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REINVENTING THE EXAMINATION PROCESS FOR PATENT APPLICATIONS COVERING SOFTWARE-RELATED INVENTIONS

By ALAN P. KLEIN†

I. INTRODUCTION

Not all inventions can be patented. Although an invention is useful, the United States Patent Office (hereinafter, the “Patent Office”) may reject a patent application on it, citing 35 U.S.C. section 101 of the Patent Act, if the claims are directed to non-statutory subject matter,¹ or citing 35 U.S.C. sections 102 and 103, if the claims are not new and non-obvious over the prior art.²

In the past, the Patent Office has refused patents on processes and machines employing computer programs. Claims to these inventions often recite a mathematical algorithm. Either the claim as a whole is for the mathematical algorithm, or the claim contains a mathematical algorithm as one of its components. The Patent Office has rejected such claims under section 101 on the ground that mathematical algorithms are not statutory subject matter.³

When these claims are rejected under section 101, the question of their novelty and non-obviousness does not have to be addressed. Application of sections 102 and 103 requires that a determination be made as

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1. 35 U.S.C. § 101 (1994).
2. *Id.* at §§ 102, 103.
3. *Id.* at § 101.

to whether the mathematical algorithm is within the prior art.⁴ Such a determination is very difficult to make. A tremendous amount of prior art must be searched. If the claims are rejected under section 101, it is not necessary to determine whether the mathematical algorithm is within the prior art. For many years this was a factor in the Patent Office's blanket use of section 101 to dispose of such claims.

Currently, the Patent Office is using a three-step test to decide whether to issue a patent on a computer program-related invention which is useful. The first step is to determine whether the claim recites a mathematical algorithm. If the answer to the threshold question is "yes," proceed to the second step. In the second step, the Patent Office asks whether the claim as a whole merely recites a mathematical algorithm. If the answer is "yes," the claim is not patentable under section 101. If the answer is "no," proceed to the third step. In the third step, the Office determines whether the mathematical algorithm is within the prior art, and asks whether the claim is new and non-obvious over the prior art. If the answer is "no," the claim is not patentable under sections 102 and 103.

On January 26-27, 1994, in San Jose, California, and on February 10-11, 1994, in Arlington, Virginia, the Patent Office held public hearings on the use of the patent system to protect computer program-related inventions. It was noted that different sectors of the software industry have expressed concern over the ability of the Patent Office to examine patent applications for computer program-related inventions effectively.

Critics of the Patent Office test say that it does not have the resources to apply the third step correctly. They argue that the Patent Office often answers the third question "yes" because it is unable to determine that the mathematical algorithm is actually within the prior art. They say the result is that computer program-related inventions which are not new and non-obvious over the prior art are being patented and withdrawn from the stock of knowledge freely available to all.

In the Notice Of Hearings And Request For Public Comments, the following factors contributing to the problem were identified:

early programming techniques were not well documented . . . locating and obtaining the most relevant prior art is extremely difficult, due to the widely diverse nature of processes that have been implemented by computer software-related systems; and software is not documented in a consistent, readily understandable format (e.g., some programs only provide object code, different programming languages are used, source code is not summarized or documented, etc.).⁵

4. *Id.* at §§ 102, 103.

5. 58 Fed. Reg. 66, 347 (1993).

This article addresses the issue of whether the Patent Office test should be replaced by a better test. The article begins with a discussion of the question of whether the bar of section 102(c) of the Patent Act defines "prior art" under section 103, the non-obviousness provision. The old combination doctrine is then analyzed and shown to be based on the bar of section 102(c), coupled with section 103. Next, the old combination doctrine is discussed in connection with the trilogy of cases decided by the Supreme Court on the patentability of computer-related inventions where it is argued that the old combination doctrine was applied. Lastly, it is concluded that the Patent Office test is inconsistent with the standard employed by the Supreme Court, a standard which the Patent Office is bound to follow. This paper proposes a new and better test for patenting computer-related software.

The first step of the new test is to ascertain whether the claim as a whole is for a mathematical algorithm, or contains a mathematical algorithm as one of its components. If the answer to the threshold question is "yes" and the claim as a whole is for a mathematical algorithm, the claim is not patentable under section 101. If the answer to the threshold question is "yes" and the claim contains a mathematical algorithm as one of its components, proceed to the second step. In the second step, assume the algorithm is within the prior art (even if it is not), and ask whether the claim is new and non-obvious over the prior art. If the answer is "no," the claim is not patentable under sections 102 and 103.

