
Richard L. Wynne Jr.

Follow this and additional works at: https://digitalcommons.law.ou.edu/olr

Part of the Intellectual Property Law Commons

Recommended Citation

This Note is brought to you for free and open access by University of Oklahoma College of Law Digital Commons. It has been accepted for inclusion in Oklahoma Law Review by an authorized editor of University of Oklahoma College of Law Digital Commons. For more information, please contact darinfox@ou.edu.
I. Introduction

[T]he limits of a patent must be known for the protection of the patentee, the encouragement of the inventive genius of others and the assurance that the subject of the patent will be dedicated ultimately to the public.¹

Less than one year after announcing its commitment to ensuring certainty in defining the scope of patents, the United States Supreme Court took a step toward undermining that commitment in Warner-Jenkinson Co. v. Hilton Davis Chemical Co.² Although the Court sought to clarify³ the proper scope of the doctrine of equivalents,⁴ the unanimous Court's opinion in Warner-Jenkinson fails to address the concerns of inventors, businesses and the patent bar regarding application of the doctrine. This note analyzes the policy considerations underlying the patent system and the doctrine of equivalents to propose a revised inquiry striking a balance between the competing considerations in doctrine of equivalents cases.

In the United States, patent infringement may occur either when an accused device or process literally infringes the claims of the patent⁵ or through application of the judicially-developed doctrine of equivalents. Infringement under the doctrine of equivalents differs from literal infringement in that under an equivalents theory, infringement may be found even though the infringing device or process falls outside the scope of the claims of the patent.⁶ Since 1950, the primary analysis applied for determining whether there was infringement under the doctrine of equivalents has been

---

³ See id. at 1045.
⁴ See discussion infra Part II.
⁵ Literal infringement of a patented invention occurs when a person "without authority makes, uses, offers to sell, or sells any patented invention." 35 U.S.C. § 271 (Supp. I 1995). To obtain a patent, the inventor must submit a specification detailing one or more claims "particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. § 112 (1994). Because the claims define the scope of the patented invention, literal infringement occurs when the accused invention falls within the patent claims. See Charles Greiner & Co. v. Mari-Med Mfg., Inc., 962 F.2d 1031, 1034 (Fed. Cir. 1992).
⁶ See Johnston v. IVAC Corp., 885 F.2d 1574, 1580-81 (Fed. Cir. 1989).

Published by University of Oklahoma College of Law Digital Commons, 2020
the test announced by the United States Supreme Court in Graver Tank & Manufacturing Co. v. Linde Air Products Co. The Graver Tank "triple identity" or "function-way-result" test provides that a patentee may prove infringement if the accused device "performs substantially the same function in substantially the same way to obtain the same result" as the patented invention.  

As one of its defects, the Warner-Jenkinson opinion leaves open the question of whether the triple identity test continues to be determinative of infringement under the doctrine of equivalents. Moreover, the Court failed to provide any specific guidance as to how the lower courts should determine "equivalence" within the doctrine. Instead, the Court merely instructed the United States Court of Appeals for the Federal Circuit to develop a test through a series of "case-by-case determinations." This note addresses the development and application of the doctrine of equivalents in patent infringement cases, with particular emphasis on Warner-Jenkinson. Initially, this note examines the doctrine, analyzing from an historical perspective, the broad range of interpretations courts have given. Second, this note recounts the facts and holdings of Warner-Jenkinson, illustrating the variety of issues addressed by both the Federal Circuit and the Supreme Court. Third, the Supreme Court's opinion is analyzed to demonstrate its inherent shortcomings together with its proper conclusions. Fourth, recognizing the potential breadth of the doctrine of equivalents, this note proposes a test to the Federal Circuit for limiting the doctrine. In conclusion, this note analyzes the proposed test and determines that the policy considerations underlying both the doctrine of equivalents and the patent system as a whole support the proposed limited inquiry.

II. Evolution of the Doctrine of Equivalents

Unlike current law which requires patent specifications to include claims particularly and distinctly describing the extent of the invention, the original Patent Acts of 1793 required only a general description. Under the original patent law, the government issued the patent upon the inventor's description so as to "distinguish the [invention] from other things before known." Accordingly, the scope of the description was so broad that courts determined infringement if the accused device was "substantially, in [its] principles and mode of operation, like" the patented invention.

8. Id. at 608 (quoting Sanitary Refrigerator Co. v. Winters, 280 U.S. 30, 42 (1929)).
10. At the Federal Circuit, the caption of the case was Hilton Davis Chemical Co. v. Warner-Jenkinson Co. When discussing the circuit court's opinion, this note will refer to the case as Hilton Davis. However, because Warner-Jenkinson was the petitioner at the Supreme Court, the order of the parties in the caption was reversed. Accordingly, this note will refer to the Supreme Court's opinion as Warner-Jenkinson.
13. Id. § 3, 1 Stat. at 321.
Because of a recognized need for the public to be made aware of the extent of granted patents, Congress, in 1836, prescribed the requirement that patent applications include claims for the inventions. Following Congress' mandate that patent applications include claims of invention, the Supreme Court in 1853 first recognized the need for the doctrine of equivalents in *Winans v. Denmead*. In *Winans*, the patentee had invented a conical-shaped railroad car for transporting coal. The alleged infringer incorporated the patentee's tapered design but used a car having an octagonal rather than a circular cross-section. Applying the doctrine of equivalents, the sharply divided Court held that through the patent description, the patentee protects "not only the precise forms he has described, but all other forms which embody his invention." On the other side, the four dissenting justices argued that the statutory requirement of detailed description mandated that the courts refrain from finding infringement beyond the bounds of the claim.

Nearly one hundred years later, the Supreme Court repeated the same opposing views in *Graver Tank & Manufacturing Co. v. Linde Air Products Co.* In *Graver Tank*, the plaintiff held patents for multiple electric welding compositions or fluxes. The claims disclosed in the patent described the product as a flux "containing a major proportion of alkaline earth metal silicate." The defendant's products included silicates of calcium and manganese instead of silicates of calcium and magnesium. Manganese is not an alkaline earth metal as specified in the patent claim. Therefore, the accused products fell outside the patent claims, and there was no literal infringement.

The *Graver Tank* Court reaffirmed the doctrine of equivalents, stating that the policy supporting the doctrine was to prevent "fraud on a patent." The Court restated the test for infringement under the doctrine by providing that "[t]o temper unsparing logic and prevent an infringer from stealing the benefit of the invention 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.'" The Court further specified that equivalency must be determined in context with the patent, the prior art, and the particular circumstances of the individual case.

15. See Patent Act of 1836, ch. 357, § 6, 5 Stat. 117, 119 (requiring that the inventor "particularly specify and point out the part, improvement, or combination, which he claims as his own invention or discovery").


17. Id. at 342.

18. See id. at 347 (Campbell, J., dissenting). Essentially, the dissenting justices argued that Congress required the patentees to set forth their claims of invention, and the courts should limit infringement to devices falling within the scope of the claims.


20. Id. at 613 (Black, J., dissenting).


23. Id. (footnote omitted).

24. See id. at 609. The *Graver Tank* Court stated that when determining infringement under the
Within the factual context of the case, the *Graver Tank* Court determined that application of the doctrine of equivalents turned on whether the substitution was substantial.\textsuperscript{25} The *Graver Tank* Court reviewed the evidence and determined that because persons skilled in the art would have known that the substituted materials would have little effect on the welds, there was sufficient evidence to support the trial court's determination that the substitution of materials constituted an insubstantial difference.\textsuperscript{26}

Because of problems with forum-shopping, Congress created the United States Court of Appeals for the Federal Circuit in 1982.\textsuperscript{27} The Federal Circuit has exclusive appellate jurisdiction in certain types of cases, including appeals in patent infringement cases.\textsuperscript{28} Notwithstanding Congress' intent to bring more uniformity into the patent system,\textsuperscript{29} the Federal Circuit was unable to develop a consistent application of the doctrine of equivalents.\textsuperscript{30} Accordingly, "to the displeasure of many patent practitioners, the doctrine of equivalents [has been] mired in considerable ambiguity and uncertainty."\textsuperscript{31}

