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Chapter 3

THE PATENT LAW

While the classes of patentable inventions and statutory restrictions are readily set forth, with illustrative cases, the question of what is "obvious" and what is "invention" under the 1952 Patent Act is unsettled. This chapter accordingly concludes with a discussion of this vital question which the Supreme Court has thus far refused to hear. Here are presented the author's views based, in part, upon the current very real role played in American innovation by the independent inventor.

There must, clearly, be a set of rules or norms by means of which to establish the various kinds of invention (using that word in its popular sense for the moment) that may be patentable or, at least, the circumstances under which public policy requires that a patent may not be given.

As noted earlier, Congress set forth, in the Patent Act of 1952, a codification of our patent laws, restating the substance of prior statutes and adopting constructive court-made law established prior to the 1930's. But, in addition, it introduced changes in the law primarily directed at curbing the damage to the patent system effected by recent destructive policies of the Supreme Court. Included in these curbs are the abolition of the doctrine of "flash of genius [1]" as the test for invention, later discussed, and the loose and ready invalidation of patent claims as defining the invention functionally, instead of structurally.

Classes of Patentable Invention

The 1952 Act was passed pursuant to the previously discussed constitutional provision in Article I, Section 8, empowering Congress to promote the progress of useful arts by securing for limited times to inventors the exclusive right to their discoveries. Two words are used here: "inventors" and "discoveries." While invention and discovery may involve different concepts to the linguist, in patent law they had previously meant the same thing and been used synonymously. The first provision of the 1952 Act, Section 100, thus sets forth that "the term 'invention' means invention or discovery." As explained before, the word "discovery" does not include the bald discovery of a scientific principle, and the definition in Section 100 appears to

limit the word to mean only "invention," as that term had been used in prior court decisions.

The statute then proceeds to define various classes of invention—listing a process, a machine, a manufacture, a composition of matter, or a material. Some of these words are a little bit out-of-date today, but they came from the very early patent acts when the only appropriate term to describe an invention was a "machine" or a "manufacture." In our modern vernacular, a "machine" is hardly descriptive of an electronic component or circuit; but the courts, following the lead of prior Supreme Courts and the actual desires and intentions of Congress, continue to use this older language of the statutes. Thus, a piece of apparatus that achieves a useful result functionally is a "machine," and an item that can be produced or manufactured by a machine is an article of "manufacture." As an illustration, apparatus for weaving cloth is a "machine;" the cloth, when woven, is a "manufacture."

The term "composition of matter" is self-explanatory. If someone invents a new chemical compound, that compound may be patentable. If someone else merely discovers a chemical compound or element existing in nature, that is not patentable. Thus a claim to an electric lamp filament wire formed of ductile tungsten was invalidated [2]. The General Electric Company inventor, W. D. Coolidge, had made an important advance in a ductile-tungsten filament for lamps. He had accomplished this by removing impurities from tungsten as found in nature; but removing impurities from natural tungsten to make it ductile resulted only in pure tungsten, which is inherently ductile. Pure tungsten, of course, is a natural element, even if it is never found pure in nature. It is interesting to note that the judge who invalidated this patent (Judge Morris of the District Court for the District of Delaware) had himself previously sustained the patent. He had not then, however, been presented with the argument that the patent covered merely an element of nature in its pure state; but when so informed, reasoned that it could not be the subject of a "monopoly," even though never found pure in nature. An element is not included in the statutory classes of invention.

"Material" is a new word in the statute and may have a meaning very similar to that of "manufacture," though a "material" may be produced by a process that would not, in conventional language, necessarily be termed "manufacturing."

"Process" is defined, in part, as a "process, art, or method." It usually embraces a series of steps for accomplishing or producing a certain result. A chemical process is, of course, quite easy to comprehend. The next chapter, which discusses the Bell Telephone Cases, will show that there may also be an electrical process.

Suppose someone arranges the various parts of an old machine in a novel manner to perform a new operation. Is this a process

or method. A case of the Supreme Court in perforating machinery, the dies lift to enlarge the perforating sheet [3]. The definition of patentable classes with its dies was of the ultimate "manufacture" article. By this machinery, a new method of matter. Nonetheless involved a new process. The Court had previously a novel patentable electrical, or other, however, decided also involve method of operating an old

In addition to "process, art, or method" that "process" is

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To appreciate the case of Dr. V. in some quarters of discovery, and the York Eye and Ear, indeed, freely infringing which freely infringing for infringement entitled to be claimed by mankind." But, a new process? Researchers had previously inhaled the new effect of ether for the purpose of the court, a new "art" matter? Ether h. No. Was it a new process that this epoch-making limited classes of patentable. So Dr. Mc

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or method A case of this sort came before the United States Supreme Court in connection with adjusting an existing metal-perforating machine so that, instead of merely perforating the metal, the dies lifted the perforations out and twisted them to enlarge the perforations, thereby making an expanded metal sheet [3]. The defendant argued that this was not within the patentable classes of invention since the original "machine" with its dies was old and thus was not patentable, and, additionally, the ultimate "manufacture"—the expanded metal—was an old article. By this reasoning the inventor had not produced a new machine, a new manufacture, or, obviously, a new composition of matter. Nonetheless, the Supreme Court held that this invention involved a new process, although, on several occasions, that Court had previously intimated, by dicta, that there could not be a novel patentable process or method unless it involved chemical, electrical, or other such "elemental" phenomena. This case, however, decided that a patentable process, art, or method could also involve mechanical manipulative steps: it could be a new way of operating an old machine to obtain new results. —

In addition to the definition of the term "process" as meaning "process, art, or method," the Patent Act of 1952 also provides that "process" shall include

A new use of a known process, machine, manufacture, composition of matter, or material.

