An invention must be "useful" in order for it to be patentable. In the absence of a definition of this term in any of the patent statutes from 1790 to the present, interpretation of the term "useful" has been left to the judiciary and to the Patent Office which has issued guidelines gleaned from case law. However, legislation recently submitted to Congress attempts to supply a legislative determination of what the term "useful" should include.

The proposed statute states: "The term 'useful' shall include, but shall not be limited to, utility in agriculture, commerce, industry, or research."

This newly proposed definition of "utility" has gained wide acceptance by those most directly affected. The Pharmaceutical Manufacturers Association and the American Patent Law Association have expressed their approval of the term "utility in research."

The Supreme Court treated this entire problem as one of statutory construction when it stated, "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."

This article will discuss the development of the utility requirement from the first Patent Act of 1790 to the present. Since there is no legislative history or evidence of congressional intent, only case law and judicial interpretation is available to interpret what was meant by the statutory require-
ment that an invention must be "useful" in order to obtain a patent. The
doctrine that a specific utility had to be asserted in the patent application
developed in the twentieth century. Earlier case law dealt mainly with
simple mechanical inventions which required minimal utility to satisfy the
statutory mandate. The chemical and pharmaceutical areas were treated
differently from the mechanical area. This dual treatment first started in
1950 when the Court of Customs and Patent Appeals (hereinafter cited as
C.C.P.A.) and the Patent Office both agreed that an application for a patent
had to positively assert a specific utility for the invention. Ten years later
the C.C.P.A. tried to reverse this test and return to the earlier standards
of utility that were imposed on chemical inventions. The earlier chemical
standards were similar to the standards imposed on other types of inven-
tions such as machines and articles. The earlier test of utility was one that
required minimal compliance. The Supreme Court handed down its own
interpretation of the utility requirements. This article will discuss that
decision, the new legislation, how it affects that decision, and how to in-
terpret the new definition.

History of the Requirement

The requirement that an invention be "useful" has been in every major
patent statute since 1790. The Patent Act of 1790 granted a patent to those
who discovered any "useful" invention. The Patent Act of 1793 made
little change in this requirement for patentability. The cases decided under
these statutes dealt with mechanical devices and articles, the most famous
of these cases being Lowell v. Lewis and Bedford v. Hunt.

In Lowell, the defendant claimed that the plaintiff's patented pumps
lacked utility. Mr. Justice Story, in the Circuit Court of Massachusetts, ac-
cepted a negative test of utility that is still the criterion for patentability.
He stated: "All that the law requires is, that the invention should not be
frivolous or injurious to the well-being, good policy, or sound morals of
society. The word 'useful' therefore, is incorporated in the act in contradis-
tinction to mischievous or immoral." In Bedford, the patent was granted

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9. Id.
12. The Act states that a patent shall issue to anyone who invents "any useful art,
13. Section 1 states that anyone who invents, "any new and useful art . . . ." is en-
15. 3 F. Cas. 37 (No. 1217) (C.C.D. Mass. 1817).
16. 15 F. Cas. at 1019.
on a shoeboot. Again the utility issue was raised, and again Mr. Justice Story concluded that the statute merely requires some beneficial use in society. One need not establish the superiority of his invention. If the practical utility of the invention were limited, the invention would only be of "little or no profit to the inventor."\textsuperscript{17} It was not the degree of utility that governed but only that the invention should be capable of some use. In \textit{Bedford}, the negative test again applied, \textit{i.e.}, an invention is useful if it is not frivolous or in contravention of public policy.

In \textit{Thompson v. Haight},\textsuperscript{18} the application had been made for a method of making carpets. The court held that an invention under the Patent Act of 1793 must be substantially useful and not merely a contrivance without any other merit than novelty. This minimal test of utility was easy to apply to simple mechanical devices, but how does one establish utility for a specific new chemical compound? Can a utility be established by those skilled in the art if the utility is obvious to them because of its properties? Or is a disclosed use a prerequisite to patentability? How much description of the specific use must be included in the application before a patent can issue? Does utility ultimately become the requirement to satisfy patentability? These are the questions that confront the courts in the 20th century.

An analysis of the early cases interpreting the utility requirement in the statutes sheds little light on the complex doctrine of utility that has evolved with respect to the chemical and pharmaceutical area. There were no early cases reported dealing with compositions of matter (\textit{i.e.}, chemical compounds) and the standard of utility to be applied. "Compositions of matter" have been considered as a statutory category of invention since the Patent Act of 1793, but in view of the lack of early case law, it was impossible to define the requisite standard of utility. The earliest case that discussed a composition of matter was \textit{Langdon v. De Groot}.\textsuperscript{19} In that case there was dicta discussing a patent obtained on a drug. The test of utility was that it must, at the very least, be beneficial to the community. The court suggested that if it found that the twenty patients who were treated with the drug did not survive, it would find that the drug had no utility. That court confused the present safety standards\textsuperscript{20} with concepts of utility. However, the court did not have before it the situation wherein a drug was capable of some beneficial use.

