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CASE NOTES

PATENTS—UTILITY REQUIREMENT—COMPARISON BETWEEN CHEMICAL AND NON-CHEMICAL INVENTIONS

On March 3, 1959, chemists Kirk and Petrow filed with the United States Patent Office a patent application for certain steroid compounds.¹ The application stated that the claimed steroids were a new class of compounds often possessing high biological activity. The steroids were also asserted to be of value as intermediates in the preparation of biologically active compounds, and thus were useful in the furtherance of steroidal research. Although the Patent Office Examiner admitted that the compounds were new and unobvious to those skilled in the art of steroidal chemistry, and thus were the product of invention, all claims in the application were rejected on the ground that the claimed compounds did not satisfy the statutory test of being useful,² commonly referred to as the utility requirement. Upon affirmation by the Patent Office Board of Appeals, the two applicants appealed to the United States Court of Customs and Patent Appeals (C.C.P.A.). In a three-two decision, the C.C.P.A. affirmed the Patent Office's position, and denied the applicants a patent.³ *In re Kirk*, 376 F.2d 936, 153 U.S.P.Q. 48 and 266 (C.C.P.A. 1967).

In a companion case, decided concurrently with the *Kirk* case, applicants Joly and Warnant, on January 9, 1961, had filed for a patent. The patent application⁴ covered a number of steroidal compounds and a method or process for making the steroids. The application disclosed that the claimed

¹ Serial No. 796,749, entitled "1-Dehydro-6-Methyl Steroid Compounds." A steroid is any of numerous organic compounds containing the carbon ring system of various alcohols found in lipids, which with proteins and carbohydrates constitute the principal structural components of living cells.

² 35 U.S.C. § 101 (1964): "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." (Emphasis added.)

³ The decision also dealt with 35 U.S.C. § 112 (1964), concerning the legal adequacy of a patent application to disclose how to use the invention, not within the purview of this note. Section 112 requires in part: "The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention."

⁴ Serial No. 81,272, entitled "Esters of 2-Enols of delta¹ Steroids and Preparation Thereof."

compounds were useful as intermediates in the preparation of certain other steroids, and during prosecution the applicants contended that the steroids which could be prepared from the claimed compounds were closely related in chemical structure to compounds having known useful properties, namely, cortisone and prednisone. The Patent Office Board of Appeals, though finding both the product and the process for making it to be new and unobvious to research chemists, upheld the Examiner's rejection of the application on the basis that the claimed steroids were not useful under the patent statute.⁵ The C.C.P.A. affirmed the Board of Appeals. *In re Joly*, 376 F.2d 906, 153 U.S.P.Q. 45 and 243 (C.C.P.A. 1967).

In deciding both cases, the C.C.P.A. was especially concerned with the applicability of the decision of the United States Supreme Court in *Brenner v. Manson*,⁶ which involved a chemical invention totally lacking in utility. Although the patent applications in both the *Kirk* and *Joly* cases disclosed some utility for the chemical compounds, the C.C.P.A. expanded on statements in the *Manson* case, and in so doing expressly overruled a number of its earlier decisions on this subject.⁷ The present cases are therefore noteworthy in that they establish new standards of utility, discussed hereinafter, to be applied in the future to all chemical inventions.

It has been advanced in general terms that chemical inventions are held to a more strict standard of utility than required for non-chemical inventions.⁸ Significantly, only one constitutional⁹ and statutory¹⁰ requirement exists for all patents. The purpose of this note is to analyze decisions in which utility was a patent issue in non-chemical fields to determine the standard required for non-chemical inventions. This standard can then be compared with the

⁵ *Supra* note 2.

⁶ 383 U.S. 519, 148 U.S.P.Q. 689 (1966).

⁷ *In re Adams*, 316 F.2d 476, 137 U.S.P.Q. 333 (C.C.P.A. 1963); *In re Szwarc*, 319 F.2d 277, 138 U.S.P.Q. 208 (C.C.P.A. 1963); *In re Wilke*, 314 F.2d 558, 136 U.S.P.Q. 435 (C.C.P.A. 1963). *In re Nelson*, 280 F.2d 172, 126 U.S.P.Q. 242 (C.C.P.A. 1960). "[T]o the extent that those decisions are inconsistent with *Brenner v. Manson* (*supra* note 6) and the views expressed herein, they must be, and are, overruled." *In re Kirk*, 376 F.2d 936, 946, 153 U.S.P.Q. 48, 56 (C.C.P.A. 1967).