To appreciate the significance of this definition, let us recall the case of Dr. William Morton, a Boston dentist, who is credited, in some quarters, with having been the first to make the discovery, and the use of ether was immediately adopted. The New York Eye and Ear Infirmary and a number of other hospitals, indeed, freely infringed upon Dr. Morton's patent. Suit was entered which freely infringed upon Dr. Morton's patent. Suit was entered for infringement [4], and the court found that Dr. Morton "was entitled to be classified among the greatest benefactors of mankind." But, the court questioned, was the claimed invention a new process? No, there was no new series of steps involved. Researchers had previously inhaled ether. (Question: Had they previously inhaled it to the extent taught by Morton to produce the new effect of anesthesia?) Dr. Morton was claiming the use of ether for the purpose of anesthetization. That is not, said the court, a new "art" or "process." Was it a new composition of matter? Ether had been discovered before. Was it a new machine? No. Was it a new manufacture? No. The court concluded, therefore, that this epoch-making discovery was not one included in the limited classes that Congress had defined as among those patentable. So Dr. Morton's patent was thrown out.

A discovery may be brilliant and useful, and not patentable.

. . . Something more is necessary. The new force or principle

brought to light must be embodied and set to work, and can be patented only in connection or combination with the means by which, or the medium through which it operates.

To cite another illustration: the citrus fruit industry had long been troubled with a blue mold that formed upon citrus fruit shipped from the South. It was discovered that if oranges were coated with a solution of borax, specks or cuts in the fruit became thoroughly covered over and no formation of the mold would take place. A patent was applied for and obtained by the Brogdex Co. covering the product and the process for making it. It was claimed that fresh citrus fruit of which the rind or skin carried borax in a very small amount is rendered resistant to blue mold. The American Fruit Growers infringed this patent and Brogdex brought suit. The district court and the court of appeals held the patent valid and infringed. The Supreme Court, however, held that this invention was neither a machine nor a composition of matter [5]. It was also not an article of manufacture, because there was no change in form or appearance of the fruit (much as Coolidge still only produced tungsten). In other words, it did not belong to any of the patentable classes and could not, therefore, be protected by patent. As for claiming the discovery in method form, the Supreme Court held that the use of borax had been known before, not for filling up small specks to prevent blue mold, but for preserving fruit, and the method of applying the borax was the same as used here (much as Dr. Morton's method of applying ether to the nostrils was allegedly old). One could not then obtain a patent for a new use of an old method.

Let us assume, by way of contrast, that in the process of treating the orange with borax some chemical reaction took place so that the orange was no longer an orange, and the borax was no longer borax. We would then have a new composition of matter—neither orange nor borax. Would this be patentable? A similar case occurred where it had been found that, in dyeing fur to preserve it, a chemical reaction took place which actually made a new preserved fiber out of the natural hair. It no longer had the characteristics of the natural fur. Under these circumstances, said the circuit court of appeals [6], the invention was a new article of manufacture and hence within the patentable classes of invention.

One can see, accordingly, that there is room for great latitude and ingenuity of argument in trying to construe a discovery as being within one of the patentable classes. A hostile court will not permit the law to grow with scientific discovery, whereas a court with a zeal to protect property rights in discoveries (under Article I, Section 8 of the Constitution) can offer great encouragement to the promotion of progress in the useful arts.

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We can all probably understand why Congress has not seen fit to permit patents to be granted for mere scientific discoveries. Something is wrong, however, if a practical application of such a discovery cannot be construed as being within the patentable classes of invention set forth by the Congress for that very purpose. Dr. Morton, for example, did not try to patent ether all over again; he tried to patent its use for a particular new result. Should not that take it out of the category of pure scientific discovery? Congress, the engineering, scientific, and business people, and the lawyers who were responsible for the 1952 Patent Act appear to have answered this question in the affirmative by defining "process" to include "a new use of a known process, machine, manufacture, composition of matter, or material." While the paucity of court decision makes it too early to form an opinion as to the ultimate effect of this new definition, the Board of Appeals of the Patent Office has already construed it to mean that the new use must be one not analogous to, but radically different from, the kind before involved, and that the patent claim must be couched in the form of a process or method and not of an apparatus.

Conditions of Patentability

Turning, now, to the definition in the statute of patentable invention, we find that Section 101 is limited to "Whoever invents or discovers." This means an individual or individuals, since a corporate body or other organizational entity cannot itself invent or discover. The individuals who do this creating and this inventing may, however, assign their patent rights or a portion thereof, in writing, to a corporation or to the government, so that a patent or a part thereof may actually be owned by others than the inventor. But the application must be filed in the name of the first inventor or inventors. The language provides that, in this country, a patent can be issued only to the first inventor. In Great Britain, patents were and are granted to anyone who brings a new invention into the country. The British philosophy encourages the importation as well as invention of new techniques. Not so in this country, however, for if a patent should be granted to someone other than a first inventor, it will be thrown out by the court as invalid.

Continuing with Section 101, the inventor must invent or discover a "new and useful" invention. The matter of the requirement for novelty has previously been discussed. As for the word "useful," nearly everything has been held to be useful. Among the exceptions are devices for promoting fraud or that are injurious to the public health or against public policy. A "perpetual-motion" machine or any other inoperative proposal also lacks utility. There are then set forth the before-mentioned five classes of patentable invention: "process, machine, manufacture, or composition of matter" or "material"; and, in addition, "any new and useful improvement

thereof." Not everyone can make a basic invention, but the law entitles one to seek a patent for an improvement in a machine, manufacture, composition of matter, or process.