Some of the early cases discussing utility requirements under the Patent

\textsuperscript{17} 3 F. Cas. at 37.
\textsuperscript{18} 23 F. Cas. 1040 (No. 13957) (C.C.S.D.N.Y. 1826).
\textsuperscript{19} 14 F. Cas. 1099 (No. 8059) (C.C.S.D.N.Y. 1822).
Act of 1836\textsuperscript{21} were \textit{Stanley v. Whipple}\textsuperscript{22} and \textit{Roberts v. Ward}\textsuperscript{23}. The first case dealt with a patent on a stove, the latter with a method of constructing boxes for train axles. The decisions were merely affirmations of the earlier theories of utility. In ascertaining utility it was not important that one invention be more valuable than others that accomplish the same result.\textsuperscript{24} The theory that any utility was sufficient under the Acts of 1793 and 1836 was reinforced in \textit{Wintermute v. Redington}.\textsuperscript{26} These cases indicated that the courts were inclined to accept a minimal standard of utility. As long as this minimal utility was disclosed in the application, it was sufficient to meet the statutory requirements. The courts applied the same standard to all categories of invention,\textsuperscript{26} but imposed different levels of proof to establish utility. The case law that developed in the 19th century established a test of utility that was easily met. Most of the cases that discussed the interpretation of the respective statutes were infringement suits. As soon as infringement was established, it was an easy task for the courts to find utility. Obviously the infringer was utilizing the invention, so he could not say it lacked utility. Thus, use by another became prima facie evidence of utility for the patentee.\textsuperscript{27}

Curtis, in his treatise on patents,\textsuperscript{28} concluded that every patent must be capable of use, but, he wrote:

\begin{quote}
the degree of utility, whether larger or smaller, is not a subject for consideration, in determining whether the invention will support a patent. But it is obvious that the capability of use for some beneficial purpose is a material element in determining whether there is a sufficiency of invention to support a patent; the force of the word “useful” \ldots introduced into the statute in connection with the epithet “new” [was] to determine whether the subject-matter \ldots is capable of use, for a purpose for which any advantage can be derived to the public.\textsuperscript{29}
\end{quote}

The early cases and authorities clearly established the definition of the term “utility” in the non-chemical areas. Any utility was sufficient: how useful the invention might be was not important. Where actual utility

\begin{itemize}
\item \textsuperscript{21} Act of July 4, 1836, ch. 357 § 6, 5 Stat. 117. “[A]ny person \ldots having discovered \ldots any new and useful art \ldots” is entitled to a patent. \textit{Id.} at 119.
\item \textsuperscript{22} 22 F. Cas. 1046 (No. 13286) (C.C.D. Ohio 1839).
\item \textsuperscript{23} 20 F. Cas. 936 (No. 11918) (C.C.D. Mich. 1849).
\item \textsuperscript{24} 3 F. Cas. at 37.
\item \textsuperscript{25} 30 F. Cas. 367 (No. 17896) (N.D. Ohio 1856).
\item \textsuperscript{27} \textit{See} Hays v. Sulsor, 11 F. Cas. 915 (No. 6271) (S.D. Ohio 1859).
\item \textsuperscript{28} \textit{See} \textit{In re} Nelson, 126 U.S.P.Q. at 248.
\item \textsuperscript{29} \textit{Id.}.
\end{itemize}
existed, its degree was immaterial. The problem of defining "actual utility" remained.

The In re Bremner Period

Until the decision by the Court of Customs and Patent Appeals in In re Bremner, the test of utility was one that required little evidence to satisfy the statutory mandate. In the mechanical cases discussed earlier it was sufficient if any beneficial function for which the invention could be used was shown. Case law has concluded that commercial use is not required; that perfection is not a test; that strict safety is not required; and that any nonfrivolous, noninjurious use is sufficient. It is not the extent of utility that governs, but the existence of some utility.

In Bremner, no disclosure of utility was made in the application. The invention was related to the production of certain polymers of dihydropyran. The C.C.P.A. was "certain that the law requires that there be in the application an assertion of utility. . . ." The authority for this holding was the Constitution, patent statutes, and four cases—Potter v. Tone, Scoville Mfg. Co. v. Sailer, Smokador Mfg. Co. v. Tubular Products Co. and In re Holmes. In Potter a claim to "silicon monoxid [sic]" was upheld because the disclosed utility as a nonconductor and reducing agent was sufficient. These were mere properties of the material, but a use could easily be gleaned from these properties. The court stated:

To hold that it must be shown to be capable of use in some commercial process and that process must have been successfully practiced would seem to amount to holding that the inventor must make a second invention which might be the subject of another patent. . . . Such apparent usefulness of the newly-discovered compound being shown, nothing more was requisite.

