

***FESTO: A CASE CONTRAVENING THE  
CONVERGENCE OF DOCTRINE OF  
EQUIVALENTS JURISPRUDENCE IN  
GERMANY, THE UNITED KINGDOM,  
AND THE UNITED STATES***

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## INTRODUCTION

Despite differences in patent law jurisprudence in Germany, the United Kingdom and the United States, the fundamental principles underlying each system serve the same basic purpose: to encourage technological innovation and dissemination of knowledge.<sup>1</sup> In granting exclusive patent rights, it is important that the scope of patent protection not be so broad as to remove existing knowledge from the public domain.<sup>2</sup> The scope of protection should strike a balance between granting adequate patent rights while preserving the public's ownership in the public domain or the prior art. To encourage innovation patentees must attain significant exclusive rights, while potential infringers receive sufficient notice of a patent's scope.<sup>3</sup> To realize patent system goals, the scale measuring adequate patent protection should not be so heavy as to outweigh the public's right to know the scope of a patentee's rights.<sup>4</sup>

Several issues in patent law jurisprudence in the aforementioned countries reveal the tension between adequate protection and the rights of the public. Such doctrines include: a) the on-sale bar,<sup>5</sup>

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1. The protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations.

Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, art. 7, Marrakesh Agreement Establishing the World Trade Organization [hereinafter WTO Agreement], Annex 1C, LEGAL INSTRUMENTS—RESULTS OF THE URUGUAY ROUND vol. 31, 33 I.L.M. 81, 86–87 (1994) [hereinafter TRIPS Agreement]. See *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 146 (1989) (stating that the Patent Clause of the United States Constitution U.S. CONST. art. I, § 8, cl.8. “reflects a balance between the need to encourage innovation and the avoidance of monopolies which stifle competition without any concomitant advance in the ‘Progress of Science and useful Arts’”).

2. See *Bonito Boats*, 489 U.S. at 146.

3. See *Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 29 (1997) (“There can be no denying that the doctrine of equivalents, when applied broadly, conflicts with the definitional and public-notice functions of the statutory claiming requirement.”).

4. See *id.*

5. See 35 U.S.C. § 102(b) (2001) (Providing a one year grace period for the filing of patents once the invention went “on sale”). Convention on the Grant of European Patents (European Patent Convention), October 5, 1973 art. 54, 13 I.L.M. 270, 286 available at [http://www3.european-patent-office.org/dwld/epc/epc\\_2000.pdf](http://www3.european-patent-office.org/dwld/epc/epc_2000.pdf) (last visited Nov. 29, 2001) [hereinafter EPC] (requiring all patentable inventions to be new or not in use); see also *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 65 (1998). (“The patent system represents a carefully crafted

b) public use,<sup>6</sup> c) obviousness,<sup>7</sup> and d) the doctrine of equivalents.<sup>8</sup> While all four issues are illustrative, this Article focuses on the doctrine of equivalents.

Infringement occurs under the doctrine of equivalents when an accused device does not fall literally within the scope of the claim language, yet is an equivalent of what is claimed.<sup>9</sup> The doctrine of equivalents prevents those who make insubstantial changes to a patented invention from reaping the benefits of such an insignificant contribution.<sup>10</sup> As such, the doctrine elevates substance over form in circumscribing infringement. In three major industrialized nations—Germany, the United Kingdom, and the United States—there has been a genuine convergence of doctrine of equivalents jurisprudence.<sup>11</sup> In both Germany and the United Kingdom, the doctrine of equivalents has vitality.<sup>12</sup> The scope of the doctrine of equivalents does not encompass

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bargain that encourages both the creation and the public disclosure of new and useful advances in technology, in return for an exclusive monopoly for a limited period of time. The balance between the interest in motivating innovation and enlightenment by rewarding invention with patent protection on the one hand, and the interest in avoiding monopolies that unnecessarily stifle competition on the other, has been a feature of the federal patent laws since their inception.”).

6. See 35 U.S.C. § 102(b) (2001) (Providing a one year grace period for the filing of patents once the invention was in “public use”); EPC, *supra* note 5, art. 54, 13 I.L.M. at 286 (requiring all patentable inventions to not have previously been made available to the public); *Pennock v. Dialogue*, 27 U.S. (2 Pet.)1, 23–24 (1829) (“If the public were already in possession and common use of an invention fairly and without fraud, there might be sound reason for presuming, that the legislature did not intend to grant an exclusive right to any one to monopolize that which was already common. There would be no quid pro—no price for the exclusive right or monopoly conferred upon the inventor for” the patent term.).

7. *Graham v. John Deere Co.*, 383 U.S. 1 (1965). EPC, *supra* note 5, art. 54, 13 I.L.M. at 286 (requiring that all patentable inventions contain an “inventive step”).

8. *Warner-Jenkinson*, 520 U.S. at 29 (“[A] distinction can be drawn that is not too esoteric between substitution of an equivalent for a component *in* an invention and enlarging the metes and bounds of the invention *beyond* what is claimed.” quoting J. Nies dissenting in *Hilton Davis Chem. Co. v. Warner-Jenkinson Co., Inc.*, 62 F.3d 1512, 1573–74 (Fed. Cir. 1995) (emphasis in original)). See also *supra* note 3.

9. *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 609 (1950).

10. *Warner-Jenkinson*, 520 U.S. at 24–25; *Graver Tank*, 339 U.S. at 608–09.

11. See *infra* Part V.

12. See *Entscheidungen des Bundesgerichtshofes in Zivilsachen [BGHZ]* [Supreme Court] 98, 12 (19) (F.R.G.) *translated in* Formstein, 1991 R.P.D.T.M.C. 597, 604 (1991). Formstein was the first case after the new German Patent Act of 1981, which was introduced to harmonize the national laws to the European Patent Convention. In this case, the Supreme Court of Germany quoted from the Protocol on the Interpretation of Article 69 to formally hold that the doctrine of equivalents had vitality under the new law:

Under the Protocol on the Interpretation of

Article 69 [of the European Patent Convention], the extent of protection afforded by a patent does not merely include what follows from the precise wording of the claims. The way is therefore open to determine the extent of protection in a manner that goes beyond the wording of the claims so as to include modifications of the

equivalents that belong to the state of the art or that which is obvious over the state art.<sup>13</sup> United States jurisprudence has not maintained the same structure as Germany and the United Kingdom, but the underlying principles have been in accord until recently.<sup>14</sup>

In *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*,<sup>15</sup> the United States Court of Appeals for the Federal Circuit (Federal Circuit) unraveled centuries of precedent. The court virtually eliminated the doctrine of equivalents as a method of finding patent infringement in routine and conventional situations. Prior to *Festo*, the doctrine of equivalents was a viable theory for determining patent infringement. After *Festo*, the policies underlying the doctrine of equivalents have taken a back seat to bright line rules with little substantive basis.

The *Festo* court held that any narrowing amendment made to a claim element during prosecution, for “a reason related to patentability,” triggers prosecution history estoppel such that no range of equivalents is available for that amended claim element.<sup>16</sup> According to the court, what was said or even whether the applicant was silent as to why the narrowing amendment was made during prosecution is irrelevant.<sup>17</sup> No range of equivalents is given to the amended claim element absolutely.<sup>18</sup> Proclaiming the doctrine of equivalents unworkable in its current state, the court instituted this drastic change.<sup>19</sup> This produced the even more troubling result that amendments made for procedural reasons, rather than for distinguishing prior art, preclude any range of equivalents as to the amended claim element. “[B]ecause most patents contain claims that were amended during prosecution, . . . [*Festo*] effectively strips most

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invention described in the claims. It is within the knowledge of the court that the extension of protection beyond the wording of the claims to equivalent forms of embodiment corresponds to the legal concept which the states participating in the European Patent Convention had in mind, even though significant differences of detail still exist, both as to the method of determining the factual extent of protection and as to the scope of the protection granted.

BGHZ 98, 12 (19) (F.R.G.) *translated in* Formstein, 1991 R.P.D.T.M.C. 597, 604 (1991). The “extent of protection” mentioned above is essentially the scope of patent protection including literal meaning of the claims as well as the expanded scope available under the doctrine of equivalents. The European Patent Convention does not specifically define the doctrine of equivalents so that harmonization of the patent law does not remove the ability of individual countries to formulate their own jurisprudence to define the doctrine.

13. *See infra* Parts V.A-C.

14. *See infra* Part V.D.

15. 234 F.3d 558 (Fed. Cir. 2000), *cert. granted*, 121 S.Ct. 2519 (2001).

16. *Id.* at 574.

17. *Id.* at 578.

18. *Id.* at 575–76.

19. *Id.*

patentees of their rights to assert infringement under the doctrine of equivalents . . . .”<sup>20</sup>

Prior to *Festo*, the Federal Circuit used a “flexible bar” approach to determine equivalents. There was no entrenched formula for establishing the range of equivalents available to a claim element.<sup>21</sup> Equivalency decisions were made on a case-by-case basis, with many variables evaluated in reaching a decision.<sup>22</sup> The *Festo* Court rejected the “flexible bar” approach and embraced the “complete bar” approach, eliminating any range of equivalents when a narrowing amendment is made to a claim element. The “complete bar” approach, however, is detrimental to patent owners because it subjugates substance in favor of form.

In *Festo*, the Federal Circuit created a bright line rule to solve a problem it considers “unworkable.” Bright line rules do, in most instances, provide clear guidance. Moreover, society needs bright line rules in numerous important situations. In criminal cases, for example, where basic human rights are at stake, bright line rules serve both as a bulwark of individual liberty and as a means of ensuring that, otherwise well founded, convictions are not overturned. Bright line rules defining when police officers must obtain a search warrant or “read” people their rights meet this goal.<sup>23</sup> The *Festo* “complete bar” rule, however, serves no such fundamental purpose.

Rather than permit form to triumph over substance, perhaps it is better to substantively examine the major public policy issues surrounding the application of the doctrine of equivalents. These issues can be

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20. *Festo*, 234 F.3d at 598 (Michel, J. concurring in part, dissenting in part); see also *Black & Decker, Inc. v. Hoover Serv. Ctr.*, 886 F.2d 1285, 1295 (Fed. Cir. 1989) (“Considering that virtually every patent application is amended, acceptance of the [“complete bar” approach] would read the doctrine of equivalents out of the law.”).

21. *Hughes Aircraft Co. v. United States*, 717 F.2d 1351, 1361 (Fed. Cir. 1983).

