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# Patentability of Computer Programs

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subject franchises, distributorships and similar enterprises to costly and onerous registration requirements which were previously not applicable. In discounting non-managerial efforts as insignificant, the *Turner* test may not have accurately reflected business realities. In 1970, the then General Counsel to the Securities and Exchange Commission, testifying before the Senate Select Committee on Small Businesses, expressed the view that, generally, franchises should not be considered securities because their success depends, in large measure, on the joint labor of the franchisor and franchisee.<sup>45</sup> It is submitted that the instant decision was colored by the defendant's fraud. Hopefully, its rule will be restricted, as here, to inherently fraudulent promotions.

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## PATENTABILITY OF COMPUTER PROGRAMS

Respondents<sup>1</sup> filed an application in the Patent Office on a programmed conversion<sup>2</sup> of numerical information in general purpose digital computers for use in the transmission of telephone signals.<sup>3</sup> Their claim, a method for converting binary-coded-in decimal numbers into pure binary numerals, covered any use of the method in any type of digital computer.<sup>4</sup> Pursuant to a policy decision of the Patent Office, the claims were rejected by both the examiner and the Patent Office Board of Appeals as being "non-statutory subject matter." The Court of Customs and Patent Appeals (C.C.P.A.) reversed<sup>5</sup> and allowed the claims as fitting within the

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45. SEC. REG. & L. REP. A-8 (April 29, 1970).

1. Amicus briefs of sixteen groups were filed. *Gottschalk v. Benson*, 93 S. Ct. 253, 258 n.7 (1972). The issue of patentability of computer programs has split the computer industry into two factions. On one hand, the hardware manufacturers are against extending protection to programs on the ground that it might hurt computer sales and for fear that widespread and efficient distribution of new programming techniques will be inhibited. On the other hand, software companies, whose sole product consists of computer programs, favor patent protection on the ground that lack of it discourages growth and marketability of their programs. Note, *Computer Programs and Proposed Revisions of the Patent and Copyright Laws*, 81 HARV. L. REV. 1541, 1547 (1968) [hereinafter cited as 81 HARVARD].

2. A computer program is basically a set of mathematical instructions which direct the inner workings of the computer hardware. Programs are written in one of several computer languages such as COBAL, FORTRAN, and ALGOL, which may be used with almost any general purpose digital computer. Programs are also written in "machine language," that is, the language peculiar to each type of computer. Different applications will warrant the use of the different languages.

3. The program was developed for and assigned to Bell Telephone Laboratories, Inc. See *Computers: Hard Ruling for Software—Victory for Hardware*, TIME, Dec. 4, 1972, at 46.

4. See notes 45 & 46 *infra*.

5. *In re Benson*, 441 F.2d 682, 169 U.S.P.Q. 548 (C.C.P.A. 1971).

statutory definition of a "process."<sup>6</sup> The Patent Office's petition for a writ of certiorari was granted by the United States Supreme Court, which held, *reversed*: A computer program, being a series of mathematical formulas without substantial practical application except in connection with a digital computer, is not a patentable process within the meaning of the patent act. *Gottschalk v. Benson*, 93 S. Ct. 253 (1972).

Software companies have been seeking patent protection for their proprietary programs because they believe the other means of protection available—trade secrets and copyright—are inadequate.<sup>7</sup> Trade secrecy is a branch of state unfair competition law under which the company can protect itself by extracting a promise not to divulge the secrets of the invention in a contract. Its greatest shortcoming is that there are many ways the secret can be legally disclosed, thus destroying all trade secret protection.<sup>8</sup> Also, it may not be available at all if the extensive coverage of patent law preempts any state law protections for inventions.<sup>9</sup>

Copyrights are secured through registration with the Copyright Office.<sup>10</sup> Their main disadvantage is that while full disclosure of the program is required, there is no adequate protection against infringement since only the form of expression of the idea is protected, not the idea itself.<sup>11</sup> As an example, a leading case held that a method of keeping books did not infringe the copyright of a similar plan with similar results

6. "The term process means process, art, or method and includes a new use of a known process, machine, manufacture, composition of matter, or material." 35 U.S.C. § 100(b) (1970). "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 (1970).