Since this test assumes that the algorithm is within the prior art, adopting it would simplify patentability determinations for the Patent Office and silence its critics. It would no longer be necessary to determine whether the mathematical algorithm is actually within the prior art.

II. ABANDONMENT AS PRIOR ART

35 U.S.C. section 103 of the Patent Act provides in part:

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. . . .⁶

Section 103 refers to the differences between the subject matter sought to be patented and the "prior art."⁷ However, the expression

6. 35 U.S.C. § 103 (1994).

7. *Id.*

"prior art" does not appear at all in section 102.⁸ Thus, which bars of section 102 may be used as "prior art" under section 103 is an open question.

35 U.S.C. section 102(c) provides, "[a] person shall be entitled to a patent unless. . . (c) he has abandoned the invention."⁹ Both Judge Rich and Judge Baldwin of the Federal Circuit's predecessor court, the Court of Customs and Patent Appeals ("CCPA"), agreed that the bar of section 102(c) does not define "prior art" under section 103.¹⁰ Yet, while "[i]t is admittedly difficult to conceive of abandoning an invention before it is made in the 'anticipation' sense,"¹¹ several commentators have noted that it does not follow that abandonment cannot be constructive or statutory prior art under section 103, particularly against later obvious variations of the abandoned invention.¹²

Walterscheid, in his article, "The Ever Evolving Meaning of Prior Art," makes two objections to the use of the bar of section 102(c) as "prior art" under section 103.¹³ First, the public does not gain knowledge of the invention; second, there is a problem in ascertaining when an invention has been "truly abandoned."¹⁴

However, there is one category of abandonment that is not subject to these objections. An applicant for a patent is required by 35 U.S.C. section 112 to conclude the specification "with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."¹⁵ When the applicant has made his or her claims, any subject matter disclosed (to the public), but not claimed, is presumed to be abandoned and dedicated to the public.¹⁶

The CCPA has stated that the presumption of abandonment is conclusive unless it is rebutted by one of three things: (1) filing a reissue application pursuant to the last paragraph of 35 U.S.C. section 251 which permits a broadening reissue application to be filed up to two years after the patent issues; (2) claiming the invention in a copending application before the patent issues; or (3) filing an application claiming the invention within the one year grace period following the issuance of

8. *Id.* at § 102.

9. *Id.* at § 102(c).

10. *In re Bass*, 474 F.2d 1276, 1290, 1295 n. 3, 177 U.S.P.Q. 178, 189, 193 n. 3 (C.C.P.A. 1973) (Baldwin, J., with whom Almond, J. joins).

11. Alton D. Rollins, *Loss of Right As "Prior Art,"* 63 J. PAT. [& TRADEMARK] OFF. SOC'Y 663, 667 (1981).

12. Donald S. Chisum, *Sources of Prior Art in Patent Law*, 52 WASH. L. REV. 1, 10 (1976-77).

13. Edward C. Walterscheid, *The Ever Evolving Meaning of Prior Art* (Part 6), 65 J. PAT. [& TRADEMARK] OFF. SOC'Y 658, 676-77 (1983).

14. *Id.*

15. *The Corn-Planter Patent*, 90 U.S. 181, 224 (1874).

16. *Id.*

the patent before the patent becomes a statutory bar under 35 U.S.C. section 102(b).¹⁷

III. THE OLD COMBINATION DOCTRINE

The leading Supreme Court case on the "old combination" doctrine¹⁸ of patent law is *Lincoln Engineering Co. of Illinois v. Stewart-Warner Corp.*¹⁹ In that case, the patentee invented an improved gripping chuck for a grease gun, but instead of claiming it by itself, he claimed the entire grease gun in which the elements performed no new function.²⁰ Citing numerous precedents in a footnote, the Supreme Court stated that "the improvement of one part of an old combination gives no right to claim that improvement in combination with other old parts which perform no new function in the combination."²¹

The viability of a rejection based on this doctrine is in doubt because it does not have a clear statutory basis under the Patent Act of 1952. In *In re Bernhart*,²² the CCPA rejected it.²³ Acknowledging that the rejection "has the support of many cases," including *Lincoln Engineering*, the CCPA held that the rule as stated is no longer "proper under the present statute."²⁴

The CCPA concluded that the only statutory basis for an "old combination" rejection is the requirement in 35 U.S.C. section 112 that the applicant include claims "particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."²⁵ Since there is nothing peculiar about old combination claims that would make them as a class nonparticular or indistinct, this was tantamount to reading the "old combination" rejection out of existence.

