

PATENT DRAFTER ESTOPPEL: WHY DIDN'T *SAGE PRODUCTS* CREATE A NEW FORESEEABILITY
LIMITATION ON THE APPLICATION OF THE DOCTRINE OF EQUIVALENTS?

CHRISTOPHER M. KAISER*

INTRODUCTION

In 1997, the Federal Circuit decided *Sage Products v. Devon*,¹ in which the court appeared to create a new doctrine limiting the scope of the doctrine of equivalents in patent infringement cases. At the time, commentators dubbed this new doctrine “patent drafter estoppel”² and predicted that it would be “a significant development favoring potential infringers.”³ In reality, however, the Federal Circuit has backed away from creating such a “weapon for alleged infringers,”⁴ repeatedly holding that its decision in *Sage Products* represented nothing more than a straightforward application of the well-known rule against using the doctrine of equivalents to vitiate a claim limitation.

This paper will explore the Federal Circuit’s failure to create the patent drafter estoppel limitation and will attempt to determine whether the court’s decision was a good one from the perspective of advancing relevant patent law policies. Part I will describe equivalent infringement analysis and the policies that are sought to be advanced in the patent law system. Part II will examine *Sage Products* itself. Part III will discuss the two lines of thought that emerged after the *Sage Products* decision was rendered. Finally, Part IV will analyze these

* Associate, Kirkland & Ellis LLP. Juris Doctor, IIT/Chicago-Kent College of Law, 2005. Bachelor of Science, Chemical Engineering, Colorado School of Mines, 1996.

¹ 126 F.3d 1420 (Fed. Cir. 1997).

² Darius C. Gambino & Richard A. Paikoff, *A New Weapon for Alleged Infringers? “Patent Drafter Estoppel” Explored*, 10 FED. CIR. B.J. 469, 470 (2001).

³ *Id.*

⁴ *Id.* at 469.

conflicting interpretations with respect to their advancement of patent law policy and determine why the court’s decision was consistent with patent law policy.

I. GENERAL PATENT LAW BACKGROUND

A. Policies at Work in Patent Law

The United States patent law system is the result of several conflicting policy goals. Several policies behind the patent system are dictated by the United States Constitution, while others have been developed through case law to keep the system functioning more smoothly.

The patent system is provided for in the United States Constitution, which grants Congress the power “[t]o promote the Progress of Science and useful Arts, by securing for limited Times to . . . Inventors the exclusive Right to their respective . . . Discoveries.”⁵ The grant of power provides the first policy embodied in the patent system: grants of patents must “promote the Progress of Science and useful Arts.”⁶ Generally, this means that the patent system must operate in a way that promotes innovation. Also contained within the grant of Congressional power is the patent system’s second policy: by granting to inventors only the “Right to *their* respective . . . Discoveries,”⁷ the Constitution ensures that the patent system will not operate in such a way as to remove knowledge from the public domain. These twin policies—encouraging significant innovation and ensuring that, once available to the public, knowledge is never again made the subject of protection—form the constitutional underpinning of the United States patent system.

⁵ U.S. CONST. art. I, § 8, cl. 8.

⁶ *Id.*

⁷ U.S. CONST. art. I, § 8, cl. 8 (emphasis added).

Over time, the courts have refined these policies somewhat, defining several goals for the patent system that allow concepts to be evaluated to determine whether they are consistent with patent policy. The goal of encouraging significant technological advances is still alive and well.⁸ However, this goal is now seen as one half of “a careful balance,” the other side of which is encouragement of “imitation and refinement through imitation.”⁹ All patent policies therefore must be interpreted in light of how well they advance the twin goals of encouraging significant and pioneering technological advances and encouraging design-around behavior and other secondary improvements.

The additional goals of the patent system are derived from these two overarching principles. The constitutional mandate to ensure that knowledge once made available to the public does not become the subject of patent protection is enforced by a policy that “Congress may not authorize the issuance of patents whose effects are to remove existent knowledge from the public domain, or to restrict free access to materials already available.”¹⁰ The goal of encouraging secondary innovation is advanced by the patent system’s disclosure requirements, which require an inventor to divulge enough about his invention to enable others to make and use it before gaining protection for the idea.¹¹ The patent system also requires clear enough disclosure that the public is made sufficiently aware of the scope of issued patents to avoid infringing them when attempting to imitate or design around them.¹²

Thus, any new concept that purports to change the patent system for the better must support these five general policies, or at least must advance more of them than it retards. First, it

⁸ See, e.g., *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 146-47 (1989).

