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Ambivalence in Equivalents: Problems and Solutions for Patent Law's Doctrine of Equivalents

INTRODUCTION

In 1988, Horst Saalbach began a lawsuit involving the infringement of two patents owned by his Long Island robotics company, Festo Corporation. Today, after 15 years of continual litigation, including two trips to the United States Supreme Court, his case is still not resolved. In May of 2002, the Supreme Court issued its decision in *Festo Corporation v. Shoketsu Kinzoku Kogyo Kabushiki Company, Limited*¹ (known as SMC²), vacating a controversial Court of Appeals decision and remanding the case once again for further proceedings. Saalbach, a naturalized U.S. citizen who escaped communist East Germany when he was seventeen, continues this fight because of his belief in the principles of the Constitution.³ He has the resources to persist because Festo Corporation is a \$1.5 billion company with 10,000 employees worldwide.⁴

However, *Festo* represents perfectly a serious flaw in the patent system today. The policy of patent law involved, the Doctrine of Equivalents, has caused at least as many problems in the last twenty years as it has solved. Applying the doctrine is problematical for courts because, as *Festo* itself demonstrates, it does not allow for precise boundaries. The Supreme Court has described problems with the doctrine,⁵ and the Court of Appeals for the Federal Circuit has gone so far as to call application of the doctrine “unworkable.”⁶ This policy is also costly for litigants as the cases involved tend to be closely contested and, like *Festo*, are sometimes appealed for years.⁷ Since relatively few

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1. 535 U.S. 722, 122 S. Ct. 1831 (2002).

2. The respondent company's name is Japanese and translates to “Sintered Metal Company,” hence the abbreviation SMC. See <http://www.smcworld.com> (last visited Jan. 30, 2004).

3. Saalbach stepped down as president and CEO of Festo Corporation in early 2002 after quadruple bypass surgery and now serves as board vice chairman. Mark Harrington, *Fighting for His Rights*, *Newsday.com*, January 1, 2002, at <http://www.newsday.com/technology/reviews/ny-biz-festo0102,0,7225251.story> (last visited Jan. 30, 2004).

4. *Id.*

5. *Festo*, 122 S. Ct. at 1837. For a discussion of these problems, see text accompanying notes 129–134.

6. *Festo*, 234 F.3d. 558, 575 (Fed. Cir. 2000). Specifically, the Court of Appeals explained, “[i]n patent law, we think that rules qualify as ‘workable’ when they can be relied upon to produce consistent results and give rise to a body of law that provides guidance to the marketplace on how to conduct its affairs.”

7. See generally Kimberly A. Moore, *Judges, Juries, and Patent Cases—An Empirical Peek Inside the Black Box*, 99 Mich. L. Rev. 365, 396–401 (2001).

patent holders can afford the one million dollar average cost of patent litigation,⁸ the rights of many patent holders are effectively diminished.

This note argues that a solution to this problem is for Congress to eliminate the Doctrine of Equivalents. Such legislation may seem at first to be controversial, and it may not have been an optimal solution twenty years ago, but it is feasible today. The doctrine was considered an important equitable solution when first introduced by the Supreme Court some 150 years ago,⁹ but it has since become outdated and unnecessary.

The sheer volume of patent applications makes reform of the system especially desirable. In late 1999, the six-millionth patent was granted in the United States. At the present rate of filing this number will double in only sixteen years.¹⁰ Eliminating the doctrine of equivalents is therefore needed to increase judicial efficiency by clarifying claim interpretation, thus bringing certainty and predictability to the patent process. Since a patent is a contract, the doctrine can be replaced with traditional common law rules of contract interpretation. This proposed legislation would not be applied retroactively, so it would not impact the present owners of unexpired patents.

Part I of this note provides a background of patent principles, including the doctrine of equivalents and its counterpart, prosecution history estoppel. Part II introduces the procedural history of *Festo*, leading up to the highly anticipated Supreme Court decision issued in 2002, analyzes the Court's holding and reasoning, and summarizes recent developments in the case. Part III shows that the Court's decision in *Festo* opened the door for congressional action to eliminate the doctrine of equivalents and discusses the rationale and benefits of such legislation.

I. PATENT LAW—AN OVERVIEW

A. *The Patent Process*

A patent is a contract between an inventor and the government.¹¹ An inventor applies for his patent by making claims to the United

8. See American Intellectual Property Law Association, Report of Economic Survey, 1999, at 69.

9. *Winans v. Denmead*, 56 U.S. (15 How.) 330 (1853), discussed in text accompanying notes 44–48.

10. The first U.S. patent was awarded in 1790, so this comprises a period of 209 years. Craig Hovey, *The Patent Process: A Guide to Intellectual Property for the Information Age*, 1–2 (2002).

11. The Supreme Court has described this *quid pro quo* as “a carefully crafted bargain for encouraging the creation and disclosure of new, useful and nonobvious advances in technology and design in return for the exclusive right to practice the invention for a period of years.” *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 150, 109 S. Ct. 971, 977 (1989).

States Patent and Trademark Office (PTO).¹² These claims form the basis of the inventor's legal protection. They are his property and can be quite valuable.¹³ The patentee is given what can become a monopoly over his invention for "limited times,"¹⁴ as granted by the Constitution.¹⁵ He has the exclusive right to manufacture, use, and sell the patented device, or simply to prevent others from doing so.¹⁶

The process of interaction between the PTO examiner and the inventor is called the prosecution history.¹⁷ During this process, the patent examiner either allows or rejects the inventor's claims. Rejected claims may then be amended by the inventor, and the patent examiner will then either allow or reject the amended claims.¹⁸ These negotiations last on average about eighteen months¹⁹ and can include an interview with the examiner.²⁰ Receiving a patent is not a simple task, and patent attorneys must have scientific and/or technical backgrounds and special certification to write patent applications.²¹

In exchange for receiving a patent, an inventor must disclose his invention to the public.²² This is the public notice requirement, and it promotes the "progress of science"²³ by allowing others to see exactly what has been patented and to improve upon it.²⁴ Patent laws protect both pioneering inventions and technological improvements made by others on existing patented devices.²⁵ Each type of invention is vital to the advancement of technology. A pioneering invention is one that performs a function never before achieved, such as the phonograph or the laser.²⁶ More than 90% of all patented inventions, however, are simply advances over existing technology²⁷ as is the

12. 35 U.S.C. § 111 (2003).

