at retail. One is the New Products Showcase at the Irving Mall in Irving, Texas. Also, there are a number of Sharper Image- and Nature Co.-like stores that sell dozens of new gadgets and are always looking for new ones to scoop their competition.

6. The Premium Marketing Route

If you can't get a manufacturer or distributor to take your invention, try offering it as a premium to accompany a related product that is already on the market. For example, one television magazine show featured a girl, Abbey Mae Fleck, 8, of St. Paul, Minnesota, who invented a great plastic hanger to suspend bacon in a microwave oven so that the grease dripped away while it cooked. However, none of the manufacturers of plastic microwave accessories would bite (their loss!). So ingenious Abbey approached a bacon com-

pany and got them to offer her MAKIN BACON® via a discount coupon on their bacon packages. The result: An instant success! The bacon company's investment was minimal, yet it profited handsomely by providing a way to cook its bacon dryly. And Abbey got her commercial distribution. Abbey's story also shows that creativity has no age limits.

7. The Celebrity Endorsement Route

If a product bears a celebrity's name or endorsement, people will be far more likely to buy it. So, getting a celebrity to endorse it is often a key to instant success. Consider George Foreman's Lean, Mean Grilling Fat-Reducing Machine griller. Without the champ's endorsement and name it might not have been a fabulous success. Celebrity endorsements are particularly useful if you have a sporting goods invention, such as a golf club. To get a celebrity endorsement, first perfect and get your product ready for market. Prepare suitable sales and promotional materials, with photos, and then approach the celebrity you feel would do your baby justice. While you'll have to share a good portion of your profits, you'll find that your chances of success will be almost assured if you have a good product and can get a famous celebrity to endorse and name it.

K. Summary

After filing a patent application, try to get your invention on the market; don't wait until your patent issues. Since it can take a long time to license an invention, perseverance and patience are essential.

There are seven routes to profit from an invention and they involve using a marketing intermediary, manufacturing and/or marketing your invention yourself, or licensing your invention to a company. Most inventors use the latter.

Don't use a fee-based intermediary (a company that wants up-front money) unless they can demonstrate that many of their clients have made more money than they paid the intermediary.

The best way to sell or license an invention is to demonstrate a working model. Find prospective manufacturers in stores, catalogs, and trade magazines. Larger companies will require that you sign a waiver (giving up all rights except patent rights) before they will look at your invention. You may have better luck with companies that are smaller and geographically close to you. These companies usually communicate in a more direct manner, avoid the NIH syndrome, and often don't require a waiver.

If you want to manufacture and/or distribute the invention yourself you may need financing and a business plan.

There are many ways to get publicity for your invention including premium marketing and celebrity endorsements.

CHAPTER 12

Going Abroad

Inventor's Commandment 23

Foreign Filing: Don't file your invention in any foreign country unless you're highly confident it has extremely strong commercial potential there or unless someone else will pay the costs. File a Patent Cooperation Treaty (PCT) application or file directly in Convention (major industrial) countries within one year of your earliest U.S. filing date (regular or Provisional Patent Application) and in non-Convention countries before the invention becomes publicly known. Don't file abroad until you receive a foreign-filing license or until six months after your U.S. filing date.

A. Introduction

By now you've gotten your U.S. application on file and have taken steps to have your invention manufactured and distributed in anticipation of receiving a patent. Your next step will be either to file in one or more other countries (this chapter) or to deal with the first substantive response by the USPTO (called an "Office Action") to your application (Chapter 13).

If you've already received your first Office Action from the USPTO, you'll have a pretty good idea of the patentability of your invention and, consequently, your chance of getting foreign patents abroad. (If you want to help determine your chances of getting foreign patents, see Chapter 10, Section I, to see how to get your U.S. application examined earlier.)

Why file your patent application in other countries? Simply because a U.S. patent will give you a monopoly in the U.S. only. If you think your invention is important enough to be manufactured or sold in large quantities in any other countries, and you want to create a monopoly there, you'll have to go through the considerable effort and expense of foreign filing in order to eventually get a patent in each desired foreign country. Otherwise, anyone in a foreign country where you have no patent will be able to make, use, and sell your invention with impunity. However, if you have a U.S. patent they won't be able to bring it into the U.S. without infringing your U.S. patent.

This chapter doesn't give you the full, detailed instructions necessary to file abroad. That would take another book. Instead, my mission is to alert you to the basic procedures for foreign filing, so that you won't lose your opportunity to do so through lack of information. However, once you decide to foreign file, you'll probably need some professional guidance, notwithstanding the availability of other resources (discussed in Section M of this chapter) that will answer most of your questions.

The most important points you can learn from this chapter are presented in Inventor's Commandment 23 at the beginning of the chapter. It states (a) don't foreign file in any foreign country unless you're highly confident your invention has extremely strong commercial potential there, (b) don't foreign file until you get a foreign-filing license (see Section H, below) or until six months has elapsed from your U.S. filing date, (c) you must do any desired filing in non-Convention countries (see Section F, below) before you publish or sell the invention, and (d) you must file a Patent Cooperation Treaty application or file in all other countries (Convention countries—see Section B, below) within one year of your earliest U.S. filing date (regular or Provisional Patent Application (PPA)).

Prior to discussing the ins and outs of foreign filing, it's important that you familiarize yourself with several important treaties and arrangements. As I'll explain in detail below, most countries are treaty members of the "Paris Convention," which gives you the full benefit of your filing date in your home country in any foreign "Convention" country, provided you file in the foreign Convention country within one year (Section B, below). Also, most of the countries of Europe have joined the European Patent Convention, which has created a single patent office—the European Patent Office (EPO—Section D, below)—to grant European patents that are good in all member countries provided they're registered and translated in each country (and you pay annuities or maintenance fees there). Similarly, most African countries are members of one of two African patent organizations, the African Intellectual Property Organization (OAPI—for French-speaking countries) or the African Regional Industrial Property Organization (ARIPO—for English-speaking countries), while the Eurasian Patent Organization (EAPO) comprises the former Soviet republics. Lastly, most industrialized countries are also members of the PCT—Patent Cooperation Treaty—which enables applicants to file a relatively economical international application in their home country within one year of their home-country filing date. The PCT gives applicants up to a 30-month delay and enables them to have a search, and optimally an examination, performed before making an expensive filing abroad (Section E). Let's discuss these areas in detail.

U.S. patent applications are published 18 months after the earliest claimed filing date, unless the applicant files a Nonpublication Request (NPR) at the time of filing, stating that the application will not be filed abroad. If you do file an NPR and then file abroad, you must revoke the NPR

and notify the PTO of the foreign filing within 45 days (use PTO Form PTO/SB/36).

B. The Paris Convention and the One-Year Foreign Filing Rule

The most important thing to know about foreign filing is the International Convention for the Protection of Industrial Property. Most people in the patent field call it the "Paris Convention" or simply "the Convention." The majority of industrialized nations of the world are parties to this international treaty, which was entered into in Paris in 1883 and has been revised many times since. Generally, the Paris Convention governs almost all reciprocal patent filing rights. Like most of these international treaties, the Paris Convention is administered by the World Intellectual Property Organization (www.wipo.int) in Geneva, Switzerland.

For the purpose of this chapter, there's only one thing you need to know about the all-important Paris Convention: If you file a patent application (regular or PPA) in any one member jurisdiction of the Paris Convention (such as the U.S.), you can file a corresponding application in any other member jurisdiction (such as the U.K., Japan, the EPO, the PCT, Australia, etc.), within one year of your earliest filing date—six months for designs. Your application in each foreign jurisdiction will be entitled to the filing date of your U.S. application (regular or PPA) for purposes of overcoming prior art. ("Jurisdiction" refers to any country or group of countries that have joined under a treaty, that is, the EPO, PCT, AIPO, ARIPO, and EAPO, as listed above.

You do have to claim "priority" of your original application. "Priority" means that a later application is entitled to the benefit of the filing date of an earlier application. If you fail to file any foreign applications under the Convention within the one-year period, you can still file after the one-year period in Convention jurisdictions, provided you haven't sold, published, or patented your invention yet. However, any such late application won't get the benefit of your original U.S. filing date, so any relevant prior art that has been published in the meantime can be applied against your applications. Put differently, once you miss the one-year deadline, your foreign application won't be entitled to the filing date of your original application. Rather, it becomes a non-Convention application, even in Convention countries. Also, once your U.S. application issues, it's too late to foreign file anywhere (unless you file within the one-year period)—that is, if you file a Convention application.

All jurisdictions that are members of the Paris Convention are indicated in Fig. 12A, where the most popular jurisdictions for foreign filing are indicated in boldface.

C. Other Priority Treaties Similar to the Paris Convention

There are three other priority treaties that operate similarly to the Paris Convention—that is, the member or signatory countries have reciprocal priority rights in each others' countries. For example, the U.S. has entered into treaties with the Republic of China (Taiwan), India, and Thailand, so that applicants who file a U.S. application can file corresponding applications in each of these countries within one year and obtain the benefit of their U.S. filing date, and vice versa.

D. European Patent Office/ Europäisches Patentamt/Office Européen des Brevets (EPO)

The European Patent Office (EPO) (www.epo.org) is a separate and vast trilingual patent office at Ehrhardstrasse 27, D-8000, München 2, Germany, across the Isar River from the famous Deutsches Museum. (There is a separate website for searching the European Patent Office (www.espacenet.com).) There is also a facility in The Hague, Netherlands. The EPO grew out of the earlier formation of the European Union (EU, formerly EEC), and the economic integration that resulted. Member nations of the EEC are also members of a treaty known as the European Patent Convention (EPC). Under the EPC you can make one patent filing in the EPO. If this filing matures into a European patent, it will, when registered in whatever individual member countries you select, cover your invention in these selected countries. And since the EPC is, in turn, considered the same as a single country (a jurisdiction) under the Paris Convention and the PCT, your effective EPO filing date will be the same as your original U.S. filing date, so long as you comply with the one-year foreign filing rule. In other words, filing in the EPO allows you to kill many birds with one stone.

Once your application is on file, the EPO will subject it to a rigorous examination, including an opposition publication 18 months after filing. (See Chapter 13.) Even though you'll have to work through a European agent, patent prosecution before the EPO is generally smoother than in the PTO, because the examiners are better trained (all speak and write three languages fluently) and because they actually take the initiative and suggest how to write your claims to get them allowed. If your application is allowed, you'll be granted a European patent that lasts for 20 years from your filing date (provided you pay maintenance fees in the member countries you've

selected). Your patent will be valid automatically in each member country of the EPC that you've designated in your application, provided that you register it in and file translations in each country and appoint an agent there.

CAUTION

Filing in the EPO Is Extremely Expensive for U.S. Residents, who have to pay a substantial annuity to the EPO each year an application is on file there until it issues. Thereafter, U.S. residents must pay substantial fees to register and translate the Europatent and pay annuities in each member country in which the Europatent is registered. Therefore, as I suggest in Section I, below, you should not file for a Europatent unless you're extremely confident your invention will be commercially successful there, or unless someone else, such as a European licensee, is paying the freight.

All member countries of the EPO are indicated in Fig. 12A. The member countries have agreed to establish a community patent for all of Europe at sometime in the future.

E. The Patent Cooperation Treaty (PCT)

The PCT is another important treaty to which most industrial countries are a party. Under the Patent Cooperation Treaty (PCT), which was entered into in 1978, U.S. residents can file in the U.S. and then make a single international filing in the USPTO within the one-year period. This can cover all of the PCT jurisdictions, including the European Patent Office (EPO). Eventually, you must file separate or "national" applications in each PCT jurisdiction (including the EPO) where you desire coverage. These separate filings, which must be translated for non–English-speaking jurisdictions, must be made for most countries within 30 months after your U.S. filing date.

If you file a PCT application, the USPTO, acting under the PCT, will make a patentability search of your invention and will give you an indication of its patentability. If you want an actual examination of your invention to see what claims are allowable or rejected and to prosecute the application and revise claims, elect Chapter II of the PCT by 19 months after your U.S. filing date. Except for the single international filing, the PCT affords you a 30-month extension in which to file in most PCT countries or the EPO.

Also, you can file your first application under the PCT and then file in any PCT jurisdiction (including the U.S.) within 30 months from your PCT filing date. You should take this route if you've filed a PPA and you've decided to foreign file by one year after your PPA filing date. Further, since the PCT is a member of the Paris Convention, if you file with the PCT first, you can file in any non-PCT Convention jurisdiction within one year from your PCT filing date. As stated, after you file your PCT application, you'll receive a "search report" citing any pertinent references against your application. If you elect Chapter II of the PCT (optional) you'll receive an "examination report," which allows or rejects the claims of your application on the cited references. A list of PCT jurisdictions is indicated in Fig. 12A. All PCT jurisdictions are bound by Chapter I (searching part) and Chapter II (examination part). (Note that all PCT members are members of the Paris Convention, but not vice versa.)

The PCT is administered by the World Intellectual Property Organization (WIPO), www.wipo.int, whose main mailing address is listed in Section M.

NOTE

Distinguishing Among PCT Member Countries. Technically, only individual countries (and not associations of countries such as the EPO) can become members of the PCT. For purposes of filing, this distinction is immaterial and when possible, associations should be designated—for example, the EPO, and not the individual member country such as Germany. For that reason, I list associations of countries as members of the PCT. Below is a list of country associations which grant regional patents and whose constituent countries are members of the PCT: ARIPO (African Regional Intellectual Property Organization), EAPO (Eurasian Patent Association), EPO, and OAPI (Organisation Africaine de la Propriété Intellectuelle). The member countries of each of these associations are listed at http://www.wipo.int/export/sites/www/pct/en/texts/pdf/reg_des.pdf.

F. Non-Convention Countries

There are several countries (generally nonindustrial) that aren't parties to any Convention. If you do want to file in any of them, you may do so at any time, provided:

1. your invention hasn't yet become publicly known, either by your publication, by patenting, by public sale, or by normal publication, in the course of prosecution in a foreign jurisdiction (the PCT and the EPO publish 18 months after filing), and
2. you've been given a foreign-filing license on your U.S. filing receipt (see Section H, below) or six months has elapsed from your U.S. filing date.

I won't discuss filing in non-Convention countries in detail, except to note that if you do wish to file in any, you

Members of Paris Convention (Total Contracting Parties: 173)				
Albania	Costa Rica	Iceland	Morocco	Sierra Leone
Algeria	Côte d'Ivoire	India	Mozambique	Singapore
Andorra	Croatia	Indonesia	Namibia	Slovakia
Angola	Cuba	Iran	Nepal	Slovenia
Antigua and Barbuda	Cyprus	Iraq	Netherlands	South Africa
Argentina	Czech Republic	Ireland	New Zealand	Spain
Armenia	Dem. People's Rep. of Korea	Israel	Nicaragua	Sri Lanka
Australia		Italy	Niger	Sudan
Austria	Dem. Rep. of Congo	Jamaica	Nigeria	Suriname
Azerbaijan	Denmark	**Japan**	Norway	Swaziland
Bahamas	Djibouti	Jordan	Oman	Sweden
Bahrain	Dominica	Kazakhstan	Pakistan	Switzerland
Bangladesh	Dominican Republic	Kenya	Panama	Syrian Arab Republic
Barbados	Ecuador	Kyrgyzstan	Papua New Guinea	Tajikistan
Belarus	Egypt	Lao People's Dem. Rep.	Paraguay	Thailand
Belgium	El Salvador	Latvia	Peru	Togo
Belize	Equatorial Guinea	Lebanon	Philippines	Tonga
Benin	Estonia	Lesotho	Poland	Trinidad and Tobago
Bhutan	Finland	Liberia	Portugal	Tunisia
Bolivia	**France**	Libyan Arab Jamahiriya	Qatar	Turkey
Bosnia and Herzegovina	Gabon	Liechtenstein	Republic of Korea	Turkmenistan
Botswana	Gambia	Lithuania	Republic of Moldova	Uganda
Brazil	Georgia	Luxembourg	Romania	Ukraine
Bulgaria	**Germany**	Macedonia (Former Yugoslav Rep. of)	Russian Federation	United Arab Emirates
Burkina Faso	Ghana	Madagascar	Rwanda	**United Kingdom**
Burundi	Greece	Malawi	Saint Kitts and Nevis	**United Rep. of Tanzania**
Cambodia	Grenada	Malaysia	Saint Lucia	**United States of America**
Cameroon	Guatemala	Mali	St. Vincent & Grenadines	Uruguay
Canada	Guinea	Malta	San Marino	Uzbekistan
Central African Republic	Guinea-Bissau	Mauritania	Sao Tome and Principe	Venezuela
Chad	Guyana	Mauritius Mexico	Saudi Arabia	Vietnam
Chile	Haiti	Monaco	Senegal	Yemen
China	Holy See	Mongolia	Serbia	Zambia
Colombia	Honduras	Montenegro	Seychelles	Zimbabwe
Comoros	Hungary			
Congo				

Fig. 12A—Membership in Patent Conventions

Members of Patent Cooperation Treaty (Total Contracting Parties: 143)				
Albania	Costa Rica	Iceland	Mozambique	Slovenia
Algeria	Côte d'Ivoire	India	Namibia	South Africa
Angola	Croatia	Indonesia	Netherlands	Spain
Antigua and Barbuda	Cuba	Ireland	New Zealand	Sri Lanka
Argentina	Cyprus	Israel	Nicaragua	Sudan
Armenia	Czech Republic	Italy	Niger	Swaziland
Australia	Dem. People's Rep. of Korea	**Japan**	Nigeria	Sweden
Austria	Denmark	Kazakhstan	Norway	Switzerland
Azerbaijan	Dominica	Kenya	Oman	Syrian Arab Republic
Bahrain	Dominican Republic	Kyrgyzstan	Papua New Guinea	Tajikistan
Barbados	Ecuador	Lao People's Dem. Republic	Peru	Thailand
Belarus	Egypt	Latvia	Philippines	Former Yugoslav Rep. of Macedonia
Belgium	El Salvador	Lesotho	Poland	Togo
Belize	Equatorial Guinea	Liberia	Portugal	Trinidad and Tobago
Benin	Estonia	Libyan Arab Jamahiriya	Republic of Korea	Tunisia
Bosnia and Herzegovina	Finland	Liechtenstein	Republic of Moldova	Turkey
Botswana	**France**	Lithuania	Romania	Turkmenistan
Brazil	Gabon	Luxembourg	Russian Federation	Uganda
Bulgaria	Gambia	Madagascar	Saint Kitts and Nevis	Ukraine
Burkina Faso	Georgia	Malawi	Saint Lucia	United Arab Emirates
Cameroon	**Germany**	Malaysia	St. Vincent & Grenadines	**United Kingdom**
Canada	Ghana	Mali	San Marino	**United Rep. of Tanzania**
Central African Republic	Greece	Malta	Sao Tome and Principe	**United States of America**
Chad	Grenada	Mauritania	Senegal	Uzbekistan
Chile	Guatemala	Mexico	Serbia	Vietnam
China	Guinea	Monaco	Seychelles	Zambia
Colombia	Guinea-Bissau	Mongolia	Sierra Leone	Zimbabwe
Comoros	Honduras	Montenegro	Singapore	
Congo	Hungary	Morocco	Slovakia	

Member States of the European Patent Organization				
Albania	**France**	Liechtenstein	Netherlands	Slovakia
Austria	**Germany**	Lithuania	Norway	Slovenia
Belgium	Greece	Luxembourg	Poland	Spain
Bulgaria	Hungary	Macedonia (Former Yugoslav Rep. of)	Portugal	Sweden
Croatia	Iceland	Malta	Romania	Switzerland
Cyprus	Ireland	Monaco	San Marino	Turkey
Czech Republic	Italy		Serbia	**United Kingdom**
Finland	Latvia			

Fig. 12A—Membership in Patent Conventions (continued)

should do so in exactly the same manner as you would for an individual filing in a Convention country (see Section K, below). However, you won't need a certified copy of your U.S. application since you won't be able to obtain priority (the benefit of your U.S. filing date).

G. Never Wait Until the End of Any Filing Period

As stated, you have one year after you file your U.S. application (PPA or RPA) to file foreign Convention patent applications (and be entitled to your U.S. filing date) in the PCT, the EPO, or any other jurisdiction that's a member of the Paris Convention. You also have 30 months after you file a U.S. application to file in the individual PCT countries, including the EPO, provided you filed a PCT application. You have one year, if you file under the PCT first, to file in non-PCT Convention countries and 30 months to file in the PCT countries, respectively. However, you should never wait until the end of any of these periods. You should normally make your decision and start to take action about two or three months before the end of the period. This is to give you and the foreign agents time to prepare (or have prepared) the necessary correspondence and translations and to order a certified copy, if needed, of your U.S. application. So mark your calendar in advance accordingly. (While you shouldn't wait until the very end of the one-year period, you shouldn't file until near the end, since there's no advantage in filing early, unless you need an early patent—for example, because you have a foreign infringement.)

H. The Early Foreign Filing License or Mandatory Six-Month Delay

Normally, the official filing receipt that you get after filing your U.S. application (Chapter 13, Section A) gives you express permission from the PTO to file abroad. This permission usually will be printed on your filing receipt, as follows: "If required, Foreign Filing License Granted 2010 Dec 14." However, if your filing receipt fails to include a foreign filing license (only inventions with possible military applications won't include the license), you aren't allowed to foreign file on your invention until six months following your U.S. filing date. What's the reason for this? To give the U.S. government a chance to review your application for possible classification on national security grounds. You probably won't be affected by any of this, as most applications get the foreign filing license immediately and, in any case, there is usually no good reason to file before six months after your U.S. filing. If your situation is different, however, and your filing receipt doesn't include a license, see a patent lawyer (Chapter 6, Section E). If your invention does have military applications, not only will you fail to get a foreign filing license on your filing receipt, but after you receive the receipt, you may receive a Secrecy Order from the PTO. This will order you to keep your invention secret until it's declassified, which often takes 12 years. (The Government kept Dr. William Friedman's application, filed in 1933 on a cryptographic system, secret until 2000 August 1, when it issued as patent 6,097,812—67 years later! Dr. Friedman is regarded as the father of American cryptography.) Your patent can't issue while it's under a secrecy order, but the government may compensate you if they use your invention in the meantime. You can foreign file an application that is under a secrecy order, but it's complicated; see a patent lawyer who has experience in this area.

I. Don't File Abroad Unless Your Invention Has Very Good Prospects in Another Country

Because patent prosecution and practice in other countries is relatively complicated and extremely expensive, you should not file applications abroad unless:

- a significant market for products embodying the invention is *very* likely to exist
- *significant* commercial production of your invention is *very* likely to occur, or
- you've already located a foreign licensee or there is someone else willing to pay for the foreign filing.

It's been my experience that far too many inventors file abroad because they're in love with their invention and feel it will capture the world. Unfortunately, this almost never happens. Almost all inventors who do file abroad never recoup their investment—that is, they usually waste tens of thousands of dollars in fees and hardly ever derive any royalties, let alone enough royalties to cover their costs. Thus, as a general rule, I suggest that you file in another country only if you feel that you're:

- very likely to sell at least $500,000 worth of products embodying your invention there, if you're selling it yourself
- very likely to earn at least $100,000 in royalties from sales of your invention there by others, or
- associated with a licensee or sales representative there who contracts to pay you royalties with a substantial advance or guarantee, or who will pay for your foreign filing in that country.

In addition to the high initial cost of foreign filing, you will have to pay substantial expenses to obtain foreign patents and maintenance fees each year to keep them in force.

Note that even if an infringement occurs in a country where you didn't file, it still is not worth paying for foreign filing there, unless the infringement is substantial enough to justify the expense of filing, getting the patent, paying the maintenance fees, and the uncertainties of licensing and litigation.

TIP

The U.S., with its approximately 310 million people, provides a huge marketplace that should be a more-than-adequate market from which to make your fortune, especially if it's your first invention. In comparison, most foreign countries are relatively insignificant. For example, Switzerland, Lebanon, and Israel are each smaller in size than San Bernardino County in California and smaller in population than Los Angeles County; Canada has fewer people than California. In other words, filing in the U.S. usually gives you ten to 50 times more bang for your buck than filing abroad, which costs ten to 50 times as much anyway.

J. The Patent Laws of Other Countries Are Different

Despite the Paris Convention and other treaties covering patent applications, and except for Canada, whose patent laws and practice are practically identical to ours, almost all countries have some differences from the U.S. in their substantive patent laws and practices. These differences have been reduced under the GATT treaty, but some that still exist are as follows:

- In the U.S., once an application is examined and allowed, the patent issues without any further proceedings. However, most foreign countries have an opposition proceeding under which the application is published and anyone who believes the invention isn't patentable can cite additional prior art to the patent office in order to block the patent.
- In the U.S. the patent must be applied for in the name of the actual inventor, but in most foreign countries any assignee (usually the inventor's employer-company) can apply in its own name.
- Many smaller countries (for example, Belgium and Portugal) don't conduct novelty examinations on applications that are filed there directly (not through the EPO), but instead simply issue a patent on every application filed and leave it up to the courts (in the event of an infringement) to determine whether the invention was novel and unobvious.
- Some jurisdictions (the EPO, France, Germany, Italy, Australia, the Netherlands) require the payment of annual maintenance fees while the application is pending. But if you file in these countries (except Australia) through the EPO, no individual country fees are due until the European patent issues and is registered in each country. However, substantial annual EPO fees plus European agent fees are due until the Europatent issues.
- Most foreign countries don't have the one-year grace period the U.S. has. Thus you must get an effective filing date in most countries (either by actual filing there or by filing in the U.S. and then filing a corresponding Convention application there within one year) before publication of the invention. Most foreign countries consider any publication in any country as prior art, but some recognize only publications in their country as prior art. Some countries allow an exhibit at a recognized trade show, provided the application is filed within six months.
- Some countries such as Italy don't grant patents on drugs and some don't grant patents on computer programs or business methods.
- If two different applicants file respective patent applications on the same invention, virtually every country will award a patent to the first to file, a simple, economical, and easy-for-a-layperson system. However, the U.S. and the Philippines award the patent to the "first to invent," a system that requires an expensive, complicated, and lawyer-conducted trial proceeding called an interference (see Chapter 13).
- In Japan, the filing and translation fees are very high. Then, examination must be separately requested within seven years, requiring another stiff fee. After examination is requested, it takes about three years before the Japanese Patent Office, which is understaffed, gets around to it. Getting the application allowed is very difficult. However, it will be given more respect than in the U.S. That is, competitors will be far less likely to infringe or challenge it. Nevertheless, Japanese courts tend to interpret patents narrowly.

K. The Ways to File Abroad

Until several years ago, there was only one way to foreign file, namely, to file a separate application in each country in which you wished to file. As this was a cumbersome and expensive process, many of the countries got together to simplify things. Now there are five basic approaches

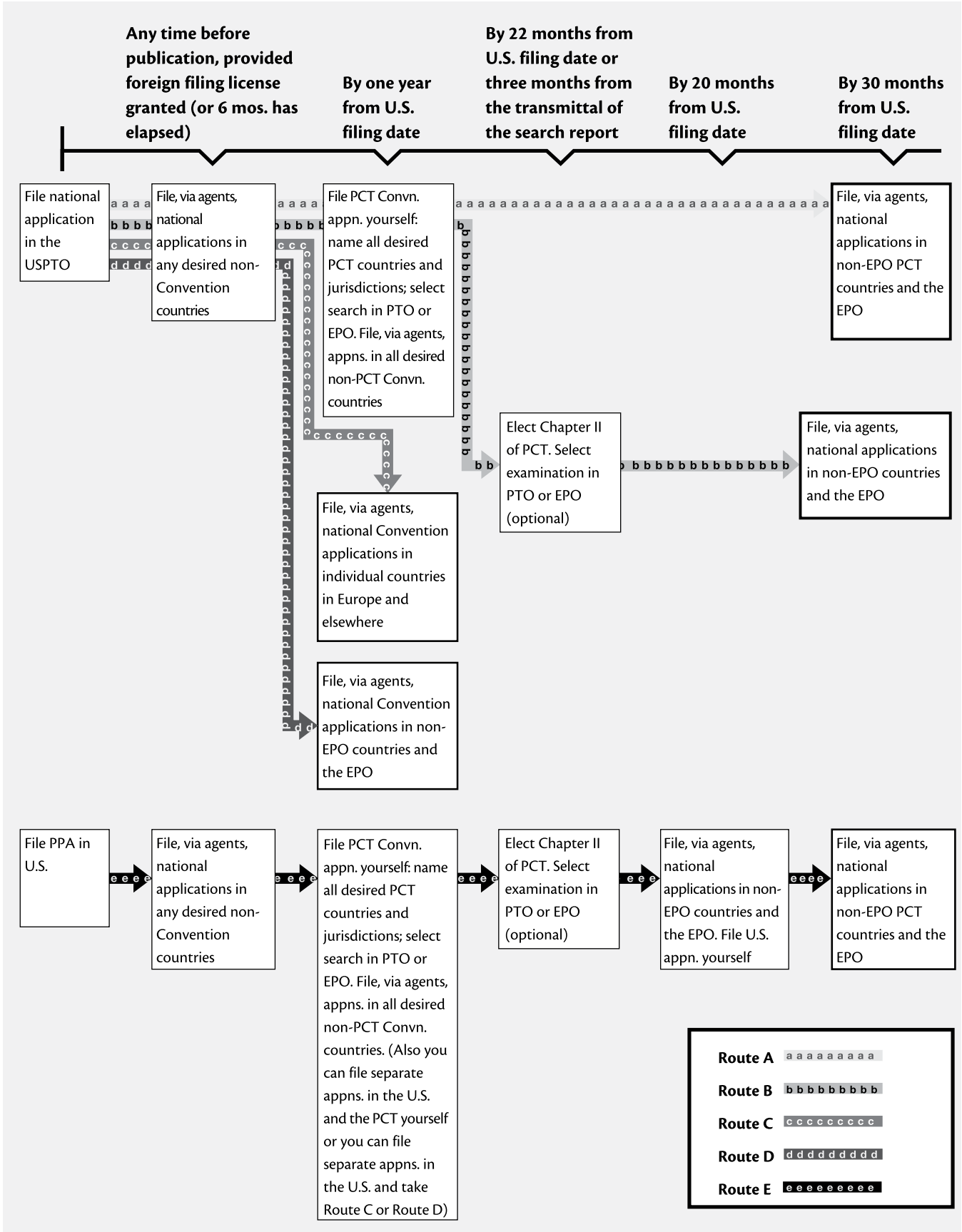


Fig. 12B—Foreign Filing Routes (After Filing Basic U.S. Application)

to filing abroad in Convention countries. You may end up using different approaches for different countries, or the same approach for all. The chart above, Fig. 12B, summarizes these alternatives. The lettered routes in the explanation below are keyed to the paths in the chart (see the legend at the bottom right of the chart). In essence, the routes are:

Route A: This is the most common. File in U.S. Then file in non-Convention countries before publication or sale. (For more information about filing in non-Convention countries, see Section F, above.) Then, within one year, under the Paris Convention, file a PCT application to cover the PCT countries and jurisdictions (including the EPO). Select the PTO or EPO for the search. Then, by 30 months from your U.S. filing date, file national applications (you'll have to hire agents and spend big bucks) in the EPO and non-EPO PCT countries.

Route B: This is the same as Route A, except that within 19 months from your U.S. filing date, or three months from the transmittal of the search report, elect Chapter II of the PCT to get the application examined, either in the PTO or EPO. Finally, file in the EPO and non-EPO countries within 30 months from your U.S. filing date.

Route C: This is the same as Route A, except that the PCT is eliminated entirely and you file Convention applications in the EPO and non-EPO countries within 12 months from your U.S. filing date.

Route D: This is the same as Route C, except that you file directly in the individual EPO countries (rather than the EPO).

Route E: In addition, if you've filed a Provisional Patent Application (PPA), and by the time almost one year elapses from your PPA's filing date you want to file in the U.S. and abroad, you can do so in three basic ways: (1) File a PCT application yourself, naming the U.S. and all other desired PCT countries. File in non-PCT Convention countries using agents. By 22 months from your PPA filing date or three months from the transmittal of the search report, you may elect Chapter II of the PCT and select examination in the PTO or EPO. By 30 months from your PPA filing date, file, via agents, national applications in the EPO and non-EPO countries and file yourself in the U.S., claiming priority of your PCT application. (2) File separate applications in the U.S. and PCT yourself. Continue as in Route A for your PCT application. (3) File separate applications in the U.S. and either (a) use agents to file in non-EPO countries and the EPO (Route C), or (b) use agents to file national Convention applications in individual countries in Europe and elsewhere (Route D).