Section 101 also states that one may obtain a patent in the above classes, subject to the requirements given in Section 102, which sets out the "Conditions for patentability, novelty and loss of right to patent." The Congress has positively declared that "A person shall be entitled to a patent unless . . ." This appears to have been an effort (not yet successful) to curb the indiscriminate invalidation of patents.

The first restriction is that a patent cannot be granted if the invention was known or used by others in this country or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent (Section 102 [a]). The inventor does not have to be actually aware of such prior knowledge, use, publication, or patenting, for, if the invention was "described in a printed publication" or a prior patent was issued anywhere at all before he made his invention, there would be an absolute bar to granting him a patent. Even if the prior patentee did not claim the same inventive features, but merely "described" the invention adequately in a patent issued prior to the present inventor's concept, this description becomes a statutory bar. This restriction demonstrates the importance of patent and literature searches of both United States and foreign patents and publications before filing a patent application.

As for the phrase "known or used by others in this country," a little history is in order. This was not always the law. The early patent statutes set up as a bar to patentability knowledge or use anywhere in the world. Realizing the importance of encouraging the utilization of new concepts in this country, however, Congress revised this to cover only prior knowledge or use in this country—a sore point in our current relations with foreign countries. If the invention was known or used abroad but was not patented or described in a printed publication before the invention was made here, no bar exists to obtaining a patent in this country, provided that the inventor did not know of this knowledge or use abroad. Of course, if he did know, he did not make the invention.

The courts have interpreted the word "known," moreover, in a very strict sense to mean that "an invention . . . has been completed by reduction to practice [7]." The invention is not "known" if it is a prior "conception only" (such as a laboratory notebook drawing or disclosure, or an unpublished manuscript), or if "prior machines" have not "been working machines" but "mere experiments." Even the knowledge by individuals in this country, prior to an inventor's invention here, that a certain device had been previously used abroad successfully, is not within the statutory term "known [8]."

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The term "used" is similarly the subject matter of much court construction. Briefly, it means a public use [9] and not an experimental or secret use, and does not include mere conceptions or abandoned experiments, such as those made in company laboratories or in institutions of learning and not followed up by publication, reduction to practice, actual public use, or patenting.

All of this has to do with knowledge, use, patenting, or publishing (Section 102 [a]) before one makes an invention. There is also a time limitation. If an applicant waits too long, even though there is no prohibition under Section 102 (a), he may be out of luck in view of the restriction of Section 102 (b), which provides that a person shall be entitled to a patent

unless the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States.

Even though he may be qualified under Section 102 (a), therefore, if he does not file the patent application until more than a year after publishing a thesis or scientific paper on the invention, he is too late to obtain a patent. If, before filing, he waits more than a year after someone else has described his invention in a publication, again it is too late to obtain a patent. And the same is true if he files more than a year after his invention first went into public use or was put on sale.

In some foreign countries, it is too late to file for a patent after any document describing the invention has been made public in the country in question; this is the case, for example, in Great Britain. In Germany, a description of the invention in public print in any language or country, before the German application is filed, bars a German patent. It is not entirely safe, therefore, to delay filing until after publication to obtain foreign patent protection.

The last-named restrictions of Section 102 (b) in connection with "public use" or "sale" are very important to the applied scientist and engineer. His new products are always going out for tests, for sale, for use; and the question arises as to when he should file a patent application. Perhaps one of the fundamental cases that partially answered this question arose in Boston in the late nineteenth century in connection with the invention of wooden paving blocks. The patent was not applied for until several years after these blocks had been in use in a toll road. The defendant infringed the patent, contending that it was invalid since the blocks had been in public use on the street more than two years before the inventor had filed his patent application. (At that time, the statute provided for two years of public use instead of one year, as at present.) The Supreme Court found [10] that there was no way of proving the efficacy of this invention except by actual test on a street, and the circumstances showed that the

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inventor was merely trying to test whether or not the invention was any good. The Court, accordingly, construed this, not as a "public use," but rather as an experimental one.

Along came the case of a gentleman who invented steel stays for women's corsets, in place of whalebone as before. He gave a sample to a lady friend to try out, and she used it for several years. Then the inventor filed for his patent. When the case reached the court, the defendant set up as a "public-use" argument the fact that this corset had been worn for more than two years before the inventor filed his patent application. The inventor, on the other hand, argued according to the rule of the paving-block case before mentioned. The court thereupon laid down a second important rule [11], namely, that even a single use by a member of the public, except under such restrictions or conditions as would clearly delineate experimental or confidential use, constitutes a bar to the granting of a patent, unless the application is filed within the statutory period. And this very rigid rule has been discovered by several companies, with important patents, much to their sorrow.

In a recent case [12], suit was brought for infringement of a patent dealing with a process for casting patterned plastic sheets. The defendant showed that more than a year before the application for patent the plaintiff had sold several hundred plastic sheets made by the patented process. Thereupon, the plaintiff insisted that this use of the patent and sale of the product created by its process were merely experimental to determine the "production controls" necessary for the successful commercial exploitation of the patent; but the court held that this constitutes a "prior use" within the meaning of the statute.

This decision points out significantly the importance of filing a patent application not only for the new article, but also for the process involved in the manufacture of the article, within a year after the first sale. The safest procedure is to file before the public obtains the article, and even before it is put on sale. The term "sale," moreover, has been interpreted by the courts to include an offer for sale. Thus the matter of patent protection, both for the article and for the method of making it, should be very carefully explored well within the year after any offer to sell or any public use.