13. David A. Burge, *Patent and Trademark Tactics and Practice* 32 (1999); Joy L. Bryant, *Protecting Your Ideas, The Inventor's Guide to Patents* 25 (1999).

14. Currently, 20 years from filing date. 35 U.S.C. § 154 (2003).

15. U.S. Const. art I, § 8, cl. 8.

16. 35 U.S.C. § 271 (2003).

17. Irah H. Donner, *Patent Prosecution: Practice & Procedure Before the U.S. Patent Office* 6 (1999).

18. 35 U.S.C. § 132 (2003).

19. Kimberly Pace Moore, Paul R. Michel & Michael V. Lupo, *Patent Litigation and Strategy* 4 (1999).

20. Interviews can be either in person or over the phone. Donner, *supra* note 17, at 67-71.

21. 37 C.F.R. § 10.7 (2003).

22. Donner, *supra* note 17, at 3.

23. U.S. Const. art I, § 8, cl. 8.

24. Donner, *supra* note 17, at 3.

25. This has been the case since the first U.S. patent laws were enacted by Congress. The Patent Act of 1790, Ch. 7, 1 Stat. 109.

26. Travis Brown, *Historical First Patents, The First United States Patent for Many Everyday Things* 119, 140 (1994).

27. Hovey, *supra* note 10, at 25.

robotics device which is the subject of the *Festo* controversy.²⁸ Such “design-arounds” are essential to progress because when a device is made better or cheaper without infringing existing patents, the public benefits. This benefit is made possible by the public notice requirement.

The essence of patent law, therefore, is a balancing of two competing interests—the inventor’s right to control his work versus society’s right to use it. If the patent holder is given too much protection, a fear of infringing by competitors discourages innovation, so the public suffers. With too little protection, copycats flourish. In either case, with less incentive to innovate, the effect is exactly the same.²⁹ Courts are largely responsible for balancing these interests, and the patent community has watched them struggle to strike the right balance between these competing issues for many years.³⁰

B. Patent Rights as Property Rights

A patent creates a property right in an invention which is analogous to a real property right.³¹ Like real property, patents can be sold, or “rented” through licensing, and the fees generated are royalties.³² The patent owner can also prevent “trespassers” from using his property with the threat or the act of a lawsuit. What a patent owner actually owns are his claims—the verbal descriptions of his invention.³³ These legally define the invention in the same way that a metes and bounds description in a property deed describes the property conveyed by the deed.³⁴ Claims become part of the public domain and therefore must be clearly written so that

28. For a description of the device, see text accompanying notes 73–75.

29. See Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 Tex. L. Rev. 989, 990 (1997).

30. For an account of how the pendulum has swung back and forth between judicial protection of patent-owners and their competitors, see Jay I. Alexander, *Cabining the Doctrine of Equivalents in Festo: A Historical Perspective on the Relationship between the Doctrine of Equivalents and Prosecution History Estoppel*, 51 Am. U.L. Rev. 553 (2002).

31. Robert P. Merges & John F. Duffy, *Patent Law and Policy: Cases and Materials*, 48 (2002).

32. Thomas T. Gordon & Arthur S. Cookfair, *Patent Fundamentals for Scientists and Engineers* 11 (1995).

33. Robert L. Harmon, *Patents and the Federal Circuit* 3 (1991). Judge Giles Rich of the CAFC has frequently been quoted as saying “to coin a phrase, the name of the game is the claim.” *Hilton Davis Chem. Co. v. Warner-Jenkinson Co. Inc.*, 62 F.3d 1512, 1539 (Fed. Cir. 1995), *In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998); *Electronic Planroom, Inc. v. McGraw-Hill Cos., Inc.*, 135 F. Supp. 2d 805, 833 (E.D. Mich. 2001).

34. Herbert F. Schwartz, *Patent Law and Practice* 7–8 (1996).

the patent holder knows what he owns and so that “the public should know what he does not.”³⁵

When a patent application is filed with the PTO, an examiner will search through the pertinent literature to determine if the invention is really new, useful, and not obvious.³⁶ The body of technical information available to the public to determine these facts is known in the trade as “prior art.”³⁷ A patent application is typically rejected the first time it is examined because it usually does not fully conform to the requirements of the Patent Act.³⁸ Often, the PTO examiner will require that at least one claim is changed, usually with the effect of narrowing it. When a claim is narrowed, the inventor is said to have “surrendered” some of the territory he originally requested (to continue the real property analogy). But since the inventor may not be able to get a patent without making the requested changes, he usually does so.³⁹

When a claim is amended, a question sometimes arises as to whether the original claim should receive the same protection from infringement as does the final one. For example, if an inventor states in his original application that the process he wants to patent functions in “a large pH range,” the examiner may require him to narrow that range to avoid a conflict with the prior art.⁴⁰ If the inventor complies by amending the claim to state that the process works in solutions with a pH of “approximately 6.0 to 9.0,” does the inventor then lose the right to a process that works at a pH of 5.0?⁴¹ In other words, how broadly should claims be interpreted? On the one hand, effective patent protection would require claims to be read broadly enough to encompass the work envisioned by the inventor. The notice function, on the other hand, requires a narrow reading so

35. *Festo*, 122 S. Ct. at 1837.

36. 35 U.S.C. §§ 101, 102, 103 (2003).

37. *Merges*, *supra* note 31, at 36.

38. Commonly, a claim is rejected because it conflicts with the prior art. Richard Stim, *Intellectual Property: Patents, Trademarks and Copyrights*, 483 (2001).

39. A claim which receives a final rejection may be appealed to the Patent Office Board of Patent Appeals and Interferences (35 U.S.C. § 134). Additionally, claims can be appealed to the Court of Appeals for the Federal Circuit, and some have even gone to the Supreme Court. *Donner*, *supra* note 17, at 59, 75, 81.

40. pH is the measure of acidity or basicity of a solution and specifically refers to the hydrogen ion concentration. pH values below 7 are acidic, those above 7 are basic, and a pH of 7 is neutral. *The New Encyclopædia Britannica* 350 (15th ed. 1989).

