THE OTHER CONSTITUTIONAL IP CONTEXT: PATENT LAW

Oxford History: 268-271

Types of Patents: Utility (35 U.S.C. § 101 *et seq.*), plant (§ 161), design (§ 171-173)

Patentability

DIAMOND v. CHAKRABARTY
447 U.S. 303 (1980) (patentable subject matter)

Mr. Chief Justice BURGER delivered the opinion of the Court.

I

[Respondent Chakrabarty filed a patent application for a human-made, genetically engineered bacterium of the genus Pseudomonas, containing at least two stable plasmids. This bacterium was capable of breaking down multiple components of crude oil so as to aid in cleaning up oil spills more efficiently than existing methods which relied on naturally occurring bacteria. The patent examiner held that the genetically engineered bacteria were not patentable subject matter under 35 U.S.C. § 101 because (1) they were "products of nature" and (2) they were living things. The Patent Office Board of Appeals affirmed, concluding that while the human-made bacteria were not "products of nature" (because their plasmid content was higher than that of naturally occurring bacteria), nonetheless § 101 was not intended to cover living things. The Court of Customs and Patent Appeals (or CCPA, a precursor to the current U.S. Court of Appeals for the Federal Circuit) reversed, relying on its decision in *In re Bergy*, 563 F.2d 1031, 1038 (1977), that "the fact that the microorganisms . . . are alive" is "without legal significance" for patent law purposes.]

II

The Constitution grants Congress broad power to legislate to "promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." Art. I, § 8, cl. 8. The patent laws promote this progress by offering inventors exclusive rights for a limited period as an incentive for their inventiveness and research efforts. *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 480-481 (1974); *Universal Oil Co. v. Globe Co.*, 322 U.S. 471, 484 (1944). The authority of Congress is exercised in the hope that "[t]he productive effort thereby fostered will have a positive effect on society through the introduction of new products and processes of manufacture into the economy, and the emanations by way of increased employment and better lives for our citizens." *Kewanee, supra*, 416 U.S., at 480.

The question before us in this case is a narrow one of statutory interpretation requiring us to construe 35 U.S.C. § 101, which provides:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Specifically, we must decide whether respondent's micro-organism constitutes a "manufacture" or "composition of matter" within the meaning of the statute.

III

. . . [In the absence of a statutory definition, t]his Court has read the term "manufacture" in § 101 in accordance with its dictionary definition to mean "the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery." *American Fruit Growers, Inc. v. Brogdex Co.*, 283 U.S. 1, 11 (1931). Similarly, "composition of matter" has been construed consistent with its common usage to include "all compositions of two or more substances and . . . all composite articles, whether they be the results of chemical union, or of mechanical mixture, or whether they be gases, fluids, powders or solids." *Shell Development Co. v. Watson*, 149 F.Supp. 279, 280 (D.C.1957) (citing 1 A. Deller, Walker on Patents § 14, p. 55 (1st ed. 1937)). In choosing such expansive terms as "manufacture" and "composition of matter," modified by the comprehensive "any," Congress plainly contemplated that the patent laws would be given wide scope.

The relevant legislative history also supports a broad construction. The Patent Act of 1793, authored by Thomas Jefferson, defined statutory subject matter as "any new and useful art, machine, manufacture, or composition of matter, or any new or useful improvement [thereof]." The Act embodied Jefferson's philosophy that "ingenuity should receive a liberal encouragement." 5 Writings of Thomas Jefferson 75-76 (Washington ed. 1871). . . . Subsequent patent statutes in 1836, 1870, and 1874 employed this same broad language. In 1952, when the patent laws were recodified, Congress replaced the word "art" with "process," but otherwise left Jefferson's language intact. The Committee Reports accompanying the 1952 Act inform us that Congress intended statutory subject matter to "include anything under the sun that is made by man." . . .

This is not to suggest that § 101 has no limits or that it embraces every discovery. The laws of nature, physical phenomena, and abstract ideas have been held not patentable. Thus, a new mineral discovered in the earth or a new plant found in the wild is not patentable subject matter. Likewise, Einstein could not patent his celebrated law that E=mc; nor could Newton have patented the law of gravity. Such discoveries are "manifestations of . . . nature, free to all

men and reserved exclusively to none." [*Funk Brothers Seed Co. v. Kalo Inoculant Co.,* 333 U.S. 127, 130 (1948).]

Judged in this light, respondent's micro-organism plainly qualifies as patentable subject matter. His claim is not to a hitherto unknown natural phenomenon, but to a nonnaturally occurring manufacture or composition of matter -- a product of human ingenuity "having a distinctive name, character [and] use." *Hartranft v. Wiegmann*, 121 U.S. 609, 615 (1887). The point is underscored dramatically by comparison of the invention here with that in *Funk*. There, the patentee had discovered that there existed in nature certain species of root-nodule bacteria which did not exert a mutually inhibitive effect on each other. He used that discovery to produce a mixed culture capable of inoculating the seeds of leguminous plants. Concluding that the patentee had discovered "only some of the handiwork of nature," the Court ruled the product nonpatentable:

> Each of the species of root-nodule bacteria contained in the package infects the same group of leguminous plants which it always infected. No species acquires a different use. The combination of species produces no new bacteria, no change in the six species of bacteria, and no enlargement of the range of their utility. Each species has the same effect it always had. The bacteria perform in their natural way. Their use in combination does not improve in any way their natural functioning. They serve the ends nature originally provided and act quite independently of any effort of the patentee.