7. See Bender, *Computer Programs: Should They Be Patentable?*, 68 COLUM. L. REV. 241, 248-50 (1968) [hereinafter cited as 68 COLUMBIA]; Comment, *Computer Program Protection: The Need to Legislate a Solution*, 54 CORNELL L. REV. 586, 589-95 (1969) [hereinafter cited as 54 CORNELL]; Comment, *In Re Prater and Patent Reform Proposals: Debugging the Patent Office's Administration of Computer Program Applications*, 51 J. PAT. OFF. Soc'y 581, 586-90 (1969) [hereinafter cited as 51 J. PATENTS]; 81 HARVARD, *supra* note 1, at 1549.

8. Unfair Competition is an equitable doctrine regulating business conduct by enforcing "business integrity." The branch of state unfair competition law most relevant to program protection is trade secrecy. . . .

To come within the purview of trade secrecy, the programmer's prime objective must be to keep the program a secret from his competitors. The secret may be shared with another in confidence or with a person owing fiduciary duties to the programmer. There are two contractual methods of creating a fiduciary duty not to disclose. One is to procure restrictive employment contracts, whereby employees promise not to divulge secrets. Another is to obtain contracts with program lessees whereby they also promise not to divulge the secret. Remedies . . . include both damages and an injunction against further disclosure.

54 CORNELL, *supra* note 7, at 590, citing 1 H. NIMS, THE LAW OF UNFAIR COMPETITION AND TRADEMARKS § 1 (4th ed. 1947). *But see* RESTATEMENT (SECOND) OF AGENCY §§ 395-96 (1958) (duty of nondisclosure *unless* otherwise agreed).

9. See *Kewanee Oil Co. v. Bicron Corp.*, 478 F.2d 1074 (6th Cir. 1973).

10. 17 U.S.C. § 4 (1970).

11. "Unlike a patent, a copyright gives no exclusive right to the art disclosed; protection is given only to the expression of the idea—not the idea itself." *Mazer v. Stein*, 347 U.S. 201, 217 (1954).

so long as the alleged infringer made a different arrangement of columns and used different headings.<sup>12</sup> Another problem is that while the Copyright Office is allowing registration of programs as class A books,<sup>13</sup> there is some question as to whether this would withstand judicial review. For instance, in a previous decision, a copyright was denied to the creator of a piano roll because the perforations were unintelligible to the average person and merely part of a machine.<sup>14</sup>

In contrast to copyright and trade secret law, patent law offers a combination of public disclosure<sup>15</sup> and adequate protection.<sup>16</sup> The holder of the patent receives a seventeen-year monopoly which effectively prevents another from making, using, or selling the invention without authorization from the patentee.<sup>17</sup> Independent creation by another subsequent to the issuance of the patent is immaterial.<sup>18</sup> Also, the doctrine of equivalents,<sup>19</sup> which is especially applicable to a many-stepped process such as a computer program, prevents a prospective infringer from avoiding infringement liability by substituting for a part of the process its equivalent.<sup>20</sup> In addition to this infringement protection, patents also perform a social function by requiring full public disclosure of the invention in exchange for the monopoly.<sup>21</sup> Such disclosure has the effect of preventing

12. *Id.*

13. The practice of registering programs as class A books was initiated in 1964. The conditions for such registration are:

- (1) The elements of assembling, selecting, arranging, editing, and literary expression that went into the compilation of the program are sufficient to constitute original authorship.
- (2) The program has been published, with the required copyright notice: that is, "copies" . . . bearing the notice have been distributed or made available to the public.
- (3) The copies deposited for registration consist of or include reproductions in a language intelligible to human beings. If the only publication was in a form that cannot be perceived visually or read, something more (e.g., a print-out of the entire program) would also have to be deposited.

54 CORNELL, *supra* note 7, at 593, quoting 11 COPYRIGHT SOC'Y BULL. 361 (1964).

14. White-Smith Music Publ. Co. v. Apollo Co., 209 U.S. 1 (1908).

15. 35 U.S.C. § 112 (1970).

16. 35 U.S.C. § 271 (1970); see 81 HARVARD, *supra* note 1, at 1553.

17. 35 U.S.C. § 271 (1970).

18. Copyright protection, on the other hand, is based on originality, not novelty. See 54 CORNELL, *supra* note 7, at 594, citing *Wihtol v. Wells*, 231 F.2d 550, 553 (7th Cir. 1956).