However, the CCPA did not have the benefit of the Patent Office Board Appeal's ruling in *Ex parte Andresen*.²⁶ In that case, the Board

17. *In re Gibbs*, 437 F.2d 486, 494, 168 U.S.P.Q. 578, 584-85 (C.C.P.A. 1971).

18. See generally, LANDIS ON MECHANICS OF PATENT CLAIM DRAFTING, 197-204 (3d ed. 1990); U.S.P.T.O., MANUAL OF PATENT EXAMINING PROCEDURE § 706.03 (j) (5th ed. rev. 1994); Robert A. Kreiss, *The Theory of Overclaiming and Its Application to Diamond v. Diehr*, 66 J. PAT. [& TRADEMARK] OFF. SOC'Y 52, 59 (1984); Thomas L. Grisman and Robert P. Taylor, *Vending an Old Combination: A Patent Misuse-Antitrust Problem*, 51 J. PAT. [& TRADEMARK] OFF. SOC'Y 649 (1969).

19. 303 U.S. 545 (1938).

20. *Id.* at 548.

21. *Id.* at 549.

22. 417 F.2d 1395, 1403, 163 U.S.P.Q. 611, 618 (C.C.P.A. 1969). *Accord*, *Radio Steel & Mfg. Co. v. MTD Products, Inc.*, 731 F.2d 840, 221 U.S.P.Q. 657 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 831 (1984).

23. *Bernhart*, 417 F.2d at 1403, 163 U.S.P.Q. at 618.

24. *Id.* at 1402.

25. *Radio Steel & Mfg. Co.* 731 F.2d at 845, 221 U.S.P.Q. at 661.

26. 212 U.S.P.Q. 100 (P.T.O.B.A. 1981).

declared that the non-obviousness provision of 35 U.S.C. section 103 includes all of the various bars to a patent as set forth in 35 U.S.C. section 102.²⁷ Recognizing that some of the bars may not be universally applicable to every applicant, but may apply only to certain applicants for a patent, the Board stated, “[f]or instance, the bar of section 102(c) may be applicable only to the applicant who has previously abandoned his invention and thereafter attempts to patent the same invention or an obvious modification of the abandoned invention.”²⁸ It appears that there is a clear statutory basis for the old combination rejection. It is the bar of 35 U.S.C. section 102(c) coupled with 35 U.S.C. section 103 (hereinafter, “the sections 102(c)/103 bar”).

In *Lincoln Engineering*, the plaintiff sued on a patent covering the combination of a newly-invented gripping chuck with the other parts of a grease gun.²⁹ It was old to combine a gripping chuck with the other parts of a grease gun. The omission to claim the gripping chuck by itself was an abandonment (so that it was “within the prior art” and “old”),³⁰ and it was obvious to combine it with the other old parts of a grease gun where the actions of these parts were not affected by the improvement of the gripping chuck. The opinion stated that, “[t]he mere aggregation of a number of old parts or elements which, in the aggregation, perform or produce no new or different function or operation than that theretofore performed or produced by them, is not patentable invention.”³¹

Notably, *Lincoln Engineering* is a 1938 case. The term “obvious” and the requirement that non-obviousness is necessary for patentability were new with the enactment of section 103 of the Patent Act of 1952. Previously, however, the courts held patents invalid for lack of “invention” and the Patent Office had refused to issue patents for lack of “invention.”³²

Since the presumption of abandonment was not rebutted by the facts in *Lincoln Engineering*, the patent’s claim could properly have been invalidated under the sections 102(c)/103 bar. This interpretation is supported by the two Supreme Court cases which were cited at the

27. *Id.* at 102.

28. *Id.*

29. 303 U.S. 545 (1938).