333 U.S., at 131. Here, by contrast, the patentee has produced a new bacterium with markedly different characteristics from any found in nature and one having the potential for significant utility. His discovery is not nature's handiwork, but his own; accordingly it is patentable subject matter under § 101.

IV

Two contrary arguments are advanced, neither of which we find persuasive.

The petitioner's first argument rests on the enactment of the 1930 Plant Patent Act, which afforded patent protection to certain asexually reproduced plants, and the 1970 Plant Variety Protection Act, which authorized protection for certain sexually reproduced plants but excluded bacteria from its protection. In the petitioner's view, the passage of these Acts evidences congressional understanding that the terms "manufacture" or "composition of matter" do not include living things; if they did, the petitioner argues, neither Act would have been necessary.

We reject this argument. . . . [A]bsent some clear indication that Congress "focused on [the] issues . . . directly related to the one presently before the Court," *SEC v. Sloan*, 436 U.S. 103, 120-121 (1978), there is no basis for reading into its actions an intent to modify the plain meaning of the words found in § 101. . . .

The petitioner's second argument is that micro-organisms cannot qualify as patentable subject matter until Congress expressly authorizes such protection. His position rests on the fact that genetic technology was unforeseen when Congress enacted § 101. From this it is argued that resolution of the patentability of inventions such as respondent's should be left to Congress. The legislative process, the petitioner argues, is best equipped to weigh the competing economic, social, and scientific considerations involved, and to determine whether living organisms produced by genetic engineering should receive patent protection. In support of this position, the petitioner relies on our recent holding in *Parker v. Flook*, 437 U.S. 584 (1978), and the statement that the judiciary "must proceed cautiously when . . . asked to extend patent rights into areas wholly unforeseen by Congress." *Id.*, at 596.

It is, of course, correct that Congress, not the courts, must define the limits of patentability; but it is equally true that once Congress has spoken it is "the province and duty of the judicial department to say what the law is." *Marbury v. Madison*, 1 Cranch 137, 177 (1803). Congress has performed its constitutional role in defining patentable subject matter in § 101; we perform ours in construing the language Congress has employed. In so doing, our obligation is to take statutes as we find them, guided, if ambiguity appears, by the legislative history and statutory purpose. Here, we perceive no ambiguity. The subject-matter provisions of the patent law have been cast in broad terms to fulfill the constitutional and statutory goal of promoting "the Progress of Science and the [sic] useful Arts" with all that means for the social and economic benefits envisioned by Jefferson. Broad general language is not necessarily ambiguous when congressional objectives require broad terms.

Nothing in *Flook* is to the contrary. That case applied our prior precedents to determine that a "claim for an improved method of calculation, even when tied to a specific end use, is unpatentable subject matter under § 101." 437 U.S., at 595, n. 18. The Court carefully scrutinized the claim at issue to determine whether it was precluded from patent protection under "the principles underlying the prohibition against patents for 'ideas' or phenomena of nature." *Id.*, at 593. We have done that here. *Flook* did not announce a new principle that inventions in areas not contemplated by Congress when the patent laws were enacted are unpatentable *per se.*

To read that concept into *Flook* would frustrate the purposes of the patent law. This Court frequently has observed that a statute is not to be confined to the "particular application[s] . . . contemplated by the legislators." *Barr v. United States*, 324 U.S. 83, 90 (1945). . . . This is especially true in the field of patent law. A rule that unanticipated inventions are without protection would conflict with the core concept of the patent law that anticipation undermines patentability. See *Graham v. John Deere Co.*, 383 U.S., at 12-17. Mr. Justice Douglas reminded that the inventions most benefiting mankind are those that "push back the frontiers of chemistry,

physics, and the like." *Great A. & P. Tea Co. v. Supermarket Corp.*, 340 U.S. 147, 154 (1950) (concurring opinion). Congress employed broad general language in drafting § 101 precisely because such inventions are often unforeseeable. . . .

Accordingly, the judgment of the Court of Customs and Patent Appeals is AFFIRMED.

Mr. Justice Brennan, with whom Mr. Justice White, Mr. Justice Marshall, and Mr. Justice Powell join, dissenting. . . .

The patent laws attempt to reconcile this Nation's deep seated antipathy to monopolies with the need to encourage progress. *Deepsouth Packing Co. v. Laitram Corp*., 406 U.S. 518, 530-531 (1972); *Graham v. John Deere Co*., 383 U.S. 1, 7-10 (1966). Given the complexity and legislative nature of this delicate task, we must be careful to extend patent protection no further than Congress has provided. . . .

Other Recently Recognized Categories of Patentable Subject Matter: computer programs, *Diamond v. Diehr*, 450 U.S. 175 (1981); business methods, *State Street Bank & Trust Co. v. Signature Financial Group*, 149 F.3d 1368 (Fed. Cir. 1998), and *Bilski v. Kappos*, 130 U.S. 3218 (2010)

Ineligible Matter: laws of nature, products of nature, atomic weaponry, etc.