19. "A patentee may invoke this doctrine to proceed against the producer of a device 'if it performs substantially the same function in substantially the same way to obtain the same result.'" *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 605 (1950), citing *Sanitary Refrigerator Co. v. Winters*, 280 U.S. 30, 42 (1929).

20. This concept was illustrated in a recent case where an infringer tried substituting a grounded grid triode for a diode in an electronic circuit. The net result of this substitution was null, because in this configuration the triode performs the same function in substantially the same way as the diode. *Tektronix, Inc. v. United States*, 165 U.S.P.Q. 392 (Ct. Cl. 1970). See also *Ex parte Heacock*, 134 U.S.P.Q. 446 (P.O. Bd. App. 1962).

21. 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.

35 U.S.C. § 112 (1970).

unnecessary duplication of effort and allows more efficient use of manpower, thus lowering production costs.<sup>22</sup>

To qualify for a patent, the invention must pass three tests. First, it must be capable of classification as either a process, machine, manufacture, or composition of matter.<sup>23</sup> A computer program, being a series of instructions to a computer, obviously fits the dictionary definition of a process. Second, the invention must be new, useful,<sup>24</sup> and not obvious.<sup>25</sup> These criteria distinguish a mere mechanical improvement from an invention.<sup>26</sup> The final requirement is that it be disclosed to the public in such a way that one of ordinary skill in the art would be able to use or make it.<sup>27</sup>

Prior to the present decision, there were two lines of cases used by the Patent Office to reject process claims for computer programs.<sup>28</sup> The first was the "change of state" doctrine, which was adopted from dicta in the leading Supreme Court case, *Cochrane v. Deener*.<sup>29</sup> There the Court said: "A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a *different state or thing*."<sup>30</sup> However, in *In re Prater* (a twice considered opinion),<sup>31</sup> the C.C.P.A. rejected this language as stating a rule

requiring that all processes, to be patentable, must operate physically upon substances. Such a result misapprehends the nature of the passage quoted as dictum in its context, and the question being discussed by the author of the opinion. To deduce such

22. In 1967 there was an estimated shortage of programmers of 50,000 to 60,000. Software sales had surpassed hardware sales and it appeared that there was a growing gap between capabilities of the third generation computers and the software available for use with them. See 54 CORNELL, *supra* note 7, at 586-87; 51 J. PATENTS, *supra* note 7, at 581; 81 HARVARD, *supra* note 1, at 1545.

23. 35 U.S.C. § 100(b) (1970); 35 U.S.C. § 101 (1970). See note 6 *supra*.

24. 35 U.S.C. § 101 (1970).

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

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

35 U.S.C. § 103 (1970).

26. Section 103 was enacted in 1952 in response to the widely criticized holding in *A & P Tea Co. v. Supermarket Equip. Co.*, 340 U.S. 147 (1950). Its utility is now in doubt since the decision in *Anderson's Black Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57 (1969). See I. KAYTON, *PATENT PROPERTY, CASES AND READINGS* 214 (3d ed. 1971).

27. See note 21 *supra*.

28. This analytical approach was suggested in 54 CORNELL, *supra* note 7, at 596. Rather than being two separate lines of cases, it is probably closer to being merely two separate arguments advanced by the Patent Office. The line drawn between them is not always clear, but then neither is the area of law under consideration.

29. 94 U.S. 780 (1876).

30. *Id.* at 788 (emphasis added).

31. 415 F.2d 1393, 162 U.S.P.Q. 541 (C.C.P.A. 1969) [hereinafter cited as *Prater II*], *superseding* 415 F.2d 1378, 159 U.S.P.Q. 583 (C.C.P.A. 1969) [hereinafter cited as *Prater I*].

a rule from the statement would be contrary to its intentment which was *not to limit* process patentability *but to point out that a process is not limited to the means used in performing it.*<sup>32</sup>

The court then cited Supreme Court cases<sup>33</sup> subsequent to *Cochrane* to show that the alleged "rule" never was in fact adopted by the Court. In the superseded opinion, the *Prater I* court also had stated that since "the law does not require that a *machine*, to be patentable, must act on physical substances," it would be anomalous to require this of a process.<sup>34</sup>

