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The Doctrine of Equivalents: An Analysis of the *Festo* Decision

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I. INTRODUCTION

On November 29, 2000, the Federal Circuit fundamentally changed patent law in the United States. In deciding the case of *Festo Corp. v. Shoketsu Kinzoku Kabushiki Co.*, the Federal Circuit Court of Appeals expanded the application of prosecution history estoppel on infringement analysis under the doctrine of equivalents. A patent claim element that has been amended for any reason related to patentability is precluded from any future application of the doctrine of equivalents. This fundamental change in patent practice is sure to have an impact on patent practitioners as well as patent owners, as it affects both patent prosecution and enforcement.

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2 *Id.* at 568.
II. FACTUAL AND PROCEDURAL BACKGROUND

By assignment, Festo Corporation owns two patents related to magnetically coupled rodless cylinders: the Stoll patent and the Carroll patent. Shoketsu Kinzoku Kogyo Kabushiki Co. (SMC) competes with Festo in the market for magnetic rodless cylinder systems. Festo sued SMC in the United States District Court for the District of Massachusetts, alleging infringement of the Carroll and Stoll patents. The district court held that SMC had indeed infringed on the two patents owned by Festo Corporation under the doctrine of equivalents.

The Festo patents disclosed and claimed devices with a pair of sealing rings. The Stoll patent, in particular, disclosed and claimed a sleeve made of a magnetized material. The SMC devices had a single resilient two-way sealing ring, located on one end of the pistons. The outer portion of the sleeves of SMC’s devices were made of an aluminum alloy, not a magnetizable material. Stoll had amended claim one to recite “sealing rings” on the piston and to recite “a cylindrical sleeve made of a magnetized material” during prosecution, stating the changes were made for Section 112 reasons.

The district court found no literal infringement of the Stoll patent because SMC’s devices did not have magnetized sleeves. The court further declined to hold that prosecution history estoppel barred a finding that the Stoll patent was infringed under the doctrine of equivalents because the reason for the amendments was unclear. The jury then found that claim one of the Stoll patent infringed under the doctrine of equivalents: SMC’s non-magnetizable sleeve and

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3 See id. at 579 (magnetic rodless cylinder systems are used to move items along assembly lines).
4 U.S. Patent No. 4,354,125 (issued Oct. 12, 1982); see Festo, 234 F.3d at 563.
5 U.S. Patent No. 3,779,401 (issued Dec. 18, 1973); see Festo, 234 F.3d at 563.
7 Id.
8 Id.
9 Festo, 234 F.3d at 579.
10 Id.
11 Id. at 582.
12 Id.
13 Id. at 583.
14 Id.
15 Festo, 234 F.3d at 584.
16 Id.
single seal ring performed substantially the same function, in substantially the same way to obtain substantially the same result as the claimed magnetizable sleeve and sealing rings.\textsuperscript{17} The jury also found the Carroll patent infringed under the doctrine of equivalents.\textsuperscript{18}

SMC appealed and, in 1995, the Federal Circuit affirmed the judgment in favor of Festo.\textsuperscript{19} While SMC’s petition for \textit{certiorari} was pending, the United States Supreme Court decided \textit{Warner-Jenkinson Co. v. Hilton Davis Chemical Co.}\textsuperscript{20} The Supreme Court subsequently granted \textit{certiorari} in \textit{Festo}, vacating the Federal Circuit decision and remanding the case for reconsideration in light of \textit{Warner-Jenkinson}. On remand, a Federal Circuit panel again found that the Carroll patent was infringed under the doctrine of equivalents,\textsuperscript{21} concluding that none of the amendments made during reexamination were "required" for successful prosecution.\textsuperscript{22} However, the court vacated the infringement judgment as to the Stoll patent and remanded because the record did not adequately reveal the "reason" for the amendments made during prosecution.\textsuperscript{23} In August 1999, the Federal Circuit vacated the panel ruling and granted \textit{en banc} review.\textsuperscript{24}

The \textit{en banc} court barred the application of the doctrine of equivalents on the grounds of prosecution history estoppel.\textsuperscript{25} The court found that Festo failed to prove that the amendments to its patent claims were unrelated to patentability and thus reversed the judgment of infringement.\textsuperscript{26} The decision of the \textit{en banc} court expands the situations when an estoppel applies and bars any analysis under the doctrine of equivalents for any claim element narrowed by amendment during prosecution.