22. *Malta v. Schulmerich Carillons, Inc.*, 952 F.2d 1320, 1326 (Fed. Cir. 1992) (equivalency is determined on a case-by-case basis, looking at many variables, such as “the form of the claim, the nature of the invention defined by it, the kind of limitation that is not literally met, etc.”); *We Care, Inc. v. Ultra-Mark Int’l Corp.*, 930 F.2d 1567, 1571 (Fed. Cir. 1991) (“[A] determination of infringement based on [the doctrine of equivalents] cannot be made in a vacuum; the prior art must be examined . . . .”); *Black & Decker*, 886 F.2d at 1295 (“[T]he range of equivalents to which a claimed invention is entitled may never be so great as to encompass a structure in the prior art. . . . [T]he mere fact of amendment . . . may result in a limiting effect on the range of equivalents ‘within a spectrum ranging from great to small to zero.’” (citations omitted)); *Sun Studs, Inc. v. ATA Equip. Leasing, Inc.*, 872 F.2d 978, 986 (Fed. Cir. 1989) (“Equivalency is determined in the light of prior art, the patent specification, and the prosecution history. . . .”).

23. See *Kyllo v. U.S.*, 533 U.S. 27, 121 S.Ct. 2038, 2046 (2001) (stating that with respect to search and seizure, the Fourth Amendment draws procedural firm bright-lines at the entrance to the house, requiring clear specifications about methods of surveillance requiring a warrant); *Miranda v. Arizona*, 384 U.S. 436, 444–45 (1966) (detailing the procedural safeguards defining when the prosecution may or may not use statements from defendants stemming from a custodial interrogation).

addressed in the context of a doctrine of equivalents analysis, without virtually eliminating the doctrine altogether, in order to embrace formal strictures.

United States courts, as well as those of other countries, have articulated that the proper scope of a patent claim should extend beyond the literal language of that claim and reach equivalents. In expanding this scope, however, courts have discussed why it is important to restrain the scope of equivalents so that it does not encapsulate what is already in the public domain. First, when applied too broadly, the doctrine of equivalents conflicts with the statutory, definitional and notice functions of claiming.<sup>24</sup> Second, it is vital that patentees are prevented from obtaining a scope of equivalents encompassing the prior art.<sup>25</sup>

The doctrine of equivalents has retained its vitality in other jurisdictions, namely Germany and the United Kingdom. There is no reason to draw a bright line rule that would overwhelm the doctrine of equivalents to effectual extinction. The proper sphere for prosecution history estoppel is as a complement to the doctrine of equivalents. When a bright line rule uses prosecution history estoppel to essentially eliminate the practicable use of the doctrine of equivalents, the doctrine is expunged. This conflicts with United States precedent and is inconsistent with the jurisprudence of other jurisdictions that previously converged with United States law.

Prosecution history estoppel, to complement and not subsume the doctrine of equivalents, should be used only as an “estoppel” doctrine. “Estoppel prevents a litigant from denying an earlier admission upon which another has already relied.”<sup>26</sup> When a patentee affirmatively, not silently, surrenders patent scope, the patentee should be constrained to that abandonment. This comports with the underlying principle protecting the public’s right to that which is in the public domain, as well as the notice requirement.

To further ensure that the scope of equivalents does not incorporate the prior art, a doctrine of equivalents analysis should formally include the following factors:

If an allegedly infringing device or process forms part of the prior art, there can be no infringement; and

If an allegedly infringing device or process would have been obvious over the prior art, there can be no infringement; and

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24. *Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 29 (1997).

25. *See Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 146–47 (1989).

26. *Festo*, 234 F.3d at 619 (Rader, J., concurring in part, dissenting in part) (citing BLACK’S LAW DICTIONARY 570 (7th ed. 1999)).

The aforementioned tests may only encompass those elements of the allegedly infringing device that are covered in the patent claim or are an equivalent to an element of the patent claim.<sup>27</sup>

Analyzing these factors in conjunction with a doctrine of equivalents formulation will create or encourage a substantive inquiry, making it unnecessary to throw out the rule, the doctrine of equivalents, in favor of the exception, prosecution history estoppel. Moreover, these three factors maintain consistency with the underlying principles behind the doctrine of equivalents in Germany, the United Kingdom, and the United States.

Part I of this article is a general overview of the history of both the doctrine of equivalents and prosecution history estoppel; Part II discusses *Festo* and what the case holds; Part III discusses where *Festo* conflicts with Supreme Court precedent; Part IV articulates the additional factors that encompass public policy concerns regarding scope restraint as the basis for evaluating equivalents; Part V presents and analyzes cases utilizing the Formstein test in their rationales; Part VI explores tangential issues prompted by the *Festo* decision; and Part VII sets forth the conclusions reached from the analysis.

## PART I

### A. *History of Doctrine of Equivalents*

To comprehend the extent to which *Festo* has changed the law, a review of the history and significance of the doctrine of equivalents is instructive. This is important because *Festo* is a virtual elimination of this kind of patent infringement.

The United States Constitution grants Congress the power “[t]o promote the progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”<sup>28</sup> In implementing this power, Congress has granted patentees rights and remedies for patent infringement to deter and compensate for any trespass to their inventions.<sup>29</sup> Beyond providing a list of infringing acts, the patent statutes do not further define how

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27. See *Streamfeeder, LLC v. Sure-Feed Sys., Inc.*, 175 F.3d 974, 983 (Fed. Cir. 1999) (“Hypothetical claim analysis . . . cannot be used to redraft granted claims in litigation by narrowing and broadening a claim at the same time.”); *Moore U.S.A., Inc. v. Standard Register Co.*, 229 F.3d 1091, 1106 (Fed. Cir. 2000) (“[Hypothetical claim] analysis is not divorced from the claim language, but rather must be anchored in the limitation for which a range of equivalents is sought.”); BGHZ 98, 12 (22–23) (F.R.G.) *translated in* Formstein, 1991 R.P.D.T.M.C. 597, 606–07 (1991).

28. U.S. CONST. art. I, § 8, cl. 8.

29. See 35 U.S.C. §§ 154, 271, 283, 284, 289 (1994).

patent infringement is to be determined.<sup>30</sup> Defining what constitutes patent infringement has been left to the courts. Courts have recognized two types of infringement, literal and doctrine of equivalents.<sup>31</sup>

Literal infringement exists when, after the claims have been construed, the “accused matter falls clearly within the claim,”<sup>32</sup> meaning that the accused device falls within the literal language of the claim. The doctrine of equivalents provides that a patentee’s invention covers not only the literal language of the claim, but also all other forms that embody his or her invention.<sup>33</sup>

As early as 1853, the Supreme Court expressed that a patent covers “not only the precise forms [the patentee] has described, but all other forms which embody his [or her] invention . . . .”<sup>34</sup> Pronouncing a preference for substance over form, the Court said:

Where form and substance are inseparable, it is enough to look at the form only. Where they are separable; where the whole substance of the invention may be copied in a different form, it is the duty of courts and juries to look through the form for the substance of the invention—for that which entitled the inventor to his [or her] patent, and which the patent was designed to secure; where that is found, there is an infringement . . . .<sup>35</sup>

The Court further highlighted that a patent is an exclusive right that “is not secured, if the public are at liberty to make substantial copies of it, varying its form or proportions.”<sup>36</sup>

Almost a century later, in *Graver Tank & Manufacturing Co. v. Linde Air Products Co.*,<sup>37</sup> the Supreme Court reiterated that patent infringement should not be limited to only literal infringement:

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30. See MARTIN J. ADELMAN ET AL., CASES AND MATERIALS ON PATENT LAW 855 (1998).

31. See *Autogiro Co. of America v. United States*, 384 F.2d 391, 401 (Ct. Cl. 1967) (“[T]he determination of patent infringement is a two step process. First, the meaning of the claims in issue must be determined by a study of all relevant patent documents. Secondly, the claims must be read on the accused structures. In doing this, it is of little value that they read literally on the structures. What is crucial is that the structures must do the same work, in substantially the same way, and accomplish substantially the same result to constitute infringement.”).

32. *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 607 (1950).

33. See *Winans v. Denmead*, 56 U.S. (15 Howard) 330, 342 (1853) (“[T]o copy the principle or mode of operation described, is an infringement, although such copy [is] . . . unlike the original in form or proportions.”).

34. *Id.* at 342.

35. *Id.* at 343.

36. *Id.* at 343.

37. 339 U.S. 605 (1950).

[T]o permit imitation of a patented invention which does not copy every literal detail would be to convert the protection of the patent grant into a hollow and useless thing. Such a limitation would leave room for—indeed encourage—the unscrupulous copyist to make unimportant and insubstantial changes and substitutions in the patent which, though adding nothing, would be enough to take the copied matter outside the claim, and hence outside the reach of the law. One who seeks to pirate an invention, like one who seeks to pirate a copyrighted book or play, may be expected to introduce minor variations to conceal and shelter the piracy. Outright and forthright duplication is a dull and very rare type of infringement. To prohibit no other would place the inventor at the mercy of verbalism and would be *subordinating substance to form*. It would deprive him of the benefit of his invention and would foster concealment rather than disclosure of inventions, which is one of the primary purposes of the patent system.<sup>38</sup>

The fundamentally self-evident nature of the Court’s words notwithstanding, defining when non-literal piracy of a patented invention occurs has proven difficult. The Court’s standard required the development of doctrines that were, by their very nature, meant to be applied on a case-by-case basis.

The doctrine of equivalents is the principal doctrine that defines non-literal infringement and prevents an accused infringer from escaping liability for patent infringement through making only minor or insubstantial changes, while retaining the invention’s central and fundamental likeness or identity.<sup>39</sup> A patentee may invoke the doctrine of equivalents to proceed against an alleged infringer if his or her device “‘performs substantially the same function in substantially the same way to obtain the same result.’”<sup>40</sup> The doctrine protects inventors not only from “unscrupulous copyists”<sup>41</sup>, but also from “unanticipated equivalents” found in technology after the patent has issued.<sup>42</sup>

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38. *Id.* at 607 (emphasis added).

39. *See Id.* at 608–09.

40. *Id.* at 608 (quoting *Machine Co. v. Murphy*, 97 U.S. 120, 125 (1877)).

41. *Graver Tank*, 339 U.S. at 607.

42. *Kinzenbaw v. Deere & Co.*, 741 F.2d 383, 389 (Fed. Cir. 1984) (citing *Hughes Aircraft Co. v. United States*, 717 F.2d 1351, 1362 (Fed. Cir. 1983); *See also Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558, 619 (Fed. Cir. 2000) (Rader, J., dissenting) (expressing the importance of doctrine of equivalents infringement for protecting amended claims with respect to after-arising technology)).