In an attempt to resolve some of the problems with its application of the doctrine of equivalents, in 1995, the Federal Circuit granted an en banc rehearing of *Hilton Davis Chemical Co. v. Warner-Jenkinson Co.*\textsuperscript{32} The court split seven-to-five on how to apply the doctrine, and the case resulted in five opinions spanning seventy pages in the *Federal Reporter.*\textsuperscript{33} Immediate reaction to the decision suggested that the Federal Circuit's widely divergent views meant that the decision "[d]id not resolve a thing."\textsuperscript{34} Accordingly, some commentators believed that the appropriate way to achieve resolution of the issues was for the Supreme Court to hear the case.\textsuperscript{35}

### III. Statement of the Case

In 1982, the Hilton Davis Chemical Co. began research into the development of an ultrafiltration process for purifying certain food, drug, and cosmetic dyes.\textsuperscript{36}

---

\textsuperscript{25} See *id.* at 610.
\textsuperscript{26} See *id.* at 611-12.
\textsuperscript{31} *Id.* at 1034.
\textsuperscript{33} *See id.* at 1512-32.
\textsuperscript{35} *See id.* ("The fact that this court is so philosophically divided suggests that [the Supreme Court] ought to look at it.") (statement of Herbert F. Schwartz) (alteration in original).
\textsuperscript{36} The facts involved in the case are discussed in detail in the Federal Circuit's opinion. *See Hilton
Ultrafiltration uses osmosis to separate components of a solution by drawing some of the components through a membrane. Hilton Davis completed successful tests of the process in October 1982 and January 1983. Subsequently, Hilton Davis filed a patent application.

During the prosecution of the Hilton Davis patent application, the patent examiner objected to a perceived overlap with an existing patent for an ultrafiltration process which operated at a pH level of above 9.0. In response to the objection, Hilton Davis modified its claim language to limit the claim for the process operating "at a pH from approximately 6.0 to 9.0." It remains unclear why Hilton Davis included the lower 6.0 pH limitation in the claim. Following the amendment, the Patent & Trademark Office issued the patent to Hilton Davis in 1985.

While Hilton Davis was developing its process, the Warner-Jenkinson Co. independently experimented with an ultrafiltration process in 1982. In fact, Warner-Jenkinson tested its process prior to the Hilton Davis tests. However, Warner-Jenkinson's tests failed, and the company temporarily abandoned the research. In 1986, Warner-Jenkinson renewed its research and successfully developed an ultrafiltration dye purification process.

The Hilton Davis and Warner-Jenkinson processes are similar in that each includes ultrafiltration through a membrane. The Warner-Jenkinson process operates at gage pressures from 200 to 500 pounds per square inch at a pH of 5. The claim disclosed by the Hilton Davis patent states that Hilton Davis' process operates at gage pressures between approximately 200 to 400 pounds per square inch at a pH of between approximately 6.0 and 9.0. Because the pH of the solution in the Warner-

---

37. See id. at 1515.
38. The pH of a solution is a measure of the acidity or basicity of the solution. See THE CONDENSED CHEMICAL DICTIONARY 725 (7th ed. 1966). The pH values run from 0 to 14 on a logarithmic scale with 7 representing neutrality, numbers less than 7 representing increasing acidity, and numbers greater than 7 representing increasing alkalinity. See EUGENE P. SCHOCH & WILLIAM A. FELSING, GENERAL CHEMISTRY 305-07 (1938).
40. Id. at 1045.
41. See id. at 1046 & n.2. Warner-Jenkinson, the alleged infringer, claimed that Hilton Davis included the 6.0 pH limit because its process created "foaming" which precluded the process from working effectively at lower levels. See id. at 1046 n.2. In response, Hilton Davis stated: "the patented process was successfully tested to pH values as low as 2.2 . . . with no effect on the process because of foaming." Respondent's Brief at 34 n.34, Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 117 S. Ct. 1040 (1997) (No. 95-728).
43. See id. at 1516.
44. As recounted by the Federal Circuit, the claim at issue provides in pertinent part:
   In a process for the purification of a dye selected from [a group including Red Dye # 40 and Yellow Dye # 6] . . . the improvement which comprises: subjecting an aqueous solution . . . to ultrafiltration through a membrane having a nominal pore diameter of 5-15 Angstroms under a hydrostatic pressure of approximately 200 to 400 p.s.i.g., at a pH from approximately 6.0 to 9.0, to thereby cause separation of said impurities from said dye . . . .
Jenkinson process fell outside the range included in Hilton Davis' patent claim, there could be no literal infringement. However, the trial court submitted the case to the jury under instructions incorporating the Graver Tank triple identity test to determine if there was infringement under the doctrine of equivalents. The jury found that Warner-Jenkinson had infringed the Hilton Davis patent.

A. Decision of the Federal Circuit

In granting an en banc review of the Hilton Davis case, the Federal Circuit sought to resolve three issues. First, the court undertook to establish whether a finding of infringement under the doctrine of equivalents requires more than satisfaction of the triple identity test. Second, the court attempted to determine whether application of the doctrine is within the trial court's discretion based upon the facts and circumstances of the individual case. Third, the court sought to determine whether the doctrine is an equitable remedy, precluding the right to a jury trial.

Id. at 1515 (alteration and first and second omissions in original) (emphasis omitted).

45. Prior to trial, "Hilton Davis conceded that there was no literal infringement." Warner-Jenkinson, 117 S. Ct. at 1046.

46. See Hilton Davis, 62 F.3d at 1523.

47. See id. at 1516.

48. A thorough discussion of the Federal Circuit's decision is necessary because it set the framework for the Supreme Court's analysis. Moreover, the Federal Circuit made several determinations regarding the doctrine of equivalents which the Supreme Court refused to address.

49. Recall that this note will refer to the circuit court decision as Hilton Davis and the Supreme Court's opinion as Warner-Jenkinson. See supra note 10.

50. See Hilton Davis, 62 F.3d at 1516.

51. See id. Prior to Hilton Davis, there was a great disparity among the Federal Circuit judges as to the scope of the doctrine. Some cases concluded that a patent holder is permitted to pursue an infringement action under an equivalents theory only in exceptional cases. For example, one panel of the Federal Circuit stated:

"Application of the doctrine of equivalents is the exception, however, not the rule, for if the public comes to believe (or fear) that the language of the patent claims can never be relied on, and that the doctrine of equivalents is simply the second prong of every infringement charge, regularly available to extend protection beyond the scope of the claims, then claims will cease to serve their intended purpose."

London v. Carson Pirie Scott & Co., 946 F.2d 1534, 1538 (Fed. Cir. 1991). However, the London court's interpretation of the doctrine's application appeared to contradict the Supreme Court's guidance. See, e.g., Seymour v. Osborne, 78 U.S. (11 Wall.) 516, 556 (1871) ("Patentees ... are entitled in all cases to invoke to some extent the doctrine of equivalents . . . .") (dictum).

52. Prior to Hilton Davis, some courts characterized the doctrine of equivalents as an "equitable" doctrine. See, e.g., Charles Greiner & Co. v. Mari-Med Mfg., Inc., 962 F.2d 1031, 1036 (Fed. Cir. 1992); Texas Instruments, Inc. v. United States Int'l Trade Comm'n, 805 F.2d 1558, 1563 (Fed. Cir. 1986). The courts labeling the doctrine as an equitable remedy focused on the policies underlying the doctrine and concluded that judges created the doctrine using their equitable powers in order to prevent the unscrupulous copyist from causing a "fraud on a patent." See, e.g., Charles Greiner & Co., 962 F.2d at 1035-36.

53. See Hilton Davis, 62 F.3d at 1516. The Seventh Amendment to the United States Constitution provides: "In Suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved . . . ." U.S. CONST. amend. VII. In deciding whether the Seventh Amendment provides a right to a jury trial in a specific civil action, the court must determine whether...
1. Expansion Beyond the Triple Identity Test

After reviewing the history of the doctrine of equivalents, the Hilton Davis court stated that it was merely restating, not revising, the test under the doctrine. The court concluded that "a finding of infringement under the doctrine of equivalents requires proof of insubstantial differences between the claimed and accused products or processes." Although the Hilton Davis court adopted this "insubstantial differences" test, the court recognized that in many cases, the Graver Tank triple identity test will suffice "to assess equivalency because similarity of function, way, and result leaves little room for doubt that only insubstantial differences distinguish the accused product or process from the claims."

However, the court determined that "evidence beyond function, way, and result is also relevant to the doctrine." The Federal Circuit held that in certain instances, the intent of the alleged infringer is relevant in determining whether there is infringement under the doctrine of equivalents. The court emphasized that that intent plays no role in determining whether to apply the doctrine; intent is only relevant to whether the differences between the claims and the accused product or process are insubstantial. Accordingly, the court concluded that evidence of independent development is irrelevant to finding infringement because such development is unrelated to the substantiality of the differences between the claims and the accused product or process.