Returning to the restrictions in Section 102, we see that part (c) bars a patent if the inventor has abandoned his invention. Even if one has produced and tested an invention, so as to establish its so-called reduction to practice, but has put it away on a shelf and forgotten it, and in the meantime it is independently invented by another person, he cannot prevail as the first inventor against the second person. Abandonment does not promote the useful arts, and accordingly it is not in accordance with our public policy to reward such inactivity. It is very important, therefore, to realize

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that one cannot put ideas away and forget about them, and then hope to resurrect early dates for them at a later time. Those early dates not utilized are of no avail as against the diligence of others.

Section 102 (d) relates to the effect of foreign patent filing. One must file a separate patent application in each country in which one wishes the invention protected, though it now appears likely that a single European Economic Community patent may be established within a very few years, as discussed in Chapter 7. Under the Universal Copyright Convention [13], a copyright registration in one country serves also as one in the other foreign countries which are members of the convention. Patents, on the other hand, must be obtained through the individual patent offices of the respective countries. Section 102 (d) provides that, if one has filed in a foreign country more than twelve months before filing in this country, and if the patent issues abroad before the filing of the United States application, he is barred from obtaining a patent here.

This goes hand in hand, however, with a provision of a different convention [14], by which one may file abroad in any foreign country that is a member of this other convention, and thereby obtain the effective benefit of the earlier filing date in the United States, provided the foreign filing is done within twelve months of the United States filing date. Similarly, foreigners may file here with reciprocal privileges. There is thus a year's leeway in which to decide whether or not to file abroad; and foreign applications claiming the convention benefits, if filed within that year, will be treated as if they had been filed simultaneously with the United States application.

The United States Government, however, does not permit its citizens to file abroad as an absolute right. This is because of national-defense statutes. The patent application filed in the Patent Office is examined by Army, Air Force, AEC, and other personnel, assisting the commissioner of patents, to see whether it contains information which might jeopardize the security of the country. If the answer is in the affirmative, the commissioner will issue a secrecy order, prohibiting any filing abroad before obtaining a license from the government to do so. If, under those circumstances, one still wishes to file abroad, he may petition the commissioner, offering reasons why secrecy should not be required in the particular case. The commissioner will take up the matter with the branch of the service which, in the first place, considered that the invention involved classified material; and then a decision will be reached as to whether or not to permit filing abroad, and in what countries. If, however, after one has filed an application, he does not hear within six months from the Patent Office that the case has been put under secrecy orders, he automatically obtains a license to file abroad, except that special permission may be required for Iron Curtain countries.

Section 102 (e) provides that if an invention has been described

in a patent granted to another on an application filed before one has himself independently made the same invention, there is a bar to his obtaining a patent in this country. If the prior patent claims the invention, and if the independent inventor made his invention before the filing date of the application for the prior patent, then he may ask the Patent Office to declare an interference contest between himself and the prior patentee. In this way he may have the right to take inter partes testimony for a determination as to who is really the first inventor. If the patent discloses, but does not claim the invention, however, and, again, the independent inventor made the invention before the filing date of the application for the prior patent, the independent inventor may present ex parte evidence, by means of affidavit [15], to demonstrate his earlier date of invention, and thus remove the other patent as a bar to the granting of his.

Section 102 (f) deals with the necessity, previously discussed, for the applicant to be the first inventor.

Interference

Section 102 (g) provides for interference contests mentioned above to determine priority of invention where more than one person is claiming to be the original inventor. The statute describes the court-established rule that the first applicant to file is not necessarily, in law, the first inventor. The inventor is the first to reduce it to practice, but there is one exception to this rule. If, though the last to reduce it to practice, he was the first to conceive, and was diligently working at it when his rival entered the field and continued to do so until his reduction to practice, then he is the first inventor.

Perhaps a few definitions of interference terminology may be helpful. Conception involves obtaining the complete mental picture of the invention, even though one has not yet built it. If one is to rely upon a drawing or a notebook disclosure or the like to prove conception, he must show that all of the elements of the claimed invention in controversy are present or implied therein. The keeping of full notes is thus greatly to be desired. Reduction to practice of the invention means either building and successfully testing the invention (though there are some exceptions to this necessity in the case of very simple devices) or filing a patent application for a theoretically operative model. Building and successful testing is termed "actual" reduction to practice, filing a patent application may constitute a "constructive" reduction to practice. Corroboration by a qualified witness to the inventor's tests is important, since the courts, in order to avoid possible fraud, require such independent corroboration of the inventor's testimony before accepting the latter's alleged dates.

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is satisfied with the theoretical operativeness of the invention, he may protect his rights by filing a patent application, and thus obtain a constructive reduction to practice. The United States Government currently takes the position, in contracts granted to develop or adapt inventions, that, no matter how much money one may have spent in developing a conception or in reducing it to practice by filing patent applications and the like, if government money in substantial amounts is appropriated to build the invention for the first time under the contract, the government must be granted a free license, with no strings attached [16]. The government may then, with impunity, give to others than the inventors and developers the business of building the invention commercially for it.

As a former member of a bar-association committee on government patent policies, I can state that, unfortunately, many lawyers are apathetic in this matter, which puts a particularly onerous burden on the small company. It is the government, however, that suffers in the long run when individual inventors and their companies are discouraged from suggesting the creative flashes from which have sprung the seeds, not only of our weapons of defense and offense, but also of our economic expansion and development.