\textsuperscript{17} \textit{Id.} at 585.
\textsuperscript{18} \textit{Id.}
\textsuperscript{19} \textit{Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.,} 72 F.3d 857 (Fed. Cir. 1995).
\textsuperscript{21} \textit{Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.,} 172 F.3d 1361 (Fed. Cir. 1999).
\textsuperscript{22} \textit{Id.}
\textsuperscript{23} \textit{Id.}
\textsuperscript{24} \textit{Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.,} 187 F.3d 1381 (Fed. Cir. 1999).
\textsuperscript{25} \textit{Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.,} 234 F.3d 558, 586, 588 (Fed. Cir. 2000).
\textsuperscript{26} \textit{Id.} at 588.
III. THE DOCTRINE OF EQUIVALENTS PRE-Festo

A. Graver Tank & Manufacturing Co. v. Linde Air Products Co.

The doctrine of equivalents permits a court to find infringement when an accused product or process falls outside the literal language of the claims, but is equivalent to and differs only unsubstantially from the claimed invention.\(^{27}\) For example, in *Graver Tank*, the patent in suit claimed a welding flux containing essentially a combination of alkaline earth metal silicate and calcium fluoride.\(^{28}\) The accused product substituted silicates of calcium, not an alkaline earth metal, for silicates of magnesium, an alkaline earth metal used in the patentee's product.\(^{29}\) The Supreme Court applied the *all elements rule* stating that infringement can be found when the accused product “performs substantially the same function in substantially the same way to obtain the same result.”\(^{30}\) The Court affirmed the lower court decision that the accused flux containing manganese silicates infringed under the doctrine of equivalents. In the accused flux, the manganese silicates performed substantially the same function as the magnesium silicates in substantially the same way to obtain substantially the same result.\(^{31}\)

The purpose of the doctrine of equivalents is two-fold: to ensure that the patentee enjoys the full benefit of the patent while also providing that the claims give “fair notice” of the patent's scope.\(^{32}\) When applied, the doctrine prevents an accused infringer from avoiding liability simply by changing only minor details of a claimed invention while retaining the invention's essential identity.\(^{33}\) However, when applied broadly, the doctrine of equivalents “conflicts with the definitional and public-notice functions of the statutory claiming requirement.”\(^{34}\) This conflict arises from the very object of patent law. “The object of the patent law in requiring the patentee [to specifically define his invention] is not only to secure to him all to which he is entitled, but to appraise the public of what is still open to

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\(^{28}\) Id. at 610.

\(^{29}\) Id.

\(^{30}\) Id. at 608 (quoting *Sanitary Refrigerator Co. v. Winters*, 280 U.S. 30, 42 (1929)).

\(^{31}\) *Graver Tank*, 339 U.S. at 611-12.


\(^{33}\) *Graver Tank*, 339 U.S. at 608.

If the doctrine of equivalents is applied too broadly, the public has no way of truly knowing what is still open to them. It is this conflict that the Court more recently addressed in *Warner-Jenkinson*.

**B. Warner-Jenkinson Co. v. Hilton Davis Chemical Co.**

The Supreme Court, more recently in *Warner-Jenkinson*, analyzed proving infringement under the doctrine of equivalents and the balance with prosecution history estoppel. The patent involved in *Warner-Jenkinson* disclosed an improved process for purifying dyes. During prosecution, the claims were amended to change the pH at which the process was carried out. The Hilton Davis patent claimed pH was 6.0 for this process, while the Warner-Jenkinson performance of the process was at a pH of 5.0. On appeal, the Federal Circuit reiterated that the application of the doctrine of equivalents "rest[s] on the substantiality of the differences between the claimed and accused products or processes." Substantiality is judged on an objective standard from the perspective of one of ordinary skill in the relevant art. One of ordinary skill in the art would know that performing ultrafiltration at a pH of 5.0 will allow the membrane to perform substantially the same function in substantially the same way to reach substantially the same result as performing ultrafiltration at pH 6.0. The Federal Circuit found that there was sufficient evidence to support this jury finding under the doctrine of equivalents.