⁹ *Id.* at 146.

¹⁰ *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 6 (1966).

¹¹ 35 U.S.C. § 112 (2000).

¹² *Id.*; *General Electric Co. v. Wabash Appliance Corp.*, 304 U.S. 364, 369 (1938) (the strict disclosure requirement “seeks to guard against unreasonable advantages to the patentee and disadvantages to others arising from uncertainty as to their rights.”); *McClain v. Ortmyer*, 141 U.S. 419, 424 (1891) (the purpose of the disclosure requirement “is not only to secure to him all to which he is entitled, but to apprise the public of what is still open to them.”).

must encourage primary innovation, significant advances in technology. Second, it must encourage design-around behavior or other secondary innovation. Third, it must not allow knowledge that is already freely available to the public to be removed from the public domain. Fourth, it must encourage inventors to disclose the inventions fully in order to give those skilled in the art the ability to make and use the invention. Finally, it must encourage inventors to disclose their inventions clearly in order to give adequate public notice of the patent's existence and scope.

B. Infringement of Patents

Once a patent is issued, the inventor (or the person to whom she assigns the patent) has a right to exclude others from nearly any use of the patented invention.¹³ In any case where patent infringement is at issue, the courts must grapple with exactly how broad the patent's scope is and whether the alleged infringer's product falls within that scope.

While the determination of a patent's scope might seem a simple matter of construction, there are at least two problems that preclude such a rosy view of the scope determination. First, the language used by the inventor in her patent application may fall short of a perfect description of her invention, leading to fights over exactly what the language means. Even the Federal Circuit, whose mission is to create consistency by providing "a forum for appeals from throughout the country in areas of the law [such as patent law] where Congress determines that there is special need for national uniformity,"¹⁴ has not reached consensus on exactly how to carry out such a fundamental task as patent claim construction.¹⁵

¹³ 35 U.S.C. § 271(a) (" . . . whoever without authority makes, uses, offers to sell, or sells any patented invention . . . infringes the patent. ").

¹⁴ S. Rep. 97-275 (Nov. 18, 1981), *reprinted in* 1982 U.S.C.C.A.N. 11, 14.

¹⁵ *Compare* *Victronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576 (Fed. Cir. 1996) (holding that all intrinsic evidence, including the claim language, the patent specification, and the patent's prosecution history, must be evaluated before turning to extrinsic evidence, such as dictionary definitions or expert testimony) *with* *EMI Group North America, Inc. v. Intel Corp.*, 157 F.3d 887 (Fed. Cir. 1998) (holding that weighing all evidence, intrinsic or

Second, and more importantly for current purposes, accused devices may infringe patents even when they do not fit within the exact limitations defined by the patent claim language itself. Were patent scope limited to the literal scope defined exactly by the language of patent claims, it would be possible for an alleged infringer to escape liability for infringement by making only a few very insubstantial changes to the patented invention. There would be no infringement of the patent, since the alleged infringer would have produced a product outside the scope of the patent's claims, but the infringer might still have practiced the patented invention nonetheless, because language is an imprecise tool for describing the highly technical concepts at issue in patent law.¹⁶ To keep this situation from arising, to keep people from “practice[ing] a fraud on a patent,”¹⁷ the doctrine of equivalents is used to provide the patentee with scope beyond the literal words of her patent claims and to the full extent of her actual invention.

When an accused infringer makes only insubstantial changes to a patented invention, he is said to have infringed the patent under the doctrine of equivalents, or to have committed equivalent infringement (as opposed to literal infringement). Since *Graver Tank*, courts have generally (although not exclusively) used the “function-way-result” test to determine whether an accused device is equivalent to a given patent claim.¹⁸ Under this test, if the accused device achieves the same result as the patentee's invention and does so by “perform[ing] substantially the same function in substantially the same way” as the patented invention, there may be

extrinsic, simultaneously was acceptable); *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed. Cir. 2002) (holding that courts should review dictionary definitions before considering any other evidence, including intrinsic evidence, during patent claim construction). The Federal Circuit is considering this issue during en banc review in *Phillips v. AWH Corp.*, 376 F.3d 1382 (Fed. Cir. 2004).

¹⁶ This was discussed fully by the United States Supreme Court in *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 605, 607 (1950) (“To prohibit [nothing but a literally infringing device] would place the inventor at the mercy of verbalism and would be subordinating substance to form.”).

¹⁷ *Id.* at 608.

