I. INTRODUCTION

The federal patent law serves two primary functions: 1) provide incentive and reward to innovators; 2) promote public awareness of technological developments and facilitate further improvement over patented technologies. These two functions are frequently at tension with each other. On the one hand, a patentee strives to achieve as much protection of his invention as possible to ensure maximum profits, on the other hand, the public interest is better served by limiting the scope of patent protection, so that commercial activities outside of the invention can be carried out without fear of patent infringement.

The Supreme Court first applied the idea of equivalents over a century ago in Winans v. Denmead, aiming to secure the necessary protection to the inventors. The Court laid the modern foundation of the doctrine in Graver Tank & Mfg. Co. v. Linde Air Prod. The Court recognized that "to 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," the Court announced that "[t]o temper unsparing logic and prevent an infringement from stealing the benefit of the invention, a patentee may invoke

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2 56 U.S. 330 (1853).
4 Id. at 607.
[the doctrine of equivalents] to proceed against the producer of a device if it performs substantially the same function in substantially the same way to obtain the same result."\(^5\)

However, applying the doctrine of equivalents necessarily renders the patent claims indefinite, since "things equal to the same thing may not be equal to each other and . . . things for most purposes different may sometimes be equivalents." \(^6\) As a result, "the doctrine of equivalents, as it has come to be applied since Graver Tanks, has taken a life of its own, unbounded by the patent claims." \(^7\)

To rein in the application of the doctrine of equivalents, the Court established an "all elements" rule in Warner-Jenkinson Co. v. Hilton Davis Chemical Co, where it stated that "[e]ach 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." \(^8\) In addition, the Court recognized that "Graver Tank did not dispose of prosecution history estoppel as a legal limitation on the doctrine of equivalents." \(^9\) Under the doctrine of prosecution history estoppel, that what is surrendered during prosecution due to prior art cannot be recaptured by the doctrine of equivalents. \(^10\)

However, the Court rejected a wider application of prosecution history estoppel to any claim amendments as proposed by the petitioner in Warner-Jenkinson. \(^11\) The Court held that "[o]ur 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

\(^5\) Id. at 608.
\(^6\) Id. at 609.
\(^8\) Id. at 29.
\(^9\) Id. at 30.
\(^11\) 520 U.S. at 30.
cause for requiring a more rigid rule invoking an estoppel regardless of the reasons for a change."\textsuperscript{12}

In a recent \textit{en banc} decision by the Federal Circuit in Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co. (hereinafter "Festo IV"),\textsuperscript{13} the Federal Circuit effected a significant change in the way prosecution history estoppel would be applied. The court held that prosecution history estoppel is triggered by any amendments made for patentability reasons, including amendments made to conform to any statutory requirements, and that once a claim amendment creates prosecution history estoppel, no range of equivalents is available for the amended element.\textsuperscript{14} The Supreme Court granted \textit{writ of certiorari} and vacated the Federal Circuit's proposed change to the patent law.\textsuperscript{15}

II. FACTS AND PROCEDUAL HISTORY

Festo Corporation owns two patents for an improved magnetic rodless cylinder, a piston-driven device that relies on magnets to move objects in a conveying system.\textsuperscript{16} The first patent, the Stoll Patent (U.S. Patent No. 4,354,125), was amended after the patent examiner rejected the initial application due to the use of ambiguous language and impermissible multiple dependent claims.\textsuperscript{17} The second patent, the Carroll Patent (U.S. Patent No. 3,779,401) was amended during a reexamination proceeding.\textsuperscript{18} Both patents added a new limitation--that the inventions contain a pair of sealing rings--during the amendment. The amended Stoll Patent added a further limitation requiring that the outer

\textsuperscript{12} \textit{Id.} at 32.
\textsuperscript{13} 234 F.3d 558 (Fed. Cir. 2000).
\textsuperscript{14} \textit{Id.} at 563-64.
\textsuperscript{15} Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 122 S.Ct. 1831 (2002), hereinafter "Festo V."
\textsuperscript{16} \textit{Id.} at 1835.
\textsuperscript{17} \textit{Id.} at 1835-36.
\textsuperscript{18} \textit{Id.} at 1836.
shell of the device, the sleeve, be made of a magnetic material.\textsuperscript{19} Prior art references were also added to both applications.\textsuperscript{20}

Shoketsu Kinzoku Kogyo Kabushiki Co. (hereinafter "SMC") made a device similar to Festo's. SMC employs a single sealing ring with a two-way lip instead of Festo's two one-way sealing rings, and SMC's device does not use magnetic sleeve.\textsuperscript{21} SMC's device falls outside of the literal claims of the two Festo patents, but Festo claimed that SMC infringed its patents under the doctrine of equivalents. SMC raised prosecution history estoppel as its defense.\textsuperscript{22}