2. Trial Court's Discretion in Invoking the Doctrine

In Graver Tank, the Supreme Court stated that the doctrine of equivalents served the purpose of preventing the unscrupulous copyist from making "unimportant and insubstantial changes and substitutions in the patent" in order to avoid liability for infringement. The Court added that "[t]he essence of the doctrine is that one may not practice fraud on a patent." Moreover, the Court recognized that the doctrine falls within "Suit[s] at common law." See Tull v. United States, 481 U.S. 412, 417 (1987). To aid in such determination, the Supreme Court has provided that actions which "are analogous to 18th-century cases tried in courts of equity or admiralty do not require a jury trial." Id. Consequently, if the doctrine of equivalents were merely an equitable remedy, there would not be a constitutional right to a jury trial.

54. See Hilton Davis, 62 F.3d at 1516.
55. Id. at 1521-22 (emphasis added). The court asserted that it had "stressed the significance" of the "insubstantial differences" standard in prior decisions. See id. at 1517.
56. Id. at 1518.
57. Id. (emphasis added).
58. See id. at 1519 (holding that evidence of copying is relevant in determining whether "the differences between the claimed and accused products or processes — measured objectively — are insubstantial"); id. at 1520 (holding that evidence of "designing around" patent claims supports a finding that the changes made are substantial).
59. See id. at 1519-20 (rejecting arguments that the Graver Tank Court's statements of the doctrine's purpose to prevent "fraud on a patent" limited application of the doctrine to cases where there was evidence that the alleged infringer intended to copy the product or process).
60. See id. at 1520.
62. See id. at 608. The Court's use of the word "fraud" emphasizes the relevance of the alleged
of equivalents is "available for utilization when the proper circumstances for its application arise." With the *Graver Tank* Court's policy analysis and Federal Circuit precedents limiting application of the doctrine to cases involving copying with incorporation of insubstantial modifications, the Federal Circuit sought to clearly define the extent to which a patentee can invoke the doctrine.

Despite concerns about widespread application of the doctrine, the *Hilton Davis* court summarily concluded that the trial judge has no discretion in whether to apply the doctrine of equivalents. The court relied on dicta in Supreme Court cases to determine that "every patent owner is entitled to invoke the doctrine of equivalents." This position drew sharp criticism from the dissenting judges at the Federal Circuit. Judge Lorie concentrated on *Graver Tank*’s references to piracy, stating:

The whole purpose of the doctrine is to defeat piracy and to do justice to a patentee. A pirate is one who intentionally copies a patented product, making only the most minor change to avoid literal infringement. An innocent developer who unintentionally happens to come close to the claims of a patent should be treated differently.

In addition, Judge Nies quoted directly from *Graver Tank* which suggested that some evidence of copying was required before the court should apply the doctrine of equivalents:

It is difficult to conceive of a case more appropriate for application of the doctrine of equivalents... Without some explanation or indication that [the accused product] was developed by independent research, the trial court could properly infer that the accused [product] is the result of imitation rather than experimentation or invention.

64. See, e.g., London v. Carson Pirie Scott & Co., 946 F.2d 1534, 1538 (Fed. Cir. 1991) ([W]here an infringer, instead of inventing around a patent by making a substantial change, merely makes an insubstantial change, essentially misappropriating or even 'stealing' the patented invention, infringement may lie under the doctrine of equivalents.").
65. See *Hilton Davis*, 62 F.3d at 1516 ("Is application of the doctrine of equivalents by the trial court to find infringement of the patentee's right to exclude, when there is no literal infringement of the claim, discretionary in accordance with the circumstances of the case?").
66. See *Hilton Davis*, 62 F.3d at 1522.
67. Id. at 1521 (citing Sanitary Refrigerator Co. v. Winters, 280 U.S. 30, 42 (1929); Seymour v. Osborne, 78 U.S. (11 Wall.) 516, 556 (1871)).
68. Id. at 1548 (Lorie, J., dissenting).
3. Right to a Jury Trial

Hilton Davis was the second of two important patent cases involving issues of the roles of the judge and jury decided by the Federal Circuit in 1995. In the first of the cases, Markman v. Westview Instruments, Inc., the court held that the interpretation of the patent claims is an issue of law to be determined by the judge. In Hilton Davis, the court sought to resolve whether infringement under the doctrine of equivalents is an issue to be resolved by a jury. Rather than making the inquiry as to whether the Seventh Amendment provides a right to a jury trial, the Federal Circuit flatly assumed that because infringement presents questions of fact, a jury must make the doctrine of equivalents inquiry in cases tried before a jury.

B. Decision of the Supreme Court

Recognizing the sharp disagreement within the Federal Circuit regarding the doctrine of equivalents, the Supreme Court granted certiorari and sought "to clarify the proper scope of the doctrine." The importance of the decision to patent owners and the patent bar is evidenced by the seventeen amicus briefs filed in the case. The Court reversed and remanded the case, but the Court discussed much

72. See id. at 970-71. The interpretation of valid patent claims is the first step in a two-part analysis for infringement. Before determining whether the accused product or process infringes the patent, there must be a determination of the meaning of the claim language. See Markman v. Westview Instruments, Inc., 116 S. Ct. 1384, 1388 (1996). In literal infringement cases, the second step, that of determining whether the accused device or process falls within the limits of the patent claims, has long been recognized as being within the province of the jury. See, e.g., United States v. Esnault-Pelterie, 299 U.S. 201, 205 (1936).
73. See Hilton Davis, 62 F.3d at 1516.
74. See discussion supra note 53.
75. See Hilton Davis, 62 F.3d at 1521.
76. See id. at 1525. At least one district court would disagree with the Federal Circuit's analysis. In Transmatic, Inc. v. Gulton Industries, 835 F. Supp. 1026 (E.D. Mich. 1993), rev'd on other grounds, 53 F.3d 1270 (Fed. Cir. 1995), the court analogized the doctrine of equivalents as the reformation of a contract. See Transmatic, 835 F. Supp. at 1029. Applying the test announced by the Supreme Court for whether the Seventh Amendment guarantees the right to a jury trial, see supra note 53, the Transmatic court concluded that because reformation of a contract was an equitable decision, the parties did not have a right to a jury trial. See Transmatic, 835 F. Supp. at 1028.
In Warner-Jenkinson at the Supreme Court, Hilton Davis and many of the amici urged the Court to decide the issue regarding the right to a jury trial. See Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 117 S. Ct. 1040, 1053 (1997). The Court, however, refused to pass on the issue, concluding that the Federal Circuit's determination of the issue had sufficient support from Supreme Court precedent. See id.
77. Warner-Jenkinson, 117 S. Ct. at 1045. The single question before the court was "[w]hether patent infringement exists whenever the accused product or process is 'equivalent' to the invention claimed in the patent, in that the differences are not 'substantial' as determined by a jury, even though the accused product or process is outside the literal scope of the patent claim." Petitioner's Brief at i, Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 117 S. Ct. 1040 (1997) (No. 95-728).
78. See Warner-Jenkinson, 117 S. Ct. at 1054.
more about the doctrine of equivalents than was necessary to reach that result. As
with the Federal Circuit's decision, the early reaction to the Supreme Court's opinion
suggested that the Court clarified little about the doctrine.79

IV. Analysis of the Supreme Court's Decision

Perhaps because of the many conflicting issues raised by the parties and amici,
Justice Thomas' opinion for the Court in Warner-Jenkinson Co. v. Hilton Davis
Chemical Co.80 meanders through the doctrine of equivalents, uncovering many
questions, but answering very few. In fact, the Court's basis for reversing the case
was the doctrine of prosecution history estoppel,81 an issue only summarily dis-
cussed by the Federal Circuit.82 Perhaps the most positive aspect of the Court's
opinion is the determination that the doctrine of equivalents must be applied on an
element-by-element basis, rather than applied to the invention as a whole.83

Although the limitation of the doctrine to equivalent "elements" somewhat
narrowed the potential scope of the doctrine, the remainder of the Warner-Jenkinson
opinion provides little direct guidance to the lower courts with respect to the
document's application. Rather than following Justice Thomas' opinion from issue to
issue, this note concentrates primarily on the appropriate standard for equivalence
within the doctrine of equivalents.