BRENNER v. MANSON

383 U.S. 519 (1966) (utility)

Mr. Justice FORTAS delivered the opinion of the Court.

[An examiner in the Patent Office rejected Manson's application for a patent on a chemical process which produced certain know steroids, basing the rejection of Manson's failure "to disclose any utility for" the steroids as required by 35 U.S.C. § 101, even though Manson had established that a closely related steroid had tumor-inhibiting effect in mice. The Board of Appeals concluded that "the statutory requirement of usefulness cannot be presumed merely because it happens to be closely related to another compound which is known to be useful." The CCPA reversed, holding that "where a claimed process produces a known product it is not necessary to show utility for the product," so long as the produce is not "detrimental to the public interest."]

Our starting point is the proposition, neither disputed nor disputable, that one may patent only that which is "useful." . . . [T]he concept of utility has maintained a central place in all of our patent legislation, beginning with the first patent law in 1790 and culminating in the present law's provision that

> "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title." . . .

As is so often the case, however, a simple, everyday word can be pregnant with ambiguity when applied to the facts of life. That this is so is demonstrated by the present conflict between the Patent Office and the CCPA over how the test is to be applied . . .

It is not remarkable that differences arise as to how the test of usefulness is to be applied to chemical processes. Even if we knew precisely what Congress meant in 1790 when it devised the "new and useful" phraseology and in subsequent re-enactments of the test, we should have difficulty in applying it in the context of contemporary chemistry where research is as comprehensive as man's grasp and where little or nothing is wholly beyond the pale of "utility" -- if that word is given its broadest reach.

Respondent does not -- at least in the first instance -- rest upon the extreme proposition, advanced by the court below, that a novel chemical process is patentable so long as it yields the intended product and so long as the product is not itself "detrimental." Nor does he commit the outcome of his claim to the slightly more conventional proposition that any process is "useful" within the meaning of § 101 if it produces a compound whose potential usefulness is under investigation by serious scientific researchers, although he urges this position, too, as an alternative basis for affirming the decision of the CCPA. Rather, he begins with the much more orthodox argument that his process has a specific utility which would entitle him to a declaration of interference even under the Patent Office's reading of § 101. The claim is that the supporting affidavits filed [with the Patent Office], by reference to Ringold's 1956 article, reveal that an adjacent homologue of the steroid yielded by his process has been demonstrated to have tumor-inhibiting effects in mice, and that this discloses the requisite utility. We do not accept any of these theories as an adequate basis for overriding the determination of the Patent Office that the "utility" requirement has not been met.

Even on the assumption that the process would be patentable were respondent to show that the steroid produced had a tumor-inhibiting effect in mice, we would not overrule the Patent Office finding that respondent has not made such a showing. The Patent Office held that, despite the reference to the adjacent homologue, respondent's papers did not disclose a sufficient likelihood that the steroid yielded by his process would have similar tumor-inhibiting characteristics. Indeed, respondent himself recognized that the presumption that adjacent homologues have the same utility has been challenged in the steroid field because of "a greater known unpredictability of compounds in that field." In these circumstances and in this technical area, we would not overturn the finding of the Primary Examiner, affirmed by the Board of Appeals and not challenged by the CCPA.

The second and third points of respondent's argument present issues of much importance. Is a chemical process "useful" within the meaning of § 101 either (1) because it works -- i.e., produces the intended product? or (2) because the compound yielded belongs to a class of compounds now the subject of serious scientific investigation? These contentions present the basic problem for our adjudication. Since we find no specific assistance in the legislative materials underlying § 101, we are remitted to an analysis of the problem in light of

the general intent of Congress, the purposes of the patent system, and the implications of a decision one way or the other.

In support of his plea that we attenuate the requirement of “utility,” respondent relies upon Justice Story's well-known statement that a “useful” invention is one “which may be applied to a beneficial use in society, in contradistinction to an invention injurious to the morals, health, or good order of society, or frivolous and insignificant” -- and upon the assertion that to do so would encourage inventors of new processes to publicize the event for the benefit of the entire scientific community, thus widening the search for uses and increasing the fund of scientific knowledge. Justice Story's language sheds little light on our subject. Narrowly read, it does no more than compel us to decide whether the invention in question is “frivolous and insignificant” -- a query no easier of application than the one built into the statute. Read more broadly, so as to allow the patenting of any invention not positively harmful to society, it places such a special meaning on the word “useful” that we cannot accept it in the absence of evidence that Congress so intended. There are, after all, many things in this world which may not be considered “useful” but which, nevertheless are totally without a capacity for harm.

It is true, of course, that one of the purposes of the patent system is to encourage dissemination of information concerning discoveries and inventions. And it may be that inability to patent a process to some extent discourages disclosure and leads to greater secrecy than would otherwise be the case. The inventor of the process, or the corporate organization by which he is employed, has some incentive to keep the invention secret while uses for the product are searched out. However, in light of the highly developed art of drafting patent claims so that they disclose as little useful information as possible -- while broadening the scope of the claim as widely as possible -- the argument based upon the virtue of disclosure must be warily evaluated. Moreover, the pressure for secrecy is easily exaggerated, for if the inventor of a process cannot himself ascertain a “use” for that which his process yields, he has every incentive to make his invention known to those able to do so. Finally, how likely is disclosure of a patented process to spur research by others into the uses to which the product may be put? To the extent that the patentee has power to enforce his patent, there is little incentive for others to undertake a search for uses.