Patent claims define the scope or the “metes and bounds” of the patented invention.<sup>43</sup> On the one hand, it is important to give the patentee a range of equivalents to protect his or her invention. On the other hand, expanding the scope of equivalents too far could thwart the requirement that the patent claims give “fair notice” of a patent’s scope.<sup>44</sup> The Supreme Court recently revisited this issue in *Warner-Jenkinson Co. v. Hilton-Davis Chemical Co.*<sup>45</sup>

In *Warner-Jenkinson*, the Court announced that the “doctrine of equivalents, when applied broadly, conflicts with the definitional and public-notice functions of the statutory claiming requirement.”<sup>46</sup> The Court provided means to constrain the doctrine by adopting the “all elements rule.”<sup>47</sup> The Court stressed that,

Each element contained in a patent claim is deemed material to defining the scope of the patented invention, and thus the doctrine of equivalents must be applied to individual elements of the claim, *not to the invention as a whole*. It is important to ensure that the application of the doctrine, even as to an individual element, is not allowed such broad play as to effectively eliminate that element in its entirety.<sup>48</sup>

Since *Warner-Jenkinson*, courts compare the patent claims to the allegedly infringing device in order to determine patent infringement under the doctrine of equivalents. If the device does not fall literally within the claims, then courts reexamine the allegedly infringing device to determine whether doctrine of equivalents infringement occurred. This can happen if for every claim element, there is an equivalent element in the infringing device.<sup>49</sup> The idea is to balance the patentee’s right to protect the entire scope of the claimed invention against the public notice requirement that the claims define the metes and bounds of the patented

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43. *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257 (Fed. Cir. 1989).

44. *See Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558 (Fed. Cir. 2000), *cert. granted*, 121 S.Ct. 2519 (2001).

45. 520 U.S. at 29.

46. *Id.*

47. *Id.* at 28–29. *See Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 935 (Fed. Cir. 1987) (“It is . . . well settled that each element of a claim is material and essential, and that in order for a court to find infringement, the plaintiff must show the presence of every element or its substantial equivalent in the accused device.” (quoting *Lemelson v. United States*, 752 F.2d 1538, 1551 (Fed. Cir. 1985))).

48. *Warner-Jenkinson*, 520 U.S. at 29 (emphasis added).

49. *Id.* at 29 (“Each element contained in a patent claim is deemed material to defining the scope of the patented invention, and thus the doctrine of equivalents must be applied to individual elements of the claim not to the invention as a whole.”).

invention.<sup>50</sup> For an element to be an equivalent, the differences between the claim element and the equivalent must be, according to one skilled in the art, insubstantial or interchangeable.<sup>51</sup> For example, a difference may be insubstantial or interchangeable if the accused elements perform substantially the same function in substantially the same way to obtain substantially the same result as the invention.<sup>52</sup> The particular linguistic framework for determining equivalents is not set in stone. “Different linguistic frameworks may be more suitable to different cases, depending on their particular facts.”<sup>53</sup> The Court deferred to the Federal Circuit to prescribe other appropriate methods of determining equivalents.<sup>54</sup>

Another way to prevent the doctrine of equivalents from expanding too far and, thus, thwarting the notice requirement is to use the doctrine of prosecution history estoppel.<sup>55</sup> Prosecution history estoppel limits a patentee from expanding patent scope when such coverage has been relinquished during prosecution of the patent application before the Patent and Trademark Office (“PTO”).<sup>56</sup>

The *Warner-Jenkinson* Court further narrowed the doctrine of equivalents by creating a new presumption affecting prosecution history estoppel:

Where no explanation [of a patent amendment] is established, . . . the court should presume that the patent applicant had a substantial reason related to patentability for including the limiting element added by amendment.<sup>57</sup>

The Court emphasized, however, that this presumption is rebuttable if the reason for an amendment gives “proper deference to the role of claims in defining an invention and providing public notice, and to the primacy of the PTO in ensuring that the claims allowed cover only subject matter that is properly patentable in a proffered patent application.”<sup>58</sup>

Another recent change to the Court’s precedent concerns applying prosecution history estoppel to amendments made for reasons other than

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50. *Id.* at 29.

51. *See id.* at 39–40.

52. *See id.* at 40.

53. *Id.* at 40.

54. “We expect that the Federal Circuit will refine the formulation of the test for equivalence in the orderly course of case-by-case determinations. . .” *Id.*

55. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558, 564 (Fed. Cir. 2000), *cert. granted*, 121 S.Ct. 2519 (2001).

56. *Exhibit Supply Co. v. Ace Patents Corp.*, 315 U.S. 126, 136 (1942) (recourse may not be had to recapture claims patentee surrendered by amendment).

57. *Warner-Jenkinson*, 520 U.S. at 33.

58. *Id.* at 33–34; *See Festo*, 234 F.3d at 632 (Newman, J., concurring in part, dissenting in part) (noting that the majority in *Festo* holds that the presumption can only be rebutted by evidence that is already in the record and as such would thus be irrebuttable because the record is “necessarily silent” as to why the change was made in order for the presumption to arise).

distinguishing over the prior art. The *Warner-Jenkinson* Court addressed changes made for “patentability” reasons rather than prior art reasons. In *Festo*, the Federal Circuit interpreted “patentability” to include changes made for reasons other than prior art, pursuant to 35 U.S.C. § 101.<sup>59</sup>

The Court left a question unanswered in *Warner-Jenkinson*, however: what range of equivalents is available when an estoppel applies under the doctrine of prosecution history estoppel? In *Festo*, the Federal Circuit answered this question: no range of equivalents is available.

### B. History of Prosecution History Estoppel

It is helpful to visit the precedents surrounding the doctrine of prosecution history estoppel in order to understand the impact of *Festo* on patent law jurisprudence.

As an estoppel doctrine, prosecution history estoppel prevents a litigant from denying an earlier admission when another has relied upon it.<sup>60</sup> In the context of patent prosecution, “the admission is the applicant’s surrender of claim scope to acquire a patent.”<sup>61</sup> “Prosecution history estoppel applies both ‘to claim amendments to overcome rejections . . . and to arguments submitted to obtain the patent.’”<sup>62</sup> Thus, the scope of the surrender, normally, must be determined before the estoppel applies. Before *Festo*, in order to determine equivalents scope, courts looked to actual amendments and attorney arguments to evaluate what subject matter was surrendered. This can be characterized as a bargain (or contract) struck between the patent attorney and the examiner in order to acquire the patent.<sup>63</sup> “A patentee is not free to retrade or renege on a deal struck with the PTO during patent prosecution.”<sup>64</sup>

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59. Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title. 35 U.S.C. § 101 (1994).

60. See *supra* note 25.

61. *Festo*, 234 F.3d at 619–20.

62. *Townsend Eng’g Co. v. HiTec Co.*, 829 F.2d 1086, 1090 (Fed. Cir. 1987) (quoting *Hughes Aircraft v. United States*, 717 F.2d 1351, 1362 (Fed. Cir. 1983)).

63. Most foreign countries do not have a prosecution history estoppel doctrine. Germany only has *inter partes* prosecution history estoppel in the context of an opposition or a nullity proceeding where the patent owner clearly establishes that he or she did not mean to cover a specific embodiment in the claim. This *inter partes* estoppel only has an effect between the parties of the opposition proceeding or the invalidity action. This estoppel is seen more as a kind of contractual limitation than an estoppel doctrine. In other words, patent applicant agreed with the other parties as to the claim scope and is bound by such agreement. See *Weichvorrichtung*, 95 Gewerblicher Rechtsschutz und UrheberrechtRechtsprechung [GRUR] 886, 888 (1993) (F.R.G.).

64. *Sage Prods., Inc. v. Devon Indus.*, 126 F.3d 1420, 1432–33 (Fed. Cir. 1997); Cf. William M. Atkinson ET AL., *Was Festo Really Necessary*, 83 J. PAT. & TRADEMARK OFF. SOC’Y 111, 134–35 (February 2001) (“Examining the prosecution history to determine permissible equivalents is much closer to divining the intent of the parties in a contract dispute.”).

The Supreme Court historically treated prosecution history estoppel as an estoppel doctrine. The Court inquired into what the patentee surrendered in order to attain a patent on the invention. As early as 1886, the Court in *Shepard v. Carrigan*<sup>65</sup> opined that where a patentee gives up claim scope in order to get a patent issued, “he cannot after the issue of the patent broaden his claim by dropping the element which he was compelled to include in order to secure his patent.”<sup>66</sup> The same year, the Court held in *Sutter v. Robinson*<sup>67</sup> that during the prosecution process, where the patentee limited his claims, “[h]e is not at liberty now to insist upon a construction . . . he was expressly required to abandon and disavow as a condition of the [patent] grant.”<sup>68</sup>

In 1900, the Court in *Hubbell v. United States*<sup>69</sup> examined the patentee’s file wrapper history. The Court discovered that in order to obtain a patent, patentee was compelled to accept a narrower claim construction than that written in the original application. The Court held that:

[I]t is well settled that the claim as allowed must be read and interpreted with reference to the rejected claim and to the prior state of the art, and cannot be so construed as to cover either what was rejected by the Patent Office or disclosed by prior devices.<sup>70</sup>

In 1921, the Court in *Weber Electronic Co. v. E.H. Freeman Electronic Co.*<sup>71</sup> held that patentee, having narrowed a claim to obtain a patent, could not through claim construction or by application of the doctrine of equivalents “give to the claim the larger scope which it might have had without the amendments, which amount to a disclaimer . . . as an operative feature . . . .”<sup>72</sup> That same year, in *Smith v. Magic City Kennel Club, Inc.*,<sup>73</sup> the Court held that when a patentee narrows a claim in order to escape a patent rejection, he may not reclaim what has been disclaimed.<sup>74</sup> In 1942, the Court stated in *Exhibit Supply Co. v. Ace Patents Corp.*,<sup>75</sup> “[i]t follows that what the patentee, by a strict construction of

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65. 116 U.S. 593 (1886).

66. *Id.* at 597.

67. 119 U.S. 530 (1886).

68. *Id.* at 541.

69. 179 U.S. 77 (1900).

70. *Id.* at 80.

71. 256 U.S. 668 (1921).

72. *Id.* at 677–78.

73. 282 U.S. 784 (1931).

74. *Id.* at 790.

75. 315 U.S. 126 (1942).

the claim, has disclaimed . . . cannot now be regained by recourse to the doctrine of equivalents . . . .”<sup>76</sup>

The Federal Circuit followed the Supreme Court’s view of prosecution history estoppel for many years. In *Hughes Aircraft Co. v. United States*,<sup>77</sup> the court applied what is now coined the “flexible bar” approach.<sup>78</sup> The flexible bar rejects the view that any claim amendment creates an estoppel to bar all range of equivalents, restricting the patentee to the literal language of the claims.<sup>79</sup> Under the flexible bar approach, the range of equivalents to a claim element is determined by what transpired during the patent prosecution. An amendment “may result in limiting the range of equivalents ‘within a spectrum ranging from great to small to zero.’”<sup>80</sup>

Because making amendments is a common practice in prosecuting patent applications, there is no reason to stop applying the doctrine of equivalents to those few claims allowed as originally filed, but never amended.<sup>81</sup> Eliminating the range of equivalents when prosecution history estoppel is applied virtually reads the doctrine of equivalents out of patent law.<sup>82</sup>

The Federal Circuit followed the flexible bar approach from 1983 through most of 2000.<sup>83</sup> But on November 29, 2000, the Federal Circuit decided *Festo*, eliminating all range of equivalents when prosecution history estoppel is triggered.<sup>84</sup> The Court held that an amendment made to a claim element during prosecution, for reasons related to patentability, gives rise to a complete bar against a claim of infringement under the doctrine of equivalents.<sup>85</sup> This complete bar applies whether or not the amendment was made voluntarily.<sup>86</sup> *Festo* has significantly subordinated the importance of the doctrine of equivalents in favor of prosecution history estoppel.