Let's discuss each of these alternatives in more detail.

1. Route A: Non-Convention/Convention (PCT and Non-PCT/Chapter II/National)

Route A is the most popular way to go. Not surprisingly, it's also the cheapest way to go in the short run, since you won't have to file national applications (with foreign patent agents and the huge expense they entail—indicated by boxes with bold lines on the chart) until 30 months from your U.S. filing date. Under Route A, you file in the U.S. first and then go abroad through the PCT, insofar as possible. Here's how it works for U.S. inventors:

- First file in the U.S. in the usual manner.
- Next file directly in any non-Convention countries you desire, before your application or invention is published, but after you get your foreign-filing license or six months has elapsed from your U.S. filing date.
- Then, before one year from your U.S. filing date, file a PCT request form and a separate "international application" with the USPTO within 12 months from your filing date. The application designates the PCT member countries or jurisdictions (such as the EPO) in which you desire coverage.
- The request and application are forwarded to the "International Searching Authority" (a branch of the PTO) or the EPO (if you've elected to have your search made there) where an "international search report" is prepared. If you select the PTO, the examination will generally be done by the same examiner who handles your U.S. application.
- Copies of the search report and application are then forwarded to the countries designated in the application. Cite any new references to the PTO on your basic U.S. case through another Information Disclosure Statement.
- Within 30 months from your U.S. filing date, you must hire agents and prosecute the application in the individual countries. You must also provide a translation (except in the EPO) and must pay any fees that are required. While separate prosecution is required in each country, it's commonly made easier by the fact that the PCT member countries generally rely on the international search and examination. It is no longer necessary to elect Chapter II to obtain the 30-month delay, except for certain individual country filings.

a. How to Prepare a PCT (International) Application

To prepare an international application under the PCT, first prepare your original U.S. application and drawings in the A4 international format. The main differences between the PCT and U.S. national formats (both of which are accept-

able for U.S. applications) are the paper and drawing size and margins. (These differences are detailed in Chapter 10.)

The World Intellectual Property Organization has software ("PCT-Easy") that enables you to pay somewhat reduced fees and automates the process of completing the PCT filing forms. You can download it (http://pcteasy.wipo.int/en/index.html), but so far I have not been able to use it and the USPTO does not support it.

You can file a PCT application on EFS-Web or by mail. If you want to file by mail, obtain and complete a multipage "Request" (Form PCT/RO/101) including the Fee Calculation Sheet and the Transmittal Letter (Form PTO 1382) from the PTO's website (www.uspto.gov). Click "Patents," then click "PCT." The form can also be obtained from Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, Phone 571-272-4300 or Fax 571-273-0419. Ask for the latest fees when you call, or you can find these in the latest *Official Gazette* on the PTO's website. Complete the forms (full instructions and examples are attached), requesting the PTO to prepare a certified copy of your U.S. application for use with your PCT application, and attach a copy of your application in PCT (A4) format (with drawings) and a credit card payment form or check payable to the Commissioner for Patents for the international application filing fees as computed on the Fee Calculation Sheet—the last page of the Request form. To file a PCT application by EFS-Web, first prepare a PDF copy of your application and drawings in A4 size. Then complete the "Request" (Form PCT/RO/101) including the Fee Calculation Sheet and Transmittal Letter (Form PTO 1382) from the PTO's website (www.uspto.gov). Full instructions are on the forms. Then file the forms (all must be in PDF format) on the PTO's site (http://www.uspto.gov/patents/ebc). You will be able to pay the fees by credit card as part of the process. Call the PTO's PCT Help Desk at 571-272-4300 if you have any questions.

b. PCT Fees

The PCT fees frequently vary due to exchange rate fluctuations. They're composed of several parts as follows:

- Transmittal Fee
- Search Fee: (a) if you haven't already filed in the U.S. (that is, you filed your first application in the PCT, rather than the U.S.—very rare—see Section 6, below); (b) if you've already filed in the U.S. (the usual case); and (c) if you want to use the EPO as your searching authority (recommended)
- International Filing Fee (country designation fees are no longer required since all possible countries are automatically designated).

A common course of action is to designate the EPO and Japan with an EPO search. You should designate the EPO as your searching authority if you intend to file there since they generally do a better search than the USPTO and you'll save money and time in the EPO later. But be warned: Sometimes the EPO does such a good search that you might have to abandon both your U.S. and EPO applications. If any foreign patent office cites a new reference against your application, be sure to cite it in your U.S. application by filing it with a supplemental IDS and PTO-1449. (See Chapter 10, Section G.)

c. How to File PCT and Non-PCT Convention Applications

To file a paper PCT application by mail, mail the Transmittal Letter, Request (including the Fee Calculation Sheet), a copy of your application and drawings (both on A4 size), and CCPF or check, and a receipt postcard to: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, which, as mentioned, is a designated receiving office for the International Bureau. Like Convention applications, the international (PCT) application should be filed within one year of your U.S. filing date, also known as the priority date.

I advise filing the PCT application at least a month before the anniversary of your U.S. filing date, so you'll have time to correct any serious deficiencies. But you can mail the PCT application as late as the last day of the one-year period from your U.S. filing date if you use Express Mail and complete the Express Mail Certification on page 1 of the Transmittal Letter. (Never use a plain Certificate of Mailing (see Chapter 13, Section H) for any PCT correspondence.)

To electronically file a PCT application using EFS-Web, complete the Transmittal Letter online and save a PDF copy. Complete the Request online, print it, sign it in Box X, and convert it back to PDF by scanning. Prepare a copy of your application and drawings and convert them to PDF. Then, file online at the PTO's EFS site (in the same manner as instructed for your U.S. application in Chapter 10). You will get an instant acknowledgment and PCT Serial Number.

To file any non-PCT Convention applications, use a foreign patent agent in each country you select to prepare an appropriate application. The easiest way to do this is to send the agent a copy of your U.S. application and ask what else is needed. The requirements vary from country to country, but special drawings in each country's format will always be needed. You can have your foreign agent prepare these, or you can have these prepared yourself at

lesser cost by the same companies that make drawings for U.S. divisional applications. (See discussion of "Divisional Applications" in Chapter 14, Section D.) Also, the agent will send you a power of attorney form that you'll have to sign. Also you'll generally need a certified copy of your U.S. application; this can be obtained from the PTO. (See Appendix 4, Fee Schedule.) The cost for filing a foreign application in each individual country is about $1,000 to $5,000, depending on the country, the length of your application, and whether a translation is required.

If you wish to correspond directly with the foreign patent agents yourself, you'll first have to get the name of a patent agent in each country. See Section M, below.

d. What Happens to Your International Application?

You'll receive a (PCT) filing receipt and separate serial number for your international application, and the application will eventually be transmitted for filing to the countries (including the EPO) you've designated on your request form. If you make any minor errors in your PCT application, the PCT Department of the USPTO will give you a month to correct them.

e. Search Report

When you receive your PCT search report (either from the PTO or EPO and usually after several months), it will include a written opinion on patentability. You can comment on it and amend your claims if necessary, but no extended prosecution or negotiation is permitted. If you enter Chapter II of the PCT (optional), you will receive a more formal examination of your application, but it will be similar to the written opinion on patentability of Chapter I. The WIPO will publish your PCT application 18 months from your priority date. Your priority date is the date you filed a PPA or an RPA if you didn't file a PPA.

CAUTION

If the search report cites any new references, be sure to cite these to the PTO by way of a supplemental IDS; see Chapter 10, Section G, and Chapter 13, Section A4.

f. National Stage

Within 30 months from your U.S. filing date, whether or not you elect Chapter II, you must hire an agent in Europe (get one in London, if you are seeking one who is fluent in English, or Munich, if seeking an agent close to the EPO offices) and file an EPO application based on your PCT application. Also, you must have an agent in each non-EPO PCT country (such as Japan or Australia) in which you wish to file and get national applications on file in these countries. Expect to pay very stiff fees to file and a high maintenance fee each year that the EPO application is pending.

As mentioned, each of the separate countries and the EPO will rely to a great extent on the international examination they'll receive from the International Bureau. (In most cases this will be the EPO search or an adoption of the U.S. search.) Thus, one advantage of the PCT approach is that you'll save much of what used to be the agonizing, extremely expensive job of separately and fully prosecuting an application in each country in which you elected to file.

CAUTION

You will not receive a reminder to enter the national stage by 30 months from your priority (U.S. filing) date. You are solely responsible for getting your national stage applications on file by the 30-month deadline. I suggest that you select a date two months ahead of the 30-month deadline and write this on your calendar and on each paper you receive from the PCT.

2. Route B: Elect Chapter II of PCT If You Want an International Examination

Route B is the same as Route A, except that instead you elect Chapter II of the PCT before filing your national applications. You have, as indicated, 22 months from your U.S. filing date or three months from the transmittal of the search report, to do this.

Get the forms (PCT/IPEA/401) from the PTO's site or the PCT department of the PTO, and also get the latest fees for Chapter II. If you select the EPO to do the examination, you must file the papers with the EPO in Munich (address in Section D, above) and pay the fee in Euros. You'll get an examination report where claims will actually be allowed or rejected. You can amend your application once and even interview your examiner.

You file your EPO and non-EPO applications in the same way you did under Route A—that is, you elect agents, send them copies of all of your papers, and tell them you want to file national applications in their countries based upon your U.S. and PCT applications. Route B will cost more than Route A since you incur the expense of Chapter II of the PCT.

3. Route C: Convention Applications in EPO and Non-EPO Countries

Under Route C, you bypass the PCT entirely and file, through agents, national convention applications in the EPO and non-EPO countries within 12 months of your U.S. filing date. This is the cheapest way to go in the long run if you wish to file in several European countries. An EPO filing, while expensive, is generally considered cheaper than separate filings if:

1. Two or more non–English-speaking countries are involved (for example, it's cheaper to file in the EPO than to file separate applications in France and Germany), or
2. The U.K. and more than one non-English country are involved. Conversely, it's cheaper to file separate applications in the U.K. and Germany, for instance, than to go through the EPO.

As mentioned, to file a Convention application in the EPO you'll have to go through a European patent agent, unless you have an address in one of the EPO countries, in which case you can do it yourself. Correspondence with the EPO must be in English if your application is based on your U.S. case.

Including the agent's fee, expect to spend a stiff fee to get your application on file and examined in about six countries. (See Appendix 4, Fee Schedule.) Additional large fees will be incurred for prosecution (getting your application approved once it's filed) and issuance. Then you'll have to arrange to get translations and individual agents for the respective countries you designate. For more information, write to the EPO for a copy of *How to Get a European Patent* (address in Section D, above).

4. Route D: Convention Applications in Individual Countries

Here you bypass both the PCT and the EPO. It's not a wise idea to bypass the EPO unless you want to file in just two countries in Europe—in which case it's usually cheaper to make individual filings rather than go through the EPO. This is the simplest way to go, on the charts, although it can get very complex and involve a lot of parallel correspondence and paperwork, since you'll have to make simultaneous prosecutions in each country. Filing is effected by sending a certified copy of your U.S. application to a patent agent in each country and instructing the agent to file a Convention application based upon your U.S. application. The agent will tell you what else is needed.

5. Route E: PPA Filed

If you've filed a PPA (see Chapter 3), your choices and procedures are the same as Routes A to D, except that at each stage there's another national country in which you can file: the United States. If you've filed a PPA, I recommend you file in the U.S., separately, by one year after you file your PPA, because it's simpler and somewhat cheaper. However, if you want to delay your U.S. filing, you can name the U.S. in your PCT application when you file your PCT application within one year after your PPA's filing date. You can then file your U.S. national application by 30 months after your PPA date. Your U.S. application should be identical to a "regular" U.S. application, except that you should add the following sentence to the PAD (Form 10-2) to get the benefit of your PCT filing date: "I hereby claim foreign priority benefits under 35 USC 119 of PCT patent application, Ser. No. _____, Filed 20___; which in turn claims priority of provisional patent application Ser. Nr. _____ filed _____."

6. File the PCT Application First

Although not listed on the chart because it's not a very popular method, if you haven't filed a PPA you can file a PCT application first (before you file anything) and then file in the U.S. and PCT countries (including the EPO) through the PCT. File in the non-PCT Convention countries through the Convention. You can use this method to postpone the examination of your U.S. application until 30 months after your PCT filing date.

If you haven't filed a PPA and you know for certain, before you file anywhere, that you'll want to file in the U.S. and at least one foreign PCT country, then you can save some fees and effort by filing the PCT application first, before you file in the U.S. In your PCT application you must designate the U.S. and any foreign PCT countries (including the EPO) you desire. Then, within one year of your PCT filing date, you should file Convention applications, based upon your PCT application, in any non-PCT country.

Within 30 months of your PCT filing date, file separately (claiming priority of your PCT application) in each country or jurisdiction you've designated in your PCT application, including the U.S. and the EPO. Then order (from the PTO) a certified copy of your PCT application and file this within a few months after your U.S. filing date.

Whether you're filing in a PCT or non-PCT jurisdiction based upon a PCT filing, your foreign patent agents will tell you what you'll need to file PCT-based applications in their countries; allow at least two months before the 20- or

30-month deadline to give them (and you) time to prepare the applications and translations, if necessary.

Patent Prosecution Highway—Expedited Examination of Applications Filed Abroad

As stated in Chapter 10, you get your application examined ahead of turn in almost all major foreign patent offices if you first filed your application in the U.S. and then filed a foreign application claiming priority of your earlier-filed U.S. application. In order to enter this program in the foreign patent office, the USPTO must have officially allowed at least one claim in the first-filed U.S. application. If you want to enter this program you must have your foreign agent file a request in the foreign patent office.

L. Rescind Any Nonpublication Request

When you filed your U.S. application, you had the opportunity to file a Nonpublication Request (NPR) (see Form 10-7). If you filed an NPR, you must file a rescission of this Request with the PTO within 45 days of filing your foreign application. You must file the rescission regardless of whether you are filing directly in a foreign country or using a PCT application. If you do not file the rescission, the PTO will strike your U.S. application.

To make the rescission, complete and file Form PTO/SB/36, available on the PTO's website. If you don't have Internet access, you can use Form 13-1, but title it "Request to Rescind Previous Nonpublication Request." Remove the sentence stating "In response to Office Letter …" and substitute the following statement: "Applicant has foreign filed the above application on or about [date] and therefore hereby rescinds the previously filed Nonpublication Request under 35 USC 122(b)." Remember to complete or include a Certificate of Mailing at the end of the rescission as in Form 13-2. (If you forget to rescind the NPR within 45 days of your foreign filing your application is technically abandoned but you may revive it by a petition under Rule 136(6), accompanied by a stiff fee.)

After notification, the PTO will schedule publication of your application 18 months after your U.S. filing date (or as soon as possible after the 18-month period). You will have to pay a fee for publication when you pay your issue fee.

Beware of Scams

Unfortunately the scammers have even invaded the world of the PCT and foreign patent filings. Once your application is published, you may get offers from scammers seeking to lighten your wallet. E.g., after filing a PCT application for a client and revoking the Nonpublication Request that I had originally filed, the PTO published his application about 18 months after filing. Shortly thereafter He got a letter from a "Patent Registry" in Washington, DC, offering to register his patent in their private "American Patent and Trademark Register" for only $2,489.46! I did not see any commercial value whatsoever to this offer.

M. Resources to Assist in Foreign Filing

There are a number of resources to assist you in foreign filing your patent application. Let's look at them separately.

1. U.S. Patent Practitioners

Most U.S. patent attorneys and agents have experience in foreign filing and will handle the PCT filing and national stage filings for you for a fee, in addition to the filing fees.

2. Foreign Filing Firm

One firm specializes in foreign patent filing. Visit www.Inovia.com.

3. Foreign Patent Agents

As I've mentioned, if you desire to file abroad in the national stage you'll almost certainly need to find a foreign patent agent who's familiar with patent prosecution in the countries where you desire protection. (In most countries, patent professionals are called "agents" rather than attorneys. As in the U.S., patent agents are licensed to represent clients before their patent office, but not their courts.) Your best bet is to find one through a U.S. patent attorney (see Chapter 6, Section E), as most are associated with one or more patent agents in other major countries.

If you don't know a U.S. patent attorney or someone who's familiar with foreign patent agents, there are several other ways to obtain the names.

The easiest way is to use an Internet search engine, for example, by entering "patent agent [name of country]."

Another way is to look in the telephone directory of the city where the patent office of the foreign country is located. Most large libraries have foreign telephone directories.

Another simple way is to inquire at the consulate of the country; most foreign countries have consulates in major U.S. cities and these should have a list of patent agents.

A fourth possibility is to look in the *Martindale-Hubbell Law Directory* (in any law library or at www.martindale.com), which lists some foreign patent agents in each country.

A fifth possibility is to hire a local patent attorney to do the work for you, although this involves an intermediary's costs. Because of the complicated nature of foreign filing, many patent attorneys even use their own intermediaries, namely, specialized patent-law firms in New York, Chicago, or Los Angeles, which handle foreign filing exclusively.

A sixth possibility is to hire a British firm of patent agents to do all your foreign filing. The reason for this is that they speak fairly good English and they're familiar with foreign filing. This would be especially appropriate if you're filing with the EPO, but most German agents in Munich, although not as fluent in English, have the compensating advantage of their physical proximity to the EPO.

Whichever way you find your foreign patent agent, be careful, since many foreign agents are bound by a minimum fee schedule, which is sometimes exorbitant. Also, keep in mind that some foreign patent agents—like their U.S. counterparts—are incompetent or inclined to overcharge.

4. Written Materials

As you've gathered by now, filing abroad can become very complicated. If you want to learn more, and get the latest information (if the print date of this book is old), including the laws of each country, see *Patents Throughout the World*, by Anne Marie Greene (Clark Boardman Callaghan). This book is revised annually, so be sure you have the most recent version. Also, you can call the consulate of any country to get information on their patent laws. For more information on how to utilize the PCT, "The PCT Applicant's Guide," "Basic Facts," and other instructive materials and forms are available online at http://www.wipo.int and from the PCT Department of the USPTO. The World Intellectual Property Organization (Post Office Box 18, 1211 Geneva 20, Switzerland) administers the PCT. (For more information on the EPO, see Section D, above.)

Bonne chance et au revoir!

N. Summary

A U.S. patent only provides a monopoly in the United States, so it is necessary to file for corresponding foreign patents in any other countries in which you want offensive rights. Foreign filing is very expensive and few inventors who foreign file ever recoup their investment, so an inventor should foreign file the application in a country only if the invention has extremely strong commercial potential there.

Various conventions govern foreign filing. The Paris Convention grants anyone who files a basic application in any member country the benefit of the basic filing date in any other country where a corresponding application is filed within one year.

The European Patent Office enables one to file a single patent application and get a European patent that is valid in any European country, provided the Europatent is registered in and translated for each country.

The Patent Cooperation Treaty (PCT) enables a U.S.-resident inventor who has filed a patent application in the PTO to file a PCT application in the USPTO within one year and have it searched and examined to determine patentability and delay filing of national stage applications in foreign jurisdictions for 30 months from the U.S. filing date.

Other countries, such as the Republic of China and Thailand, have individual treaties with the U.S. that work similarly to the Paris Convention.

An inventor who files a U.S. application must wait six months before foreign filing, unless the PTO grants a foreign filing license, which it usually grants on the filing receipt. The laws of other countries are different from the U.S. in certain respects—for example, some countries have no interferences, no one-year grace period, and no patents on drugs. Some countries have maintenance fees during pendency, hold opposition proceedings, and companies can apply for patents in the name of the company or an assignee.

There are several routes for filing abroad, but most inventors file in the U.S. first, then file a PCT application within a year, then file national-stage applications within 30 months of the U.S. filing date. An inventor can file a PCT application in the USPTO by completing the PCT forms and filing an A4 copy of the application with the appropriate fees. You can file a PCT application on paper or via EFS-Web.

If an inventor files a U.S. application with a Nonpublication Request, the inventor must revoke this within 45 days of any foreign filing. It is necessary to hire a foreign patent agent in any jurisdiction where a national-stage application (in an individual country or in a regional office like the EPO) is to be filed.

CHAPTER 13

Getting the PTO to Deliver

Inventor's Commandment 24

Never admit or state anything negative or limiting about your invention on the record (in writing), since anything negative you admit will be used against you later by an adversary or construed against you in a judicial proceeding.

Inventor's Commandment 25

Your application will go abandoned if you don't file a timely response. Whenever you have a patent application pending, you must be available to receive Office Actions (letters) from the PTO and you must respond to every OA within the time allotted or within the time period of any extension you buy (when possible).

Inventor's Commandment 26

You may not add any "new matter" (technical information not in the application as filed) to any patent application. If you want to add any new matter you must file a continuation-in-part application as explained in Chapter 14

Inventor's Commandment 27

In order to answer an Office Action from the PTO, you must respond to each and every point (objection or rejection) in the OA, either by suitable argument or by complying as required.

Inventor's Commandment 28

When drafting an amendment in response to the first Office Action, do your very best job. Include a complete response, all available arguments for patentability, and the narrowest and most comprehensive claims possible, since the next OA will almost certainly be made final, foreclosing any future substantive changes unless you pay another filing or continued examination fee.

You can file a lawsuit against anyone for anything. Whether you can prove your case and win is, of course, a very different matter.

Similarly, anyone can file a patent application on anything. But getting the Patent and Trademark Office (PTO) to issue you a patent is, of course, a very different matter.

This chapter tells you how to get the PTO to deliver, assuming your invention meets the standards of patentability (Chapter 5). This material is sure to seem confusing the first time you read it. A little familiarity with the process, however, should do a world of good when it comes to your understanding. Sections A to N of this chapter apply to utility patent application except as noted in the design prosecution section (Section P).

A. What Happens After Your Patent Application Is Filed

It will be helpful to review exactly what will occur after your patent application is filed.

1. Receipt Postcard

If you filed by mail, you'll receive your receipt postcard back in about two to four weeks. If you filed electronically, you'll receive your filing acknowledgment immediately. The postcard or acknowledgment will have an eight-digit number—for example, "U.S. Patent & TM Office, 22 August 2010; 12/123,456" The date is the "deposit" date (date of receipt), and the number is the serial number (sometimes called "application number") of your application. Your electronic acknowledgment will also contain another four-digit number, called a confirmation number, which you will need to file amendments via EFS-Web if you're a registered eFiler. As stated in Chapter 11, Section G, you should keep your serial number and filing date confidential unless a prospective manufacturer has shown serious interest and asks for this information—for example, because you're about to enter into a license or sale agreement.

2. Official Filing Receipt

About one to three months later (if you followed my instructions in Chapter 10) you should receive an official filing receipt by mail. This is a sheet containing the following:

- the name(s) of the inventor(s)
- the title of your patent application
- the examining group to which your application has been assigned

- the filing date and serial number of your application and the confirmation number
- the number of claims (total and independent)
- the filing fee you paid
- your name and address
- the words "Small Entity" if you filed as a small entity, and
- the words "Foreign Filing License Granted [date]" if the invention hasn't been militarily classified (most won't be).

Check all of this information carefully; it's what's entered into the PTO's data-processing system about your application. If the filing receipt has any errors, indicate the error on the filing receipt and send a copy or fax it to the Office of the Initial Patent Examination (OIPE) whose numbers will be on the filing receipt—but, if not, see the number in Appendix 5, Mail, Telephone, Fax, and Email Communications With the PTO. Request a new filing receipt.

Assuming you've done everything properly—as explained in Chapter 10—your patent application is technically pending once you receive your Express Mail receipt from the Post Office clerk or electronic acknowledgment. However, the actual filing receipt makes it official and shows that it's actually recorded in the PTO.

If You Receive a Foreign Filing License

The words "Foreign Filing License Granted" on your filing receipt mean that you can foreign file at any time, rather than waiting six months. However, you still should wait until approximately nine months have passed before considering filing abroad in Convention countries. This will allow time for you to receive a possible Office Action, so you'll have better information about patentability and to accumulate additional commercial information on your invention. You should file abroad in non-Convention countries before you sell or publish details of the invention.

You may continue to label your invention and any descriptive literature "Patent Pending," or "Patent Applied For." They have the same meaning. Note that it's a criminal offense to use the words "patent applied for" or "patent pending" in any advertising when there's no active, applicable regular or provisional patent application on file.

If for any reason you didn't comply with an item on the checklist in Chapter 10, so that your application hasn't been filed properly (for example, your check bounced, you didn't pay enough for the filing fee, or you forgot to sign the PAD (Form 10-1)), you won't get the filing receipt. Instead, the Office of Initial Patent Examination (OIPE) of the PTO will send you a deficiency notice telling you what's needed and what surcharge (fine) you'll have to pay for the error of your ways. Once you comply with the deficiency notice (they usually give you a month), you'll get your filing receipt a few weeks later.

3. Patent Pending Status

The patent pending period begins when your regular patent application or provisional patent application is filed and lasts until the patent issues. During the patent pending period, your rights depend upon whether you have filed a Nonpublication Request (NPR). If you have not filed an NPR, the PTO will publish your regular patent application 18 months after the filing date. Once it is published, you obtain provisional rights that allow you to obtain royalties from an infringer for activities that occurred from the date the infringer gets actual notice of the published application. (You can provide actual notice to the infringer by sending a copy of the published application by certified mail, return receipt requested.) You must wait until after the patent issues to request (and sue if necessary for) these "patent pending" royalties. If the patent does not issue, you cannot obtain any royalties.

If, at the time of filing your application, you filed an NPR, your application will not be published prior to issuance and you will have no offensive rights during the patent pending period. In other words, if it is not published prior to issuance, anyone can freely make, use, sell, and offer your invention for sale during the entire pendency period.

In general, a potential infringer won't copy a device that it knows is patent pending. This is because the infringer would have to take the chance that a patent will later be issued and you'll use your patent to enforce your monopoly—that is, stop any further production and marketing. In this case, the money the infringer would have to spend on expensive tooling will have been wasted. (If you're willing to license the infringer under your patent, the infringer's tooling outlay will be worthwhile, but few infringers will be willing to take this chance.) Another reason for marking a device "patent pending" is to show that you have given notice to potential infringers, thereby giving you the right to obtain treble damages and attorney fees (after your patent issues) for willful infringement.

After your application is filed, you may publish articles on your invention without loss of any legal rights in the U.S. or foreign Convention countries (see Chapter 12), but you'll lose rights in non-Convention countries

(Chapter 12). However, it's not desirable to reveal details of your invention to potential competitors at this early stage, especially since your application may not become a patent.

4. Send in Your Information Disclosure Statement (IDS)

If you haven't done so already, after receiving your official filing receipt send in your Information Disclosure Statement as discussed in Chapter 10, Section G. If you filed your application by mail send in the IDS by filling out a Transmittal Form (SB/21 or Form 10-05). Accompany it with the SB/08A and SB/08B or 10-6A and 10-6B forms as necessary, and copies of any non-U.S. patent references you listed on the form. If you filed electronically, and you're a registered eFiler, you won't need a transmittal form. Instead you get the electronic SB/08a form by going to www.uspto.gov/ebc, then clicking EFS-Web Unregistered eFilers, then Electronic Filing, then eFiling Forms, or go directly to www.uspto.gov/ebc/portal/efs/US_ADS_Form_SB_14.pdf. Open the SB/08a form, fill the blanks, and save the form as a PDF file, (for example, IDS.pdf) as you did with the Data Sheet when you filed, and make a PDF of any non-U.S. patent references (known as Nonpatent Literature or "NPL"), and file all of these using the PTO's electronic business site. Remember that the PTO wants the IDS to be filed within three months of the application's filing date. Don't forget to fill in all the blanks on the forms.

If you don't file the IDS within three months of your filing date, or before your first Office Action, or within three months after entry into the "national" stage for references cited in foreign applications, the PTO will still consider it. However, you must file it *before* a final action or a notice of allowance is sent, and (1) pay a "Late IDS Fee" (see Appendix 4, Fee Schedule), or (2) include a certificate as follows.

"Each item of information contained in this Information Disclosure Statement (IDS) was cited in a communication from a foreign patent office in a counterpart foreign patent application not more than three months prior to the filing of such IDS, or no item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign patent application, or, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 CFR 1.56(c) (inventor, attorney, assignee, etc.) more than three months prior to the filing of such IDS."

You can even file the IDS after a final action or notice of allowance is sent, but before you pay the issue fee. However, you *must* include the above certificate, a petition requesting consideration of the IDS, and a petition fee—see Fee Schedule.

If you send in an IDS and later discover any additional references—for example, in the course of foreign prosecution—you must bring these to the attention of the PTO through a supplemental IDS. (Don't send an IDS for any references the examiner cites in your U.S. case; these will automatically be listed, along with those which you cited, on the patent.)

5. First Office Action

About six months to three years after the filing date (patent prosecution is mostly a waiting game) you'll receive a communication from the PTO known as a "first Office Action" (OA), sometimes called an "official letter." It consists of forms and a letter from the examiner in charge of your application, describing what is wrong with your application and why it cannot yet be allowed. (Rarely will an application be allowed in the first OA.)

Specifically, the OA may:

- reject claims
- list defects in the specification and/or drawings
- cite and enclose copies of prior art that the examiner believes shows your invention is either:
  - not novel, or
  - obvious, and/or
- raise various other objections.

The PTO no longer sends U.S. patent references with OAs, although it still sends foreign patents and nonpatent literature. You must download the patent references from the Internet or send for them by mail. The PTO has a batch downloading procedure under its PAIR system, but you can also download them from the PTO's patent database site or either of the free patent copy supply sites listed in Chapter 6.

To find out approximately when you'll receive the first OA from the PTO, you can go to the PTO's home page (www.uspto.gov), then click Patents, then "OG (*Official Gazette*)—regular and special notices," then find the latest OG, open the Notices, select Technology Centers, and determine the latest application filing date for the Technology Center to which your application has been assigned. Also you can call the clerk of the examining group where your application has been assigned. The name of this group will be typed on your filing receipt. PTO phone numbers are listed on the PTO website, in Appendix 5, and are published irregularly in the *Official Gazette* (OG). Each issue of the OG also gives date status information for patent applications in each examining group. Also, you can call the PTO's main number (see Appendix 5, Mail, Telephone, Fax, and Email Communications With the PTO) to find the telephone number of your group.

I suggest that you write three date entries (as shown below) on every paper you receive from the PTO:

Received ___[*date*]_____
Start preparing response by ___[*date*]_____
Response due by___[*date*]_____

(I also suggest you make the "Start preparing response by" date a month ahead of the "Due by" date. If no response is due simply omit the last two lines or write NA" (not applicable) on them.)

6. Response to First Office Action

Every OA itself will specify an interval, usually three months (extendable, for a fee, up to six months) from the date the OA was mailed, within which you must file a response. Your response must take whatever action is necessary to overcome the objections and rejections listed in the OA. The response you file is technically called an "amendment" (assuming it contains any changes), or a "response" (assuming it doesn't contain any changes). The entire process of correspondence (Office Actions and amendments) to and from the PTO is known as "patent application prosecution," although no one is "prosecuted" in the usual sense. I show you how to draft your response in Section F, below.

7. Second/Final Office Action

About two to six months after you file your first amendment, you'll receive a second OA from the PTO; this will usually be designated a "final" OA by the PTO. A final OA is supposed to end the prosecution stage before the examiner. However, as we'll see later, this is far from true. In other words, a "final action" is rarely final. Again, you have three months to reply.

8. Notice of Allowance

After the first OA—assuming you submit an amendment or whatever is necessary to get your application in condition for allowance—you'll be sent a Notice of Allowance, indicating that all of your claims are allowed and that an issue fee (and publication fee if the application was published) is due within three months. (Sometimes you'll get a "Notice of Allowability" before or with the formal allowance; this merely states that your claims are all allowed, the Notice of Allowance will be sent, and whether formal drawings are due.)

9. Issue Fee and Issue Notification

Several months after you pay the issue fee (see Appendix 4, Fee Schedule) and file formal drawings (if you didn't do so before), you'll receive an Issue Notification from the PTO, indicating the forthcoming issue date and number of your patent.

10. Receipt of Official Patent Deed

Shortly after the date your patent issues, you'll receive your official "Letters Patent" or deed from the PTO. Any printed copies of the patent that you've ordered will arrive in a separate envelope.

11. Enhanced First Action Interview Pilot Program

The PTO is testing a program under which some applicants will have an opportunity to interview their examiner before the first Office Action but after the examiner makes a search. The goal of the program is to dispose of applications early without the need for Office Actions and amendments. If your application is eligible for the program and you feel confident enough to study the references, redraft your claims, and handle an interview, I recommend you enter the program. To see if you're eligible, and to see if the program is still in force, go to the PTO's home page (www.uspto.gov) and search for "First Action Interview Pilot Program." To enter the program you must be a registered eFiler and you must file a request on Form PTO/SB/413C.