30. *Compare Wells v. Curtis*, 66 F. 318, 321 (6th Cir. 1895) (“[i]t is material to observe that the invention claimed is not of the specific device in providing the casing as a bearing for the ring, but is of a combination of certain described elements, of which that is one. This amounts to a disclaimer of anything new in that element, so far as this patent is concerned, whatever might be its value as the ground of an independent patent application. That feature must therefore be treated as old.”)

31. 303 U.S. 545, 549 (1938). This author previously proposed the sections 102(c)/103 bar as the statutory basis for the old combination doctrine. 73 J. PAT. [& TRADEMARK] OFF. Soc’y 557 (1991).

32. *See Dann v. Johnston*, 425 U.S. 219, 225-26 (1976).

beginning of the lengthy footnote of precedents following the holding in *Lincoln Engineering*.³³

In *Heald v. Rice*,³⁴ the plaintiff sued on a reissue patent covering the combination of a newly invented boiler with a straw-feeding attachment.³⁵ It was old to combine a boiler with a straw-feeding attachment. The Court stated, “[i]n this case, Morey’s patents were for combining strawfeeders with portable steam-boilers generally. Rice discovered that by substituting one particular kind of portable steam-boiler which no one else had used for the steam boilers which had been used, that he had a better combination.”³⁶

The Supreme Court held that the omission to claim the boiler by itself in the reissue patent (it had been claimed in the original patent) was an abandonment of it. The Court stated:

It appears then, from the mere reading of the two specifications, that the invention described in the first is for the return-flue boiler; while that described in the second, abandoning the claim for the boiler itself, is for a particular mode of using it, with straw as a fuel, by means of an attachment to the furnace-door for that purpose.³⁷

The plaintiff, in-fact, admitted in testimony that the boiler was old:

It further appears from the testimony of Rice that he considered the main principle of his invention to be combining the arrangement, patented by Morey, with the return-flue boiler. He supposed at first that his invention covered the boiler itself, though he found afterwards that it was not new, but was on the contrary well known as the Cornish boiler.³⁸

There was no invention in bringing the boiler together with the straw-feeding attachment:

What invention could he claim? He uses Morey’s device precisely as Morey’s patent contemplated, and the Cornish boiler exactly as it was designed it should be used. And in the combination each operates separately, producing its own results. There was no inventive resource drawn upon to bring them together.³⁹

Similarly, in *Underwood v. Gerber*,⁴⁰ the plaintiff sued on a patent covering the combination of a newly-invented coating for making carbon paper (such as used in typewriters) with paper.⁴¹ It was old to combine such a coating with paper. The Supreme Court stated, “[t]he opinion of

33. 303 U.S. at 550 n. 6.

34. 104 U.S. 737 (1881).

35. *Id.*

36. *Id.* at 747.

37. *Id.* at 753.

38. *Id.* at 746.

39. 104 U.S. 737, 755 (1881).

40. 149 U.S. 224 (1892).

41. *Id.* at 225.

the Circuit Court says that in view of the earlier patents and publications put in evidence, it was difficult to see what novelty or invention there was in taking a coloring substance already known and applying it to paper; . . . that such a combination was old."⁴² The Court held that the omission to claim the coating by itself was an abandonment of it, and that there was no invention in applying the coating to paper.⁴³ The Court stated, "[a]s No. 348,073 [the patent sued on] does not claim the composition of matter, although it describes it, that composition must be regarded as disclaimed, and as being public property, and there was no invention in applying it to paper, as claimed in the patent sued on."⁴⁴

In addition, this interpretation is supported by *In re McNeil*,⁴⁵ a case from the Court of Appeals of the District of Columbia, the predecessor court to the CCPA. *McNeil* was also cited in the lengthy footnote of precedents following the holding in *Lincoln Engineering*, and it is the leading lower court case on the old combination doctrine.