41. This requires one to argue that 5.0 is equivalent to approximately 6.0. Though this may seem like an easy question, it is a difficult one under the doctrine of equivalents, and it is the situation which occurred in the case of *Warner-Jenkinson* (discussed at length in text accompanying notes 56–64), a case which was litigated for several years but was never actually resolved by the courts.

that the words retain their meaning and the public can clearly ascertain what is protected. Two doctrines were created by the courts to attempt to deal with these divergent ends—the Doctrine of Equivalents and Prosecution History Estoppel.

C. *The Doctrine of Equivalents*

An inventor is protected not only against literal infringement of his patent, but also against “knock-offs,” instances where a copyist attempts to avoid liability by making minor, insignificant changes to the invention. This protection is achieved in two ways—by means-plus-function claim writing and by the doctrine of equivalents.

The federal statute that provides specifications for claim-writing was amended in 1952 to make the task easier for patent agents and more advantageous for inventors. This so-called “means plus function” method allows for claims to describe the functions of parts rather than particular materials themselves, thus giving more property to patentees.⁴² For example, one may use the word “fastener” rather than “screw” in a claim to prevent a competitor from building a device using a nail or staple simply to avoid literal infringement. The patent agent writes the claim as broadly as possible to encompass all the territory the PTO will allow him to claim (in this case, nails, screws, adhesives, staples, rivets, etc.) so that ideally there is little question as to what property the patent-holder owns.⁴³

The other device designed to protect inventors from infringement is the doctrine of equivalents, wherein patent owners are given a protected zone around the literal scope of their claims. In 1856, the Supreme Court created this doctrine in *Winans v. Denmead*.⁴⁴ The plaintiff in this case had invented railroad cars for carrying coal which were “cylindrical and conical” in shape and were a considerable improvement over traditionally shaped cars.⁴⁵ The defendants manufactured a similar car, though it did not literally infringe the patent.⁴⁶ In a 5–4 decision, the Court held that since the defendants’ product substantially embodied the invention, it was equivalent and hence the doctrine of equivalents was created.⁴⁷ Notice that means-plus-function claim writing did not exist at this time, but even so, the dissenters strongly felt the patentee should be held only to the claims he owned. The dissenters noted that the language of the patent was

42. 35 U.S.C. § 112 ¶ 6 (2003).

43. Edward F. O’Connor, *Intellectual Property Law and Litigation* 63–65 (2003).

44. 56 U.S. 330, 14 L. Ed. 717 (1853).

45. *Id.* at 332.

46. The defendants’ cars were octagonal and pyramidal. *Id.*

47. *Id.* at 344.

“full, clear, and exact,” and since the defendants had designed a different shape, there was no infringement.⁴⁸

This doctrine of equivalents was problematical from the start because the Court offered no test to determine equivalence. The Court directly addressed the issue again a century later in *Graver Tank & Manufacturing Company v. Linde Air Products Company*,⁴⁹ where it laid out the modern contours of the doctrine. The test for equivalence would be to ask if the infringing device “performs substantially the same function in substantially the same way to obtain the same result.”⁵⁰ If the answer to this “function/way/result” test was yes, the two products would be deemed the same and infringement would have occurred.⁵¹ This test has increasingly been criticized by courts because it often does not work in a modern technological society.⁵² Federal Appeals Court Judge Alan D. Lourie gave an example of this problem in 1997, noting that, for example, aspirin and ibuprofen perform the same function in the same way to obtain the same result, but they are not equivalent. They have different chemical structures, and no one would consider one to infringe the other.⁵³ Additionally, the function/way/result test is difficult for juries to apply because patent cases can be notoriously technical and complicated.⁵⁴ The test gives confused juries the opportunity to essentially rewrite claims, which is not allowed in patent interpretation.⁵⁵

Another fifty years passed before the Supreme Court again addressed the doctrine of equivalents in *Warner-Jenkinson Company v. Hilton Davis Chemical Company*.⁵⁶ It involved the pH example used throughout this note. The plaintiffs patented a process for removing impurities from dyes by filtering them through a membrane.⁵⁷ The amended claim in the patent called for this to be accomplished in solution “at a pH from approximately 6.0 to 9.0.”⁵⁸ The upper limit of 9.0 was added to the original claim because a

48. *Id.* at 347.

49. 339 U.S. 605, 70 S. Ct. 854 (1950).

50. *Id.* at 608, 70 S. Ct. 856.

51. *Id.*

52. Richard T. Holzmann, *Infringement of the United States Patent Right, A Guide for Executives and Attorneys* 85 (1995). *See also*, O'Connor, *supra* note 43, at 72; Donner, *supra* note 17, at 629.

53. *Hilton Davis Chem. Co. v. Warner-Jenkinson Co., Inc.*, 62 F.3d 1512, 1546 (Fed. Cir. 1997).

54. James M. Amend, *Patent Law: A Primer for Federal District Court Judges*, 3 (1998). *See generally* Moore, *supra* note 7; Moore, *infra* note 72.

55. Harmon, *supra* note 33, at 179.

56. 520 U.S. 17, 117 S. Ct. 1040 (1997).

57. *Id.* at 21, 117 S. Ct. at 1045.

58. *Id.* at 22, 117 S. Ct. at 1045.

previous patent had already claimed pH values of 9.0 and above.⁵⁹ The parties disagreed as to why the lower limit of 6.0 was chosen.⁶⁰ Because the reason was not known, the Court remanded the case to determine the reason for the change.⁶¹

In remanding, the Court instructed the Court of Appeals to use the doctrine of equivalents even though it also noted that "Congress can legislate the doctrine of equivalents out of existence any time it chooses."⁶² The Court cautioned that the doctrine should not be applied too broadly and further limited it by stating that it should only be applied element-by-element.⁶³ The Court placed the burden on the patentee to show that he did not amend his claim for reasons of patentability.⁶⁴ If he could not meet this burden, then he would be estopped from arguing equivalence. So in the case of *Warner-Jenkinson*, if the patentee could not show that he added the lower pH limit of "approximately 6.0" for a reason unrelated to patentability, then he would not be allowed to argue that a pH of 5.0 was equivalent.