Whatever weight is attached to the value of encouraging disclosure and of inhibiting secrecy, we believe a more compelling consideration is that a process patent in the chemical field, which has not been developed and pointed to the degree of specific utility, creates a monopoly of knowledge which should be granted only if clearly commanded by the statute. Until the process claim has been reduced to production of a product shown to be useful, the metes and bounds of that monopoly are not capable of precise delineation. It may engross a vast, unknown, and perhaps unknowable area. Such a patent may confer power to block off whole areas of scientific development, without compensating benefit to the public. The basic *quid pro quo* contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility. Unless and until a process is refined and developed to this point--where specific benefit exists in currently available form -- there is insufficient justification for permitting an applicant to engross what may prove to be a broad field.

These arguments for and against the patentability of a process which either has no known use or is useful only in the sense that it may be an object of scientific research would apply equally to the patenting of the product produced by the process. Respondent appears to concede that with respect to a product, as opposed to a process, Congress has struck the balance on the side of nonpatentability unless "utility" is shown. Indeed, the decisions of the CCPA are in accord with the view that a product may not be patented absent a showing of utility greater than any adduced in the present case. We find absolutely no warrant for the proposition that although Congress intended that no patent be granted on a chemical compound whose sole "utility" consists of its potential role as an object of use-testing, a different set of rules was meant to apply to the process which yielded the unpatentable product. That proposition seems to us little more than an attempt to evade the impact of the rules which concededly govern patentability of the product itself.

This is not to say that we mean to disparage the importance of contributions to the fund of scientific information short of the invention of something "useful," or that we are blind to the prospect that what now seems without 'use' may tomorrow command the grateful attention of the public. But a patent is not a hunting license. It is not a reward for the search, but compensation for its successful conclusion. "[A] patent system must be related to the world of commerce rather than to the realm of philosophy * * *" [citing *Application of Ruschig*, 343 F.2d 965, 970 (CCPA 1965)].

The judgment of the CCPA is REVERSED.

Mr. Justice HARLAN, concurring in part and dissenting in part. . . .

What I find most troubling about the result reached by the Court is the impact it may have on chemical research. Chemistry is a highly interrelated field and a tangible benefit for society may be the outcome of a number of different discoveries, one discovery building upon the next. To encourage one chemist or research facility to invent and disseminate new processes and products may be vital to progress, although the product or process be without 'utility' as the Court defines the term, because that discovery permits someone else to take a further but perhaps less difficult step leading to a commercially useful item. In my view, our awareness in this age of the importance of achieving and publicizing basic research should lead this Court to resolve uncertainties in its favor and uphold the respondent's position in this case. . . .

GAYLER v. WILDER

51 U.S. (How.) 477 (1850) (novelty)

Mr. Chief Justice TANEY delivered the opinion of the court.

[Wilder, the assignee of a patent, brought an action against Gayler and another for an alleged infringement of a patent for the use of plaster of Paris in the construction of fire-proof

chests (i.e., safes). The declaration averred that one Fitzgerald was the original and first inventor of a new and useful improvement in fire-proof chests, and that letters patent were granted to him for them in 1843.]

It appears that James Conner, who carried on the business of a stereotype founder in the city of New York, made a safe for his own use between the years 1829 and 1832, for the protection of his papers against fire; and continued to use it until 1838, when it passed into other hands. . . .

It does not appear what became of this safe afterwards. And there is nothing in the testimony from which it can be inferred that its mode of construction was known to the person into whose possession it fell . . .

Upon these facts the court instructed the jury, "that if Connor had not made his discovery public, but had used it simply for his own private purpose, and it had been finally forgotten or abandoned, such a discovery and use would be no obstacle to the taking out of a patent by Fitzgerald or those claiming under him, if he be an original, though not the first, inventor or discoverer." . . .

The act of 1836, ch. 357, § 6, authorizes a patent where the party has discovered or invented a new and useful improvement, "not known or used by others before his discovery or invention." And the 15th section provides that, if it appears on the trial of an action brought for the infringement of a patent that the patentee "was not the original and first inventor or discoverer of the thing patented," the verdict shall be for the defendant.

Upon a literal construction of these particular words, the patentee in this case certainly was not the original and first inventor or discoverer, if the Conner safe was the same with his, and preceded his discovery.

But we do not think that this construction would carry into effect the intention of the legislature. It is not by detached words and phrases that a statute ought to be expounded. The whole act must be taken together, and a fair interpretation given to it, neither extending nor restricting it beyond the legitimate import of its language, and its obvious policy and object. And in the 15th section, after making the provision above mentioned, there is a further provision, that, if it shall appear that the patentee at the time of his application for the patent believed himself to be the first inventor, the patent shall not be void on account of the invention or discovery having been known or used in any foreign country, it not appearing that it had been before patented or described in any printed publication.