¹⁸ *Id.* (quoting *Sanitary Refrigerator Co. v. Winters*, 280 U.S. 30, 42 (1929)) (“a patentee may invoke [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.’”)

equivalent infringement.¹⁹ Otherwise, the alleged infringer's device has more than insubstantial changes from the patented invention, and there is no infringement.

C. Legal Limitations on the Doctrine of Equivalents

Perhaps because it is such a broadly stated doctrine, the doctrine of equivalents is subject to some degree of abuse. When applied, it offers patentees broader protection than they would be allowed under a strictly literal interpretation of their claim language, with the result that competitors seeking to design around the patent without committing infringement might have trouble ascertaining the actual scope of the patent's claims. For this reason, several legal limitations on the doctrine of equivalents have evolved. Each limitation restricts the range of equivalents to which the patentee is entitled, controlling the application of the doctrine of equivalents so as to limit its adverse effects on public notice of patent claim scope.

1. The All-Elements Rule

In order to maximize the public notice of patent claim scope provided by claim language, any finding of equivalent infringement must be rooted in that language. Thus, any determination of the scope of equivalents due a patent claim must take note of the language the patentee chose to use to define her invention; the doctrine of equivalents is meant only to correct for inevitable failures of language, not to substitute the court's judgment for that of the patentee. In order to ensure the patentee's chosen language is not forgotten in determining the proper scope of equivalents, the courts have developed the all-elements rule.

Under the all-elements rule, the "function-way-result" test is to be applied to each individual claim limitation separately, rather than to the claim as a whole.²⁰ This approach prevents the doctrine of equivalents from being used "to effectively eliminate [an] element in its

¹⁹ *Id.*

²⁰ Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 29-30 (1997).

entirety.”²¹ Since each patent claim comprises multiple elements or limitations, and since “[e]ach element contained in a patent claim is deemed material to defining the scope of the patented invention,”²² the equivalency test must be applied to each element separately. Because the all-elements rule protects the materiality of each claim limitation, it is often described as a rule against vitiating a limitation.

2. Prosecution History Estoppel

As with the all-elements rule, the doctrine of prosecution history estoppel exists to limit the application of the doctrine of equivalents. The Supreme Court has held that “[p]rosecution history estoppel ensures that the doctrine of equivalents remains tied to its underlying purpose.”²³ It does so by ensuring that, if a patentee voluntarily surrenders material during patent prosecution, she cannot later reclaim that material under the doctrine of equivalents.²⁴ Although the exact contours of the doctrine are still being shaped following the *Festo* decisions, prosecution history estoppel generally is applied after a court undertakes two inquiries. First, the court must determine whether the patentee made a narrowing amendment to his claim during patent prosecution.²⁵ Second, the court must determine whether the amendment was for a reason related to patentability.²⁶ *Festo* held that an amendment made to cure any defect in the patent application was an amendment for reasons related to patentability.²⁷ If an amendment was both narrowing and for patentability reasons, then prosecution history estoppel applies, and the

²¹ *Id.* at 29.

²² *Id.*

²³ *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 734 (2002).

²⁴ *Id.* at 734-35 (“Where the original application once embraced the purported equivalent but the patentee narrowed his claims to obtain the patent or to protect its validity, the patentee cannot assert that he lacked the words to describe the subject matter in question. The doctrine of equivalents is premised on language’s inability to capture the essence of innovation, but a prior application describing the precise element at issue undercuts that premise. In that instance the prosecution history has established that the inventor turned his attention to the subject matter in question, knew the words for both the broader and narrower claim, and affirmatively chose the latter.”).

²⁵ *Id.* at 736. “Narrowing” in this context suggests that the patentee surrendered subject matter or equivalent structures that, in the absence of the amendment, he could have claimed.

²⁶ *Id.*

²⁷ *Id.*

patentee may be precluded from using the doctrine of equivalents to recapture any subject matter she surrendered via the amendment.

3. Specification Dedication

Another legal limitation on the doctrine of equivalents is the doctrine of specification dedication, as laid out in the majority opinion in *Johnson & Johnston Assocs. v. R.E. Serv. Co.*²⁸ Under this doctrine, when the patentee discloses a range of possible equivalents in the patent's specification but fails to claim some of them, she is deemed to have dedicated the unclaimed equivalents to the public.²⁹ They cannot be reclaimed through the doctrine of equivalents.