Though it has been weakened by the holding of *Warner-Jenkinson*, the doctrine of equivalents was designed to give the patentee a zone around the literal wording of a claim and therefore more property. Referring back to the real property analogy, patent claims mark the actual boundaries which the patent-holder owns. But here is where intellectual property differs from real property—what if a landowner decided to fence in the land he owned, and the law allowed him to enclose an extra twenty or thirty feet in every direction around the perimeter of the property actually described in his deed? The extra acreage could add up to a considerable amount of land that he would now have full use of, and the law would then protect his interests in it. In close analogy, the patent owner is given a penumbra around the literal wording of his claim to protect him against equivalents. But the inherent uncertainty in this system is that it is impossible to know the size of the zone. That is the problem faced by both courts and potential infringers—the doctrine of equivalents makes the scope of patents less certain and interferes with the public notice function of patent agreements. To try to bring balance back to the system, courts were forced to develop a competing doctrine—prosecution history estoppel.

59. *Id.* at 22, 117 S. Ct. at 1046.

60. *Id.*

61. *Warner-Jenkinson*, 520 U.S. at 41, 117 S. Ct. at 1054.

62. *Id.* at 28, 117 S. Ct. at 1048.

63. *Id.* at 29, 117 S. Ct. at 1049.

64. *Id.* at 33, 117 S. Ct. at 1051.

D. Prosecution History Estoppel—Protection Versus Notice

Where the doctrine of equivalents was designed to protect the patentee, prosecution history estoppel was designed to protect competition.⁶⁵ It prohibits patent-holders from claiming protection over claims which were knowingly given up in the application process.⁶⁶ The patentee is estopped from arguing that he owns a right that he did not, in the end, claim. In the continuing example, since the inventor claimed a pH of approximately 6.0 as the lower end of his solution range, he would be estopped from arguing that he meant his product to include pH values below 6.0, since he knows such pH values exist, but he did not claim them in the final draft of the agreement.

The Court of Appeals for the Federal Circuit (hereinafter “CAFC” or “Federal Circuit”) was created by Congress in 1982 to promote stability in patent law.⁶⁷ The court has exclusive jurisdiction over patent appeals and deals with more than fifty of these cases a year.⁶⁸ The creation of the CAFC has brought stability to patent law, except in the area of the doctrine of equivalents, which it has wrestled with since its inception. For several years, the CAFC has used what it called the “flexible bar” approach, where the reasons claims were amended are considered in determining if a patentee should be estopped from asserting infringement.⁶⁹ That is, it has to be clear to the court that the patentee has purposely surrendered a claim during prosecution. If there is any doubt, the patentee would be allowed to expand his patent under the doctrine of equivalents.⁷⁰ The problem with the flexible bar is its lack of precision—it is difficult for anyone to know what the zone of protection is. Uncertainty due to the flexible bar damages the notice function, which contravenes the government’s goal of encouraging the progress of science.⁷¹ While the CAFC has deemed application of this doctrine unworkable, the lower courts have had even greater difficulty with it, since they are usually not well equipped to handle these complicated, technical cases.⁷²

65. Donner, *supra* note 17, at 93.

66. *Id.*

67. See Federal Courts Improvement Act of 1982, Pub. L. No. 97–154 Stat. 25 (codified as amended in scattered sections of 28 U.S.C.A.) (establishing the United States Court of Appeals for the Federal Circuit).

68. CAFC statistics, available at <http://www.fedcir.gov/#information>, for years 1997–2002 (last visited Jan. 30, 2004).

69. Matthew J. Conigliaro, Andrew C. Greenberg & Mark A. Lemley, *Foreseeability in Patent Law*, 16 Berkeley Tech. L.J. 1045, 1047 (2001).

70. *Id.*

71. *Id.*

72. See generally Kimberly A. Moore, *Are District Court Judges Equipped to Resolve Patent Cases?*, 15 Harv. J. Law & Tec. 1 (2001) (presenting empirical evidence that suggests district court judges are not sufficiently capable of resolving

II. *FESTO* ILLUSTRATES THE PROBLEMA. *Facts of Festo*

Festo Corporation owns two patents,⁷³ the “Stoll” and the “Carroll,” on a device known as a magnetic rodless cylinder, which has many uses in robotics and other automated products. Inside the cylinder is a piston which moves through the cylinder via pressurized air. Outside the cylinder is a sleeve which is magnetically coupled to the piston so that as the piston moves inside the cylinder, the sleeve moves along with it on the outside of the cylinder. Therefore, whatever is attached to the outside of the cylinder also moves, and the device acts as a conveyor.⁷⁴ Festo Corporation revolutionized the field of robotics with this invention and made millions of dollars on it, notably in animatronics such as those used by Disney in its theme park creatures.⁷⁵

Since the Festo device was so successful, a rival company, SMC, developed a competing device which it sold at a lower price.⁷⁶ Festo believed the SMC robotic arm was a knock-off of its patented device. In fact, the two products were so nearly identical that their parts were interchangeable.⁷⁷ SMC countered that they were not literally infringing Festo’s patent because they made changes in the design of the device.⁷⁸ They further argued that Festo’s invention was modeled on prior art from the 1960’s and that SMC was simply doing the same thing by producing a design-around.⁷⁹ The courts would have to look at the prosecution history to decide who was correct.

B. *Prosecution History of Festo’s Patents*

During the prosecution of the Stoll patent in 1980, the PTO examiner initially rejected the relevant claim because the method of operation of the device was unclear.⁸⁰ Dr. Stoll amended his claim to

patent cases accurately).

73. U.S. Patent nos. 3,779,401 (issued Dec. 18, 1973) and 4,354,125 (issued Oct. 12, 1982). Both patents have expired, but are still being litigated.

74. See *Festo*, 172 F.3d 1361, 1365, 1366 (Fed. Cir. 1999) for illustrations of the device.

75. *Festo*, No. Civ. A. 88–1814–MA, 1993 WL 1510657 (D. Mass.) at *1.

76. *Id.* at *2.

77. Mark Harrington, *Supreme Court Spells Out New Patent Guidelines*, *Newsday.com*, May 29, 2002, available at www.newsday.com/technology/ny-festo0528.story?coll=ny-technology (last visited October 18, 2002).

78. *Festo*, 1993 WL 1510657 (D. Mass.) at *18.