Because any amendment, regardless of whether there was surrender of subject matter, bars all range of equivalents as to the element amended, this approach is not an application of an estoppel at all. In a

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76. *Id.* at 137.

77. 717 F.2d 1351 (Fed. Cir. 1983).

78. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558, 574 (Fed. Cir. 2000), *cert. granted*, 121 S.Ct. 2519 (2001).

79. *See Hughes*, 717 F.2d at 1362–63.

80. *Black & Decker, Inc. v. Hoover Serv. Ctr.*, 886 F.2d 1285, 1295 (Fed. Cir. 1989) (quoting *Hughes*, 717 F.2d at 1363).

81. *Hughes*, 717 F.2d at 1363.

82. *Black & Decker, Inc.*, 886 F.2d at 1295.

83. *See Festo*, 234 F.3d at 613–15 (listing the Federal Circuit cases where the “flexible bar” approach was applied).

84. *Id.* at 574.

85. *Id.* at 567.

86. *Id.* at 568.

separate opinion, Judge Michel wrote, concurring in part and dissenting in part,

The majority's approach gives no consideration to whether a reasonable competitor would rely on the nature of the rejections and of the amendments and statements between the applicant and the examiner as evidence of surrender of subject matter.<sup>87</sup>

Prosecution history estoppel has been treated as a way to limit the range of equivalents, and not as a method to entirely eliminate the doctrine of equivalents as a form of infringement.<sup>88</sup> In keeping with this tradition, prosecution history estoppel should remain subservient to the doctrine of equivalents. The “complete bar” rule in *Festo* throws the proverbial baby out with the bath water, an unattractive result to say the least.<sup>89</sup> *Festo* is nakedly out of context because the doctrine of equivalents epitomizes the idea of substance over form.<sup>90</sup> The doctrine of equivalents has been historically used to find accused devices infringing, despite their failure to literally or formally fall within the claims.

In *Festo*, the majority said it eliminated the range of equivalents when an estoppel applies because in such cases determining an appropriate range of equivalents is unworkable.<sup>91</sup> The majority's assessment rested on its belief that there is no rule regarding the range of equivalents that “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.”<sup>92</sup> Instead of erecting a bright-line rule that ignores substantive inquiries, however, the court should have labored harder to establish a “workable” doctrine that preserves the general theme of the doctrine of equivalents.

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87. *Id.* at 600 (Michel, J., concurring in part, dissenting in part).

88. *Cf. Haynes Int'l, Inc. v. Jessop Steel Co.*, 8 F.3d 1573, 1581 (Fed. Cir. 1993) (Newman, J., concurring) (“The broadening of prosecution history estoppel is a corollary to the narrowing of the doctrine of equivalents.”).

89. *See also Atkinson ET AL., Was Festo Really Necessary*, 83 J. PAT. & TRADEMARK OFF. SOC'Y 111, (February 2001) (“In effect, the *Festo* decision may have transformed prosecution history estoppel into an exception that swallows the rule.”).

90. *See Winans v. Denmead*, 56 U.S. (15 Howard) 330, 343 (1853) (“Where form and substance are inseparable, it is enough to look at the form only. Where they are separable; where the whole substance of the invention may be copied in a different form, it is the duty of courts and juries to look through the form for the substance of the invention—for that which entitled the inventor to his patent, and which the patent was designed to secure; where that is found, there is an infringement; and it is not a defence, that it is embodied in a form not described, and in terms claimed by the patentee.”).

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

92. *Id.*

What was it about the facts in *Festo* that brought about such a drastic change in philosophy? In the following section, the facts of *Festo* are presented.

## PART II

### A. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*<sup>93</sup>

The Federal Circuit decided the first *Festo*<sup>94</sup> decision prior to the *Warner-Jenkinson* decision. In the first *Festo* case, the court found that the defendant infringed under the doctrine of equivalents. The court, however, did not apply the element-by-element doctrine of equivalents analysis required under *Warner-Jenkinson*. After the Supreme Court decided *Warner-Jenkinson*, the Court granted certiorari in the *Festo* case and vacated and remanded the case for further consideration in light of the Court's doctrine of equivalents analysis in *Warner-Jenkinson*.<sup>95</sup>

*Festo* owns two patents, the Stoll and the Carroll patents, covering magnetically coupled rodless cylinders comprising a piston, a cylinder, and a sleeve. In response to hydraulic pressure, the piston moves inside the cylinder. The sleeve, which lies outside the cylinder, is magnetically coupled to the piston. As such, they move in conjunction with each other. This enables the sleeve to move objects on a conveying system, and that movement of objects is the purpose for the invention.<sup>96</sup>

The pertinent claims of the Stoll patent comprise one independent claim and two dependent claims. Independent Claim 1 covers "sealing means" located at opposite ends of the piston. Dependent Claim 4 is drawn to two sealing rings, and dependent Claim 8 requires that the sleeve is comprised of magnetisable<sup>97</sup> material.<sup>98</sup>

During prosecution, the examiner rejected all of the claims, but not for reasons based on prior art. This is significant because, as was discussed in Part I B, prosecution history estoppel has, historically, applied only when the applicant has surrendered subject matter to avoid prior art. This changed, however, in *Warner-Jenkinson*, when the Supreme Court created a new presumption where an amendment is made but the record

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93. 234 F.3d 558 (Fed. Cir. 2000), *cert. granted*, 121 S.Ct. 2519 (2001).

94. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 72 F.3d 857 (Fed. Cir. 1995) *vacated by* 520 U.S. 1111 (1997).

95. *Id.*

96. *Festo*, 234 F.3d at 579.

97. The patent uses the English spelling of the word "magnetisable" instead of the American, "magnetizable." See *Festo*, 234 F.3d at 583. To be consistent, this Article adopts the English spelling.

98. See *Festo*, 234 F.3d at 583.

is silent as to the reason for the amendment.<sup>99</sup> In this situation, the Court is to presume the patent applicant “had a substantial reason related to patentability for including the limiting element added by the amendment.”<sup>100</sup> After *Warner-Jenkinson*, the question remained: what does “patentability” mean? Is it just prior art, under 35 U.S.C. §§ 102 and 103, or does it include amendments made pursuant to 35 U.S.C. §§ 101 and 112, that are often made for procedural reasons?

In *Festo*, the examiner rejected all of the claims under 35 U.S.C. § 112.<sup>101</sup> The examiner found it unclear from the claims whether the patent was drawn to a true motor or magnetic clutch.<sup>102</sup> Further procedural issues also raised concerns. Some dependent claims were rejected for being written in improper multiple dependent form.<sup>103</sup> The applicant amended Claim 1 and canceled Claims 4 and 8.<sup>104</sup> As amended, Claim 1 incorporated the magnetisable sleeve and two sealing rings of the canceled claims.<sup>105</sup>

Further, applicant brought new prior art to the examiner’s attention when submitting this amendment. Patentee discovered this prior art while prosecuting a corresponding German application. According to the applicant, however, the claims as amended were distinguishable over the newly submitted prior art.<sup>106</sup> Thereafter, the examiner allowed the amended claims.<sup>107</sup>

The Carroll patent’s relevant prosecution history is related to its re-examination proceeding.<sup>108</sup> The new prior art discovered during the prior German prosecution sparked the applicant to request reexamination of the Carroll patent.<sup>109</sup> The German patent described “rodless cylinders having several of the features of the device described in the Carroll patent . . . .”<sup>110</sup> Applicant added an independent claim containing a new

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99. *Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 33 (1997).

100. *Id.*

101. The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention. 35 U.S.C. § 112 (1994).

102. *Festo*, 234 F.3d at 583.

103. *Id.*

104. *Id.*

105. *Id.*

106. *Id.*

107. *Festo*, 234 F.3d at 583.

108. *Id.*

109. *Id.* at 584.

110. *Id.*

claim element, “a pair of resilient sealing rings.”<sup>111</sup> The examiner allowed the new claims as amended.<sup>112</sup>

Festo sued SMC for infringing both the Stoll and the Carroll patents. The jury found the Stoll patent infringed under the doctrine of equivalents. The court ruled on the Carroll patent and granted Festo’s motion for summary judgment based on Festo’s contention that some of SMC’s devices infringed the Carroll patent under the doctrine of equivalents.<sup>113</sup> SMC appealed because the devices found to infringe under the doctrine of equivalents had only one resilient two-way sealing ring located on one end of the pistons. SMC argued that because the patents disclosed and claimed devices with a pair of sealing rings, SMC did not infringe. Further, SMC’s claimed its devices had sleeves with outer portions made of aluminum alloy, a nonmagnetisable material. Because the Stoll patent disclosed and claimed a sleeve made of a magnetisable material, SMC contended it did not infringe.<sup>114</sup>

The court’s determination that SMC had not infringed under the doctrine of equivalents can be characterized as an application of the *Warner-Jenkinson* analysis with the addition of the “complete bar” prosecution history estoppel rule.<sup>115</sup> First, the court found that the claim elements at issue were amended and narrowed for reasons related to patentability.<sup>116</sup> The court made that finding even while noting that the examiner did not reject the Stoll patent claims for prior art reasons, but for procedural reasons under § 112. The court said the two elements found to infringe by equivalents were the cylindrical sleeve made of a magnetisable material and the first sealing rings,<sup>117</sup> and that both of these elements were added during prosecution as narrowing amendments.<sup>118</sup> Second, the court observed that Festo had not demonstrated that either amendment was made for a reason unrelated to patentability. Based on their finding that Festo had not shown the amendments were made for reasons other than patentability, the majority ruled that the presumption of *Warner-Jenkinson* barred the application of the doctrine of equivalents.<sup>119</sup> Third, the court found that Festo’s sealing ring amendment in the Carroll patent reexamination was made to distinguish over the prior art.

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111. *Festo*, 234 F.3d at 584.

112. *Id.*

113. *Id.* at 578–79.

114. *Id.* at 582.

115. Whether *Warner-Jenkinson* permits such an analysis will be discussed later in the article. See discussion *infra* Part III.

116. See *Festo*, 234 F.3d at 588.

117. *Id.* at 587.