4. Prior Art Preclusion

The doctrine of prior art preclusion provides an important and sometimes very broad limitation on the doctrine of equivalents. Under the prior art preclusion doctrine, the patentee cannot use the doctrine of equivalents to gain protection for equivalent structures that are within the public domain, such as structures that are part of the prior art.³⁰ This ensures that the doctrine of equivalents is not used to take knowledge out of the public domain in violation of the policy underpinning the patent system. If an accused infringer can demonstrate that his allegedly equivalently infringing device is only practicing the prior art, he will be found not to infringe under the doctrine of equivalents, since the doctrine of prior art preclusion will prevent the patentee from gaining such broad protection.³¹

²⁸ 285 F.3d 1046 (Fed. Cir. 2002).

²⁹ *Id.* at 1054 (“when a patent drafter discloses but declines to claim subject matter . . . this action dedicates that unclaimed subject matter to the public”).

³⁰ *Wilson Sporting Goods Co. v. David Geoffrey & Assoc.*, 904 F.2d 677, 684 (Fed. Cir. 1990) (“since prior art always limits what an inventor could have claimed, it limits the range of permissible equivalents of a claim”).

³¹ *Id.* Note that the Federal Circuit has been clear that the burden is actually on the patentee to show that her claims as construed to cover the accused device under the doctrine of equivalents do not encompass any prior art, rather than on the accused infringer to demonstrate the opposite. *Id.* at 685.

5. *Specification Estoppel*

Specification estoppel, sometimes referred to as the all-advantages rule, limits the doctrine of equivalents by requiring an infringing equivalent to provide all the specified advantages of the patented invention. Thus, when a patentee discloses in the patent specification multiple functions performed by a given claim limitation, the accused device must perform all of those functions in order to be found to infringe the patent.³²

The doctrine of patent drafter estoppel, the topic of this article, would, if adopted, join this list of legal limitations on the doctrine of equivalents. As discussed below, the Federal Circuit appears to have declined to create such a doctrine.

II. *SAGE PRODUCTS: THE GENESIS OF PATENT DRAFTER ESTOPPEL?*

The case of *Sage Products, Inc. v. Devon Industries, Inc.* dealt with alleged infringement of patents covering containers for safely “disposing of hazardous medical waste, including hypodermic needles.”³³ In holding that the defendant did not infringe the plaintiff’s patents under the doctrine of equivalents, the Federal Circuit at first blush appeared to have created a new legal limitation on that doctrine. To understand the new “patent drafter estoppel” doctrine, it is necessary to understand the facts of *Sage Products*.

Sage Products developed and patented “a disposal container”³⁴ for medical waste. The container was designed so that a user could dispose of the waste without coming into contact with any hazardous medical waste, such as used hypodermic syringes, already deposited in the

³² Vehicular Techs. Corp. v. Titan Wheel Int’l, Inc., 141 F.3d 1084, 1091 (Fed. Cir. 1998).

³³ *Sage Products*, 126 F.3d at 1422.

³⁴ *Id.* (citing U.S. Patent No. 4,779,728 (issued Oct. 25, 1988)).

container.³⁵ To accomplish this, Sage Products designed its containers as closed vessels with elongated slots protected by a closure mechanism with two constrictions, one above the slot and one below it.³⁶

Sage Products' claim language reflected its design. As quoted by the court, the relevant patent claim read as follows:

1. A disposal container comprising:
 - a. a hollow upstanding container body,
 - b. *an elongated slot at the top of the container body* for permitting access to the interior of the container body,
 - c. barrier means disposed adjacent said slot for restricting access to the interior of said container body, at least a portion of said barrier means comprising:
 - i. *a first constriction extending over said slot*, and
 - ii. a complementary second constriction extending below said slot, and
 - d. a closure disposed adjacent said slot.³⁷

The defendant in the case, Devon Industries, produced competing containers for disposing of hazardous medical waste. Devon Industries' containers were designed and constructed with a lid that could be lifted, exposing constrictions inside the container that allowed needles to be deposited in the container but did not allow a user to reach inside the container and contact previously disposed waste.³⁸ However, because any structure that could be called an elongated slot in Devon Industries' containers was located inside the container body, rather than "at the top of the container body,"³⁹ as required by Sage Products' patent, the court held that Devon Industries' products did not literally infringe the patent.⁴⁰

As to equivalent infringement, the Federal Circuit noted that, since the Devon Industries' product had its "first constriction," "elongated slot," and "second constriction" located inside the

³⁵ *Id.*

³⁶ *Id.*

³⁷ *Id.* (citing U.S. Patent No. 4,779,728 (issued Oct. 25, 1988)) (emphasis in original).