The United States District Court for the District of Massachusetts held that Festo's amendments were not the kind that gives rise to estoppel, because they were not made to avoid prior art.\textsuperscript{23} A panel of the Court of Appeals for the Federal Circuit affirmed (hereinafter "Festo I").\textsuperscript{24} The Supreme Court granted \textit{certiorari}, vacated and remanded to the Federal Circuit for further consideration in light of the Court's intervening Warner-Jenkinson decision (hereinafter "Festo II").\textsuperscript{25} After a decision by the original panel on remand (hereinafter "Festo III"),\textsuperscript{26} the Federal Circuit ordered rehearing \textit{en banc} and reversed the District Court's ruling (hereinafter "Festo IV").\textsuperscript{27} The \textit{en banc} court held that prosecution history estoppel arises from any amendment that narrows a claim to

\textsuperscript{19} \textit{Id.} \\
\textsuperscript{20} \textit{Id.} \\
\textsuperscript{21} \textit{Id.} \\
\textsuperscript{22} \textit{Id.} \\
\textsuperscript{23} \textit{Id.} \\
\textsuperscript{24} Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 72 F.3d. 857 (Fed. Cir. 1995), hereinafter "Festo I." \\
\textsuperscript{25} Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd. v. Festo Corp., 520 U.S. 1111 (1997), hereinafter "Festo II." \\
\textsuperscript{26} Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 172 F.3d 857 (Fed. Cir. 1999), hereinafter "Festo III." \\
\textsuperscript{27} Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 234 F.3d 558 (Fed. Cir. 2000), hereinafter "Festo IV."
comply with the Patent Act, not only from amendments made to avoid prior art. 28 Furthermore, the court held that when estoppel applies, it stands as a complete bar against any claim of equivalence for the element that was amended. 29 This ruling stood in sharp contrast to the flexible bar approach that had been in place for over a century and generated a huge controversy in the patent community. 30 The Supreme Court granted certiorari in June 2001 and vacated the Federal Circuit's complete bar ruling in May 2002 (hereinafter "Festo V"). 31

III. THE FEDERAL CIRCUIT'S ANALYSIS

In Festo IV, the Federal Circuit first analyzed whether the "substantial reason related to patentability" as required by Warner-Jenkinson in creating prosecution history estoppel is limited to those amendments made to overcome prior art under §102 and §103. 32 Acknowledging that the Supreme Court in Warner-Jenkinson focused on claim amendments made to overcome prior art, the court reasoned that other statutory requirements, such as 35 U.S.C. § 101 and § 112 requirements, are equally important in patentability analyses, as the Patent Office will reject a patent application that fails to satisfy any of these statutory requirements. 33 The court concluded that since an amendment related to any of these statutory requirements is an amendment made for "a

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28 Id. at 566.
29 Id. at 574-75.
32 Id. at 566.
33 Id.
substantial reason related to patentability," such amendment triggers the prosecution history estoppel.\textsuperscript{34}

Second, the Federal Circuit analyzed whether a voluntary claim amendment--one not required by the examiner or made in response to a rejection by an examiner for a stated reason--creates prosecution history estoppel.\textsuperscript{35} Since voluntary amendments, like amendments required by the Patent Office, signal to the public that subject matter has been surrendered, the court saw no reason to treat them differently.\textsuperscript{36}

Third, the Federal Circuit asked what range of equivalents, if any, is available to amended claim elements subject to prosecution history estoppel.\textsuperscript{37} This question sharply divided the court. The seven-member majority claimed that the Supreme Court never directly addressed this question, at least in circumstances where the claim was amended for a reason related to patentability.\textsuperscript{38} After analyzing several Supreme Court cases, including Warner-Jenkinson, the majority concluded that in all those cases, the Supreme Court only resolved the question of whether there will be a prosecution history estoppel, but did not address the scope of the equivalents available after the estoppel.\textsuperscript{39} The majority thus determined that the Federal Circuit must "independently decide the issue."\textsuperscript{40}

The majority then analyzed the Federal Circuit's own precedents, and acknowledged that in most of those cases, the court applied a "flexible bar" approach in deciding the scope of the equivalents.\textsuperscript{41} That approach was exemplified a previous

\begin{itemize}
\item \textsuperscript{34} Id. at 567.
\item \textsuperscript{35} Id. at 568.
\item \textsuperscript{36} Id.
\item \textsuperscript{37} Id. at 569
\item \textsuperscript{38} Id.
\item \textsuperscript{39} Id. at 569-71.
\item \textsuperscript{40} Id. at 571.
\item \textsuperscript{41} Id. at 572-74.
\end{itemize}
opinion stating that "although the available range of equivalency is limited, by estoppel, . . . the prosecution history and the prior art do not eliminate equivalence." 42

In one case, Kinzenbaw v. Deere & Co., however, the majority found that the court applied a more stringent standard that refused to apply the doctrine of equivalents to a claim element narrowed by amendment. 43