⁸ Dissenting opinion of Judge Smith in the *Joly* case, in the subsection entitled "The Patent Statute Applies Equally to All Inventors Without Regard to the Technical Fields to Which Their Inventions Relate," 376 F.2d 906, 929, 153 U.S.P.Q. 45 and 260 (C.C.P.A. 1967). *Cf.* Dissenting opinion of Mr. Justice Harlan in *Brenner v. Manson*, *supra* note 6, at 536-40, 148 U.S.P.Q. at 696-98, expressing concern for the impact that the majority opinion may have on chemical research.

⁹ U.S. CONST. art. 1, § 8. "The Congress shall have power . . . [t]o 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. (Emphasis added.)

¹⁰ *Supra* note 2.

present standard for chemical inventions to determine if a divergence has in fact occurred. The consequences of a stricter standard of utility for chemical inventions could be far reaching. Without the incentive conferred by patent protection, industry may become less willing to expend funds and manpower in the pursuit of basic chemical research.

The standard of utility now required for chemical inventions can be discerned from the language of the court in the present cases. At one time, organic compounds were regarded as inherently patentably useful as intermediates for preparing other compounds.¹¹ In the *Joly* case, however, the court specifically rejected the position that a chemical compound used as an intermediate to make other compounds is useful per se, without regard to the usefulness of the final product.¹² It also cannot be presumed that a chemical compound is useful simply because the compound is closely related only in a structural sense to other compounds of known usefulness.¹³

The court started with the concept that to be patentable, an invention must have substantial utility. Until it is refined and developed to this point, namely, where specific benefit exists in currently available form, there is insufficient justification to grant a patent.¹⁴ Developing this concept into new standards, the court found that compounds useful to chemists doing research, which can produce other compounds which are members of a general class, some members of which are known to have useful therapeutic properties, are not patentably useful. The fact that the general class of compounds as a whole is the subject of scientific inquiry and is the object of present research does not turn the scales in favor of usefulness.¹⁵ The *Kirk* court drew the line of demarcation in favor of compounds employed as intermediates to produce other directly useful compounds.¹⁶

Some language in the present decisions, however, gives warning that what is useful may be further qualified by other conditions. A class or number of related organic intermediates may be used to produce several final products, depending on the manner in which an organic chemist directs the reactions. The court appears to endorse the position that all final products produced

¹¹ Dissenting opinion of Judge Rich, *In re Kirk*, 376 F.2d 947, 952, 153 U.S.P.Q. 266, 270 (C.C.P.A. 1967).

¹² 376 F.2d 906, 908, 153 U.S.P.Q. 45, 47 (C.C.P.A. 1967).

¹³ *In re Kirk*, 376 F.2d 936, 942, 153 U.S.P.Q. 48, 53 (C.C.P.A. 1967).

¹⁴ *Id.* at 945, 153 U.S.P.Q. at 55, citing *Brenner v. Manson*, *supra* note 6.

¹⁵ *Id.* at 945, 153 U.S.P.Q. at 56, "Nor is it enough that the product disclosed to be obtained from the intermediate belongs to some class of compounds which now is, or in the future might be, the subject of research to determine some specific use."

¹⁶ *Id.* at 946, 153 U.S.P.Q. at 56, approving *Reiners v. Mehlretter*, 236 F.2d 418, 111 U.S.P.Q. 97 (C.C.P.A. 1956).

from a class of intermediates must be useful in order for the intermediate class itself to be useful.¹⁷

Although chemical inventions are, due to their nature, more apt to give rise to utility problems, questions concerning the utility of a product or a process are not inherently different in non-chemical areas. Fully aware that exact equivalence may not be realized, it is believed that an analysis of decisions on utility of non-chemical inventions will provide an important tool for judging the propriety of the court's decisions, and serve as a guide in determining whether chemical inventions are in fact being discriminated against as compared with inventions in other fields of science, with respect to the utility requirement.