118. *Id.*

119. *Id.* at 588.

In a separate opinion, Judge Newman disagreed with the majority's characterization of the prosecution history. She opined that the changes made to the Carroll patent during prosecution were not in response to examination

For the Carroll patent, Festo added an element to the claims before reexamination. For the Stoll patent, Festo rewrote improper multiple dependent claims, dropping the broader claim. In neither the Carroll nor the Stoll patent were the elements at issue amended; however, in both patents estoppel is now held to be complete barring any assertion of equivalency as to these elements . . . .<sup>120</sup>

After the reexamination request was granted but before reexamination on the merits, Festo cancelled original claim 1 and added a new claim which differed from the original claim in several ways including the addition of “a pair of resilient sealing rings.” Festo did not explain these changes; nor was explanation required, for the changes were made before action by the examiner.<sup>121</sup>

Consequently, Judge Newman found there was no estoppel argument against the Carroll patent because there was no bargain with the examiner. Carroll did not surrender a portion of the pertinent claim element's scope in order to obtain the patent.<sup>122</sup>

Further, Judge Newman criticized the majority for not reaching the critical question of equivalents but, instead, focusing on what may or may not have been said during prosecution.<sup>123</sup> The jury, the district court and the Federal Circuit already found doctrine of equivalents infringement, pre-*Warner-Jenkinson*.<sup>124</sup> It seems only fair that the court would look at the doctrine of equivalents analysis again under the post-*Warner-Jenkinson* standards. The court, however, declined to reach this decision

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120. *Id.* at 636 (Newman, J., concurring in part, dissenting in part).

121. *Id.*

122. *Cf.* Festo 234 F.3d at 632 (Newman, J., concurring in part, dissenting in part) (“The majority holds that the [*Warner-Jenkinson*] presumption can only be rebutted by evidence that is already present in the prosecution record. . . . Thus the majority holds that the rebuttable presumption concerning the reason for an amendment, which presumption arises when the prosecution record is silent as to the reason for the amendment, can not be rebutted with evidence outside of the prosecution record. The rebuttable presumption thereby becomes irrebuttable, because the prosecution record is necessarily silent in order for the presumption to arise at all.”).

123. *Id.* at 638.

124. *Id.* at 636; Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 72 F.3d 857 (Fed. Cir. 1995) *vacated by* 520 U.S. 1111 (1997).

as the majority concluded that “the amended claim elements [were] entitled to no range of equivalents.”<sup>125</sup>

In the first *Festo* case, a case before a Federal Circuit panel, Judge Newman, writing for the court, found substantial evidence supporting the jury’s verdict of doctrine of equivalents infringement.<sup>126</sup> *Festo* presented expert testimony that the SMC sleeve performed substantially the same function in substantially the same way to achieve substantially the same result as *Festo*’s magnetisable sleeve.<sup>127</sup> SMC argued that the omission of one of the sealing rings precluded a finding of infringement under the “all elements rule.” The court responded that the “all elements rule” does not require one-to-one correspondence of components.

This determination, however, was made prior to the Supreme Court’s decision in *Warner-Jenkinson*, which adopted the “all elements rule” and required that no individual element be eliminated in its entirety when applying the doctrine of equivalents.<sup>128</sup> Thus, SMC’s lack of a second ring, effectively eliminated the second sealing ring element in its entirety. *Festo* probably could have been decided on that basis alone, without resorting to the new “complete bar” rule.<sup>129</sup>

The courts have two alternatives available to them with regard to prosecution history estoppel. The court can claim that the changes were made for reasons related to patentability, and therefore there is no clear estoppel. A more advantageous interpretation is to focus on two questions (1) Is the allegedly infringing device an equivalent, or (2) Is the allegedly infringing device practicing to prior art or obvious in view of the prior art? If neither question is answered in the affirmative, there should be no finding of infringement. Why should courts automatically bar these questions from the discussion?<sup>130</sup> It is enough to apply prosecution history estoppel as a true estoppel doctrine and ensure the doctrine of equivalents is further limited by protecting devices that encompass the prior art to restrain the scope of equivalents.

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125. *Festo*, 234 F.3d at 591.

126. *Festo*, 72 F.3d at 862–63.

127. *Id.* at 862–63.

128. *Warner-Jenkinson*, 520 U.S. at 29. *See supra* Part I.A.

129. *See Festo*, 234 F.3d at 574–78 (adopting the complete bar approach to the application of the doctrine of equivalents).

130. *See Festo*, 234 F.3d at 631–34 (Newman, J., concurring in part, dissenting in part).

## PART III

A. *How Festo Conflicts with Supreme Court Precedent*

Insofar as *Festo* essentially eliminates doctrine of equivalents infringement in cases where a patent has been amended, the case conflicts with Supreme Court precedent. In *Warner-Jenkinson*, the Court emphatically held, “Today we adhere to the doctrine of equivalents.”<sup>131</sup> The Court could hardly be clearer in disclaiming any attempt to eliminate the doctrine from patent law jurisprudence.

In *Warner-Jenkinson*, the petitioner challenged Court precedent, contending that the reason for an amendment during patent prosecution is irrelevant to a subsequent estoppel.<sup>132</sup> The Supreme Court expressly disagreed, finding that a more limited application of prosecution history estoppel than what was required by earlier precedent was inappropriate.

[P]etitioner reaches too far in arguing that the reason for an amendment during patent prosecution is irrelevant to any subsequent estoppel. In each of our cases cited by petitioner . . . prosecution history estoppel was tied to amendments made to avoid prior the art, or otherwise to address a specific concern . . . that arguably would have rendered the claimed subject matter unpatentable. . . . It is telling that in each case this Court probed the reasoning behind the Patent Office’s insistence upon a change in the claims. In each instance, a change was demanded because the claim as otherwise written was viewed as not describing a patentable invention at all—typically because what it described was encompassed within the prior art. . . . Our prior cases have consistently applied prosecution history estoppel only where claims have been amended for a limited set of reasons, and we see no substantial cause for requiring a more rigid rule invoking an estoppel regardless of the reasons for a change.<sup>133</sup>

Hence, the Court treated prosecution history as an estoppel doctrine in *Warner-Jenkinson*. What is said during prosecution must be reviewed on a case-by-case basis in order to determine what has been surrendered.

*Festo* further departs from *Warner-Jenkinson* by requiring a patentee trying to prove that an amendment was made for reasons other than patentability, to “base his [or her] arguments solely upon the public record of the patent’s prosecution, i.e., the patent’s prosecution history.”<sup>134</sup> In

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131. *Warner-Jenkinson*, 520 U.S. at 40.

132. *Id.* at 30.

133. *Warner-Jenkinson*, 520 U.S. at 30–32.

134. *Festo*, 234 F.3d at 586.

Judge Newman's separate opinion, she criticized the court's application of the "rebuttable presumption" of prosecution history estoppel as applied in *Festo* because it necessarily becomes irrebuttable:

The majority holds that the presumption can only be rebutted by evidence that is already present in the prosecution record. . . . Thus the majority holds that the rebuttable presumption concerning the reason for an amendment, which presumption arises when the prosecution record is silent as to the reason for an amendment, can not be rebutted with evidence outside of the prosecution record. The rebuttable presumption thereby becomes irrebuttable, because the prosecution record is necessarily silent in order for the presumption to arise at all.<sup>135</sup>

It is unlikely that the *Warner-Jenkinson* Court, in explicitly creating a rebuttable presumption, really intended it to be irrebuttable.

The Court's decision in *Warner-Jenkinson* confirms that the Supreme Court is attempting to limit the seemingly unbounded breadth of the doctrine of equivalents. The Court wants to ensure that patent claims themselves serve both a "definitional and notice function" to the public and are constrained in accordance with public policy.<sup>136</sup>

*Festo* treats patent applications having identical content differently depending on whether or not an amendment was made to the application. In other words, the process by which the application was prosecuted, rather than its substance or the language of the patent claims as actually granted, determines the scope of equivalence. For example, suppose Application A has narrow claims that have not been amended and Application B has identical claims to Application A, but only after broader claims have been amended and narrowed. Application A may obtain a range of equivalents as to its claim elements, but Application B may not. An application that starts with broader claims that are later narrowed is barred from any range of equivalents as to the amended element.<sup>137</sup> In *Warner-Jenkinson*, the Court did not authorize treating identical applications differently where no surrender of claim scope is evident.

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135. *Festo*, 234 F.3d at 632 (Newman, J., concurring in part, dissenting in part).

136. *Warner-Jenkinson*, 520 U.S. at 33.

137. *Festo*, 234 F.3d at 574.

## PART IV

A. *Additional Factors for Evaluating Equivalents:  
The Formstein Test*

A practical way to achieve an acceptable level of predictability regarding the scope of the range of equivalents is to revisit and improve the legal analysis of equivalents already in existence in patent law. Such a doctrine, utilizing an improved equivalents analysis, brings to the foreground the underlying principles behind the patent laws. The better solution lies in defining the doctrine of equivalents and not in making per se rules regarding prosecution history estoppel. Additional factors for evaluating equivalents should actively supplement the doctrine of equivalents inquiry to ensure patentees cannot expand patent scope beyond what is in the prior art. These additional factors are:

1. If an allegedly infringing device or process forms part of the prior art, there can be no infringement; and
2. If an allegedly infringing device or process would have been obvious over the prior art, there can be no infringement; and
3. The aforementioned tests may only encompass those elements of the allegedly infringing device that are covered in the patent claim or are an equivalent to an element of the patent claim.<sup>138</sup>

These factors can be easily extracted from Supreme Court precedent.<sup>139</sup> In all but a few cases, the alleged infringer was actually practicing the prior art and thus could not be infringing on the patentee's patent. The most significant concern should be that "a patentee should not be able to obtain, under the doctrine of equivalents, coverage which he [or she] could not lawfully have obtained from the PTO by literal claims."<sup>140</sup> In *Festo*, the court claims the Supreme Court has never directly addressed or specifically answered how to determine the scope of equivalents when prosecution history estoppel applies to a claim element.<sup>141</sup> Since the Court did not use the term "prosecution history estoppel" until its 1997 *Warner-Jenkinson* decision, this is not surprising. There are cases from the nineteenth century that the Court acknowledged

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138. *See supra* note 27.

139. *See infra* note 142.

140. *Wilson Sporting Goods Co. v. Geoffrey & Assocs.*, 904 F.2d 677, 684 (Fed. Cir. 1990).

141. *Festo*, 234 F.3d at 569.

in *Warner-Jenkinson* that set forth the principles of the present doctrine of prosecution history estoppel.<sup>142</sup>

In cases where the allegedly infringing device approaches the scope of the prior art, it is important to determine whether the patent owner should be able to expand patent claims to cover the accused device. A case hailing from Germany, *Formstein*, formulates an analysis for this situation.<sup>143</sup> *Formstein* presents the test which uses the aforementioned factors to determine the scope of equivalents. These factors have been adapted so that they are more compatible with United States legal construction.

