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Rejection as Being a Function of the Apparatus
[*Noyd v. Bond*, 402 F.2d 441 (10th Cir. 1968), *cert.*
granted, 37 U.S.L.W. 3259 (U.S. Jan. 21, 1969) (No.
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PATENTS — PROCESS CLAIMS — REJECTION AS BEING
A FUNCTION OF THE APPARATUS

In re Tarczy-Hornoch, 397 F.2d 856 (C.C.P.A. 1968).

Ever since the Supreme Court rejected Samuel Morse's attempt to monopolize electromagnetism in the patent for his telegraph,¹ inventors have been faced with the dilemma of losing their right to protection of new and useful processes² because their process was merely the "function of the apparatus" claimed in the patent application. One hundred and fifteen years later, the Court of Customs and Patent Appeals in the recent case of *In re Tarczy-Hornoch*³ reversed much judicial precedent and made it clear that an applicant is entitled to patent protection of a new and useful process even if it is only the function of a claimed apparatus.

The patent applicant, Zoltan Tarczy-Hornoch, had invented a device for accurately counting and sorting electrical pulses.⁴ All of the apparatus claims were allowed; however, the patent examiner rejected eight of the method claims dealing with pulse sorting apparatus and method⁵ because they "merely define the function of the applicant's system."⁶ The Patent Board of Appeals, realizing the method claims would be patentable if presented alone, nevertheless felt itself bound by its own precedent and affirmed the ex-

¹ O'Reilly v. Morse, 56 U.S. (15 How.) 61 (1853). The Morse patent had attempted to claim "[t]he use of the motive power of the electric or galvanic current, which I call electromagnetism." *Id.* at 86.

² The right to patent is statutory. Until the 1952 Patent Act, 35 U.S.C. §§ 1-293 (1964), processes *eo nomine* were not listed as patentable. Early Supreme Court decisions, however, interpreted the phrase "new and useful art," which appears in the Constitution and early patent acts, as including processes. *See, e.g.,* Cochrane v. Deener, 94 U.S. 780 (1876).

³ 397 F.2d 856 (C.C.P.A. 1968).

⁴ The applicant's invention used electronic counters arranged in such a way that any pulse not counted by the first counter would be counted by the second; any pulse not counted by the second counter would be counted by the third; and so on until all the pulses were counted. To prevent a pulse from being counted twice, every pulse counted in the first stage would trigger an inhibiting pulse which would prevent the successive stages from counting the pulse. By using this method appellant's invention was capable of counting and sorting electrical pulses with repetition rates of over 50,000,000 per second. Such an apparatus will probably find immediate use in the construction of digital computers.

⁵ Patent application serial No. 23,739 filed April 21, 1960. Claims 29 through 35 and 40 were rejected. The Patent Office makes no distinction between the terms "process" and "method" for the purposes of rejection as the function of the apparatus. *See* 25 U.S.C. § 100(b) (1964); Guidelines of Patentability Memorandum No. 1, GPI(d), 792 O.G. 3, issued June 17, 1963. These terms are used interchangeably in this article.

⁶ 397 F.2d at 856.

aminer's rejection of the method claims as being merely the function of the disclosed apparatus.⁷ Thus the appeal from the Board's ruling put the question squarely before the Court of Customs and Patent Appeals: "[w]hether a process claim otherwise patentable, should be rejected because the application, of which it is a part, discloses apparatus which will *inherently* carry out the recited steps."⁸

In a comprehensive opinion, Judge Rich, writing for the majority, analyzed the Supreme Court's pronouncements on the function of the apparatus doctrine and concluded that the Supreme Court had not required the rejection of process claims because they could be carried out only by the disclosed apparatus. Such rejections had been the result of faulty reasoning in the lower courts, especially the Court of Customs and Patent Appeals.⁹ The *Tarczy-Hornoch* court decided not to follow these decisions and allowed the applicant's method claims.¹⁰