35. See 40 AM. JUR. PATENTS § 43 (1942).
37. 86 U.S.P.Q. at 75.
38. U.S. CONST. art. I, § 8. Neither the Constitution nor statutes relied on required an "assertion of utility".
41. 21 F.2d 630 (D.C.D. Conn. 1927).
42. 31 F.2d 255 (2d Cir. 1929).
43. 16 U.S.P.Q. 399 (C.C.P.A. 1933).
44. 36 App. D.C. at 184.
In the *Scoville* case, a claim to a variable condenser was upheld since utility was established prima facie because of the granting of the patent and the failure to show the total incapacity of the invention to do anything claimed. *Smokador* was an infringement suit in which the utility of an ash tray receptacle (made of clear glass so its contents could be seen), was established merely by the act of infringement. The *Holmes* case dealt with an article that was rejected as unpatentable because prior art showed it to be old and well known. The strength of these authorities for the proposition stated in *Bremner* is questionable. The question presented in *Bremner* was totally unrelated to the factual situations in the four cases cited by the C.C.P.A. The question of whether “an assertion of utility” had to be made in an application was not presented in any of the authorities relied on. The Constitution, statutes, and cases made no mention of the “assertion of utility” as a prerequisite for patentability. The *Bremner* application was unique in that there was a total failure to state any utility. The court’s reliance on *Potter v. Tone* only emphasizes the traditional requirement for utility—that is, capable of some use. “If *Potter v. Tone* be accepted as controlling today, very little additional disclosure in the *Bremner* case would have met the requirement of utility sufficient for patentability.”45 A history of the cases prior to *Bremner* leads one to the conclusion that any organic compound could be useful as an intermediate to make other compounds under the ruling of Ex parte *Watt*46 where use as an intermediate satisfied the utility requirement in the statute.47

After *Bremner* every application had to assert a utility to meet the statutory requirement.48 The Patent Office Board of Appeals in Ex parte *Ladd*49 held that since the art taught a use for an end product it was sufficient to meet the utility requirement. The examiner, relying on *Bremner*, rejected the claims on the grounds that they lacked an assertion of utility. The applicants stated that their compounds were useful as intermediates for certain syntheses and were useful in the preparation of new halogen containing polymers. Since the art recognized that resulting polymers could be made from “very closely related positioned isomers and homologs of the claimed compounds,”50 and since the use of these resulting polymers was known from the prior art, the *Bremner* test was satisfied. An interesting

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45. See 20 GEO. WASH. L. REV. 727, 728 (1952).
47. Of course the problem that arises out of this type of disclosure is not only the satisfaction of “utility” but also the requirements of “how to use” under 35 U.S.C. § 112 (1964).
50. Id. at 338.
dissent by Judge Burger appeared in *Petrocarbon Ltd. v. Watson.* The majority excluded expert testimony to show that those skilled in the art would know what the term "film" meant. The polymers claimed were disclosed to have good thermal stability and acid resistance. Judge Burger felt that the testimony should have been admitted to show whether, in fact, one could easily tell how to use these polymers. Although useful properties were disclosed, the majority stated that a use for the end product was not asserted. Yet the district court in the *Petrocarbon* case refused to allow one skilled in the art to show that the use of the claimed material was obvious!

This area was ripe for clarification when the Court of Customs and Patent Appeals was confronted with *In re Nelson.* Utility as an "intermediate in the preparation of steroids" was asserted. The Patent Office rejection was based on the fact that no allegation was made with respect to the utility of the steroids produced from these intermediates. The applicants contended that new "building blocks" valuable to one doing research were supplied "which have utility as intermediates in the search for cheaper and shorter routes to the synthesis of steroids having therapeutic or similar ultimate utility." Judge Rich concluded that "a new group of steroid intermediates is useful to chemists doing research on steroids." The *Bremner* rule was rejected because mere assertion of utility was inferable from the fact that the application was filed. The court felt the situation in *Nelson* did satisfy the *Bremner* rule because the applicants had asserted that their intermediates were useful in the field of steroid chemistry. "Nothing in the *Bremner* case requires more." An ultimate utility was not a requirement