The Statutory Test of Invention

The court-made law relating to the requirement for the exercise of a "flash of creative genius," in order to support a patent, laid down by Mr. Justice Douglas [17], was overthrown by Congress in the last sentence of Section 103 of the Patent Act of 1952:

Patentability shall not be negatived by the manner in which the invention was made.

It has been superseded by another and entirely different test which assumes that the requirements of Section 102 have been met. It reads:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made. (Italics mine.)

The Supreme Court has, as yet, declined every opportunity offered it to interpret this statutory provision of the ultimate test of whether an improvement is or is not sufficiently significant to warrant a patent grant. Since this question is the most pressing

to every inventor, engineer, or other party concerned with inventions, a discussion of the history of this legislation and at least certain lower-court views with regard to it may be helpful.

A "person having ordinary skill in the art to which said subject matter pertains" has been the standard set up ever since at least 1850 [18]. Unfortunately, however, that standard has not always been met, but has varied with the different courts. When one court was desirous of sustaining a patent, one standard was set up. When another court desired to invalidate a patent, the standard was quite different. Matters reached such a state that, as before mentioned, the standard became no longer a "person having ordinary skill in the art to which said subject matter pertains" but rather one inspired by "the flash of creative genius."

This "flash-of-creative-genius" standard has raised a storm of protest throughout the country, since in practice it is almost impossible to attain. Such a yardstick would have invalidated many of our most important patents, including Eli Whitney's cotton gin, McCormick's reaper, the sewing machine, the air brake, the telegraph, the telephone, and the electric lamp. Such invalidation, of course, would have discouraged invention.

Whether or not this result would have pleased a minority of justices of the Supreme Court, it certainly did not please Congress. And the reaction of Congress, moreover, did not arise out of any solicitude for our large corporations:

Rather, through the operation of the patent system the small company and the newcomer has been able to gain a foothold without being subject to appropriation of developments by the larger entrenched firms. Polaroid, Thiokol, Mallory, and many others, represent small and modest sized businesses which have launched new products against the competition of an existing industry. . . . It should not be assumed that every time an excuse is found to invalidate a patent, competition necessarily benefits [19].

Even so, Congress had no desire to change the law, but rather to lower the "flash-of-creative-genius" standard to the level of the "person having ordinary skill in the art to which said subject matter pertains." Congress itself said so, in the Reviser's Note to Section 103:

This paragraph is added with the view that an explicit statement in the statute may have some stabilizing effect. . . .

It is of interest to observe, therefore, that the late Judge Learned Hand held [20] that Section 103 does not actually constitute new legislation, but rather restores the law to what it was "twenty or thirty years ago" before the courts began to adopt the standard of "the flash of creative genius." Some

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courts have followed Judge Hand's decisions; others have not.

Congress seemed convinced that only by such a restoring of the law would the confidence of inventors be re-established and the progress of the useful arts promoted. Therefore, it is again studying the problem with the object of enacting further legislation. A subcommittee of the Senate Committee on the Judiciary has been hearing testimony and collecting evidence for some years. Several reports by that subcommittee have expressed dissatisfaction with the large number of patents still being invalidated by the courts.

It may be well here to state that Section 103 had its origin in this very dissatisfaction. In the report of the National Patent Planning Commission, 1943, headed by the late Charles F. Kettering, for example, appears the following:

The most serious weakness in the present patent system is the lack of a uniform test or standard for determining whether the particular contribution of an inventor merits the award of the patent grant. There is an ever-widening gulf between the decisions of the Patent Office in granting patents and decisions of the courts who pass upon their validity. It would be highly desirable and a great step forward if patents could be issued with a greater assurance that their validity would be upheld by the courts. No other feature of our law is more destructive to the purpose of the patent system than this existing uncertainty as to the validity of a patent.

Obviousness of "Subject Matter as a Whole"

The restriction that an invention is not patentable if it is obvious as a whole, and not merely in part, has been in force at least back to Supreme Court decisions in the late 1800's [22].

The Century Dictionary gives the following definition of "obvious": "easily discovered, seen, or understood; plain; manifest; evident; palpable." The way to determine whether an invention is obvious, accordingly, is by evidence.

In patent-infringement suit after patent-infringement suit, the plaintiff has offered evidence to show that he was the first to have offered a sought-after solution to an existing problem and that, after disclosure of his solution, the defendant appropriated it. The courts, in sanctioning this appropriation, have rarely disagreed with the plaintiff in his showing, but have thrown out his patent as involving merely an "obvious" step or device. But such reasoning raises questions.

If the solution of the problem disclosed by the inventor was obvious, why did not the defendants adopt it earlier? Why did they wait until the invention was placed upon the market by the plaintiff? If the prior-art developments constitute satisfactory solutions of the given problem, as every defendant argues, why

do not the defendants use that prior art, instead of spending money in litigation in order to obtain the right to use the plaintiff's invention? If, on the other hand, the prior art is not satisfactory, can it really be contended that the plaintiff has accomplished no more in his device than, "as a whole," was obvious in the prior art?

But in case after case the courts have insisted in holding the invention "obvious" in the light of hindsight in prior-art knowledge, in the face of indisputable showings that there was no "person having ordinary skill in the art to which said subject matter pertains" to whom the invention was at that time "obvious." Recently, a court of appeals sustained a district court's holding [23] that "I am not so troubled" about "Monday-morning-quarterbacking" as more "sensitive judges" would have been; "it does not seem to me to require inventive genius" to make the plaintiff's invention; "I am unable to perceive invention." (*Italics mine.*)

In an earlier day, a district court judge similarly remarked [24]. "I am satisfied that it amounts to nothing more than. . . . I am unable to see how. . . ."; and the court of appeals reversed the decision, holding that these statements were not findings of fact, but merely expressions of opinion, with "no testimony in the record to support it."