The requirement that an invention must be useful has always existed in the statutory scheme,¹⁸ and in essentially the identical form found in the present patent statute.¹⁹ For this reason, decisions from even the earliest date are valid today in determining the nature of utility, and the standard which has evolved in defining it.

At the outset, a few general observations may be made regarding the nature of the utility requirement. Utility is a question of fact for the court, rather than a question of law.²⁰ Several factual situations usually associated only with chemical inventions find direct analogy in the non-chemical arts, and the rules of law applicable to them are the same. Intermediates, that is, a product which is only temporarily useful in making another product, are patentable. For this reason, a patent was issued on a joint construction for a motor vehicle chassis, which served to maintain the chassis in an assembled state only until rivets could be swaged to permanently hold the chassis together.²¹ Similarly, joints and blanks which of themselves have no commercial status, but are only useful as intermediates in forming other products, are patent-

¹⁷ In *In re Kirk*, *supra* note 13, at 943, 153 U.S.P.Q. at 54, the court disposes of the argument that the intermediates are useful because the 6-methyl aromatic steroids produced therefrom are members of a class of aromatic estrogen compounds, some of which are used commercially. "But appellants have not disclosed or otherwise shown that *any* 6-methyl aromatic steroid which can be produced from their intermediates possesses activities in common with those commercial members of the aromatic steroid series."

¹⁸ *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 148 U.S.P.Q. 459 (1966). See Act of April 10, 1790, ch. 7, 1 Stat. 109; Act of Feb. 21, 1793, ch. 11, 1 Stat. 318; Act of July 4, 1836, ch. 357, 5 Stat. 117; Act of July 8, 1870, ch. 230, 16 Stat. 198.

¹⁹ *Supra* note 2.

²⁰ *Lorenz v. General Steel Products Co.*, 337 F.2d 726, 143 U.S.P.Q. 140 (5th Cir. 1964); *Harley Loney Co. v. Ravenscroft*, 162 F.2d 703, 74 U.S.P.Q. 47 (7th Cir. 1947); *Gordon Form Lathe Co. v. Ford Motor Co.*, 133 F.2d 487, 56 U.S.P.Q. 495 (6th Cir.), *aff'd*, 320 U.S. 714 (1943); See *Armour & Co. v. Wilson & Co.*, 274 F.2d 143, 124 U.S.P.Q. 115 (7th Cir. 1960) (not modifying utility rule in *Harley Loney Co.*, *supra*).

²¹ *Ex parte Mueller*, 57 U.S.P.Q. 154 (Pat. Bd. App. 1942).

able.²² Finally, it makes no difference whether the invention relates to a product, *i.e.*, the thing itself, or to a process for making the product, since the patenting of a process is not limited to chemical inventions.²³ In fact, it may be only the mechanical process which is patentable, and not the mechanical product, as when the product itself is old.²⁴

In view of the statutory requirement, it is axiomatic that an invention which completely lacks utility is not patentable. Patents are not granted for discoveries of abstract laws or principles of nature, which are mere items of knowledge, and, without being employed, lack utility.²⁵ A patent will not be granted where the sole purpose of a device is to deceive the public, and the courts will look beyond form to the actual substance of the invention.²⁶

Where it is shown that only one component in a combination is novel, that component must be shown to be useful for the purposes for which the invention is useful, or the invention will lack utility. Thus, if the novel component has no use which is an advantage to the invention,²⁷ or is in fact detrimental to the operation of the combination,²⁸ no patent can issue. If a device is completely inoperative in that it will not work as disclosed, it will be rejected on the basis that it lacks utility.²⁹ The fact that small modifications would make the device operative will not thereby make the device

²² *Id.* at 155. *Cf.* *Wright Co. v. Herring-Curtiss Co.*, 204 F. 597 (W.D.N.Y. 1913), *aff'd*, 211 F. 654 (2d Cir. 1914) (pioneer patent to Orville and Wilbur Wright for an airplane) holding a claimed subcombination valid though it was not useful unless embodied in a complete device.

²³ *Expanded Metal Co. v. Bradford*, 214 U.S. 366 (1908) (process for making expanded sheet metal by a series of mechanical steps).