In the case thus provided for, the party who invents is not strictly speaking the first and original inventor. The law assumes that the improvement may have been known and used before his discovery. . . . The clause in question qualifies the words before used, and shows that by knowledge and use the legislature meant knowledge and use existing in a manner

accessible to the public. If the foreign invention had been printed or patented, it was already given to the world and open to the people of this country, as well as of others, upon reasonable inquiry. They would therefore derive no advantage from the invention here. It would confer no benefit upon the community, and the inventor therefore is not considered to be entitled to the reward. But if the foreign discovery is not patented, nor described in any printed publication, it might be known and used in remote places for ages, and the people of this country be unable to profit by it. The means of obtaining knowledge would not be within their reach; and, as far as their interest is concerned, it would be the same thing as if the improvement had never been discovered. It is the inventor here that brings it to them, and places it in their possession. And as he does this by the effort of his own genius, the law regards him as the first and original inventor, and protects his patent, although the improvement had in fact been invented before, and used by others. . . .

Upon the same principle and upon the same rule of construction, we think that Fitzgerald must be regarded as the first and original inventor of the safe in question [and that] there is no error in [the Circuit Court's] instruction. For if the Conner safe had passed away from the memory of Conner himself, and of those who had seen it, and the safe itself had disappeared, the knowledge of the improvement was as completely lost as if it had never been discovered. The public could derive no benefit from it until it was discovered by another inventor. And if Fitzgerald made his discovery by his own efforts, without any knowledge of Conner's, he invented an improvement that was then new, and at that time unknown . . .

. . . [If] there was no existing and living knowledge of this improvement [i.e., fore-proof chests], or of its former use, at the time [Fitzgerald] made the discovery[,] whatever benefit any individual may derive from it in the safety of his papers, he owes entirely to the genius and exertions of Fitzgerald.

. . . [T]he judgment is therefore affirmed.

Mr. Justice McLEAN [dissenting]. . . .

If there be anything clear in the patent law, it is that the original inventor means the first inventor . . . Now, if the invention was patented abroad, or was described in a foreign publication, both of which were unknown to the inventor in this country, still his patent is void. So it is void, if such invention has been known to any person in this country. The instruction says, if Conner's invention "had been forgotten or abandoned," it was no obstacle to Fitzgerald's right. Can a thing be forgotten or abandoned that was never known? If known before Fitzgerald's invention, it is fatal to it. . . .

The instruction seems to attach great importance to the fact that Conner's safe was used only for his private purpose. This is of no importance. The invention is the question, and not the

manner in which the inventor used it. . . . [T]he act is express, -- *if the thing patented was known before*, the patent is void. . . .

GRAHAM v. JOHN DEERE CO.

383 U.S. 1 (1966) (nonobviousness)

Mr. Justice CLARK delivered the opinion of the Court.

After a lapse of 15 years, the Court again focuses its attention on the patentability of inventions under the standard of Art. I, s 8, cl. 8, of the Constitution and under the conditions prescribed by the laws of the United States. Since our last expression on patent validity, *Great A. & P. Tea Co. v. Supermarket Equipment Corp.*, 340 U.S. 147 (1950), the Congress has for the first time expressly added a third statutory dimension to the two requirements of novelty and utility that had been the sole statutory test since the Patent Act of 1793. This is the test of obviousness, i.e., whether "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." § 103 of the Patent Act of 1952.

The questions . . . are what effect the 1952 Act had upon traditional statutory and judicial tests of patentability and what definitive tests are now required. We have concluded that the 1952 Act was intended to codify judicial precedents embracing the principle long ago announced by this Court in *Hotchkiss v. Greenwood*, 11 How. 248 (1851), and that, while the clear language of § 103 places emphasis on an inquiry into obviousness, the general level of innovation necessary to sustain patentability remains the same.

I.

. . . *Graham v. John Deere Co.,* an infringement suit by petitioners, presents a conflict between two Circuits over the validity of a single patent on a "Clamp for vibrating Shank Plows." The invention, a combination of old mechanical elements, involves a device designed to absorb shock from plow shanks as they plow through rocky soil and thus to prevent damage to the plow. . . .

III.

. . . This Court formulated a general condition of patentability in 1851 in *Hotchkiss v. Greenwood*, 11 How. 248 (1851). The patent involved a mere substitution of materials -- porcelain or clay for wood or metal in doorknobs -- and the Court condemned it, holding:

> "[U]nless more ingenuity and skill * * * were required * * * than were possessed by an ordinary mechanic acquainted with the business, there was an absence of that degree of skill and ingenuity which constitute essential elements of every invention. In other words, the improvement is the work of the skilful mechanic, not that of the inventor." At p. 267.

Hotchkiss, by positing the condition that a patentable invention evidence more ingenuity and skill than that possessed by an ordinary mechanic acquainted with the business, merely distinguished between new and useful innovations that were capable of sustaining a patent and those that were not. The *Hotchkiss* test laid the cornerstone of the judicial evolution suggested by Jefferson and left to the courts by Congress. . . . In practice, *Hotchkiss* has required a comparison between the subject matter of the patent, or patent application, and the background skill of the calling. It has been from this comparison that patentability was in each case determined.