A. The Doctrine of Equivalents Survived the Patent Act of 1952

Congress is the body which is entrusted with the authority to make the patent
laws.84 In exercising this authority, Congress has mandated that the patent

79. See generally Victoria Slind-Flor, High Court Punts on Equivalents, NAT'L L.J., Mar. 17, 1997,
at A6. "[T]he ruling is a case of 'these guys throwing the issue over the fence to those guys and those
guys throwing it back again.'" Id. (quoting Robert P. Merges, Professor of Law at Boalt Hall School of
Law, University of California—Berkeley).
81. See id. at 1054. Prosecution history estoppel, or "file-wrapper estoppel," applies in situations
where, during the prosecution of the patent application, the patentee made amendments to the patent
claims. See, e.g., Hughes Aircraft Co. v. United States, 717 F.2d 1351, 1362 (Fed. Cir. 1983). In a
subsequent infringement action, prosecution history estoppel bars the patentee "from contending later in
an [equivalents] infringement action that his claims should be interpreted as if limitations added by
amendment were not present." Thomas & Betts Corp. v. Litton Sys., Inc., 720 F.2d 1572, 1579 (Fed.
Cir. 1983). In other words, when the patentee limits the scope of his claims by amendment in order to
receive the patent, the patentee may not thereafter use the doctrine of equivalents to regain the ground
surrendered by the amendment.
82. The Federal Circuit suggested that prosecution history estoppel was inapplicable to the case
because the modification to the patent claim, see supra text accompanying notes 38-40, was made to
avoid the prior art involving processes operating at pH levels above 9.0, while there was no patentability
reason for placing the lower pH limit of approximately 6.0. See Hilton Davis, 62 F.3d at 1525. The
Federal Circuit held that the amendment of the claim "does not bar Hilton Davis from asserting
equivalency to processes . . . operating sometimes at a pH below 6." Id. The circuit court's discussion
of prosecution history estoppel is limited to only one paragraph in the fifteen pages of the majority
opinion.
83. See Warner-Jenkinson, 117 S. Ct. at 1044.
84. See U.S. CONST. art. I, § 8, cl. 8 ("The Congress shall have Power . . . To promote the Progress
"specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." The statute provides that infringement occurs when someone "without authority makes, uses, offers to sell, or sells any patented invention . . . ." Nowhere does the Patent Act even mention the doctrine of equivalents.

Recognizing that the last time the Supreme Court addressed the doctrine of equivalents was in 1950 in Graver Tank & Manufacturing Co. v. Linde Air Products Co., Warner-Jenkinson first argued that the Patent Act of 1952 terminated the doctrine. Specifically, Warner-Jenkinson stated that "[t]here is nothing whatever in the 1952 Act, or in any legislative history, endorsing Graver or otherwise indicating that the standard for infringement protects a patent monopoly defined with reference to 'equivalents,' beyond the construed meaning of the patent claims." The Court, however, rejected Warner-Jenkinson's argument, emphasizing that "[i]n the context of infringement, [the Court] ha[d] already held that pre-1952 precedent survived the passage of the 1952 Act." Considering that the Supreme Court had recognized the doctrine of equivalents for almost 150 years without any express congressional authority, the possibility that the Court would find that the doctrine was foreclosed by the 1952 Patent Act was remote. Even Warner-Jenkinson most likely did not expect the Court to eliminate the doctrine of equivalents entirely. Notwithstanding the continued existence of the doctrine, the Court recognized that if the doctrine were applied broadly, it could conflict with the policies underlying the claiming requirements of the Patent Act. A common fear is that, if interpreted broadly, infringement by the doctrine of equivalents would become the rule rather than the exception.

The Supreme Court recognized well over a century ago that "the courts have no right to enlarge a patent beyond the scope of its claim as allowed by the Patent Office . . . . When the terms of a claim in a patent are clear and distinct (as they always should be), the patentee, in a suit brought upon the patent, is bound by it."
Unfortunately, the courts have defined the scope of patent claims in a manner which makes it difficult to understand how the doctrine of equivalents can be applied without enlarging protection beyond the claims.

1. Analogy Between Patent Infringement and Trespass to Land

Reference to the often-employed comparison between an infringement action and a trespass action provides an illustration of the inherent difficulty in understanding how the doctrine of equivalents fails to enlarge protection beyond the claims. The courts have stated repeatedly that the patent claims define the "metes and bounds" of the patent protection. This allusion to real property terminology conjures images of the claim scope being specified on a plat defining precise limits. If an accused device or process does not come within the limits defined on the plat, the natural reaction is to assume that it must be outside the limits. In a sense, an infringer is like a trespasser on the real property. Upon initial consideration, the doctrine of equivalents appears difficult to harmonize with the real property analogy because, when the doctrine of equivalents applies, the accused product or process necessarily falls outside the patent claims. If the realty analysis held true, the doctrine of equivalents would always enlarge the scope of the patent claims because it would allow infringement outside the originally-defined "metes and bounds."

2. Analogy Between Equivalents Infringement and Above-Surface Trespass

Applied in this manner, the real property analogy appears unsatisfactory. However, when combined with American common law tort principles, the analogy may provide a suitable concept for harmonizing the doctrine of equivalents and the courts' characterization of patent scope. Continuing the comparison of a patent infringer to a trespasser, the common law development of the vertical extents of a landowner's possession rights may offer guidance for the development of the doctrine of equivalents.

98. See, e.g., Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1257 (Fed. Cir. 1989); Teledyne McCormick Selph v. United States, 558 F.2d 1000, 1007 (Ct. Cl. 1977); Straussler v. United States, 290 F.2d 827, 831 (Ct. Cl. 1961). But see Smith v. Mid-Continent Inv. Co., 106 F.2d 622, 624 (8th Cir. 1939) ("Such boundaries never are and never can be defined in that definite sense which we employ in thinking of physical things — they are not matters of metes and bounds.").
99. Although the "metes and bounds" definition of patent scope provides a convenient reference, the "boundar[ies] cannot be drawn with precision." Royal Typewriter Co. v. Remington Rand, Inc., 168 F.2d 691, 693 (2d Cir. 1948) (L. Hand, J.).
100. "The claims become of utmost importance, for they are of the nature of metes and bounds and describe for the world the area of the invention beyond which no one may go without trespassing." Straussler v. United States, 290 F.2d 827, 831 (Ct. Cl. 1961); see also Hoechst-Roussel Pharmns. v. Lehman, 109 F.3d 756, 759 (Fed. Cir. 1997) ("With respect to direct infringement, . . . the claims define the patent owner's property rights whereas infringement is the act of trespassing upon those rights.").
Similar to a patent which "must describe the exact scope of an invention," a deed to real property must provide a sufficient legal description of the property. The realty description will typically describe only the surface of the land. However, the common law grants to the landowner an exclusive property right in some airspace above the surface. As such, the law protects an ownership interest in intangible "space" even though such "space" is excluded from the legal description of the property. This is closely analogous to the doctrine of equivalents which protects, in some instances, the patentee's ownership interest in the patent.

The appropriateness of the above-surface trespass analogy becomes clear when the competing interests in the airspace — and likewise in information outside the scope of the patent claims — are examined. Although Lord Coke asserted that "whoever has the land possesses all the space upwards to an indefinite extent," the United States Supreme Court has recognized that such a proposition "has no place in the modern world." Instead, "[t]he landowner owns at least as much of the space, above the ground as he can occupy or use in connection with the land."

When an aircraft flies over a person's land, the inquiry into whether a trespass occurs requires a balancing test considering the landowner's interest in the use and enjoyment of the property and the public's right to use the airspace. In the doctrine of equivalents, the identical interests compete — the patentee seeks to protect his interest in the patent, even though the accused device or process does not fall within the specific language of the patent claims, while the alleged infringer asserts the public's right to use information outside the scope of the patent claims. Just as for the above-surface trespass, the analysis under the doctrine of equivalents should include a balancing of competing interests. The policy considerations of the doctrine of equivalents are discussed and applied to a proposed narrow interpretation of the doctrine in part V of this note.