After granting *certiorari*, the Supreme Court reversed and remanded this case back to the Federal Circuit, stating "the Court of Appeals for the Federal Circuit did not consider all of the requirements as described by us today, particularly as related to prosecution history estoppel and the preservation of some meaning for each element in a claim."

In the interest of placing reasonable limits on the doctrine of equivalents, the Supreme Court created a presumption that when a

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36 *Warner-Jenkinson*, 520 U.S. at 17.
37 Id. at 21.
38 Id. at 22.
39 Id. at 22-23.
42 Id.
43 Id. at 41.
claim is amended during prosecution and the prosecution history does not reveal the reason for the change, it should be presumed that there was "a substantial reason relating to patentability for including the limiting element added by amendment." \(^{44}\) It is up to the patentee to rebut this presumption by showing that the reason for the amendment was unrelated to issues of patentability. \(^{45}\) If the presumption holds, prosecution history estoppel would bar the application of the doctrine of equivalents as to that element or claim limitation. \(^{46}\)

The Court's decision in \textit{Warner-Jenkinson} reaffirmed prosecution history estoppel as a limitation on the doctrine of equivalents. If the reason for a claim amendment is unclear from the prosecution history, it is presumed the amendment was for a substantial reason relating to patentability; the burden then falls on the patentee to rebut. Prosecution history estoppel is a complete bar to the doctrine of equivalents where the presumption is not rebutted.

IV. THE \textit{FESTO} DECISION

In the long-awaited November 29, 2000 decision by the Federal Circuit, the 12-member \textit{en banc} court addressed certain questions relating to the doctrine of equivalents that it believed had been left unresolved by the Supreme Court's decision in \textit{Warner-Jenkinson}. In the wake of the Supreme Court's remand of \textit{Festo} per the \textit{Warner-Jenkinson} decision, the Federal Circuit had issued an order seeking briefing and argument of five questions addressing the interplay of the doctrine of equivalents and prosecution history estoppel. \(^{47}\) The court answered four of the five questions as follows:

\textit{En Banc} Question 1:

For the purposes of determining whether an amendment to a claim creates prosecution history estoppel, is "a substantial reason related to patentability," \textit{Warner-Jenkinson Co. v. Hilton Davis Chem. Co.,} 520 U.S. 17, 33, 117 S. Ct. 1040, 137 L. Ed. 2d 146 (1997), limited to those amendments made to overcome prior art under § 102 and § 103, or does "patentability" mean any reason affecting the issuance of a patent? \(^{48}\)

An eleven-judge majority of the court joined in the opinion of

\(^{44}\) \textit{Id.} at 33.
\(^{45}\) \textit{Id.} at 41.
\(^{46}\) \textit{Id.}
\(^{48}\) \textit{Festo Corp. v. Shoketsu Kogyo Kabushiki Co.,} 234 F.3d 558, 566 (Fed. Cir. 2000).
Judge Schall, who answered in the negative. The court held, "that 'a substantial reason related to patentability' is not limited to overcoming prior art, but includes other reasons related to the statutory requirements for a patent." Any amendment "that narrows the scope of a claim for any reason related to the statutory requirements for a patent," including 35 U.S.C. §§ 101, 102, 103, and 112, "will give rise to prosecution history estoppel with respect to the amended claim element." The court reasoned that prosecution history estoppel functions to preserve the notice function of the claims and to prevent patent holders from recapturing subject matter under the doctrine of equivalents that was surrendered before the Patent Office, and as such, there is "no reason why prosecution history estoppel should not also arise from amendments made for other reasons related to patentability."

*En Banc* Question 2:

Under *Warner-Jenkinson*, should a "voluntary" claim amendment—one not required by the examiner or made in response to a rejection by an examiner for a stated reason—create prosecution history estoppel?

In response to *en banc* Question 2, the eleven-judge majority held that "voluntary claim amendments are treated the same as other amendments. Therefore, a voluntary amendment that narrows the scope of a claim for a reason related to the statutory requirements for a patent will give rise to prosecution history estoppel as to the amended claim element." The court reasoned that there is no difference between the Patent Office rejecting a claim because it believes it to be unpatentable and when an applicant amends a claim voluntarily because he believes the claim to be unpatentable. "Both voluntary amendments and amendments required by the Patent Office signal to the public that subject matter has been surrendered."