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51. 247 F.2d 800 (D.C. Cir. 1957).
52. Id. at 802.
54. Id. at 246.
55. Id. at 247.
56. Id. at 250.
57. Id.
58. Id. at 252. At footnote 10, the court stated:
The first point discussed in the *Bremner* opinion was that a patent specification is required by law to assert "utility" and the factual finding was that it did not. We find on review of the record that the court was mistaken in saying there was no assertion of utility, for the opening statement of the *Bremner et al.* specification was that the invention was "new and useful". Upon reflection, we are now of the opinion that a mere assertion of utility in a specification is a meaningless formality and no more required by law than an assertion of novelty. We think it only reasonable to infer from the fact of filing an application that the applicant asserts that the invention is new and useful, for unless it is both he has no right to a patent. 35 U.S.C. 101.
59. Id. at 252.
60. Id.
for patenting. The court pointed out that certain inventions did not require the assertion of utility because merely naming the invention would communicate to one skilled in the art what its use would be. For example, a “match,” “paint,” or “adhesive” would not require a specific recitation of the use to which it may be put because that use may be inherent in a description or may result from a disclosure of properties that would make the use obvious. The factual situation in Nelson was distinguishable from Bremner in that the latter merely stated that the solid polymers of the invention were “resins.” Judge Rich said that this was too broad and had no definite meaning.\textsuperscript{61} The court agreed with Judge Burger’s dissent in Petrocarbon, in which he advocated using expert testimony to show that one skilled in the art would know how to use the invention, and stated that even without such testimony one skilled in the art “would know of many possible uses for the polymers.”\textsuperscript{62} The Supreme Court was finally presented with a similar problem in Brenner v. Manson.\textsuperscript{63}

\textit{The Policy Considerations in Brenner v. Manson}

In the Manson case, the Supreme Court held that an end product of a process whose sole value was that it was employed in research did not make the product useful within the terms of Section 101 of Title 35.\textsuperscript{64} This decision upheld the Bremner test which had been rejected by the C.C.P.A. in the

\textsuperscript{61} Id. at 253.
\textsuperscript{62} Id. at 254.
\textsuperscript{63} 383 U.S. 519 (1964). A complete discussion of the facts of Brenner v. Manson is unwarranted since the field of utility has been deluged with analyses of this case. See Eggert, Uses, New Uses and Chemical Patents—A Proposal, 1968 Wis. L. REV. 901; Meyer, Utility Requirement In The Statute, 49 J. PAT. OFF. SOC’Y 533 (1967); Velvel, A Critique of Brenner vs. Manson, 49 J. PAT. OFF. SOC’Y 5 (1967); Note, The Utility Requirement in Chemical Process and Chemical Intermediate Patent Claims, 9 WM. & MARY L. REV. 826 (1968). In Manson, the application was based on a new process for making specific steroids. The Patent Office rejected the invention for failure to disclose any utility for the steroids produced by the claimed process. The C.C.P.A. reversed and held that where a claimed process produces a known product it was not necessary to show utility for the product. 333 F.2d 234. The Supreme Court reversed the C.C.P.A. and held that a process, to be patentable, must produce a compound that has some utility. 383 U.S. at 535. The Court came to this conclusion by 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.” 383 U.S. at 532. This was their way of stating they would use more logic than law to decide the issue. The Court rejected Justice Story’s “negative test” of utility by stating, “[I]t 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”. 383 U.S. at 533.

\textsuperscript{64} “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.” 35 U.S.C. § 101 (1964).
Nelson case. In Manson, the Court stated that the C.C.P.A. and the Patent Office had agreed on the standard set forth in Bremner, but observed that the C.C.P.A. "has . . . moved sharply away from Bremner."

It has been suggested that the Court may not have realized that the Patent Office had modified the utility requirements as early as 1940. After this modification, the first case to reach the courts was In re Bremner. The Patent Office was apparently satisfied with the Bremner outcome but the trend of the C.C.P.A. after Bremner was to revert to the earlier minimal standards of utility that existed in the mechanical cases.

The Supreme Court's characterization in Manson that the Nelson case engrafted a radical change in the standards applied to interpret the statute appears unsupported. Mr. Justice Harlan's dissenting view points out the true consensus:

While available proof is not conclusive, the commentators seem to be in agreement that until Application of Bremner . . . chemical patent applications were commonly granted although no resulting end use was stated or the statement was in extremely broad terms. Taking this to be true, Bremner represented a deviation from established practice which the C.C.P.A. has now sought to remedy in part only to find that the Patent Office does not want to return to the beaten track.

The government's brief also agrees, in essence, with the proposition that prior to Bremner the Patent Office assumed that chemical compounds were useful.

The Court realized that the purpose of the patent system is to encourage dissemination of information, and the inability of one to obtain a patent on a process of the type claimed in Manson would encourage secrecy until a use for the product was found. But, the majority reasoned, "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 the disclosure must be warily evaluated."