In *McNeil*, the applicant appealed from a refusal by the Commissioner of Patents to grant a patent on his application covering the combination of a newly-invented stitch-forming mechanism with a trimmer.⁴⁶ The court contented itself with quoting from the opinion of the Assistant Commissioner, adding only a citation to its prior decision, *Durham v. Seymour*.⁴⁷ The opinion states, "[i]t is old in a sewing-machine to combine a trimmer with a stitch-forming mechanism. This combination is shown in the patent to Borton and Willcox."⁴⁸

The Assistant Commissioner opined that there was no invention in bringing the stitch-forming mechanism together with the trimmer:

Borton and Willcox having invented the combination of a trimmer with a stitch-forming mechanism, it is not invention to combine a trimmer with another stitch-forming mechanism whether the stitch-forming mechanism be new or old. No new result is accomplished by appellant which differs in kind from the result accomplished by Borton and Willcox. There is no special coaction between the particular stitch-forming mechanism and the trimmer. Each acts in its own way and is not affected by the other and performs its function in the combination irrespective of the other. I think that what the appellant has done is within the province of the mechanic and does not amount to invention.⁴⁹

It appears that the court added the citation to *Durham* to explain why the Assistant Commissioner had stated that it was not invention to

42. *Id.* at 227-28.

43. *Id.* at 231.

44. *Id.*

45. 1902 Dec. Comm'r Pat. 563 (App. D.C. 1902).

46. *Id.* at 563-64.

47. *Id.* *Durham v. Seymour*, 1895 Dec. Comm'r Pat. 307 (App. D.C. 1895).

48. *McNeil*, 1902 Dec. Comm'r Pat. at 564.

49. *Id.* at 565.

combine a trimmer with the applicant's stitch-forming mechanism even if the latter was new. The court noted that the applicant had omitted to claim the stitch-forming mechanism by itself stating, "[t]he particular stitch-forming mechanism shown by appellant and which constitutes an element in the combination of his claims is not separately claimed by the appellant."⁵⁰ *Durham* held that subject matter not finally claimed before the Examiner in the Patent Office is presumed to be abandoned, just as much as if the patent had issued.⁵¹

IV. THE PATENTABILITY OF COMPUTER PROGRAM-RELATED INVENTIONS

An important instance where the old combination doctrine should have been applied, but was not, is the controversial Supreme Court case of *Parker v. Flook*.⁵² In *Flook*, the applicant invented an improved method for calculating an updated alarm value on a process variable, i.e., a mathematical algorithm.⁵³ However, instead of claiming the method by itself, the applicant claimed it in combination with the steps of determining the present value of the process variable, and adjusting the alarm limit to the updated alarm value (claim 1).⁵⁴ It was old to combine the steps of determining the present value of a process variable, calculating an updated alarm value, and adjusting the alarm limit to the updated alarm value.⁵⁵ The omission to claim the improved method of calculating the updated alarm value (the mathematical algorithm) by itself was an abandonment of it (so that it was "within the prior art"). It was obvious ("it lacked patentable invention") to combine it with the steps of determining the present value of the process variable and adjusting the alarm limit to the updated alarm value, where the actions of these steps were not affected by the improvement of the updated alarm value calculating step.

The presumption of abandonment could not have been rebutted. The mathematical algorithm could not be claimed by itself because it did not fall within one of the four statutory classes of patentable subject matter, i.e., "process, machine, manufacture or composition of matter" de-

50. *Id.* at 565.

51. 1895 Dec. Comm'r Pat. at 315 ("Having elected to amend again and again and finally to stand upon the three claims which were rejected, we think that the abandonment of all else is as complete as if he had succeeded and received his patent thereon").

52. 437 U.S. 584 (1978).

53. *Id.* at 585.

54. *Id.* at 596.

55. *Id.* at 585-86 ("The only difference between the conventional methods of changing alarm limits and that described in respondent's application rests in the second step—the mathematical algorithm or formula").

fined by 35 U.S.C. section 101.⁵⁶ In *Gottschalk v. Benson*,⁵⁷ the Supreme Court reasoned that a mathematical algorithm is like a law of nature, and thus, applied the established rule that a law of nature cannot be the subject of a patent.⁵⁸ Thus, claim 1 could properly have been rejected in *Flook* under the sections 102(c)/103 bar. However, the Court in *Flook* instead held that claim 1 recited non-statutory subject matter and affirmed the rejection under, 35 U.S.C. section 101.⁵⁹

Relying on its precedents *MacKay Radio & Tel. v. Radio Corp. of America*⁶⁰ and *Funk Bros. Seed Co. v. Kalo Co.*,⁶¹ two pre-1952 Act cases, the Court in *Flook* held, "[r]espondent's process is unpatentable under § 101 not because it contains a mathematical algorithm as one component, but because once that algorithm is assumed to be within the prior art, the application considered as a whole contains no patentable invention."⁶² The Court's rejection was essentially the same as this author's proposed rejection under the sections 102(c)/103 bar. Did the Court apply the sections 102(c)/103 bar under the guise of a section 101 rejection? This is very likely.

