

THE UNFINISHED TASKS OF FESTO: BALANCING THE DOCTRINE OF EQUIVALENTS AND PROSECUTION HISTORY ESTOPPEL

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In a decision eagerly awaited by the patent community, the Supreme Court in *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.* (hereinafter *Festo*) vacated the Federal Circuit's *en banc* decision (hereinafter *Festo III*) adopting a "complete bar" against application of the doctrine of equivalents to amended claims.¹ The Court held that the doctrine of equivalents is still available to narrowed claims if the equivalent in question meets one of the three tests promulgated by the Court —the foreseeability, tangential relationship and reasonableness tests.² These tests represent the newest effort by the Court to balance the protection and notice functions of the patent law. Most inventors and patent attorneys welcome the return of the doctrine of equivalents, because the vast majority of patents currently in force have amended claims.³ The Federal Circuit's "complete bar" approach, if not vacated, would have significantly reduced the scope of protection to inventors and dramatically changed the way new patent applications are prosecuted.⁴

¹ 122 S. Ct. 1831, 1842 (2002), *rev'g* 234 F.3d 558 (Fed. Cir. 2000) (*en banc*).

² *Id.*

³ See, e.g., Richard A. Kaplan, *Festo Brings the Return of the Doctrine of Equivalents*, CHI. LAW., Oct. 2002, at 71; Steve Andersen, *Festo, Finally: Doctrine of Equivalents Withstands Test, with Concessions*, CORP. LEGAL TIMES, Aug. 2002, at 62. But see, R. Polk Wagner, *Reconsidering Estoppel: Patent Administration and the Failure of Festo*, 151 U. PA. L. REV. 159 (2002) (arguing that a strict prosecution history estoppel generates incentives for patentees to produce socially valuable information during and before patent application).

⁴ See, e.g., Stephen Dirksen et al., *iBRIEF: PATENTS & TECHNOLOGY: Patent Amendments and Prosecution History Estoppel Under Festo*, 2001 DUKE L. & TECH. REV. 11; Glen P. Belvis, *An Analysis of the En Banc Decision in Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co. and the Doctrine of Equivalents*, 11 FED. CIR. B.J. 59, 99-110 (2002).

Part I of this Note traces the historic development of the doctrine of equivalents and prosecution history estoppel and suggests that Supreme Court precedent concerning the interaction of these two doctrines has not been consistent. Part II summarizes the decisions from the *en banc* Federal Circuit and the Supreme Court, and Part III then analyzes the Supreme Court decision and its impact on patent prosecution and litigation. Acknowledging that the new tests have the potential to be more balanced than both the "flexible bar" and the "complete bar" approaches, this Note argues in Part III that the Court's adoption of a foreseeability test contradicts the Court's previously stated view on the doctrine of equivalents in *Graver Tank & Manufacturing. Co. v. Linde Air Products Co.*,⁵ and proposes that the Court should overrule *Graver Tank* for a uniform application of the test. This Note also argues in Part III that the scope of the doctrine of equivalents under *Festo* is narrower than that under the traditional "flexible bar" approach and proposes patent prosecution strategies to avoid the limiting effect of the *Festo* tests.

I. BACKGROUND

The purpose of the patent system is to encourage and reward innovation. It achieves this purpose by protecting patent rights while providing notice to the public of the scope of those rights.⁶ These two functions are often at tension with each other: while a patentee profits by maximizing patent protection, the public benefits from limiting the scope of patent rights so that further innovation, inspired by and based upon the original invention, will not be stifled. Two legal doctrines, the doctrine of equivalents

⁵ 339 U.S. 605, 612 (1950).

⁶ See Matthew J. Conigliaro, Andrew C. Greenberg & Mark A. Lemley, *Foreseeability in Patent Law*, 16 BERKELEY TECH. L.J. 1045, 1047 (2001).

and prosecution history estoppel, play important roles in balancing the two conflicting functions of the patent law.⁷

A. THE DOCTRINE OF EQUIVALENTS

The Supreme Court first established the doctrine of equivalents in *Winans v. Denmead* in 1853,⁸ in which the Court held that an octagonal-shaped coal car with a pyramidal-shaped base is equivalent to a cylindrical-shaped one with a tapered cone-like base.⁹ This debut of the doctrine of equivalents was achieved over the dissent of four justices, who raised a strong concern with the uncertainty that the doctrine would bring to the scope of patent claims.¹⁰

Nearly a century later, the Supreme Court laid the foundation of the modern doctrine of equivalents in *Graver Tank*.¹¹ In that case, the patentee claimed an electric welding composition that contained alkaline earth metal silicates, such as calcium or magnesium silicates. The only difference in the alleged infringer's product was the replacement of magnesium silicate with manganese silicate, which is not an alkaline earth metal silicate. The issue in *Graver Tank* centered on whether manganese silicate was an equivalent of magnesium silicate in the welding composition.¹²

In an effort to provide a framework for the doctrine of equivalents, the Court proposed that "a patentee may invoke [the doctrine of equivalents] to proceed against the

⁷ *Id.*

⁸ 56 U.S. 330 (1853). In fact, reasoning similar to the doctrine of equivalents can be found much earlier than *Winans*. See Jay I. Alexander, *Cabining the Doctrine of Equivalents in Festo: A Historic Perspective on the Relationship Between the Doctrine of Equivalents and Prosecution History Estoppel*, 51 AM. U.L. REV. 553, 556-57 (2002) (finding reasoning similar to the doctrine of equivalents in a 1798 case).

⁹ 56 U.S. at 339-42. The patentee only patented the cylindrical-shaped car, not the octagonal-shaped one used by the defendant. The Court found that the advantage of a cylindrical-shaped coal cart with a cone-like base is to disperse the pressure of the load outwards in every direction, which can be achieved similarly by the octagonal-shaped car with a pyramid-like base.

¹⁰ See *id.* at 347 (Campbell, J., dissenting).

¹¹ 339 U.S. 605 (1950).

¹² *Id.* at 610.

producer of a device if it performs substantially the same function in substantially the same way to obtain the same result,"¹³ an often-quoted test that has become known as the "function, way, result" test. An important factor in determining equivalence under this test is whether a person reasonably skilled in the art would have known of the interchangeability of the unclaimed elements with the claimed ones.¹⁴ Finding that manganese silicate was widely known to be substantially identical in operation and result to magnesium silicate in welding compositions, the Court held that it was a protectable equivalent of magnesium silicate.¹⁵

Protection of patent rights clearly gained an upper hand over clear notice to the public in *Graver Tank*. As the Court observed, "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."¹⁶ However, the concern about uncertain patent scope, first raised by the dissenting justices in *Winans*, never subsided, and the unpredictable application of the "function, way, result" test following *Graver Tank* further intensified the debate. The Supreme Court recognized in *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.* that after *Graver Tank*, the doctrine had "taken a life of its own, unbounded by the patent claims."¹⁷

To rein in the application of the doctrine of equivalents, the Court endorsed two limitations in *Warner-Jenkinson*. The first is the "all elements rule,"¹⁸ which requires

¹³ *Id.* at 608.