The *function of the apparatus* doctrine evolved as a result of the unsuccessful attempt by the Supreme Court to delineate processes that were patentable from those that were not. Abstract principles were clearly not patentable processes,¹¹ while a process which consisted of a series of tangible acts and produced a new product, such as "to increase the production of the best quality of flour" was patentable.¹² In *Risdon Iron & Locomotive Works v. Medart*,¹³ the Court considered a patent which disclosed the process and apparatus for manufacturing belt pulleys. The patented process, lacking novelty over the prior art, could have been held invalid on this basis.¹⁴ However, the Court chose to invalidate the process on the

⁷ *Ex parte Tarczy-Hornoch*, No. 383-06 (Pat. Off. Bd. App., Nov. 29, 1965). The board based its decision on its prior holding in *Ex parte Packard*, 140 U.S.P.Q. 27 (Pat. Off. Bd. App. 1963), and reaffirmed the holding that it was bound by the decisions of the Court of Customs and Patent Appeals, regardless of how inequitable the result might seem. *Ex parte Tarczy-Hornoch*, *supra* at 4. The Board did, however, allow claims 29 and 30 because the applicant had disclosed by affidavit apparatus "of an essentially different character" which could perform the process. *Ex parte Tarczy-Hornoch*, *supra*. This exception was developed to avoid the often inequitable result of a literal application of the doctrine. See note 23 *infra* & accompanying text.

⁸ 397 F.2d at 856.

⁹ *Id.* at 857.

¹⁰ On the same day the Court of Customs and Patent Appeals also upheld method claims for a way to perform mathematical integration electronically, citing its decision in *Tarczy-Hornoch*. *In re Bekey*, 397 F.2d 871 (C.C.P.A. 1968).

¹¹ *O'Reilly v. Morse*, 56 U.S. (15 How.) 61 (1853).

¹² *Cochrane v. Deener*, 94 U.S. 780, 785 (1876).

¹³ 158 U.S. 68 (1895).

¹⁴ Act of July 8, 1870, ch. 230 § 324, 16 Stat. 201. This statute is now 35 U.S.C. § 102 (1964).

theory that "the operation or function of such machine . . . is not a patentable process."¹⁵

The Supreme Court continued to reaffirm the proposition that "the mere function or effect of the operation of a machine cannot be the subject-matter of a lawful patent."¹⁶ However, the Court held valid such patents as those for a machine performed process of making expanded sheet metal,¹⁷ and for a process and apparatus for hatching eggs.¹⁸ These apparently anomalous results created much confusion between the courts and Patent Office officials as they tried to correctly establish when the function of the apparatus doctrine was a proper ground for rejection of a patent.

Despite the Supreme Court's lack of clarity in defining the function of the apparatus doctrine,¹⁹ the decisions of the Court of Customs and Patent Appeals and the Patent Board of Appeals had clearly established its existence as a ground for patent rejection.²⁰ However, the courts had realized the hardships to inventors created by applying the doctrine verbatim and began to formulate exceptions. At the time of the present case, the function of the apparatus doctrine would not be grounds for rejection if the steps could be carried out by hand or with the use of simple tools²¹ or another different apparatus which could perform the steps was disclosed.²²

The development of these exceptions began when the District of Columbia Court of Appeals, predecessor of the Court of Customs and Patent Appeals, in deciding the case of *In re Weston*,²³ examined the Supreme Court's decisions dealing with function of the apparatus and concluded "that a process or method of mechanical nature, not absolutely dependent upon a machine although perhaps best illustrated by mechanism, may, if new and useful, be the proper subject of a patent . . ."²⁴ Subsequent cases logically estab-

¹⁵ 158 U.S. at 79.

¹⁶ *Expanded Metal Co. v. Bradford*, 214 U.S. 366, 383 (1909).

¹⁷ *Id.*

¹⁸ *Waxham v. Smith*, 294 U.S. 20 (1935).

¹⁹ A good analysis of the history of the function of the apparatus doctrine in the Supreme Court may be found in the Court's opinion in *Tarczy-Hornoch* and the dissent in *Ex parte Goldsmith*, 94 U.S.P.Q. 403 (Pat. Off. Bd. App. 1952).