## PART V

### A. Cases Utilizing Additional Factors in Their Rationale

#### 1. Formstein

In Germany, the standard test used for determining the scope of doctrine of equivalents infringement is *Formstein*. The Formstein standard is applied whenever there is no literal infringement and the defendant presents prior art coming close to the allegedly infringing device. *Formstein* identifies the key policy concerns surrounding expansion of the scope of patent claims through equivalents, and recites a test to take these concerns into account when determining the scope of protection.

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142. *Id.* at 602 (Michel, J., concurring in part, dissenting in part) (“[A]lthough these older cases do not specifically recite either of the synonymous phrases “prosecution history estoppel” or “file wrapper estoppel,” the principles articulated in these cases form the core of the doctrine of prosecution history estoppel that we have applied until today. The phrase “file wrapper estoppel” was not employed by the Supreme Court until its decision in *Exhibit Supply Co. v. Ace Patents Corp.*, 315 U.S. 126, 128 . . . (1942), and the Supreme Court did not use the phrase “prosecution history estoppel” until *Warner-Jenkinson* . . .). However, many of the old cases cited in *Festo* may be inapposite when it comes to modern doctrine of equivalents analysis. This is because claim style in the nineteenth century significantly differs from that of modern claim drafting. For example, in some of the old cases, it was possible to claim equivalents in the claim so that any alleged infringement that was an equivalent to a claim element would actually be a literal infringement. *See Hurlbut v. Schillinger*, 130 U.S. 456, 463 (1889) (patent holder claimed a patent in “[t]he arrangement of tar paper *or its equivalent* between adjoining blocks of concrete, substantially as and for the purpose *set forth*.”) (first emphasis added); *Goodyear Dental Vulcanite Co. v. Davis*, 102 U.S. 222, 223 (1880) (A reissue patent claimed in “[t]he plate of hard rubber or vulcanite, *or its equivalent*, for holding artificial teeth . . .”) (emphasis added). Other nineteenth century cases cited in *Festo* have omnibus claims. *See Hubbell v. United States*, 179 U.S. 77, 81–82 (1900); *Royer v. Coupe*, 146 U.S. 524, 526–27 (1892); *Crawford v. Heysinger*, 123 U.S. 589, 596–99 (1887); *Sutter v. Robinson*, 119 U.S. 530, 535 (1886).

143. BGHZ 98, 12 (F.R.G.) *translated in* Formstein, 1991 R.P.D.T.M.C. 597, (1991).

In *Formstein*, the plaintiff received German Patent No. 2944622, filed on November 5, 1979, on a molded curbstone.<sup>144</sup> These curbstones were molded to have longitudinal trough and cross-sectional drainage channels running away from the center of the road.<sup>145</sup> The state of the art molded curbstones (*e.g.* the prior art) caused all the rainwater on the road to be drained off, overburdening the drainage system.<sup>146</sup> Patentee’s molded-curbstones provided for “safe and reliable” drainage.<sup>147</sup>

Defendant town built a road with sufficient drainage.<sup>148</sup> Instead of using molded curbstones, however, defendant used conventional, commercially available, rounded curbstones running alongside the road surface.<sup>149</sup> The six-centimeter high curbstones, placed with three-centimeter gaps between them, provided drainage of run-off water. Believing this to be a patent infringement, the plaintiff sued defendant and requested an injunction.<sup>150</sup>

As a defense to infringement, the Court said a defendant could assert that the alleged infringing stones, were “derived from the prior art in a manner obvious to a person skilled in the art . . . .” Such a defense is otherwise known as the *Formstein* defense.<sup>151</sup> Thereafter, the Court remanded to the Court of Appeals for determination of whether the “alleged infringement formed part of the prior art or that in view of that prior art there was no patentable invention . . . .”<sup>152</sup> In other words, the Court required the Court of Appeals to consider whether arranging the individual stones in the prior art was obvious in view of the prior art. If arranging the stones in such a manner would have been obvious, then

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144. BGHZ 98 at 12 *translated in* *Formstein*, 1991 R.P.D.T.M.C. at 600. (“Claims 1 and 2 of the patent read as follows:

An integral or cross-sectionally multi-part molded curbstone with a longitudinal trough for drainage channels at a roadside, characterized in that it comprises at least one cross-channel branching off from the longitudinal trough and opening into the side of the curbstone facing away from the centre of the road.

A molded curbstone as claimed in claim 1, characterized in that the cross-channel has a slight inclination.

145. *Id.*

146. BGHZ 98 at 15 *translated in* *Formstein*, 1991 R.P.D.T.M.C. at 602.

147. BGHZ 98 at 15 *translated in* *Formstein*, 1991 R.P.D.T.M.C. at 602.

148. BGHZ 98 at 13 *translated in* *Formstein*, 1991 R.P.D.T.M.C. at 601.

149. *Id.*

150. BGHZ 98 at 14 *translated in* *Formstein*, 1991 R.P.D.T.M.C. at 602.

151. BGHZ 98 at 22 *translated in* *Formstein*, 1991 R.P.D.T.M.C. at 606.

152. BGHZ 98 at 22 *translated in* *Formstein*, 1991 R.P.D.T.M.C. at 606. In Germany, only the Patent Court has jurisdiction to nullify or invalidate a patent. *See* Bekanntmachung der Neufassung des Patentgesetz (Patentgesetz), v. 16.12.1980 (BGBl. I S.1) *translated in* *IV Industrial Property Laws and Treaties*, (World Intellectual Prop. Org.) Germany, Patent Law, at 2–002 pg. 18 (April 1999) (“An action shall be filed with the Patent Court in writing.”). The Supreme Court and the Court of Appeals are not at liberty to nullify or invalidate a patent.

there was no infringement.<sup>153</sup> On the other hand, if the Court of Appeals found that despite the prior art, inventive activity<sup>154</sup> was necessary to discover the alleged infringement, infringement was possible only if one skilled in the art found the accused devices to be an equivalent.<sup>155</sup>

The German courts are not the only courts in Europe to apply the principles of *Formstein*. The English House of Lords applied principles similar to those of *Formstein* in an early case called, *Merrell Dow Pharmaceuticals Inc. and Another v. H.N. Norton & Co. Ltd. and Others*,<sup>156</sup> finding the patent invalid because it was not new.

B. *Merrell Dow Pharmaceuticals Inc. and Another v. H.N.  
Norton & Co. Ltd. and Others*<sup>157</sup>

*Merrell Dow* was an appeal to the House of Lords by plaintiff-patentee, Merrell Dow, from a Court of Appeals judgment that dismissed the patent as invalid. Plaintiffs first obtained a patent on the antihistamine, “Terfenadine,” used by people suffering from allergies. Plaintiffs stated that after they filed the patent on “Terfenadine,” they discovered, through research, that 99.5% of it was metabolized in the liver.<sup>158</sup> This explained why “Terfenadine” had no side effects, such as drowsiness.<sup>159</sup> Through further analysis plaintiffs discovered an active acid metabolite formed in the liver, MDL 16,455. Because the acid metabolite had not been identified earlier, plaintiffs patented this substance.<sup>160</sup>

When the patent on “Terfenadine” expired, competitors began manufacturing a generic substance equivalent to “Terfenadine.” Plaintiffs sued

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153. BGHZ 98 at 22–23 *translated in* *Formstein*, 1991 R.P.D.T.M.C. at 606.

154. Instead of engaging in a nonobviousness-inquiry, like the United States, European patent practice requires the patent applicant to show inventive step.

155. BGHZ 98 at 23 *translated in* *Formstein*, 1991 R.P.D.T.M.C. at 607.

156. 1996 R.P.D.T.M.C. 76, (1995) (H.L.). The House of Lords is the final court of appeal on points of law in civil cases for the United Kingdom and the final court of appeal in criminal cases for England, Wales and Northern Ireland. *See also* *Gillette Safety Razor Co. v. Anglo-American Trading Co.*, 1913 R.P.D.T.M.C. 465, 480–81 (1913) (H.L.) (Moulton, L., concurring) (“It is impossible for an ordinary member of the public to keep watch on all the numerous Patents which are taken out and to ascertain the validity and scope of their claims. But he is entitled to feel secure if he knows that that which he is doing differs from that which has been done of old only in non-patentable variations, such as the substitution of mechanical equivalents or changes of material shape or size. The defence that “the alleged infringement was not novel at the date of the plaintiff’s Letters Patent” is a good defence in law, and it would sometimes obviate the great length and expense of Patent cases if the defendant could and would put forth his case in this form, and thus spare himself the trouble of demonstrating on which horn of the well-known dilemma the plaintiff had impaled himself, invalidity or non-infringement.”).

157. 1996 R.P.D.T.M.C. 76, (1995) (H.L.).

158. *Merrell Dow*, 1996 R.P.D.T.M.C. at 80.

159. *Id.*

160. *Id.*

defendants for patent infringement on the later filed application covering the acid metabolite, MDL 16,455. Interestingly, the defendants' allegedly infringing substance did not contain MDL 16,455.<sup>161</sup> The patient's liver was actually responsible for processing the acid metabolite.<sup>162</sup> The key issue in the case was whether the subsequent discovery about the way "Terfenadine" was broken down in the body had the effect of removing the process, or any part of it, from the public domain.<sup>163</sup>

In evaluating the merits of plaintiffs' case, the House of Lords applied the principles of *Formstein*, finding the patent invalid. Lord Hoffman, writing for the Court said:

It is the *invention* which must be new and which must therefore not be part of the state of the art.<sup>[164]</sup> It is therefore part of the state of the art if the information which has been disclosed enables the public to know the product under a description sufficient to work the invention.<sup>165</sup>

Lord Hoffman further explained the importance that patents not obtain coverage extending into the state of the art.<sup>166</sup>

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161. Merrell Dow Pharmaceuticals, Inc. v. H.N. Norton & Co., 1995 P.P.D.T.M.C. 233, 236, (1994) (C.A.).

162. *Id.*

163. *Id.* at 238.

164. The term "state of the art" is comparable to the term "prior art" in U.S. patent law. See Convention on the Grant of European Patents (European Patent Convention), October 5, 1973 art. 54, 13 I.L.M. 270, 286.

165. *Merrell Dow*, 1996 R.P.D.T.M.C. at 89.

166. Imagine a scientist telling an Amazonian Indian about the discoveries of 1820 and 1944. He says: "We have found that the reason why the bark is good for fevers is that it contains an alkaloid with a rather complicated chemical structure which reacts with the red corpuscles in the bloodstream. It is called quinine." The Indian replies: "That is very interesting. In my tribe, we call it the magic spirit of the bark." Does the Indian know about quinine? My Lords, under the description of a quality of the bark which makes it useful for treating fevers, he obviously does. I do not think it matters that he chooses to label it in animistic rather than chemical terms. He knows that the bark has a quality which makes it good for fever and that is one description of quinine.