This is a congressional problem, not a judicial one. Claim drafting is controlled by statute. All an applicant has to do is particularly point out

65. 383 U.S. at 530.
67. 383 U.S. at 539-40.
69. 383 U.S. at 534.
and distinctly claim the invention. He may draft his claims as broadly as the disclosure permits. The claims do not provide the disclosure to the public; it is the specification (description of the invention) that is supposed to set forth the invention "in such full, clear, concise and exact terms" so as to allow one skilled in the art to make or use the invention. It should be noted that the case law is well settled with respect to utility in the specification: only one use is required in the specification. But the Court in *Manson* did not consider a research use as being one disclosed use and imposed a higher standard of patentability. The Court declared: "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." This reasoning is faulty. The more logical approach would be to prevent disclosure until a use could be found by the inventor so he could obtain the patent himself. However, the concept of non-disclosure is repugnant to the patent system which encourages early disclosure.

Commentators have pointed out that some "academic researchers" are not interested in profit and would publish their discoveries to enable others to experiment with them. This may be true to some extent, but notice how many colleges and universities are patenting their research results because of the high costs of modern research. The demand for a return on their investment is becoming greater than the demand to divulge their discoveries to academia without first securing patent protection.

The Court in *Manson* also stated that if the type of process disclosed in the application were patented, the disclosure would prevent others from further research for fear of infringing the patent. Thus, there would be little incentive for the public to search for new uses. The patent that would issue on the process grants a monopoly on just that process and not the product that results therefrom. Of course, if this were the only known process for making the product, the patentee could have effectively obtained a second monopoly. However, modern chemists have at their disposal a host of methods for synthesizing compounds and such "second monopolies"

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70. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention. A claim may be written in independent or dependent form, and if independent form, it shall be construed to include all the limitations of the claim incorporated by reference into the independent claim.


71. Id.


73. 383 U.S. at 534.

are rare. Also, the Court might have ignored the fact that the patent statute also grants protection on a "new use" of an old compound. This encourages new use research and does not, as the Court feared, prevent it. It has been suggested that the Court did not know such "new use" protection was available since it was not mentioned in any of the briefs before the Court, nor did the opinion contain any reference to this part of the statute. The Court's discussion of hampering experimentation on the product if a patent was granted is totally unsupported in the case law. Experimental use has never been considered infringing use.

How Should We Define "Utility"?

There is some authority for the premise that compositions are useful per se. Prior to 1950, any organic compound had utility as an intermediate, but subsequent interpretation of the law modified this holding. Judge Rich feels it is an "illegal practice" to require two inventions (discovery of the compound and discovery of its use) before one can be patented. A variety of problems arise in the area of intermediates.

If an intermediate is held unpatentable to one person because a useful end product is not yet known, and later an end product is discovered by another, who is the inventor? Are the two persons joint inventors? "Joint inventor" treatment is not possible because the inventor of the compound was not the inventor of its use. There was no concert of action.

75. Id. at 9. It should be emphasized that the patent grant only gives one the right to exclude others. 35 U.S.C. § 154 (1964). See Herman v. Youngstown Car Mfg. Co., 191 F. 579 (6th Cir. 1911). The result of a "new use" patent is that the patentee must obtain the patented compound in order to practice his own "new use" invention. If the patentee of the compound refuses to license or sell the compound the "new use" patentee is effectively precluded from practicing his own invention. What might occur is a cross-licensing agreement that would be beneficial to both parties. There is an area of public policy that might be affected by a monopoly on a compound when the patentee refuses to make the compound available. The public need for a cancer cure or any cure for diseases, that might be discovered after the initial compound were patented, might lead to compulsory licensing legislation. The drug industry was quite aware of the possibility of compulsory licensing legislation throughout the era of the Kefauver investigations in 1959. A complete discussion of this legislation is found in Cacciapaglia & Rockman, The Proposed Drug Industry Antitrust Act—Patents Pricing, and the Public, 30 Geor. Wash. L. Rev. 875 (1962).


78. In re Kirk, 153 U.S.P.Q. 266, 275 (1967). One commentator has stated:

The section 101 utility requirement should be amended to provide that chemical intermediates, per se, meet the utility requirement. This section should further be amended to provide that operability is the test of process utility. . . .

The power to eliminate the stifling environment of the chemical patent law lies with Congress; its exercise is earnestly encouraged.

The reverse is also true, *i.e.*, the inventor of a possible "new use" could not join in with the inventor of the compound if a "new use" application were filed under 35 U.S.C. § 100(b). The Court indicated in *Manson* that an inventor would be encouraged to disclose the unpatented invention so others could find a practical utility.\(^7^9\) There may be a problem of public use or publication that might create a statutory bar if made more than one year prior to filing.\(^8^0\) Perhaps no bar can exist on an incomplete invention and the time period starts to run at the point at which it was possible to file for a patent.