Despite the weight of the Federal Circuit's own precedent, the majority nonetheless held that based on the Circuit's long experience, the flexible bar approach is "unworkable." 44 Emphasizing the paramount importance of the notice function and the need for certainty as to the scope of patent protection, 45 the majority proposed a "complete bar" approach, under which no range of equivalents available for an element amended for patentability reasons. 46 According to the majority, a complete bar approach best serves the notice and definition function of patent claims. Furthermore, technological advances that would have lain in the unknown, undefined zone around the literal terms of narrowed claim under the flexible bar approach will not go wasted and undeveloped due to fear of litigation. 47 As for the reduced protection to the patentees under the complete bar, the majority cursorily concluded that the benefits to patentees under the flexible bar do not outweigh the costs of uncertainty. 48

The fourth holding addressed voluntary, unexplained claim amendments. In Warner-Jenkinson, the Supreme Court held that a presumption of prosecution history estoppel is established when a claim element is voluntarily amended without a proffered

42 Id. at 572, citing Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1555-56 (Fed. Cir. 1996)
43 741 F.2d 383 (Fed. Cir. 1984).
44 234 F.3d at 575.
45 Id.
46 Id. at 569.
47 Id. at 576-77.
48 Id. at 578.
reason.\textsuperscript{49} Based on Warner-Jenkinson and the majority's holding on the previous questions, the majority in Festo IV concluded that no range of equivalents is available to the amended element.\textsuperscript{50}

Finally, the Federal Circuit did not provide answer to the question whether an infringement judgment in the instant case would violate the all element rule.\textsuperscript{51} Based on the amendment made to the two patents at issue, the court held that prosecution history estoppel applies, and no range of equivalents is available to the two amended claim elements. The District Court's infringement ruling was therefore reversed.\textsuperscript{52}

Five of the twelve judges dissented as to complete bar approach. Judge Michel in particular wrote a charged dissenting opinion stating that the "complete bar" approach contradicts to settled law. To support his opinion, he listed numerous cases that, according to him, were overturned by the majority's adoption of a complete bar.\textsuperscript{53}

\textbf{IV. THE SUPREME COURT'S ANALYSIS}

The Supreme Court vacated the Federal Circuit's \textit{en banc} ruling as to the complete bar approach. While the Court acknowledged the importance of certainty and clarity in defining the boundary of patent rights, it also recognized the impreciseness of language in fully describing an invention.\textsuperscript{54} It stated that "[t]he scope of a patent is not limited to its literal terms but instead embraces all equivalents to the claims described."\textsuperscript{55}

\begin{itemize}
\item \textsuperscript{49} 520 U.S. at 33.
\item \textsuperscript{50} 234 F.3d at 578.
\item \textsuperscript{51} \textit{Id}.
\item \textsuperscript{52} \textit{Id.} at 591.
\item \textsuperscript{53} \textit{Id.} at 598-619.
\item \textsuperscript{54} Festo V., 122 S. Ct. at 1837.
\item \textsuperscript{55} \textit{Id}.
\end{itemize}
The Court analyzed its previous decisions, from Graver Tank to Warner-Jenkinson, and found no case that supported Federal Circuit's complete bar approach. The Court found that "[its] prior cases have consistently applied prosecution history estoppel only where claims have been amended for a limited set of reasons, such as to avoid prior art, or otherwise to address a specific concern--such as obviousness--that arguably would have rendered the claimed subject matter unpatentable." 56

Although the Court agreed with the Federal Circuit that a narrowing amendment made to satisfy any requirement of the Patent Act may give rise to an estoppel, 57 it departed from the Circuit Court's opinion in holding that "[a]n narrowing amendment may demonstrate what the claim is not; but may still fail to capture precisely what the claim is." 58 Therefore, the Court concluded, "there's no more reason for holding the patentee to the literal terms of an amended claim than there is for abolishing the doctrine of equivalents altogether and holding every patentee to the literal terms of the patent." 59

In addition, the Court was mindful of the settled expectations of the inventing community. Since "[i]nventors who amended their claims under the previous regime had no reason to believe they were conceding all equivalents . . . [t]here is no justification for applying a new and more robust estoppel to those who relied on prior doctrine." 60

The Court did allow a limited version of the "complete bar" when the patentee is unable to explain the reason for amendment. 61 In addition, when prosecution history estoppel applies to an amended element, the Court placed the burden on the patentee to

56 Id. at 1839.
57 Id.
58 Id. at 1841.
59 Id.
60 Id.
61 Id. at 1842.
show that the amendment does not surrender the particular equivalent in question.\textsuperscript{62} "The patentee must show that at the time of the amendment one skilled in the art could not reasonably be expected to have drafted a claim that would have literally encompassed the alleged equivalent."\textsuperscript{63}

Applying these holdings to the case before it, the Court determined that the amendments were made for a reason relating to patentability.\textsuperscript{64} It held that the question is not whether estoppel applies but what territory the amendments surrendered, and remanded the case to the lower court for further proceedings.\textsuperscript{65}

\textsuperscript{62} Id.
\textsuperscript{63} Id.
\textsuperscript{64} Id.
\textsuperscript{65} Id.