B. General Considerations During Patent Prosecution

Patent application prosecution is generally more difficult than the preparation of the initial application. Assuming that you're going to handle the prosecution phase pretty much on your own, I recommend that you keep the following general considerations in mind.

1. The PTO Can Write Claims for You

As I mentioned in Chapter 9 (claims drafting), you can ask the PTO to write one or more claims for you if the application contains allowable subject matter. Then you can either accept this claim or amend it if you think you can get it past the examiner. You should generally have several sets of varied claims (one independent and several dependent per set) to cover your invention fully.

2. Consultation With a Patent Professional Might Be Wise

You might wish to consult with a patent expert at this point of the proceedings. Paying $200 to $1,000 (if you use a "discount" patent attorney—see Chapter 6) to have an expert amend your claims and argument (which is usually

what's required) may prove to be relatively cheap in the long run if you can afford the expense now. As you review the following, often dense, material, remember that expert outside help is available.

3. Intervals Are Approximate

Except for official periods, such as the three-month period for response to an OA or to pay the issue fee, the dates and times I've given in this chapter are only approximate and are gleaned from recent experience. They can vary quite widely, depending on conditions in the PTO at the time you file your patent application. You have to be patient. If you don't receive any communication from the PTO for a long time, say over a year after you file your application, you should check the latest *Official Gazette* for the status of the cases in your group. Also, if it's over six months after you file an amendment, you should make a call, or send a letter, to the examiner or examining group to determine the status of your case. (If you are willing to submit a lot of paperwork, install software, and so forth, you can access the PTO's "Private PAIR" system, which enables you to see a docket sheet and all of the papers for your patent application on the PTO's website. To get on Private PAIR, see the instructions in Chapter 10, Section E5, or in Section D, below.)

4. You'll Be Able to Correct Technical Errors

Don't worry too much about minor technical errors (except for dates—see next consideration) when dealing with the PTO. If you make one, you'll be given an opportunity to correct it. The PTO has so many rules and regulations that even patent attorneys who deal with them all the time can't remember them all. Also, the PTO is flexible in giving do-it-yourself (pro se) applicants opportunities to correct nondate errors that don't affect the substance of the application.

5. Dates Are Crucial

Every OA that you receive from the PTO will specify an interval by which you must reply to the OA. If you fail to reply in the time the PTO allots you, the penalty is draconian: Your application will go abandoned, although it can be revived at a price. (See Section Q, below.) Thus, you should write the due date for response to every OA promptly on the OA and on your calendar and heed it carefully. If you're not the type who can faithfully heed due dates, you must do something about this—for example, by hiring a methodical friend to bug you. You can even turn the whole job of prosecution over to a patent attorney. If you miss a crucial date, you'll find that the PTO is a cruel and unforgiving bureaucracy. However, as stated, you can usually pay to revive applications that go abandoned for lateness in responding—see Section Q.

6. Situations Not Covered

If any situation occurs that isn't covered in this book, and you can't find the answer by looking in the *Rules of Practice* or *Manual of Patent Examining Procedure* (see Section 10, below, for how to obtain these), call the PTO, consult an attorney or agent, or use common sense and do what you would expect to be the logical thing to do in such a situation.

Newly Discovered Reference: For example, suppose that after you've filed your patent application you find a prior-art reference that considerably narrows what you thought your invention to be. You should bring this to the attention of the PTO by way of another (supplemental) IDS and PTO/SB/08, and submit an amendment substituting narrower claims that avoid the reference. Remember that you have a continuing duty to disclose all material information about your invention to the PTO.

Embodiment Changes: If you discover that an embodiment of your invention doesn't work, delete it from your application. (See Section E, below, for how to do this.) If you discover a new embodiment of your invention that supersedes the present embodiments, file a continuation-in-part application. (See Chapter 14.)

Entity Size Change: If you license or assign your application to a large entity (or such a license is terminated or your application is reassigned back to you), you should send a letter to the PTO asking that your small-entity status be canceled (or send in a letter to establish SE status).

Change of Address: If you change your address, you should send a change of address form (use Form PTO/SB/81 on the PTO's site) or an appropriate letter (caption as in Form 13-1 but headed "Change of Applicant's Address") to the PTO.

PTO Mistakes: If the examiner cites a prior-art reference against your application that is later than your filing date, obviously the examiner made an error (this happens occasionally). You should call or write to bring it to the examiner's attention so that a new Office Action can be issued. If the PTO fails to send you a copy of a non–U.S. patent reference that it has cited against you, send an appropriate paper (captioned as in Form 13-1) headed "Request for Copy of Missing Reference" to the PTO. If a part of the OA doesn't make sense, or a part seems to have been omitted, send an immediate "Request for Clarification of Office Action."

Finally, as a wise person said, "Don't be afraid to ask dumb questions: They're easier to handle than dumb mistakes."

Bureaucratic Static: The examiner may object to something in your application if it's unusual or irregular, even

if it's otherwise proper and harmless. This is the result of bureaucratic attitudes—that is, examiners like others in government sometimes have a tendency to rigidly enforce a "standard" administrative procedure. The remedy is to explain to the examiner that what you have done is proper and to respectfully challenge the examiner to provide a specific reason for the objection and a suggestion for correction. The next paragraph shows how I responded to an examiner who objected when I typed "stateless" in the citizenship blank of the declaration form, even though the applicant was stateless; the examiner did not repeat the objection again.

> **"The Objection to the Declaration:** *The Office Action objected to the Declaration since it listed the citizenship of the applicant as "stateless." The Examiner required a new declaration. Applicant does not understand this objection, the legal basis therefor, or what remedial action the Examiner would like on any new declaration. Applicant's citizenship is indeed "stateless." In the past, applicant's representative has filed other patent applications for various stateless individuals. He always listed their citizenship as "stateless" and all of these cases went on to patent without ever before encountering any objection. Therefore applicant respectfully submits that the "stateless" entry is proper.*
>
> *"Applicant is willing to file a new declaration if the Examiner still desires, but he doesn't know what the Examiner would like applicant to enter in the Citizenship blank in lieu of "stateless." If the Examiner continues the objection, applicant respectfully requests that the Examiner explain what specifically he objects to about the "stateless" entry, the legal basis for the objection, and exactly what replacement entry Examiner would like in any new declaration. Thereupon applicant will be pleased and eager to comply. Note that applicant cannot enter any specific country in the Citizenship blank since he is not a citizen of any country."*

7. Standards of Patentability Vary Widely

While I've tried to give the proper standards of patentability in this book (see Chapter 5), what actually happens when your application is examined will vary, depending upon the personality, whims, training, and current emotions of the examiner assigned to handle it. Most examiners adhere to the basic standards of patentability outlined here and are competent, knowledgeable, and occasionally helpful when it comes to telling you what to do to put the case in condition for allowance. Some even go further, suggesting claim language that would be allowable, making improvements in unclear wording, and otherwise taking other constructive and helpful actions. Unfortunately, a small number of examiners are very new and inexperienced, new to the U.S. and unfamiliar with English, incompetent or superficial, mean and vindictive, unable to comprehend a true advance in the art, ignorant in the field or art being examined, or lacking in the requisite sensitivity to appreciate the huge financial and work burdens their acts might impose on applicants. This can sometimes lead them to make arbitrary, irrational rulings and deny patents that should be granted or vice versa. Services have deteriorated everywhere in recent years, but especially in the PTO.

The solution to the problem with an unreasonably tough or inexperienced examiner is to, first, be persistent. Go to the PTO (or hire a patent attorney to go) to interview your examiner. If necessary, appeal. Appealing is a powerful weapon against a tough examiner. Examiners don't like to write answers to appeal briefs since these take a lot of time. Also, they usually must have an appeal conference with two other examiners, and it looks bad on their record if they get reversed.

The problem with an easy examiner is that your allowed application might not stand up in court (should this ever become necessary). Accordingly, if you believe that your examiner is not rigorous enough (for instance, all your claims are allowed in the first Office Action), make especially sure yourself that at least some of your claims are clearly patentable. That is, they should define a novel enough invention to withstand a court challenge. (See Chapter 15.)

It may help to know that examiners themselves have to contend with two opposing forces. On the one hand, they're expected to dispose of (allow or get the applicant to abandon) a certain number of cases. However, on the other hand, they're subject to a quality review program to make sure they're not too lenient.

Note that even if you have a great invention that is clearly patentable, but you haven't claimed it properly, most U.S. PTO examiners, unlike their counterparts in the European Patent Offices, won't volunteer help or constructive suggestions or try to assist you. They'll simply reject your claims or make a requirement and leave it to you to figure out how to do what's necessary to remedy the situation. Thus, it's up to you to claim and fight for what's rightfully yours. Never automatically accept any examiner's rejection.

8. Don't Take Rejection Personally

If the examiner rejects your claims, don't take such a rejection as a condemnation of you personally. The examiner doesn't know you and is thus merely rejecting your claims and not you. In other words, a rejection of

your claims just means one examiner, at one point, feels that your claims are not different enough from the prior art or clear enough to be allowed. You still are a good and worthwhile person and your innovation may still be patentable with revised claims, or if you successfully argue over the rejection.

9. Dealing With the PTO Can Be Frustrating and Unfair

Dealing with the PTO, as with any other government agency, can sometimes be a very difficult, time-consuming, and frustrating experience. I could spend a whole chapter listing the errors and mistakes I've encountered recently, but one example will suffice. I once filed an application for an inventor whose last name was "Loe." The filing receipt came back with the name "Lee." After several letters and calls with no response, a "corrected" filing receipt arrived with the name spelled "Leo." After a few more calls and much frustration, a correct filing receipt finally arrived. Put succinctly, dealing with the PTO is not like dealing with an efficient and competitive private company. All I can tell you is to be philosophical, scrupulously check your correspondence with the PTO to make sure they get it right, and persist in correcting errors when they occur.

The Unlevel Playing Field

When you mail a paper
To the PTO,
Make sure it's signed and dated
Or you're in for woe.

Also make sure it's sent
Before the deadline set.
And include the proper fees
Or you'll incur a debt.

All pages should be present
And serial numbers exact
With a filing done quite properly
Or adversely they'll react.

Their rules are very stringent.
If you make a teeny error,
Their penalties are draconian,
Designed to instill much terror.

But if the goof is theirs
They can lose your entire file!
They never are rebuked—
So play their game and smile!

As far as the unfairness goes—there are many situations when you deal with the PTO (and the IRS) where you'll find an inherent unfairness due to no reciprocity. For example, while you have to reply to an OA when the PTO tells you to, they can reply to you whenever they get around to it. Your patent term will be extended to give you a minimum of 17 years of coverage provided the delay wasn't your responsibility. While you have to make your claims and specification clear, grammatical, and free of spelling errors, you'll often find that the correspondence you receive from the PTO doesn't meet these standards. While you have to pay a stiff fine if you forget to sign your check or make some other inadvertent error, the PTO never is liable, no matter how negligent they are. In other words, you're playing on an unlevel field. There's nothing you can do about this unfairness except, again, to be philosophical and resign yourself to accept the rules of the game before you play.

As stated, the PTO is staffed by many young, inexperienced examiners who often are not closely supervised, yet have tremendous power over the fate of your application. Often they are negative and it is difficult to convince them of an invention's value. The only solutions are to go in for a personal interview (or have a DC-area attorney do it), to persevere by filing an RCE (see Chapter 14), or to appeal.

One inventor was so frustrated that he sued his examiner and the PTO for negligence. The judge said, "This is the sad tale of an inventor frustrated by the bureaucratic mindset and Byzantine workings of the PTO." While he won in trial court, the appellate court reversed, holding that examiners are not legally responsible for their actions.

10. PTO Reference Books

During patent prosecution, you may need to refer to the MPEP, the PTO's *Rules of Practice,* and/or the patent statutes. All can be viewed on or obtained from the PTO's website and the latter two can be obtained from regional government bookstores in paperbound forms. Also, all three can be obtained from the GPO, and the CASSIS CD-ROMs at any PTDL. The PTO's patent rules are given the prefix number "1" to distinguish them from trademark rules "2" and copyright rules "3." For example, Patent Rule 111, referred to later in this chapter, is officially identified as Title 37 of the Code of Federal Regulations, Section 1.111, or in legal citation form, 37 CFR 1.111. The *Manual of Patent Examining Procedure* (MPEP), which is often referred to as the "examiner's bible," covers almost any situation you can encounter in patent prosecution and contains the patent rules and statutes. It's a large, loose-leaf volume with about four megabytes of text, but you can view and print any part (or all of it) from the PTO's Internet site. The MPEP on the

PTO's site contains the PTO's *Rules of Practice* (37 CFR) and all of the Patent Statutes (35 USC).

11. Never Make Negative or Limiting Statements on the Record

When dealing with the PTO, you should never say or write anything that derogates your invention, you should never admit that any prior-art reference shows (includes) any feature of your invention, and you should never state anything that a court could use to limit your invention. For example, here are some improper statements that could be used against you:

- "While applicant's device is not as good as Smith's …"
- "It is true that Jones shows applicant's gear ratio …"
- "Applicant's device is designed for use with an electronic control."

Admittedly, this advice may be very difficult to follow in some situations, but it's important to comply with. Why? The PTO puts all correspondence into your official file (called your "file wrapper"), and if litigation arises regarding your patent, your adversary will use any negative admission or limiting statement against you. Thus, if you anticipate this potential for litigation, you'll do a much better job in the prosecution phase. This is so important that I've made it Inventor's Commandment 24, at the beginning of this chapter.

12. Remember Your Continuing Duty to Disclose Material Information

As explained in Chapter 10, Section G, you have a duty to disclose all material information, such as relevant prior art, known to you that bears on the patentability of your invention. This duty is normally fulfilled when you send in your IDS and PTO/SB/08(A and B) with the application or three months thereafter. However, if you discover any additional information later, you must send in a supplemental IDS and PTO/SB/08(A and B). However, you do not have to (and shouldn't) admit or state anything negative about your invention, even if what you disclose is very close to your invention. Of course, if you find a prior-art reference that you feel is so close that you believe your invention is not patentable, you should abandon your application.

13. The PTO Can Request Search Information and Literature

In connection with your continuing duty to disclose, above, the PTO can now require, under Rule 105, that any applicant supply any search information and literature which the applicant knows of, which the applicant used to draft the application, or which the examiner can use to examine the application properly. This may include a form paragraph or letter in your application requesting this. If you receive such a Request, comply with it, but don't include any information that you already included with your IDS.

14. Be Available to Answer Office Actions

As mentioned, you'll normally be required to respond to a PTO Office Action within three months. If an OA is sent while you're away or unavailable and you fail to reply to it, your application will, as stated in Section 5, above, be considered abandoned. Thus, I've provided Inventor's Commandment 25, at the beginning of this chapter, to give you ample warning. If you will be unavailable for an extended period while your application is pending, you should empower a patent attorney to handle it for you or arrange to have your mail forwarded by a reliable friend or relative. You can ask to have correspondence from the PTO sent to anyone you choose, but the PTO generally won't allow you to appoint a layperson to represent you, so all inventors must sign every paper that is sent to the PTO.

15. Consider Foreign Filing

About eight to ten months after you file your patent application, you should consider whether you want to file for coverage in other countries, as stated in Inventor's Commandment 23 (Chapter 12). Foreign filing is extremely expensive, time-consuming, and arduous, so do it only if you have a very important, innovative invention or a foreign licensee who will pay the freight. There are international conventions or agreements among most countries that entitle you to the benefit of your U.S. filing date on any foreign applications you file within one year after you file your U.S. regular or provisional application. (Refer back to Chapter 12 to see how to file for a patent in other countries.)

16. You Can Call and Visit Your Examiner

If you have any questions about your application, or any reference that is cited against it, you are permitted to call, and/or make an appointment with and visit, the examiner in charge of your application. Your examiner's telephone number will be listed on official letters that you receive from the PTO. However, usually only one, or at most two, applicant-initiated interviews are permitted. So save this privilege for when you really need it. If you have an interview, you must summarize its substance (unless the examiner does so) in the next amendment. An interview is often a very valuable way

to get a difficult case allowed, since communication is greatly enhanced when you and the examiner can discuss your differences and reach an understanding through the give and take and multiple feedback loops an interview permits. Also, it's harder to say "no" directly to a person face-to-face. Lastly, an interview provides an excellent opportunity to bring in and demonstrate a working prototype or sample of the invention to the examiner; this is usually an excellent persuader. However, I recommend that you try to avoid calling or interviewing any examiner on Fridays, since, like most of us, they're likely to be less attentive then. An excellent guide for negotiating with examiners is presented by Examining Group Director A.L. Smith at page 168 of the 1990 February *Journal of the Patent and Trademark Office Society.* (This is available in most academic and business libraries as well as in Patent Depository libraries.)

I cannot overstate the value of an interview. One pro se applicant that I know (Alex) had a very difficult time getting his case allowed. On my suggestion he traveled to the PTO to have an interview with his examiner. To his dismay Alex found from discussing the case that the examiner had likely never read his application and definitely did not understand the invention. Fortunately he was able to explain the invention on the spot and, with some claim adjustments, managed to get the case allowed. By the way, one site (www.USPTOExaminers.com), allows attorneys and applicants to post reviews of examiners anonymously.

Sometimes your examiner will call you, offering to allow the application if some changes are made in the application. If the changes are minor you can agree to them on the spot. But if the changes are substantive and involve the claims, I suggest you tell the examiner you would like to study them for a day or two and will call back. You should study the proposed changes carefully. If they would unduly narrow the claims, try to formulate and suggest some less restrictive changes which are still allowable.

17. Working or Commercial Model

If you have a working or commercial model of your invention, it's usually desirable to show or send this (or literature on it) to your examiner. This may make the examiner a believer in your invention, its operability, its advantages, and its commercial success. If your invention is out on the market and has had commercial success, you should submit a Declaration Under Rule 132 with exhibits attesting to such success and explaining why such success is a result of the novel features of your invention. The Supreme Court has specifically stated that the PTO must consider such commercial success when deciding on patentability—see MPEP § 1504.03.

18. No New Matter Can Be Added to Your Application

Virtually every inventor I've ever dealt with has asked me, at one time or another, about adding a new development or embodiment of their invention to their pending application. I must always answer in the negative. This is because once your application is filed, the statute, 35 USC § 132, prohibits you from adding any "new matter" to it. (New matter consists of any technical information, including dimensions, materials, parts, values, arrangements, connections, methods, etc., that was not present in your application as originally filed.) This prohibition makes sense since, if patent applicants were permitted to add continuing improvements and changes to their applications, the date of invention, and what was invented when, would be too difficult to determine.

Because of this widespread misconception, and because of the frequency with which PTO examiners must object when "pro se" (no attorney) applicants add new matter, I made this prohibition the subject of Inventor's Commandment 26, at the beginning of this chapter.

If you do want to add any new developments to your application, consider a special type of supplementary application (termed a "continuation-in-part application" or CIP and covered in Chapter 14) or, if your improvement is really significant, an independent, subsequent patent application.

New matter should be distinguished from prior art that may be discovered after an application has been filed. You are obligated to inform the PTO about any newly discovered, relevant prior art. (See Section 6, above.) Such prior art doesn't form part of your specification, nor does it affect the nature of your invention. Rather, it provides the PTO with more information by which to judge your invention for patentability. Also note that if you submit new claims that are broader, narrower, or different, the PTO does not consider them new matter, unless the new claims contain new information that was not originally present in the application.

19. Official Dates Are When the PTO Receives Your Submission

Every paper that you send to or receive from the PTO has an official date. This is the date on which it was mailed from or received by the PTO. You should put your actual date of mailing on anything you send to the PTO, but the date of the PTO's "Received" stamp on your paper will be the "official" date of the paper. If you send in your application by Express Mail with an EM Certification (see Chapter 10), the PTO will stamp it as of the date you express mailed it, even though they receive it one to three days later. This is because, under PTO Rule 10, they consider your local post office their agent to receive your correspondence, provided you use EM.

Fax and Internet Filing Now Available; Email Is Coming

The PTO prefers that responses, including amendments, petitions, appeals, and elections, should be filed via the Internet if you're a registered eFiler since they have to scan and upload paper responses. If you're not a registered eFiler, you should file responses by fax. As a last alternative, you still can mail your responses; be sure to always include a receipt postcard. (Do not file applications, fees, or drawings by fax.) Faxed papers should include, "I certify I have transmitted this paper by fax to the Patent and Trademark Office at [#] on [date]." The PTO will consider the paper as having been filed on the date of transmission or the next business day if you fax it on a nonbusiness day. Keep your signed original and your machine's record of successful transmission. The PTO's fax machines will now automatically fax back a "fax received" receipt. (The PTO's main fax numbers are in Appendix 5, Mail, Telephone, Fax, and Email Communications With the PTO.) If you don't have a fax machine, there are methods to fax via computer—using either fax software that is included with your computer's operating system or using an online fax service (that can also provide you with a telephone number to receive faxes). To fax a signed document, you will need a scanner, and a method for converting scanned files to PDF files. If you're a registered eFiler, go to the PTO's Electronic Business site and eFile the papers in PDF format as you did with the original application.

Email communications may be used for minor matters, such as status requests, minor corrections in a paper, notification that a communication has been sent, etc., but not major papers, such as amendments and patent applications. Email addresses will be available on Office Actions and on the PTO's website (www.uspto.gov). However, since email is not a secure form of communication and the PTO is obligated to preserve all patent applications in secret, PTO employees are not allowed to send email containing any sensitive information unless you specifically authorize this. If you are willing to receive email from the PTO containing sensitive information about your application, you must file the following statement in your application: "Recognizing that Internet communications are not secure, I hereby authorize the PTO to communicate with me concerning any subject matter of this application by electronic mail. I understand that a copy of these communications will be made of record in the application file." Similarly, you should print out and put in your file a copy of all email communications you receive from the PTO.

20. Know Who Has the Ball

To use an analogy drawn from the game of football, during patent prosecution the "ball" (burden of action) will always be either on your side or the PTO's. If you just sent in your case, the ball will be with the PTO until they return your postcard, send you an official filing receipt, and send you a first Office Action. It doesn't go back to your side until that first OA. Once they send the first OA, you have the ball and must usually take action within three months. Once you file an amendment, the PTO has the ball again, and so on. You should always know the status of your case—that is, whose side has the ball.

21. Reread Appropriate Chapters

When you respond to an OA, you should go back and reread the chapter that covers the issue you need to address. For example, if a claim is rejected for prolixity, reread Chapter 9 (drafting claims). If claims are rejected on prior-art grounds, reread Chapter 5. If your specification or drawings aren't in proper form, reread Chapters 8 and 10.

22. Respond to Each and Every Point in the Office Action

A typical OA will contain several criticisms (termed "objections" and/or "rejections"), such as drawing objections, specification objections, claim rejections for indefiniteness, and claim rejections based upon prior art. You must, as stated in Inventor's Commandment 27, at the beginning of this chapter, respond to each and every criticism in your next amendment or your amendment will be considered non-responsive, in which case you'll usually be given two weeks to complete the amendment. Suitable responses can be an argument against the criticism or some action to eliminate the criticism—for example, by canceling claims, amending the specification, supplying new drawings, or substituting different claims and arguing that the substituted claims are patentable over the prior art cited.

23. Form Paragraphs

Your actual Office Action, unlike the sample below, will usually include several form paragraphs that quote statutes or rules. Examiners love to use such form paragraphs. Therefore, don't assume, if you receive an Office Action with numerous form paragraphs that quote basic statutes and rules, that you've been singled out or that your application is substandard: All attorneys get OAs with these form paragraphs as well. Also, the form paragraphs that the examiner

chose may sometimes be inapplicable or only partially applicable. If so, courteously point this out in your response.

24. Preliminary and Supplemental Voluntary Amendments

In addition to the "regular" amendments discussed in this chapter (sent in response to an OA), you can also file a voluntary Preliminary Amendment before your first OA to correct any errors in the specification or claims, or narrow or broaden the claims. Also, you may file a Supplemental Amendment (after you file a regular amendment, but before the next OA) to correct any errors or omissions in your Amendment. However, under Rule 111(a)(2) you don't have the right to file a Supplemental Amendment unless it is clearly limited to (a) canceling claims, (b) adopting an examiner's suggestions, (c) placing the application in condition for allowance, (d) replying to an Office requirement made after the first reply was filed, (e) correcting informalities, such as typographical errors, or (f) simplifying issues for appeal. The best way to avoid the need for a Supplemental Reply is to do the first amendment well in advance of the due date, wait a day or two, and then review it again and polish and correct it as necessary. Also remember the rule against adding any new matter to your patent application. Finally, you aren't allowed to amend your application after allowance or after a final action, unless the examiner authorizes it—see Section J, below.

The patent term for any invention will be extended in the event of certain delays caused by the PTO in the course of the patent prosecution process. Every patent is guaranteed an in-force period of at least 17 years provided you did not delay unduly on your side.

25. Double Patenting Obviousness Rejections

If the PTO rejects a claim of your application under Section 103 for obvious-type double patenting on an earlier patent or application that you own and it is not early enough to be prior art against your application, you can disqualify the earlier patent as prior art. You should submit a terminal disclaimer with a fee (see Chapter 14, Section I) and a declaration stating that the patent is owned by you and has the same inventor (Rule 130).

26. Eighteen-Month Publication

If you haven't filed a Nonpublication Request (see Chapter 10), your application will be published on the PTO's website 18 months after filing (if it's still pending) and anyone can order or download and print out a copy of your application. Anyone will then be able to cite prior art against your application if they think your claims are not patentable. (PTO Rule 99.) I advise you of this so that you will be aware of the fact that, even if the PTO allows your application, they can change their mind and still reject it if someone cites better prior art than your examiner found. Publication by the PTO after 18 months does not confer patent rights and does not mean that the application has been allowed.

27. *Festo* Considerations

As indicated in Chapter 9, you should have drafted a full spectrum of claims (from broad to specific) which cover every aspect of your invention and all possible permutations. The reason for this is the Supreme Court's decision in *Festo v. Shoketsu*, which holds essentially that the Doctrine of Equivalents (DoE—see Chapter 15) can be used to broaden any claim that was amended during prosecution provided (a) the equivalent was unforeseeable at the time the application was filed, or (b) the equivalent is not related to the way the claim is amended. However, if the court cannot determine the reason for the amendment, the DoE cannot be used. By submitting a full spectrum of claims, at least some of them will stand a good chance of being allowed in the prosecution stage without amendment, thereby preserving your full DoE rights for those claims. During the prosecution stage, you should try, if at all possible, not to amend any claims, or to amend as few as possible. If you have to amend any claims, state the reason for the amendment.

28. Rejection v. Objection

Office actions may contain (either or both of) two types of disapproval or criticism of various parts of your application. It's useful to know the difference so that you can use these terms correctly in writing your amendment and in case you have to appeal.

A *rejection* is made by an examiner to a substantive claim deficiency, such as a lack of patentability of a claim over a prior-art reference or indefiniteness in the claim. An *objection* is made to a nonclaim defect, such as an unclear drawing or a misspelling in the specification, or to a nonsubstantive claim matter, such as a dependent claim which is allowable in substance, but which can't be allowed because it's dependent upon a rejected independent claim.

You have to fix or successfully argue over both types of disapproval (rejection or objection) to get the application allowed; the only practical difference is that a *rejection* that can't be overcome must be appealed, while an *objection* that can't be overcome must be petitioned (unless it's

associated with a rejection). In addition, anyone can follow the prosecution of your application (that is, see your Office Actions and amendments) on the PTO's "Private PAIR" site.

29. When Submitting Arguments, Rely on Statutes, Rules, and the MPEP, Rather Than Case Law

When drafting the remarks portion of an amendment, it's helpful to cite authority for any rule of law or requirement that you rely upon. I've tried to provide most of the rules and main arguments in this chapter, but there are many more that I do not have room to include. If you need to find an authority for your position, look in the MPEP, which is available online at the PTO's site. The MPEP has a full online index and its Chapter 2100 on patentability is very helpful. If and when you do cite any authority, keep in mind that examiners consider the patent statutes (35 USC), the *Rules of Practice* (37 CFR), and the MPEP to be the most meaningful authorities. Examiners are strictly bound to follow these authorities. There are thousands of patent cases available also, but examiners find these far less persuasive and less useful. (One reason is that it's difficult and time-consuming for an examiner to look up and analyze a case.) In fact, when I was employed as an examiner, my supervisor told me never to cite a case since the attorney for the applicant could always rebut me by citing a *different* case with a contrary holding!

30. Don't Wait Until the Last Minute

I find that most inventors who receive an Office Action tend to wait until near the end of the three-month period, or even later, to draft their response. The reason for this procrastination is usually due to fear of tackling a new task. However I strongly advise you grit your teeth and do the job as soon as possible so that you will have enough time, you won't be rushed, you can ramp-up to the nuances and intricacies of the process, and you'll have time to review and polish your work.

31. Patents and Published Patent Applications Are Prior Art as of Their Filing Date as Well as Their Publication Date

As discussed in Chapter 5, patents and published patent applications (PubPAs), unlike other publications, are effective as of their filing date, in addition to their publication date. So if the examiner rejects your claims on a patent or PubPA, you may have to consider both dates when formulating your response. If the patent or PubPA was published over a year before your filing date, it's a statutory bar (Section 102(b)) so you can't swear behind it (see Section D3 below) and thus only the publication date is relevant. If the patent or PubPA was published less than a year before your filing date, it's prior art as of its publication date (Section 102(a)) and as of its filing date (Section 102(e)). You must swear behind the earlier (filing) date by proving an earlier date of invention—see Section D3, below, and also review Chapter 5, Section E1b. Check the date of all prior art cited against your application, since examiners sometimes make mistakes—for example, after the PTO published an application of Nokia's, an examiner examined the application and mistakenly cited the published patent application against itself!

32. Patent Examiners Overwhelmed

An article on WashingtonPost.com (2007 Oct 8) noted that examiner turnover and the PTO's backlog are very high due to production quotas, difficulty of searching, and the cost of living in the DC area. In other words, the quality of examination has been declining and the delay in receiving an Office Action has been increasing, a situation that could be harmful to U.S. competitiveness. For this reason you may have to wait a long time before you receive a first Office Action. You can check the status of cases in your examining division to ascertain approximately when you will hear from the PTO. To do so, first find out the examining division or Group Art Unit from your Filing Receipt. Then, go to the PTO's home page (www.uspto.gov), click Patents, then Search Aids, then OG (Official Gazette) regular and special notices, then Browse [current year], and finally click the latest issue. Click Patent Technology Centers and find your Group Art Unit. In the right-hand column find the average filing date that your GAU is working on now. Compute the time from this date to the present date and add this time to your filing date to find the approximate date they will reach your case.

33. Beware of "Whack-a-Mole" Rejections

Examiners have been increasingly making subsequent rejections on a different ground than a previously rebutted rejection, even though the subsequent rejection could have been made when the previous rejection was made. Some patent attorneys have termed this practice, "Whack-a-Mole Rejecting." (It is also called piecemeal prosecution and condemned in the MPEP.) There is no good solution except to be aware in advance that it may occur and to take it philosophically if it does occur and patiently respond to each new rejection in the usual manner. If it becomes

excessive it is possible to complain to the examiner's supervisor, but frankly supervisors usually support the examiner in these situations.

34. Limitations on Number of Claims

As indicated in Chapter 10, the basic filing fee entitles an applicant to submit three independent and 20 total claims. If an application is filed with or amended to have over three independent claims or over 20 total claims, the PTO requires a large fee for each extra independent claim and a medium fee for each extra total claim. However if you file more than the basic "3/20" allotment of claims, be sure that they differ significantly because examiners don't like to examine a lot of claims, even if you pay for them. The examiner can reject excessive claims (that is, they do not differ substantially) as unduly multiplied.