In *In re Bergy*,⁶³ the majority concluded that the Supreme Court had erroneously commingled "distinct statutory provisions which are conceptually unrelated."⁶⁴ Apparently, the Patent Office Board of Appeals agrees. In *Ex parte Bonne*,⁶⁵ the Board extended *Flook* to rejections under section 103.⁶⁶

A second instance where the old combination doctrine should have been applied, but was not, is the Supreme Court case of *Diamond v. Diehr*.⁶⁷ In *Diehr*, the applicants invented an improved method for calculating cure time, i.e., a mathematical algorithm; but instead of claiming it by itself, they claimed it in combination with the steps of pre-heating a mold, putting unmolded rubber in the mold, closing the mold, initiating an interval timer, heating the mold, comparing the calculated cure time

56. 35 U.S.C. § 101 (1994).

57. 409 U.S. 63, 67 (1972). *Benson* defined an "algorithm" as "a procedure for solving a given type of mathematical problem." *Id.* at 65.

58. *Id.* at 67-68.

59. 437 U.S. 584, 596 (1978).

60. 306 U.S. 86 (1939).

61. 333 U.S. 127 (1948).

62. 437 U.S. at 594.

63. 596 F.2d 952, 201 U.S.P.Q. 352 (C.C.P.A. 1979), *cert. granted*, *Diamond v. Bergy*, 444 U.S. 924, 204 U.S.P.Q. 608 (C.C.P.A. 1979), *and aff'd*, *Diamond v. Chakrabarty*, 447 U.S. 303 (1980), 206 U.S.P.Q. 193 (1980).

64. *Id.* at 959, 360.

65. P.T.O. Serial No. 885,070 (P.T.O.B.A. December 28, 1981) (unpublished opinion).

66. See Note, Jeffrey A. Simenauer, *Patentability of Computer-Related Inventions: A Criticism of the PTO's View on Algorithms*, 54 GEO. WASH. L. REV. 871 (1986).

67. 450 U.S. 175 (1985).

with the elapsed time, opening the mold and removing the molded rubber (claim 11).⁶⁸ It was old to combine the steps of pre-heating a mold, putting unmolded-rubber in the mold, closing the mold, initiating an interval timer, heating the mold, calculating cure time, comparing the calculated cure time with the elapsed time, opening the mold and removing the molded rubber.⁶⁹ The omission to claim the improved method for calculating cure time by itself was an abandonment of it, and it was obvious to combine it with the steps of pre-heating a mold, putting unmolded rubber in the mold, closing the mold, initiating an interval timer, heating the mold, comparing the calculated cure time with the elapsed time, opening the mold and removing the molded rubber, where the actions of these steps were not affected by the improvement of the cure time calculating step.

The presumption of abandonment could not have been rebutted. The mathematical algorithm could not be claimed by itself because it was non-statutory subject matter. Thus, claim 11 could properly have been rejected under the sections 102(c)/103 bar. Instead, the Court in *Diehr* held that claim 11 recited statutory subject matter and reversed the rejection under 35 U.S.C. section 101.⁷⁰ The Court distinguished *Flook*, observing that *Flook's* claims set forth a method for computing an alarm limit, which was simply a number, whereas the applicants in *Diehr* were interested in protecting their rubber-molding process, a process that the patent laws were designed to protect.⁷¹

In a footnote, the dissent disagreed.⁷² The dissent noted that the only distinction between the invention in *Flook* and the one in *Diehr* was not in the characteristics of the inventions themselves, but in the drafting of the claims.⁷³ Furthermore, the dissent noted that the *Diehr* claims can be redrafted into the format employed in the *Flook* application.⁷⁴ This suggests that in *Flook*, the sections 102(c)/103 bar was ap-

68. *Id.* at 180 n. 5.