B. The Supreme Court Refused to Adopt a Test for the Doctrine of Equivalents

A fundamental question with which the Warner-Jenkinson Court wrestled was the proper "linguistic framework" for determining "equivalence" under the doctrine of

105. See generally id. § 11.2, at 723-31. However, a deed will rarely, if ever, describe the airspace above the surface.
106. See KEETON ET AL., supra note 102, § 13, at 78.
107. Because patents have the attributes of personal property, see 35 U.S.C. § 261 (1994), a patentee acquires a property right in the power to exclude others from making, using, or selling the patented invention. See 35 U.S.C. § 271(a) (1994).
110. Id. at 264.
equivalents.112 The Court acknowledged that the appropriate test could depend on the facts of the particular case.113 Finding "no purpose in going further and micro-managing the Federal Circuit's particular word choice for analyzing equivalence,"114 the Court refused to define the proper inquiry under the doctrine of equivalents.115 Instead, the Court instructed the Federal Circuit to call upon its special expertise to refine the appropriate test through an "orderly course of case-by-case determinations."116

Because the Federal Circuit has had exclusive appellate jurisdiction in patent cases since 1982,117 it has naturally developed a substantial amount of precedent in doctrine of equivalents cases.118 The circuit court naturally combined such precedent with its special expertise when it first decided Hilton Davis Chemical Co. v. Warner-Jenkinson Co.119 Accordingly, the Supreme Court's directive to the Federal Circuit to "refine" its test for equivalence120 will likely have only minor impact on the inquiry announced by the circuit court in Hilton Davis.121 At most, the impact of Supreme Court's opinion on the test under the doctrine of equivalents will be limited to its express rejection of the Federal Circuit's conclusion that evidence of "copying" or "designing around" was relevant to the determination of

113. See id. The Court recognized that the Graver Tank "triple identity" test, see supra notes 7-8 and accompanying text, is often appropriate for mechanical patents but that its utility decreases when the patent involves a process or another type of product. See Warner-Jenkinson, 117 S. Ct. at 1054.
115. See id.
116. Id.
117. See supra notes 27-28 and accompanying text.
118. From its inception until March 1997, the Federal Circuit mentioned the doctrine of equivalents in 374 cases. Search of Westlaw, CTAF database (Apr. 1, 1997).
119. 62 F.3d 1512 (Fed. Cir. 1995) (en banc) (per curiam), rev'd, 117 S. Ct. 1040 (1997). In deciding the issue of the appropriate inquiry under the doctrine of equivalents, the Hilton Davis court determined that "a finding of infringement under the doctrine of equivalents requires proof of insubstantial differences between the claimed and accused products and processes." Id. at 1521-22 (emphasis added). The Supreme Court, however, noted that this "insubstantial differences" test "offers little additional guidance as to what might render any given difference 'insubstantial.'" Warner-Jenkinson, 117 S. Ct. at 1054.
120. See Warner-Jenkinson, 117 S. Ct. at 1054.
121. Although the Federal Circuit adopted the "insubstantial differences" test in Hilton Davis, see supra note 119, the court's inquiry included much more than a mere statement that application of the doctrine of equivalents requires that any differences be "insubstantial." The Hilton Davis court did not choose the "insubstantial differences" test at the expense of "triple identity" (or "function-way-result") test. See supra text accompanying note 8. Instead, the court recognized that the triple identity test may form part or all of the inquiry. See Hilton Davis, 62 F.3d at 1518.

However, the court concluded "evidence beyond function, way, and result is also relevant to the doctrine of equivalents." Id. The court refused to place any limitation other than relevancy on the type of evidence a party could admit in a case involving the doctrine. See id. at 1522. The court did specifically recognize that evidence of "copying" or "designing around" may be relevant to the question of whether the differences between the patent and accused device or process are insubstantial. See id. at 1519, 1520; supra notes 58-59 and accompanying text.
the substantiality of the differences between the patent and the accused product or process.\textsuperscript{122}

As the Federal Circuit will most likely adopt some version of the "insubstantial differences" test with the "triple identity" test embedded therein,\textsuperscript{123} unless the Federal Circuit provides some additional guidance, trial courts will continue to struggle with the factual determination of whether the differences are "insubstantial."\textsuperscript{124} The person making such a factual determination will encounter either the inherently vague adjective "insubstantial" with nothing more\textsuperscript{125} or "a formulaic chant — function, way, result — which . . . provides little in the way of guidance, and in some cases may be of no persuasive significance at all."\textsuperscript{126} Accordingly, the Supreme Court's decision "brought little comfort to members of the intellectual property bar."\textsuperscript{127}

V. A Proposed New Analysis Under the Doctrine of Equivalents

Any analysis under the doctrine of equivalents must address a number of competing policy interests. Some courts have recognized that the fundamental purpose of the doctrine of equivalents is to prevent a copyist from "stealing" an invention by making only insubstantial changes to avoid the scope of the patent claims.\textsuperscript{128} However, although the patent laws abhor such "copying," the patent laws are designed to encourage, not just tolerate, persons to "design around" patented inventions by making improvements incorporating substantial changes.\textsuperscript{129} A broad application of the doctrine of equivalents creates a conflict because the threat of an infringement lawsuit may deter persons from attempting to design around valid patents because of the inherent uncertainty in the "insubstantial differences" standard for equivalents infringement.

This section of this note first proposes a refinement of the doctrine of equivalents in order to strike a compromise position between the competing policy interests.

\textsuperscript{122} See Warner-Jenkinson, 117 S. Ct. at 1052 ("The better view, and the one consistent with Graver Tank's predecessors and the objective approach to infringement, is that intent plays no role in the application of the doctrine of equivalents.").

\textsuperscript{123} See supra notes 54-60 and accompanying text.

\textsuperscript{124} The Supreme Court refused to consider whether application of the doctrine of equivalents is for the jury or the court. See Warner-Jenkinson, 117 S. Ct. at 1053. Accordingly, the Federal Circuit's determination "infringement under the doctrine of equivalents is an issue of fact to be submitted to the jury in a jury trial" remains the law. Hilton Davis, 62 F.3d at 1522. However, the courts must limit the application of the doctrine according to the summary judgment and judgment as a matter of law rules contained within the Federal Rules of Civil Procedure. See Warner-Jenkinson, 117 S. Ct. at 1053 n.8. Moreover, the Supreme Court charged the Federal Circuit with the responsibility of ensuring that the district courts do not abdicate their summary judgment obligations because of a lack of familiarity with the subject matter of patent cases. See id.

\textsuperscript{125} Cf. Warner-Jenkinson, 117 S. Ct. at 1054 ("[T]he insubstantial differences test offers little additional guidance as to what might render any difference 'insubstantial.'").

\textsuperscript{126} Hilton Davis, 62 F.3d at 1537 (Plager, J., dissenting).

\textsuperscript{127} Slind-Flor, supra note 79, at A6.


\textsuperscript{129} See Hilton Davis, 62 F.3d at 1520.
This proposed inquiry satisfies the fundamental purposes of the doctrine, yet the proposed test narrows the scope of the doctrine somewhat. Next, this section analyzes the proposed test with respect to the policy interests and concludes that such a narrowed inquiry better balances the competing interests than does the Federal Circuit's current standard.

A. Equivalents of the "Best Mode" Disclosure and Actual Embodiments of the Invention

When the Federal Circuit, en banc, decided Hilton Davis, one cause of the division within the circuit was the debate as to whether there was an equitable threshold which must be met before the court may apply the doctrine of equivalents.\(^ {130} \) Although the approach concluding that such a threshold existed appeared to find support from the Supreme Court's Graver Tank decision which characterized the "essence" of the doctrine as a prohibition against "practic[ing] a fraud on a patent,"\(^ {131} \) the Federal Circuit in Hilton Davis concluded that "[t]he trial judge does not have the discretion to choose whether to apply the doctrine of equivalents when the record shows no literal infringement."\(^ {132} \) On appeal, the Supreme Court essentially agreed with the Federal Circuit's interpretation, stating that the doctrine is not limited to only those cases where it will prevent copying and piracy.\(^ {133} \)

However, nowhere in Warner-Jenkinson did the Supreme Court require that the definition of "equivalent" be consistent across the broad scope of a patent claim. Moreover, the Court directed the Federal Circuit to use its "sound judgment" to refine the test for equivalence.\(^ {134} \) By adopting the narrowed test proposed in this note, the Federal Circuit may be able to achieve a compromise position on the doctrine of equivalents which both ensures broad protection for patentees and prevents this judicially made doctrine from overbroad application.

1. Disclosures Required by the Patent Statute

Before presenting the proposed inquiry, some background on patent disclosures is appropriate. The patent statute requires the patent applicant to include "one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."\(^ {135} \) As noted above, the claims define the "metes and bounds" of the patent protection.\(^ {136} \) However, the statute requires disclosure of more than just patent claims. The applicant must provide a specification "contain[ing] a written description of the invention and of the manner

\(^ {130} \) See Peter K. Schalestock, Comment, Equity for Whom? Defining the Reach of Non-Literal Patent Infringement, 19 Seattle U. L. Rev. 323, 333 (1996); see also supra note 51.