IV.

. . . . The pivotal section [of the 1954 Patent Act] around which the present controversy centers is § 103. It provides:

> § 103. *Conditions for patentability; non-obvious subject matter*
>
> "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.

The section is cast in relatively unambiguous terms. Patentability is to depend, in addition to novelty and utility, upon the "non-obvious" nature of the "subject matter sought to be patented" to a person having ordinary skill in the pertinent art. The first sentence of this section is strongly reminiscent of the language in *Hotchkiss*. Both formulations place emphasis on the pertinent art existing at the time the invention was made and both are implicitly tied to advances in that art. The major distinction is that Congress has emphasized "nonobviousness" as the operative test of the section, rather than the less definite "invention" language of Hotchkiss that Congress thought had led to "a large variety" of expressions in decisions and writings. . . .

It is undisputed that this section was, for the first time, a statutory expression of an additional requirement for patentability, originally expressed in *Hotchkiss*. It also seems apparent that Congress intended by the last sentence of § 103 to abolish the test it believed this Court announced in the controversial phrase "flash of creative genius," used in *Cuno Corp. v. Automatic Devices Corp.*, 314 U.S. 84 (1941). . . .

We believe that this legislative history, as well as other sources, shows that the revision was not intended by Congress to change the general level of patentable invention. We conclude that the section was intended merely as a codification of judicial precedents embracing the Hotchkiss condition, with congressional directions that inquiries into the obviousness of the subject matter sought to be patented are a prerequisite to patentability.

V.

Approached in this light, the § 103 additional condition, when followed realistically, will permit a more practical test of patentability. The emphasis on non-obviousness is one of inquiry, not quality, and, as such, comports with the constitutional strictures.

While the ultimate question of patent validity is one of law, the § 103 condition, which is but one of three conditions, each of which must be satisfied, lends itself to several basic factual inquiries. Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy.

This is not to say, however, that there will not be difficulties in applying the nonobviousness test. What is obvious is not a question upon which there is likely to be uniformity of thought in every given factual context. The difficulties, however, are comparable to those encountered daily by the courts in such frames of reference as negligence and scienter, and should be amenable to a case-by-case development. We believe that strict observance of the requirements laid down here will result in that uniformity and definiteness which Congress called for in the 1952 Act. . . .

Although we conclude here that the inquiry which the Patent Office and the courts must make as to patentability must be beamed with greater intensity on the requirements of § 103, it bears repeating that we find no change in the general strictness with which the overall test is to be applied. We have been urged to find in § 103 a relaxed standard, supposedly a congressional reaction to the “increased standard” applied by this Court in its decisions over the last 20 or 30 years. The standard has remained invariable in this Court. Technology, however, has advanced-and with remarkable rapidity in the last 50 years. Moreover, the ambit of applicable art in given fields of science has widened by disciplines unheard of a half century ago. It is but an evenhanded application to require that those persons granted the benefit of a patent monopoly be charged with an awareness of these changed conditions. The same is true

of the less technical, but still useful arts. He who seeks to build a better mousetrap today has a long path to tread before reaching the Patent Office.

VI.

We now turn to the application of the conditions found necessary for patentability to the case[] involved here: . . .

Th[e] patent, No. 2,627,798 (hereinafter called the '798 patent) relates to a spring clamp which permits plow shanks to be pushed upward when they hit obstructions in the soil, and then springs the shanks back into normal position when the obstruction is passed over. . . .

We find no nonobvious facets in the '798 arrangement. . . .

Judgment of Court of Appeals in No. 11 affirmed. . . .

Disclosure Sufficiency Doctrines:

Definiteness
Enablement
Written Description
Best Mode

Statutory Bars:

Prior Patent
Prior Publication
Public Use in U.S. (vs. Experimental Use)
On-Sale in U.S.

Content and Term of Patent (a.k.a. Rights and Duration):

35 U.S.C. § 154
Contents and term of patent . . .

(a) In General. –

(1) Contents. -- Every patent shall contain a short title of the invention and a grant to the patentee, his heirs or assigns, of the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States, and, if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States, or importing into the United States, products made by that process, referring to the specification for the particulars thereof.

(2) Term. -- Subject to the payment of fees under this title, such grant shall be for a term beginning on the date on which the patent issues and ending 20 years from the date on which the application for the patent was filed in the United States . . .

Infringement:

AUTOGIRO CO. OF AMERICA v. UNITED STATES

384 F.2d 391 (U.S. Ct. Cl., App. Div., 1967)

DURFEE, Judge.

The Autogiro Company of America, a Delaware corporation owning all patents involved in this litigation, sues, under 28 U.S.C. § 1498, to recover the "reasonable and entire compensation" for the Government's allegedly unauthorized use of its patented inventions. . . .

Patent Infringement

I

The Patent Act of 1952 . . . is the controlling law in this case. No previous patent act contained a section on infringement. Congress had always allowed the courts to settle the issue without any legislative guidelines. Section 271(a)* which covers the type of infringement alleged here was not inserted in the Act to clarify any legal problems, but only as a codification of existing judicial determinations.