69. *Id.* at 208. (Stevens, J. dissenting) (“[f]inally, the Board of Patent Appeals expressly found that ‘the only difference between the conventional methods of operating a molding press and that claimed in [the] application rests in those steps of the claims which relate to the calculation incident to the solution of the mathematical problem or formula used to control the mold heater and the automatic opening of the press.’ This finding was not disturbed by the Court of Customs and Patent Appeals and is clearly correct.”) See Robert A. Kreiss, *The Theory of Overclaiming and its Application to Diamond v. Diehr*, 66 J. PAT. [& TRADEMARK] OFF. SOC’Y 52 (1984).

70. *Diehr*, 450 U.S. at 191.

71. *Id.* at 186-87.

72. *Id.* at 210, n. 32 (Stevens, J., dissenting).

73. *Id.*

74. David A. Blumenthal & Bruce D. Riter, *Statutory or Non-Statutory?: An Analysis of the Patentability of Computer Related Inventions*, 62 J. PAT. [& TRADEMARK] OFF. SOC’Y 454, 505 (1980).

plied, whereas in *Diehr* it was not. This is the only significant difference between the two cases.

V. CONCLUSION

There are two lines of Supreme Court authority for the view that 35 U.S.C. section 103 includes the bar of 35 U.S.C. section 102(c), at least when the applicant omits to claim disclosed subject matter. First, *Lincoln Engineering* and its precedents suggest that the old combination doctrine is based on section 103, and that the improved element is "prior art" by virtue of its abandonment through failure to claim it by itself. Second, *Flook* and its precedents appear to have determined patentability based on section 103 with the assumption that the non-statutory element is "prior art." Since the non-statutory element cannot be claimed by itself, this suggests it is "prior art" by virtue of its abandonment.

This article has argued that the only significant difference between the invention in *Flook* and that in *Diehr* was that in *Flook*, the sections 102(c)/103 bar was applied, whereas in *Diehr* it was not. This would explain the peculiar fact that the *Diehr* claims which were held to recite statutory subject matter can be redrafted into the non-statutory format employed in the *Flook* application.

The Patent Office is currently using the following test in deciding whether to issue a patent on a computer-related invention which is useful: the first step is to determine whether the claim recites a mathematical algorithm. If the answer to the threshold question is "yes," proceed to the second step. In the second step, ask whether the claim as a whole merely recites a mathematical algorithm. If the answer is "yes," the claim is not patentable under section 101. The first two steps are known as the *Freeman-Walter* two-step test, named after the CCPA cases in which it is found.⁷⁵ If the answer is "no" to the question asked in the second step, proceed to the third step. In the third step, determine whether the mathematical algorithm is within the prior art, and ask whether the claim is new and non-obvious over the prior art. If the answer is "no," the claim is not patentable under sections 102 and 103.⁷⁶

The foregoing analysis suggests that this test is inconsistent with the standard actually applied by the Supreme Court in the *Benson-Flook-Diehr* trilogy. The test which the Patent Office should apply is the following: the first step of the new test is to ascertain whether the claim as a whole is for a mathematical algorithm, or contains a mathematical

75. *In re Iwahashi*, 12 U.S.P.Q.2d 1908, 1911 (Fed. Cir. 1989).

76. It should be noted that the recent cases of *In re Alappat*, 31 U.S.P.Q.2d 1545 (Fed. Cir. 1994), and *In re Warmerdam*, 31 U.S.P.Q.2d 1754 (Fed. Cir. 1994) only reached the issue of whether a claim covering a computer program-related invention is allowable under 35 U.S.C. § 101, and not under §§ 102 and 103.

algorithm as one of its components. If the answer to the threshold question is "yes" and the claim as a whole is for a mathematical algorithm, the claim is not patentable under section 101. If the answer to the threshold question is "yes" and the claim contains a mathematical algorithm as one of its components, proceed to the second step. In the second step, assume the algorithm is within the prior art (even if it is not), and ask whether the claim is new and non-obvious over the prior art. If the answer is "no," the claim is not patentable under sections 102 and 103.

Since this test assumes that the algorithm is within the prior art, adopting it would simplify patentability determinations for the Patent Office and silence its critics. Further, it would no longer be necessary to determine whether the mathematical algorithm is actually within the prior art.