The second line of cases used to reject program process claims was the so-called "mental step" cases, where it was asserted that a method which included some mental steps was not a process within the meaning of the patent statute. This doctrine originated in *Don Lee, Inc. v. Walker*,<sup>35</sup> where a *method of computation* for determining the position and weights necessary to counterbalance distortion was held not patentable because it was "not 'a new and useful art, machine, manufacture or composition of matter' within the meaning of [the patent statute in effect at that time]."<sup>36</sup>

The next important development in the "mental step" doctrine occurred in *In re Abrams*,<sup>37</sup> where a patent was sought on a process for prospecting for petroliferous products. The process included physical and mental steps (measuring, determining, and comparing). In an attempt to circumvent the mental steps doctrine, the applicant proposed three rules.<sup>38</sup>

32. *Prater II*, 415 F.2d at 1403, 162 U.S.P.Q. at 549 (original emphasis) (footnote omitted).

33. *E.g.*, *Tilghman v. Proctor*, 102 U.S. 707 (1880). In the superseded opinion, the *Prater I* court stated:

What we find interesting in *Tilghman* and directly applicable to our analysis here is the reference, 102 U.S. at 728, to a process as being "an act, or mode of acting" and the further recognition that it is "a conception of the mind, seen only by its effects when being executed or performed." As such, . . . *Tilghman* adds a recognizable dimension to *Cochrane v. Deener* which focuses attention on the mental aspect of process inventions . . . .

[I]n the Telephone Cases, 126 U.S. 1 . . . (1887), involving processes acting on energy rather than physical matter . . . [t]he Court made no discovery of any "rule" in *Cochrane* that process claims are required to act on physical substances . . . . *Prater I*, 415 F.2d at 1388, 159 U.S.P.Q. at 592. *See also* *Smith v. Snow*, 294 U.S. 20 (1935), and *Waxham v. Smith*, 294 U.S. 20 (1935), where the Court sustained a claim to a process for securing a function performed in nature by methods not occurring in nature.

34. *Prater I*, 415 F.2d at 1388, 159 U.S.P.Q. at 592.

35. 61 F.2d 58, 14 U.S.P.Q. 272 (9th Cir. 1932).

36. *Id.* at 67, 14 U.S.P.Q. at 285.

37. 188 F.2d 165, 89 U.S.P.Q. 266 (C.C.P.A. 1951).

38. 1. If all the steps of a method claim are purely mental in character, the subject matter thereof is not patentable within the meaning of the patent statutes.
2. If a method claim embodies both positive and physical steps as well as so-called mental steps, yet the alleged novelty or advance over the art resides in one or more of the so-called mental steps, then the claim is considered unpatentable for the same reason that it would be if all the steps were purely mental in character.
3. If a method claim embodies both positive and physical steps as well as so-called mental steps, yet the novelty or advance over the art resides in one or more of the positive and physical steps and the so-called mental step or steps are incidental parts of the process which are essential to define, qualify

While the court never accepted these rules as stating the law, it seemed to adopt rule 2 toward the latter part of the opinion. These rules were then relied upon by the Patent Office until *Prater*, where the C.C.P.A., in the superseded opinion, finally pointed out that the apparent adoption of rule 2, "was advanced not to show adoption of the rules by the court but merely to point out that even if, *arguendo*, the court had adopted his rules, Abrams would still not have prevailed in his particular fact situation."<sup>39</sup> Later, in *In re Musgrave*,<sup>40</sup> these "rules" were shown to be inconsistent with the statutory requirements because the rules required that patentability depend upon whether the novelty was in the physical or mental steps of the process.<sup>41</sup>

Having discarded the *Abrams* "rules," *Musgrave* then dealt with the problem of a process having both physical and mental steps:

The board also considered individual *steps* in the claims to be "non-statutory" . . . . While it may be a minor matter . . . , we are here concerned only with whether the *combinations* of steps constituting the claimed processes are statutory "processes."

. . . .