79. *Id.*

80. *Id.* at *12.

state that the sleeve should be made of “magnetizable” material.⁸¹ This would seem reasonable since the sleeve and piston were to be magnetically coupled, but this narrowing amendment ultimately became a costly problem for Festo. SMC was able to make the same device work with a nonmagnetizable metal, thus avoiding literal infringement.⁸² Nothing in the prosecution history shows exactly why Stoll amended his claim in this particular way, but the examiner allowed the claim as amended and the patent was granted.⁸³

The Carroll patent was issued in 1973, but was reexamined in 1988 in light of Stoll’s patent.⁸⁴ Festo added a claim to the Carroll patent to include a pair of one-way sealing rings on the piston to prevent impurities from entering.⁸⁵ This narrowing amendment was placed on the record to distinguish it from the prior art, and it too was accepted by the examiner.⁸⁶ Once again, SMC found a way to copy this detail without literal infringement; instead of using two one-way sealing rings, SMC devices have a single sealing ring with a two-way lip.⁸⁷

C. Procedural History

1. Lower Court Decisions—Festo Wins the First Three Rounds

In 1988 Festo Corporation filed suit against SMC arguing infringement of both patents under the doctrine of equivalents. The district court used the flexible bar approach to decide that prosecution history estoppel did not apply and that Festo could indeed argue that the magnetizable sleeve had substantially the same function and acted in substantially the same way to obtain the same result as a nonmagnetizable sleeve.⁸⁸ The jury agreed with Festo.

On the separate issue of the sealing rings, Festo won its motion for summary judgment in the same way under the function/way/result test of the doctrine of equivalents.⁸⁹ SMC appealed both the jury verdict and the grant of summary judgment. A panel of the CAFC

81. *Id.*

82. *Id.* at *16.

83. *Festo*, 1993 WL 1510657 at *13.

84. *Id.* at *6. It was reexamined by the patent office because of the discovery of an older German patent which had not been included during prosecution of the Carroll patent and which raised a question of its patentability. The Carroll patent was therefore amended to meet the requirements of the PTO. *Id.*

85. *Id.*

86. *Id.*

87. *Id.* at *9.

88. *Id.*

89. *Id.* at *26.

affirmed both judgments,⁹⁰ and SMC appealed to the Supreme Court. The Supreme Court granted certiorari but, at about the same time, decided the related case of *Warner-Jenkinson*. Recall that in *Warner-Jenkinson*, the Court remanded the case to the CAFC to determine reasons the patentee had amended his claim.⁹¹ Since *Festo* dealt with a similar issue, the Supreme Court remanded it also for further consideration.⁹² Accordingly, a three-judge CAFC panel affirmed all previous judgments in favor of *Festo*.⁹³ SMC petitioned the CAFC to rehear the appeal *en banc*, and this petition was granted.⁹⁴

2. *The En Banc Decision—Festo Loses Round Four*

Toward the end of the Supreme Court decision in *Warner-Jenkinson*, the Court stated that it would “leave it to the Federal Circuit how best to implement procedural improvements to promote certainty, consistency, and reviewability to this area of the law.”⁹⁵ When remanding *Festo* for consideration in light of the *Warner-Jenkinson*, the Court likely did not anticipate the lengths the CAFC would soon go to heed this advice. In November of 2000, an *en banc* CAFC made a controversial 8–4 decision regarding *Festo*.⁹⁶ The court disregarded many years of precedent and instituted a “complete” bar.⁹⁷ Under such a bar, estoppel would arise from *any* claim amendment made to comply with the Patent Act. Moreover, this estoppel would act as an absolute bar against any claim of equivalence for the amended element.⁹⁸ This bright-line rule adopted by the CAFC went against 150 years of jurisprudence, contradicted the Supreme Court instructions in *Warner-Jenkinson*, and caused a great deal of controversy in the patent community.⁹⁹

The CAFC argued that it was correct in overruling the flexible bar because its experience with the approach was that it was unworkable and that it contravened the public-notice function of patent claims.¹⁰⁰

90. *Festo*, 72 F.3d 857 (Fed. Cir. 1995).

91. As discussed in text accompanying notes 56–64.

92. *Festo*, 520 U.S. 1111, 117 S. Ct. 1240 (1997).

93. *Festo*, 172 F.3d 1361 (Fed. Cir. 1999).

94. *Festo*, 187 F.3d 1381 (Fed. Cir. 1999).

95. *Warner-Jenkinson*, 520 U.S. 17, at 41 n.8, 117 S. Ct. at 1054 n.8 (1997).

96. *Festo*, 234 F.3d 558 (Fed. Cir. 2000).

97. *Id.* at 569.

98. *Id.* at 576.

99. See, e.g., Conigliaro, *supra* note 69; William M. Atkinson, Bruce J. Rose, & John A. Wasleff, *Was Festo Really Necessary?*, 83 J. Pat. & Trademark Off. Soc’y 111 (2001); Glen P. Belvis, *An Analysis of the En Banc Decision in Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co. and the Doctrine of Equivalents*, 11 Fed. Cir. B.J. 59 (2002).

100. *Festo*, 234 F.3d at 575.

The court noted that the flexible bar was a benefit to the patentee that “comes at the public’s expense.”¹⁰¹ As Judge Plager of the CAFC had earlier warned, the flexible bar was a “virtually uncontrolled and unreviewable license for juries to find infringement if they so choose.”¹⁰²

In fact, there are several advantages to the CAFC complete bar rule over the previous flexible bar. The first is judicial efficiency—complex patent cases without clear rules clog the court system.¹⁰³ These cases are usually difficult for both judge and jury as they tend to be highly technical close calls.¹⁰⁴ It is logical that a bright line rule would move cases through the system more quickly on summary judgments and would provide incentives for parties to settle out of court.

Another major advantage of the CAFC complete bar is that it would provide clarity and certainty for potential infringers who would know exactly what constitutes infringement and could better make economic and long-term decisions, such as whether to attempt to buy a license or to simply produce the product themselves. Sometimes competitors believe it is cheaper to pay undeserving royalties—even if they are confident they are not infringing—than to fight in court.¹⁰⁵ These costs are passed along to consumers in the form of higher prices.¹⁰⁶ The CAFC took note of situations where some patentees were seeking greater coverage than their patents allowed and were blackmailing competitors into paying licensing fees.¹⁰⁷ The CAFC’s bright-line rule could eliminate these problems. Research and development would likely increase.¹⁰⁸ Ironically, the CAFC, by ignoring much of the Supreme Court’s *Warner-Jenkinson* decision, had actually achieved the final instruction of the Supreme Court—they had come up with a rule which would have indeed promoted “certainty, consistency, and reviewability to this area of the law.”¹⁰⁹

101. *Id.* at 576.