* 28 U.S.C. § 1498 states in part:

Whenever an invention described in and covered by a patent of the United States is used or manufactured by or for the United States without license of the owner thereof or lawful right to use or manufacture the same, the owner's remedy shall be by action against the United States in the Court of Claims for the recovery of his reasonable and entire compensation for such use and manufacture.

The claims of the patent provide the concise formal definition of the invention. They are the numbered paragraphs which "particularly (point) out and distinctly (claim) the subject matter which the applicant regards as his invention." 35 U.S.C. § 112. It is to these wordings that one must look to determine whether there has been infringement. Courts can neither broaden nor narrow the claims to give the patentee something different than what he has set forth. No matter how great the temptations of fairness or policy making, courts do not rework claims. They only interpret them. Although courts are confined by the language of the claims, they are not, however, confined to the language of the claims in interpreting their meaning. . . .

The very nature of words would make a clear and unambiguous claim a rare occurrence. Writing on statutory interpretation, Justice Frankfurter commented on the inexactitude of words:

> They are symbols of meaning. But unlike mathematical symbols, the phrasing of a document, especially a complicated enactment, seldom attains more than approximate precision. If individual words are inexact symbols, with shifting variables, their configuration can hardly achieve invariant meaning or assured definiteness.

Frankfurter, Some Reflections on the Reading of Statutes, 47 Col.L.Rev. 527, 528 (1947).

The inability of words to achieve precision is none the less extant with patent claims than it is with statutes. The problem is likely more acute with claims. Statutes by definition are the reduction of ideas to print. Since the ability to verbalize is crucial in statutory enactment, legislators develop a facility with words not equally developed in inventors. An invention exists most importantly as a tangible structure or a series of drawings. A verbal portrayal is usually an afterthought written to satisfy the requirements of patent law. This conversion of machine to words allows for unintended idea gaps which cannot be satisfactorily filled. Often the invention is novel and words do not exist to describe it. The dictionary does not always keep abreast of the inventor. It cannot. Things are not made for the sake of words, but words for things. To overcome this lag, patent law allows the inventor to be his own lexicographer.

Allowing the patentee verbal license only augments the difficulty of understanding the claims. The sanction of new words or hybrids from old ones not only leaves one unsure what a rose is, but also unsure whether a rose is a rose. Thus we find that a claim cannot be interpreted without going beyond the claim itself. No matter how clear a claim appears to be, lurking in the background are documents that may completely disrupt initial views on its meaning.

The necessity for a sensible and systematic approach to claim interpretation is axiomatic. The Alice-in-Wonderland view that something means whatever one chooses it to mean makes for enjoyable reading, but bad law. Claims are best construed in connection with

the other parts of the patent instrument and with the circumstances surrounding the inception of the patent application. . . .

II

In deriving the meaning of a claim, we inspect all useful documents and reach what Justice Holmes called the “felt meaning” of the claim. In seeking this goal, we make use of three parts of the patent: the specification, the drawings, and the file wrapper.

Specification. -- Section 112 of the 1952 Patent Act requires the specification to describe the manner and process of making and using the patent so that any person skilled in the patent's art may utilize it. In serving its statutory purpose, the specification aids in ascertaining the scope and meaning of the language employed in the claims inasmuch as words must be used in the same way in both the claims and the specification. The use of the specification as a concordance for the claim is accepted by almost every court, and is a basic concept of patent law. . . .

The specification “set[s] forth the best mode contemplated by the inventor of carrying out his invention.” 35 U.S.C. § 112. This one embodiment of the invention does not restrict the claims. Claim interpretation must not make use of “best mode” terms inasmuch as the patentee need not guard against infringement by listing every possible infringing device in the specification. . . .

Drawings. -- The patent may contain drawings. 35 U.S.C. § 113. In those instances where a visual representation can flesh out words, drawings may be used in the same manner and with the same limitations as the specification.

File wrapper. -- The file wrapper contains the entire record of the proceedings in the Patent Office from the first application papers to the issued patent. Since all express representations of the patent applicant made to induce a patent grant are in the file wrapper, this material provides an accurate charting of the patent's pre-issuance history. One use of the file wrapper is file wrapper estoppel, which is the application of familiar estoppel principles to Patent Office prosecution and patent infringement litigation. The patent applicant must convince the patent examiner that his invention meets the statutory requirements; otherwise, a patent will not be issued. When the application is rejected, the applicant will insert limitations and restrictions for the purpose of inducing the Patent Office to grant his patent. When the patent is issued, the patentee cannot disclaim these alterations and seek an interpretation that would ignore them. He cannot construe the claims narrowly before the Patent Office and later broadly before the courts. File wrapper estoppel serves two functions in claim interpretation; the applicant's statements not only define terms, but also set the barriers within which the claim's meaning must be kept. These results arise when the file wrapper discloses either what the claim covers or what it does not cover.

The file wrapper also has a broader and more general use. This is its utilization, like the specification and drawings, to determine the scope of claims. For example, the prior art cited in the file wrapper is used in this manner. In file wrapper estoppel, it is not the prior art that provides the guidelines, but the applicant's acquiescence with regard to the prior art. In its broader use as source material, the prior art cited in the file wrapper gives clues as to what the claims do not cover.