All that is necessary, in our view, to make a sequence of operational steps a statutory "process" within 35 U.S.C. § 101 is that it be in the technological arts so as to be in consonance with the Constitutional purpose to promote the progress of "useful arts." Const. Art. 1, sec. 8.<sup>42</sup>

Thus it appeared at the time the present case came before the C.C.P.A. for decision that both the "mental steps" and the "change of state" doctrines were dead, at least as applied to computer programs. This is not to say that the court would extend patent protection to a completely mental process. For example, the rule that one cannot obtain a patent on a mathematical formula still stands.<sup>43</sup> The reason is simply that a mathematical formula is merely a statement of a law of nature, and no law of nature, albeit previously unknown to man, can be new.<sup>44</sup>

In *Gottschalk*, Judge Rich first rejected the argument that the previous decisions discarding the mental steps doctrine could be distinguished on the basis that while all of those inventions involved some subsidiary art, the present case involved only data processing itself.<sup>45</sup> Instead he

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or limits its scope, then the claim is patentable and not subject to the objection contained in 1 and 2 above.

*Id.* at 166, 89 U.S.P.Q. at 268 (quoting appellant's brief). The applicant tried to fit his invention into rule 3.

39. *Prater I*, 415 F.2d at 1386, 159 U.S.P.Q. at 591.

40. 431 F.2d 882, 167 U.S.P.Q. 280 (C.C.P.A. 1970).

41. "[N]ovelty and advancement of an art are irrelevant to a determination of whether the nature of a process is such that it is encompassed by the meaning of "process" in 35 U.S.C. 101." *Id.* at 889, 167 U.S.P.Q. at 286.

42. *Id.* at 893, 167 U.S.P.Q. at 289 (original emphasis).

43. *Mackay Co. v. Radio Corp.*, 306 U.S. 86, 94 (1938).

44. *Funk Bros. Seed Co. v. Kalo Co.*, 333 U.S. 127, 130 (1947).

45. *In re Benson*, 441 F.2d 682, 686, 169 U.S.P.Q. 548, 551 (C.C.P.A. 1971). These

framed the issue as to whether a reasonable interpretation of the claims included coverage of the process as implemented by the human mind.<sup>46</sup>

As to claim 8,<sup>47</sup> he found the answer to be negative. Claim 8 was for a method to be practiced in part on a particular *apparatus* specified as a "reentrant shift register." It referred to the operations of storing, shifting, and masking "signals" which, by a *reasonable* interpretation, could only mean signals of the kind upon which the disclosed electronic digital computer hardware operates. The court found that because the process was capable of being carried out without human intervention it did not constitute a process that was basically mental in character. It specifically rejected an argument that since the computer program is but a "tool of the mind," the method is basically mental in character because the raw material of the method is numbers which are mathematical abstractions.

As to claim 13,<sup>48</sup> which contained no reference to any apparatus, and referred to the matter operated on not as "signals," but as "representations," the court argued that no human judgment was required in carrying out the steps, "merely observation and rating prescribed action according to what is observed."<sup>49</sup> While the process could conceivably be carried out mentally with the aid of pencil and paper, it was obvious from reading

cases were: *In re Foster*, 438 F.2d 1011, 169 U.S.P.Q. 99 (C.C.P.A. 1971); *In re Musgrave*, 431 F.2d 882, 167 U.S.P.Q. 280 (C.C.P.A. 1970); *In re Mahoney*, 421 F.2d 742, 164 U.S.P.Q. 572 (C.C.P.A. 1970); *In re Bernhart*, 417 F.2d 1395, 163 U.S.P.Q. 611 (C.C.P.A. 1969); *In re Prater*, 415 F.2d 1393, 162 U.S.P.Q. 541 (C.C.P.A. 1969), *superseding* 415 F.2d 1378, 159 U.S.P.Q. 583 (C.C.P.A. 1969).

46. *In re Benson*, 441 F.2d 682, 687, 169 U.S.P.Q. 548, 551 (C.C.P.A. 1971).

47. 8. The method of converting signals from binary coded decimal form into binary which comprises the steps of

- (1) storing the binary coded decimal signals in a reentrant shift register,
- (2) shifting the signals to the right by at least three places, until there is a binary "1" in the second position of said register,
- (3) masking out said binary "1" in said second position of said register,
- (4) adding a binary "1" to the first position of said register,
- (5) shifting the signals to the left by two positions,
- (6) adding a "1" to said first position, and
- (7) shifting the signals to the right by at least three positions in preparation for a succeeding binary "1" in the second position of said register.

*Id.* at 683, 169 U.S.P.Q. at 549.