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49 Id.
55 Id. at 567.
56 Id. at 568.
57 Id.
58 Id.
59 Id.
En Banc Question 3:

If a claim amendment creates prosecution history estoppel, under Warner-Jenkinson what range of equivalents, if any, is available under the doctrine of equivalents for the claim element so amended?\(^6^0\)

On this question, the court was more closely split. An eight-judge majority held that "[w]hen a claim amendment creates prosecution history estoppel with regard to a claim element, there is no range of equivalents available for the amended claim element. Application of the doctrine of equivalents to the claim element is completely barred (a 'complete bar')."\(^6^1\) This issue was not addressed in Warner-Jenkinson by the Supreme Court, but the Federal Circuit reasoned that a complete bar will provide a greater benefit to the public. "With a complete bar, both the public and the patentee know that once an element of a claim is narrowed by amendment for a reason related to patentability, that element's scope of coverage will not extend beyond its literal terms."\(^6^2\) Since both the public and the patentee will know the scope and value of the patent, expensive litigation costs can be avoided.\(^6^3\) The Federal Circuit rejected the idea of a "flexible bar" in favor of a "complete bar" because of the importance of the notice function.\(^6^4\) With the flexible bar approach, the court found that there would be too much uncertainty in determining the scope of the patent for both the patentee and the public.\(^6^5\) According to the court, "a complete bar reigns in the doctrine of equivalents, making claim scope more discernable in preserving the notice function of claims."\(^6^6\)

En Banc Question 4:

When "no explanation [for a claim amendment] is established," Warner-Jenkinson, 520 U.S. at 33, 117 S. Ct. 1040, thus invoking the presumption of prosecution history estoppel under Warner-Jenkinson, what range of equivalents, if any, is available under the doctrine of equivalents for the claim element so amended?\(^6^7\)

In response, the \emph{en banc} court found "[w]hen no explanation for

\(^6^0\) Festo, 234 F. 3d at 569.
\(^6^1\) Id.
\(^6^2\) Id. at 577.
\(^6^3\) Id.
\(^6^4\) See id. at 578.
\(^6^5\) Id.
\(^6^6\) Festo, 234 F.3d at 578.
\(^6^7\) Id.
a claim amendment is established, no range of equivalents is available for the claim element so amended. According to the court, this question was adequately addressed in *Warner-Jenkinson*. 

*En Banc* Question 5:

Would a judgment of infringement in this case violate *Warner-Jenkinson*’s requirement that the application of the doctrine of equivalents “is not allowed such broad play as to eliminate [an] element in its entirety,” 520 U.S. at 29, 117 S. Ct. 1040. In other words, would such a judgment of infringement, post *Warner-Jenkinson*, violate the “all elements” rule?

The court did not address the all elements rule in the *Festo* decision and, instead, left it for another day.

In *Festo*, the majority concluded that a complete bar to the doctrine of equivalents best serves the notice and definitional function of patent claims. According to the court, the notice function of the doctrine of equivalents can be protected by prosecution history estoppel. “ Prosecution history estoppel is one tool that prevents the doctrine of equivalents from vitiating the notice function of claims.”

Prosecution history estoppel operates to prevent a patentee from obtaining protection of subject matter that has been relinquished during the prosecution of the patent. “The logic of prosecution history estoppel is that the patentee, during prosecution, has created a record that fairly notifies the public that the patentee has surrendered the right to claim particular matter as within the reach of the patent.”

The public can look to the prosecution history to determine if any prosecution history estoppel arises as to any claim element. If so, the scope of protection for that element is clearly defined by its literal terms.

Prosecution history estoppel arises from actions by the patentee, including both voluntary and involuntary claim arguments and

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68 Id.
69 Id. at 578 (quoting *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 33 (1997)) ("Where no explanation is established ... prosecution history estoppel would bar the application of the doctrine [of] equivalents as to that element.").
70 *Festo*, 234 F.3d at 578.
71 Id.
72 Id. at 564.
73 Id. *See also* *Charles Greiner & Co. v. Mari-Med Mfg., Inc.*, 962 F.2d 1031, 1036 (Fed. Cir. 1992).
75 *Festo*, 234 F.3d at 564-65.
amendments made before the USPTO. The doctrine of equivalents, therefore, is subordinate to prosecution history estoppel.\textsuperscript{77}

The \textit{Festo} court held that prosecution history estoppel applied to the patent claim elements at issue. During prosecution, Festo narrowed the scope of the claims and did not establish that the change was made for a reason unrelated to patentability and thus gave rise to prosecution history estoppel. Because prosecution history estoppel acts as a complete bar to the doctrine of equivalents, the application of equivalents was barred and the finding of infringement reversed.