¹⁴ *Id.* at 609.

¹⁵ *Id.* at 612.

¹⁶ *Id.* at 607.

¹⁷ 520 U.S. 17, 28-29 (1997).

¹⁸ The framework of the "all elements rule" appeared much earlier than *Warner-Jenkinson*. In *Water-Meter Co. v. Desper*, 101 U.S. 332 (1879), the Court held that defendant's meter did not infringe upon the patented meter because the defendant's meter lacked one material element and substituted no equivalent for the element. In *Gage v. Herring*, 107 U.S. 640 (1882), the Court dismissed the infringement complaint

that the doctrine of equivalents be applied to each element of the claim, not to the invention as a whole.¹⁹ This element-by-element analysis limits a patentee's overreaching argument of overall similarity in function. The second limitation relies on prosecution history estoppel, the central subject of contention in *Festo*.²⁰

B. PROSECUTION HISTORY ESTOPPEL

1. Inconsistency in the Court's Application of Prosecution History Estoppel

The Supreme Court applied prosecution history estoppel as early as 1879 to bar a patentee from claiming subject matter clearly abandoned during prosecution,²¹ but the doctrine of equivalents remained available to subject matter unaffected by the abandonment.²² The Court's position has not been consistent in less straightforward situations, where an amendment narrows the originally claimed subject matter, but the alleged infringing device is not clearly surrendered.

In its earliest cases, the Court applied an approach similar to the "flexible bar," which allowed the application of the doctrine of equivalents to claim elements narrowed

because all the elements of the claimed invention were not present in the defendant's product. The Court stated that every claimed element is material and the Court can only decide whether any part omitted by an alleged infringer is supplied by some other device or instrumentality which is its equivalent. *Id.* at 648. *See also* Alexander, *supra* note 8, at 565.

¹⁹ 520 U.S. at 29.

²⁰ *See* Festo, 122 S. Ct. 1831. *See also* Festo III, 234 F.3d 558 (Fed. Cir. 2000).

²¹ *See* Leggett v. Avery, 101 U.S. 256 (1879). The patentee applied for extension of seven claims, six of which were rejected for anticipation by prior art and disclaimed by the patentee. *Id.* at 258. Only the fifth claim was granted. *Id.* The patentee later filed a reissue application containing claims essentially the same as the previously disclaimed ones and was granted the patent. *Id.* The Court held the reissued patent invalid, for the patentee could not recapture claims he already abandoned. *Id.* at 259-60. *See also* Union Metallic Cartridge Co. v. United States Cartridge Co., 112 U.S. 624 (1884) (holding that patentee was estopped from claiming infringement of an equivalent structure which had been expressly disclaimed during reissuance of the patent).

²² *See* Goodyear Dental Vulcanite Co. v. Davis, 102 U.S. 222 (1880). The patentee claimed the use of "vulcanized rubber" for the making of artificial teeth and disclaimed a specific material called "gutta-percha" for the purpose. *Id.* at 227-28. The Court nevertheless proceeded with analyzing whether the accused celluloid was an equivalent of the claimed "vulcanized rubber." *Id.* at 229-30.

during prosecution. For example, in *Hurlbut v. Schillinger*, the patentee had disclaimed a portion of his invention to avoid prior art.²³ In a prior litigation, this disclaimer precluded a finding of infringement where the infringing device was found to be clearly abandoned by the disclaimer.²⁴ Nevertheless, the disclaimer did not prevent the *Hurlbut* Court from finding equivalent a device more similar to the invention than to the clearly surrendered subject matter.²⁵

Starting in the early twentieth century, however, the Supreme Court appeared to adopt a more restricted view of the doctrine of equivalents as applied to narrowed claims.²⁶ *Exhibit Supply Co. v. Ace Patents Corp.* represents the Court's furthest deviation from the "flexible bar" approach, in which the Court announced that "by the amendment [the patentee] recognized and emphasized the difference between the two phrases and proclaimed his abandonment of all that is embraced in that difference."²⁷

²³ 130 U.S. 456, 458-63 (1889). The patent involved an improvement in concrete pavements where concrete blocks were formed in detachment from each other by inserting tar-paper or its equivalent in between. *Id.* at 459-63. After reissuance of the patent, the patentee disclaimed the forming of blocks from plastic material without interposing anything in between the blocks, which the original claim encompassed. *Id.* at 463.

²⁴ *Id.* at 465-66 (discussing a prior litigation involving the patent where the patentee was barred from asserting infringement against a defendant whose pavement contained nothing between the blocks).

²⁵ *Id.* at 472. The Court found that the defendant's temporary use of a trowel or cutting instrument to divide the blocks is equivalent to the tar-paper claimed in the patent. *See also* *Sutter v. Robinson*, 119 U.S. 530 (1886). In a patent claiming a process of re-sweating tobacco leaves, the patentee narrowed his claim to a porous wooden box in order to distinguish a prior art metal box, but the Court still analyzed whether the uses of cases, boxes or packages in which tobacco leaves were originally packed by the producer was equivalent to the porous wooden box. *Id.* at 541.

²⁶ *See, e.g.*, *Hubbell v. United States*, 179 U.S. 77, 83-84 (1900) ("[L]imitations imposed by the inventor . . . must be strictly construed against the inventor and in favor of the public."); *Weber Electric Co. v. E.H. Freeman Electric Co.*, 256 U.S. 668, 677-78 (1921) (stating that when a patentee narrows his claim in order to obtain a patent, he may not resort to the doctrine of equivalents to claim the larger scope which it might have had without the amendments).

²⁷ 315 U.S. 126, 136 (1942). The patent related to the structure of a resilient contact switch used in ball rolling games. During prosecution, the patentee substituted the phrase "conduct means embedded in the table" for the original broader phrase "carried by the table," in response to a rejection by the examiner. *Id.* at 133. The Court limited the scope of the term "embedded in the table" to its literal meaning due to the amendment. *Id.* at 136.

The inconsistency in Supreme Court precedent resulted in inconsistent decisions in the lower courts, which applied both a "flexible bar" approach and a more limiting approach.²⁸ After its establishment in 1982, the Federal Circuit embraced the "flexible bar" approach in *Hughes Aircraft Co. v. United States*,²⁹ its first case concerning prosecution history estoppel, because the court believed that no reason or warrant existed for limiting application of the doctrine of equivalents to the few unamended claims.³⁰ The court further held that the effect of the amendment to the scope of available equivalents could range "from great to small to zero," depending on the nature and purpose of the amendment.³¹

A majority of cases decided by the Federal Circuit between 1984 and 1997 followed the *Hughes* reasoning and the "flexible bar" approach,³² except *Kinzenbaw v. Deere & Co.*³³ In *Kinzenbaw*, decided one year after *Hughes*, a five-judge panel refused to analyze the availability of the doctrine of equivalents to a claim element narrowed by amendment, despite the argument by the patentee that the amendment was not necessary for patentability.³⁴ The *Kinzenbaw* decision thus resembles the "complete bar" approach, which is more consistent with the Supreme Court's instruction in *Exhibit Supply* than the "flexible bar" approach.³⁵

²⁸ For a general discussion of circuit court approaches to prosecution history estoppel and the doctrine of equivalents, see Alexander, *supra* note 8, at 584-92.