Judge Rich points out in *Kirk* that it is common practice in industry to "fabricate" uses by common chemical reactions to produce an ultimate end use that may be knowingly commercially unfeasible, and chemically impracticable: "If one skilled in the chemical art knows how to convert any new compound into a material which will have the sort of utility that the non-skilled understands, it is possible, at the expense of valuable time and effort to demonstrate eventual utility."\(^8^1\) For example, compounds having a benzene ring were easily sulfonated to produce a compound that possessed surface-activity with the applicant having full knowledge that the production expenses of the new sulfonated compound prohibited its employment as an intermediate for the production of a wetting agent. Another instance was the hydrolyzation of a material being used in cancer research and the conversion of the resulting free acid into a copper salt which had a use as fungicide. Since the use as fungicide would certainly satisfy the test of utility, any claim to the compound would inherently protect the cancer research related uses.\(^8^2\) Because only one use is necessary to satisfy the statutory requirement and since Patent Office inquiry is rare once the assertion of utility is made,\(^8^3\) the applicant is really not giving the public any benefit of a disclosure in the utility area if a "fabricated" use is disclosed. But, if

\(^7^9\) 383 U.S. at 534.

\(^8^0\) One may not acquire a patent if "the invention was . . . described in a printed publication . . . or [was] in public use or on sale . . . more than one year prior to the date of the application for patent . . . ." Patent Act of 1952, 35 U.S.C. § 102(b) (1964).

\(^8^1\) 153 U.S.P.Q. at 277.

\(^8^2\) In re Thuau, 135 F.2d 344 (C.C.P.A. 1943) The patentee does not have to recite every use for his compound or composition—his claim to the material protects all such uses whether or not such use was known prior or subsequent to his own disclosed uses.

\(^8^3\) There are few areas where the Patent Office inquiry into utility is extensive. So called "incredible assertions" are usually thoroughly questioned. See In re Ferens, 163 U.S.P.Q. 609 (C.C.P.A. 1969) where an invention alleged it was a cure for baldness. Where there is an allegation that the invention will cure a problem previously deemed incurable, the Patent Office requires overwhelming proof. See also In re Oberweger, 115 F.2d 826 (C.C.P.A. 1940); Ex parte Wolf, 65 U.S.P.Q. 527 (Pat. Off. Bd. App. 1945).
there was a requirement that an allegation of research utility be specified in
the application, the benefit of such a disclosure would be far more valuable
than any benefit from a “fabricated” utility.

Judge Rich suggests that a compound is useful per se. The requirement
of utility should not be different for chemical inventions than any other
category of invention. Different requirements would seem to be “an unde-
sirable discrimination between chemical compounds and other classes of
invention.”

There are other authorities who believe a composition is
useful per se, but, other than the mere disclosure of the composition, there
is no quid pro quo for the patent grant. Although a patent grant on a
compound without a disclosed use would encourage early disclosure to the
public, it is of no use to the public if nothing further is disclosed. Any
grant of a patent on a compound with no known utility would, as the Su-
preme Court states in Manson, “disclose as little useful information as pos-
sible—while broadening the scope of the claim as widely as possible.”

There is some value in disclosing the compound if it is the subject of
serious scientific research. Disclosure of these research activities should
be sufficient to meet the quantum of evidence necessary to show utility.
The material is useful to those who are utilizing it in serious research and
investigation. Conversely, a compound or composition of no present value

(1967).
85. E.g., Meyer, supra note 84. A novel proposal is made by Paul Eggert, Wis. L.
Rev. at 913 (1968). He contends there are four points at which inventions could take
place, (1) upon conception of the compound, (2) upon synthesis, (3) upon conception
of a use for that compound, and (4) upon a reduction to practice of an ultimate use.
He feels “how to make” the compound and “how to use” it (examples 2 and 4) are
the only sufficient criteria of patentability, thus giving protection to the method of
producing the compound and the method of using it. While he urges patentability of
the process and any new use, he intently omits patentability of the compound. He
states that countries such as Japan, West Germany, Sweden and Switzerland deny com-
pound patents. He feels that no one should be granted control over more than he has
contributed, but what Eggert fails to realize is that a compound grants no greater mo-
nopoly because of failure to specify all of its possible uses. If someone discovers a
new use he is entitled to it as a matter of law. The new use invention was made possible
by the disclosure of the compound. What would be the incentive to disclose a compo-
und to the public if no patent could be granted. If the disclosure is not made the
“how to use” is never discovered by the public. His contention that competition could
encourage the development of superior “how to make” fails to realize that experi-
mental use is not considered infringing use. See Chesterfield v. United States, 116 U.S.P.Q.
445 (Ct. Cl. 1958). The public would still have the right to experiment with the com-
pound, but as the author points out, its source would be limited to the patentee. But
then the public would not have the benefit of the compound to experiment with if it
were not for the patentee. The author is prophetic when he states that the courts
would be spared a problem of defining a minimum qualitative utility. This is in fact
what the new definition is attempting to accomplish.
87. 383 U.S. at 534.
Utility and the New Legislation