V. THE DISSenting OpINONS

A number of judges concurred-in-part and dissented-in-part from the majority’s decision, most notably on the response to \textit{en banc} Question 3. Judges Michel, Rader, Linn and Newman each wrote separate dissents from this section of the court’s opinion. A common concern raised by each of the dissenters was summarized by Judge Michel:

Would be copyists, of course, will exploit the majority’s bar. Unwittingly, the majority has severely limited the protection previously available to patentees. Indeed, it may nullify the doctrine of equivalents. Under the majority’s approach, anyone who wants to steal a patentee’s technology need only review the prosecution history to identify patentability related amendments, and then make a trivial modification to that part of its product corresponding to an amended limitation. All the other limitations may be copied precisely. The competitor will then be free to make, use, or sell an insubstantial variant of the patentee’s invention. It appears to me that this complete bar approach upsets the balance that the Supreme Court has struck. Under this approach, most patentees will lose the protection against copying that the Supreme Court unanimously reaffirmed in \textit{Warner-Jenkinson}.\textsuperscript{78}

Many of the concurring and dissenting opinions expressed concern that eliminating all protection under the doctrine of equivalents does not account for the process by which patents are obtained. Some felt the new rule adopted by the majority was a rejection of the policy advanced by the Supreme Court in \textit{Warner-Jenkinson}. That policy was that the all elements rule and prosecution history estoppel are sufficient to balance the competing needs of

\textsuperscript{76} \textit{Id.} at 564.

\textsuperscript{77} \textit{Autogiro Co. v. United States}, 384 F.2d 391, 400-01 (Ct. Cl. 1967).

\textsuperscript{78} \textit{Festo}, 234 F.3d at 600-601.
granting meaningful protection to patentees and of notifying the public of the effective scope of a patentee’s claims. Some also felt that by barring all application of the doctrine of equivalents for amended claims, all patent protection for amended claims is lost when it comes to subsequently-arising technology while the doctrine of equivalents will continue to accommodate later technologies in unamended claims.79

VI. CONCLUSION

According to the Federal Circuit, prosecution history estoppel preserves the notice function of claims and prevents patent holders from recapturing subject matter surrendered before the Patent & Trademark Office. As such, the Federal Circuit held that prosecution history estoppel can arise not only from amendments under 35 U.S.C. §§ 102 and 103, but also under 35 U.S.C. §§ 101 and 112. Prosecution history estoppel can arise whenever an amendment is made for a reason related to patentability. However, “if a patent holder can show from the prosecution history that a claim amendment was not motivated by patentability concerns, the amendment will not give rise to prosecution history estoppel.”80 The prosecution record must clearly show that the amendment was not related to patentability, otherwise, the court must presume that the amendment was related to patentability and apply an estoppel. Similarly, if the record is silent as to the reason for the amendment, the court must presume that the amendment was related to patentability and apply an estoppel. A narrowing amendment will give rise to prosecution history estoppel unless the prosecution record reveals that the amendment was made for a reason unrelated to patentability. The court will only apply the all elements rule after the prosecution history estoppel analysis is complete.

The Festo decision is sure to have an impact on United States patent practice. Practitioners must take into consideration the Festo decision when preparing applications and drafting claims now that a doctrine of equivalent claim may no longer be made for a patent claim element that has been amended for a reason related to patentability. Practitioners are now faced with drafting claims that may be allowed with minimal or no amendments while trying not to draft claims that are too narrow in scope.

79 Id.
80 Id. at 567-68.
Furthermore, the *Festo* decision changes the scope of all claims in the million plus unexpired patents that were narrowed by amendment during prosecution. This change in the scope of claims affects existing licensing programs and business relationships. Patent owners now have a much heavier proof burden when it comes to proving infringement—they must show literal infringement for those claim elements affected by this decision.