²⁰ *See, e.g., In re Horvath*, 211 F.2d 604 (C.C.P.A. 1954); *In re Weston*, 17 App. D.C. 431 (D.C. Cir. 1901); *Ex parte Packard*, 140 U.S.P.Q. 27 (Pat. Off. Bd. App. 1963); *Ex parte Goldsmith*, 94 U.S.P.Q. 403 (Pat. Off. Bd. App. 1952).

²¹ *See, e.g., In re Winder*, 241 F.2d 734 (C.C.P.A. 1957); *In re McCurdy*, 76 F.2d 400 (C.C.P.A. 1935).

²² *In re Parker*, 79 F.2d 908 (C.C.P.A. 1935).

²³ 17 App. D.C. 431 (D.C. Cir. 1901).

²⁴ *Id.* at 432.

lished that if the method could be performed by hand or by a completely different apparatus, then the process was "not absolutely dependent upon a machine."²⁵

The application of this doctrine, notwithstanding its exceptions, received criticism from patent authors²⁶ and examiners.²⁷ The critics attacked the doctrine as being both an illogical and an erroneous interpretation of the Supreme Court's pronouncements. Especially influential in the majority's opinion in *Tarczy-Hornoch* were 16 years of opposition to the doctrine by Patent Board of Appeals Examiner-in-Chief M. F. Bailey. Mr. Bailey first expressed his opposition to the function of the apparatus rejection in his dissent in *Ex parte Goldsmith*,²⁸ where he criticized the decision of the Court of Customs and Patent Appeals as inconsistent with the intent of the decisions of the Supreme Court.²⁹ Mr. Bailey also reinforced his criticism on the simple yet persuasive observation that: "The method is the same whether it can be carried out by only the apparatus disclosed or by the many essentially different forms or by hand operated instrumentalities."³⁰

²⁵ *Id.* See also *In re Ernst*, 17 F.2d 169 (C.C.P.A. 1934).

²⁶ See 1 W. ROBINSON, LAW OF PATENTS 256 n.2 (1890) ("For if the operation performed by the machine is new . . . a new process has been invented; and this is no less true . . . if the process can be performed in no other known way than by this particular machine"); Gaughn, *Method and Machine Claims in the Same Application*, 41 J. PAT. OFF. SOC'Y 520 (1959):

In conclusion it must be said that there is a substantial amount of case law which will not allow method claims in a patent where the method describes the operation of the disclosed machine It is the writer's opinion that this case law is wrong and the result of an unexplained pragmatic approach. *Id.* at 530.

See also Rosenberg, *Method Claims in Mechanical and Electrical Applications*, 32 J. PAT. OFF. SOC'Y 399 (1950); Whitney, *Patentable Processes*, 19 HARV. L. REV. 30 (1905); 17 GEO. WASH. L. REV. 563 (1949).

²⁷ See note 28 *infra* & accompanying text.

²⁸ 94 U.S.P.Q. 403 (Pat. Off. Bd. App. 1946).

²⁹ *Id.* at 405-08.

³⁰ *Ex parte Hart*, 117 U.S.P.Q. 193, 198 (Pat. Off. Bd. App. 1957) (concurring opinion). Mr. Bailey continued to promote his reasoning in his concurring opinions in *Ex parte Roth*, 118 U.S.P.Q. 742 (Pat. Off. Bd. App. 1957). In *Ex parte Symons*, 134 U.S.P.Q. 74 (Pat. Off. Bd. App. 1962), Mr. Bailey wrote the majority opinion in which the Board held unpatentable certain method claims because there was a prior patent disclosing them. Bailey took the opportunity to reverse the examiner's holding that certain method claims should be rejected because they disclosed only a function of an apparatus, although, as the dissent pointed out, the question was really moot. *Id.* at 84. Nevertheless, the Patent Board of Appeals felt compelled to overrule *Symons* in *Ex parte Packard*, 140 U.S.P.Q. 27 (Pat. Off. Bd. App. 1963), in which the Board re-established the validity of the function of the apparatus rejection stating

[w]hile there is some doubt in our minds as to the equity of rejecting otherwise proper method claims as being drawn to the function of the apparatus, nevertheless we are of the opinion that . . . this ground of rejection [is] bind-