should not be patentable. The constitutional mandate of Article 1, section 8 is to "promote the progress of the useful arts and sciences" and speculation as to future utility should be insufficient for that purpose. Utility is determined as of the date of invention, and not when a use is discovered. A building block (as intermediates are called) to build nothing of present value is of no value at all unless there is some link to another material with a known use. Research should be sufficient to supply this link, but how to define a threshold of utility slightly above "no use" is difficult. The quantum of utility necessary to satisfy the statute should be met by alleging utility in research, with that research being fully set forth in the application.

Judge Smith, in his dissent in In re Joly, stated that proof of the fact that those possessing ordinary skills in the art "know how to and can use or are using the invention" would be sufficient to meet the test of utility. He fully supported the idea that objects of use to researchers do promote the progress of science. With this in mind, and barring separate standards for each category of invention, it follows that a chemical invention should be treated like other inventions and should require minimal utility.

Judicial and Administrative Interpretation

Upon enactment of the new definition new Patent Office Guidelines on utility should be promulgated. As a result of developing case law, the Patent Office, in 1968, established guidelines for considering disclosures of utility in drug cases. They were set up to assist the public and the examiners when examining applications in that area. The utility of a material had to "be definite and in currently available form, not merely for further investigation or research." These guidelines are an administrative codification of the decisions prior to 1968 and only reflect the present standard of utility. It should be noted that certain aspects of the guidelines should still be followed. For example, if the asserted utility is believable on its face to persons skilled in the art then the burden is on the examiner to give adequate support for rejecting on lack of utility. Correspondingly, statements not deemed likely to be correct by one skilled in the art require adequate proof by the applicant. Inventions to cure baldness or cancer are typical exam-

90. Id. at 258.
91. Id.
93. Id. at 567.
94. Id. at 568. See also In re Gazave, 154 U.S.P.Q. 92 (C.C.P.A. 1967) where it was held that the Patent Office required too much proof where it gives no adequate reason to disbelieve the specification's statement of usefulness.
amples where the Patent Office requires a high level of proof and is supported by the courts. In re Ferens\textsuperscript{96} was a typical "hair-growing" application. The court said that "where an applicant predicates utility for the claimed invention on allegations of the sort here which are or border on the incredible in light of contemporary knowledge of the particular art, those allegations must be substantiated by acceptable evidence."\textsuperscript{97}

Another problem in the utility area is whether tests in humans should be required for new drug compounds. The standard set up in In re Krimme\textsuperscript{98} should be adopted as the universal standard. The applicant alleged as the utility of his compound that it was an anti-inflammatory, anti-bacterial agent that decreased vascular permeability. The examiner rejected the application on lack of utility because there was an absence of clear and convincing proof that the composition was "safe, effective and reliable for all therapeutic effects with human beings."\textsuperscript{99} The examiner required the utility to be proven by tests in humans and rejected experimentation in animals as inconclusive. The Patent Office Board of Appeals affirmed the rejection for the following reasons. First, the fact that the compound was utilized successfully in animals was unconvincing as to its effectiveness in humans. Second, the economic value of administering the medication to animals to save them was insufficient utility. Third, many tests that gave promising animal results failed to prove out in humans.\textsuperscript{100} On appeal the C.C.P.A., however, held that "pharmaceutical applications" included the treatment of animals and declared that "when an applicant for a patent has alleged in his patent application that a new and unobvious chemical compound exhibits some useful pharmaceutical property and when this property has been established by statistically significant tests with 'standard experimental animals,' sufficient statutory utility for the compound has been presented."\textsuperscript{101} Since the compound had established some effective pharmaceutical property in a standard experimental animal, it had made a contribution to the art whether or not the compound performs in the same manner in humans. This is the most authoritative statement on this subject since the Supreme Court reserved judgment of the issue and stated in Brenner v. Manson: "[W]e express no view as to the patentability of a process whose sole demonstrated utility is to yield a product shown to inhibit the growth of tumors in laboratory animals."\textsuperscript{102}