²⁴ *In re Holmes*, 63 F.2d 642, 16 U.S.P.Q. 399 (C.C.P.A. 1933) (process for manufacturing U-shaped pipe).

²⁵ *Buck v. Ooms*, 63 F. Supp. 715, 68 U.S.P.Q. 25 (D.D.C. 1945), *aff'd*, 159 F.2d 462, 72 U.S.P.Q. 211 (D.C. Cir. 1947) (alleged law of siphonic action).

²⁶ *Scott & Williams v. Aristo Hosiery*, 7 F.2d 1003 (2d Cir. 1925) (seamless stocking with imitative seam); *National Battery Co. v. Western Molded Products, Inc.*, 39 F. Supp. 954, 50 U.S.P.Q. 445 (S.D. Cal. 1941), *aff'd on other grounds*, 132 F.2d 510, 56 U.S.P.Q. 259 (9th Cir. 1942) (inlay for battery case to simulate integral container).

²⁷ *The Automatic Devices Corp. v. Sinko Tool & Manufacturing Co.*, 112 F.2d 335, 45 U.S.P.Q. 394 (7th Cir. 1940), *aff'd*, 314 U.S. 94 (1941) (cigar lighter); *Imperial Stonecutters, Inc. v. Schwartz*, 370 F.2d 425, 152 U.S.P.Q. 91 (8th Cir. 1966) (stonecutter).

²⁸ *Schaefer Inc. v. Mohawk Cabinet Co., Inc.*, 276 F.2d 204, 125 U.S.P.Q. 318 (2d Cir. 1960) (refrigerated display cabinet); *Ex parte Massa*, 48 U.S.P.Q. 331 (Pat. Bd. App. 1940) (loudspeaker). *But see In re Eller*, 299 F.2d 272, 132 U.S.P.Q. 467 (C.C.P.A. 1962) (storage battery).

²⁹ *In re Spence*, 261 F.2d 244, 120 U.S.P.Q. 82 (C.C.P.A. 1958) (flexible coupling). However, if a court is not completely convinced that the invention cannot operate as claimed, but has suspicions to that effect, it may refuse a patent based on failure to adequately disclose how to use the invention, under 35 U.S.C. § 112 (1964). *See In re Woody*, 331 F.2d 636, 141 U.S.P.Q. 518 (C.C.P.A. 1964) (subterranean salt mining using cavern created by nuclear explosion).

useful, since the inventor, presumably one skilled in the art, did not make such changes, and because a patent must disclose a workable device.³⁰

There is general agreement that some use, *i.e.*, anything greater than complete lack of utility, satisfies the requirement that an invention be useful, regardless of its technical subject area. An authoritative dictionary, in use at the time of the drafting of the constitutional provision for patents,³¹ defines "useful" as helpful to any purpose.³² Similarly, the courts have held that the only utility requirement is that the article itself (or the process) must be useful, and whether it is more or less useful than other articles is unimportant.³³ The utility requirement has been characterized in a different manner. The earliest American case on utility is *Lowell v. Lewis*,³⁴ in which Judge Story made his famous statement: "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."³⁵ In another early decision, Judge Story held that the law does not look to the degree of utility.³⁶

An invention may be imperfect in form, but still patentable. Usefulness implies practicality, as distinguished from perfection.³⁷ The first telephone, disclosed in a patent to Alexander Graham Bell, was unquestionably a crude, imperfect device. The Supreme Court, in upholding the validity of the patent, held that an inventor need not have brought his invention to the highest degree of perfection, but it would be sufficient if he described his invention with sufficient clearness and precision to enable one to understand

³⁰ *General Steel Products Co., Inc. v. Lorenz*, 204 F. Supp. 518, 132 U.S.P.Q. 574 (S.D. Fla. 1962), *aff'd*, 337 F.2d 726, 143 U.S.P.Q. 140 (5th Cir. 1964) (multiple position chair).

³¹ *Supra* note 9.

³² See WALKER, PATENTS 493 (2d ed. Deller 1964).