35. The PTO Has Been Very Difficult on Applicants

In the period between 2007 through 2009, the PTO was very difficult on applicants by making numerous Whack-a-Mole rejections (see Item 33, above), making far-fetched rejections, using a very high standard of patentability, being antagonistic to applicants and attorneys, and refraining from assisting applicants or making any constructive suggestions. One examiner, in an anonymous post on the Internet, said:

> *"My view is that under [the last Commissioner] the Patent Office became the Patent 'Rejection' Office, and instead of trying to protect IP rights (which is our purpose), USPTO management's solution was to hire lots of people to reject out of the problem. This led to an assembly line of under trained, unknowledgeable examiners who were taught how to reject, but not how to get applications to allowance. This 'reject, reject, reject now' policy is encouraged by management's policy of issuing a written warning on an examiner's permanent file for allowance error percentage above 10%. While this may seem high, if you only allow 20 cases a year it is no problem for quality to find some kind of error in your cases, especially when they aren't experts in your art. Additionally, there is a lack of motivation to get cases allowed, because there is no incentive for the examiner to do the extra work required to arrive at claim language which can be allowed. Getting claim language to this point takes me several phone calls with attorneys and/or inventors due to the fact that disclosures typically contain multiple inventions, but claims must be limited to one and because the attorneys and not the inventors usually draft claim language which is usually broad. Add the time spent on phone calls to the lack of credit/counts given for time spent responding to amendments and the examiner is further discouraged from getting cases to allowance."* IPWatchdog.com (Blog of 2009 Mar 17).

A similar view was expressed by noted patent gadfly Greg Aharonian in one of his blog entries at www.BustPatents.com. What's the answer? The only recourse that I can see is to prosecute your applications as instructed in this chapter, attacking each improper rejection and appealing when necessary. Make sure your claims are in optimal condition and define your invention's novelty over the references taken individually or in any combination. If necessary, file a continuation (use an RCE—see Chapter 14) to revise your claims after a final action. Don't hesitate to appeal if necessary. If you appeal, be sure to try a "Pre-Appeal Brief Request for Review" (see Section J4, below). Always keep you temper and don't attack your examiner personally since he or she is merely following instructions.

Remember to always use the two-part 102 (novelty)-103 (unobviousness) approach whenever you argue patentability —see Inventor's Commandment 7 in Chapter 5.

36. Avoid Fraud on the PTO

In all of your statements, arguments, and representations to the PTO you should be careful to be honest and forthright and not to make any statements to the examiner by which you intend to deceive, mislead, or "snow" the examiner. This is because a court can hold your patent invalid if it ever discovers that any statement that you made to the PTO amounted to "fraud on the PTO" and you intended to deceive the PTO. E.g., if you intentionally misrepresent the operation or construction of a reference or claim false and excessive results for your invention, and your adversary discovers this later in litigation, they will bring it to the attention of the judge, who will likely hold your patent invalid. So always state the truth, the full truth, and nothing but the truth.

37. Keep Your Remarks as Short as Possible

There are a number of reasons to keep your remarks as short as possible. First, examiners tend to be put off and hence may not read overly long responses. Their time is limited and they are under pressure to dispose of (allow or have the applicant abandon applications). So to get your remarks read, keep them as short as possible, but include all the arguments that you feel are necessary. Second, as noted by patent attorney Michael E. Kondoudis (www.

MEKIPLaw.com), the longer your response, the more likely you are to say something erroneous or harmful that can be used against you later. Third, longer responses take more of your time to write and your time is valuable also. Fourth, longer arguments tend to be less persuasive than shorter arguments because they are diluted and lack as much pith and force.

38. Enablement

Remember our old friend, Section 112 of the patent statutes, which reads as follows:

> *The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.*

This statute contains at least three requirements: (1) The specification must have a written description of the invention, (2) It must enable a PHOSITA (person having ordinary skill in the art) to make and use it, and (3) It must set forth the best mode contemplated by the inventor. While requirements 1 and 2 appear similar, the courts have held that they are somewhat different. Part 1 requires that the specification describe the invention but not necessarily to any degree of detail. Part 2 specifies the detail: it must be sufficient for a PHOSITA to make and use it. In practice the courts have held that Part 2 means that any specific embodiments claimed must be disclosed in the description. Thus when one inventor's description described a needle holder with a pressure jacket, his claims to a needle holder with the pressure jacket complied with Part 2. However when he broadened his claims to recite a needle holder alone, the courts held that they were invalid because the description did not describe this. *Liebel-Flarsheim Company v. Medrad, Inc.*, 358 F.3d 898 (Fed. Cir. 2004). Thus, to avoid violating Part 2, you must be sure that every embodiment covered by your claims (originally and as amended) is described in the specification and shown in the drawings.

39. Ombudsman Pilot Program

The PTO has implemented an Ombudsman Pilot Program under which you may be able to resolve breakdowns in the normal patent prosecution process (e.g., your examiner is being extremely unreasonable) with the aid of a Technology Center Ombudsman (TCO). This program is not intended to resolve normal issues, such as good-faith differences of opinion on issues of patentability, but only when you have a question about a specific application in prosecution and have not been able to find the right person to assist you or when you have not been able to obtain assistance from your examiner or the Supervising Patent Examiner (SPE). To invoke the aid of a TCO, go to www.uspto.gov/ombudsman.jsp and read the notice and the FAQs to see if it is applicable to your situation. If so, complete and file the form in the notice. The TCO will contact you by phone to obtain the details from you orally.

C. A Sample Office Action

Now that you have an overview of the patent application prosecution process and the general principles that apply to it, it's time to get more concrete. Fig. 13A, below, shows a sample OA in an imaginary patent application. A study of this example will enable you to deal with your first OA far more effectively. It has been purposely written to include the most common objections and rejections; an actual OA is usually not this complicated and quotes applicable statutes. First let's look at Fig. 13A/1 (page 1 of the OA).

At the top of the OA, the examiner's name and his examining section (Art Unit 2540) are given. Art Unit 2540 is part of Examining Group 2500. Before that, in the large brackets, are the serial number, filing date, and inventor's name. To the right is the date the OA was mailed; this is its official date.

Below the address of the attorney, the first box that is checked indicates: "This application has been examined," denoting that this is the first OA in this application. If it had been a second and nonfinal OA, the second box, "Responsive to communication filed on [date]," would have been checked; had it been a final OA, the third box, "This action is made final," would have been checked.

The next paragraph indicates that the period for response will expire in three months and that failure to respond will cause the application to be abandoned. Since the OA was mailed 1998 Oct 9, the period for response expires 1999 Jan 9. If the last date of the period falls on a Saturday, Sunday, or holiday, the period for response expires on the next business day. Be sure to calculate the period for response from the date the OA was mailed, not the date you received it.

Under "Part I," the checked boxes indicate that two attachments, a "Notice of References Cited" and a "Notice re Patent Drawing," are part of the OA. A typical Notice of References Cited is shown in Fig. 13A/3, below, and the drawing notice is shown in Fig. 13A/4. Be sure to calculate the period for response from the date the OA was mailed, not the date you received it.

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
07/345,678	1998 Aug 9	LeRoy Inventor	

EXAMINER	
HEYMAN, J	
ART UNIT	PAPER NUMBER
2540	3

DATE MAILED: 1998 Oct 9

Portia Barrister
1237 Chancery Lane
Puyallup, WA 98371-3841

Received
1998 Oct 14
P.B.

This is a communication from the examiner in charge of your application.

COMMISSIONER OF PATENTS AND TRADEMARKS

Response Due 1999 Jan 9 P.B.

☑ This application has been examined ☐ Responsive to communication filed on _____ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☑ Notice of References Cited by Examiner, PTO-892.
2. ☑ Notice re Patent Drawing, PTO-948.
3. ☐ Notice of Art Cited by Applicant, PTO-1449
4. ☐ Notice of Informal Patent Application, Form PTO-152
5. ☐ Information on How to Effect Drawing Changes, PTO-1474
6. ☐ _____

Part II SUMMARY OF ACTION

1. ☑ Claims 1-7 are pending in the application.
   Of the above, claims _____ are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☑ Claims 1-7 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☑ This application has been filed with informal drawings which are acceptable for examination purposes until such time as allowable subject matter is indicated.
8. ☐ Allowable subject matter having been indicated, formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. These drawings are ☐ acceptable; ☐ not acceptable (see explanation).
10. ☐ The ☐ proposed drawing correction and/or the ☐ proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed _____, has been ☐ approved. ☐ disapproved (see explanation). However, the Patent and Trademark Office no longer makes drawing changes. It is now applicant's responsibility to ensure that the drawings are corrected. Corrections MUST be effected in accordance with the instructions set forth on the attached letter "INFORMATION ON HOW TO EFFECT DRAWING CHANGES", PTO-1474.
12. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

PTOL-326 (Rev. 7-82) EXAMINER'S ACTION

Fig. 13A/1—Sample Office Action

Serial No. 07/345,678 -2-

Art Unit 254

The drawing is objected to under Rule 1.83(a) in that all the features recited in the claims are not shown. See Claims 1 and 2 regarding the "electronic counter means" and "first and second solid state counters."

The specification is objected to under Rule 1.71(b) as inadequate. In particular, there is insufficient information regarding the "counter," "counter memory," and how the counter controls the illumination of the lights. Applicant is required to amplify the disclosure in this regard without the introduction of new matter, 608.04 MPEP.

Claims 1-7 are rejected under 35 U.S.C. § 112, 1st. paragraph, as based on an insufficient disclosure. See above.

Insofar as adequate, Claims 1-6 are rejected under 35 U.S.C. § 102(b) as fully anticipated by Ohman. Ohman shows an electronic cribbage board counter that fully meets these claims. See Fig. 1. The microprocessor 300 shown in Fig. 3 inherently includes the counter means of Claims 1 and 2.

Claim 7 is rejected under 35 U.S.C. § 112, ¶ 2. The term "said LCD readout" lacks proper antecedent basis in parent independent claim 1 as claim 1 recites only an "LCD monitor."

Claim 7 is rejected under 35 U.S.C. § 103 as unpatentable over Ohman in view of Morin. Ohman shows an electronic cribbage board counter, as stated. Morin shows an LCD tally monitor. It would be obvious to substitute Morin's LCD tally monitor for Ohman's mechanical readout, since the substitution of LCD readouts for mechanical readouts is an expedient well known to those skilled in the art. See column 13, lines 34-41 of Morin, which indicate that in lieu of the LCD readout shown, other types of readouts may be used.

No claim is allowed.

The remaining art cited shows other electronic board games containing the claimed structure. Note Morin, which shows the details of a computer as containing first and second counter means.

Any inquiry concerning this communication should be directed to Examiner Heyman at telephone number 703-557-4777, Fax number 703-872-9314.

Heyman/EW

98/10/09

John S. Heyman

Examiner

Group Art Unit 254

Fig. 13A/2—Sample Office Action

FORM PTO-892 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

NOTICE OF REFERENCES CITED

SERIAL NO.	GROUP ART UNIT	ATTACHMENT TO PAPER NUMBER
07/345,678	254	3

APPLICANT(S): LeRoy Inventor

U.S. PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	A	4368516	1/1983	Morin	377	5	
	B						
	C						
	D						
	E						
	F						
	G						
	H						
	I						
	J						
	K						

FOREIGN PATENT DOCUMENTS

	DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUB-CLASS	PERTINENT SHTS. DWGS	PERTINENT PP. SPEC.
L	8101766	6/1981	International P.U.B. (ACT)	Ohman	273	148R	5	21
M	1195001	10/1985	Canada	Mah	273	148R	3	14
N	2173406	10/1986	Gr. Britain	Armstrong	273	148R	3	6
O								
P								
Q								

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

R

S

T

U

EXAMINER J.S. Heyman DATE 4-1-20xx

*A Copy of this reference is not being furnished with this office action.
(See Manual of patent Examining Procedure, section 707.05(a).)

Fig. 13A/3—Notice of References Cited

Rec'd 9/50 28

Form PTO 948 (Rev. 10-93) U.S. DEPARTMENT OF COMMERCE - Patent and Trademark Office Application No. 07/883567

NOTICE OF DRAFTSPERSON'S PATENT DRAWING REVIEW

PTO Draftpersons review all originally filed drawings regardless of whether they are designated as formal or informal. Additionally, patent Examiners will review the drawings for compliance with the regulations. Direct telephone inquiries concerning this review to the Drawing Review Branch, 703-305-8404.

The drawings filed (insert date) 9/27/95, are
A.___ not objected to by the Draftsperson under 37 CFR 1.84 or 1.152.
B.✓ objected to by the Draftsperson under 37 CFR 1.84 or 1.152 as indicated below. The Examiner will require submission of new, corrected drawings when necessary. Corrected drawings must be submitted according to the instructions on the back of this Notice.

1. DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings:
Black ink. Color.
___ Not black solid lines. Fig(s)___
___ Color drawings are not acceptable until petition is granted.

2. PHOTOGRAPHS. 37 CFR 1.84(b)
___ Photographs are not acceptable until petition is granted.

3. GRAPHIC FORMS. 37 CFR 1.84 (d)
___ Chemical or mathematical formula not labeled as separate figure. Fig(s)___
___ Group of waveforms not presented as a single figure, using common vertical axis with time extending along horizontal axis. Fig(s)___
___ Individuals waveform not identified with a separate letter designation adjacent to the vertical axis. Fig(s)___

4. TYPE OF PAPER. 37 CFR 1.84(e)
___ Paper not flexible, strong, white, smooth, nonshiny, and durable. Sheet(s)___
___ Erasures, alterations, overwritings, interlineations, cracks, creases, and folds not allowed. Sheet(s)___

Transparent objectionable Figs 1, 3

5. SIZE OF PAPER. 37 CFR 1.84(f): Acceptable paper sizes:
21.6 cm. by 35.6 cm. (8 1/2 by 14 inches)
21.6 cm. by 33.1 cm. (8 1/2 by 13 inches)
21.6 cm. by 27.9 cm. (8 1/2 by 11 inches)
21.0 cm. by 29.7 cm. (DIN size A4)
___ All drawing sheets not the same size. Sheet(s)___
___ Drawing sheet not an acceptable size. Sheet(s) ___

6. MARGINS. 37 CFR 1.84(g): Acceptable margins:

Paper size		
	21 cm. X 27.9 cm. (8 1/2 X 11 inches)	21 cm. X 29.7 cm. (DIN Size A4)
	2.5 cm. (1")	2.5cm.
	.64 cm. (1/4")	2.5 cm.
	.64 cm. (1/4")	1.5 cm.
	.64 cm. (1/4")	1.0 cm.

Margins do not conform to chart above.
Sheet(s)___
___Top (T) ___ Left (L) ___Right (R) ___Bottom (B)

7. VIEWS. 37 CFR 1.84(h)
REMINDER: Specification may require revision to correspond to drawing changes.
___ All views not grouped together. Fig(s)___
___ Views connected by projection lines. Fig(s)___
___ Views contain center lines. Fig(s)___
Partial views. 37 CFR 1.84(h)(2)
___ Separate sheets not linked edge to edge. Fig(s)___
___ View and enlarged view not labeled separately. Fig(s)___
___ Long view relationship between different parts not clear and unambiguous. 37 CFR 1.84(h)(2)(ii) Fig(s)___
Sectional views. 37 CFR 1.84(h)(3)
___ Hatching not indicated for sectional portions of an object. Fig(s)___
✓ Hatching of regularly spaced oblique parallel lines not spaced sufficiently. Fig(s)___
___ Hatching not at substantial angle to surrounding axes or principal lines. Fig(s) 3
___ Cross section not drawn same as view with parts in cross section with regularly spaced parallel oblique strokes. Fig(s)___
___ Hatching of juxtaposed different elements not angled in a different way. Fig(s)___
Alternate position. 37 CFR 1.84(h)(4)
___ A separate view required for a moved position. Fig(s)___

Modified forms. 37 CFR 1.84(h)(5)
Modified forms of construction must be shown in separate views. Fig(s)___

8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i)
___ View placed upon another view or within outline of another. Fig(s)___
___ Words do not appear in a horizontal, left-to-right fashion when page is either upright or turned so that the top becomes the right side, except for graphs. Fig(s)___

9. SCALE. 37 CFR 1.84(k)
___ Scale not large enough to show mechanism without crowding when drawing is reduced in size to two-thirds in reproduction. Fig(s)___
___ Indication such as "actual size" or "scale 1/2" not permitted. Fig(s)___
___ Elements of same view not in proportion to each other. Fig(s)___

10. CHARACTER OF LINES, NUMBERS, & LETTERS. 37 CFR 1.84(l)
✓ Lines, numbers & letters not uniformly thick and well defined, clean, durable, and black (except for color drawings). Fig(s)___

11. SHADING. 37 CFR 1.84(m)
___ Shading used for other than shape of spherical, cylindrical, and conical elements of an object, or for flat parts. Fig(s)___
___ Solid black shading areas not permitted. Fig(s)___

12. NUMBERS, LETTERS, & REFERENCE CHARACTERS. 37 CFR 1.84(p)
___ Numbers and reference characters not plain and legible. 37 CFR 1.84(p)(1) Fig(s)___
___ Numbers and reference characters used in conjuction with brackets, inverted commas, or enclosed within outlines. 37 CFR 1.84(p)(1) Fig(s)___
___ Numbers and reference characters not oriented in same direction as the view. 37 CFR 1.84(p)(1) Fig(s)___
___ English alphabet not used. 37 CFR 1.84(p)(2) Fig(s)___
___ Numbers, letters, and reference characters do not measure at least .32 cm. (1/8 inch) in height. 37 CFR(p)(3) Fig(s)___

13. LEAD LINES. 37 CFR 1.84(q)
___ Lead lines cross each other. Fig(s)___
___ Lead lines missing. Fig(s)___
___ Lead lines not as short as possible. Fig(s)___

14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.84(t)
___ Number appears in top margin. Fig(s)___
___ Number not larger than reference characters. Fig(s)___
___ Sheets not numbered consecutively, and in Arabic numerals, beginning with number 1. Sheet(s)___

15. NUMBER OF VIEWS. 37 CFR 1.84(u)
___ Views not numbered consecutively, and in Arabic numerals, beginning with number 1. Fig(s)___
___ View numbers not preceded by the abbreviation Fig. Fig(s)___
___ Single view contains a view number and the abbreviation Fig.
___ Numbers not larger than reference characters. Fig(s)___

16. CORRECTIONS. 37 CFR 1.84(w)
Corrections not durable and permanent. Fig(s)___

17. DESIGN DRAWING. 37 CFR 1.152
___ Surface shading shown not appropriate. Fig(s)___
___ Solid black shading not used for color contrast. Fig(s)___

ATTACHMENT TO PAPER NO. 9 REVIEWER CBK DATE 10/25/95

Applicant's Copy

Fig. 13A/4—Draftsperson's Drawing Objection Sheet

Under "Part II—Summary of Action," the examiner has checked various boxes to indicate what action he has taken with the application. He has rejected all seven claims pending. He has also acknowledged that informal drawings were filed and has indicated that these will be acceptable until allowable subject matter is indicated.

Now it's time to look at Figs. 13A/2 and 13A/3 (pages 2 and 3 of the OA).

On page 2 of the Office Action, the examiner gives his specific reasons for rejecting or objecting to the claims.

The first paragraph of page 2 of the OA objects to the drawings because they fail to show certain features recited in the claims. Remember (Chapter 10) that the drawings must show every feature recited in the claims.

The second paragraph objects to the specification as inadequate. As stated in Chapter 8, the specification must teach, in full, clear, and exact detail, how one skilled in the art would make and use the invention. This is a potentially serious and fatal flaw, since it is not permissible to add new matter (see Section B18, above) to supply the missing description.

In the third paragraph, the examiner rejects all of the claims under Section 112, since they are based on an inadequate specification for reasons stated in the second paragraph.

The fourth paragraph rejects Claims 1 to 6 on the Ohman reference (see Fig. 13A/3—p. 3 of the OA), under Section 102. This means that the examiner feels that these claims contain no novelty over Ohman. The requirement that the claims contain novel physical features was discussed in Chapters 5 and 9.

At the bottom of page 2 of the OA, the examiner has rejected Claim 7 under Section 112 since a "said" clause in Claim 7 has no proper antecedent in parent, independent Claim 1 from which Claim 7 depends. Remember (Chapter 9) that every "said" clause must contain an identical antecedent earlier in the claim or in a parent claim. Many examiners, especially young ones, lean heavily on any Section 112 defects.

In the last paragraph of page 2 of the OA (Fig. 13A/2), the examiner has rejected Claim 7, under our old and troublesome friend Section 103, as unpatentable over two references. Note that the examiner states what each reference shows and why it would be obvious to combine the teachings of these references. Also note that by using two references, or by relying on Section 103, the examiner has tacitly admitted that this claim has satisfied the novelty (Section 102) requirement. (See Chapter 5, Fig. 5A.)

The examiner next summarizes by stating that no claim is allowed.

Finally he refers to certain other prior art, which he cites but does not apply, to provide background and to put on the record in case he wants to use it later.

The examiner will sign the Office Action at the bottom and list his telephone number and fax above his official name stamp.

Next, we turn to Fig. 13A/3 (the Notice of References Cited). It lists one U.S. and three foreign patents. All of the foreign references will be attached to the OA, except any checked in the column marked with the asterisk (*), which were furnished in a prior Office Action, a prior related application, or were furnished by you in your Information Disclosure Statement. The "Document Number" column generally lists patent numbers. You may have to download the U.S. patents from the Internet.

The date column indicates the date the patent issued, or the document was published. If this date is later than your filing date, the reference is not a good reference against your application, unless it is a U.S. patent filed before your application. In the latter instance, the examiner is supposed to indicate the filing date of the patent reference in the last column.

Finally, note the Notice of Draftperson's Patent Drawing Review (Fig. 13A/4). This sheet comes from the PTO's Drafting Department and has been inserted, since they found several self-explanatory defects in the drawings.

If you've sent in your IDS and PTO-1449 (Chapter 10, Section G), the OA will also include a copy of your PTO-1449, and a list of your references will be included under "References Cited" in the printed patent.

When the PTO cites patents as prior-art references, some inventors react in various illogical ways, as indicated by the following Common Misconceptions:

Common Misconception: The PTO can't cite foreign or non-English patents or other publications against a U.S. patent application.

Fact: As indicated in Chapter 5, any publication, including a patent from anywhere in the world, in any language, is valid prior art against your patent application, provided it was published before your filing date, or before your earliest provable date of invention, up to one year before your filing date.

Common Misconception: An in-force foreign patent that shows or claims your invention will prevent you from making the invention in the U.S.

Fact: A patent of any country is enforceable only within the geographical area of that country and has no enforceability elsewhere. Thus, for example, a French patent is enforceable

only in France and has no enforceability or effect in the U.S. However, it is a good prior-art reference in the U.S.

Common Misconception: If an examiner cites an in-force U.S. patent as a prior-art reference against your application, this means that your invention, if manufactured, sold, or used, would infringe this patent.

Fact: The only way you can tell if your invention would infringe any patent is to compare the patent's claims against your invention. Most cited in-force patents would not be infringed by your invention, since their claims are directed to a different invention. Again, examiners hardly ever read claims of patents they cite and the PTO is never concerned with infringements.

Common Misconception: If an examiner cites a very old prior-art reference against your application, it is not as good a reference as an in-force patent or a very recent reference.

Fact: The age of a reference is totally irrelevant, so long as its date is earlier than your filing date or your earliest provable date of invention. (See Chapter 5.)

D. What to Do When You Receive an Office Action

When you receive an OA, don't panic or be intimidated or take it personally. It's common for some examiners to reject all claims, even if the rejections are not valid. This type of rejection is termed a "shotgun" or "shoot-from-the-hip" rejection. Although they shouldn't do so, examiners sometimes do this because of the pressure of work, and sometimes to force you to state more clearly the essence of your invention and its true distinguishing features. You'll find that even if your examiner rejects all of your claims, if you approach your OA in a calm, rational, and methodical manner, as outlined below, you shouldn't have too much difficulty in ultimately getting your patent if your invention meets the legal tests for patentability.

If the PTO Suggests You Get an Attorney

Some examiners insert a form paragraph in an OA, suggesting that you hire a patent attorney, regardless of how well the application is prepared, if there is no attorney of record. This has been done in several cases I prepared, but where I did not appear as the attorney of record. You can safely ignore this form paragraph, unless you feel uncomfortable without an attorney.

1. Record Due Date on Your Calendar and OA, and Mount OA in Your File

After you get your Office Action, write the date you received the OA and the due date of your response right on it (as is done in Fig. 13A/1), and also on your calendar so you don't forget it. You should actually write the date *thrice* on your calendar: once on the date it's actually due, once two weeks before it's due, and once one month before it's due. If the due date falls on a weekend or holiday, your due date is the next business day. Also, mount the OA in your file (see Inventor's Commandment 19 in Chapter 10) so you won't lose it.

2. Check the References and Review Your Application

Your OA will usually cite prior-art references. Some will be applied against your claims and some will be cited as background as a matter of interest. In either case, the PTO does not send copies of any cited U.S. patent and published patent application references with OAs. They do send copies of cited foreign patents and nonpatent references. If you receive an OA which cites U.S. patent references, you must obtain copies of the cited references yourself. You have several ways to do this: (1) Download them one page at a time for free or order entire patents for a fee from the PTO's website (see Chapter 6, Section M, for instructions), (2) Download complete patents for free from one of the free patent sites (see Chapter 6, Section M), (3) Obtain access to the PTO's Private PAIR (Patent Application Information Retrieval) system and download complete U.S. patents cited against your patent application. At present I don't see any significant advantage of getting copies via Private PAIR over the private services, but it can also be used to file patent applications electronically and view the status of your applications. (Since it is somewhat inconvenient to obtain references, you may wish to obtain paper copies of only those that the PTO has actually applied against your claims and merely review on the monitor those that were cited as being of interest.)

To obtain access to Private PAIR, you must: (1) Obtain a PKI (Public Key Infrastructure) Digital Certificate by completing and mailing to the PTO a notarized application; (2) Obtain a Customer Number by sending or faxing an application to the PTO; (3) Associate your Customer Number with your patent application(s) by completing an Excel spreadsheet and mailing it on a CD to the PTO; (4) Obtain and install the PTO's electronic filing software on your computer. (I strongly advise making a ghost backup of your hard disk and learning how to restore the backup before attempting to install any new software.) The full

instructions can be found at the PTO website (www.uspto.gov/ebc).

After you obtain copies of the cited references, check all of them carefully to make sure you've received all the correct references listed in the Notice of References Cited. If there's any discrepancy, or if any seem irrelevant, call or write the examiner at once. This call will not count as an interview. (You are usually limited to two interviews.)

If you sent in an IDS and PTO/SB/08, the examiner will send, with your first OA, a copy of your PTO/SB/08, with the blank adjacent each reference initialed to show that the examiner has considered it. If you don't get the PTO/SB/08 back with every reference initialed, check with your examiner. Otherwise, the references you cited on your PTO/SB/08 won't be listed on your patent when it's printed.

Next, read the OA carefully and make a detailed written summary of it so that you'll have it impressed in your mind. After that, reread your application, noting all grammatical and other errors in the specification, claims, and drawings that you would like to correct or improve. Remember, however, that you can't add any "new matter" to your application.

3. Read and Analyze Each Cited Reference, Except Patent Claims

Next, read every applied prior-art reference (except the claims of patent references) completely and carefully. (You don't have to read the nonapplied references carefully, but you should review them to be sure none is more relevant than an applied reference.) Make sure that you take enough time to understand each reference completely, including all of the structure involved and how it works. Write a brief summary of each reference, preferably on the reference itself, even if it has an adequate abstract, in order to familiarize yourself with it in your own words.

CAUTION

Don't Fall Into a Claims Trap. As I mentioned in Chapter 6 in connection with conducting a patentability search, don't read the claims of any patent cited as a reference. Why not? Because the patent has not been cited for what it claims, but rather for what it shows about the prior art. The claims generally only repeat parts of the specification and are not directly relevant to the patent prosecution process, since they are only used to determine whether infringement exists. If you think of cited patents as magazine articles, you'll avoid this "claims trap" that most laypersons fall into.

"Swearing Behind" References: Under the PTO's Rule 131, you can "swear behind" and thus eliminate certain cited references as prior art to your application, provided you can prove that your *date of invention* is earlier than the *effective date* of the reference. (Remember from Chapter 5, Section E, that your *date of invention* is the earliest of (1) your *filing date* (regular or PPA), (2) your *date of building and testing,* or (3) your *date of conception* followed by *diligence.* The *effective date* of any U.S. patent reference is its *filing date* and the *effective date* of any other reference is its *publication date.)*

If the PTO cites a reference against your application that has an *effective date* later than your *date of invention,* and you can prove your *date of invention* (you'll be able to if you've followed my recording instructions in Chapter 3!), you're in luck: You can swear behind this reference and thereby completely eliminate it from consideration. Typical references that you can swear behind are U.S. patents with *filing dates,* and other publications with *publication dates* earlier than your *filing date* but later than your *date of invention.*

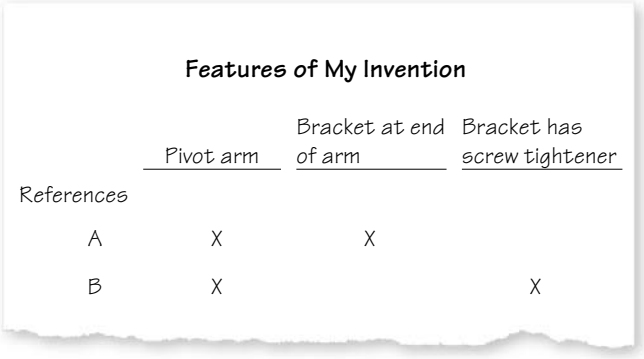
To swear behind such a reference, you must submit a declaration containing facts with attached copies of documents showing that you *built and tested* the invention, or conceived the invention and were thereafter *diligent* in building and testing it, or filing the patent application before the *effective date* of the reference. See MPEP 715 for details.

If you've filed a PPA and need to rely on its filing date, merely refer to it by its Serial Number and Filing Date and point out to the examiner that a reference that the examiner cited is ineffective because you have an earlier effective filing date due to your PPA. Remember, however, that if your PPA didn't disclose your invention completely in accordance with Sec. 112, ¶ 1, you won't be entitled to rely on it.

One-Year Rule and Interference Limitations: Two important limitations exist on your right to swear behind: (1) Because of the "one-year rule" (Chapter 5, Section E), you can't swear behind any reference (U.S. patent or otherwise) with a *publication date* over one year before your *filing date.* (There's no limitation as to how far you can swear back if the reference is a U.S. patent which issued less than one year before your *filing date*.) (2) You can't swear behind a U.S. patent which claims the same invention as yours; the only way you can overcome such a patent is to get into interference with it and win "priority." (See Chapter 15.)

4. Make a Comparison Chart

Next, you'll find it helpful to make a comparison chart showing every feature of your invention across the top of the chart and listing the references down the left-hand side of the chart, as in Fig. 13B.



Features of My Invention

References	Pivot arm	Bracket at end of arm	Bracket has screw tightener
A	X	X	
B	X		X

Fig. 13B—Comparison Chart

Be sure to break up your invention so that all possible features of it, even those not already claimed, are covered and listed across the top of the chart. Remember that a feature can be the combination of two known separate features or a new use of an old device. Then indicate, by checking the appropriate boxes, those features of your invention that are not shown by each reference. This chart, if done correctly and completely, will be of tremendous aid in drafting your response to the first OA.

5. Follow the Flowchart

Fig. 13C provides a comprehensive, self-explanatory flowchart for dealing with all prior-art (Sections 102 and 103) rejections. Fig. 13D provides a list of all possible arguments I've found against obviousness rejections. For each claim (or set of claims) rejected, follow the chart and list carefully.

6. Compare Your Broadest Claim With the Cited References for Novelty

If the examiner applies any prior-art references under Section 102, you'll need to deal with the novelty question. However, if the reference is said to apply under Section 103 (obviousness), the examiner is tacitly admitting that you've made it past Section 102—that is, your claimed structure is novel. Therefore, you won't have to go through the full analysis in this section. Instead, review the section briefly, and then concentrate on Section 7.

First, reread your broadest claim to see which features it recites. Remember, only positively recited physical structure or acts count. Then consider whether these physical features distinguish your invention from each reference cited against this claim. Don't pay any attention to the advantages of your invention, your statements of function, or your "whereby" clauses. Only focus on the novel physical features, including those that are in the form of a means clause followed by a function.

> **EXAMPLE:** "A lever having a threaded end with a counterbalance thereon" is a proper physical recitation that can distinguish your invention from the prior art. The phrase "means for counterbalancing" is a means clause followed by a function and is equivalent to a physical recitation. But "said lever counterbalancing said arm" is a mere statement of result or function and can't be used to distinguish the prior art.

If only one reference has been cited against your broadest claim, consider whether your claim distinguishes over this reference under Section 102 (that is—whether your claimed structure is novel; see Chapter 5, Section E). In other words, are there any features recited in the claim that are not shown in the reference being cited against it? If not, the claim is "fully met" or anticipated by this reference and will have to be narrowed or canceled.