III

The use of the various parts of the patent to determine the meaning of the claims is only half the process of determining patent infringement. The other half is “reading the claims on the accused structures.” If the claims read literally on the accused structures, an initial hurdle in the test for infringement has been cleared. The race is not over; it has only started. To allow literality to satisfy the test for infringement would force the patent law to reward literary skill and not mechanical creativity. And since the law is to benefit the inventor's genius and not the scrivener's talents, claims must not only read literally on the accused structures, but also the structures must “do the same work, in substantially the same way, and accomplish substantially the same result.” Dominion Magnesium Ltd. v. United States, 320 F.2d 388, 396 (1963). This approach of making literal overlap only a step and not the entire test of infringement has been consistently applied by the courts . . .

If the claims do not read literally on the accused structures, infringement is not necessarily ruled out. The doctrine of equivalence casts around a claim a penumbra which also must be avoided if there is to be no infringement. It provides that a structure infringes, without there being literal overlap, if it performs substantially the same function in substantially the same way and for substantially the same purpose as the claims set forth. Equivalence is the obverse of the discounting of literal overlap. The latter is to protect the accused; the former to protect the patentee. The rationale behind equivalence was set forth by the Supreme Court in Graver Tank & Mfg. Co. v. Linde Air Products Co., [339 U.S. 605, 607 (1950)]:

> [T]o permit imitation of a patented invention which does not copy every literal detail would be to convert the protection of the patent grant into a hollow and useless thing. Such a limitation would leave room for-indeed encourage-the unscrupulous copyist to make unimportant and unsubstantial changes and substitutions in the patent which, though adding nothing, would be enough to take the copied matter outside the claim, and hence outside the reach of the law. * * *

Checking the subordination of substance to form and not depriving the inventor of the benefit of his invention cannot be standardized. The range of equivalence varies with each patent; however, some general guidelines can be drawn. One important guide is whether persons reasonably skilled in the art would have known of the interchangeability of an ingredient

not contained in the patent with one that was. Id. at 609. Another guide is the notion that pioneer patents are to be given wider ranges of equivalence than minor improvement patents. This statement is less a canon of construction and more a shorthand expression for the dictates of the law and the patents themselves. The doctrine of equivalence is subservient to file wrapper estoppel. It may not include within its range anything that would vitiate limitations expressed before the Patent Office. Thus a patent that has been severely limited to avoid the prior art will only have a small range between it and the point beyond which it violates file wrapper estoppel. Similarly a patent which is a major departure from the prior art will have a larger range in which equivalence can function. The scope of the patents also influences the range of equivalence. A pioneer patent which occupies symbolically a six-inch circle will have three inches of equivalence if its range is fifty percent. An improvement patent occupying a two-inch circle has only one inch of equivalence with the same range. Thus with relatively identical ranges, the scope of the patent provides the pioneer patent with absolutely a larger range of equivalence.

IV

In summary, the determination of patent infringement is a two-step process. First, the meaning of the claims in issue must be determined by a study of all relevant patent documents. Secondly, the claims must be read on the accused structures. In doing this, it is of little value that they read literally on the structures. What is crucial is that the structures must do the same work, in substantially the same way, and accomplish substantially the same result to constitute infringement. This is the general approach which this court uses to determine the infringement of all the patent claims properly before it in this case.

The Patents

The patents in suit are concerned with rotor structures and control systems on rotary wing aircraft. . . .

In summary, we find valid all claims found infringed.

Conclusion

Since plaintiff is the lawful owner of all claims found valid and infringed, it is entitled to recover 'reasonable and entire compensation' for the unauthorized use of these claims. Judgment is entered to that effect. The extent of liability will be determined in further proceedings before the trial commissioner . . .

Who Interprets Claims: *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996) (construction of a patent, including terms of art within its claim, is exclusively within the province of the court; hence, *Markman* hearings)

Indirect Infringement: inducement (§ 271(b)); contributory (§ 271(c))

Defenses:

Invalidity, Etc.
Exhaustion after First Sale
Inequitable Conduct, Including Misuse
Other Defenses (Not Including Statute of Limitations)

Remedies:

35 U.S.C. § 283

Injunction

The several courts having jurisdiction of cases under this title may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable.

* * *

According to well-established principles of equity, a plaintiff seeking a permanent injunction must satisfy a four-factor test before a court may grant such relief. A plaintiff must demonstrate: (1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction.

EBay Inc. v. Mercexchange, L.L.C.,
126 S.Ct. 1837 (2006) (Thomas, J.)

35 U.S.C. § 284

Damages

Upon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interest and costs as fixed by the court.

When the damages are not found by a jury, the court shall assess them. In either event the court may increase the damages up to three times the amount found or assessed. Increased damages under this paragraph shall not apply to provisional rights under section 154(d) of this title.

The court may receive expert testimony as an aid to the determination of damages or of what royalty would be reasonable under the circumstances.

35 U.S.C. § 285

Attorney fees

The court in exceptional cases may award reasonable attorney fees to the prevailing party.

35 U.S.C. § 286

Time limitation on damages

. . . [N]o recovery shall be had for any infringement committed more than six years prior to the filing of the complaint or counterclaim for infringement in the action. . . .

Patent Reform?