²⁹ 717 F.2d 1351, 1363 (Fed. Cir. 1983).

³⁰ *Id.*

³¹ *Id.*

³² DONALD S. CHISUM, CHISUM ON PATENTS § 18.05[3][b][i], at 18-497 (2001).

³³ 741 F.2d 383 (Fed. Cir. 1984).

³⁴ *Id.* at 388-89. In a patent for a row planter, the patentee amended his original claim to include a limitation that the radius of the gauge wheel exceeded the radius of the disc, although the patent examiner's rejection was directed to another limitation. *Id.* at 388. The court nevertheless applied prosecution history estoppel and limited this claim element to its literal meaning. *Id.* at 389.

³⁵ See *Exhibit Supply*, 315 U.S. at 136.

2. The Implication of *Warner-Jenkinson* on Prosecution History Estoppel

The Supreme Court again addressed the two doctrines in *Warner-Jenkinson v. Hilton Davis*,³⁶ but still failed to resolve the confusion. The *Warner-Jenkinson* court discussed the circumstances that trigger prosecution history estoppel, but it did not reach the issue as to what range of equivalents, if any, is available once prosecution history estoppel.

In *Warner-Jenkinson*, the patentee amended during prosecution his claim of an ultrafiltration process, limiting the operative pH of the process to approximately 6.0 to 9.0.³⁷ The upper limit of pH 9.0 was added to distinguish the claim from the prior art, which disclosed an ultrafiltration process operating at pH above 9.0. However, the reason for adding a lower limit of pH 6.0 was not clear from the record.³⁸ The accused infringing process was conducted at pH 5.0, outside of the literally claimed range.³⁹

The Court declined to take the position that prosecution history estoppel applies to every amendment, regardless of the reasons underlying the amendment.⁴⁰ As to a voluntary narrowing amendment, the Court placed the burden on the patentee to establish the reason for the amendment.⁴¹ When no explanation for the amendment is established, the *Warner-Jenkinson* court held that the application of the doctrine of equivalents as to

³⁶ 520 U.S. 17 (1997).

³⁷ *Id.* at 32.

³⁸ *Id.*

³⁹ *Id.* at 23.

⁴⁰ *Id.* at 33 ("Where the reason for the change was not related to avoiding the prior art, the change may introduce a new element, but it does not necessarily preclude infringement by equivalents of that element.").

⁴¹ *Id.* The Court also instructed lower courts to determine whether the proffered reason is sufficient to overcome prosecution history estoppel as a bar to application of the doctrine of equivalents to the element added by that amendment. *Id.*

that element would be completely barred,⁴² because an amendment is presumed to have a "substantial reason" related to patentability if not proved otherwise.⁴³ The Court adopted this approach to further a claim's notice function.

The *Warner-Jenkinson* court adopted a "complete bar" to the doctrine of equivalents only in a narrow situation -- where the patentee failed to establish an explanation for the amendment -- and did not address the range of equivalents available when a reason related to patentability is offered for the amendment. However, the Court's reasoning -- that an unexplained amendment with a *presumed* substantial relationship to patentability is subject to a "complete bar" on the doctrine of equivalents - - is arguably consistent with the idea that an amendment made for a *stated* reason related to patentability should also be subject to a "complete bar." This continued lack of clarity in the Court's guidance on the scope of the doctrine of equivalents led to the debate in the Federal Circuit in *Festo III*.

II. CASE SUMMARY

A. FACTS AND PROCEDURAL HISTORY

Festo Corporation owns two patents, U.S. Patent No. 3,779,401 (the Carroll Patent), and U.S. Patent No. 4,354,125 (the Stoll Patent), for an improved magnetic rodless cylinder, a piston-driven device for moving objects that has many industrial uses.⁴⁴ Carroll added a requirement of a pair of sealing rings to his claims during a reexamination proceeding, to more specifically define his invention and to distinguish it from the prior art references.⁴⁵ Stoll added, in addition to a pair of sealing rings, a second

⁴² *Id.*

⁴³ *Id.*

⁴⁴ *Festo III* at 578-82.

⁴⁵ *Id.* at 584.

requirement that the cylindrical sleeve be made of magnetizable material, after the examiner rejected the original claims for indefiniteness under 35 U.S.C. §112.⁴⁶

Shoketsu Kinzoku Kogyo Kabushiki Co. (hereinafter SMC) made a device similar to Festo's except that SMC employed a single sealing ring with a two-way lip and it did not use a magnetizable sleeve.⁴⁷ Since SMC's device fell outside of the literal claims of the two Festo patents, the question at issue was whether SMC infringed the patents under the doctrine of equivalents.⁴⁸

The district court found that Festo's amendments were not related to the examiner's § 112 rejections, and were not made to avoid prior art.⁴⁹ The court therefore declined to apply prosecution history estoppel, and granted Festo summary judgment of infringement of the Carroll patent under the doctrine of equivalents.⁵⁰ A jury also found SMC infringed the Stoll patent under the doctrine of equivalents.⁵¹ A panel of the Court of Appeals for the Federal Circuit affirmed (*Festo I*).⁵² The Supreme Court granted *certiorari*, vacated and remanded the case to the Federal Circuit for further consideration in light of the Court's intervening *Warner-Jenkinson* decision.⁵³ After a decision by the same Federal Circuit panel as in *Festo I* on remand (*Festo II*),⁵⁴ the Federal Circuit ordered a rehearing *en banc* and in *Festo III* reversed the district court's ruling.⁵⁵

⁴⁶ *Id.* at 583.

⁴⁷ *Id.* at 582.

⁴⁸ *Id.*

⁴⁹ *Id.* at 585.

⁵⁰ *Id.*

⁵¹ *Id.* at 584-85.

⁵² *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 72 F.3d 857 (Fed. Cir. 1995).

⁵³ *Shoketsu Kinzoku Kogyo Kabushiki Co. v. Festo Corp.*, 520 U.S. 1111 (1997).

⁵⁴ *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 172 F.3d 857 (Fed. Cir. 1999).

⁵⁵ *Festo III*, 234 F.3d 558 (Fed. Cir. 2000).

B. THE FEDERAL CIRCUIT'S ANALYSIS

In order to provide a bright-line rule to the application of prosecution history estoppel, the *en banc* Federal Circuit held that prosecution history estoppel arises from any amendment that narrows a claim to comply with the Patent Act, not only from amendments made to avoid prior art.⁵⁶ More importantly, the court held that when estoppel applies, it stands as a "complete bar" against any claim of equivalence for the element that was amended.⁵⁷

The court first analyzed whether the "substantial reason related to patentability" as required by *Warner-Jenkinson* to invoke prosecution history estoppel is limited to those amendments made to overcome prior art under § 102 and § 103.⁵⁸ 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 § 112,⁵⁹ are equally important in patentability analyses, because the Patent Office will reject a patent application that fails to satisfy any of these statutory requirements.⁶⁰ The court concluded that since an amendment relating to any of these statutory requirements is an amendment made for "a substantial reason related to patentability," such an amendment triggers prosecution history estoppel.⁶¹

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

⁵⁶ *Id.* at 566.