The statute in Section 103, however, makes it plain that the question to be decided by the court is not what may seem obvious after the event to lay courts or even technical experts, but, rather, what

would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. (*Italics mine.*)

This opinion has been reiterated recently by the Court of Customs and Patent Appeals [25]:

What amounts to patentable "invention". . . is simply whether the difference between what is claimed and the prior art would have been obvious to one of ordinary skill in the art at the time the invention was made. (*Italics the court's.*)

Certainly this does not mean whether the invention may seem obvious to the court through hindsight.

The views of the late Judge Parker [26], of the Court of Appeals for the Fourth Circuit, may be of interest:

The state of the prior art, the problem to which the invention was addressed, its success in solving the problem, its acceptance by the art, and its success commercially should be accorded more weight than what the judge, who is unfamiliar with the art or with the problems of industry generally, may chance to think, in the light of the problem's solution, as to what one skilled in the art should have known or should have been able to do.

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He went on:

And especially should the judge be on guard against permitting anticipation to be found in the bone yard of abandoned experiments and mere paper patents. In such case the searching and conclusive inquiry is: "If what has caused such a great change in the art and such an improvement in the industry was old and ready at hand, why did not it occur to someone else to use it?"

As one court of appeals [27] remarked:

It is usually, if not indeed always, easy to discover a genesis somewhere for any patentee's contribution. But if patents were to be held invalid on such reasoning, few would survive.

An invention, moreover, is always "simple" and "obvious" after it has been disclosed. The Supreme Court of an earlier era said [28]:

At this point we are constrained to say that we cannot yield our assent to the argument, that the combination of the different parts or elements for attaining the object in view was so obvious as to merit no title to invention. Now that it has succeeded, it may seem very plain to any one that he could have done it as well. This is often the case with inventions of the greatest merit. It may be laid down as a general rule, though perhaps not an invariable one, that if a new combination and arrangement of known elements produce a new and beneficial result, never attained before, it is evidence of invention.

The invention of the patent in suit in the Barbed Wire Patent case [29] lay in wrapping the barb several times around the carrier wire, so that a bearing was provided for the barb, which was thus held permanently at right angles to the carrier wire. The prior art disclosed the same barb, but without the bearing, so that it wobbled about the carrier wire instead of being held rigidly at right angles.

The Supreme Court remarked that "it may be strange" that this simple device was not "obvious." Yet, "simple" and "obvious" as this improvement appeared in retrospect, it laid a foundation for accomplishing something that the prior art could not do. By the new barbed-wire invention, cattle could be kept within their wired enclosures.

A short time later [30], in sustaining a patent, the Supreme Court spoke of an invention that "appears to the ordinary mind so simple as to excite wonder that it was not thought of before." And, still later [31]:

Its simplicity should not blind us as to its character. Many things, and the patent law abounds in illustrations, seem obvious after they have been done. . . . Knowledge after the event is always easy, and problems once solved present no difficulties.

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The invention involved in the Eibel Process case [32], in retrospect, was again "simple" and "obvious." It merely raised slightly the rear end of the belt of the Fourdrinier paper-making machine, in order that the liquid pulp traveling thereon could move a little faster, by gravity. Small as the advance was, however, it was promptly adopted by the industry.

Again, the invention in the Ray-O-Vac case of the early 1940's [33] was "a very narrow one in a crowded art." It consisted of enclosing a flashlight battery in a steel casing to render it leakproof. But this idea had never occurred (and hence manifestly was not obvious) to those persons (other than the inventor) "having ordinary skill in the art" who had long been troubled with the battery leakage.

And so it would seem that honest adherence to the spirit and scope of the tests of Section 103 should go a long way toward stabilizing the ultimate test of patentable invention.

Statutory Presumption of Validity of a Patent

Numerous decisions indicate that, certainly as codified by Section 282 of the Patent Act of 1952,

a patent shall be presumed valid. The burden of establishing invalidity of a patent shall rest on a party asserting it.

The Supreme Court has previously held [34] that "the burden of proof to make good this defense" is "upon the party setting it up," and "every reasonable doubt should be resolved against him."

But the courts of the mid-twentieth century have paid little attention to this presumption. As Judge Galston has said [35],

in the last two decades, though courts had said prior thereto that patents were entitled to a presumption of validity, during the latter years only lip service has been given to that doctrine. Now it becomes clear that since there is a statutory presumption, it may not be ignored. (Italics mine.)

This policy followed the dissent in the early 1940's of Mr. Justice Black [36]:

In the absence of a statutory prescription to the contrary, I see no reason for extending the presumption of validity arising from the mere issuance of a patent. . . .

Section 282 of the Patent Act of 1952 now provides that "statutory prescription." The presumption is greatly increased, moreover, when the art cited by a defendant in an infringement suit is substantially the same as the art before the examiner in the Patent Office.

If it were not for prejudices in the field of patents, the trend of decisions in the administrative law field would seem to indicate

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that there should be, though there is not, a steadily growing tendency to follow the proposal of an earlier court of appeals [37] in giving special weight to the use of skilled examiners in the Patent Office in determining patentability. Surely, by Section 282, Congress intended that patents should not be held invalid merely by "Monday-morning-quarterbacking."