On the other hand, in a different context, the Amazonian Indian would not know about quinine. If shown pills of quinine sulphate, he would not associate them with the cinchona bark. He does not know quinine under the description of a substance in the form of pills. And he certainly would not know about the artificially synthesised alkaloid.

I recognise that there is a distinction between cinchona bark and terfenadine. The former is a substance occurring in nature and the latter is an artificial product. This might have been relevant if the medicinal qualities of the bark had been unknown and a person who discovered them had tried to patent the bark or the natural alkaloid. But the distinction is not material to the present question, which is essentially an epistemological one: what does it mean to know something, so that it can be part of the state of the art? The quinine example shows that there are descriptions under which something may in a relevant sense be known without anyone being aware of its chemical composition or even that it has an identifiable molecular structure. This proposition is unaffected by whether the substance is natural or artificial. *Id.* at 88.

The Federal Circuit has not directly applied the Formstein test. A similar analysis to *Formstein* nevertheless appeared in *Wilson Sporting Goods Co. v. David Geoffrey & Associates*.<sup>167</sup>

C. *Wilson Sporting Goods Co. v. David Geoffrey & Associates*

In *Wilson Sporting Goods*, the defendant appealed from the district court's findings of patent infringement and patent validity. Plaintiff patented a configuration of dimples on a golf ball cover that increased ball flight. Plaintiff sued defendant for patent infringement. Because defendant's golf balls did not fall literally within the claims, plaintiff argued defendant infringed under the doctrine of equivalents.

The court held that even if the function-way-result ("F-W-R") test is satisfied, "there can be no infringement if the asserted scope of equivalency of what is literally claimed would encompass the prior art."<sup>168</sup> This is so because "patentee should not be able to obtain, under the doctrine of equivalents, coverage which he [or she] could not lawfully obtain from the PTO by literal claims."<sup>169</sup> Thus, "prior art always limits what an inventor could have claimed, it limits the range of permissible equivalents of a claim."<sup>170</sup>

To determine whether defendants' products fell within the permitted range of equivalents, the court applied a "hypothetical patent claim" analysis to decide whether infringement occurred. This analysis encompassed visualizing a "hypothetical patent claim," whereby such claim was written with sufficient scope to literally encompass the accused product.<sup>171</sup> If the PTO could have allowed the hypothetical claim over the prior art, then the prior art was not a bar to infringement under the doctrine of equivalents.<sup>172</sup> If, however, the converse was true and the PTO could not have allowed the hypothetical claim over the prior art, allowing patentee to extend patent coverage to ensnare the prior art would be improper.<sup>173</sup> The court employed the hypothetical claim analysis in order to provide a more precise way to determine infringement. Hypothetical claim analysis served as an alternative to simply looking to see if the accused product would have been obvious in view of the prior art.

Here, the court found that a hypothetical claim drawn to the literal scope of the accused product would have been obvious over the prior art. Thus, the plaintiff's patent could not be given a range of equivalents

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167. 904 F.2d 677 (Fed. Cir. 1990).

168. *Id.* at 683.

169. *Id.* at 684.

170. *Id.*

171. *Id.*

172. *Id.*

173. *Id.*

broad enough to encompass the defendant's accused golf balls.<sup>174</sup> Although the court did not actively apply the Formstein test, the test's underlying principles were followed. The court answered the question: How far should equivalents extend and why should the prior art be a limitation on the permissible range of equivalents? If we compare this to the Formstein test, we see it is similar. This means the patentee should not be able to obtain coverage over something that is not new or nonobvious over the prior art. The Federal Circuit left unanswered, the question of what conditions and limitations should be placed on parties drawing a hypothetical claims. The hypothetical claim analysis would be more effective if limits were placed on how parties drafted hypothetical claim language. As suggested in the final additional factor of the modified Formstein test, the hypothetical claim should only encompass those elements of the allegedly infringing device that are covered in the patent claim or are an equivalent to an element of the patent claim. The Federal Circuit may not have fully embraced the hypothetical claim analysis it created in *Wilson Sporting Goods*'s because it lacked restrictions similar to those found in the last factor of the modified Formstein test.

*D. Improving the Hypothetical Claim Analysis  
of Wilson Sporting Goods*

The *Wilson Sporting Goods* “hypothetical claim” analysis has received a warm reception when applied to ensure that the doctrine of equivalents does not ensnare prior art.<sup>175</sup> This analysis, however, can be somewhat difficult to use. Drafting a proper “hypothetical” claim is both complicated and tricky, because *Wilson* did not set forth specific limitations as to what can be amended in the original claim for inclusion in the hypothetical claim. To improve the hypothetical claim analysis, only the limitations, which are not literally met by the alleged infringement, should be amended. For example, if a patent claim includes elements a, b, and c, and the alleged infringement includes a, b, and c', where c' is close to c, the hypothetical claim may not set limitations on, or amend, language regarding a and b, because claim elements a and b literally read on the accused device. Put another way, the patent claim is a, b, and c; while the alleged infringement is a, b, and c'; then the hypothetical claim may not amend original claim language covering a and b. Amending original claim language that literally reads on the alleged infringement

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174. *Id.* at 685.

175. *Marquip, Inc. v. Fosber Am., Inc.*, 198 F.3d 1363, 1367 (Fed. Cir. 1999) (“Based on the fundamental principle that no one deserves an exclusive right to technology already in the public domain, this court has consistently limited the doctrine of equivalents to prevent its application to ensnare prior art.”).

can lead to drafting a hypothetical claim that covers the accused device, but avoids prior art.<sup>176</sup>

In *Streamfeeder, LLC v. Sure-Feed Systems, Inc.*,<sup>177</sup> for example, the Federal Circuit criticized the defendant's "hypothetical claim" saying such "analysis is not an opportunity to freely redraft granted claims."<sup>178</sup> In that case, Streamfeeder owned U.S. Patent No. 4,991,831 (the '831 patent) drawn to a bottom sheet feeder apparatus that collated paper for processing in industrial applications, including mailings, printing and binding.<sup>179</sup> Sure-Feed sold the commercial embodiment of U.S. Patent No. 5,601,282, an allegedly infringing device. Streamfeeder sued Sure-feed for infringement of claim 1 of the '831 patent.<sup>180</sup>

Both devices fed stacks of paper forward through a machine from the bottom. A gate prevented more than one sheet, taking the bottom-most sheet first, from traveling through the machine. The dispute between the parties centered on the gate element. The gate element disclosed in the specification differed from the gate element claimed. Unlike the gate in the patent claim, the gate element in the specification

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176. See *Streamfeeder, LLC v. Sure-Feed Sys., Inc.*, 175 F.3d 974, 983 (Fed. Cir. 1999) (stating that a hypothetical claim may permit extending the claim to cover subject matter equivalent to that which is literally claimed but warning that such claim should not be written to encompass the accused device but be narrowed to avoid prior art).

177. 175 F.3d 974 (Fed. Cir. 1999).

178. *Id.* at 983.

179. *Id.* at 975.

180. Claim 1 of the '831 patent reads as follows:

An apparatus for serially feeding sheets in a forward direction from the bottom of a generally vertical stack of such sheets comprising:

means for supporting the generally vertical stack of sheets and so that the stack defines a forward side composed of aligned forward edges of the sheets, and a bottom, said supporting means including endless belt means and means rotatably mounting said endless belt means so as to have an upper run positioned to extend across the bottom of said stack;

drive means for rotating said endless belt so that said upper run moves in the forward direction; and

means including a stationary gate forming member positioned above said upper run of said belt means and adjacent the forward side of said stack and so as to define a nip which forms a gap between said gate forming member and said upper run, for permitting the lowermost sheet of the stack to pass forwardly from the stack through said nip, said gate forming member including first surface means facing toward forward side of said stack so as to engage the forward edges of the sheets in the stack, and second surface means at said nip and having a coefficient of friction which is higher than that of said first surface means, and such that the lowermost sheet is free to pass through said nip without significant frictional resistance while the sheet immediately above the lowermost sheet is retarded in moving through said gap by its frictional engagement with said second surface means.

*Id.* at 976.

was characterized as circular.<sup>181</sup> The gate element in the accused device was elliptical. Streamfeeder, in its hypothetical claim, redrafted the original claim to narrow the gate element and replace it with the limitations of the gate element disclosed in the specification. Streamfeeder amended the gate element in the hypothetical claim as follows (amended language in italics):

ORIGINAL CLAIM	HYPOTHETICAL CLAIM
said gate forming member including first surface means facing toward forward side of said stack so as to engage the forward edges of the sheets in the stack . . .	said gate forming member <i>comprising a cylindrical member having a plurality of annular grooves formed inwardly from a periphery thereof at regularly spaced intervals and with elastomeric bands disposed in said annular grooves and</i> including first surface means facing toward forward side of said stack so as to engage the forward edges of the sheets in the stack . . .

In drafting this hypothetical claim, the patentee narrowed the gate limitation to “consist specifically of a cylindrical member containing elastomeric bands . . .”<sup>182</sup> The gate element should not have been amended, because the allegedly infringing device literally infringed this element. Further, the original claim actually ensnared the prior art. Thus, the court found that patentee’s hypothetical claim, without the narrowed limitation, read on the prior art.<sup>183</sup>

In a properly drafted hypothetical claim, each element of the claim which is not literally infringed should correspond to each element of the alleged infringement. For example, if the original Claim is a, b, and c; while the alleged infringement is a, b, and c’; then the hypothetical claim should only amend the original claim as to c’. The entire hypothetical claim should be drafted to cover a, b, and c’ only. This means that the exchange element, c’, must be the element that fulfills the doctrine of equivalents test (*e.g.* function-way-result or the insubstantial change test), but does not add anything new. Put another way, if the patent claim is a, b, and c; while the alleged infringement is a, b, c’, and d; then the hypothetical claim should not include d, because d is an entirely new element.

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181. *Id.* at 976–79.

182. *Id.* at 982.

183. *Id.* at 983–84.

In *Moore U.S.A., Inc. v. Standard Register Co.*,<sup>184</sup> the court lambasted the patentee for using a hypothetical claim analysis that operated “to the exclusion of the doctrine of prosecution history estoppel or the All [Elements] Rule.”<sup>185</sup> Obviously, the court found that the patentee’s “poorly-articulated hypothetical claim analysis” failed.<sup>186</sup>

*Wilson Sporting Goods* nevertheless provides a good basis for applying the principles of *Formstein* to circumscribe the scope of equivalents in tandem with an inquiry into pertinent and substantive public policy issues. Hypothetical claim analysis, however, should place specific limits on parties as to how they draft the hypothetical claim. First, parties should not be permitted to include elements that are literally infringed by the accused device. Second, the hypothetical claim should only encompass those elements of the alleged infringing device that correspond to elements in the patent claim or are the equivalent of an element of the patent claim, as suggested in the final additional factor of the modified *Formstein* test.