³³ *Lamb Knit Goods v. Lamb Glove & Mitten*, 120 F. 267 (6th Cir. 1902) (knitted glove); *Accord*, *Blanchard v. Ooms*, 153 F.2d 651, 68 U.S.P.Q. 314 (D.C. Cir. 1946) (portable radio antenna) where utility is the only factor necessary to establish patentability. *Cf.* Court's footnote 1 in *In re Ratti*, 270 F.2d 810, 123 U.S.P.Q. 349 (C.C.P.A. 1959) (oil seal).

³⁴ 15 F. Cas. 1018 (No. 8568) (C.C.D. Mass. 1817). See generally Marshall, *Comparative Utility as a Requisite of Patentability*, 1 J. PAT. OFF. Soc'y 550 (1919) for early American decisions on the law of utility.

³⁵ *Lowell v. Lewis*, 15 F. Cas. 1018, 1019 (No. 8568) (C.C.D. Mass. 1817) (water pump). But see *Brenner v. Manson*, *supra* note 6 at 533, 148 U.S.P.Q. at 695, for a disparaging comment on Judge Story's definition of utility.

³⁶ *Bedford v. Hunt*, 3 F. Cas. 37 (No. 1217) (1st Cir. 1817) (manufacture of boots).

³⁷ *Curtiss Wright Corp. v. Link Aviation, Inc.*, 182 F. Supp. 106, 124 U.S.P.Q. 266 (N.D.N.Y. 1959) (blind flight airplane simulator); *General Electric Co. v. George J. Hagan Co.*, 38 F.2d 995, 3 U.S.P.Q. 227 (W.D. Pa. 1929) (electric resistance furnace).

the invention and some practical way of putting it into operation, which Bell had done.³⁸

The fact that an invention could be improved, as by eliminating a possibly superfluous element, does not affect utility.³⁹ In *Mergenthaler Linotype Co. v. The Press Publishing Co.*,⁴⁰ the court strongly rejected the argument that an invention was valueless because not perfect, and listed many great inventions, each of which were extremely crude in the form disclosed in the patent, and though subsequently improved, were greatly deserving of patent protection. The court pointed out that none of the great inventions could have survived years later in the market in their original form.

It is unsettled whether an invention must eventually become a commercial success in order to evidence sufficient utility to uphold a patent. Some courts have unequivocally stated that commercial success is not necessary to sustain a patent.⁴¹ Other courts have in effect reached the same conclusions in holding that the fact that an invention may be more costly than prior apparatus does not establish the absence of utility.⁴²

In *Seymour v. Osborne*,⁴³ the Supreme Court, in holding four improvement patents valid, stated that an invention must be capable of being beneficially used for the purposes for which it was designed, as the law does not require that the invention should be of such general utility as to supersede all other inventions which accomplish the same object. Later, in *Hildreth v. Matoras*,⁴⁴ the Court upheld a generic or pioneer patent, stating that the device does not have to be a commercial success, it being enough if it actually and mechanically performs, though only crudely, the important functions by which it makes substantial changes in the art.

*Hartford-Empire Co. v. Obear-Nester Glass Co.*⁴⁵ involved a patent for feeding molten glass to molds. The apparatus was of refractory material,

³⁸ Telephone Cases, 126 U.S. 1 (1887). See *Claude Neon Electrical Products, Inc. v. Brilliant Tube Sign Co.*, 48 F.2d 176, 8 U.S.P.Q. 512 (9th Cir. 1931), *rev'd*, 40 F.2d 708, 5 U.S.P.Q. 37 (W.D. Wash. 1930) (basic patent on neon tube lamp).

³⁹ *Ex parte White and Falconer*, 55 U.S.P.Q. 96 (Pat. Bd. App. 1942) (electrical relay circuit).

⁴⁰ 57 F. 502 (S.D.N.Y. 1893) (type casting machine).

⁴¹ *In re Chilowsky*, 229 F.2d 457, 108 U.S.P.Q. 321 (C.C.P.A. 1956), *patent denied on other grounds*, 306 F.2d 908, 134 U.S.P.Q. 515 (C.C.P.A. 1962) (nuclear fission chain reactor); *Union Sulphur Co. v. Freeport Texas Co.*, 251 F. 634 (D. Del. 1918), *modified on other grounds*, 255 F. 961 (3d Cir.), *cert. denied*, 249 U.S. 618 (1919) (sulphur mining).