102. *Hilton-Davis*, 62 F.3d. at 1538.

103. *See generally* Amend, *supra* note 54 (regarding complexity of patent cases); Moore, *supra* note 7; Schwartz, *supra* note 34, at 130–35.

104. *Id.*

105. Brief of Intel Corporation, Cypress Semiconductor Corporation & United Technologies Corporation as Amici Curiae in support of Respondents, at 2, Festo, 535 U.S. 722 (2002) (No. 00–1543).

106. *Id.* at 12.

107. *Hilton-Davis*, 62 F.3d. at 1537.

108. Brief, *supra* note 105, at 11.

109. *Warner-Jenkinson*, 520 U.S. at 41 n.8, 117 S. Ct. at 1054 n.8 (1997), as discussed in text accompanying note 95.

D. The Supreme Court Steps In

Eighteen months later, a unanimous Supreme Court, while emphasizing with the difficulties faced by the CAFC in these cases, nevertheless overruled them and ordered them to rehear the case using a modified version of the flexible bar.¹¹⁰ The Court disapproved of the CAFC decision for several reasons. First, the absolute bar was unfair to the 1.2 million owners of unexpired patents who wrote their claims without knowledge of this rule and would have to defend these claims based on principles they did not know about at the time of application. As the Court explained, “[f]undamental alterations in these rules risk destroying the legitimate expectations of inventors in their property.”¹¹¹ Second, the change would have violated the principles of *stare decisis* as it would have overruled fifty Federal Circuit cases and eight Supreme Court opinions.¹¹² Finally, the Court felt that this complete bar would disrupt the balance the Court had traditionally attempted to maintain between the doctrine of equivalents and prosecution history estoppel.¹¹³ For these reasons, the Court reinstated the flexible bar of the doctrine of equivalents but raised it with a rebuttable presumption and a foreseeability test.¹¹⁴ That is, the Court ruled that if a patentee amends a claim, it will be *presumed* that he made it for reasons of patentability and prosecution history estoppel will apply.¹¹⁵ The patentee has the burden for proving otherwise. Put another way, the patentee is entitled to rebut the presumption that a narrowing amendment surrendered the entire territory between the original and amended claim. Specifically, the Court enumerated three “rebuttal criteria;” unforeseeability, tangentialness, and the catch-all category of “some other reason.”¹¹⁶

If an equivalent is unforeseeable by a person trained in the art at the time the patent is granted, prosecution history estoppel will not apply.¹¹⁷ That is, if the patentee successfully establishes that the amendment was not for a reason of patentability, he can argue the use

110. *Festo*, 535 U.S. at 1843.

111. *Id.* at 1841.

112. *Id.* at 1837.

113. *Id.* at 1841.

114. *Id.* at 1842.

115. *Id.*

116. *Festo*, 535 U.S. at 1842. Specifically, the Court pointed out that “[t]he equivalent may have been unforeseeable at the time of the application; the rationale underlying the amendment may bear no more than a tangential relation to the equivalent in question; or there may be some other reason suggesting that the patentee could not reasonably be expected to have described the insubstantial substitute in question.”

117. *Id.*

of the doctrine of equivalents. While this may seem like an equitable solution, it effectively gutted the doctrine of equivalents for patentees like Festo who amended claims without knowledge of this new court-created presumption.

E. Back to the CAFC

On September 26, 2003, an *en banc* CAFC rendered the ninth judicial opinion in this case.¹¹⁸ The CAFC had ordered the parties to brief four questions—two dealing with the factors involving the rebuttable presumption in general and two specifically dealing with whether Festo could rebut the presumption.¹¹⁹ The CAFC concluded that rebuttal of the presumption to surrender is a question of law to be determined by the court, not a jury.¹²⁰ The Court then, addressing the three rebuttal criteria, remanded the case once again to district court—this time to determine whether Festo can rebut the presumption of surrender by demonstrating that the accused device’s aluminum sleeve and sealing ring elements would have been unforeseeable to a person of ordinary skill in the art at the time of the amendments.¹²¹

Assuming no new facts come out in the remand to district court, Festo Corporation will likely ultimately lose. How could Festo, whose patented product was so closely copied by a competitor that their replacement parts were interchangeable, lose this infringement battle? The answer seems to lie in the doctrine of equivalents. During prosecution of Festo’s patents, amendments were made with the understanding that the doctrine would protect any equivalents. It was understood that as long as the infringing device met the function/way/result test, the patentee could win his battle. But the Supreme Court, in *Warner-Jenkinson* and *Festo*, limited the use of the doctrine of equivalents to cases where claims were amended for reasons unrelated to patentability. If Festo’s lawyers cannot show that they amended their claims for reasons unrelated to patentability, they will be estopped from arguing that “magnetizable” is equivalent to “non-magnetizable” and that two one-way rings are equivalent to one ring with a two-way lip.¹²² It is unlikely Festo’s attorneys will be able to meet this standard because they probably did amend the

118. *Festo*, 2003 WL 22220526 (Fed. Cir.), referred to as Festo IX.

119. *Id.* at *2.

120. *Id.* at *4.

121. *Id.* at *7.

122. Specifically, Festo will have to prove that the accused device’s aluminum sleeve and sealing ring elements would have been unforeseeable to a person of ordinary skill in the art at the time of the amendments. *Id.*

claims for reasons of patentability.¹²³ In fact, the Supreme Court expressly stated that SMC “might well prevail” for these very reasons.¹²⁴ Instead of receiving an estimated sixteen million dollars in damages from sales lost to SMC,¹²⁵ Festo may be left with only very large legal fees for depending on the doctrine of equivalents to protect its patents. Even if Festo ultimately prevails, the victory would come at tremendous cost.

III. SOLUTION—IT’S TIME FOR CONGRESS TO STEP IN

Because of the problems caused by the doctrine of equivalents, Congress should consider eliminating it.¹²⁶ The Supreme Court paved the way for this solution in *Festo* by stating that since the doctrine of equivalents and prosecution history estoppel are settled law, “the responsibility for changing them rests with Congress.”¹²⁷ The CAFC tried to accomplish similar results with the complete bar but was overruled for reasons of *stare decisis* and the retroactive effects of such a rule. Although a legislative solution may seem controversial, it complies with the intent of both courts and is fair to present and future patent holders.