Commentary - The Case for Sympathetic Legal

Recognition of Inventions

- There is certainly a feeling in some judicial quarters that patents should not be granted for "gadgets" or trivial devices, as contrasted with such inventions as the atomic bomb; and perhaps this may seriously affect the construction put on the Patent Act of 1952.

This was certainly the public policy advocated by Mr. Justice Douglas in his opinion in the A & P case [38]:

The patent involved in the present case belongs to this list of incredible patents which the Patent Office has spawned.

If I understand Mr. Justice Douglas correctly, he regards a patent for an everyday household item as an "incredible patent." Certainly he so classified one for a collar. Apparently Mr. Justice Douglas views a collar as among "the simplest of devices," one of a "host of gadgets," for the improvement of which men should not be encouraged to devote their inventive faculties. This view, it should be observed, was merely Mr. Justice Douglas's opinion, concurred in, at that time, by Mr. Justice Black and by no other justice.

The records show, however, that at another time a particular invention in a collar was important enough to revolutionize a whole industry, and a patent for it was sustained by one of our greatest judges; Learned Hand [39]. Probably Justices Douglas and Black themselves have benefited by that very invention, for it is doubtful whether they still wear the prior-art collars. Furthermore, the Supreme Court itself has sustained a patent for a bare collar button [40], and many patents for articles of wearing apparel and other "gadgets" of considerable value to the public have heretofore been sustained.

As later will be made more evident, the part played by individual inventors and small companies in the development of such inventions is still great. And still pertinent is the unheeded call in late depression years of the then commissioner of patents, the Honorable Conway P. Coe:

When a patent issues to an inventor we purport to give him the right, the exclusive right, for a term of 17 years to prevent others from making, using, or selling the invention covered by it. But we say that with our tongue in our cheek,

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for we know better than he that by our present method of adjudicating patent rights he will find it exceedingly difficult to prevent the wrongful appropriation of his property and may be compelled to stand helpless while he is despoiled. . . .

My conviction is that the poor inventor, and through him the public, suffers injustice precisely for the reason and to the extent that the monopoly, the exclusive right, purportedly bestowed on him is not now fully safeguarded. What we need is not to decrease but to enhance the monopoly called a patent. Genuine protection in that form would be the last surviving bulwark standing between the inventor and the onslaught of mighty corporations.

A patent should function as a leveler whereby an individual or a company of small means may be enabled to hold his or its rights of property against the pressure of the strongest adversary. It should have a protective character like that of a high-power rifle in the hands of a puny man beset by a wildly charging bull elephant. Unfortunately, the patent affords no such safeguards. . . .

The patent system of the United States, more than any other in the world, offers hope, encouragement, opportunity and recompense to an individual or a company of small resources. It is as democratic as the Constitution which begot it.

Congress has recognized this problem at least partially and has tried to solve it. The Patent Act of 1952, it is to be hoped, has restored the standard of invention at least to what it was originally and continued to be up to very recent years. If questions of public policy are involved, therefore, Congress has made plain that its purpose in enacting the new Patent Act was to remove the discouragement of inventors induced by prior decisions of the courts.

Particularly in view of the extremely large number of important and breakthrough inventions that still flow from independent inventors and small companies [41], we cannot sit back and merely wait for the fruits of government-sponsored and large-corporation research. Never before in modern history has America been threatened so seriously from abroad—both economically and militarily—and hence never before has it needed so desperately to encourage invention from all quarters.

With the same end in view of encouraging invention, Congress, in 1954, in Section 1235 of the Internal Revenue Code, allowed capital-gains tax treatment to professional inventors and their backers, under certain circumstances, while discriminating against authors. Recent interview studies of independent inventors, conducted under the auspices of The Academy of Applied Science at Cambridge, Massachusetts, revealed fully the error of the Treasury Department's proposed repeal of this Section 1235

together with the removal of sales of patents by an inventor (even an amateur inventor) from possible capital gains treatment [42].

Now these independent inventors represented a wide range of experience in innovation engaged in from six to more than forty years. Their more important inventions included: methods of calibrating D.C. instruments; magnetic amplifier control systems; mechanical-electrical transducers; systems to convert capacitance changes to output voltages; shades that keep out heat but let in sunlight; inventions in image intensification; medical instruments; methods of compacting continuously sheet materials at a high rate of speed—used in paper, textiles and plastics; the fuel oil whistle; gasoline tank design; reverberation devices for sound; UHF tuner; electric motors; broad-band amplifiers; power-steering; the RC oscillator; the dynamic noise suppressor; stereo amplification systems; the hydrogen thyratron; cryotrons; flash lamps; electron tubes; cathode-ray tube displays for analog computers; high-vacuum apparatus; gauge calibration equipment; pressure and temperature sensitive switches—widely used in space vehicles. (The inventions which I have italicized have revolutionized industries.)

Most of these inventors sell or exclusively license their inventions, thereby placing themselves under the capital-gains category of Section 1235; or they own their own companies, which in most cases have been built around one or more of their own inventions, with the capital-gains provision used to build up the company. Their technically successful inventions ranged from about 20 to 80 per cent, with a mean about one in three. Of these, only about one in five has been a substantial income-producer to the inventor; the average yearly return from licensing or selling inventions being from 10,000 to 50,000.

The average time lag between the making of an invention and the receipt of returns therefrom was five years; and more than half of all the commercially successful inventions had to be pioneered on the market by the inventor himself before others could be persuaded to adopt them. Only one of these inventors received any financial backing from a government contract in the making of his inventions.