## PART VI

### A. *Tangential Issues Related to Festo*

It is important to look at how practitioners may react to the “complete bar” rule of *Festo*. Since the “complete bar” only applies to amended claims, practitioners will probably avoid making amendments. One of the best ways to accomplish this is, of course, by narrowing the claim. Making claims narrower initially lessens the chance of prior art rejections. Practitioners, however, will want to preserve the ability to argue broader equivalents in subsequent litigation. They can accomplish this by disclosing broader subject matter in the specification and not claiming it. They can then point to the specification and argue that equivalents reach as far as what they have disclosed.

This may not be a viable option as there are two conflicting Federal Circuit cases addressing whether subject matter disclosed in the patent specification, but not claimed, falls within the scope of equivalents. The two conflicting cases are *Maxwell v. Baker, Inc.*<sup>187</sup> and *YBM Magnex, Inc. v. International Trade Commission*<sup>188</sup>

In *Maxwell*, the Federal Circuit held that failure to claim subject matter disclosed in the patent specification dedicates the disclosed matter

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184. 229 F.3d 1091 (Fed. Cir. 2000).

185. *Id.* at 1107.

186. *Id.* at 1107.

187. 86 F.3d 1098 (Fed. Cir. 1996).

188. 145 F.3d 1317 (Fed. Cir. 1998).

to the public.<sup>189</sup> The Federal Circuit distinguished *YBM Magnex* from *Maxwell*, on its facts and held that Supreme Court guidance “does not permit the blanket rule that everything disclosed but not claimed is barred from access to the doctrine of equivalence . . . .”<sup>190</sup>

B. *Maxwell v. Baker, Inc.*<sup>191</sup>

When distributing shoes, matching shoes must be kept paired together. Some manufacturers connect shoes with plastic filaments through shoe eyelets, but not all shoes have eyelets. As a result, some manufacturers make holes in eyelet-less shoes to keep them together. This often damages the shoes. Maxwell, an employee at Target<sup>®</sup>, invented and patented a system for fastening mated pairs of shoes through securing tabs inside the shoe so they could be fastened together without damage.<sup>192</sup> Her system required the fastening tab to be placed between the inner and outer soles, separate from the inside shoe lining. Defendant Baker purchased shoes from manufacturers and instructed them to connect the shoes using a “fabric loop” inserted under a shoe’s sock lining, but not between the inner and outer soles. Maxwell sued Baker for patent infringement.

In its analysis, the court found that because Baker did not secure fastening tabs between the inner and outer soles, but rather, under the sock lining, there could be no infringement. Apparently, Maxwell’s specification disclosed an alternative fastening system whereby “the fastening tab, . . . may be ‘stitched into a lining seam of the shoes at the sides or back of the shoes.’”<sup>193</sup> The court held that “[b]y failing to claim these alternatives, the Patent and Trademark Office was deprived of the opportunity to consider whether these alternatives were patentable [by Maxwell].”<sup>194</sup> The Federal Circuit was very concerned about whether the disclosed matter had been dedicated to the public:

A person of ordinary skill in the shoe industry, reading the specification and prosecution history, and interpreting the claims, would conclude that Maxwell, by failing to claim the alternate shoe attachment systems in which the tabs were attached to the inside shoe lining, dedicated the use of such systems to the public. As a matter of law, J. Baker could not infringe by using an

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189. *Maxwell*, 86 F.3d at 1106–08.

190. *YBM Magnex*, 145 F.3d at 1320.

191. 86 F.3d 1098 (Fed. Cir. 1996).

192. *Maxwell*, 86 F.3d at 1101–02. See U.S. Patent No. 4,624,060 (issued Nov. 25, 1986).

193. *Id.* at 1106 (quoting U.S. Patent No. 4,624,060 (issued Nov. 25, 1986)).

194. *Id.* at 1108 (footnote omitted).

alternate shoe attachment system that Maxwell dedicated to the public.<sup>195</sup>

Among other things, the court reversed the trial court's decision denying Baker's motion for judgment as a matter of law that its under-the-sock-lining fasteners did not infringe.<sup>196</sup>

*C. YBM Magnex, Inc. v. International Trade Commission*<sup>197</sup>

Patentee brought an action to enforce a consent order, wherein respondents agreed not to import allegedly infringing magnets. The consent order was issued pursuant to Section 337 of the Tariff Act of 1930, 19 U.S.C. 1337, (1995). The International Trade Commission (ITC) modified the consent order and found the importation was not barred. The Federal Circuit reversed the decision as an error of law.

YBM owns U.S. Patent No. 4,588,439 (issued May 13, 1986), drawn to a magnet alloy having at least one rare earth element, iron and specified amounts of oxygen. Adjusting the oxygen content improved the magnet's stability in warm, humid conditions. In claim 1, the oxygen level was listed as 6,000 to 35,000 ppm oxygen. During the administrative law judge's (ALJ's) investigation, the allegedly infringing magnets were measured as having an oxygen content between 5,450 ppm and 6,000 ppm,  $\pm 150$  ppm.<sup>198</sup> The ALJ held the magnets infringed either literally or under the doctrine of equivalents.

YBM filed an enforcement complaint against three respondents, alleging their continued importation of infringing products. While the enforcement proceeding was pending, *Maxwell* was decided. The ALJ nevertheless held that *Maxwell* did not foreclose applying the doctrine of equivalents to encompass oxygen contents of 5,450 to 6,000 ppm. The ITC reversed the ALJ, finding that "*Maxwell* established a new rule of law, and that the doctrine of equivalents can no longer be applied to reach subject matter that is disclosed in the patent but not claimed."<sup>199</sup> Thus, the Commission held that oxygen contents below 6,000 ppm could not infringe as equivalents. YBM appealed the ITC's decision.

The court distinguished this case from *Maxwell*, stating that Maxwell had "disclosed two distinct alternative ways in which pairs of shoes

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195. *Id.*

196. *Id.*; *Cf. Maxwell*, 86 F.3d at 1106 (Baker had purchased some shoes that infringed because the shoes were fastened between the inner and outer soles).

197. 145 F.3d 1317 (Fed. Cir. 1998).

198. *Id.* at 1319.

199. *Id.* at 1320.

are attached for sale, and claimed only one of them.”<sup>200</sup> Because the distinct and separate alternative was not included in the patent claims, Maxwell was able to avoid examination of that method. There was no way to know if Maxwell could have received a patent on the unclaimed method. The ITC was incorrect in assuming that, after *Maxwell*, it was “irrelevant whether there is probative evidence of insubstantial differences . . . [or equivalents].”<sup>201</sup> The court later went on to state:

The doctrine of equivalents seeks to establish a just balance between the purpose of claims to define and give notice of what is patented, and the judicial responsibility to avoid a “fraud on the patent” based on insubstantial changes from the patented invention. The fundamentals of the law of equivalency implement these premises, and were not changed by *Maxwell* as applied to all situations. *Maxwell* did not displace the wealth of precedent that permits determination of equivalency, *vel non*, as to subject matter included in the written description but not claimed.<sup>202</sup>

To resolve the disagreement between *Maxwell* and *YBM Magnex*, the Federal Circuit has ordered an *en banc* review of *Johnson & Johnston Associates, Inc. v. R.E. Service Co.*<sup>203</sup> to address the pertinent issues. In its Order, the court directed supplemental briefings and oral arguments be confined to the following questions:

1. Whether and under what circumstances a patentee can rely upon the doctrine of equivalents with respect to unclaimed subject matter disclosed in the specification.
2. Whether in this case the jury’s finding of infringement should be reversed because the patentee was foreclosed from asserting the doctrine of equivalents with respect to unclaimed subject matter disclosed in the specification.<sup>204</sup>

From these questions, it is evident the court intends to clarify whether subject matter disclosed in the specification, but not claimed, should be within reach of equivalents. In any case, the outcome of *Johnson & Johnston Associates* will have a significant impact on how practitioners write patent applications.

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200. *Id.*

201. *Id.*

202. *Id.* at 1322.

203. 238 F.3d 1347 (Fed. Cir. 2001) (*en banc*).

204. *Id.*

## PART VII

## CONCLUSION

In the United States, doctrine of equivalents jurisprudence historically converged with the jurisprudence of Germany and the United Kingdom. Both Germany and the United Kingdom, like the United States, are heavily industrialized nations. The common jurisprudence incorporated the underlying principles of granting adequate protection to patent owners while preserving the public's ownership over the public domain. The recent Federal Circuit decision in *Festo* will potentially yield disparate treatment for patent applications having identical claims, which would cause inadequate patent protection. *Festo* favors per se bright line rules over consistency and substance, while embellishing subordinate patent law issues (e.g. prosecution history estoppel).

*Festo* has effectively eliminated doctrine of equivalents infringement in commonplace infringement cases. Where a narrowing amendment to a claim element is made during prosecution for a reason substantially related to patentability, no range of equivalents is available as to that element.<sup>205</sup> It does not matter what was substantively said or whether the applicant was silent as to why the amendment was made.<sup>206</sup> Applying a doctrine of equivalents analysis is completely barred under the doctrine of prosecution history estoppel.

The Federal Circuit adopted a bright line rule because the court felt the current practice was "unworkable." Rather than making bright line rules, the court should revisit and improve the legal analysis of equivalents already in existence and implement a workable doctrine. A doctrine utilizing an improved equivalents analysis brings to the foreground the underlying principles behind the patent laws. The better solution lies in defining the doctrine of equivalents and not in creating per se rules regarding prosecution history estoppel. Additional factors should actively supplement the doctrine of equivalents inquiry to ensure patentees cannot expand patent scope beyond what is in the prior art. After such a determination is made, the obviousness inquiry should be employed to determine whether or not there is an infringement under the doctrine of equivalents. The additional factors useful to this inquiry are:

1. If an allegedly infringing device or process forms part of the prior art, there can be no infringement; and
2. If an allegedly infringing device or process would have been obvious over the prior art, there can be no infringement; and

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205. *Festo*, 234 F.3d at 574–78.

206. *Id.* at 577–78.

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*Festo*

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3. The aforementioned tests may only encompass those elements of the allegedly infringing device that are covered in the patent claim or are an equivalent to an element of the patent claim.

Further, prosecution history estoppel should be used as a true estoppel doctrine and only limit patent scope where applicant affirmatively surrenders claim scope.<sup>207</sup>

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207. *See Festo*, 234 F.3d at 619–20 (Rader, J. concurring in part, dissenting in part).