\(^ {134} \) See id. at 1054.


\(^ {136} \) See cases cited supra note 98.
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 make and use the same."\textsuperscript{137} In addition, the specification must "set forth the best mode contemplated by the inventor of carrying out his invention."\textsuperscript{138}

This note proposes that the Federal Circuit should adopt an "insubstantial differences" test in which the extent of "insubstantial" depends upon more than just the patent claims. Instead, whether the accused device or process infringes under the doctrine of equivalents should depend upon the patent specification, including the "best mode" disclosure,\textsuperscript{139} and actual embodiments of the invention made by the patentee. It is axiomatic that a patent's claims will be broader than an embodiment of the invention, whether that embodiment be the preferred embodiment as provided in the specification or an actual embodiment developed by the patentee.\textsuperscript{140}

2. \textit{Proposed Test for the Doctrine of Equivalents}

Patent claims protect the patentee from \textit{literal} infringement anywhere within the metes and bounds disclosed by those claims.\textsuperscript{141} As currently applied by the Federal Circuit, the doctrine of equivalents requires comparison of the accused device to the claims of the patent rather than to an embodiment of the invention.\textsuperscript{142} However, this application fails to fully recognize all of the competing policy concerns underlying both the doctrine of equivalents and the patent system in general. This note suggests that the Federal Circuit should reconsider its position and emphasize that the courts should be loath to find infringement under the doctrine of equivalents when the accused product or process is not equivalent to either the "best mode" disclosure or to any \textit{actual} embodiments made by the patentee which are available to the alleged infringer.\textsuperscript{143} To accomplish this, the Federal Circuit should dictate that the measure of "insubstantiality" for purposes of the doctrine of equivalents should be at its highest when the accused device or process appears "equivalent" to an actual or the preferred embodiment. Likewise, the court should require that the measure of "insubstantiality" be at its lowest ebb where the accused product or process appears to be "equivalent" to a patent claim, but not to an actual or the preferred embodiment.

\textsuperscript{138} \textit{Id.}
\textsuperscript{140} In his book on the mechanics of claim drafting, Robert Faber, like any lawyer seeking to protect his clients' interests, advocates inclusion of patent claims which cover the invention as broadly as possible. \textit{See} ROBERT C. FABER, LANDIS ON MECHANICS OF PATENT CLAIM DRAFTING at X-1 (4th ed. 1996).
\textsuperscript{141} \textit{See} Smith Int'l, Inc. v. Hughes Tool Co., 718 F.2d 1573, 1579 n.2 (Fed. Cir. 1983).
\textsuperscript{142} \textit{See} Nestier Corp. v. Menasha Corp., 739 F.2d 1576, 1579 (Fed. Cir. 1984).
\textsuperscript{143} \textit{See} discussion \textit{infra} part V(B). By "actual embodiments available to the alleged infringer," this note refers to embodiments which are not identical to the "best mode" disclosure but which fall within the scope of the patent claim. As discussed \textit{infra} part V(B), one of the policy considerations underlying the patent system is "notice" to the public. The proposed analysis' requirement that the actual embodiments be "available to the alleged infringer" ensures that such notice function is satisfied.
The Federal Circuit can ensure these goals by limiting the analysis under the doctrine of equivalents to a comparison of the accused device or process to the preferred or actual embodiments of the invention which are available to the alleged infringer. However, it cannot be overemphasized that reference to the specification and actual embodiments of the invention would apply only to the doctrine of equivalents and would have absolutely no impact on defining the scope of the invention.144

3. Sample Application of the Proposed Inquiry

Before explaining the rationale supporting this proposition, an example of how it might work in practice would likely be helpful. The facts of Graver Tank & Manufacturing Co. v. Linde Air Products Co.145 provide a useful illustration. In Graver Tank, the patent claim involved in the dispute described the invention as a flux "containing a major proportion of alkaline earth metal silicate."146 The alkaline earth metals include beryllium, magnesium, calcium, strontium, barium, and radium.147 In practice, the patentee produced and marketed a welding flux containing silicates of calcium and magnesium, each of which is an alkaline earth metal.148 On the other hand, the accused product was "similar to [the patentee's product], except that it substitute[d] silicates of calcium and manganese — the latter not an alkaline earth metal — for silicates of calcium and magnesium."149 Accordingly, the Court acknowledged that there was no literal infringement.150

Applying the proposed analysis to the Graver Tank facts, a court would compare the accused device to the preferred and the actual embodiments available to the alleged infringer.151 Therefore, the court would inquire as to whether silicates of calcium and manganese and silicates of calcium and magnesium are "equivalents."152 In making this inquiry, the court would apply a refinement of the "insubstantial differences" test.153

Assume, however, for purposes of this example, that the accused product contained silicates of a metal other than manganese. Further assume that silicates

144. It is a basic premise of American patent law that the claims, and not the specification, define the scope of the invention. See Markman v. Westview Instruments, Inc., 116 S. Ct. 1384, 1388 (1996). Nothing in this note even suggests that such is improper. Rather, this note suggests that when dealing with the doctrine of equivalents, as opposed to literal infringement, the specification and actual embodiments of the invention have relevance in the infringement analysis.


146. Id. at 613 (Black, J., dissenting).


148. See Graver Tank, 339 U.S. at 610.

149. Id.

150. See id. at 612.

151. The patented welding fluxes were marketed publicly by the patentee. Accordingly, the fluxes were "available" to the alleged infringer.

152. Essentially, this was part of the inquiry made by the Graver Tank Court. The Court noted the similarities of magnesium and manganese in addition to the relation between manganese and alkaline earth metals in general. See id. at 610-11.

153. See supra notes 119-22 and accompanying text.
of this other metal, although the metal is not an alkaline earth metal, have properties similar to those of silicates of barium, which is an alkaline earth metal. Under the proposed inquiry, the court would not analyze the differences between the silicates of this other metal and any of the alkaline earth metal silicates (i.e., barium). Rather, the court would only compare the accused product's silicates to silicates of calcium and magnesium as used in the patentee's actual embodiment. If the differences between the accused product and the embodiments were insubstantial, there would be infringement under the doctrine of equivalents. However, if such differences were substantial, there would be no infringement notwithstanding the fact that the silicates in the accused product have only insubstantial differences from silicates of barium which fall within the scope of the patent claims.

B. Policy Analysis for the Proposed Inquiry Under the Doctrine of Equivalents

1. Background of Policies Supporting the Patent Laws and the Doctrine of Equivalents

The policies underlying patent protection are diverse. One objective is to encourage innovation. To accomplish this goal, Congress grants to the patent owner the right to prohibit others from making, using or selling the patented invention. This monopoly power furnishes the inventor with the incentive to be innovative because the inventor can be assured that he can prevent others from reaping the rewards of his innovation and investment. However, in exchange for this right to exclude, the inventor must disclose the invention in sufficient detail "as to enable any person skilled in the art to which it pertains . . . to make and use" the invention. The public benefits from this disclosure through the increase in information which is within the public domain. In contrast, the patent owner retains the right to exclude others from making, selling, or using the patented invention for the term of the patent. However, at the end of the patent term, the entire invention joins the patent disclosures in the public domain.

In addition to these general policy considerations, the American system of patent "claiming" has separate policy underpinnings. Because the patent claims define the scope of a patent, those claims provide the requisite notice to others of what is protected by the patent. Accordingly, persons may take appropriate actions to ensure that they do not infringe the patent. Of course, the competing policy is

158. See supra note 156, at 325.
161. See id.
the protection of the patent owner's interest in the invention. The doctrine of equivalents poses a problem with respect to the "notice" function because the doctrine necessarily only applies when the accused product is not within the scope of the claims. While a potential infringer should be able to examine the patent claims to determine whether the accused device or process falls within their bounds, it is more difficult for the potential infringer to determine whether the accused device or process is "equivalent" to the patented invention.

When the Supreme Court first recognized the doctrine of equivalents in Winans v. Denmead, it did so by only a 5-4 decision. The dissenting justices focused on the statutory mandate that the patentee must "describe his invention, in such full, clear, and exact terms, that from the description, the invention may be constructed and used." The dissenters concluded that both principles of legal interpretation and the public interest required limiting patent scope to the language contained in the patent claims. Consequently, the justices dissenting in Winans essentially concluded that the language of the patent statute precluded the application of the doctrine of equivalents.