The inventors interviewed, moreover, had not only provided the country with many new products and processes, but had, in the process, created thousands of new jobs, and tens of millions of dollars of new sales. Dare we risk discouraging this well of current invention by making an already highly dangerous and speculative profession untenable to pursue [44] Unsympathetic decisions by the courts or administrative agencies can only negate the policy of Congress which would encourage inventors to continue to invent and businessmen to take risks on the development of invention.

Footnotes

1. Cuno Engineering Corp. v. Automatic Devices Corp., 214 U.S. 84, 91 (1941).
2. General Electric Co. v. DeForest Radio Co., 28 F 2d 641.
3. Expanded Metal Co. v. Bradford, 214 U.S. 366 (1909).
4. Morton v. New York Eye Infirmary, 17 Fed. Cas. 879, 5 Blatchf. 116 (1862).
5. American Fruit Growers, Inc. v. Brogdex Co., 283 U.S. 1.
6. Steinfur Patents Corp. v. William Beyer, Inc., 62 F 2d 238.
7. Application of Schittler, CCPA, 234 F 2d 882, 887.
8. Doyle v. Spaulding, C.C. 19 F. 744; Westinghouse Machine Co. v. General Electric Co., 2 Cir., 207 F. 75, City of Milwaukee v. Activated Sludge, Inc., 7-Cir., 69 F. 2d 577.
9. Paddies, Inc. v. Broadway Dept. Stores, 147 F. Supp. 373.
10. Elizabeth v. Pavement Co., 1877, 97 U.S. 126, 134-135.
11. Egbert v. Lippman, 104 U.S. 333.
12. U.S. Chemical Corporation v. Plastic Glass Corporation, 3 Cir., 243 F. 2d 892 (1957).
13. The United States is a signatory to this 1952 Convention, implemented into our law by Public Law 743, 83d Congress, effective September 16, 1955.
14. Convention of Paris for the Protection of Industrial Property of March 20, 1883, as amended December 14, 1900 (Brussels); June 2, 1911 (Washington, D.C.); November 6, 1925 (The Hague); June 2, 1934 (London). A further conference at Lisbon, October 6-31, 1958 resulted in further amendments.
15. Patent Office Rule of Practice No. 131.
16. The Armed Services Procurement Regulations provide an exception in cases where the Government funds are relatively small and in other similar circumstances.
17. Cuno Engineering Corp. v. Automatic Devices Corp., U.S. 84, 91 (1941).
18. Hotchkiss v. Greenwood, 11 How. 248, 267 (1850).
19. George E. Frost, "The Patent System and the Modern Economy," Senate Subcommittee on Patents, Trademarks and Copyrights, of the Committee on the Judiciary, Study No. 2, page 77, 84th Congress, 2d Session (1956).
20. Lyon v. Bausch & Lomb Optical Co., 2 Cir., 224 F. 2d 530 (1955), certiorari denied 350 U.S. 911, 955.
21. See above, fn. 19.

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22. Bates v. Coe, 98 U.S. 31, 48 (1878), Imhauser v. Buerk, 101 U.S. 647, 660 (1879), Parks v. Booth, 102 U.S. 96 (1880).
23. Glagovsky v. Bowcraft, 164 F. Supp. 189, 190, 1 Cir., 267 F. 2d 479 (1959), certiorari denied 361 U.S. 884.
24. Gray v. Eastman Kodak Co., 7 F. Supp. 321, 322, reversed 3 Cir. 67 F. 2d 190, 194 (1933). Though the Supreme Court reversed at 292 U.S. 332 (293 U.S. 628), it was only because of a defect in appellate procedure.
25. Application of Ruff and Dukeshire, CCPA, 256 F. 2d 590, 598 (1958).
26. "Recurrence of Fundamentals," in American Bar Association Journal, Vol. 30, p. 623 (1944).
27. S. D. Warren Co. v. Nashua Gummed and Coated Paper Co., 1 Cir., 205 F. 2d 602, 605 (1953).
28. Loom Co. v. Higgins, 105 U.S. 580, 591 (1854).
29. 143 U.S. 275, 283 (1892).
30. Potts v. Creager, 155 U.S. 597, 608 (1895).
31. Diamond Rubber Co. of N.Y. v. Consolidated Rubber Tire Co., 220 U.S. 428, 434 (1911).
32. Eibel Process Co. v. Minnesota and Ontario Paper Co., 261 U.S. 45 (1923).
33. Goodyear Tire and Rubber Co., Inc. v. Ray-O-Vac Co., 321 U.S. 275, 279 (1944).
34. Radio Corp. of America v. Radio Engineering Laboratories, Inc., 293 U.S. 1, 7-8 (1934).
35. 13 F.R.D. 463, 469.
36. Williams Mfg. Co. v. United Shoe Machinery Corp., 316 U.S. 364, 392 (1942).
37. United Shoe Machinery Corp. v. Muther, 1 Cir., 288, 287 (1923).
38. Great Atlantic and Pacific Tea Co. v. Supermarket Equipment Corp., 340 U.S. 147, 158 (1950).
39. Van Heusen Products, Inc. v. Earl and Wilson, 300 F. 922, 925 (1924).
40. Krementz v. The S. Cottle Co., 148 U.S. 556 (1893).
41. Donald A. Schon, "Champions for Radical New Inventions," Harvard Business Review, Vol. 41, No. 2, p. 77 (1963).
42. "Angry Inventors," in Wall Street Journal, May 10, 1963.
43. See above, fn. 41.
44. Benjamin F. Miessner, "Today's Inventor—A Study in Frustration," in American Engineer, Vol. 33, No. 4, pp. 38-40 (1963).