48. 13. A data processing method for converting binary coded decimal number representations into binary number representations comprising the steps of

- (1) testing each binary digit position *i*, beginning with the least significant binary digit position, of the most significant decimal digit representation for a binary "0" or a binary "1";
- (2) if a binary "0" is detected, repeating step (1) for the next least significant binary digit position of said most significant decimal digit representation;
- (3) if a binary "1" is detected, adding a binary "1" at the (*i* + 1)th and (*i* + 3)th least significant binary digit positions of the next lesser significant decimal digit representation, and repeating step (1) for the next least significant binary digit position of said most significant decimal digit representation;
- (4) upon exhausting the binary digit positions of said most significant decimal digit representation, repeating steps (1) through (3) for the next lesser significant decimal digit representation as modified by the previous execution of steps (1) through (3); and
- (5) repeating steps (1) through (4) until the second least significant decimal digit representation has been so processed.

*Id.* at 683, 169 U.S.P.Q. at 549.

49. *Id.* at 688, 169 U.S.P.Q. at 552.



the application as a whole that there was apparatus with which the process could be carried out without human intervention. Furthermore, it was of no practical value except when used with a general purpose digital computer. Therefore, a *reasonable* interpretation of the process disclosed in claim 13 did not include implementation by the human mind.

After the C.C.P.A. had held computer programs patentable, the Patent Office secured review of the decision by the Supreme Court through a writ of certiorari.<sup>50</sup> In reaching its decision that the method claimed was not a process, the Court ignored all of the C.C.P.A.'s decisions and chose instead to rely exclusively on its own past decisions in the field of patent law.<sup>51</sup>

The first principle set forth was the prohibition against patenting a law of nature. "If there is to be invention from such a discovery, it must come from the application of the law of nature to a new and useful end."<sup>52</sup> This argument focuses on the nature of the computer program, being composed of a series of mathematical instructions to the computer. If a mathematical formula is a law of nature, then a series of formulas is also. However, the court chose to ignore that a computer program has no intrinsic value. It acquires value only when it is put to use with a digital computer.<sup>53</sup> So, even if a computer program is a "law of nature," here it is being applied to the transmission of telephone signals. If this is an "application of the law of nature to a new and useful end," the program should be patentable.

Further, the Court, after citing *Cochrane v. Deener*,<sup>54</sup> restated the change of state doctrine: "Transformation and reduction of an article 'to a different state or thing' is the clue to the patentability of a process claim that does not include particular machines."<sup>55</sup> Since it made no distinction between claim 8 and claim 13 in its rejection, it is not clear whether the Court considered the argument that claim 8 can be read as producing a change of state in an electronic signal.<sup>56</sup> Read in this manner, it would then be patentable unless by "transformation to a different state" the Court means permanent change therein.<sup>57</sup>

50. 405 U.S. 915 (1972).

51. Listed in the order they appear in the opinion: Mackay Co. v. Radio Corp., 306 U.S. 86 (1938); Rubber-Tip Pencil Co. v. Howard, 88 U.S. (20 Wall.) 498 (1874); LeRoy v. Tatham, 55 U.S. (14 How.) 156 (1852); Funk Bros. Seed Co. v. Kalo Co., 333 U.S. 127 (1947); O'Reilly v. Morse, 57 U.S. (15 How.) 62 (1853); The Telephone Cases, 126 U.S. 1534 (1887); Corning v. Burden, 57 U.S. (15 How.) 252 (1853); *Cochrane v. Deener*, 94 U.S. 780 (1876); Tilghman v. Proctor, 102 U.S. 707 (1880); Expanded Metal Co. v. Bradford, 214 U.S. 366 (1908); Smith v. Snow, 294 U.S. 1 (1934); Waxham v. Smith, 294 U.S. 20 (1934).

52. Funk Bros. Seed Co. v. Kalo Co., 333 U.S. 127 (1947).

53. This was argued by Judge Rich in the C.C.P.A.'s opinion. *In re Benson*, 441 F.2d 682, 688, 169 U.S.P.Q. 548, 553 (C.C.P.A. 1971).

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

55. 93 S. Ct. at 256.

56. See 54 CORNELL, *supra* note 7, at 596, citing Note, *The Patentability of Computer Programs*, 38 N.Y.U.L. REV. 891 (1963).