Remember that the examiner is entitled to interpret any claim in any reasonable way against you. That is, if your claims, or any word in one of your claims, has two reasonable interpretations, the examiner is entitled to take the one least favorable to you when determining if your claim has novel physical structure under Section 102. For example, suppose your invention uses a clamp that is halfway between two ends of a rod and a reference shows a clamp near one end of a rod. If your claim recites that the clamp is "intermediate" the ends of the rod, this won't distinguish over the reference since "intermediate" means "between" as well as "in the middle." The remedy? Recite that your claim is "substantially in the middle" of the rod in order to distinguish over the reference under Section 102 (but not necessarily under Section 103).

Suppose the physical features of your claim are all shown in a prior-art reference, but the features are used for a different purpose than yours. For example, you claim "a depression in a wall plate for holding a clock" and the prior art shows a large oil drip pan under a milling machine; this pan literally constitutes "a plate with a depression." Thus your claim literally "reads on" the prior art, but your claimed elements are directed to a different purpose than the elements of the prior-art reference. Unfortunately, the rejection is valid: You'll have to narrow the claim, or consider claiming your structure as a "new use" invention.

Sometimes, even though a claim recites a limitation that is novel, the examiner will overlook the limitation. In order to force the examiner to consider the limitation, it will help to rewrite the limitation in a stronger, separate, more prominent clause in its own paragraph—that is, change "a series of beads" to two paragraphs reading "a plurality of beads, said plurality of beads being connected in series to form a chain of said plurality of beads."

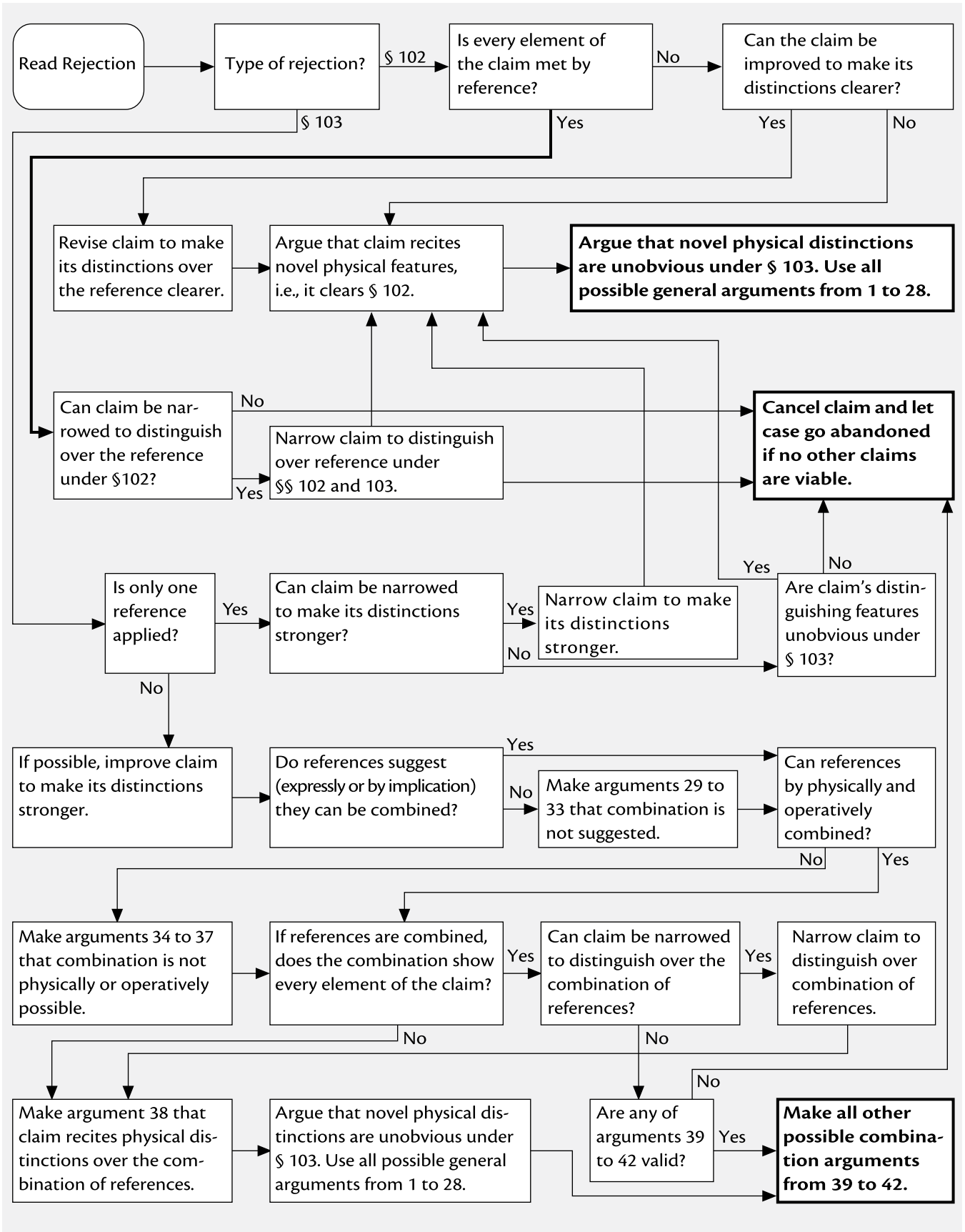


Fig. 13C—Flowchart for Handling Prior-Art Rejections

7. Analyze Novel Features for Unobviousness

If the claim recites (or has been amended to recite) novel features, consider whether these are unobvious over the reference cited against it. All possible reasons for arguing unobviousness are listed in Fig. 13D (Part I). When you use any reasons from this chart, you should not merely copy the reason, as I've seen some inventors do. Rather, you must state facts in support of each reason you use. For example, if you select Reason 1 (Unexpected Results) after stating that your novel claimed structure produces new and unexpected results, state precisely what they are—such as that it does a job faster or more reliably.

If you consider the features of your invention obvious, you'll have to narrow the claim, either by adding more features from your specification or from narrower (dependent) claims (refer to Fig. 13C, above) or by reciting the existing features more narrowly.

Part I—General Arguments Against Obviousness

Below are arguments you may be able to make in response to a charge that your invention is obvious. You will have to go into more detail than to simply recite the argument. For example, if you are responding that the invention achieves unexpected results, you will have to list those unexpected results. For arguments 16 through 20, you may also need—in addition to a detailed explanation—a suitable declaration with attached exhibits. In addition, some arguments contain references to the MPEP. Check these sections before responding to make sure they have not been amended and that they are still relevant.

1. **Unexpected Results:** The results achieved by the invention are new, unexpected, superior, disproportionate, unsuggested, unusual, critical, and/or surprising.
2. **Assumed Unworkability:** Up to now those skilled in the art thought or were skeptical that the techniques used in the invention were unworkable or presented an insuperable barrier.
3. **Assumed Insolubility:** Up to now those skilled in the art thought or found the problem solved by the invention to be insoluble—that is, the invention converts failure into success. The failures of prior-art workers indicate that a solution was not obvious.
4. **Commercial Success:** The invention has attained commercial success. (Prove this by a declaration with supporting documents.)
5. **Unrecognized Problem:** The problem solved by the invention was never before even recognized much less solved. The recognition and solution of an unrecognized problem militates in favor of patentability.
6. **Crowded Art:** The invention is classified in a crowded art; therefore, a small step forward should be regarded as significant.
7. **Omission of Element:** An element of a prior-art device has been omitted or a prior-art version has been made simpler without loss of capability.
8. **Unsuggested Modification:** The prior art lacks any suggestion that the reference should be modified in a manner required to meet the claims.
9. **Unappreciated Advantage:** Up to now those skilled in the art never appreciated the advantage of the invention, although it is inherent.
10. **Inoperative References:** The prior-art references that were relied upon are inoperative.
11. **Poor References:** The prior-art references are vague, foreign, conflicting, or very old, and, therefore, are weak and should be construed narrowly.
12. **Ancient Suggestion:** Although the invention may possibly have been suggested by the prior art, the suggestion is many years old, was never implemented, and produced greatly inferior results.
13. **Lack of Implementation:** If the invention were in fact obvious, because of its advantages, those skilled in the art surely would have implemented it by now. That is—the fact that those skilled in the art have not implemented the invention, despite its great advantages, indicates that it is not obvious.
14. **Misunderstood Reference:** The reference does not teach what the examiner relies upon it as supposedly teaching.
15. **Solution of Long-Felt and Unsolved Need:** The invention solves a long-felt, long-existing, but unsolved need.
16. **Commercial Acquiescence:** The invention has been licensed, especially to a competitor.
17. **Professional Recognition:** The invention has been given an award or recognized in a professional publication.
18. **Purchase Offers:** Others, especially accused infringers, have tried to purchase or take a license under the invention.
19. **Copying by Others:** Others have chosen to copy and implement the invention, rather than using the techniques of the prior art.

Fig. 13D—Arguments Against Obviousness Rejections (Part I)

Part I—General Arguments Against Obviousness (continued)

20. **Competitive Recognition:** The invention has been copied by an infringer; moreover, the infringer has made laudatory statements about it, or has admitted it is unobvious.
21. **Contrarian Invention:** The invention is contrary to the teachings of the prior art—that is, the invention goes against the grain of what the prior art teaches.
22. **Strained Interpretation:** The examiner has made a strained interpretation of the reference that could be made only by hindsight.
23. **Paper Patent:** The reference is a "paper patent"—that is, it was never implemented or commercialized and therefore should be construed narrowly. (Don't use if reference completely anticipates your invention.)
24. **New Principle of Operation:** The invention utilizes a new principle of operation. Applicant has blazed a trail, rather than followed one.
25. **Inability of Competitors:** Competitors were unable to copy the invention until they were able to learn its details through a publication or reverse engineering a commercial model; this indicates unobviousness.
26. **Nonanalogous Art:** The reference is from so different a field that it would not have commended itself to an inventor's attention when considering the invention as a whole. MPEP 2141.01.
27. **No Convincing Reasoning:** The examiner has not presented a convincing line of reasoning as to why the claimed subject matter as a whole, including its differences over the prior art, would have been obvious.
28. **Reference Is Nonanalogous Art or Isn't Pertinent to the Problem Applicant Has Solved:** If a cited reference is nonanalogous or is directed to a different problem, this weighs against its use in a rejection. MPEP 707.07(f) ¶ 7.37.05.

Part II—Arguments Also Used When Combination of References Applied

29. **Unsuggested Combination:** The prior-art references do not contain any suggestion (express or implied) that they be combined, or that they be combined in the manner suggested. In 2007 the U.S. Supreme Court held that that an invention should not be held obvious over several prior-art references unless there is a suggestion, motivation, or teaching that the references can or should be combined. MPEP 2143.
30. **References Are Individually Complete:** Each reference is complete and functional in itself, so there would be no reason to use parts from or add or substitute parts to any reference.
31. **References Take Different Approaches:** The references take mutually exclusive paths and reach different solutions to a similar problem. Since they teach away from each other, it would not be logical to combine them.
32. **References Teach Away:** The references themselves teach away (expressly or by implication) from the suggested combination.
33. **Reference Is From Different Field:** One reference is from a very different technical field than that of the invention—that is, it's "nonanalogous art." MPEP 707.07(f)
34. **Impossible to Combine:** Those skilled in the art would find it physically impossible to combine the references in the manner suggested.
35. **Inoperative Combination:** If they could be combined, the references would produce an inoperative combination.
36. **Modifications Necessary:** It would be necessary to make modifications, not taught in the prior art, in order to combine the references in the manner suggested.
37. **Mutually Exclusive Paths:** The references can't be legally combined because they take mutually exclusive paths to reach different solutions to a problem, and, therefore, by implication each teaches away from combining itself with the other.
38. **Claimed Features Lacking:** Even if combined, the references would not meet the claims.
39. **Synergism:** The whole (that is—the result achieved by the invention) is greater than the sum of its parts (that is—the respective results of the individual references).
40. **Multiplicity of Steps Required:** The combination suggested requires a series of separate, awkward combinative steps that are too involved to be considered obvious.
41. **Multiplicity of References:** The fact that a large number of references (over three) must be combined to meet the invention is evidence of unobviousness.
42. **Intended Function Destroyed:** The references are not legally combinable since doing so will destroy the intended function(s) of at least one of the references.

Fig. 13D—Arguments Against Obviousness Rejections (Part II)

8. If References Are Cited in Combination Against Your Broadest Claim

If two or more references have been cited in combination against your broadest claim, refer to Fig. 13D (Part II) to see whether the examiner has a point.

TIP

You should especially consider reasons 29 to 33—that is, ask yourself whether it is proper to combine these references in the manner that the examiner has done. Also note that when you use any of the reasons of Fig. 13D, you should not merely state the applicable reason, but also supporting facts that pertain to your invention.

9. Does the Combination Disclose Subject Matter of Your Broadest Claim?

Assuming that the references are combined (whether or not they can be), ask yourself if the combination discloses the subject matter of your claim (Reason 37). If not, are the distinctions in your claim patentable under Section 103 (Reasons 1–28 and 39–41)? Also ask yourself whether there are any other errors in the examiner's logic or reasoning.

10. If Your Claims Are Rejected Under Section 112 of the Patent Laws

If your claim has been rejected under Section 112—a very common occurrence, even for patent attorneys—the examiner feels that the language of your claim is not clear or proper. For example, a very common rejection is for failure to supply an antecedent for a "said xxxx" phrase. This is easy to fix. Either positively recite the missing antecedent earlier in the claim or in a referent claim which the claim depends from, or rewrite the phrase to eliminate the "said." If you accept an examiner's rejection that the claim has vague or unclear language, you'll have to substitute a more specific recitation. Try not to limit your invention too much. For example, if you recite that a sheet is "flexible" and the examiner objects to this word as too vague, try substituting a recitation such as, "flexible enough so that it can be repeatedly folded and opened without tearing." You may benefit by calling the examiner to seek suggestions or approval for new proposed language. If the examiner makes any other type of Section 112 rejection, try to work out alternative language that will obviate this rejection. Alternatively, you can ask the examiner to write clear claims for you. (See Section F2i, below.)

11. What to Do If You Disagree With the Examiner

If you believe your broadest claim is patentable over the prior art and that there is a serious flaw in the examiner's logic, it is theoretically permissible to "stand pat"—that is, leave the claim as it is and argue its patentability in your response. It can be desirable to do this to emphasize the rightness of your position if the examiner is very wrong. If you do file a reply to an OA without changing the specification or claims, your reply is technically not an "amendment," so call it a "response."

In most situations, I advise you not to stand pat, since it's difficult psychologically for the examiner to back down. In other words, it's easier to get the examiner to change directions slightly than to make an about turn. Thus, to save the examiner's ego, it's best to try to make some amendment to the claim, even if it's insignificant.

"Treat all persons you deal with as if they had a sign around their neck reading, 'Make Me Feel Important.'"

—Mary Kay Ash

12. Making Amendments Without Narrowing Scope of Claim

It's usually possible to make amendments to a claim that don't narrow its scope. For example, you can recite that a member, which of necessity must be elongated, *is* elongated. By doing this, you have amended the claim without narrowing your scope of coverage. Also, in the electronic field, you can state that a circuit is energized by a direct-current source. For almost any claim you can add a "whereby" clause to the claim stating the function of the mechanism of the claim, and you can add a longer preamble stating in more detail (but not in narrower language) the environment of your invention. The important thing is to add some words to the claim(s), even if you already believe they distinguish over the prior art under Sections 102 and 103, in order to show that you're meeting the examiner part way.

13. Amending Your Claim When You Agree With the Examiner

If you believe your broadest claim isn't patentable as written, and you agree with all or part of the examiner's rejection, you'll have to narrow the claim by adding physical or structural limitations, or by narrowing the limitations already present, in the manner outlined in Chapter 9, or by canceling the broadest claim(s) and making a dependent claim the new independent claim.

Here are some suggestions on how to approach the amendment of your claims:

1. Look for the physical feature(s) in Fig. 13B that constitute the essence of why your invention can be distinguished from the prior art. Then try to put this essence into your claim. Note that you should amend the main claim so as to distinguish physically over the references under Section 102. The physical distinctions should also be significant enough to define structure that is unobvious under Section 103. Merely reciting a single descriptive word will usually not be enough. For example, "Manifold" may not distinguish over a single pipe (even though it should), but reciting "a pipe with a plurality of outlets" will be explicit enough to do the trick. Save your actual reasons as to why the physical distinctions are unobvious for your remarks or for a "whereby" clause at the end of the claim. ("Whereby" clauses can state the advantages of the invention in a relatively informal manner, without as much concern for antecedents, etc. Keep in mind that the examiner doesn't have to give a "whereby" clause any weight in defining your invention over the prior art.)
2. Don't make your main claim narrower than necessary. Often you can find the limitation you are looking for in one or more dependent claims. (To see how to combine a dependent claim with an independent claim, see Chapter 9, Section J.)
3. Show your invention and the cited references to friends or associates; often they can readily spot the distinguishing essence of your invention. (Remember to use the Nondisclosure Agreement (Form 3-1) if you are maintaining the invention as a trade secret in the patent prosecution phase.)
4. After you've narrowed your main independent claim so that it distinguishes over the prior art cited by the patent examiner, and you feel the distinguishing features are patentable under Section 103 (that is, they're unobvious), do the same for all your other independent claims.
5. If you've changed any independent claims, change your dependent claims so that they completely and correctly correspond in language and numbering with your main claim. If you incorporate a limitation from a dependent claim into your main claim, cancel the dependent claim. This is because the dependent claim will no longer be able to add anything to narrow the independent claim. You may also think of other, narrower dependent claims to replace those that you've canceled; refer to the comparison chart to be sure you've claimed every feature.

TIP

Computer Tip. One way to be sure the language of your dependent claims corresponds with that of your independent claim is to use a computer with a word-processing program with a "windows" function, so that you can open two windows to display both claims on your monitor simultaneously. In this way, you'll be able to compare both claims easily.

6. You should write the narrowest possible claims you're willing to accept, since it will be difficult to amend again if your amended claims are rejected next time around. See Section J on final Office Actions.
7. Be sure all of the less-important specific features of your invention are recited in your amended dependent claims.
8. Try to distinguish by adding quantitative or relative, rather than qualitative, recitations to your claims, since these carry far more weight. For example, say "a rod at least one meter long" or "a rod that is longer than said post" not "a rod of great length" (or "strength").

Changing Claim Language or Invention

If you have to amend your claims to define over the prior art, you should, of course, try to keep them as broad as possible and worded appropriately to cover your invention in its latest and most likely commercial embodiment. If you change the design of your invention from that shown and described in your application, this will not prejudice you so long as your claims are still broad enough to cover the new design. Judges recognize that designs frequently change as inventions mature. If your design changes by a great amount, consider filing a CIP or a new application. (See Chapter 14.)

14. Plan an Outline of Your Response

Indicate in pencil on a copy of your application, or on separate sheets, the amendments you intend to make to your specification, your claims, your drawing, and your remarks. The "remarks" section of your amendment (as shown in Fig. 13E, below) should consist of:

1. a positive statement indicating that you have amended the application to place it in condition for allowance
2. a brief summary of all your amendments
3. a discussion of any technical (Section 112) rejections and that the new claims overcome them or how you overcame them

4. a review of the first prior-art rejection made by the examiner, containing
   - 4a. review of the rejection
   - 4b. review of your invention, emphasizing its novelty
   - 4c. review of the reference(s) cited by the examiner
   - 4d. summary of how you changed the independent claims of this rejection, quoting your changes, and a request for reconsideration of the examiner's position
   - 4e. statement as to how your independent claims under this rejection recite novel subject matter over the reference under Section 102 if one reference was cited
   - 4f. statement of why the references can't legally be combined, if more than one reference was cited
   - 4g. statement that even if the references were to be combined, the claims would still recite novel subject matter over the combination, if more than one reference was cited
   - 4h. statement that the novel features of the claim are unobvious, using all possible arguments from Fig. 13D
   - 4i. discussion of dependent claims under this rejection, indicating that they incorporate all of the features of their referent (independent) claims and add additional limitations and thus are *a fortiori* (by stronger reason) patentable
   - 4j. discussion of any independent claims that are independently patentable
5. repeat steps 4a through 4h for each additional prior-art rejection, but don't repeat any text, just refer to it above
6. any request for aid you may wish to make under MPEP 707.07(j) requesting the examiner to write claims, and
7. a conclusion restating your main arguments briefly.

See Section F, below, for specifics on drafting your remarks.

At this point, read Fig. 13E, a sample successful amendment from an actual case (now a patent) to see the format customarily used. Continue to refer to Fig. 13E throughout the next four sections of this chapter.

E. Format for Amending the Specification and Claims

Form 13-1 in Appendix 7 provides the initial part of your amendment. Copy the text from this form into a new file on your word processor.

Fill in the serial number, filing date, your name, title of your application, and the examiner's name and examining unit or group art unit. The date on which you actually mail the amendment goes after "date," and the date of the office letter goes at the space indicated in the first paragraph. Put an appropriate letter (A, B, etc.) after "Amendment" to indicate which amendment it is (your first, second, etc.). Then immediately after the "In response to..." sentence, list the sections of your application (Drawings, Specification, and/or Claims, and Remarks) and their page numbers in the manner indicated below. (You should not format your amendment in the form of a personal letter to the examiner, as I have seen some inventors do.)

1. Changes to Specification

If you're going to make any changes to the specification, provide the heading "SPECIFICATION:" on a new page after the sentence printed on Form 13-1. Then indicate the specific paragraphs (or sections) in your application that you want to replace and provide replacement paragraphs marked to indicate deletions by ~~strikethroughs~~ and additions by underlining. If you are deleting five characters or fewer, you may indicate the deletion by double brackets (e.g., "[[claim]]") instead of strikethroughs. If you are deleting a short item, such as a number or punctuation mark, it's better to delete and replace extra portions of the text for clarity (e.g., "[[lever 4 and bracket 5]] lever 6 and bracket 5"). See the second page of the sample amendment below. (You may refer to paragraphs to be replaced by number, e.g., "Paragraph [0005]," if you numbered the paragraphs when you filed the application.) (Chapter 10.)

When your amendment is received, the clerk of the examining group will make each change on the official copy of your application in the manner you direct. Thus, you should ensure that there is no ambiguity in your amendments.

Be sure that your amendments to the specification don't contain any "new matter." (See Section B18, above.)

If you want to make a large number of amendments to the specification, it's better to submit an entirely retyped specification, called a "substitute specification." To file a substitute specification you must submit an entirely new specification with the changes made in clean copy form, plus a comparison specification with each change highlighted so the examiner can verify that you haven't added any new matter. Also, you must certify that the substitute specification doesn't contain any new matter; see MPEP 608.01(q) for instructions.

Provide 1" top margin (omitted here) to allow for mounting hole punching.

In The United States Patent and Trademark Office

Appn. Number: 07/910,721
Appn Filed: 2001 Jan 27
Applicants: Nira Schwartz, Arie Shahar, and Richard Woods
Title: Templates And Unique Histogram Analysis
Examiner/GAU: Yon J. Couso/2872

San Francisco, 2003 Jun 23 Mon

AMENDMENT A

Mail Stop Non-Fee Amendments
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Office Action Mailed 2002 Mar 23, please amend the above application as follows:

SPECIFICATION: Amendments to the specification begin on page 2 of this Amendment.

CLAIMS: Amendments to the claims begin on page 3 of this amendment.

DRAWINGS: A statement explaining the drawing amendments begins on page 7 of this Amendment.

REMARKS: Remarks begin on page 7 of this Amendment.

Fig. 13E/1—Sample "Regular" Amendment

Appn. Number 07/910,721 (Schwartz et al) GAU 3303 Amnt. A contd. 2 of 13

SPECIFICATION:

Title: Replace with following new title—Inspection Method Using Multiple Template Images, [[Templates And Unique Histogram Analysis]]

Page 3, last paragraph (extends to page 4), replace with the following new paragraph:

> In accordance with one embodiment ~~the invention~~, a scanning system uses a plurality of lamps on a rotating carousel which has arms extending radially outward to form a rim.

Page 10, last paragraph (extends to page 11), replace with the following new paragraph:

> Lamp 18 has a collimated beam and does not significantly affect photocell 20 [[trigger photocell 20]].

Page 11, after the last paragraph, add the following new paragraph:

> Carousel 22 has a photocell 38 on its bottom.

Page 22, third paragraph, replace with the following new paragraph

> The carousel carries ~~a circle of approximately fifty bottles~~ a circular line of at least 50 bottles that sequentially receive the scanning beam from photocell 28.

Fig. 13E/2—Sample "Regular" Amendment

Appn. Number 07/910,721 (Schwartz et al) GAU 3303 Amnt. A contd. 3 of 13

CLAIMS: *The following is a listing of all claims in the application with their status and the text of all active claims.*

1.-36. (CANCELED)

37 (CURRENTLY AMENDED) A method for inspecting products that move on a production line for defects, marks, and dimensional accuracy with the use of a sensor and a processing unit having a memory, comprising:

(a) providing and saving in said memory a plurality of computer-generated artificial template images having a plurality of predetermined coordinates and addresses mapped within said memory, said plurality of computer-generated artificial template images together defining a full template image.

(b) assigning a plurality of predetermined gray levels to each of said plurality of computer-generated artificial template images.

(c) creating a respective plurality of histogram vectors of said plurality of computer-generated artificial template images, each of said histogram vectors having values which are correlated to said coordinates and addresses mapped within said memory.

(d) creating a product image by sensing one of [[said]] a plurality of products with [[~~said~~]] a sensor, said product image comprising a multiplicity of pixels with intensity levels expressed as a plurality of respective gray levels.

(e) modifying said product image to produce a modified product image by converting said plurality of gray levels of said product image to a plurality of modified gray levels.

(f) creating a plurality of additional gray levels by mathematically combining said plurality of modified gray levels with said plurality of predetermined gray levels so that said plurality of additional gray levels are different from said plurality of modified gray levels or said plurality of predetermined gray levels, and

(g) analyzing said plurality of computer-generated artificial template images, said modified product image, and said plurality of additional gray levels for production inspection.

38. (PREVIOUSLY PRESENTED) The method of claim 37, further including creating said additional gray levels by superposing said modified product image onto said template images by summing gray levels assigned to memory locations of said product image and said full template image, so as to produce a summation which represents a superposed image, and saving said summation in said memory.

39. (PREVIOUSLY PRESENTED) The method of claim 38, further including creating a histogram vector of said superposed image.

40. (PREVIOUSLY PRESENTED) The method of claim 39 wherein said creating said histogram of said superposed image is done so that said histogram vector is compressed.

41. (PREVIOUSLY PRESENTED) The method of claim 39 wherein said creating of histogram vector of said superposed image is done by including gray levels that are smaller than the highest gray level of said computer-generated artificial template images so that said histogram vector is truncated.

Fig. 13E/3—Sample "Regular" Amendment

42. (PREVIOUSLY ADDED) The method of claim 39, further including comparing values of said histogram vectors of said superposed image with those of said histogram vectors of said computer-generated artificial template image.
43. (PREVIOUSLY ADDED) The method of claim 39, further including analyzing said histogram vectors of said superposed image by its discontinuities to indicate dimensions in numbers of pixels.
44. (PREVIOUSLY ADDED) The method of claim 39, further including analyzing any new gray level values which appear in said histogram vectors of said superposed image and were absent in said histogram of said computer-generated artificial template image.
45. (PREVIOUSLY ADDED) The method of claim 39, further including analyzing said histogram vectors of said superposed image by its discontinuities to detect, size, and map said defects in numbers of pixels.
46. (PREVIOUSLY PRESENTED) The method of claim 39, further including counting the number of pixels equal to gray levels in said histogram vector and saving the count in memory.
47. (PREVIOUSLY PRESENTED) The method of claim 39, further including analyzing said histogram vectors of said superposed image by its discontinuities to detect marks and express their size in numbers of pixels.

48. (PREVIOUSLY PRESENTED) The method of claim 37 wherein said modifying said product image to produce a modified product image is performed by converting said gray levels of said product image to modified gray levels which are higher than said gray levels of said full template image minus the lowest gray level of said computer-generated artificial template images.
49. (PREVIOUSLY PRESENTED) The method of claim 37, further including creating a superposed image by superposing said modified product image onto said template image by summing gray levels assigned to memory locations of said product image and said computer-generated artificial template images, and saving the results of summation in said memory.
50. (PREVIOUSLY PRESENTED) The method of claim 37 further including creating a truncated histogram vector of said superposed image by including gray levels that are smaller than the highest gray levels of said computer-generated artificial template image.
51. (PREVIOUSLY PRESENTED) The method of claim 37, further including creating a compressed histogram vector of said superposed image.
52. (PREVIOUSLY PRESENTED) The method of claim 37 wherein said products are printed circuit boards.
53. (PREVIOUSLY PRESENTED) The method of claim 37, further including modifying the number of said template images to one.
54. (NEW) The method of claim 37 wherein said providing and saving in memory is done so that full template image has a size equal to a line created by a plurality of said pixels.

Fig. 13E/4—Sample "Regular" Amendment

DRAWINGS:

The attached sheet (sheet 1/4) of drawings includes changes to Fig 2 and replaces the original sheet 1/4 with Figs 1 and 2. In Fig 2 previously omitted reference number 13 has been added. The attached sheet (sheet 3/4) of drawings includes corrections to Fig 5 and replaces original sheet 3/4 with Figs 5 and 6. The attached red-marked sheet 3/4 indicates in red the corrections made to Fig 5.

Fig. 13E/5—Sample "Regular" Amendment

Appn. Number 07/910,721 (Schwartz et al) GAU 3303 Amnt. A contd. 6 of 13

REMARKS—General

By the above amendment, Applicants have amended the title to emphasize the novelty of the invention. They have amended the drawings as indicated to correct a missing reference number and to make minor corrections to Fig 5.

Also applicants have rewritten all claims to define the invention more particularly and distinctly so as to overcome the technical rejections and define the invention patentably over the prior art.

The Objection to the Specification and the Claims Rejection Under § 112

The specification was objected to under § 112 since it was said to fail to teach how processor 106 works and there was no description as to how the plurality of template images were related to an inspection machine.

Applicants request reconsideration and withdrawal of this objection since it is not necessary to teach how prior-art processor 106 works, and since the specification teaches how the plurality of template images relate to an inspection machine.

First, note heat processor 106 is a known prior-art item of commerce, made and sold by the company indicated on p. 9 of the specification. There is no requirement that a patent application teach how such a prior-art machine works—only how to make and use the invention claimed. The present clearly teaches how to make and use the invention with processor 106. The present system uses processor 106 in a new manner and the present specification clearly teaches in detail how to use it as part of and in the practice of the invention on pp. 13 to 23.

Note that cited prior patent 5,204,911 to Schwartz and Shahar shows the same processor 106 in Fig 12 and discusses how it works under the discussion of Fig 12—see cols. 13 and 14. Thus the structure and operation of processor 106 was prior art and was well known prior to applicants' filing date.

As to how the plurality of template images are related to an inspection machine, the specification clearly shows this as follows:

P. 5 of the specification states that Fig 2 shows a plurality of template images related to an inspection machine and that Fig 3 is a histogram of a template image of Fig 2. This is done in the inspection machine.

P. 13 of the specification discusses the histogram vector of Fig 3 and how it is saved in compressed form. This is done in the inspection machine.

Pp. 13–16 discuss how an image of the product to be inspected is obtained and stored and how the gray levels of the product image are modified by the look-up tables. This is done in the inspection machine.

Pp. 16–18 discuss how the template images are superposed with the product image; this is also done in the inspection machine.

Pp. 18–21 discuss how the histogram of Fig 6 is built from the superposed image, again using the inspection machine.

Pp. 21–23 discuss how the machine of Fig 7 of the invention uses the histogram of Fig 6 to complete the inspection.

Fig. 13E/6—Sample "Regular" Amendment

Thus the present specification clearly and completely teaches how to make and use the invention in general, and how the template images are related to an inspection machine in particular.

Accordingly applicants submit that the specification does comply with § 112 and therefore request withdrawal of this objection.

The Rejection of Claim 19 on Hashim and Gaborski Overcome

The last O.A. rejected independent claim 19 on Hashim and Gaborski. Claim 19 has been rewritten as new claim 37 to define patentably over these references, and any combination thereof. Applicants request reconsideration of this rejection, as now applicable to claim 37, for the following reasons:

(1) There is no justification, in Hashim and Gaborski, or in any other prior art separate from applicants' disclosure, which suggests that these references be combined, much less be combined in the manner proposed.