With the advent of the 1952 Patent Act,³¹ arguments evolved that the function of the apparatus rejection had been abolished. The proponents of this theory based their reasoning on two significant changes in the Patent Act. First, the language of the Act now made issuance of a patent mandatory,³² and second, the new Act specifically listed categories of inventions that were not patentable.³³ Since a process which was the function of the apparatus was not included in the exceptions, it followed, *expresso unius est exclusio alterius*, that Congress had intended to permit the patenting of such processes.³⁴ However, the Court of Customs and Patent Appeals never accepted this theory and even found it unnecessary to consider it in *Tarczy-Hornoch*.³⁵ When the Court of Customs and Patent Appeals last considered a patent application involving both an apparatus and method claim, they left little doubt that the function of the apparatus rejection was still good law.³⁶

The task of the appellant Zoltan Tarczy-Hornoch was well defined: convince the court that their numerous decisions, both before and after the 1952 Patent Act, dealing with the rejection of method claims as a function of the apparatus were wrong. On its face this approach would seem impossible.³⁷ However, there were signs that indicated a chance for change. For the first time in the history of the court, two members of the patent bar had been appointed judges.³⁸ A third judge, one of the court's most recent

ing on us unless and until this ground of rejection is expressly overruled by the Court of Customs and Patent Appeals. *Id.* at 30-31 (Examiner-in-Chief Bailey dissented).

³¹ 35 U.S.C. §§ 1-293 (1964).

³² The repealed law, 35 U.S.C. § 31 (1946), states: "Any person who has invented or discovered a new and useful art . . . may . . . obtain a patent therefore." The 1952 statute states: "A person shall be entitled to a patent unless . . ." *Id.* § 102 (1964).

³³ 35 U.S.C. § 102 (a)-(g) (1964).

³⁴ This theory was advanced by Examiner-in-Chief Bailey in *Ex parte Symons*, 134 U.S.P.Q. 74 (Pat. Off. Bd. App. 1962). *But see* *Graham v. John Deere*, 383 U.S. 1 (1965); *Gotschalk, The Term Process . . . Includes a New Use*, 403 J. PAT. OFF. SOC'Y 451 (1958).

³⁵ 397 F.2d at 866 n.16. Yet Examiner-in-Chief Bailey relied on this fact in *Ex parte Symons*, 134 U.S.P.Q. 74 (Pat. Off. Bd. App. 1962), to rebut the argument that decisions of the Court of Customs and Patent Appeals subsequent to the 1952 Patent Act upholding the function of the apparatus rejection had precluded the question that the Act had changed existing case law. *See* note 37 *infra*.

³⁶ *In re Winder*, 241 F.2d 734 (C.C.P.A. 1957).

³⁷ *See, e.g., In re Horvath*, 211 F.2d 604 (C.C.P.A. 1954): "[W]e recognize the well settled law that process or method claims merely claiming the function of the apparatus are not allowable, as has been held in a long line of decisions of this court. . . ." *Id.* at 607-08.

³⁸ Giles S. Rich was appointed to the Court of Customs and Patent Appeals in 1956 by President Eisenhower. Before his appointment, Judge Rich practiced patent

appointees,³⁹ as well as the two former patent lawyers, had not yet had the opportunity to consider a case which hinged solely on the application of the function of the apparatus doctrine.⁴⁰

Supporting its reversal of the rejection of *Tarczy-Hornoch's* process claims on the basis of what it believed to be the correct expression of the Supreme Court, the majority quickly dismissed the contention that the function of the apparatus rejection was essential to the constitutional objective "to promote the progress of science and useful arts."⁴¹ The majority in *Tarczy-Hornoch* believed that by refusing to allow the applicant's method claims they would enable another inventor to build a similar apparatus which performed the same process and thus "cheat" the applicant of his invention. Such a result could only impede the "progress of science and the useful arts." Equally convincing, however, was the dissent's view that encouraging inventors to build an apparatus functionally though not patentably equivalent to the patented invention also promotes the constitutional objectives.⁴² Thus, by allowing patents for the function of the apparatus one would lessen the competition to build even a better apparatus and scientific progress would suffer.⁴³ Since no one has yet devised a way to accurately measure the effect of a particular holding on the progress of

law in New York City and was a lecturer on patent law at Columbia University. He is the author of numerous articles on patent law and the recipient of many awards for his contributions to the development of the patent system.