57. See 54 CORNELL, *supra* note 7, at 596. There the author argues that since the change

The final ground of rejection, while unclear, seems to be based on the scope of the respondent's claims, which the Court stated covered "both known and unknown uses of the [binary-coded-decimal] to pure-binary conversion."<sup>58</sup> The Court professed the fear that if the C.C.P.A.'s judgment was affirmed, then "the patent would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself."<sup>59</sup> Here the Court may have confused the issue. As was pointed out in *In re Mahoney*,<sup>60</sup> the section 112 requirement of disclosure is completely distinct from the section 101 issue of statutory subject matter. If, in this case, the Court thought that the claims were too broad, then application should have been rejected on that basis.

Does this mean that the patent would have been granted if respondents had limited the claimed use of the process to its application in systems similar to their telephone system? Does it mean that there is still room for argument that a computer system is patentable if expressly tied to a particular industry or other art, as were the programs held patentable by the previous decisions of the C.C.P.A., or are these decisions effectively overruled? It could probably be argued both ways, but for the last part of the opinion which set out what appear to be the real reasons for the rejection.

The Court admitted: "It may be that the patent laws should be extended to cover these programs, a policy matter to which we are not competent to speak."<sup>61</sup> The Court repeated the argument made by the Patent Office that it had no practical means to classify programs or to conduct prior art searches. Without these, it was argued, the presumption of validity would be all but nonexistent for a program patent.<sup>62</sup> Furthermore, the programming art had shown sufficient progress without the aid of patent protection.<sup>63</sup> The Court also emphasized that the problem had

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is only temporary (because the electronic devices have two bistable states and therefore exist in one or the other at all times), a distinction can be made on the basis of the degree of permanence of the change of state.

58. 93 S. Ct. at 255.

59. *Id.* at 257.

60. 421 F.2d 742, 164 U.S.P.Q. 572 (C.C.P.A. 1970).

61. 93 S. Ct. at 257.

62. The patent office could solve this problem by establishing a file of all programs in use at the present time. This would, of course, require the cooperation of the industry, and provisions would have to be made to ensure that these programs be kept secret except for the purpose of being cited as prior art. This secrecy would have to be preserved only for a short time, due to the rapid obsolescence of programs. It should only be afforded to those programs protected under the trade secrecy doctrine. See note 8 *supra*. The mere fact that there would have to be a transition period should not have caused the Court to rule programs unpatentable.

63. This argument has also been refuted:

Program development has advanced rapidly in the past despite the absence of effective protection partly because of conditions that existed in its infancy. In the early stages of programming free interchange of advances was common, but it appears that the fount of significant free programs is quickly drying up. Robert O. Nimtz of Bell Telephone Laboratories has identified the reason. Early developments took place largely in academic institutions and in the laboratories of hardware manufacturers. The former were interested in knowledge for its own sake and

been given consideration on the legislative and executive levels of the government.<sup>64</sup> The complexities of the problem were such that it suggested that the proper place for the solution is in the legislative, not the judicial, branch.<sup>65</sup>

There are also other considerations which suggest the utility of a legislative solution to the problem of protection for the software industry. For example, even had the Court held that a computer program is a patentable process within the meaning of section 101, the program would still have to hurdle the non-obviousness requirement of section 103.<sup>66</sup> One author has suggested that most programs would probably fail to meet this test.<sup>67</sup> And even should they meet it, the time and money involved in obtaining a patent for a complex process may still put it out of reach for practical considerations alone. This is because computer programs have such a rapid rate of obsolescence that it is possible the program would be outdated by the time the patent was granted.<sup>68</sup>

If Congress is going to extend protection to computer programs, it

considered the publication of their advances to be part of their function; the latter were interested in selling hardware, and thus found it profitable to provide application programs, which induced potential users to become actual users. Also, decisions to make programs widely available were often made by men who did not fully comprehend the value of what they were giving away. The era of free exchange is rapidly passing. Business is aware of the indispensability of data processing and of the huge development costs of programs. The increase in efforts to obtain program protection is evidence of this awareness.

Bender, *Computer Programs: Should They Be Patentable?*, 68 *COL. L. REV.* 241, 246 (1968) (footnotes omitted).

64. 93 S. Ct. at 258.

65. If these programs are to be patentable, considerable problems are raised which only committees of Congress can manage, for broad powers of investigation are needed, including hearings which canvass the wide variety of views which those operating in this field entertain. The technological problems tendered in the many briefs before us indicate to us that considered action by the Congress is needed.