(2) The proposed combination would not be physically possible or operable.

(3) Even if Hashim and Gaborski were to be combined in the manner proposed, the proposed combination would not show all the novel physical features of claim 37.

(4) These novel physical features of claim 37 produce new and unexpected results and hence are unobvious and patentable over these references.

The References and Differences of the Present Invention Thereover

Prior to discussing the claims and the above four points, applicants will first discuss the references and the general novelty of the present invention and its unobviousness over the references.

Hashim creates an image of a product, but modifies the image of the product using a transformation function. Hashim, col. 2, 11. 60-65. Applicants modify the product image using a different transformation function. Hashim modifies the gray levels in his template to either value 0 or value B related to threshold T (col. 2, 1. 57, to col. 3, 1. 22). Thus Hashim's procedure modifies the gray levels according to a value and not according to coordinates. There Hashim's procedure of gray level modification does not enable preselected coordinates and addresses to be mapped inside any template image. Further it does not assign preselected gray levels to any preselected coordinates and addresses. Hashim creates a histogram to be used as a tool for modifying gray levels of his template images (col. 2, 1. 57, to col. 3, 1. 22). However his histogram cannot be used for evaluation of product dimensions or as an indication of any coordinate values, as can applicants' histogram.

Gaborski's template is composed of vertical lines which are spread apart. There are no coordinates that map to the bars inside the template by assigning preselected gray levels to them, as in applicant's invention. Gaborski creates a histogram to be used as a tool for inspection of maximum correlation between template image and product image. His histogram vector does not contain information about the product's coordinates and dimensional measurements, as applicants' histogram vector will supply.

The last O.A. notes that Hashim's system does the following:

(1) creates template images

(2) creates product images

(3) creates additional gray levels

(4) modifies the additional gray levels to prevent ambiguity.

Fig. 13E/7—Sample "Regular" Amendment

However in general, to create a group of gray levels ('A') that are different than gray levels of another group ('B') and the gray levels of still another group ('C'), the procedure of creating the gray levels of group 'A' must take into account the values of the gray levels of groups 'B' and 'C' to prevent ambiguity. Hashim does not do this, but applicants do.

When Hashim creates (modifies) his gray levels [step (4) above] he considers only gray levels within the image that he modifies (Hashim, col. 2, 1. 57 to col. 3, 1. 18). He does not consider nor is he aware of the gray levels of step (1) above when he performs his modification step (4). Therefore, he cannot have any assurance that ambiguity is prevented. Whatever algorithm he uses to operate on the equalized histogram, this is then scanned to ascertain the positions of the edges (col. 3, 11. 10 to 18); it is NOT done to prevent ambiguity.

With regard to the compression of the histogram vectors, applicants perform this for the first time. Until now no one ever thought of compressing histogram vectors and suggested same, much less actually did it. Applicants' method identifies and maps coordinates using gray levels. Using this, one may create a very long histogram vector, or a large number of short histograms. By compressing the histogram vector, applicants save valuable processing time and storage space. As stated, this procedure was not done before, so neither it nor its concomitant advantages were known or appreciated.

1. Hashim and Gaborski Do Not Contain Any Justification to Support Their Combination, Much Less in the Manner Proposed

With regard to the proposed combination of Hashim and Gaborski, it is well known that in order for any prior-art references themselves to be validly combined for use in a prior-art § 103 rejection, *the references themselves* (or some other prior art) must suggest that they be combined. E.g., as was stated in In re Sernaker, 217 U.S.P.Q. 1, 6 (C.A.F.C. 1983):

> "[P]rior art references in combination do not make an invention obvious unless something in the prior art references would suggest the advantages to be derived from combining their teachings."

That the suggestion to combine the references should not come from applicant was forcefully stated in Orthopedic Equipment Co. v. United States, 217 U.S.P.Q. 193, 199 (C.A.F.C. 1983):

> "It is wrong to use the patent in suit [here the patent application] as a guide through the maze of prior art references, combining the right references in the right way to achieve the result of the claims in suit [here the claims pending]. Monday morning quarterbacking is quite improper when resolving the question of nonobviousness in a court of law [here the PTO]."

As was further stated in Uniroyal, Inc. v. Rudkin-Wiley Corp., 5 U.S.P.Q.2d 1434 (C.A.F.C. 1988), "[w]here prior-art references require selective combination by the court to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself … *Something in the prior art must suggest the desirability and thus the obviousness of making the combination*." [Emphasis supplied.]

In line with these decisions, recently the Board stated in Ex parte Levengood, 28 U.S.P.Q.2d 1300 (P.T.O.B.A.&I. 1993):

Fig. 13E/8—Sample "Regular" Amendment

> "In order to establish a *prima facie* case of obviousness, it is necessary for the examiner to present *evidence*, preferably in the form of some teaching, suggestion, incentive or inference in the applied prior art, or in the form of generally available knowledge, that one having ordinary skill in the art *would have been led* to combine the relevant teachings of the applied references in the proposed manner to arrive at the claimed invention. … That which is within the capabilities of one skilled in the art is not synonymous with obviousness. … That one can *reconstruct* and/or explain the theoretical mechanism of an invention by means of logic and sound scientific reasoning does not afford the basis for an obviousness conclusion unless that logic and reasoning also supplies sufficient impetus to have led one of ordinary skill in the art to combine the teachings of the references to make the claimed invention.… Our reviewing courts have often advised the Patent and Trademark Office that it can satisfy the burden of establishing a *prima facie* case of obviousness only by showing some objective teaching in either the prior art, or knowledge generally available to one of ordinary skill in the art, that 'would lead' that individual 'to combine the relevant teachings of the references.' … Accordingly, an examiner cannot establish obviousness by locating references which describe various aspects of a patent applicant's invention without also providing evidence of the motivating force which would impel one skilled in the art to do what the patent applicant has done."

In the present case, there is no reason given in the last O.A. to support the proposed combination, other than the statement "both references teach histogram template." However the fact that both references teach a histogram template is not sufficient to gratuitously and selectively substitute parts of one reference (Gaborski's template library) for a part of another reference in order to meet applicants' novel claimed combination.

The O.A. noted (p. 5) that the combination of Hashim and Gaborski produces an advantage (broadens system performance). Applicants submit that the fact that the combination produces advantages militates in favor of *applicants* because it proves that the combination produces new and unexpected results and hence is unobvious.

As stated in the above Levengood case,

> "That one can reconstruct and/or explain the theoretical mechanism of an invention by means of logic and sound scientific reasoning does not afford the basis for an obviousness conclusion unless that logic and reasoning also supplies sufficient impetus to have led one of ordinary skill in the art to combine the teachings of the references to make claimed invention."

Applicants therefore submit that combining Hashim and Gaborski is not legally justified and is therefore improper. Thus they submit that the rejection on these references is also improper and should be withdrawn.

Applicants respectfully request, if the claims are again rejected upon any combination of references, that the Examiner include an explanation, in accordance with M.P.E.P. § 706.02, Ex parte Clapp, 27 U.S.P.Q. 972 (P.O.B.A. 1985), and Ex parte Levengood, supra, a "factual basis to support his conclusion that would have been obvious" to make the combination.

Fig. 13E/9—Sample "Regular" Amendment

2. The Proposed Combination Would Not Be Physically Possible or Operable

Hashim shows a system for creating an image of a product and modifying the gray levels of this image using a transformation function. Gaborski shows a template with spaced vertical lines and a histogram for inspecting the correlation between the template image and the product image. It would not be physically possible to combine these two disparate systems in an operative manner because each system is a complete operable system in and of itself and incorporating Gaborski's system in Hashim's would completely alter and destroy Hashim's function and make it a different system that could not perform its intended function in an operable manner.

3. Even If Hashim and Gaborski Were to Be Combined in the Manner Proposed, the Proposed Combination Would Not Show All of the Novel Physical Features of Claim 37

However even if the combination of Hashim and Gaborski were legally justified, claim 37 would still have novel (and unobvious) physical features over the proposed combination. In other words, applicant's invention, as defined by claim 37, comprises much more than merely substituting a plurality of templates for one template.

Specifically, clauses (a) and (b) of claim 37 clearly distinguish applicant's template histogram from Gaborski's and Hashim's, or any possible combination thereof, since these clauses recite:

> "(a) providing and saving in said memory a plurality of computer-generated artificial template images, each of said plurality of computer-generated artificial template images having a plurality of predetermined coordinates and addresses mapped within said memory, said plurality of computer-generated artificial template images together defining a full template image.
>
> (b) assigning a plurality of predetermined gray levels to each of said plurality of computer-generated artificial template images."

Neither Hasim nor Gaborski show these features because neither of their systems assign specific gray levels to any predetermined coordinates and addresses, as applicants' system does.

By assigning specific gray levels to predetermined coordinates and addresses, applicants' system causes the histogram vectors of clause (c) to have values correlated to addresses, a feature that is missing in ordinary histogram vectors, such as those of Hashim and Gaborski. Thus Hashim and Gaborski also lack the feature of clause (c), i.e.,:

> "(c) creating a respective plurality of histogram vectors of said plurality of computer-generated artificial template images, each of said histogram vectors having values which are correlated to said coordinates and addresses mapped within said memory."

Clause (f) also clearly distinguishes over Gaborski and Hashim since it recites:

> "(f) creating a plurality of additional gray levels by mathematically combining said plurality of modified gray levels with said plurality of preselected gray levels so that said plurality of additional gray levels are different from said plurality of modified gray levels or said plurality of preselected gray levels."

Fig. 13E/10—Sample "Regular" Amendment

Neither Hashim nor Gaborski create any additional gray levels by mathematically combining the plurality of modified gray levels with the plurality of preselected gray levels so that the additional gray levels are different from the modified gray levels and the preselected gray levels.

As stated above, when Hashim creates his gray levels [step(4) above] he considers only gray levels within the image that he modifies (Hashim, col. 2, 1. 57 to col. 3 1. 18). He does not consider nor is he aware of the gray levels of step (1) above while his modification step (4) above is performed.

Therefore, he cannot have any assurance that ambiguity is prevented and he does not combine any previous gray levels to arrive at his additional gray levels.

Thus applicants submit that their invention is much more than merely substituting a plurality of templates for one template and that claim 37 clearly recites novel physical subject matter which distinguishes over any possible combination of Hashim and Gaborski.

4. The Novel Physical Features of Claim 37 Produce New and Unexpected Results and Hence Are Unobvious and Patentable Over These References Under § 103

Also applicants submit that the novel physical features of claim 37 are also unobvious and hence patentable under § 103 since they produce new and unexpected results over Hashim and Gaborski, or any combination thereof.

These new and unexpected results are the ability of applicants' system to locate addresses and coordinates in memory by referring to the gray levels in the histogram vectors. This in turn results in higher-speed image processing for detecting defects and making dimensional measurements. Applicants' system therefore is vastly superior to that of either Hashim and Gaborski, or any possible combination thereof. The novel features of applicants' system which effect these differences are, as stated, clearly recited in claim 37.

The Dependent Claims Are A Fortiori Patentable Over Hashim and Gaborski

New dependent claims 38 to 54 incorporate all the subject matter of claim 37 and add additional subject matter which makes them a fortiori and independently patentable over these references.

Claim 38 additionally recites:

> "creating said additional gray levels by superposing said modified product image onto said template images by summing gray levels assigned to memory location of said product image and said full template image, so as to produce a summation which represents a superposed image, and saving said summation in said memory."

This is entirely foreign to Hashim and Gaborski, or any combination thereof since, as stated, the systems of these references do not sum any gray levels of the product image and the full template image. Hashim modifies the product image using a transformation function, rather than by summing. Garborski does not sum either.

Claim 39 further adds "creating a histogram vector of said superposed image." Again this is clearly foreign to Hashim and Gaborski.

Fig. 13E/11—Sample "Regular" Amendment

Claims 40, 41, 50, and 51 further add that the histogram vector is compressed or truncated. As stated above, this feature is novel with applicant and produces new and unexpected results—the saving of processing time and storage space.

The last O.A. stated that it would be obvious to compress the histogram vector "in order to **increase** the processing time." [Emphasis added.] As stated, compressing the vector **saves or decreases**, rather than increases, processing time. This is an important and significant advantage. Applicants request reconsideration of the statement that compression would be obvious since they submit that the facts that it is (a) novel, and (b) produces valuable new, improved, and unexpected results proves that it is unobvious.

Claim 42 recites comparing values of the histogram vectors of the superposed image with those of the histogram vectors of said computer-generated artificial template image. Neither Hashim nor Gaborski looks for maximum correlation.

Claims 43, 45, and 47 recite analyzing the histogram vectors of the superposed image by its discontinuities to indicate dimensions in numbers of pixels. Neither Hashim nor Gaborski do this: Hashim analyzes discontinutities in the product image itself.

Claim 44 recites analyzing any new gray level values which appear in the histogram vectors of the superposed image and were absent in the histogram of the computer-generated artificial template image. Neither Hashim nor Gaborski do this: Hashim analyzes new gray levels for threshold levels in order to modify the product image.

Claim 46 recites counting the number of pixels equal to gray levels in the histogram vector and saving the count in memory. Neither Hashim nor Gaborski count pixels in the product image.

Claim 48 recites converting the gray levels of the product image to modified gray levels which are higher than the gray levels of the full template image minus the lowest gray level of the computer-generated artificial template images. Neither Hashim nor Gaborski convert gray levels while preventing ambiguity of gray levels: Hashim converts gray levels "to ascertain the positions of edges." Hashim, Col. 3, 1. 12.

Claim 49 recites creating a superposed image by superposing the modified product image onto the template image by summing gray levels assigned to memory location of the product image and the computer-generated artificial template images, and saving the results of the summation in memory. Neither Hashim nor Gaborski do this: Gaborski creates multiplications of the product image and the template image. However his template image is different from applicants' template and his product image is modified differently from applicants' product image.

Claim 53 recites modifying the number of said template images to one. Neither Hashim nor Gaborski do this.

Claim 54 recites that the providing and saving memory is done so that the full template image has a size equal to a line created by a plurality of the pixels. Neither Hashim nor Gaborski deal with an image size of one line.

Accordingly applicants submit that the dependent claims are a fortiori patentable and should also be allowed.

Fig. 13E/12—Sample "Regular" Amendment

CONCLUSION

For all the above reasons, applicants submit that the specification and claims are now in proper form, and that the claims all define patentably over the prior art. Therefore they submit that this application is now in condition for allowance, which action they respectfully solicit.

Conditional Request for Constructive Assistance

Applicants have amended the specification and claims of this application so that they are proper, definite, and define novel structure which is also unobvious. If, for any reason this application is not believed to be in full condition for allowance, applicants respectfully request the constructive assistance and suggestions of the Examiner pursuant to M.P.E.P. § 2173.02 and § 707.07(j) in order that the undersigned can place this application in allowable condition as soon as possible and without the need for further proceedings.

Very respectfully,

Nira Schwartz Arie Shahar Richard Woods

Nira Schwartz Arie Shahar Richard Woods

––––––––––––––––––––Applicants Pro Se––––––––––––––––––––

Enc: New sheets 1/4 and 3/4 of drawings and a copy of sheet 3/4 marked in red to indicate the corrections to Fig. 5.

950 Parker Street
Berkeley, CA 94710
Tel. (510) 549-1976; Fax (510) 548-5902

Certificate of Facsimile Transmission. I certify that on the date below I will fax this paper (including Appendix) to GAU 2872 of the U.S. Patent and Trademark Office at 703-872-9319.

2003 Jan. 23 Nira Schwartz

Fig. 13E/13—Sample "Regular" Amendment

2. Amendments to Claims

If you want to amend your claims, start on a new page with the following heading and text:

> *CLAIMS: Please amend the claims according to the status designations in the following list, which contains all claims that were ever in the application, with the text of all active claims.*

The number and status of each claim that is now or was ever in the application must be indicated by providing one of the seven parenthetical expressions, below, after the claim number. (I've indicated the meaning of each parenthetical expression.)

A. (ORIGINAL) The claim has the same number and content as originally filed.

B. (CURRENTLY AMENDED) The claim has the same number as originally or later filed, but is marked up to make amendments (additions and ~~deletions~~) to it.

C. (PREVIOUSLY PRESENTED) The claim was previously amended in marked-up form. It is now typed in clean copy form with the same number as before.

D. (CANCELED) The claim has been or is currently being canceled. Its text is not typed here.

E. (WITHDRAWN) The claim is directed to a non-elected invention, so it is no longer active but since it is still pending it must be typed. (It may be submitted in a divisional application.)

F. (NEW) The claim is new and is typed with a new number.

G. (NOT ENTERED) The claim was previously submitted after a final action but the examiner refused to enter it.

You must list all claims in numerical order, regardless of what action you're taking with them; you may not group all deleted claims together unless they're consecutive. See the example below.

For canceled and not entered claims, you should provide only the number and status, but not the claim's text. You should provide the number, status, and claim text for every active (currently under examination) claim. (Fortunately word processors with a copy function allow rapid entry.)

You must present the text of all active claims in clean copy form, except for claims that are being currently amended; use the CURRENTLY AMENDED format for the latter.

Which format should you use to amend claims—CURRENTLY AMENDED or NEW?

I recommend that you use the CURRENTLY AMENDED (marked-up) format if you are making minor changes only to the claim, and/or if you want to point out to the examiner just how you're amending the claim. Use ~~strikethroughs~~ to show deletions and underlining to show additions—the same as for specification amendments. As with specification amendments, if you are deleting five characters or fewer, you may indicate the deletion by double brackets (e.g., "[[lever]]") instead of strikethroughs. If you are deleting a short item, such as a number or punctuation mark, it's better to delete and replace extra portions of the text for clarity (e.g., "[lever 4 and bracket 5] lever 6 and bracket 5").

If you are making any major changes to the claim or prefer to present it in clean copy form, as I usually do and as is done in all foreign countries, I recommend that you use the NEW format: Type the status expression (CANCELED) after the number of the old claim or claims that you're replacing and retype the claim with a new number (use the next highest number) followed by the status expression (NEW), followed in turn by the text of the claim in clean copy form. Include all the changes that you care to make.

Don't forget to re-present all other active claims (those that you're not currently amending) in clean copy form with their statuses indicated.

Here's an example of a claim listing for an amendment.

CLAIMS: Please amend the claims according to the status designations in the following list, which contains all claims that were ever in the application, with the text of all active claims.

1–5 (CANCELED)

6. (ORIGINAL) A bucket made of nylon.

7. (WITHDRAWN) A bucket with a carrying strap.

8. (PREVIOUSLY PRESENTED) *A bucket with a handle.*

9. (CANCELED)

10. (CURRENTLY AMENDED) A bucket with a blue ~~green~~ handle and a round and oval bottom.

11. (WITHDRAWN) A bucket with a bottom hole.

12. (CANCELED)

13. (NEW) A bucket with sides and a bottom which are both made of plastic.

F. Drafting the Remarks

Next, add the "remarks" portion of your amendment starting on a new page. Some general rules for drafting remarks that I'll state first may seem strange, but they're the customary practice, and to deviate substantially may make the examiner feel uncomfortable and take a negative attitude toward your invention.

1. General Rules for Drafting Remarks

Rule 1: As stated before, when writing your remarks observe Inventor's Commandment 24 by never admitting that any

prior art anticipates or renders any part of your invention obvious. Similarly, never derogate your invention or any part of it. Also, never state that your invention is limited in any way—that is, don't state anything that an adversary could use against you in a legal dispute.

Rule 2: Never get personal with the examiner. If you must refer to the examiner, always use the third person. For example, never state "You rejected…"; instead, state "The Examiner [note the capitalization] has rejected…." Better yet, state "The Office Action rejects…" or "Claim 1 was rejected…." Never, never address the examiner by name (do list the examiner's name the caption), and never make your amendment a "Dear Mr. [Examiner's Name]" letter. See the sample amendment of Fig. 13E, above, for how it's done.

Rule 3: If there's an error in the OA, refer to the error in the OA, and don't state that the examiner made the error. Even if you find the examiner made a completely stupid error, just deal with it in a very formal way, keep emotions and personalities out of your response, and don't invalidate the examiner. Remember, you've probably made some stupid errors in your life also, and you wouldn't want your nose rubbed in them. It is okay to respectfully challenge an examiner who you feel is wrong. For example, "If this rejection is repeated, applicant respectfully requests that the examiner explain where, in the references themselves, or in the art, there is a suggestion that they be combined."

Rule 4: When referring to yourself, always refer to yourself in the third person as "Applicant" and never as "I."

Rule 5: Stick to the issues in your remarks. Be relevant and to the point and don't discuss personalities or irrelevant issues. Never antagonize the examiner, no matter how much you'd like to. It's improper, and, if you turn the examiner against you, it can considerably narrow the scope of claims that are ultimately allowed.

Rule 6: Use only the legally relevant, logical arguments that are listed in Fig. 13D. Don't use arguments which, although plausible, aren't legally relevant or logical. Among these are: (1) stating that your invention is superior to a prior patented device (§ 103) without first stating that your claims recite novel hardware over the prior patent (§ 102); (2) that a cited patent shouldn't have been granted or has less novelty than yours (the PTO isn't bound to repeat its past mistakes); (3) that you have a Ph.D. and spent a lot of ingenuity to come up with the invention (the qualifications of the inventor and the amount of time it took to come up with an invention are irrelevant), (4) that you put your heart and soul and years of effort into the invention (again irrelevant), (5) that the apparatus of the reference as shown in its drawings or claims is different from yours (only the differences of your claims over the reference's specification and drawings are relevant). Also, some inventors have actually telephoned the patentee-inventor of a cited patent. This is a futile exercise, since there's nothing a patentee can do to help you; a patent speaks for itself. As a further example, if the examiner says pages 11 and 12 of your specification don't provide a clear description of the invention, tell why these pages do the job; don't simply explain how it works without reference to these pages.

Rule 7: Whenever you write any new claims or make any additions to a present claim, you must tell why the claim was amended and how the amendments distinguish over the prior art the examiner has cited under Sections 102 and 103. Follow Inventor's Commandment 7 from Chapter 5, repeated below, and Patent Rule 111(b) and (c):

Inventor's Commandment 7

To evaluate or argue the patentability of any invention, use a two-step process. First determine what novel features (§ 102) the invention has over the closest prior-art reference(s). Novelty can be a new physical (hardware) feature, a new combination or rearrangement of two separate old features, or a new use of an old feature. Second, determine if the novelty produces any new and unexpected results or otherwise indicates unobviousness (§ 103).

1. *(b) In order to be entitled to reconsideration or further examination, the applicant or patent owner must reply to the Office action. The reply by the applicant or patent owner must be reduced to a writing which distinctly and specifically points out the supposed errors in the examiner's action and must reply to every ground of objection and rejection in the prior Office action. The reply must present arguments pointing out the specific distinctions believed to render the claims, including any newly presented claims, patentable over any applied references. If the reply is with respect to an application, a request may be made that objections or requirements as to form not necessary to further consideration of the claims be held in abeyance until allowable subject matter is indicated. The applicant's or patent owner's reply must appear throughout to be a bona fide attempt to advance the application or the reexamination proceeding to final action. A general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references does not comply with the requirements of this section.*

2. *(c) In amending in reply to a rejection of claims in an application or patent under reexamination, the applicant or patent owner must clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. The applicant or patent owner must also show how the amendments avoid such references or objections.*

Rule 8: If you do disagree and think the OA was wrong, you must state exactly why you disagree. If you agree that a claim is obvious over the prior art, don't admit this in your response (see Inventor's Commandment 24); simply cancel the claim and don't give any reason for it, or if you must comment, state merely that it has been canceled in view of the coverage afforded by the remaining claims. However, if you amend any claim be sure to state why you are amending it to preserve your rights to use the DoE later; see Section B27 above.

Rule 9: Make a careful, complete, and convincing presentation, but you don't have to overly agonize about words or minutiae. The reality is that many examiners don't read your remarks or else skim through them very rapidly. This is because they're generally working under a quota system, which means they have to dispose of (finally reject or allow) a certain number of cases in each fiscal quarter. Thus, the examiners are under time pressure and it takes a lot of time to read remarks. It's important to cover all the substantive points in the Office Action and to deal with every objection and rejection. If you do make an error, as stated, the PTO will almost always give you an opportunity to correct it, rather than forcing you to abandon your application.

Two good ways to make sure your examiner reads and (hopefully) understands your points and reasons are to liberally sprinkle your amendment with boldfaced "arguing" headings which themselves tell your whole story (as is done in the sample amendment of Fig. 13E), and to keep your paragraphs short and inviting. For example, some arguing headings might be, "Briskin Does Not Show Any Elongated Lever," "Claim 1 Clearly Defines Over Warner Under Section 102," "Ihara Could Not Be Operatively Combined With Harolde," and "Applicant's Rasterizer Produces New and Unexpected Results Over Hearsh."

Rule 10: If possible, thank or praise the examiner if you can find a reason to do so with sincerity—for example, "Applicant thanks the Examiner for the clear and understandable Office Action." Examiners get criticized and told they're all wet so often that they'll welcome any genuine, deserved praise.

Rule 11: Don't emphasize your beliefs; they're considered irrelevant. For example, don't say "Applicant *believes* this invention is patentable." Rather say, "Since the claims define novel structure that produces new and unexpected results as described above, Applicant *submits* that such claims are clearly patentable."

Rule 12: Although it's okay to state *briefly* why your invention is superior to that of the reference(s), the main thrust of your argument should be a two-part legal argument that tells (a) how your invention, as claimed, differs from the reference(s), and (b) why these differences are important. Again, see Inventor's Commandment 7 above.

TIP

You may wonder whether it makes sense to put much effort into your remarks even though the chances are great they won't be carefully read. My opinion is that it does, because you never know. Think of your effort as a kind of insurance against being the one in five (or whatever) whose remarks are in fact subjected to close scrutiny.

Although it's difficult, I recommend that you do the best job you possibly can in Amendment A, since it will probably be the last chance you get to amend your claims in this application. This is so important and is violated so often, that I've made it Inventor's Commandment 28, at the beginning of this chapter. After you draft your amendment, I suggest that you wait a few days and come back and review it again, pretending that you're the examiner. This will probably give you important insights and enable you to improve it further.

2. How to Draft Your Remarks

Your remarks should first provide a brief positive summary of what you've done to the specification and claims. For example, you can start off with a summary as follows: "Applicant has amended the specification and claims to put this application in full and clear condition for allowance. She has amended the specification editorially and to correct those errors noted by the Examiner. Also she has rewritten claims 1 to 5 as new Claims 13 to 18 to more particularly define the invention in a patentable manner over the cited prior art." Then briefly summarize what each claim recites, as is done in Fig. 13E, above. If the drawing has been objected to, state that it will be corrected after allowance. If you want to make a voluntary amendment to the drawing, refer to the drawing amendment explanation on page one of the amendment (Fig. 13E/1), include a drawing amendment on a separate drawing amendment page (Fig. 13E/5), and attached replacement sheets and a red-marked sheet

indicating the changes, if necessary. See Section G, below, for more information. Then include a separate section for each rejection in the amendment.

a. Restate First Rejection

After providing a positive heading for the first rejection of the OA (for example, "The New Claims Overcome the Rejection on Jones and Smith"), restate this rejection. For example, "The Office Action rejected Claims 1 to 5 as unpatentable over Jones in view of Smith." The examiner, thus oriented, saves the time it would take to reread the OA.

b. Review Each Reference Relied on in the Rejection

One or two sentences for each is sufficient. For example: "Reference A (Smith patent 1,234,567) shows a … [and so forth]."

c. Specifically Describe Any Claim Changes and Argue Section 102 and Then Section 103

Discuss specifically how and why the claim in question has been amended and how it recites structure that physically distinguishes over each reference under Section 102. The flowchart of Fig. 13C gives the specifics as to how to do that. For example, *"Claim 1, now rewritten as new Claim 5, recites …." "This language distinguishes over Smith and Jones under Section 102 because Smith does not show [etc.] and Jones does not show [etc]."* (I find it helpful to keep the claim I'm discussing displayed in one window of my computer monitor while I type my remarks in another window. Often I need to amend the claim to distinguish further over a reference under Section 102 as I write the remarks.)

If the examiner rejected a claim on one or more references individually under Section 102, the examiner is stating that the claim doesn't recite any novel feature(s) over any of these references. If the examiner rejected a claim on one reference under Section 103, the examiner is stating that the claim recites a novel feature(s) over the reference but the examiner doesn't consider the novel feature(s) significant enough to be patentable. If the examiner rejected a claim on a combination of two or more references under Section 103, the examiner is stating neither reference shows all of the features of the claim but the combination of references does. To argue against the last rejection, state that (1) the references can't be legally combined because (a) there is no reason in the references themselves or in the art to combine them, and that (b) the combination would not be operable, and (2) even if they were to be combined the claim would recite novel features over the combination and these are unobvious. Don't state that the novel features of the claims define over the combination under Section 102 since Section 102 only applies to a rejection on a single reference.

Then, once you've established the novelty of your claim(s), show why the novel features are unobvious and patentable—for example, "These distinctions are submitted to be of patentable merit under Section 103 because [discuss new results that flow from your novel structure, giving as many reasons as you can from Fig. 13D, Part I, and your completed Form 4-2]."

Note that even if an independent claim was rejected under § 102 (lack of novelty) over a single reference, you have to cover § 103 as well as § 102 as follows: (1) rebut the § 102 rejection by showing that the claim contains novelty over the single reference, and (2) cover § 103 (obviousness) by showing that the novel feature(s) are also unobvious (produce new and unexpected results) over the single reference.

Moreover, even if you show that that the independent claim is novel and unobvious over the single reference, you should also be aware that the independent claim may also be unpatentable over a combination of the single (main) reference with any pertinent secondary references. This is because, even though the independent claim is novel and unobvious over a single reference, it might be obvious to combine the main reference with a pertinent secondary reference. So you should review all of the other cited references to be sure that no valid combination of the main reference and a pertinent secondary reference shows all the features of the independent claim. If you do find a pertinent secondary reference, you should also argue patentability over the combination of references (if warranted) to head off any future rejection on such combination.

Once you argue the patentability of the independent claim over the single reference and any combination of the single reference with any pertinent secondary reference(s), you don't need to argue the patentability of any claims that are dependent on this independent claim because they are narrower than the independent claim and thus are *a fortiori* (by stronger reason) patentable. You need merely state that dependent claims y-z are dependent upon claim x and thus incorporate all the limitations of claim x and include further limitations and thus are *a fortiori* patentable. However if any dependent claim contains a significant additional limitation, you can state that it is independently patentable and state the reasons

Using a 102/103 Approach

You must use a 102/103 approach even if your claim was rejected on Section 102 alone. This 102/103 approach is useful if you don't understand the examiner's reasoning. That is, rather than try to figure out what the examiner was trying to say, or questioning the examiner, simply put forth a detailed, cogent 102/103 argument. This will usually win the day, or at worst, reframe the issues in your favor.

I can't emphasize enough that you should discuss how your invention, *as claimed*, distinguishes over—that is, has novel physical features not shown in—the reference, not how the reference differs from your invention, and not, at this stage, why your invention is better than the reference. Remember that under Section 112, a means plus a function is considered a physical recitation.

The following jingle may help you remember this important rule:

"Never argue what's not in your claim
You'll miss the mark and may lose the game."

Also be logical in your arguments. For example, if you're claiming B and a reference shows A and B, don't argue that A is no good. Also, don't argue that a reference should be taken lightly—that is, it's a "paper patent," because its invention was never put into commercial use—unless you're absolutely sure of your facts and the reference isn't a dead ringer for your invention.

d. Refute Any Improper Combination of References

If a combination of several references has been cited against your claim, first state why the combination cannot properly be made and then discuss your distinctions under Section 103. MPEP Sections 2142 and 2143 require that, in order for two references to be combined in a rejection, the examiner must establish a *prima facie* (at first sight) case for unobviousness. Below are relevant excerpts from MPEP 2142:

"The legal concept of prima facie obviousness is a procedural tool of examination which applies broadly to all arts. It allocates who has the burden of going forward with production of evidence in each step of the examination process."

To reach a proper determination under 35 USC Section 103, the examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. In view of all factual information, the examiner must then make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person. Knowledge of applicant's disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the "differences," conduct the search, and evaluate the "subject matter as a whole" of the invention. The tendency to resort to "hindsight" based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.

"The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in KSR International Co. v. Teleflex Inc., *550 U.S. 39, 82USPQ2d 1385, 1396 (2007) noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Federal Circuit has stated that 'rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'*

"The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and in applicant's disclosure."