⁴² *Ex parte Markowitz*, 143 U.S.P.Q. 303 (Pat. Bd. App. 1964) (magnetic core memory).

⁴³ 78 U.S. (11 Wall.) 516 (1871) (reaping and harvesting machines).

⁴⁴ 257 U.S. 27 (1921) (candy-pulling machine).

⁴⁵ 71 F.2d 539, 22 U.S.P.Q. 270 (8th Cir. 1934), *cert. denied*, 293 U.S. 625 (1935).

which the Court of Appeals of the Eighth Circuit concluded must be of clay composition and rather frangible. The court then stated that such a situation was not tolerable in commercial production, and held that "useful" in the patent law means that a machine will accomplish the purpose practically when applied in industry, and a machine is not useful if from its inherent nature it will accomplish the purpose only to such a restricted extent as to make its use in industry prohibitive. In attempting to reconcile the *Hartford-Empire* decision with earlier Supreme Court decisions, the Sixth Circuit adopted the Eighth Circuit's test of practical usefulness in industry, but held that the test did not apply in the case of a generic patent.⁴⁶

Whether practical usefulness in industry is a proper test of utility is open to considerable doubt, especially in view of numerous earlier decisions making no distinction between whether the invention involved was generic or not. In a later decision from the Court of Appeals of the Third Circuit, an invention which the court found was of small coverage and of even smaller importance was held to possess utility, since it was not the extent of utility that governed, but the existence of some utility.⁴⁷

No conclusion of general non-utility can follow from one unsuccessful experiment in which the invention failed, and the fact that an ultimately impractical suggestion was also included in the patent does not vitiate the invention or the patent.⁴⁸ The invention may at times not operate satisfactorily, but absent total incapacity, a patent cannot be struck down for non-operativeness or non-utility.⁴⁹

The holding of the *Kirk* court, to the effect that products are not patentable if useful only to research chemists in the furtherance of basic chemical research, appears to be somewhat at odds with the tenor of the cases discussed above. When a chemical compound is actually useful to research chemists, it would seem to have specific benefit in currently available form, adequate to satisfy the constitutional directive that a patent must promote the progress of the useful arts.⁵⁰ Certainly many non-chemical products which

⁴⁶ *The Cleveland Punch & Shear Works Co. v. E. W. Bliss Co.*, 145 F.2d 991, 64 U.S.P.Q. 77 (6th Cir. 1944) (sheet metal drawing press).

⁴⁷ *Ostby & Barton Co. v. Jungersen*, 163 F.2d 312, 75 U.S.P.Q. 151 (3d Cir. 1947) (coin selector).

⁴⁸ *Hunt Tool Co. v. Lawrence*, 242 F.2d 347, 113 U.S.P.Q. 7 (5th Cir. 1957), *rev'd on this ground*, 142 F. Supp. 329, 111 U.S.P.Q. 37 (S.D. Tex. 1956), *cert. denied*, 354 U.S. 910 (1957) (method of removing oil well liners).

⁴⁹ *Technical Tape Co. v. Minnesota Mining & Mfg. Co.*, 143 F. Supp. 429, 110 U.S.P.Q. 260 (S.D.N.Y. 1956), *aff'd*, 247 F.2d 343, 114 U.S.P.Q. 422 (2d Cir. 1957), *cert. denied*, 355 U.S. 952 (1958) (pressure-sensitive adhesive tape).

⁵⁰ *Supra* note 9.

seem less likely to promote the progress of science have been held useful. For example, games played for innocent amusement, and which provide a means of relaxation, meet the statutory requirement of possessing patentable utility.⁵¹

Merely because a product is useful only in a laboratory, and not in industry, would not appear to be a reasonable basis for rejecting the product as lacking utility. As the above cases illustrate, many non-chemical patents have been upheld in which the inventions were in fact only laboratory curiosities. In *Electro-Dynamic Co. v. U.S. Light and Heat Corp.*,⁵² a patent for an electrical circuit for automatically recharging storage batteries used on train-lighting systems was attacked as lacking utility. Due to reasons arising from rough passage of train cars over switches, the circuit stopped charging too soon. In rejecting the argument that the invention was not useful, the court said:

That it possesses no practical utility is fully proven. The scheme might be called one of hope or aspiration; but the device will operate in a laboratory at least, and we do not think the patent can be struck down as inoperative in the sense of the patent law.⁵³

The apparent approval in the *Kirk* case of the proposition that all final products produced from a class of intermediates must be useful in order for the intermediates themselves to be useful, seems to be contrary to the standard applied to non-chemical inventions. A number of courts have considered the extent of utility, and have held that an invention need not be capable of performing all the functions declared by the inventor, but rather that the statutory requirement of utility is met if it accomplishes but one.⁵⁴ In the case of *Freedman v. Overseas Scientific Corp.*,⁵⁵ a patent claimed dentures with magnets in the plates to assist in holding the dentures against the contiguous ridge of the jaw on which it was designed to ride. It was proven that for certain patients with slight bony ridges, the magnetic dentures did not give satisfactory results. However, in other cases involving patients having a different ridge structure, the device was distinctly helpful. The court held this was enough to uphold the patent against criticism;

⁵¹ *Cusano v. Kotler*, 159 F.2d 159, 72 U.S.P.Q. 62 (3d Cir. 1947) (game board); *Callison v. T. J. Dean Novelty Co.*, 70 F.2d 55, 21 U.S.P.Q. 240 (10th Cir. 1934) (game with aerial projectiles).

⁵² 278 F. 80 (2d Cir. 1921).

⁵³ *Id.* at 85.

⁵⁴ *Decker Products Co. v. FTC*, 176 F.2d 461, 81 U.S.P.Q. 519 (D.C. Cir.), *cert. denied*, 338 U.S. 878 (1949) (vehicle exhaust attachment); *Ex parte Quinn*, 4 U.S.P.Q. 304 (Pat. Bd. App. 1930) (emergency control circuit); *Scovill Mfg. Co. v. Satler*, 21 F.2d 630 (D. Conn. 1927) (variable condenser).

⁵⁵ 248 F.2d 274, 115 U.S.P.Q. 42 (2d Cir. 1957).

the invention need not be unfailingly operable in all its applications. By analogy, as long as one end product of an intermediate class which can produce several end products is useful, the utility of the class would seem to be proven.

Thus, a comparison of the case law concerning non-chemical inventions with the rulings and trend evidenced in the present decisions does establish that the standard of utility required for chemical inventions is diverging from the standard of utility required for non-chemical inventions. The holding that chemical compounds are not patentable if useful only to chemists in the furtherance of laboratory research is contrary to the decided cases in non-chemical areas. These cases establish that a useful device does not mean one that is perfect. The fact that an invention can be improved, and perhaps only the improved form can compete in the market, does not negate the utility of the original invention. Patents on many non-chemical inventions have been upheld when the product disclosed in the patent was in fact only a laboratory curiosity. In one case, a non-chemical invention useful only in a laboratory was held to possess patentable utility. The present decisions also depart from the standard of utility for non-chemical inventions in approving the proposition that all final products must be useful in order for a class of intermediates to be useful. The law in the non-chemical field holds that if an invention is useful for any one purpose, the fact that the same invention is not useful for other purposes is immaterial.

The trend thus appears to be against the patentability of chemical products useful only to chemists doing basic research. One reason why the divergence has occurred may be inferred from the general apprehension some courts display when asked to grant a patent on a chemical invention which they feel "may engross a vast, unknown, and perhaps unknowable area."⁵⁶ However, it would seem immaterial that an invention may become of greater ultimate value than can now be foreseen. If an inventor should reap more from a patent than was expected, it is because he has made a discovery whose full importance was not originally appreciated. The effect of the present decisions would seem to be to discourage expending funds on basic chemical research, and rather concentrate on applied research which holds greater promise of producing patentable products. In the long run, however, such an approach would seem to retard rather than promote the progress of science, since history has shown that scientific progress is dependent upon discoveries flowing from basic research.

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⁵⁶ *Brenner v. Manson*, *supra* note 6 at 534, 148 U.S.P.Q. at 695.