⁵⁷ *Id.* at 574-75.

⁵⁸ *Id.* at 566. Both § 102 and § 103 relates to prior art. § 102 deals with a single piece of anticipating prior art, and § 103 deals with obviousness, where more than one piece of prior art may be combined to render an invention unpatentable. 35 U.S.C. §§ 102, 103 (2000).

⁵⁹ 35 U.S.C. §§ 101, 112 (2000). §101 relates to patentable subject matter, and § 112 relates to disclosure requirements.

⁶⁰ *Festo III*, 234 F.3d at 566.

⁶¹ *Id.* at 567.

stated reason -- creates prosecution history estoppel.⁶² Since voluntary amendments, like amendments required by the Patent Office, signal to the public that the applicant has surrendered subject matter, the court saw no reason to treat them differently.⁶³

Third, the Federal Circuit determined what range of equivalents, if any, would be available to amended claim elements subject to prosecution history estoppel,⁶⁴ a question that divided the court.⁶⁵ The eight-member majority claimed that the Supreme Court never directly addressed this question.⁶⁶ After analyzing several Supreme Court cases, including *Warner-Jenkinson*, the majority concluded that the Supreme Court only resolved the question of whether prosecution history estoppel applied, but did not address the scope of equivalents available after the estoppel.⁶⁷ The majority went on to "independently decide the issue."⁶⁸

They acknowledged that the majority of their own precedent had applied a "flexible bar" approach in deciding the scope of the equivalents.⁶⁹ Under that approach, claim amendments do not bar the doctrine of equivalents, but the available range of equivalents is limited by estoppel.⁷⁰ Nevertheless, the *Festo* majority chose to follow the stricter standard applied in *Kinzenbaw v. Deere & Co.*, where the court refused to apply the doctrine of equivalents to a claim element narrowed by amendment.⁷¹ The majority concluded that, based on the Federal Circuit's long experience, the "flexible bar"

⁶² *Id.* at 568.

⁶³ *Id.*

⁶⁴ *Id.* at 569.

⁶⁵ *Id.* at 561 (Four judges dissented to this question).

⁶⁶ *Id.* at 569.

⁶⁷ *Id.* at 569-71.

⁶⁸ *Id.* at 571.

⁶⁹ *Id.* at 572-74.

⁷⁰ *See, e.g., Modine Mfg. Co. v. United States Int'l Trade Comm'n.*, 75 F.3d 1545, 1555-56 (Fed. Cir. 1996).

⁷¹ 741 F.2d 383, 389 (Fed. Cir. 1984).

approach was "unworkable."⁷² Emphasizing the paramount importance of the notice function and the need for certainty as to the scope of patent claims,⁷³ the majority proposed a "complete bar" approach, under which no range of equivalents is available for an element amended for patentability reasons.⁷⁴ The majority reasoned that with a "complete bar," technological advances that would have otherwise lain in the unknown, undefined zone around the literal terms of a narrowed claim will not go wasted and undeveloped due to fear of litigation.⁷⁵ As for the reduced protection for 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.⁷⁶

Four judges dissented to the "complete bar" approach.⁷⁷ Judge Michel wrote a particularly lengthy dissent in which he stated that the "complete bar" approach contradicts settled law.⁷⁸ To support his opinion, he cited numerous cases that, according to him, were overturned by the majority's ruling.⁷⁹

Finally, the Federal Circuit addressed voluntary, unexplained claim amendments. Following *Warner-Jenkinson*,⁸⁰ the court held that no range of equivalents is available to those amended elements.⁸¹

Based on this analysis, the court held that prosecution history estoppel applied to the amendments made to the two patents at issue, since the amendments were made to

⁷² *Festo III*, 234 F.3d at 575.

⁷³ *Id.*

⁷⁴ *Id.* at 569.

⁷⁵ *Id.* at 576-77.

⁷⁶ *Id.* at 578.

⁷⁷ *Id.* at 598-642.

⁷⁸ *Id.* at 612.

⁷⁹ *Id.* at 613-619.

⁸⁰ 520 U.S. at 33.

⁸¹ *Festo III*, 234 F.3d at 578.

narrow the scope of the claims for reasons related to patentability.⁸² Applying the "complete bar" approach, the court easily concluded that no range of equivalents was available to the two amended claim elements, reversing the district court's ruling.⁸³ The Federal Circuit's adoption of the "complete bar" approach stood in sharp contrast to the "flexible bar" approach that had been applied for over a century, affecting the potential scope of a vast majority of patents currently in force.⁸⁴ The magnitude of the controversy in the patent community caused by this decision once again caught the attention of the Supreme Court.

C. THE SUPREME COURT'S ANALYSIS

Although the Supreme Court agreed with the Federal Circuit that a narrowing amendment made to satisfy any requirement of the Patent Act gives rise to estoppel, the Court unanimously vacated the Federal Circuit's "complete bar" approach.⁸⁵ 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.⁸⁶ Since a narrowing amendment may demonstrate what the claim is not, but may still fail to capture precisely what the claim is,⁸⁷ the Court concluded that the original basis for adopting the doctrine of equivalents still inheres in amended claims.⁸⁸

⁸² *Id.* at 591.

⁸³ *Id.*

⁸⁴ See, e.g., William M. Atkinson, Bruce J. Rose & John A. Wasleff, *Was Festo Really Necessary?*, 83 J. PAT. & TRADEMARK OFF. SOC'Y 111 (2001); Glen P. Belvis, *An Analysis of the En Banc Decision in Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co. and the Doctrine of Equivalents*, 11 FED. CIR. B.J. 59 (2002); Faith S. Fillman, *Doctrine of Equivalents: Is Festo the Right Decision for the Biomedical Industry?*, 33 ST. MARY'S L.J. 493 (2002). Since the vast majority of patents currently in force have amended claims, the "complete bar" approach greatly reduce the scope of protection to those patents.

⁸⁵ *Festo*, 122 S. Ct. at 1839-41.

⁸⁶ *Id.* at 1837.

⁸⁷ *Id.* at 1841.

⁸⁸ *Id.* ("[T]here is 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.").