A. Rationale for This Legislation

The Supreme Court stated in *Festo* that “the [patent] monopoly is a property right, and like any property right its boundaries should be clear.”¹²⁸ The Court listed the problems with the doctrine of equivalents. It makes the scope of patents less certain.¹²⁹ It can deter competitors from engaging in legitimate manufacturing.¹³⁰ It causes competitors to invest by mistake in competing products that the

123. There are not many other possible reasons for amending claims. For example, these were not made to correct grammar in the original claim. If the reasons for amending were not related to patentability, Festo’s lawyers would likely have made this argument long ago.

124. *Festo*, 122 S. Ct. at 1842. The CAFC has made similar statements, such as “it seems unlikely that an aluminum sleeve would have been unforeseeable as it was made of a commonly available metal.” *Festo*, 2003 WL 22220526 at *7.

125. Harrington, *supra* note 77.

126. Prosecution history estoppel and the flexible bar would automatically be eliminated, since they were created to balance the doctrine of equivalents. Instead, courts would use the common law parol evidence rule.

127. *Festo*, 122 S. Ct. at 1841.

128. *Id.* at 1837.

129. *Id.*

130. *Id.*

patent secures.¹³¹ It can lead to wasteful litigation.¹³² The opinion quoted Justice Hugo Black who, in 1950, astutely observed that the doctrine required competitors to be able, “at the peril of heavy infringement damages, to forecast how far a court relatively unversed in a particular technological field will expand the claim’s language.”¹³³ More recently, Judge Plager of the Court of Appeals for the Federal Circuit explained “whatever role the doctrine of equivalents may have played in earlier times . . . today the doctrine is regularly used by patentees to seek greater coverage for their patents than the patent statute grants.”¹³⁴

Additionally, the doctrine is less important today than it was in the past because the quality and quantity of patent attorneys are significantly greater today than in 1856 when the doctrine was first created by the Supreme Court.¹³⁵ As of October 2002, there were 27,000 active registered practitioners certified to practice before the PTO (up from 25,000 in May of 2002).¹³⁶ These agents must pass a difficult test to be allowed to write claims.¹³⁷ Also, these agents can use means-plus-function claim writing, which provides that equivalents are already built into claims.

Eliminating the doctrine of equivalents would benefit patent-owners who cannot afford expensive patent litigation and whose rights are therefore effectively reduced by the present system. Patent litigation can routinely take five years and cost millions of dollars.¹³⁸ Writing patent applications would be easier in that patentees would no longer have to delineate the reasons they amended claims.¹³⁹ Finally, since this legislation would not be applied retroactively, it would not negatively impact the 1.2 million present patent-holders who amended their claims under the doctrine of equivalents and who, unfortunately for some, must depend on it in any future litigation.

131. *Id.*

132. *Id.*

133. *Id.* at 1838.

134. *Hilton-Davis*, 62 F.3d. at 1537.

135. The doctrine’s creation is described in text accompanying notes 44–48.

136. Statistics available at www.uspto.gov.

137. *Id.* The passing rate varies from about 35% to 70% but averages around 50%. Data available for years 1997–2002 on the PTO website, available at <http://www.uspto.gov/web/offices/dcom/olia/oed/examresults.htm> (last visited Jan. 30, 2004). Applicants must have an approved science degree to qualify to sit for the exam and must demonstrate that they possess the scientific and technical training required. 37 C.F.R. § 10.7 (2003).

138. Brief, *supra* note 105, at 13. *Stim*, *supra* note 38, at 488.

139. Recall that the reasons claims are amended presently determine if the doctrine of equivalents can be argued as discussed in text accompanying notes 114–17.

B. Alternative to the Doctrine of Equivalents

A patent is a contract, so courts should interpret it using the traditional common law rules of contract interpretation. This formalist approach is especially appropriate in patent law because written terms should have priority over unwritten expressions of agreement to satisfy the public notice requirement.¹⁴⁰ Patent cases are usually complicated affairs for trial courts and the parties tend to be rather sophisticated. Therefore, courts should interpret claims strictly since the parties know best the meaning of the claims.¹⁴¹

As in the case of common law contracts, words in patent claims would be given their ordinary, common meaning and technical words their technical meaning. When a term has more than one meaning, it would be interpreted against the party who drafted it (in this case, the inventor). Prior dealings would also be taken into account as in other contract negotiations. For example, in the year 2000, IBM received nearly 1100 patents.¹⁴² Their legal staff is evidently very competent to write claims, and the PTO is accustomed to dealing with them, so they would be held to a higher standard than the individual writing a claim for the first time. Another example of applying common law contract interpretation is if claim language has two reasonable interpretations and only one favors the public interest, this interpretation would be preferred.¹⁴³

In contracts, the process by which a court determines the meaning of the language of the contract is called construction.¹⁴⁴ In patents, the same process occurs in claim interpretation in a Markman hearing.¹⁴⁵ At such a hearing, the judge determines the scope of the claims at issue. The primary purpose of these rules is to determine the parties' intent from the language of their agreement and to give effect to that intent. A judge is not allowed to redraft claims in the same way that he should not be allowed to redraft contracts where the terms are clear, fairly negotiated, and a matter of public record.

The plain meaning rule of contract interpretation would become important under such a regime. The essence of this rule is that there

140. Robert E. Scott, *The Rise and Fall of Article 2*, 62 La. L. Rev. 1009, 1021 (2002).

141. Robert E. Scott, *The Case for Formalism in Relational Contract*, 94 Nw. U.L. Rev. 847, 875-76 (2000).

142. Hovey, *supra* note 10, at 10.

143. E. Allen Farnsworth, *Contracts*, 474 (3d ed. 1999).

144. *Id.* at 453.

145. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 116 S. Ct. 1384 (1996) (determining that patent claim construction is a matter of law and should be decided by a judge rather than a jury).

are some instances in which the meaning of language is clear, so prior negotiations cannot be used in its interpretation.¹⁴⁶ Only later, during the interpretation stage, would prior negotiations be considered, and only if it was determined at the Markman hearing that the language lacked the required degree of clarity.¹⁴⁷

Contract law respects usage and trade terminology.¹⁴⁸ This should also be the case in patent claims, as a very specific vocabulary has evolved that patent agents and examiners understand. For example, in patent claim writing, the word "comprises" has a different meaning than the phrase "consisting of." The former is considered broader and open-ended, and the latter is considered a closed phrase which narrows a claim.¹⁴⁹ An inexperienced claim writer may make an error in claim writing which may cause a problem for his client. But in common law contracts, a party that enters a vocation or trade is presumed to have knowledge of his trade.¹⁵⁰ Similarly, in patents, since the agent had to pass a difficult test to write the claims, it would be presumed that he knew how to write them correctly.

The issue of unforeseeability would also be addressed under such a strategy. After-arising technology is anticipated under this scheme because, as in common law contracts, if a court is convinced that an unforeseeable act occurred which the parties could not have intended the contract to cover, the court is free to interpret the contract in the interest of fairness.¹⁵¹ In the same way, if new technology arises that someone skilled in the art could not have predicted, and if this technology would allow infringement of a patent, a court would interpret the patent of favor of the patentee.

In *Festo*, the Supreme Court noted that a difficulty in patent cases is that language is imperfect,¹⁵² but this is true in all contracts. A crucial difference is that patents also have abstracts, descriptions and drawings to help illuminate the intentions of the parties.¹⁵³ Additionally, the parties involved are more sophisticated and knowledgeable than most parties to contracts. Generally, patent agents are attorneys and patent examiners are scientists or engineers, so they are competent to write the agreement in such a way that it encompasses what is desired on both sides. As an extra

146. Farnsworth, *supra* note 143, at 476.

147. *Id.* at 478.

148. *Id.* at 483-85.

149. Donner, *supra* note 17, at 43.

150. Farnsworth, *supra* note 143, at 486.

151. *Id.* at 498.

152. *Festo*, 122 S. Ct. at 1837.

153. Merges, *supra* note 31, at 13-26 (describing the architecture of a modern patent).

measure of protection for the patentee, the PTO allows claims to be broadened for up to two years after a patent is granted in a process known as a reissue.¹⁵⁴ Once the agreement is made and the patent granted, the law will protect what is in the contract and the inventor will be estopped from arguing that he deserves property that he did not, in the end, claim.

Finally, a court can, under extreme circumstances, rule on the basis of equity. In other words, a court can rule that a defendant did not literally infringe, but to avoid a clearly unjust result, can enjoin the party from producing the item in question. In addition, a court may award damages on the same basis. Equity rulings of this kind would likely be rare and would also be reviewable as they are in the common law.¹⁵⁵

C. Festo and Warner-Jenkinson Could Have Had Better Results Without a Doctrine of Equivalents.

If there had been no doctrine of equivalents when the Festo inventors amended their claims, their patent attorney might have amended the claim differently. Recall that one claim was amended to state that the sleeve was magnetizeable. Because of this unnecessary narrowing, the patentee immediately lost rights to all nonmagnetizeable sleeves, and SMC took advantage of this fact. The patent agent could instead have described it using the means-plus-function method, claiming something such as “a sleeve including a means for being magnetically coupled to the piston.” This would have given Festo a much broader claim, and SMC could not have easily copied it. But the claim-writer may have made the mistake *because* of the doctrine of equivalents—he may have assumed the change would be protected by it. In the same way, the other contested Festo claim could also have been written more broadly to protect the patentee. It could have claimed, for example, “a piston having at least two guide rings, at least one of which would be a sealing ring and at least one of which would be a guide ring.”

Festo Corporation’s situation would have been different if the claims had been more carefully amended because their competitor, SMC, likely would have been advised by their counsel that the device they intended to manufacture would have infringed the patents. SMC could then have tried to negotiate a license with Festo, but if that did not work, it simply would have had to wait until the patent term was up. That is the purpose of the patent system—the patent-owner’s actual right is to exclude others from manufacturing and selling his invention.

154. 35 U.S.C. § 251 (2003).

155. As, for example, in the equitable concept of unconscionability. See generally Farnsworth, *supra* note 143, at § 4.28.

In the case of *Warner-Jenkinson*, the patentees claimed a lower pH limit of “approximately 6.0,” but it is not clear exactly why that limit was chosen. Evidence at trial suggests that the inventors did not feel the process worked correctly at pH values below 6.0, so they could not legitimately claim those values.¹⁵⁶ The inventors may have felt that the doctrine of equivalents would have covered values slightly below 6.0, but this would be a risky strategy.¹⁵⁷ After all, a pH of 5.0 has ten times the hydrogen ion concentration as a pH of 6.0, so a jury might not agree that the two values are equivalent.¹⁵⁸ Without the doctrine of equivalents around to obfuscate, the patentees in *Warner-Jenkinson* could simply have chosen the lowest limit the PTO would have allowed, thus claiming as much territory as possible. This territory is exactly what the law would protect—no more and no less. Competitors would know that anything beyond that range is fair game. The function of a claim is ultimately to enable everyone to know, without going through a lawsuit, what infringes a patent and what does not.

CONCLUSION

The public notice function of claims is of paramount importance for the technological advancement of society. When the objective public record shows that a patentee has given up subject matter during prosecution, the public is entitled to take that record on its word. Patentees would be unjustly enriched if they could renege on the bargain or if they could demand royalties for technology they agreed to exclude from their claims.

Festo’s Horst Saalbach made his daring escape from communist East Germany by passing under a guarded railroad train.¹⁵⁹ His competitive nature prepared him for the battle he fights today, but ultimately it is a fight he will likely lose. The doctrine of equivalents was created to help patent-owners like his corporation, but it has instead cost his company millions of dollars. Because the Supreme Court has effectively gutted the doctrine of equivalents in *Festo* and *Warner-Jenkinson*, Congress should consider eliminating it to prevent patentees from depending on it to their detriment.

*M. Aminthe Broussard**

156. *Warner-Jenkinson*, 520 U.S. at 22 n.2, 117 S. Ct. at 1046 n.2 (suggesting that the process foamed excessively at pH values below 6.0).

157. The jury could have just as easily concluded that this was a design-around since it improved on the previous patent.

158. This is because the pH scale is logarithmic. *The New Encyclopædia Britannica* 350 (15th ed. 1989).

159. Harrington, *supra* note 3.

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