This broader treatment of utility for chemical and pharmaceutical inven-

\begin{itemize}
\item \textsuperscript{96} 163 U.S.P.Q. 609 (C.C.P.A. 1969).
\item \textsuperscript{97} Id. at 611.
\item \textsuperscript{98} 130 U.S.P.Q. 215 (C.C.P.A 1961).
\item \textsuperscript{99} Id. at 216.
\item \textsuperscript{100} Id. at 217.
\item \textsuperscript{101} Id. at 219.
\item \textsuperscript{102} 383 U.S. at 531 n.17.
\end{itemize}
tions should be made part of the legislative history as suggested by the American Patent Law Association. Compositions, as subjects of use testing, which accomplish the stated results in standard experimental animals are useful under the requirements of Section 101 of Title 35. An ultimate utility should not be a requirement for patenting. This reasoning is sound because the monopoly on the invention would probably be useless if its effectiveness for human use is not established. Anyone could secure a "new use" patent at a later date. An analysis of the time and costs of development of suitable drugs suggests that it is practically an economic necessity for that industry to secure early patent protection. To produce a drug normally would take five to seven years from the test tube commercialization, and a cost of at least half a million dollars. The drug "Aldomet", for example, took twelve years to develop at a cost of eleven million dollars.

Further, the drug industry is always subject to the risk of a new drug replacing another. In 1950, a new drug "Cortone" was marketed and within six years the percentage of the market controlled by the drug fell from 100 percent to 3.2 percent. The granting of a patent during the development stages at the very least acts as an incentive for the drug industry to assume the risks of development and rapid obsolescence. An additional reward is that the resulting intermediate monopoly may give the developer a head start toward patent protection. It should also be noted that many governmental agencies lose valuable rights and incur unnecessary expenditures, since they don't have the facilities to develop the appropriate "utility" after the discovery of new compounds. Agencies such as the National Institute of Health (Department of Health, Education and Welfare) are compelled to "farm out" work to other agencies or private industry to provide them with a suitable utility for the newly founded material. A research utility is unsatisfactory under present case law as discussed above.

Conclusion

There are various problems that must be resolved if the new definition of utility is to be of any value to the public. The first problem is related to experimental use. Judge Worley's dissent in In re Nelson suggested precluding a patent on a compound whose sole utility to researchers was based on a theory of an unearned monopoly that prevented others from experimenting

103. 1969 APLA BULL. 679-80.
104. 47 J. PAT. OFF. SOC'y 648, 653 (1965).
105. Id. at 653.
in a field that should remain open to all. He inferred that unless one was willing to risk infringement such experimentation would be discouraged. He failed to realize that experimental use has never been considered infringing. Any process that produces a compound that is the subject of scientific research should be useful per se. The utility of the product being established, any new process that makes this product more readily available (by decreasing costs, time, etc.) warrants protection. If a patent is granted on a compound whose sole utility is for experimental use in a specified area, the fact that others experiment with the compound cannot be considered infringement. How else would a "new use" be found if the law did not permit some degree of non-infringing use? There is no intent to infringe when experimental use occurs. Even if the compound was being used in the very same area of research as disclosed by the original applicant, this should not be considered infringing use since the original research was inconclusive and only an allegation of utility was made. The applicant's claims are drawn to the compound and not to its utility. Any experimental use, even in the area of its possible utility, should be encouraged.

Another suggestion that could be used to implement the statute would be a requirement than an applicant "follow-up" his original disclosure of experimental use with an amendment pointing out the results of the research to date. When a disclosure of utility is made under the new definition (i.e., useful to researchers in a specified area or efficacy of the compound in standard experimental animals) the applicant could be required to submit, as a matter of course, a concise summary of activities performed after filing but before payment of the issue fee. The public would benefit from this disclosure of results from any later experimentation. The affidavit should avoid inclusion of new matter. Evidence tending to show that one of ordinary skill in the art would know how to use or know of a use for the invention should not be considered new matter. Affidavits, to show outstanding utility, have played a part in obtaining allowance of claims, and amendments to the specification incorporating the affidavit could be required.

One might fear that this type of practice would tend to encourage long prosecution within the Patent Office in order to find additional uses to preclude a later "new use" patent. Such stalling tactics would not fulfill the constitutional mandate of promoting the arts and sciences by prompt disclos-

109. Experimentation for "the sole purpose of gratifying a philosophical taste, or curiosity, or for mere amusement, is not an infringement of the rights of the patentee." Popleston v. Kitchen, 19 F. Cas. 1048 (No. 11279) (C.C.D. Pa. 1812).
ure. Under the newly proposed legislation the patent would expire 20 years\textsuperscript{112} from the date of filing. This provision would discourage long prosecution by cutting short the length of the monopoly. These additions to the disclosure would be in the nature of updating the application. Since the goal for processing applications by the Patent Office is eighteen months, the public would benefit from the additional disclosure of such items as whether use testing in animals progressed to the human stage or if any valuable end products had been produced from the intermediates.

\textit{Alan Grimaldi}

\textsuperscript{112} S. 2756, 91st Cong., 1st Sess. \S 154 (1969).