The Court also found no precedent supporting the sweeping "complete bar" approach adopted by the Federal Circuit and was mindful of the settled expectations of the inventing community.⁸⁹ Since inventors who amended their claims under the previous regime had no reason to believe they were conceding all equivalents, the Court found "no justification for applying a new and more robust estoppel to those who relied on prior doctrine."⁹⁰

Following *Warner-Jenkinson*, the Court retained the limited version of the "complete bar" in situations where the patentee is unable to explain the reason for an amendment. In addition, when prosecution history estoppel applies to an amended element, the Court placed the burden on the patentee to show that the amendment does not surrender the particular equivalent in question.⁹¹ The Court provided three scenarios where the patentee can satisfy that burden: 1) the equivalent was unforeseeable at the time of the application; 2) the rationale underlying the amendment bears no more than a tangential relationship to the equivalent in question; or 3) the patentee could not reasonably be expected to have described the insubstantial substitution in question.⁹²

Applying these principles to the case at bar, the Court determined that the amendments were made for a reason relating to patentability. It held that the question is not whether estoppel applies, but what territory the amendments had surrendered. It therefore remanded the case to the Federal Circuit for further proceedings.⁹³

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ *Id.* at 1842.

⁹² *Id.*

⁹³ *Id.*

III. DISCUSSION

The Supreme Court in *Festo* addressed two issues relating to prosecution history estoppel and the doctrine of equivalents: 1) what kinds of claim amendment trigger prosecution history estoppel and 2) if prosecution history estoppel applies to an amended claim element, what is the range of equivalents available to that claim element?

A. NARROWING AMENDMENT

The Supreme Court agreed with the Federal Circuit that any narrowing amendment made to satisfy the Patent Act, including §§ 101, 102, 103 and 112, might give rise to prosecution history estoppel.⁹⁴ Although in a majority of earlier cases prosecution history estoppel was applied in the context of amendments made to avoid prior art references, it is reasonable to apply the same rationale to other narrowing amendments. The key term here is "narrowing." If a patentee narrowed her claim scope to obtain the patent, then she had relinquished the original broad claim. Therefore, she should at least be barred from broadening her narrowed claim *to the full extent of her original broad claim* through the doctrine of equivalents. To hold otherwise would permit "backdoor patenting," seriously undermining the notice function of the patent system.⁹⁵

⁹⁴ *Id.* at 1839-40.

⁹⁵ Preventing "backdoor" patenting is a principle function of prosecution history estoppel. *See, e.g.,* Leggett v. Avery, 101 U.S. 256, 259 (1879) ("The allowance of claims once formally abandoned by the applicant, in order to get his letters-patent through, is the occasion of immense frauds against the public."); Shepard v. Carrigan, 116 U.S. 593, 598 (1886) (stating that an applicant, by accepting a narrowed claim in order to get the patent, is bound by it and "cannot enlarge her patent by argument, so as to cover elements not falling within its terms, and which she had explicitly abandoned."). The Court went one step further in *Festo* in stating that courts might still need to resort to the estoppel doctrine even if the purpose for an amendment is unrelated to patentability. *Festo*, 122 S. Ct. at 1839.

The full extent of the original broad claim, however, may not be clearly defined. If an examiner's rejection is based on indefiniteness under § 112,⁹⁶ then the scope of the original term is probably uncertain. Consider, for example, a patentee that originally used the term "substantially parallel," and later removed "substantially" in response to patent examiner's indefiniteness rejection. Although the term "substantially parallel" has an uncertain scope, it certainly has a larger scope than "parallel," and should be considered a narrowing amendment. The uncertainty of the original scope, however, renders it difficult to clearly determine the surrendered subject matter. The patentee probably did not intend to abandon any scope by such an amendment. Limiting the patentee to literally "parallel" in this situation, as required by the Federal Circuit's "complete bar" approach, is arguably unfair to the patentee, and the Supreme Court's adoption of a more flexible approach alleviates this problem.

B. THE "PRESUMPTIVE BAR" APPROACH

The Supreme Court's approach can be called a "presumptive bar." According to the Court, a patentee's narrowing amendment may be presumed to be a general disclaimer of the territory between the original claim and the amended claim, therefore barring a claim of equivalence to anything falling within that territory.⁹⁷ However, in contrast to the Federal Circuit's "complete bar" approach, the Supreme Court allowed the patentee to rebut this presumption of estoppel by showing that the amendment does not surrender the particular equivalent in question.⁹⁸ The Supreme Court therefore reopened the door to the doctrine of equivalents to amended claim elements. However, the burden may not be

⁹⁶ 35 U.S.C. § 112 (2000) ("The specification should conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.").

⁹⁷ *Festo*, 122 S. Ct. at 1842.

⁹⁸ *Id.*

easy for the patentee to meet, and the Court's guiding tests -- the foreseeability, tangential relationship and reasonableness tests -- by no means provide a clear standard.

1. The Foreseeability Test

The Court provided that an amendment cannot reasonably be viewed as surrendering a particular equivalent when the equivalent was unforeseeable at the time the patent application was filed.⁹⁹ The Court adopted this test as a middle ground between the traditional "flexible bar" approach and the Federal Circuit's "complete bar" approach to better balance the patent law's protection and notice functions.¹⁰⁰ A foreseeability test does have the potential to be fair, objective, and workable, overcoming the failings of both the "complete bar" and the "flexible bar."¹⁰¹ However, the foreseeability test proposed by the *Festo* court suffers from several problems.

a. The *Festo* Foreseeability Test Conflicts with the Doctrine of Equivalents in *Graver Tank*.

The Court in *Graver Tank* regarded the case as a perfect example in which to apply the doctrine of equivalents, because it was well known, and certainly foreseeable, by those having ordinary skill in the art that manganese silicate "performs substantially the same function in substantially the same way to obtain the same result" as magnesium silicate in electric welding compositions.¹⁰² Foreseeability is thus a touchstone for the Court to invoke the doctrine of equivalents to forgive the patentee's inadvertent omissions

⁹⁹ *Id.*

¹⁰⁰ The Court largely adopted the foreseeability test from an amicus brief filed on behalf of the Institute of Electrical and Electronics Engineers (IEEE) (No. 00-1543), rewritten for publication in Conigliaro, *supra* note 6, at 1064-65.

¹⁰¹ *Id.* at 1069.

¹⁰² *Graver Tank*, 339 U.S. at 608.

in claim drafting.¹⁰³ In contrast, according to the *Festo* court, "[t]he patentee, as the author of the claim language, may be expected to draft claims encompassing readily known equivalents."¹⁰⁴ Thus, the *Festo* court turned *Graver Tank's* foreseeability test on its head, making foreseeability the standard for *barring* the application of the doctrine of equivalents.

One might reconcile the two cases by pointing out that in *Graver Tank*, the claim was not amended, while in *Festo*, the Court was addressing amended claims. However, this distinction does not warrant a contradictory application of the foreseeability standard. First, drafting original claims and amending claims serve a common function. Both represent the effort of the patentee to correctly define the scope of protection for the underlying invention. As the *Festo* court stated, while a rejection informs the patentee that a particular claim is too broad to be patentable, she may still fail to define the appropriate claim scope during amendment.¹⁰⁵ The patentee's ability to draft an appropriate claim after a rejection based on patentability does not improve greatly from her ability prior to the rejection. Therefore, if the patentee is denied application of the doctrine of equivalents to unclaimed foreseeable variations following amendment, the same standard should apply to original claims.