If you feel that the examiner has not set forth a prima facie case, make your case tactfully. For example, "Applicant submits that the rejection of claim 1 on Jones and Smith does not set forth a prima facie case of obviousness, as required by MPEP 2142. This section requires that *there must be a clear articulation of the reason(s) why the claimed invention would have been obvious. Applicant submits that the rejection does not meet this requirement because the rejection gives a mere conclusory statement that the combination would be obvious. Note that neither Smith nor Jones suggests such a combination, and one skilled in the art would have no reason to make such a combination. That is, the fact that Smith shows a specific lever does not suggest that his lever can be used with Jones's pedal mechanism, especially since Jones shows his own workable lever. Further the references are from a different field than that of applicant's invention* [explain why] *and/or they are not directed to solving the same problem as applicant's invention solves* [explain why].

Moreover, applicant submits that the rejection is improper because the combination could not be made physically since the lever of the Smith type would not fit in or work with Jones's pedal mechanism because…. Also the references are not combinable because their intended function would be destroyed if one attempted to combine them [explain why].

Finally applicant submits that the rejection is improper because, even if the combination could be legally made, the combination does not show [here quote novel language of claim]. *Applicant submits that these distinctions are patentable under Section 103 because* [discuss new results and give as many reasons as you can from Fig. 13D and Form 4-2].

If the references themselves don't suggest that they should be combined (Reasons 29–33 in Fig. 13D), and there is no reason in the art to combine them, you can use the arguments in MPEP 2142 and 2143. In my experience most rejections do not articulate any clear reasons to support a combination rejection and these MPEP sections provide powerful arguments.

e. Note Secondary Factors of Unobviousness

If your invention has achieved any commercial success or has won any praise, this is relevant, and you should mention it here. If possible, submit copies of advertisements for your invention, copies of industry or trade praise, sales figures, a commercially sold sample, etc. These things reify the invention (that is, make it a "fait accompli") and impress most examiners. If you are submitting any evidence of commercial success, you should do it with a declaration with attached exhibits stating how the invention has achieved commercial success and how such success is related to the novel features of the invention. See Fig. 10U and the next section for the *format* (not the substance) of such a declaration.

f. Draft Any Needed Declaration Under Rule 132 to Refute Technical Points Raised by Examiner

If you want to challenge any technical points raised by the examiner, such as proving that your invention works in a superior manner to a reference, that two references can't be combined, or that a cited reference works in a far inferior way to yours, you or an expert in the field should do the necessary research and make the necessary tests (including building and testing a model of the cited reference) and then submit a "Declaration Under Rule 132." The Declaration should have a caption as in Form 13-1 and an appropriate heading, such as "Rule 132 Declaration Regarding Inferior Performance of Elias Patent." The body of the Declaration should start,

Jane Inventor declares as follows:

I am the inventor [or I am a mechanical engineer (state education, experience, and awards)] in the above patent application.

Then, in numbered paragraphs, detail your technical facts and/or reasons, including tests you made, etc., but state facts, not conclusions or arguments. Whenever you make any legal declaration or affidavit (as opposed to a brief or remarks), heed the words of the immortal Joe Friday, of television's *Dragnet* fame: "Just the facts, ma'am." You can attach and refer to "exhibits"—that is, documents in support of your arguments.

Then conclude with a "declaration paragraph," as in the last paragraph of Form 10-1 (that states "I hereby declare…") and sign and date the declaration.

Similarly, if you want to mention any additional factors relating to your invention, such as commercial success or copying by an infringer, which are relevant to patentability, you can submit a similar Rule 132 declaration. You can attach relevant "Exhibits," such as a prototype, a commercial sample, advertising, or sales reports. As stated, working models usually make believers out of negative examiners.

g. Request Reconsideration

Request reconsideration of the rejection(s) and allowance of the claim: "Therefore applicant submits that Claim 5 is allowable over the cited references and solicits reconsideration and allowance."

If you have dependent claims that were rejected, treat these in the same manner. Since a dependent claim incorporates all the limitations of the parent claim, you can state that the dependent claim is patentable for the same reasons given with respect to the parent claim, and then state that it is even more patentable because it adds additional limitations, which you should discuss briefly. If a dependent claim is independently patentable—that is, its added limitations are independently patentable—state this and explain why.

h. Respond to Rejections Under Section 112 for Lack of Clarity or Conciseness

If a technical rejection has been made (under Section 112), discuss how you've amended your claim and why your new claim is clear and understandable. Often an examiner will reject, for indefiniteness, a claim that you feel is clear and unambiguous. Even if I disagree with the examiner I always try to fix the claim in a way that will overcome the examiner's rejection because this is always easier than arguing with the examiner and risking the uncertainty of another rejection. If you can't figure out how to fix the

claim you can call the examiner and ask for a suggestion. Nevertheless sometimes a claim may seem perfectly clear and not amenable to any improvement. In this case you can point out to the examiner that the Court of Appeals for the Federal Circuit has stated that the definiteness requirement of § 112 "is satisfied if a person skilled in the field of the invention would reasonably understand the claim when read in the context of the specification." *Marley Mouldings, Ltd. v. Mikron Industries, Inc*., 417 F.3d 1356 (Fed. Cir. 2005).

i. Request Claim-Drafting Assistance From PTO

Once again, I emphasize that if you feel you have patentable subject matter in your application but have difficulty in writing new claims, you can request that the examiner write new claims for you pursuant to MPEP Section 707.07(j). Your remarks are the place to do this. For example, state, "Therefore Applicant submits that patentable subject matter is clearly present. If the Examiner agrees but does not feel that the present claims are technically adequate, applicant respectfully requests that the examiner write acceptable claims pursuant to MPEP 707.07(j)." If the examiner writes any claims for you, don't rest on them unless you're sure that the broadest one is as broad as the prior art permits, using the criteria above and in Chapter 5. Remember, if you are dissatisfied with the examiner's claims, you can once again submit your own claims, you can submit the examiner's claims with whatever amendments you choose, or you can interview the examiner to discuss the matter. You should request claim drafting assistance when you file, or after the first OA, not after a final OA.

j. Repeat the Above for Any Other Rejections in the Office Action

After you've covered and hopefully decimated the first rejection in the manner discussed in Subsections a to i, above, then do the same for each additional rejection—that is, provide a separate heading for the rejection, review the rejection, review the reference(s), review your new claims, discuss why they distinguish under Section 102, then why the novel features are patentable under Section 103, and request reconsideration and allowance.

k. Discuss Nonapplied References

If any references of interest have been cited but not applied against any claim, you should read these to be sure they are less relevant than the applied references. If they are less relevant, state that you've reviewed them but that they don't show your invention or render it obvious. If any reference is more relevant or you think it might be used against you later, be sure your claims define your invention in a patentable manner over it and put in a 102/103 argument to forestall any future use of it against you.

l. Acknowledge Allowed or Allowable Claims

Often the examiner will allow some claims, or indicate that certain claims would be allowed if amended in a certain way or rewritten in independent form. You should acknowledge this statement and if necessary, tell how you handled it—for example, "Applicant acknowledges the allowance of Claims 1 to 7 with appreciation," or "Applicant has rewritten Claim 13 (indicated to contain allowable subject matter) in independent form as new Claim 26."

m. Conclusion

Last, provide a conclusion that should repeat and summarize—for example, *"For all the reasons given above, applicant respectfully submits that the errors in the specification are corrected, the claims comply with Section 112, the claims define over the prior art under Section 102* [briefly repeat why]*, and the claimed distinctions are of patentable merit under Section 103 because of the new results provided* [repeat them briefly again]. *Accordingly, applicant submits that this application is now in full condition for allowance, which action applicant respectfully solicits."* Then add the closing, "Very respectfully," followed by your signature, typewritten name, your address, and telephone number on the left-hand side. If you have a coinventor(s), all of you must sign the amendment.

n. Do Your Very Best Job

It's important to do your very best job in your first amendment, since it's the only full opportunity you'll get to answer the examiner's position. I suggest that after writing the amendment, you have a friend read it or you come back to it after a few days and read it from the viewpoint of your examiner. As stated in Inventor's Commandment 28, make sure your amendment in response to the first OA is complete, carefully crafted, and includes all arguments and the narrowest claims possible, since the next OA will be final.

G. Drawing Amendments

If your Office Action includes any objections to the drawing(s), you must correct these before the case can issue and usually as soon as allowable subject matter is indicated. In addition, if you want to make any voluntary amendments to any Fig(s) of the drawings, you must now make these by submitting a

copy of the pertinent sheet with the changes marked in red, and a replacement sheet with the changes made in black.

A common drawing objection, made under Rule 83(a), is that the drawing doesn't show every feature recited in the claims. For example, suppose you claim a hose having an atomizer head and your drawing shows only a hose with a sprinkler head. How can you add an atomizer head to the drawing to remedy this objection without showing details of the atomizer, which would violate the rule against adding new matter to your application? Easy: just add a legend or label adjacent the end of the plain hose reading, "Can be atomizer." This will not add any new matter since it's no more specific than the claim, which already recites an atomizer.

To deal with any drawing objections by the examiner or the Drafting Department, first include or check the listing paragraph on page 1 (contents page) of your amendment (see Fig. 13E/1) as follows:

"DRAWINGS: A statement explaining the drawing amendments made by this amendment begins on page *[state page]* of this amendment."

Then, on the appropriate DRAWINGS page of the amendment, state that you have attached a replacement sheet with the drawing objections corrected (see Fig. 13E/5). Although not necessary, I prefer to refer briefly to the corrected sheets at the beginning of the Remarks (Fig. 13E/6). To make the corrections correct your Bristol board or Mylar film originals, or make new CAD originals, and file new, good xerographic (or CAD output) copies. All lines must be crisp, black, and sharp, and all objections on the drawing objection sheet must be corrected.

List the sheets as an enclosure at the end of the amendment (Fig. 13E/13) and attach new (corrected) sheets to the amendment for substitution for your original drawings. (Attach the new drawing sheets with a paper clip—do not staple them.) In the top margin of each replacement sheet, write "Replacement Sheet" and add your name, Serial Number, and Examination Group. (Note: If you're a registered eFiler you can send replacement drawing sheets (PDFs) electronically via the PTO's website, but generally you should not fax replacement drawing sheets to the PTO since the transmission quality is inadequate; you will have to mail any amendment containing replacement drawing sheets. However in order to expedite allowance the PTO now permits replacement sheets to be faxed after allowance, but I recommend mailing so that your patent will look better. *OG* 2005 Jul 12.)

If the examiner allows you to defer correction of the drawings until after subject matter is allowed or after allowance, you should do so promptly after you receive an indication of allowable subject matter or a Notice of Allowance. This will give the PTO's drawing checkers time to review your corrected drawings and let you know if they're still improper within the statutory three-month period to pay the issue fee. If your corrected drawings aren't approved, the PTO will give you until the end of the three-month period, or an additional 15 days, to file proper drawings.

If *you* find any errors in your drawings, you should voluntarily make any necessary (nonrequired) amendments or corrections. Formerly the PTO required that you obtain approval in advance, but now you may go right ahead and file replacement sheets. If the examiner or the PTO's drawing checkers disapprove of the changes they will notify you.

To make a voluntary drawing amendment, use the above procedure, except that you should also add a red-marked copy of the drawing indicating the changes you are making. That is, include or check the DRAWINGS listing paragraph on the contents page (1) of your amendment (see Fig. 13E/1). Then on the appropriate DRAWINGS page of the amendment state that you have attached a replacement sheet with the drawing changes and a copy of the drawing with the changes indicated in red (see Fig. 13E/5). Again, I also like to refer briefly to the corrected sheets at the beginning of the Remarks (Fig. 13E/6).

Make the changes and attach new, good copies of the changes sheets. List the sheets as an enclosure at the end of the amendment (Fig. 13E/13) and attach red-marked sheets and new (corrected) sheets to the amendment for substitution for your original drawings.

If you want to send any replacement drawing sheets separately from an amendment, or with your issue fee transmittal, use Form 13-1. Check the box on this form if you are also including a copy of any sheets marked in red to indicate any changes.

Remember that the PTO prohibits the addition of any new matter to the drawings. However, you may correct obvious errors, such as a reversed diode, a missing reference numeral, or a missing line. I recommend that you keep a file copy of every version of every drawing sheet in case you ever have to refer to any sheet before changes.

H. Typing and Filing the Amendment

The amendment should be typed with 1.5- or double-line-spacing on letter-size or A4 paper with 1.5-inch top and 1-inch left, right, and bottom margins. I often number my paragraphs and, as stated, include plenty of boldface or underlined "arguing" headings—for example, "The Elias Patent Fails to Show Any Schmitt Trigger." The PTO prefers that you file the amendment by EFS-Web (so it won't have to scan it into its computers). Less preferred is that you to fax the amendment, and last, you may mail the amendment.

In the last two cases—fax and mail—don't forget to keep an identical copy of your amendment in your file. The PTO won't return any paper you send them, although they will make a copy of any paper or record for the per-sheet photocopy charge in the Fee Schedule. Again, I recommend using a word processor or typing the amendment on easily erasable paper (ERP) on which you can readily make corrections. If you use ERP, make a plain-paper photocopy and file this because the PTO does not allow ERP to be filed. If you mail it, don't forget the postcard. The signatures of all inventors must be on the copy you send to the PTO.

If you file the amendment by EFS-Web, the online forms will provide a transmittal for the amendment. However if you file the amendment on paper (by fax or by mail) no transmittal letter is needed. If your amendment increases the number of claims above what you originally paid for when you filed the application, you have to pay for the extra claims. It's helpful (but not necessary) to attach a completed form PTO/SB/06 to calculate the extra fee.

Documents With Copies of Signatures Now Okay

The PTO now accepts documents which contain a copy of any required signature, provided you retain a copy of the document with an original signature, in case it's ever needed. (Original signatures are required only on (a) documents involving the registration of an attorney or agent and (b) certified copies.)

If you intend to mail or fax your amendment, after your signature add a "Certificate of Facsimile Transmission" (preferable) or a "Certificate of Mailing" as required by Rule 8 (don't use Express Mail as it isn't necessary and the cost is high) as follows.

Certificate of Facsimile Transmission

I certify that on the date below I will fax this communication, and attachments if any, to Group _____ of the Patent and Trademark Office at the following number: 571-273-8300.

Date: _____

Inventor's Signature: _____

Certificate of Mailing

I hereby certify that this correspondence, and attachments, if any, will be deposited with the United States Postal Service by First Class Mail, postage prepaid, in an envelope addressed to "Box Non-Fee Amendments, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" on the date below.

Date: _____

Inventor's Signature: _____

While all inventors must sign the amendment, only one inventor need sign this certification. If you include this certificate, you can fax or mail your amendment even at 23:59 on the last day of your response period—it doesn't have to go out on the day it's mailed. Even if you're mailing the amendment two months ahead of time you should use the Certificate anyway, since if the amendment is lost in the mail, causing your application technically to go abandoned, you can get it revived easily by filing a declaration stating the full facts and enclosing a photocopy of the amendment with the Certificate of Mailing—see PTO Rule 8(b). If you use mail, don't forget to attach a postcard to your amendment reading as in Fig. 13F. If you fax the amendment, and your fax machine is programmed to transmit your fax number, the PTO will send an immediate faxback receipt.

Amendment A (5 pages) plus amended and red-marked copies of sheet 2/4 of drawings in Application of John A. Novel, Ser. Nr. 999,999, filed 20xx Jan. 9, received today:

Fig. 13F—Back of Receipt Postcard for Amendment

Checklist for Sending In a Regular Amendment

Before you mail your amendment, please check the following list carefully to be sure that the amendment's complete and properly done.

- ☐ You have responded to each point in the OA.
- ☐ You have responded to any needed drawing objection.
- ☐ You have re-proofed the specification and have made any needed corrections.
- ☐ You have amended the prior-art portion of the specification to account for any significant new prior art (optional).
- ☐ You have not included any new matter in any amendments to the specification.
- ☐ You have checked all new claims against the checklist in Chapter 9.
- ☐ All claims recite structure which is physically different from every cited reference (Section 102).
- ☐ You have presented the amendment in the proscribed format: (a) a list of contents is on page 1, (b) the Specification and Drawing Amendments (if any) start on respective new pages, (c) the Claim Amendments (if any) start on a new page, (d) the Remarks start on a new page, (e) the specification is amended by replacing whole paragraphs with words to be deleted struck through and words to be added underlined, (f) all claims that were ever in the application are listed in numerical order, (g) the number of every claim is followed by one of the seven required parenthetical expressions (Original, Currently Amended, Previously Presented, Canceled, Withdrawn, New, and Not Entered), (h) for Canceled and Withdrawn claims, only the claim number without the text is provided, and (i) for claims in the Currently Amended format, words to be deleted are struck through and words to be added are underlined.
- ☐ The physically different structure in every claim is sufficiently different to produce new and unexpected results or otherwise be considered unobvious (Section 103).
- ☐ The application includes several very narrow dependent claims with a variety of phraseologies so that you won't have to present them for the first time if the next action is made final.
- ☐ The wording in the remarks is clear, grammatically correct, and understandable.
- ☐ The remarks are written in short paragraphs with ample "arguing" headings.
- ☐ Every embodiment covered in your claims (originally and as amended) is described in the specification and shown in the drawings.
- ☐ The patentability of all new claims is argued with respect to the references, using a two-part approach: (a) The claim has physical distinctions over the references under Section 102; (b) The claimed physical distinctions produce new and unexpected results or are otherwise unobvious under Section 103.
- ☐ You have included all possible arguments for unobviousness (Fig. 13D).
- ☐ A request for claim-drafting assistance under MPEP 707.07(j) has been made, if desirable.
- ☐ The amendment is 1.5- or double-line-spaced with an ample top margin for punching mounting holes.
- ☐ The last page of the amendment includes your name, address, and phone number.
- ☐ If the amendment will cause the case to have over 20 total or over three independent claims, the proper additional fee is included (if not previously paid).
- ☐ The amendment is signed and dated (no pencil) by all applicants.
- ☐ An identical file copy of the amendment has been made if you are mailing the amendment.
- ☐ The amendment is being transmitted on time or includes a properly completed Petition to Extend with the proper fee included.
- ☐ A Certificate of Faxing or Mailing is typed in the amendment unless it's being filed electronically.
- ☐ All pages are complete and present.
- ☐ A receipt postcard is attached to the amendment, if you are mailing it.
- ☐ If mailing, the envelope is properly stamped and addressed to "Mail Stop Non-Fee Amendments, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450." If you are sending any money with your amendment, omit "Box Non-Fee Amendments." If you're faxing the amendment, make sure you feed your pages carefully.

Draft Amendments May Be Faxed for Discussion

Applicants may now send a proposed amendment for discussion to "sound out" and negotiate with the examiner. Mark the amendment "DRAFT" or "PROPOSED AMENDMENT," do not sign it, and fax it to the examiner. Then call the examiner in a few days to discuss the amendment by phone or visit the examiner personally. You still must file a regular, signed amendment by the due date to avoid abandonment.

Make sure your amendment won't cause the total number of claims of your application to exceed 20, or the number of independent claims to exceed three (unless you've paid for excess claims when you filed the application). Otherwise, you'll have to pay an additional claims fee (expensive and usually not advisable, since three independent and 20 total claims should be more than adequate).

I. If Your Application Is Allowable

Hopefully, your first amendment will do the trick and the examiner will decide to allow the case. If so, you'll often be sent a Notice of Allowability and/or a formal Notice of Allowance (N/A), the latter accompanied by an Issue Fee transmittal form. You have a statutory period of three months to pay the issue fee (and to pay any publication fee if you haven't requested nonpublication); the three-month period is not extendable and forms are self-explanatory. You can fax or electronically transmit the Issue Fee Transmittal, but if you mail it, be sure to include a receipt postcard. You can also place an advance order for printed copies of your patent (a space is provided on the Issue Fee Transmittal form); the minimum order is ten. However, printed copies aren't necessary as you can make photocopies from your patent deed, or download copies from the PTO or any of the free private websites (see Chapter 6, Section I2). Also, be sure to fill in the Certificate of Mailing or Faxing on the Issue Fee Transmittal, unless you file this electronically as an eFiler. If your application was published 18 months after filing you will also have to pay the PTO publication fee. The fee is included on your Issue Fee transmittal form. You will receive a "Notice of Patent Term Adjustment" with your N/A. Usually the patent term will not be extended, but if the PTO delayed in responding to an amendment or you had to appeal, you will get a commensurate adjustment.

When you receive your N/A, make any needed drawing corrections at once (see Section G, above) and review the application and drawings once again very carefully to make sure everything is correct, logical, grammatical, and so on. If you want to make any amendments at this time, you can still do so, provided they don't affect the substance of the application. Generally, only grammatical changes are permitted after the N/A. The format of the amendment should be similar to that of Fig. 13E, except that the first sentence should read, "Pursuant to Rule 312, applicant respectfully requests that the above application be amended as follows:"

Then make any amendments to your specification and claims in the previously used format. Under "Remarks," discuss the amendments, stating that they are not matters of substance and noting that they will require very little consideration by the examiner.

If you've amended your claims in any substantial way during prosecution, after the Notice of Allowance is received you should also file a Supplemental Declaration (Form 13-3) to indicate that you've invented the subject matter of the claims as amended and that you know of no prior art that would anticipate these claims. Sometimes when a case is allowed the examiner will include a "Reasons for Allowance" section. You should review this carefully to be sure the reasons aren't too narrow, since this may adversely affect the scope of your patent. If the reasons are too narrow, you should submit a rebuttal statement to neutralize the examiner's statement.

Prior to sending in the issue fee, you should go through the checklist shown below.

You must make the drawing corrections and submit the new drawings by mail within the three-month period. Obviously you should do so as early as possible so you'll have time to make revisions in case they aren't approved.

Once your issue fee is received, your application goes to the Government Printing Office and no further changes are permitted.

Several months after the issue fee is paid, you may receive an Issue Notification Form, which will indicate the number of your patent and the date it will issue, usually a week or so after you receive the receipt. A few days after your patent issues, you'll receive the deed, or letters patent, and, separately, any additional printed copies you've ordered. (See Chapter 15, Section H, for a discussion of maintenance fees.)

Checklist for Paying an Issue Fee

- ☐ You made all needed drawing corrections and enclosed any needed formal drawings.
- ☐ You have made any needed specification or claim amendments (PTO Rule 312).
- ☐ You have properly completed and signed the Issue Fee Transmittal Form.
- ☐ You have filed a completed Supplemental Declaration if you have made any significant claim changes during prosecution.
- ☐ If transmitting by mail, you have enclosed a check or a completed credit card Form PTO-2038 for the issue fee. If transmitting by fax, you used Form PTO-2038.
- ☐ If you are mailing the issue fee, you have attached a receipt postcard, properly stamped and addressed.
- ☐ If transmitting by mail you have completed a certificate of mailing or faxing on the Notice of Allowance.
- ☐ You are transmitting the issue fee papers by the due date (no extensions allowed).
- ☐ If you are mailing the papers you have made a file copy of all issue fee transmittal papers.

J. If Your First Amendment Doesn't Result in Allowance

If your first amendment doesn't place the application in condition for allowance, the examiner will usually make the next OA final. However, if the second OA cites any new references, it won't be made final unless the examiner had to dig out the new references to meet some new limitations in your amended claims. If your second OA isn't made final, you should respond to it in the same manner as you responded to the first OA. However, if the second OA is called final—and it usually will be—note the provisions of Rules 113 and 116, which govern what happens after a final action is sent:

Rule 113—Final Rejection or Action

(a) On the second or any subsequent examination or consideration, the rejection or other action may be made final, whereupon applicant's response is limited to appeal in the case of rejection of any claim (Rule 191), or to amendment as specified in Rule 116. Petition may be taken to the Commissioner in the case of objections or requirements not involved in the rejection of any claim (Rule 181). Response to a final rejection or action must include cancellation or appeal from the rejection of each claim so rejected, and, if any claim stands allowed, compliance with any requirement or objection as to form.

(b) In making such final rejection, the examiner shall repeat or state all grounds of rejection then considered applicable to the claims in the case, clearly stating the reasons therefor.

Rule 116—Amendments After Final Action

(b) After a final … action … in an application …

(1) An amendment may be made canceling claims or complying with any requirement of form expressly set forth in a previous Office action;

(2) An amendment presenting rejected claims in better form for consideration on appeal may be admitted; or

(3) An amendment touching the merits of the application or patent under reexamination may be admitted upon a showing of good and sufficient reasons why the amendment is necessary and was not earlier presented.

(c) The admission of, or refusal to admit, any amendment after a final … action, … will not operate to relieve the application or reexamination proceeding from its condition as subject to appeal or to save the application from abandonment ….

These rules mean, in effect, that "final" isn't final after all. It's just that the rules shift a bit. If you want to continue prosecuting your patent application after a final OA, you must take one of the following actions:

1. Narrow, cancel, or fix the claims *as specified by the examiner.*
2. Argue with and convince the examiner to change position.
3. Try a further amendment narrowing the claims.
4. Appeal to the Board of Appeals and Patent Interferences (BAPI), together with an optional Pre-Appeal Conference.
5. File a continuation application or an RCE (Request for Continuing Examination) (see Chapter 14).
6. Petition the PTO Commissioner.
7. Abandon the application.

Let's examine these options in more detail.

1. Comply With Examiner's Requirements

If the examiner indicates that the case will be allowed if you amend the claims in a certain way, for example, if you cancel certain claims or add certain limitations to the claim, and you agree with the examiner's position, you should submit a complying amendment similar to the previously discussed amendment. However, instead of stating, "Please amend the above application as follows:" (Form 13-1), state "Applicant requests that the above application be amended as follows:" This is because the clerk won't enter any amendments after a final OA unless the examiner authorizes it.

Generally, no other amendments after a final OA are permitted unless you can show very good reasons why they weren't presented earlier. If your amendment changes the claims in the manner required by the examiner to get them allowed, this will clearly entitle it to entry. You should file your complying amendment as soon as possible, since you have to get the case in full condition for allowance within the three-month period, plus any extensions you've bought. If you file an after-final amendment near the end of the three-month period and the examiner agrees that it places the application in condition for allowance, but the period has expired, you'll have to buy an appropriate extension (Form 13-4): A case can't be allowed when it's technically abandoned. If you file an amendment or argument and it doesn't convince the examiner to allow your case, the examiner will send you an "advisory action," telling you why, and the three-month period will continue to run.

2. Convince the Examiner

You can try to convince the examiner to change position, either by written argument, by phone, or in person. Phone and personal interviews are especially effective because of the multiple feedback loops and give-and-take they provide in a short period. Also, it's more difficult to say no when facing someone, as any salesperson will tell you. Try to come to some agreement to get the case allowed. This is often an excellent, effective choice, especially if you have a friendly examiner and you're willing to compromise. Do this as soon as possible so you'll have time to appeal or file a continuation application, if necessary. (See Chapter 14, Section B.)

3. Amendment After Final Rejection

You can try a further amendment, narrowing your claims, or submitting other claims, provided you raise no new issues. If the examiner agrees that the amendment narrows or changes the claims sufficiently to place the case in condition for allowance, the examiner will authorize its entry and allow the case. Otherwise, the examiner will send you an "advisory action," reiterating the examiner's former position, and you'll still have the opportunity to exercise the other choices. Even if the examiner doesn't want to enter the amendment because it raises new issues, the advisory action will state whether the amendment will be entered for purposes of appeal. The examiner will enter it for appeal if it places the case in better condition for appeal and neither raises any new issues nor requires further search or consideration.

You should provide your amendment after final as soon as possible. eFiling is preferable, followed by fax, or mail. The PTO will try to reply to After-Final amendments within one month if you do the following with a *red marker on paper or faxed filings*: (1) mark the upper right of page 1 of your amendment "RESPONSE UNDER 37 CFR 1.116—EXPEDITED PROCEDURE—EXAMINING GROUP NUMBER [insert number]," (2) address the envelope and the amendment "Box AF, Commr. of Pats... [etc.]," and (3) write "BOX AF" in the lower left of the envelope.

If you do send in an amendment after a final OA, you should head it "Amendment Under Rule 116," and request (not direct) that the case be amended as follows to place it in condition for allowance. Also comply with the following checklist.

Checklist for Sending an After-Final Amendment

- ☐ You have completed all points on the checklist for "regular" amendments.
- ☐ The amendment requests (rather than directs) entry of the amendment.
- ☐ The claim changes or cancellations either comply with the examiner's requirements or otherwise narrow or revise the claims to obviate the outstanding rejections.
- ☐ The remarks state and justify why the claim changes, if any, were not presented before.
- ☐ The claims don't contain any new limitations or radical changes that would raise new issues.
- ☐ The amendment is being faxed or sent in as soon as possible after final action.
- ☐ The first page of the amendment and the envelope (if the amendment is being mailed) are marked in red as indicated above.

4. Appeal and Pre-Appeal Request for Review

If you don't see any further way to improve the claims, and if you believe the examiner's position is wrong, you can appeal a final or secondary rejection (not objection) to the BAPI (Board of Appeals and Patent Interferences), a tribunal of senior examiners (administrative law judges) in the PTO. If the issues are clear, prior to the appeal you can request an appeal conference of senior examiners in your examining division to review the case, hopefully to avoid filing a full brief and sending the case up to the Board.

To appeal, you must file a Notice of Appeal stating that you appeal to the BAPI from the examiner's final action, together with an appeal fee. (See Appendix 4, Fee Schedule.) If you also want an appeal conference (strongly recommended) the Notice of Appeal should be accompanied with a "Pre-Appeal Brief Request for Review" (PTO/SB/33—no extra fee), plus a "succinct, concise, and focused set of arguments" (no more than five pages at 1.5-line spacing) in support of your position. A copy of a PTO/SB/33 is provided as Form 13-5 in Appendix 7. When providing the five pages of argument, you can condense your last amendment. You do not have to include the claims. The Notice of Appeal, Pre-Appeal Request for Review, and Focused Set of Arguments may be mailed with a check, but the PTO prefers that you eFile them with a charge authorization or fax them with a CCPF. The PTO prefers that you use this process only where there are clear errors in fact or law and not where the issues are in gray areas, such as interpretations of the prior art or claim scope. A panel of three examiners, including a supervisor and the examiner of record, will review your arguments and issue a decision to either (1) continue the appeal because they agree with the examiner of record, (2) reopen prosecution and propose changes that will place the application in condition for allowance or advise that a further communication from the examiner will follow, (3) allow the application, or (4) dismiss your request because it fails to comply with the submission requirements. If the panel's decision is alternative 1 or alternative 4, you must file the usual brief and fee within one month from the decision or within two months from the date you filed the Notice of Appeal, whichever is longer.

If you requested an appeal conference and the decision was negative, or if you didn't request an appeal conference, file an appeal brief in triplicate if by mail, or a single copy if by fax or electronically, describing your invention and claims in issue and arguing the patentability of your claims. This brief is due within two months after you file your Notice of Appeal (or as stated above if you requested an appeal conference) and must be in a specific format specified by the Rules. Enclose a Brief fee.

If you desire it, request an oral hearing and enclose a further hearing fee (see Appendix 4, Fee Schedule). If you want an oral hearing, you'll have to travel to the PTO in Alexandria, Virginia, or ask for a telephone hearing. As always, include a Certificate of Mailing and postcard or Certificate of Faxing with all correspondence that is mailed or faxed.

For information on how to comply with the appeal procedure and write the brief, see Part 41 of the PTO *Rules of Practice* (37 CFR 41).

After you file an appeal brief, the examiner must file a responsive brief (termed an "Examiner's Answer") to maintain the rejection. To do this, the examiner (and usually two other examiners) must take another good, hard look at your case. Often this review will result in changing the examiner's mind. More commonly, the examiner will maintain the rejection and file an Examiner's Answer. You may then file a reply brief to respond to the Examiner's Answer.

If you do have a hearing, you will be allowed 20 minutes for oral argument. Sometimes the examiner attends; if so, 15 minutes will be allowed for the examiner's presentation.

If the Board disagrees with the examiner, it will issue a written decision, generally sending the case back with instructions to allow the case. If it agrees with the examiner, its decision will state why it believes your invention to be unpatentable. The Board upholds the examiner in about 65% of the appeals.

If the Board upholds the examiner and you still believe your invention is patentable, you can take a further appeal within 60 days of the date of the BAPI's decision to the Court of Appeals for the Federal Circuit (CAFC). The CAFC is located in Washington, but sometimes sits in local areas. If the CAFC upholds the PTO, you can even request the United States Supreme Court to hear your case, although the Supreme Court rarely hears patent appeals. (See Chapter 15, Section M, for more on the CAFC.)