The late Arthur M. Smith was appointed to the Court of Customs and Patent Appeals in 1959 by President Eisenhower. Judge Smith had also been involved in the private practice of patent law in Detroit, Michigan. A noted author and lecturer, Judge Smith's name is familiar to many law students who have studied his text *Patent Law, Cases, Comments, and Materials*. Judge Smith, as well as Judge Rich, have been awarded the Jefferson Medal of the New Jersey Patent Law Association presented for outstanding service to the American patent system. CONGRESSIONAL DIRECTORY, 90th Cong., 2d Sess. at 661 (1967).

³⁹ J. Lindsay Almond, appointed in 1962 by President Kennedy.

⁴⁰ Although Judge Rich was a member of the Court of Customs and Patent Appeals when *In re Winder*, 241 F.2d 734 (C.C.P.A. 1957), was decided, this court did not find it necessary to consider the function of the apparatus doctrine on its merits because the method claims in question could be sustained as the "[s]teps recited in the claim were capable of being performed by hand." *Id.* at 736.

⁴¹ U.S. CONST. art. I, § 8.

⁴² See *In Re Flint*, 330 F.2d 363 (C.C.P.A. 1964).

⁴³ It is said that this approach is not unfair to the patentee because "[i]f your process cannot be practiced except by a specific machine or its patentable equivalents then you have really lost nothing since anyone practicing your process will necessarily use your machine." Gaughn, *supra* note 26, at 522. Proponents of the function of the apparatus rejection also support their position by stating: "[T]here has been no showing that the practical working of the rule has been other than entirely satisfactory nor has Congress seen fit to make any change in the supposedly unjust and confiscatory rule which may operate to 'cheat' inventors of their inventions." 397 F.2d at 856.

science, it is difficult to separate fiction from fact in the court's reasoning. However, since both the rationales in essence question only the effect of process claims on furthering the constitutional objectives, they may not be relevant to the majority's more narrow holding that process claims will no longer be rejected merely because they are a function of the apparatus.

As the law stands after *Tarczy-Hornoch*, it is apparent that a claim for a valid process will be patentable regardless of whether it is presented alone or in conjunction with a claim for a machine which performs the process. On the other hand, a claim for a mere effect produced by an operation — *i.e.*, no sequence of steps involved — is not patentable whether termed a method, process, or function of an apparatus.

The holding of *Tarczy-Hornoch* will have an immediate effect on the present patent system. One patent attorney has observed that this holding should encourage inventors to patent new and useful electrical processes. Formerly, if an inventor had tried to patent both a new electrical apparatus and process, protection of his process would be barred by the function of the apparatus doctrine. If he tried to patent the process alone, he would usually be barred by his failure to satisfy the patent requirements of utility;⁴⁴ what utility does an electrical process have without an apparatus to perform it? But *Tarczy-Hornoch* has eliminated this circuitous trap.

In the computer industry, the *Tarczy-Hornoch* decision has been viewed as a significant step in breaking down the Patent Office's aversion to granting patents for computer programs. For example, method claims for the processing of electrical signals, if new and useful, have been patentable. Similarly, method patents for specially built computers with fixed wired circuits have also been granted. It would logically follow that processes performed by a computer should be patentable regardless of whether it is controlled by fixed wiring or a stack of cards. Although the Patent Office has not yet accepted this proposal, *Tarczy-Hornoch* may supply the first step necessary for resolving this anomaly.⁴⁵

⁴⁴ 35 U.S.C. § 101 (1964).

⁴⁵ Now that the decision of *In re Tarczy-Hornoch* . . . had laid that hobgoblin to rest . . . it would be arrant nonsense for the Patent Office to continue to insist, as in effect it has, that a process is patentable if performed by a permanently-wired-together electrical circuit but is unpatentable or non-statutory if performed by a programmed machine. This is particularly true in the computer art because it is often a toss-up whether a particular task is to be implemented by permanent wiring or by stored instructions. Popper, *Method*