Second, applying a higher standard to claim amendments than to original claims exacerbates the problem of potentially inconsistent examination of patent applications at

¹⁰³ Of note is that in *Graver Tank*, the patentee was originally allowed broader claims that covered manganese silicate, but these claims were later invalidated during litigation. *See Graver Tank*, 339 U.S. at 616 (Black, J., dissenting). Therefore the patentee's failure to literally claim manganese silicate in the remaining valid claims may be argued to not result from inadvertency, but rather from PTO's wrongful grant of the broad claims. Had the PTO rejected these broad claims during prosecution, the patentee would have had an opportunity to amend the claims to literally claim manganese silicate. It can be argued that declining patentee the protection of the doctrine of equivalents in this situation is too harsh. However, the majority opinion in *Graver Tank* did not take this fact into consideration at all.

¹⁰⁴ *Festo*, 122 S. Ct. at 1842.

¹⁰⁵ *Id.* at 1841 (stating that a narrowing amendment may still fail to precisely capture what the claim is).

the U.S. Patent and Trademark Office. Since reasonable minds may differ as to whether particular claim language satisfies the patent laws' requirements, whether a claim should be amended often depends on opinions of individual patent examiners. The fact that patent examiners are overburdened with caseload and have limited time to examine each application further increases the likelihood of a less-than-uniform application of the standards for patentability.¹⁰⁶ Amendments in many cases are simply a patentee's strategy to get the patent issued without staging a lengthy appeal against the examiner. With the contradictory application of the foreseeability test to amended and unamended claims, an amendment will not only reduce an original claim's literal scope, but also *eliminate* all "foreseeable" equivalents, thus dealing a "double blow" to the scope of a claim. On the other hand, an unamended claim will be *entitled* to both its original literal scope and its full range of "foreseeable" equivalents. Therefore, inconsistency among individual patent examiners as to when amendments are required could translate into large discrepancies in the scope of protection provided by an amended claim versus an unamended claim. These arguably arbitrary discrepancies are unfair to individual patentees.

Also, the opposite roles that foreseeability plays in amended and unamended claims unduly emphasize the importance of the prosecution procedure. Two identical inventions, simply because of differences in prosecution history, may end up with very different values to the patentee. Assume, for example, the claim in *Graver Tank* had been originally drafted to cover all metal silicates. Assume further that this claim was

¹⁰⁶ The total average time an examiner spends on an application is only eighteen hours. Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U.L. REV. 1495, 1500 (2001). In addition, Professor Lemley found that litigated patents are held invalid forty-six percent of time. In fact, Professor Lemley suggested that it is more cost effective to the society to have a rational ignorance in the PTO than to examine every patent with greater care. *Id.*

rejected for lack of enablement, and then amended to cover only alkaline earth metal silicates. Based on the *Festo* reasoning, manganese silicate would have been barred as an equivalent under prosecution history estoppel because it was a foreseeable alternative. In contrast, since the original claim was actually drafted to only cover alkaline earth metal silicates, the *Graver Tank* court applied the doctrine of equivalents to cover manganese silicate, a foreseeable substitution.¹⁰⁷ This discrepancy in claim scope focuses on procedural formality rather than substance. To preserve the doctrine of equivalents, applicants will have to take greater care in drafting original claims to avoid amendments and to choose appeal over amendment when facing rejections. Such a practice will certainly increase the cost of patent prosecution. As a result, it will reward applicants with greater financial resources.¹⁰⁸

b. A Uniform Foreseeability Test Strikes a Reasonable Balance

The tension between the protection and the notice functions of the patent law demands a balanced approach. Unbalanced emphasis on either function at the expense of the other will undermine the main purpose of the patent law to "promote the Progress of Science and useful Arts."¹⁰⁹ The "complete bar" approach dramatically favors the notice function over the patent protection function. The traditional "flexible bar" approach, on the other hand, lacks the necessary measure of certainty as to the scope of patent rights.¹¹⁰ The foreseeability test provides a framework for a standard that rests reasonably on a middle ground.

¹⁰⁷ *Graver Tank*, 339 U.S. at 612.

¹⁰⁸ See discussion *infra* Part III.C.

¹⁰⁹ U.S. CONST. art. I, § 8, cl. 8.

¹¹⁰ See Conigliaro, *supra* note 6, at 1059-63.

However, the courts cannot take full advantage of the merits of the foreseeability test while *Graver Tank* applies the test in a contradictory manner to unamended claims. Compared to the traditional "flexible bar" approach, where "depending on the nature and purpose of an amendment, it may have a limiting effect from great to small to zero,"¹¹¹ the *Festo* foreseeability test provides a more workable standard. It may not be the bright-line rule that the *en banc* Federal Circuit wanted, but it is arguably a step in the right direction. To provide consistency and to better balance the protection and notice functions of the patent law, a uniform *Festo* foreseeability test should be put in place irrespective of the amendment history of the claims.¹¹²

While a uniform *Festo* foreseeability test places a heavier burden on the patentee to claim every foreseeable equivalent, the patentee is the best party to bear that burden. Nobody knows the invention better than the patentee. The foreseeability test as applied in *Graver Tank* in effect used the doctrine of equivalents to forgive inadvertent omissions in patent drafting, which overly emphasized the protection function at the expense of public notice. In addition, the application of the *Festo* foreseeability test to original claims is not as harsh to patentees as it appears, since patentees have the additional protection of the *Festo* reasonableness test.¹¹³

¹¹¹ *Hughes Aircraft*, 717 F.2d at 1363.

¹¹² In fact, Judge Rader in his concurring opinion in *Johnson & Johnston Assocs. v. R.E. Service Co.*, 285 F.3d 1046, 1056-58 (Fed. Cir. 2002), had already proposed a foreseeability test to guide the general application of the doctrine of equivalents, in contradiction to the teachings of *Graver Tank*. His proposal was opposed by Judge Lourie. *Id.* at 1063-64. See *infra* text accompanying note 117. See also *Sage Prods. Inc. v. Devon Indus., Inc.*, 126 F.3d 1420 (Fed. Cir. 1997) (holding that the patentee should bear the cost of its failure to seek protection for the foreseeable alteration of its claimed structure). Because of the special circumstances in *Graver Tank*, see *supra* text accompanying note 103, if the Court is reluctant to overrule *Graver Tank*, it should at least limit its ruling to the very narrow scenario that a broad claim encompassing the equivalent in question was originally granted by the Patent Office.

¹¹³ See discussion *infra* Part III.B.3.

c. The *Festo* Court Failed to Give Clear Guidelines as to the Administration of the Test

In addition to the inconsistency of the foreseeability test with the Court's *Graver Tank* opinion, the *Festo* court also failed to provide guidance as to the administration of the test. For example, the Court is inconsistent as to the timing of the test. At one point in its opinion, the Court expressed that a narrowing amendment should not be deemed to relinquish equivalents unforeseeable at the time of the amendment,¹¹⁴ while later in the opinion the test seems to apply at the time of application.¹¹⁵ However, the time between application and amendment may be several years apart, and the equivalents unforeseeable at the time of application may be foreseeable at the time of amendment. From the spirit of the Court's reasoning, it seems more logical to apply the foreseeability test at the time of amendment, which action triggers prosecution history estoppel.