Under the new GATT law, as indicated, patents expire 20 years from the filing date of the patent application, but the PTO will extended this term up to five years if delay occurs due to an appeal to the BAPI, the CAFC, or because of an interference. (35 USC 154.)

Appeal briefs aren't easy to write, so I suggest you consult professional help if you want to appeal.

If the examiner has issued a ruling on a matter other than the patentability of your claims—for example, has refused to enter an amendment or has required the case to be restricted to one of several inventions—you have another option. Although you can't appeal from this type of decision you can petition the Commissioner of Patents and Trademarks to overrule the examiner. (See Section 6, "Petitions to the Commissioner," below.)

Appealing to Extend Your Patent's Term

If you want to obtain the maximum term possible for your patent, and three years have elapsed since the filing date of your application (or the filing date of any parent applications if it's a divisional or continuation—see Chapter 14), I recommend that you appeal after the second Office Action if the case is still under rejection, even if your second Action is not a final Action. Why? As stated, under the new laws, your patent will expire 20 years from your first filing date, regardless of when your patent issues. However, the PTO must extend this 20-year term (for up to five more years) from the date you file an appeal until the date of a final decision on appeal, except that if any portion of the appeal period occurs within three years of your filing date, this will not be counted in extending the expiration date (Rule 701).

Thus any time you take to negotiate with the examiner or file another amendment will shorten your patent's term. However, if three years have elapsed after your first filing date, you can avoid this shortening and actually extend your patent's term by filing an appeal and doing any negotiation or filing any amendments while your appeal is pending. If you can't get the examiner to allow the case, just follow through with the appeal by filing a brief and fee within two months after the date you file the notice of appeal. If you do get the examiner to allow the case while it's on appeal, just file a notice withdrawing the appeal; your patent's term will be extended for the time your appeal was active.

5. File a Continuation Application or Request Continued Examination

If you want to have your claims (or new claims) reviewed further in another round with the examiner, you can file a new "continuation application" or request continued examination in the same application.

Filing a continuation application is a relatively simple procedure involving writing new claims, paying a new filing fee, and sending in a special form requesting that a continuation application examination be prepared. (See Chapter 14 for how to do this.) As explained in Chapter 14, if you file a "regular" continuation application with a new copy of the specification, drawings, and formal papers (Rule 53(b)), you'll receive a new serial number and filing date for the purpose of your patent's duration, but you'll be entitled to the benefit of the filing date of your original application for the purpose of determining the relevancy of prior art. Your application will be examined all over again with the new claims.

An easier way to file a continuation application is to file a Request for Continued Examination (RCE) under Rule 114 (preferable). By filing an RCE you won't have to file a new copy of the specification or drawings and you won't receive a new serial number or filing date. You simply file an RCE form, pay an RCE fee (this is slightly less than a new filing fee), and submit another amendment including an RCE). (See Chapter 14 and form PTO/SB/30.)

If you're filing a continuation, you must actually get it on file before the end of the three-month period or any extensions you buy. (See Section Q, below.) You should not use a Certificate of Mailing (CM) with a continuation since, according to the PTO's Rules (8 and 10), a CM isn't effective when an application is being filed; you must actually get it physically on file before the other case is abandoned. The best way to do this is to use Express Mail with an Express Mail certificate (Chapter 10, Section E8, and Chapter 14, Section B) or an electronic transmission if you're a registered eFiler. However if you file an RCE, you can fax this or use a CM (which is included on the RCE form).

6. Petitions to the Commissioner for Nonsubstantive Matters

The Commissioner of Patents and Trademarks has power to overrule almost anyone in the PTO or any objection made by an examiner. (The BAPI has jurisdiction over rejections and objections if they're associated with a rejection. See Rules 181-183.) Thus, if the examiner has made an objection that you think is wrong or if you think you've been treated unfairly or illegally, you can petition the Commissioner to overrule a subordinate. For example, if the PTO's application branch (OIPE) has made a ruling regarding your patent application, such as that it's not entitled to the filing date you think you're entitled to (but not a rejection of your claims), you can petition the Commissioner to overrule this ruling.

If you petition the Commissioner for any reason, you must do so promptly after the occurrence of the event forming the subject matter of the petition, and you must make your grounds as strong and as complete as possible. Generally, most petitions must be accompanied by a verified showing and fee. A verified showing is a statement signed by you and either notarized or containing a declaration such as that in the paragraph of Form 10-1 (that starts "I hereby declare …."). (The petition fee is indicated in Appendix 4, Fee Schedule.)

7. Abandon Your Application

You must take any action in response to a final OA within the three-month period for response or any time extensions you buy (see Section Q, below); otherwise the application will go abandoned. That is, you must either appeal, file a continuation application, or get the examiner to allow your application within the period for response. However, if you're going to file an amendment or an argument, you should do it as soon as possible, preferably within one month, so the examiner's reply will reach you in time for you to take any further needed action within the three-month period.

If all claims of your application are rejected in the final OA, and you agree with the examiner and can't find anything else patentable in your application, you'll have to allow the application to become abandoned, but don't give up without a fight or without thoroughly considering all factors involved.

If you do decide to allow your application to go abandoned, it will go abandoned automatically if you don't file a timely reply to the final action, since the ball's in your court. You'll be sent a Notice of Abandonment advising you that the case has gone abandoned because you failed to reply to an outstanding Office Action.

If you do abandon the application, that doesn't mean that you've abandoned the invention. If your invention has a unique shape and it hasn't been made available to the public, offered for sale, or sold more than a year ago, consider filing a design patent application on it. Even if a utility or design patent isn't available, it may still be commercially viable; consider trade secret or trademark protection. (See Chapter 7 for more information.)

K. Interferences

An interference is a proceeding conducted by the PTO (a Patent Interference Examiner and the BAPI). An interference is instituted to determine priority of inventorship—that is, who will get the patent when two or more inventors are claiming the same invention.

The PTO generally institutes an interference when they discover two patent applications claiming the same invention. However, since the PTO is such a large, complex, and populous organization, and since its employees do not always do perfect work, they sometimes make mistakes. Thus they may allow an application that should have been involved in an interference with another application to issue as a patent without declaring an interference.

If this occurs and then an examiner or other patent applicant sees the patent and believes it claims the same invention as a pending application, an interference can be declared with the patent, provided the issued patent has not been in force for more than one year.

Monitoring Patent Applications

If you really want to do a superior job of patent prosecution, find the class and subclass of your patent application (you can find this by calling the clerk of the examining division to which your application is assigned) and then monitor the *Official Gazette* in that class/subclass for all patents which issue and all patent applications which are published while your application's pending. One service, www.FreshPatents.com, will monitor all published applications that contain any keywords you select each week for free. If you find a patent that claims the same invention as yours, you should get interference with it by copying its claims in your application (see above). If you find a patent that is relevant prior art to your invention, you should cite it via a supplemental IDS (see Section B6 above).

How is the interference instituted by you, the applicant, if you believe that you, rather than someone else, deserves the patent? Simple. You merely copy (present) the claims of the in-force patent in your application, informing the patent examiner about the patent from which you copied the claims, and showing the examiner how such claims are supported in your application. Remember, you must copy the claims of any patent within one year after it issues.

On the other hand, if you've been granted a patent, be aware that there may be other patent applicants whose applications contain the same invention as yours. All such applicants have one year from your patent's date of issuance to copy your claims in their applications to get their application into interference with your patent.

Procedurally, an interference is a very complex proceeding, which would take another book of this size to cover. Unless you have an exceptional grasp of patent law and formal advocacy techniques, definitely seek help from a patent attorney who's experienced in trial work. Unlike some of the other situations where I've recommended professional help, representation in an interference proceeding is usually very costly, usually running $10,000 to $25,000 or more.

Despite the need for professional help should an interference occur, there's much you can do on your own to help your case. The Boy Scout motto will do nicely here: Be prepared. If your application is one of the 2% that becomes involved in interference, sufficient advance preparation will

go a long way toward helping your case. As I stressed in Chapter 3:

- Record all steps in your invention development (conception, building, and so on) carefully. (Inventor's Commandment 3)
- Be diligent in building, testing, and recording your invention—unless you've filed a Provisional Patent Application (PPA) and are relying on that filing as your priority date. (Inventor's Commandment 4)
- File a patent application promptly.

Who wins an interference? As briefly stated in Chapter 5, the winner in an interference will not necessarily be the first to file a patent application on the invention. Rather, the first inventor to "reduce the invention to practice" (file a patent application or build and test the invention) will prevail, *unless* the other party conceives the invention first and has been diligent in effecting a reduction to practice. This means that the typical interference involves lots of testimony and introduction of documents by both sides, all for the purpose of proving priority. It's this trial-like aspect of the interference that virtually necessitates professional help.

Although there are certain advantages to the U.S.'s "first to invent" system, all other countries, except the Philippines, have a "first to file" system, which eliminates interferences and their attendant tremendous expense, complexity, and time delays. Some have called the interference laws a "patent attorney's relief act." If you agree, write your Congressperson or have your inventors' club launch an effort to simplify this area of the law.

L. Statutory Invention Registration (SIR)

If you intend to abandon your application, but want to prevent anyone else from ever getting a valid patent on your invention, you can have an abstract and one drawing figure of your application published in the OG–Patents (see Chapter 6 and Appendix 2, Resources: Government Publications, Patent Websites, and Books of Use and Interest) and have your application printed like a patent. This is called "converting your application to a Statutory Invention Registration (SIR)." For the reasons stated in Chapter 14, Section G, I strongly recommend against using a SIR.

M. If Your Application Claims More Than One Invention

Often patent applications claim several embodiments of an invention, and the PTO will regard these embodiments as separate inventions. The PTO will thus require you to "restrict" the application to just one of the inventions. The theory is that your filing fee entitles you to have only one invention examined.

Also, if two of your claims are directed to the same invention, but the examiner feels that the two claims are directed to subject matter that is classified in two separate subclasses (see Chapter 6), the examiner can require you to restrict the application—that is, to elect one set of claims for prosecution.

Another situation in which restriction may be required occurs when your application contains both method and apparatus claims. Even when both sets of claims are directed to the same invention, examiners often consider them two separate inventions and require you to elect either the method or the apparatus claims.

Generally speaking, it's very difficult to successfully "traverse" (argue against) a PTO-imposed restriction. Fortunately, it's possible to file a second application (called a divisional application—see Chapter 14) if you think pursuing the nonelected claims is worth the cost (new filing fee) and if present indications are that your divisional application will comprise allowable subject matter. You can file the divisional application any time until your first (parent) application issues, and your divisional application will be entitled to the filing date of your parent application. However, you should file any divisional application(s) as soon as possible since, under GATT law, any patent that issues on the divisional application will expire 20 years from the filing date of the *original* application in the chain.

One way to overcome a requirement for restriction is to add or include a "linking" claim—a claim that includes features of both inventions. If a linking claim is found allowable, the examiner will drop the restriction requirement. A linking claim is one that includes features of both inventions. For example, product and process claims can be linked by a claim to the product made by the process. While details of linking claims are found in MPEP 809.03, I recommend that you seek professional help in this area.

Another, related situation occurs when you claim several embodiments or "species" of one invention. In the first OA, the examiner may require you to elect claims to one species for purpose of examination; this is to facilitate the search. If you don't get any generic claim allowed—that is, a claim that covers all of your different species—you'll be allowed to claim only the elected species; you can file divisional applications on the nonelected species. (In this case, the PTO will consider each species to be a separate invention.) If you do get a generic claim allowed, you'll be allowed to claim a reasonable number of different species of the invention (Rule 146).

If your application contains claims to more than one invention, you may preempt the examiner by filing a Suggested Requirement for Restriction and an election of the claims that you wish to be examined. (Rule 142.)

N. The Public May Cite Additional Prior Art Against Your Published Patent Application

Most other countries have a practice under which they permit the public to see pending and allowed applications before they issue in order to give the public a chance to cite prior art or otherwise object to the allowance of the application. This practice has now been implemented in the U.S. by the 18-month publication system. This means, among other things, that you give up the confidentiality of your invention. Copies of any published application can be obtained by any member of the public who wants to download or order them; anyone can then cite prior art against your application upon payment of a fee.

I advised you to file an NPR (see Chapter 10), because of the disadvantages of publicity (the cost, the delay, the possibility of more examination, the possibility of fatally damaging prior art being cited against your application, and the loss of any trade secret rights in the application which you could otherwise maintain if the application is not allowed). However, an application that is published and survives the process will be a stronger patent. Also, a published patent application can be used to recover damages from infringers for infringing activity during the pendency of your application. See Chapter 15, Section J.

How to Cite Prior Art Against a Pending Application of Another

If you know of any prior adverse information against a published patent application of another and you want to bring this to the attention of the examiner to prevent the application from issuing, you can cite the art against such application. Use the caption of Form 13-1, filling in as much information as possible, and head the paper "Citation of Prior Art." List and enclose, but do not explain the relevance of the prior art. Be sure to cite the application's Serial Number and the name of the applicant. You must file the citation within two months after the application is published or before it is allowed, whichever is earlier, and you must send a copy of your citation to the applicant in the published application. Don't forget the Prior-Art Citation Fee (see Appendix 4), PTO Rule 99.

Public Citation of Prior Art

For applications in the fields of computers, software, business methods, and e-commerce, the New York School of Law, in cooperation with the PTO, currently provides a site (www.peertopatent.org) to: (a) enable the public to cite prior art against your application, or (b) cite prior art with comments and without a fee against applications of others. By enabling the public to cite prior art against your application, you will obtain a stronger patent. However, by inviting the public to examine and cite prior art against your application, you also risk losing the application since someone in the public may find and cite fatal art against you.

O. NASA Declarations

If your invention relates to aerospace, the PTO will send you a form letter (PTOL-224) with your filing receipt or after your application is allowed. The letter will state that because your invention relates to aerospace, you'll have to file a declaration stating the "full facts" regarding the making of your invention. This is to be sure NASA has no rights in it. If you don't file the declaration, you won't get a Notice of Allowance. Fortunately, the PTO now includes a declaration form for you to fill out. Check the appropriate blanks, indicating that you made the invention on your own time, and with your own facilities and materials, and not in performance of any NASA contract, if this is the case.

P. Design Patent Application Prosecution

Design patent application prosecution is much simpler than regular patent application prosecution, and, armed with the instructions of this chapter, you'll find it to be duck soup. Design patent application prosecution will never require anything but the most elementary changes to the specification and claim; the examiner will tell you exactly what to do. (Make the amendments in the manner specified in Sections E1 and E2.)

To be patentable, the *appearance* of your design, as a whole, must be unobvious to a designer of ordinary skill over the references (usually earlier design patents) that the examiner cites. If your design has significant differences over the cited prior art, it should be patentable; if not, you'll have to abandon your application, as there's no way to narrow or change the substance of the claim or drawings of a design patent application. If the examiner rejects your

design as obvious over one or more references, you should use the 102-then-103 attack as explained in Sections F and J—that is, point out the differences in your design and then argue their importance and significance, albeit from an aesthetic viewpoint. To reject a design claim on two or more references, one must look basically like the claimed design. (*In re Harvey*, 29 USPQ 2d 1206 (Fed.Cir. 1993).)

If your design case is allowed, you must pay an issue fee (see Appendix 4, Fee Schedule), which makes the design patent effective for a term of 14 years from its date of issue. There are no maintenance fees for a design patent. You can convert a design application to a utility application, or vice versa, by filing a continuing application under 35 USC 120. However a design patent application may not claim priority of a PPA.

Q. What to Do If You Miss or Want to Extend a PTO Deadline

If you miss any PTO deadline—for example, the three-month period to reply to an OA—your application technically becomes abandoned, but you can buy an automatic extension. If your application goes abandoned, or if you want more time to reply to an OA, it can be "revived" or extended in any of three following ways:

- buy an extension
- file a Petition to Revive if delay was "unavoidable"
- file a Petition to Revive if delay was avoidable but unintentional.

Let's look at these separately and in more detail.

1. Buy an Extension Before the Six-Month Period Ends (Rules 136(a) and 17(a)–(d))

Most substantive OAs give you three months from their mailing date to reply. Most nonsubstantive OAs (e.g., a requirement for restriction to one of two inventions) allow only one month. If you don't reply within your designated period, you can send in your reply at any time up to the end of the sixth month by buying an extension of up to five months (if it won't carry you over six months) at the prices indicated in the Fee Schedule. To buy an extension in this manner, eFile, fax, or mail your reply (amendment) by the last day of the extension month, together with a "Petition for Extension of Time under 37 CFR 1.136(a)" (PTO/SB/22 or Form 13-4), completed as necessary, and a check or credit card charge. It is not necessary to apply in advance. If you fax or mail, make sure you include a Certificate of Faxing or Mailing on your amendment. You should calculate your total number of months from the date of the OA; don't add your extension months to your original due date. For example, assume your OA was mailed 2011 May 12 and provided a three-month period to reply. Your original period expired 2011 Aug 12. You buy a two-month extension. Now, your total period for reply is five months from May 12—that is, you have until 2011 Oct 12—not two months from Aug 12. You should mail your response, petition for extension, and petition fee (which can be quite expensive) by midnight Oct 12. It does not have to go out or be postmarked by Oct 12. Remember that by statute you can't extend any response period beyond six months. Also, you can't buy an extension to send in your issue fee; the three-month statutory period from the Notice of Allowance is not extendable.

2. Petition to Revive If Delay Was "Unavoidable" (Rule 137(a))

If you failed to send in your amendment or issue fee within the regular three-month period and your delay was "unavoidable"—for example, you never received the OA, you had a death in the family that precluded your drafting an amendment, you suffered a severe illness, or your home burned down—you can petition to revive the application. (While this petition can be used for any delay beyond the three-month period, most applicants use it for delays beyond the six-month period because the petition for delays up to six months can be automatically obtained using the Extension petition of the preceding paragraph.) The fee is indicated in the Fee Schedule and you should file the following papers: (a) your reply and (b) the petition to revive with the fee. The petition (use Form PTO/SB/61 or make your own petition using the heading of Form 13-1) should petition to revive the above application, state that the delay was unavoidable because (give the reason in the declaration space or in an attached declaration). The declaration should state in detail the specific facts that caused the delay. Use numbered paragraphs and start it as follows:

A.B. declares as follows:

1. I am the applicant in the above application.

Then, give your reasons in short, specific, numbered, factual paragraphs. Refer to and attach copies of any documents you feel are relevant. Your petition and paper must be promptly filed after you become aware of the abandonment. If your petition under this paragraph is denied, you can still petition under the next paragraph if you do so within three months.

3. Petition to Revive If Delay Was Avoidable but Unintentional (Rule 137(b))

If you failed to send in your amendment or issue fee within the three-month period and your delay was "avoidable but unintentional"—such as, you merely dropped the ball, or misinterpreted the time to reply to the OA—you can still petition to revive the application, albeit at a much higher cost. (Again, this petition can be used for any delay beyond the three-month period but most applicants use it for delays beyond the six-month period because the petition for delays up to six months can be obtained at a cheaper cost using the Extension petition of Form PTO/SB/22 above.) You should file two papers:

- your reply
- a petition to revive (use PTO/SB/64) with the fee
- if you foreign-filed your application but failed to notify the PTO within 45 days, use PTO/SB/64a to revive the application; the fee is high.

R. Summary

After your application is filed, you will receive an online acknowledgment or receipt postcard in a few weeks and an official filing receipt soon after that, usually with a foreign filing license that permits you to file abroad before six months has elapsed.

Check the information in the filing receipt carefully and apply for any needed corrections. Your application is now "patent pending" and you can release details if necessary without undue risk. Be sure to file an IDS within three months.

When you receive a first Office Action check it carefully and be sure to respond in the time allotted or any extensions you buy. After you respond you'll receive a second and usually final Office Action or a notice of allowance.

If you didn't file an NPR when you filed the application your application will be published on the PTO's website 18 months after filing and the public can cite new prior art against your application. If the case is allowed you'll have to pay an issue fee and then will receive the patent deed.

During prosecution you can ask the examiner to write claims for you if the invention is patentable. Note that standards of patentability vary widely and the PTO can be unfair, so you should argue against and appeal any rejection you feel is improper.

It's important to avoid making any negative statements on the record, comply with your continuing duty to disclose material information about the invention, avoid amending your claims unless necessary, and consider foreign filing within one year of your filing date. It's often useful to call or visit your examiner. You are not allowed to add any new matter to your application, but you must respond to every point in any Office Action.

To respond to an Office Action first review your application, then the cited references, and then decide what is novel and unobvious about your invention and consider amending the claims to define over the prior art if necessary. When drafting your remarks in the amendment, go through the flowchart and use possible arguments for patentability. Be sure to separate your arguments into novelty and unobvious parts and distinguish between physical novelty and new results.

Your amendment should argue the patentability of your claims. It should not argue the patentability of the invention generally, nor the drawings, or specification.

The PTO requires a specific format for an amendment, with each section starting on a new page and a listing of every claim that was ever in the application. Follow the specific rules for drafting remarks.

The PTO prefers that you eFile the amendment if possible. Otherwise fax your amendment rather than mail it, unless it includes new drawing sheets. If you receive a final action your only options are to appeal, amend the claims as required, interview the examiner to come to an agreement, try a further amendment without raising new issues, file a full or RCE continuation application, or abandon the application. You can petition the Commissioner for nonsubstantive matters.

Design patent application prosecution is similar to utility prosecution, except that the design must be unobvious in the aesthetic sense. If you miss a PTO deadline, you can buy an extension, or petition to revive if the delay was unavoidable or unintentional.

CHAPTER 14

Your Application Can Have Children

Inventor's Commandment 29

Acquire at least some familiarity with all types of supplemental applications (continuations, RCEs, divisions, continuations-in-part, reissues, and substitutes) if you have a patent application pending, and be aware of the double-patenting trap and the shortening of your monopoly period before filing any such extension application.

A. Available Supplemental Cases

As we saw in Chapter 13 (application prosecution), the patent laws and PTO rules allow you to do much more than either get a patent or abandon your patent application. In this sense, perhaps, a patent application can best be understood by comparing it to a family tree, as shown in Fig. 14A, which shows all of the different extensions you may file.

The Basic Application is like a parent, and just as a parent has children, the parent application can be used to produce offshoots. Depending upon the situation, the parent application is called by many names (for example, "parent," "prior," "basic," or "original" application), while the offshoot applications are referred to as "daughter," "continuation," "divisional," "reissue," "independent," or "substitute" applications. If there are several successive supplements, the Basic Application is called the "grandparent" or "great-grandparent" application and the latest-filed application can be called a "granddaughter," "great-granddaughter," "continuation-of-a-continuation," etc., application.

Note that some extensions come from the bottom point of the Basic Application (BA) or the basic patent. These are "sequential" supplements or extensions since they replace the BA or its patent.

Other supplements come from the sides of the BA; these are "parallel" supplements or extensions since they can exist in addition to the BA or its patent.

The various extensions, starting from the upper left and proceeding down, then the middle and down, etc., are as follows:

- **Division or Divisional Application:** Suppose your examiner held that your BA covered two or more inventions, and required you to "restrict" it to one of these inventions. To cover the other, "nonelected" invention you'll have to file a separate application on it. You do this by filing a divisional application. Your divisional application gets the benefit of the filing date of your BA, but also expires 20 years from your BA's filing date. Your divisional patent can be in addition to your original patent.
- **Continuation Application:** Suppose your examiner sends you a final Office Action (OA), and you want to get another round with the examiner on the same claims, or to try a new and different set of claims. You can do this by filing a new application that "continues" your original application. The continuation application gets the benefit of the filing date of your original application but also expires 20 years from your BA's filing date. A continuation patent can be in addition to your original patent, but it must claim a different invention to avoid double patenting.
- **Request for Continuing Examination (RCE):** Moving down the middle column of the chart, you will see the RCE box. An RCE is similar to and is actually a type of a continuation application. It enables you to purchase another round with the examiner in the same application. Note from the chart that the RCE is like a detour or second chance on the path to a patent. The RCE replaces the BA.
- **Reissue:** If you've received an original patent, but you want to revise the claims of the patent or correct significant errors in the specification for some valid reason, you should file a reissue application. As indicated, your reissue patent takes the place of your original patent.
- **Continuation-In-Part (CIP):** Moving up to the top of the right column, if you've improved or changed your basic invention in some material way during the pendency of your application, and you want to obtain specific claims to the improvement, you should file a continuation-in-part (CIP) application. As indicated, your CIP patent can exist with your original patent, or your CIP application can replace your BA.

The above four types of applications (Division, Continuation (including RCE), Reissue, and CIP) are called *continuing* or *extension* applications because they extend or continue from (have continuity with) the parent application. The following two types of supplements have no continuity with the parent or original application.

- **Substitute:** Suppose you abandon your application and later refile a new application on the same invention. The new application, as indicated by the broken line, has no copendency or continuity with the original application. It is called a substitute application. Of course, no patent on your original application is possible.

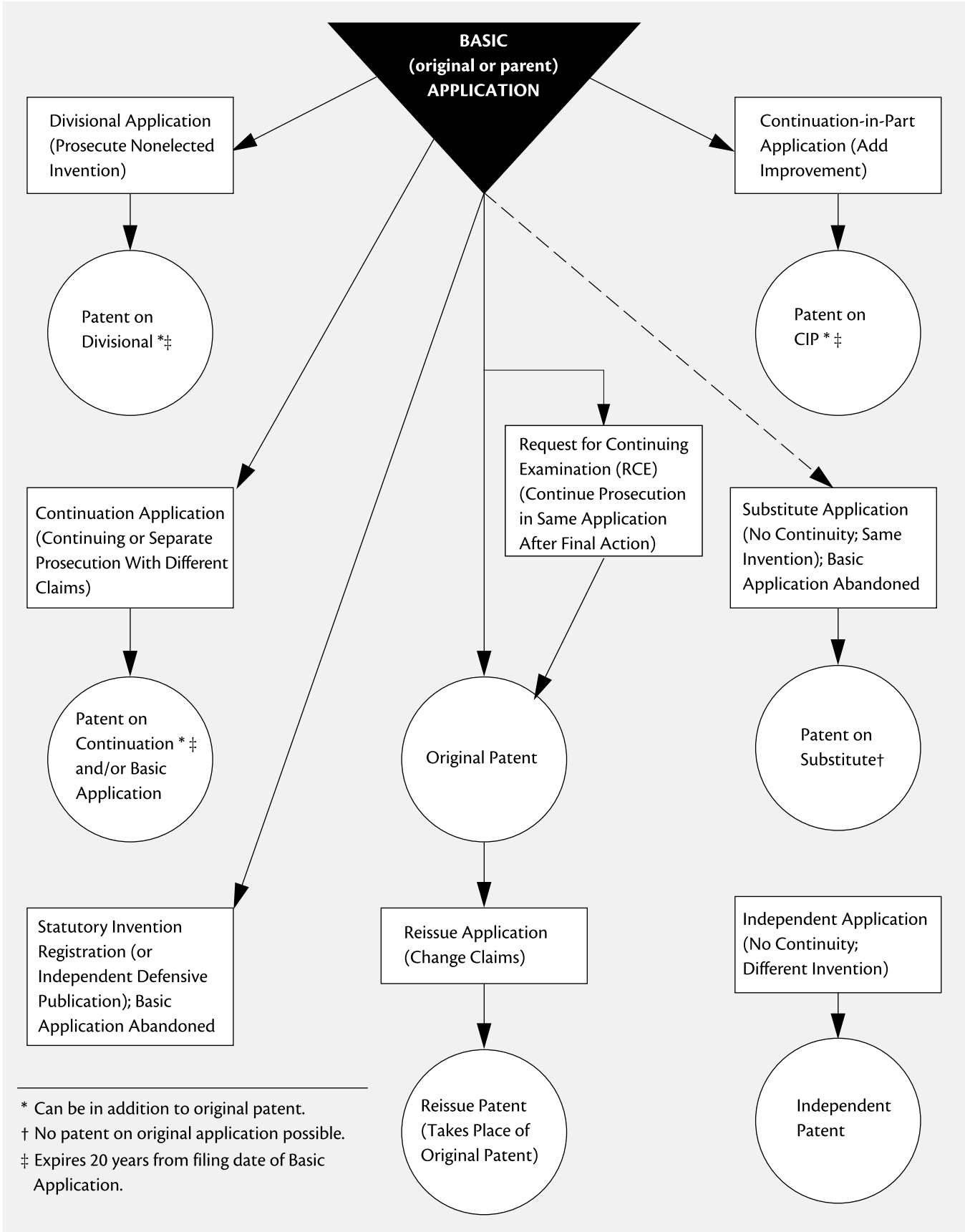


Fig. 14A—Available Supplement Cases

- **Independent:** If you've made a major improvement in your basic invention that uses new concepts and can really stand by itself, you should file an independent application. An independent application is entirely separate from your BA, although you may refer to your BA in the independent.

Now that I've identified the major types of supplements, it's time to examine each one in more detail. Before we do, however, here's a word of advice. As suggested in Chapter 13, the types of problems that will occasion your using the information in this chapter may make it appropriate for you to at least consult with an expert prior to making a decision. In other words, before you decide to file a continuation, etc., you should seriously consider seeing a patent lawyer. Also note that, of necessity, the chart is abbreviated, so rely primarily on the text, rather than the chart.

Presumption of Similar Inventions. If you file any continuing applications that have the same owner and a claimed filing or priority date within two months of the claimed filing or priority date of a previous application and name at least one inventor in common with the previous application, you must identify the applications and their inventors. The PTO will presume that the present application and the other application(s) or patent(s) contain at least one patentably indistinct claim if the other commonly owned application or patent also has substantial overlapping disclosure with the present application, and the same filing or priority date as the claimed filing or priority date of the previous application. This presumption may draw a double patenting rejection but may be rebutted (Rule 78).

B. Continuation Applications

A continuation application is concisely defined in the *Manual of Patent Examining Procedure* (MPEP), Section 201.07, as "a second application for the same [or similar] invention claimed in a prior nonprovisional [regular] application and filed before the original [the prior application] becomes abandoned or patented." Note that both the original application and continuation can issue as separate patents. However they cannot claim the same invention since this would violate the double-patenting rule that prohibits two patents on the same invention. Thus, I added "[or similar]" after "same" to expand the PTO's definition.

A continuation application is almost always filed in response to a final rejection when an applicant wants to have another round with the examiner, either to try again to get the existing claims allowed or try new claims. If you don't file a continuation within the response period (three months unless extended for a fee), you give up your right to file it at all. An applicant can also file a continuation after an original application is allowed and before it issues to patent in order to get a parallel patent with a somewhat different set of claims to a similar invention. In this case the continuation is somewhat like a divisional, except that the continuation covers a similar, rather than a different, invention. If the claims of the continuation aren't patentably different from those of the original, the applicant must file a terminal disclaimer (TD) in the continuation so that the second patent won't run longer than the original patent.

If you think that it's inconsistent for the PTO to allow you to continue prosecuting claims to an invention after it has supposedly declared an Office Action "final," a word of explanation is in order. As stated in Chapter 13, "final" has a special, unusual meaning. A "final" action doesn't mean that the examiner has given the final word on your invention, but merely has decided to cut off your right to freely change your claims in your current application. In other words, you've gotten as many go-arounds as they're going to give you for your filing fee.

An historical explanation will make it even clearer. Up to the "old" days when I worked in the PTO (early '60s), patent prosecution proceeded at a leisurely pace. The PTO (then the PO) allowed examiners to send four or five OAs before they had to issue a final action. Examiners issued a final OA only after an issue had been clearly defined and reached, or if it was a fourth or fifth OA. However, in the late 1960s the PTO instituted a "compact prosecution" practice. Under this practice the examiner is almost always supposed to make the second OA final. The purpose of this change was to obtain more income for the PTO (a continuation application gets the PTO an additional filing fee), to reduce the amount of work the PTO performed, and to shorten the backlog of pending applications.

However, two OAs are often not enough to adequately define the invention, reach an issue with the examiner, and complete the prosecution in a proper manner. Therefore, continuation applications and RCEs (see next section) are often filed, especially since the RCE process has been made very simple. Because an RCE is much simpler to prepare and costs less to file, I recommend that you use the RCE process instead of filing a continuation application.

You must file a continuing application like a regular application. The procedure is governed by 35 USC 120 and the PTO's Rule 53(b).

A continuation application must cover the same or a similar invention as the parent or Basic Application (BA). The BA can either be abandoned or can issue after a continuation is filed. The continuation application is