*Id.* at 258 (footnote omitted).

66. See note 25 *supra*.

67. Skilled programmers are not generally groping on the edge of the unknown; with sufficient time and money, a program to solve a particular problem within the capability of the hardware is possible. Is this result a non-obvious invention or merely the work of a programmer normally skilled in the art? Although courts have not as yet applied this test to programs, the non-obvious requirements are clearly stringent. . . . [P]ast cases indicate that the requirements will be difficult to meet.

54 CORNELL, *supra* note 7, at 598.

68. Even when classification and search techniques for program patents are developed, the time delay and expense involved in perfecting a patent will remain severe obstacles to the system's workability. The cost of searching prior art, prosecuting an application, and settling interferences—alone substantial—are eclipsed by the tremendous expenditures required for effective infringement litigation. . . . Moreover, the time required to secure a patent after preliminary searching, drafting, and application is approximately three years. Unless automation greatly reduces this waiting period, rapidly changing software technology will render most programs obsolete by the time the patent issues. Furthermore, during the period of uncertainty competitors may indulge in product duplication and concept copying, creating a situation later resolvable only by expensive suits. The obstacles of time delay and expense may thus create an insurmountable barrier to all but the most promising and innovative software developments.

The simple registration procedure followed in obtaining statutory copyright protection minimizes time delay and expense.

Note, *Adequate Legal Protection for Computer Programs*, 1968 *UTAH L. REV.* 369, 385.

should consider creating a hybrid between the copyright and patent statutes in order to solve some of the above mentioned problems.<sup>69</sup> A speedy registration process coupled with a shorter period of monopoly would encourage public disclosure of programs without tying up new developments in the industry. If infringement protection could be granted to the holder of this quasi-patent while still leaving some leeway for independent creation by another, production costs for small one-of-a-kind projects could be held to a minimum because prior art searches to avoid infringement liability would not have to be made. This is a touchy area. Too much leeway for independent creation could preclude any degree of protection against infringement, while not enough could raise costs by requiring a prior art search before any attempt to create a program for any purpose.

Whatever Congress' final solution is, it should act quickly. The computer industry affects almost every kind of industry and business in this country.<sup>70</sup> A system of protection for software that would cut costs and increase productivity in that industry would therefore tend to have the same effect on costs and productivity in general. Given the present state of the economy, such a result would seem to be desirable.

ERIC COHEN

### CONFLICT CERTIORARI JURISDICTION AND CONTRACTS AS TOLD BY THE SUPREME COURT OF FLORIDA

The vendor, Kendel, brought an action against the broker, Pontious, and the purchaser, Fernandez, for specific performance of an alleged contract for the sale of land. The alleged contract, "a deposit receipt," which contained a provision that the contract would be binding when signed by both parties or their agent, was prepared and signed by the

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69. Perhaps a compulsory licensing system, similar to that used for phonograph records, could be established using a licensing organization similar to A.S.C.A.P. See 17 U.S.C. § k(e) 1964); U.S. COPYRIGHT OFFICE, REGISTER OF COPYRIGHTS, SUPPLEMENTARY REPORT ON THE GENERAL REVISION OF THE U.S. COPYRIGHT LAW: 1965 REVISION BILL (Comm. Print 1965).

Another possibility is a broader type of copyright protection such as the German system which protects all intellectual creations containing an element of individuality, even if they are intangible or imperceptible to humans. See Ulmer, *Der Urheberschutz wissenschaftlicher Werke unter besonderer Berücksichtigung der Programme elektronischer Rechenanlagen*, 1967 BAYERISCHE AKADEMIE DER WISSENSCHAFTEN, SITZUNGSBERICHTE 1. But see Note, *supra* note 149, at 1551.

A third alternative would be to establish "petty patent" protection for software, similar to the German "Gebrauchsmuster," requiring a lesser showing of novelty than the present patent law standard and extending rights for a shorter period of time. See Stedman, *Trade Secrets*, 23 OHIO ST. L.J. 4, 32-33 (1962).

*Id.* at 392 n.170.

70. See generally 54 CORNELL, note 7 *supra*; 68 COLUMBIA, note 7 *supra*; and 81 HARVARD, note 1 *supra*.