In addition, it is not clear who should determine whether an equivalent is foreseeable or not. To promote consistency and increase predictability, it is probably better for a judge to decide. Some commentators have suggested a pretrial *Festo* hearing, either together or separate from a Markman hearing, to address the foreseeability issue.¹¹⁶ However, because patents are technical documents and meant to be understood by persons with ordinary skill in the art, presumably such persons should determine the foreseeability of the equivalent in question. Since a judge is often not a person with ordinary skill in the art, expert witnesses will likely be needed in trials to help determine

¹¹⁴ *Festo*, 122 S. Ct. at 1841 ("There is no reason why a narrowing amendment should be deemed to relinquish equivalents unforeseeable *at the time of the amendment* and beyond a fair interpretation of what was surrendered.") (emphasis added).

¹¹⁵ *Id.* at 1842 ("The equivalence may have been unforeseeable *at the time of the application.*") (emphasis added).

¹¹⁶ *See, e.g.*, Frank J. Derosa & Steven E. Halpern, *Assessing Impact of the 'Festo' Cases*, N.Y.L.J., July 29, 2002, at s4, col. 3 (2002).

the foreseeability issue. However, expert witnesses on both sides are likely to present competing views, and a crucial issue in the determination becomes credibility, which is traditionally left to a jury.¹¹⁷

Although courts are familiar with foreseeability issues in other types of cases, such as foreseeability in common law negligence, foreseeability in the determination of reliance in contracts, or foreseeability in the context of limiting damages,¹¹⁸ foreseeability of equivalents provides a unique challenge to the courts due to the frequent complexity of the underlying technology. Deciding whether a particular consequence is foreseeable due to negligence is probably different from deciding whether a particular variant of a DNA sequence is foreseeable.¹¹⁹ Courts' experience with foreseeability determination in non-patent cases is helpful, but may not provide enough guidance in the patent context.

This lack of guidance will likely lead to confusion and inconsistency in the early applications of the foreseeability test, which has already emerged in the district courts.¹²⁰

In two cases concerning infringement of the same patent by the same equivalent, the

¹¹⁷ Judge Lourie in his concurring opinion in *Johnson & Johnston*, 285 F.3d at 1063-64, opposed Judge Rader's proposal of using a foreseeability test to guide the scope of the doctrine of equivalents. See *supra* text accompanying note 112. One of his reasons is that foreseeability test will make adjudication of the doctrine of equivalents more complicated. In his opinion, foreseeability is not solely a question of law.

¹¹⁸ See Conigliaro, *supra* note 6, at 1065.

¹¹⁹ One reason that the Federal Circuit easily applied a foreseeability test in *Sage Products, Inc. v. Devron Indus., Inc.*, 126 F.3d 1420 (Fed. Cir. 1997), might be that the patent involved is easily understandable by a layperson. The patent at issue in *Sage Products* claimed a disposal container for hazardous medical waste, including hypodermic needles. *Id.* at 1422.

¹²⁰ See, e.g., *Smithkline Beecham Corp. v. Excel Pharmaceuticals, Inc.*, 214 F. Supp. 2d 581 (E.D. Va. 2002); *Glaxo Wellcome, Inc. v. EON Labs Mfg., Inc.*, No. 00 Civ. 9089 (LMM), 2002 U.S. Dist. Lexis 14923 (S.D.N.Y. Aug. 13, 2002); *Glaxo Wellcome v. IMPAX Laboratories, Inc.*, 220 F. Supp. 2d 1089 (N.D. Cal. 2002). The three cases arose from the same patent on the sustained release of an anti-depression drug. The patentee narrowed several claims by the addition of a specific sustained release agent, HPMC, through amendment. Excel used PVA, and both EON and IMPAX used HPC, instead of HPMC, as the sustained release agent. The Northern District of Virginia held that even if the use of PVA was unforeseeable at the time of amendment, the patentee should have tried to draft a category claim that encompasses PVA. *EXCEL*, 214 F. Supp. 2d at 592. The Northern District of California held that the use of HPC was foreseeable to anyone skilled in the art at the time of amendment and the patentee was barred from using the doctrine of equivalents. *IMPAX*, 220 F. Supp. at 1095. In contrast, the Southern District of New York held that whether the use of HPC was foreseeable at the time of amendment is a triable question of fact that precludes summary judgment. *EON*, 2002 U.S. Dist. Lexis 14923 at *13-14.

Northern District of California had no problem granting a summary judgment on the issue of foreseeability, while the Southern District of New York held that a jury determination was proper.¹²¹ Reconsidering *Festo* on remand, the Federal Circuit has asked the parties to submit briefs and has sought *amicus curie* briefs regarding what function a jury should play in determining whether a patent owner can rebut the presumption of estoppel.¹²²

Furthermore, for the test to achieve the appropriate balance, the Federal Circuit must apply the test sensibly. The Federal Circuit still has the opportunity to limit the test in a way that resembles a "complete bar." For example, the Federal Circuit may view all currently available technology as foreseeable. Even later developed technologies may be viewed as not entirely unforeseeable. As one commentator puts it, "[I]anguage is nearly always available to describe an invention--in hindsight."¹²³ If the Federal Circuit embraces itself with this line of reasoning, then the foreseeability test will become "the complete bar by another name."¹²⁴ Development of case law in this area is therefore critical to the viability of the test, and the Supreme Court should keep a close look at future cases from the Federal Circuit.

2. The Tangential Relationship Test

In addition to unforeseeable equivalents, the Supreme Court provided two other situations where the presumption can be rebutted: where the amendment bears only tangential relationship to the equivalent in question, or where it is unreasonable to expect

¹²¹ See *supra* text accompanying note 120.

¹²² *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 304 F.3d 1289 (Fed. Cir. 2002).

¹²³ Steve J. Frank, *Festo, Schmesto!*, IEEE SPECTRUM, July 2002, at 39.

¹²⁴ *Festo*, 122 S. Ct. at 1842.

the patentee to have claimed the equivalent in question.¹²⁵ The Court provided even less guidance for the application of these two tests.

The Court did not specify what it considers to be a tangential relationship, and no judicial precedent speaks to this issue. The most logical reading of this test is that a “tangential” amendment does not narrow the scope of a claim in a way that affects the equivalent in question. For example, if the amendment limits the size of an element, and the equivalent in question only differs from the claimed element in its weight, the amendment may bear a tangential relationship to that equivalent. The district court in *Vardon Golf Co. v. Karsten Manufacturing Corp.* adopted this interpretation.¹²⁶

3. The Reasonableness Test

The reasonableness test bears many similarities to the foreseeability test, and thus raises many of the same issues. As with the reasonableness test, the Federal Circuit must decide whether a judge or a jury should decide reasonableness.¹²⁷ Unlike the foreseeability test, however, whose major application may involve later developed technologies, the reasonableness test focuses on currently available equivalents. This test potentially softens the harsh standard that may be inherent in the foreseeability test. After all, it may be unreasonable to require the patentee to exhaust every arguably foreseeable equivalent in the world. Therefore if the patentee *reasonably* misses some, she will not be punished. While this is an equitable idea, there is almost no precedent in

¹²⁵ *Festo*, 122 S. Ct. at 1842.