In spite of the concerns voiced by the Winans dissent, the doctrine of equivalents has evolved without any express congressional approval in the patent statutes. The Supreme Court, however, has continued to recognize the importance of the notice function provided by the patent claims. The obvious problem is that because the doctrine of equivalents imposes liability for infringement outside the literal scope of the patent claims, the doctrine tends to undermine the notice function provided by the "claiming" requirement. Under the doctrine of equivalents, "people aren't going to know the bounds of a patent . . . until the jury comes back with a verdict." Concerns about increased litigation under the doctrine of e-

162. See id.
163. See Judin v. United States, 27 Fed. Cl. 759, 785 (1993) ("The doctrine of equivalents is an equitable doctrine, providing the patentee with a remedy when the claim does not read literally on the accused device . . . .").
164. 56 U.S. (15 How.) 330 (1853).
165. Id. at 347 (Campbell, J., dissenting).
166. See id. In reaching their conclusions, the dissenting justices noted:

Fulness, clearness, exactness, preciseness, and particularity, in the description of the invention, its principle and of the matter claimed to be invented, will alone fulfill the demands of Congress or the wants of the country. Nothing, in the administration of this law, will be more mischievous, more productive of oppressive and costly litigation, of exorbitant and unjust pretensions and vexatious demands, more injurious to labor, than a relaxation of these wise and salutary requisitions of the Act of Congress.

Id.
167. See, e.g., Union Carbon Co. v. Binney & Smith Co., 317 U.S. 228, 236 (1942) (recognizing that the statutory requirement of particularity and distinctness protects against a "zone of uncertainty" which would discourage enterprise and experimentation); Permutit Co. v. Graver Corp., 284 U.S. 52, 60 (1931) (stating that the required disclosures "inform the public during the life of the patent of the limits of the monopoly asserted, so that it may be known which features may be safely used or manufactured without a license and which may not").
168. Edward Felsenthal, Top Court Strengthens Patent Protection Against Similar, but Not Identical, Ideas, WALL ST. J., Mar. 4, 1997, at B12 (quoting Steve Anzalone, patent attorney with Finnegan,
equivalents after Warner-Jenkinson merely echo the warnings made by the Winans dissenters 144 years earlier.\footnote{170}

Related to the notice function of the patent claims is the need for uniformity in patent interpretation. Less than one year before Warner-Jenkinson, the Supreme Court decided the case of Markman v. Westview Instruments, Inc.\footnote{171} In Markman, the unanimous Court held that interpretation of patent claims is to be performed by the trial judge rather than the jury.\footnote{172} In reaching its conclusion, the Court emphasized the "importance of uniformity in the treatment of a given patent."\footnote{173} Moreover, the Markman Court stated that unless a patent's scope is clearly disclosed, "[t]he public [would] be deprived of rights supposed to belong to it, without being clearly told what it is that limits these rights."\footnote{174}

Notwithstanding these intertwined concepts of uniformity and notice, the Warner-Jenkinson Court adhered to the doctrine of equivalents.\footnote{175} The Court acknowledged that the doctrine may "conflict[] with the definitional and public-notice functions of the statutory claiming requirement,"\footnote{176} but stated that such conflicts occur only when the doctrine is applied broadly.\footnote{177} The Warner-Jenkinson Court endeavored to narrow the application of the doctrine of equivalents, but essentially determined that a patentee is entitled to invoke the doctrine in every patent infringement case.\footnote{178} However, the inherent ambiguity in the word "equivalent" makes it difficult for one using information outside the patent claims to determine whether he is infringing the patent under the doctrine of equivalents.\footnote{179}

Moreover, the failure of the notice function under the doctrine of equivalents is heightened by the Warner-Jenkinson Court's refusal to pass on the Federal Circuit's conclusion that equivalents infringement is a question for the jury.\footnote{180} Although the Warner-Jenkinson Court found support for the Federal Circuit's position,\footnote{181} the Supreme Court in Markman recognized that judges are in a better position than juries to interpret patent claims.\footnote{182} Because, under Markman, the judge must

---

Henderson, Farahow, Garrett & Dunner).

\footnote{169} See id.

\footnote{170} See quotation supra note 166.

\footnote{171} 116 S. Ct. 1384 (1996).

\footnote{172} See id. at 1395.

\footnote{173} Id. at 1396.

\footnote{174} Id. (quoting Merrill v. Yeomans, 94 U.S. 568, 573 (1877)) (alterations in original).


\footnote{176} Id. at 1049.

\footnote{177} See id.

\footnote{178} The Warner-Jenkinson Court stated that the district courts have an obligation to limit the application of the doctrine of equivalents through partial or complete summary judgments. See id. at 1053 n.8. This is really a hollow victory for accused infringers because by the time they receive summary judgment, they will likely have already been subjected to expensive and time-consuming litigation defending their use of information in the public domain.

\footnote{179} See Felsenthal, supra note 168, at B12.

\footnote{180} See Warner-Jenkinson, 117 S. Ct. at 1053.

\footnote{181} See id.

interpret the patent claims, the judge would likely be in a better position to
determine whether the differences between the patent and the accused product or
process are substantial.

Given the Warner-Jenkinson Court's position, one operating just outside the limits
of a valid patent should reasonably expect to be haled into court to defend a patent
infringement lawsuit. Yet, this appears to contradict the patent statute's policy of
encouraging innovation by permitting patentees to "design around" valid patents. Fears
of infringement suits under the doctrine of equivalents may deter com-
petitors from designing around existing patents.

2. Application of the Policy Considerations to the Proposed Inquiry Under the
Doctrine of Equivalents

With all of the competing policy interests, the Warner-Jenkinson Court
undoubtedly faced a challenge in trying to clarify the doctrine of equivalents. Instead of essentially puniting the issue back to the Federal Circuit, the Court
could have resolved the issue by adopting the proposed test for equivalency which compares the accused device to the specification "best mode" disclosure and any actual embodiments of the invention which were available to the alleged infringer. Under this proposed inquiry, the policy concerns underlying both the
patent statute and the doctrine of equivalents merge to produce an application which reasonably protects patentees while encouraging competitive innovation without threat of continuous litigation.

The proposed test squarely meets the primary policy goal, that of preventing the
"unscrupulous copyist" from perpetuating a "fraud on a patent." Although it may be theoretically possible to "copy" an invention from the patent claims, it is more likely that a copyist would replicate the invention from an embodiment disclosed in the patent specification or by reverse engineering an actual embodiment available

183. See id.
184. This conclusion derives from the essential fact that the judge must understand the technologies involved in the patented device or process in order to properly construe the patent claims. If the comprehension of the technology is beyond the capabilities of the jury, the jury is left to decide an issue which may have significant financial consequences "based on a formulaic chant — function, way, result — which . . . provides little in the way of guidance, and in some cases may be of no persuasive significance at all." Hilton Davis Chem. Co. v. Warner-Jenkinson Co., 62 F.3d 1512, 1537 (Fed. Cir. 1995) (Plager, J., dissenting), rev'd, 117 S. Ct. 1040 (1997).
185. Recognizing that the patent statute encourages "designing around" patents, the Hilton Davis court stated:

The ability of the public successfully to design around — to use the patent disclosure to
design a product or process that does not infringe, but like the claimed invention, is an
improvement over the prior art — is one of the important public benefits that justify
awarding the patent owner exclusive rights to his invention.

Id. at 1520.
186. "Designing around 'is the stuff of which competition is made . . . .' Id. (quoting State Indus.,
Inc. v. A.O. Smith Corp., 751 F.2d 1226, 1236 (Fed. Cir. 1985)).
188. See supra notes 139-53 and accompanying text.
189. See supra notes 22-24 and accompanying text.
to the copyist. Because the proposed inquiry applies the doctrine of equivalents to
determine whether the differences between the accused device or process and the
patented invention's specification disclosure or any actual embodiments available to
the alleged infringer are insubstantial, the doctrine continues to protect against the
copyist who makes insubstantial changes in order to fall outside the scope of the
patent claims.

However, the proposed test recognizes that competing policy concerns require
limits on the doctrine of equivalents. Because the patent laws not only tolerate, but
actually encourage designing around patents, the doctrine of equivalents must
be able to clearly distinguish copying from designing around. "Designing around"
necessarily involves some level of copying because it means "to use the patent
disclosure to design a product or process that does not infringe." The difference
between designing around and copying is merely that copying suggests that the
differences between the accused product or process and the patented invention are
insubstantial.