¹²⁶ No. 99 C 2785, 2002 U.S. Dist. Lexis 11802 (N.D. Ill. June 27, 2002). In a patent infringement action concerning golf clubs, the court held that the amendments focused primarily on structural explanations and descriptions on the club, not the ring and dot elements in question.

¹²⁷ See *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 304 F.3d 1289 (Fed. Cir. 2002) (The Federal Circuit is seeking briefs from parties and amicus briefs on the function of jury in determining whether a patent owner can rebut the presumption).

patent law to guide its application. Without a clear standard, this test is no less uncertain than the "flexible bar."

As with the foreseeability test, this test should also be applied to unamended claims. If only reasonable omissions can be recaptured by the doctrine of equivalents following narrowing amendments, the same standard should be applied to original claims. The reasoning advanced earlier against a double standard in the foreseeability test applies with an equal force here. For example, the omission of manganese silicate from the claims in *Graver Tank*¹²⁸ was most likely unreasonable, since it was a well-known equivalent to magnesium silicate in electric welding compositions at the time of application,¹²⁹ and it could have been easily captured by a literal claim. Only a uniform application of the foreseeability and reasonableness tests will achieve the balancing goal intended by the *Festo* court.

C. Effect of *Festo* on Patent Prosecution: Greater Burdens on Patentees

The Supreme Court's *Festo* decision is a relief to patent prosecutors fearing the burdens imposed by the Federal Circuit's "complete bar" approach. However, the "presumptive bar" still differs from the traditional "flexible bar," though not as drastically as the "complete bar." To what extent the door of the doctrine of equivalents is kept open to amended claims largely depends on the Federal Circuit's interpretation of the three Supreme Court tests. In any event, *Festo* places a heavier burden than before on the shoulder of patent prosecutors, especially when facing rejections from the patent examiner: if the claim element is amended, any *foreseeable* equivalent that may *reasonably* be included in claims will be lost forever if not literally captured.

¹²⁸ *Graver Tank*, 339 U.S. at 610.

¹²⁹ *Id.* at 610-11.

Because Festo's foreseeability test is applied to amended but not unamended claims, patentees may employ three strategies to maximize the protection of the doctrine of equivalents: keeping applications "alive," appealing rejections, and drafting original claims with more care.¹³⁰ First, a patentee may try to keep the application "alive" by filing continuation applications, which keeps the door open for the addition of new claims to recapture an omitted equivalent so long as the original disclosure supports the new claims. However, this strategy requires additional costs, and the amended claims might still be held invalid due to laches if the patentee has waited too long to amend.¹³¹

Second, instead of amending the claims, a patentee may choose to appeal the examiner's rejection, especially for important inventions. Winning an appeal will prevent the necessity for amending, and will ensure the protection of the full force of the doctrine of equivalents under *Graver Tank*. Again, appeal requires increased financial and time commitment. With the increased risk of forfeiting the protection of the doctrine of equivalents, more applications may warrant appeal.

Finally, the best cause of action is to submit, whenever possible, a set of well-thought claims from the very beginning, thus avoiding unnecessary rejection from the

¹³⁰ After the Federal Circuit's *Festo III* decision, many commentators proposed various patent prosecution strategies to preserve the doctrine of equivalents, but some of the proposed strategies are unlikely to succeed. For example, in Steven H. VerSteege, *Parallel Application to Preserve the Doctrine of Equivalents in a Post Festo World*, 84 J. PAT. & TRADEMARK OFF. SOC'Y 341 (2002), the author proposed a strategy to file a broad and a narrow application for the same invention. He suggested that any amendments made to the broad application can be rewritten on a clean slate on the narrow application, therefore preserving the doctrine of equivalents on the narrow application. *Id.* at 364-67. However, the Federal Circuit has specifically stated that the relevant prosecution history includes not only the application but also the parent and grandparent applications. *See Mark I Mktg. Corp. v. R.R. Donnelley & Sons Co.*, 66 F.3d 285, 291 (Fed. Cir. 1995). Similarly, starting with a narrow claim and broadening the scope of the claim to the point of rejection by the examiner will not help either, because prosecution history estoppel applies with equal force to all claims with the same limitation. *See Intermatic Inc. v. Lamson & Sessions Co.*, 273 F.3d 1355, 1366-67 (Fed. Cir. 2001). Canceling instead of amending the broad claims is equally unavailing, since the Federal Circuit still considers the scope of the cancelled broad claim as abandoned by the patentee. *See Diversitech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 681 (Fed. Cir. 1988).

¹³¹ *See Symbol Technologies, Inc. v. Lemelson Med., Educ. & Research Found., LLP*, 277 F.3d 1361 (Fed. Cir. 2002).

examiner. This strategy requires a substantial amount of prior art research before submitting the application to the PTO, and demands high claim drafting skills on the part of the patent prosecutor. Employing this strategy will significantly increase cost in the front end, so it may not be practical for every patent application. Therefore, it is best reserved for potentially high value inventions.

Ultimately, all three strategies require additional prosecution costs, thereby favoring patentees with greater financial resources. A uniform application of the foreseeability and reasonableness tests to both amended and unamended claims would render such strategies unnecessary. Although better claims still afford better protection, the difference in claim scopes between amended and unamended claims, artificially enhanced by applying contradictory foreseeability tests to the two types of claims, will disappear, and the bias in favor of patentees with financial resources will also be reduced. Consequently, the patent law's purpose to promote progress of science and useful arts would be better served.

IV. CONCLUSION

The Supreme Court's *Festo* decision is a seminal decision that will profoundly affect patent law adjudication. It clarifies the circumstances where prosecution history estoppel should be triggered, and provides a new set of tests, the foreseeability, tangential relationship and reasonableness tests, to govern the interaction of the doctrine of equivalents and prosecution history estoppel. This new set of tests is potentially more balanced than either the "flexible bar" approach or the "complete bar" approach. However, the tests are not self-implementing and require the Federal Circuit to interpret sensibly their metes and bounds. How to apply the tests fairly and consistently may not

be an easy task. One problem of the foreseeability test is its inconsistency with *Graver Tank*. To better serve the patent community and the public, a uniform application of the foreseeability test is necessary, and *Graver Tank* should be overruled. Similarly, the reasonableness test should also be applied uniformly in both amended and unamended claims. Finally, the scope of the doctrine of equivalents will be narrower under the *Festo* tests than under the "flexible bar" approach, and the burden is greater on the patent prosecutor to draft better claims for maximum protection.