The proposed inquiry of comparing the accused device or process to the "best
mode" disclosure and actual embodiments of the patented invention meets the
requirement of encouraging designing around while prohibiting copying because the
specification and actual embodiments, unlike the broad and general patent claims,
provide tangible references for comparison. The inventor trying to design around
a valid patent will be placed in a better position to evaluate whether the process or
device infringes the patent under the doctrine of equivalents. In addition to
striking a balance between the encouragement of designing around and the disdain
of copying, the proposed approach effectively precludes the patentee from
unreasonably broadening the claims through the doctrine of equivalents.

Likewise, under the patent system, that which falls outside the patent claims may
be used by the public. Accordingly, the "insubstantial differences" test, in a
sense, serves as a balancing test between the public's interest in using the
technology outside the patent claims and the patentee's rights to patent
protection. Without question, the patentee's interest in protection from literal infrin-

---

190. See supra notes 185-86 and accompanying text.
banc) (per curiam), rev'd on other grounds, 117 S. Ct. 1040 (1997).
192. See id. at 1519.
193. Applied to the modified Graver Tank factual scenario, see supra text accompanying notes 152-
54, a party trying to design around the alkaline earth metal silicate welding flux patent would need only
determine whether the differences between its silicate and the calcium and magnesium silicates used in
the actual embodiment of the patented invention were substantial. The party would not, however, be
required to determine whether its silicate was equivalent to any other alkaline earth metal silicate.
which includes inventions within the granted monopoly excludes from it all that is not embraced in the
invention.").
195. It is critical to remember that the discussion of this balancing test is limited solely to the
application of the doctrine of equivalents. The patentee can absolutely protect his invention from
infringement by drafting the patent claims such that these "equivalents" literally infringe the patent.
agement is great across the entirety of valid patent claims because these claims actually define the invention.196

However, the equitable nature197 of the doctrine of equivalents mandates that it be applied to promote fairness to both the patentee and the public.198 This fairness aspect is what determines the results of the balancing test between the patentee's rights and the public's interest. When the patentee discloses the "best mode" for carrying out the invention in the specification, the inventor informs the public of the inventor's preferred embodiment for making and using the invention. In addition, when the inventor develops other embodiments and makes such embodiments available to the public, the public is thereby informed of other efficient methods of carrying out the invention.

With respect to the fairness aspect of the doctrine of equivalents, the inventor obviously retains a strong interest in protecting against copying with insubstantial changes. The public's interest, however, varies with the substantiality of the differences between a technology outside the scope of the patent claims and the specification preferred embodiment or any actual embodiments available to the public.199 The public's interest, adopted by one making or using a product or process similar to the patented invention, is at its nadir when the differences between an embodiment of the invention and the accused device or process are insubstantial. Accordingly, in such a situation, fairness demands that the balancing test weigh in favor of protecting the patentee's rights.

But as this level of difference increases due to more substantial variation from the embodiment, the public's interest in using unpatented technology increases. The reasons for this increase include the patent system's goal of increased competition through the encouragement of designing around valid patents.200 More importantly, however, is the public interest in being able to use unpatented technology without fear of being sued for infringement under the doctrine of equivalents. This policy consideration is what completes the support for the proposed inquiry under the doctrine of equivalents.

The public is not truly informed of the definition of the invention until the patent claims receive interpretation. As the Supreme Court determined in Markman v. Westview Instruments, Inc.,201 however, such an interpretation must be made by

197. See Texas Instruments, Inc. v. United States Int'l Trade Comm'n, 988 F.2d 1165, 1173 (Fed. Cir. 1993) ("[T]he doctrine of equivalents has been 'judicially devised to do equity.'") (quoting Locite Corp. v. Ultraseal, Ltd., 781 F.2d 861, 870 (Fed. Cir. 1985)).
199. Nothing illustrates this variation more clearly than the patent law's abhorrence of copying (insubstantial changes), see Graver Tank & Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605, 607 (1950), but the law's encouragement of designing around (substantial changes), see Hilton Davis, 62 F.3d at 1520.
200. See Hilton Davis, 62 F.3d at 1520.
a judge in an infringement action. In reaching this conclusion, the Court emphasized that "the claims of patents have become highly technical in many respects as the result of special doctrines relating to the proper form and scope of claims that have been developed by the courts and the Patent Office." Given this recognition of the difficulty of claim interpretation, the public faces an enormous challenge in trying to determine at what point changes from patent claims (statements which are difficult to understand without special training) become substantial. However, those members of the public who are "reasonably skilled in the art" can be charged with the ability to determine the substantiality of differences between the allegedly infringing product or process and any disclosed or actual embodiments available to the alleged infringer.

Where a patentee pursues an equivalents infringement action because the accused product or process makes only insubstantial changes from the patent claims (but where the changes are substantial from the disclosed and actual embodiments), the general fairness concern underlying the doctrine of equivalents is thwarted. One seeking to design around a patent cannot know the true extent of the patent until the claims are interpreted by a judge; therefore, he risks being haled into court to defend an infringement lawsuit for trying to design around a patent — "one of the important public benefits" underlying the patent system. In this situation, the balancing test must find in favor of the public interest, and the doctrine of equivalents should not reach this far.

VI. Conclusion

In its effort to "clarify" the doctrine of equivalents in Warner-Jenkinson, the Supreme Court failed to alleviate many of the concerns regarding the doctrine. The Court's opinion discusses a variety of issues arising under the doctrine, yet leaves many important questions for the Federal Circuit to resolve. Perhaps the Court believed that it had to speak with a unanimous voice because of the sharply divided views of the Federal Circuit justices. Regardless of the motives for the decision, Warner-Jenkinson did little to quell fears that the doctrine of equivalents has been expanded to the point that increased litigation is inevitable.

202. See id. at 1395.


205. See supra text accompanying notes 202-03.


207. It bears repeating one more time that the inventor is not without a method for protecting his rights. He should draft his claims as broadly as possible so that he can protect his rights through literal infringement actions. However, he should not be permitted to use the doctrine of equivalents at the expense of the public's interest near the fringes of the patent claims.

208. See Slind-Flor, supra note 79, at A6 (quoting Donald S. Chisum, Professor of Patent Law at Santa Clara University School of Law).

209. See Felsenthal, supra note 168, at B12.
As the Federal Circuit continues to refine the doctrine of equivalents, it should develop a test which addresses the policy concerns underlying both the basic patent laws and the doctrine of equivalents. The inquiry proposed within this note strikes a balance among these concerns by limiting the doctrine of equivalents to an examination of the substantiality of the differences between the accused device or process and both the patent specification's "best mode" disclosure and any actual embodiments of the invention available to the alleged infringer. The use of the disclosed or actual embodiments rather than the patent claims for this comparison provides one attempting to engage in the encouraged "designing around" of the patent with tangible references from which he can determine the substantiality of the changes made. When one makes changes which are substantial with respect to these known references, the proposed doctrine of equivalents inquiry promotes the public's interest in advancing technology through designing around because of the reduced fear of being haled into court on an allegation of equivalents infringement.

Conversely, when the differences between the accused device or process and the disclosed or available actual embodiments are merely insubstantial, the doctrine of equivalents serves its function to protect the rights of the patent owner. In this situation, the public's interest in using technology outside the scope of the patent claims is diminished because the embodiments provide the tangible references which enable the public to be warned of the insubstantiality of the differences. Where the public has such ability to determine that the differences are insubstantial, an accused infringer cannot deny the reasonableness of being sued under the doctrine of equivalents.

The doctrine of equivalents must incorporate a balance between the public's interest in using technology outside the scope of patent claims and the patent owner's right to protection against the use of his invention by one whose use incorporates only insubstantial differences. Increased foreign competition in high technology areas will likely encourage more liberalized use of public information in order to advance American technology. If the Federal Circuit fails to put some practical limits on the doctrine of equivalents, inventors trying to advance that technology through designing around existing patents may find themselves stymied by increased litigation. Such an effect would necessarily undermine the patent law's primary objective of "promot[ing] the Progress of . . . useful Arts."  

Richard L. Wynne, Jr.

210. At the time of this note's writing, Congress was considering a bill which would overhaul the United States patent system. See H.R. 400, 105th Cong. (1997). Included in this bill is a provision which, in most cases, would require public disclosure of the patent application 18 months after filing, even though the patent would not yet have issued. See id. § 202.