³⁸ *Id.* at 1423.

³⁹ U.S. Patent No. 4,779,728 (issued Oct. 25, 1988).

⁴⁰ *Sage Products*, 126 F.3d at 1423.

container, rather than on top of the container, a finding of equivalent infringement would improperly eliminate the element of Sage Products' claim that required the elongated slot to be located "at the top of the container body."⁴¹ However, the court then went on to discuss the "inherent conflict between the role of the doctrine [of equivalents] in preventing 'fraud on a patent' and the primacy of the claims in defining the scope of a patentee's exclusive rights."⁴²

If the court did in fact create a new doctrine limiting the application of the doctrine of equivalents, it must have done so in this latter discussion. In fact, the Federal Circuit did note that Sage Products' patent covered "a relatively simple structural device."⁴³ Given this simplicity of design, "a skilled patent drafter would [have] foresee[n] the limiting potential of the 'over said slot' limitation."⁴⁴ The inventor (or his patent attorney) was not prevented by any "subtlety of language or complexity of the technology"⁴⁵ from drafting a broader claim that did not include this element. Thus, given the relative simplicity of the invention, a reasonable inventor should have foreseen devices like the defendant's product and could easily have drafted his claims more broadly, so as to cover that product literally.⁴⁶ Given that Sage Products opted not to draft the claims this way, one could argue that they intended to exclude from their patent claim scope devices like that produced by Devon Industries.⁴⁷

This discussion could certainly be interpreted as creating a new legal limitation on the doctrine of equivalents. At least with "relatively simple structural device[s],"⁴⁸ like those at

⁴¹ *Id.* at 1424.

⁴² *Id.* (quoting *Charles Greiner & Co. v. Mari-Med Mfg., Inc.*, 962 F.2d 1031, 1036 (Fed. Cir. 1992)).

⁴³ *Id.* at 1425.

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *Id.* ("If Sage [Products] desired broad patent protection for any container that performed a function similar to its claimed container, it could have sought claims with fewer structural encumbrances.")

⁴⁷ *Id.* ("as between the patentee who had a clear opportunity to negotiate broader claims but did not do so, and the public at large, it is the patentee who must bear the cost of its failure to seek protection for this foreseeable alteration of its claimed structure").

⁴⁸ *Id.*

issue in *Sage Products*, the doctrine of patent drafter estoppel seems to create a foreseeability limitation. While the doctrine of equivalents may apply, its application is limited, and protection is not granted against equivalent structures that the patentee reasonably should have foreseen but chose not to claim. In fact, it is just this interpretation of *Sage Products* that excited the patent law bar shortly after the decision was handed down.⁴⁹ However, as discussed below, the subsequent interpretation of this case by the Federal Circuit demonstrates that the doctrine of patent drafter estoppel does not exist.

III. DIVERGENCE OF OPINION FOLLOWING *SAGE PRODUCTS*

Following the decision in *Sage Products*, panels of the Federal Circuit appeared to back away from the new doctrine of patent drafter estoppel, although individual judges indicated in separate opinions that they believed such a doctrine had been created.

A. Opinions Applying the Patent Drafter Estoppel Doctrine

As ostensibly articulated in *Sage Products*, the doctrine of patent drafter estoppel limits the application of the doctrine of equivalents by denying equivalent protection against structures that, while equivalent to the claimed invention, should have been foreseen by “a skilled patent drafter”⁵⁰ who was not prevented by any “subtlety of language or complexity of the technology”⁵¹ from drafting a broader claim that would have covered the foreseen equivalent structure literally. In two cases decided since *Sage Products*, separate opinions authored by Judge Rader have adopted this doctrine as a new legal limitation on the doctrine of equivalents.

⁴⁹ See, e.g., Gambino & Paikoff, *supra* note 2, at 470.

⁵⁰ *Sage Products*, 126 F.3d at 1425.

⁵¹ *Id.*

I. Vehicular Technologies

The case of *Vehicular Technologies Corp. v. Titan Wheel International, Inc.*⁵² is famous for articulating the all-advantages rule as a legal limitation on the doctrine of equivalents. However, in a concurring opinion, Judge Rader argued that the case should have been decided on a different ground: the doctrine of patent drafter estoppel articulated in *Sage Products*, rather than the all-advantages rule, should have precluded the application of the doctrine of equivalents.⁵³

Vehicular Technologies dealt with improvements to automobile locking differentials,⁵⁴ and the relevant portion of the plaintiff's patent claimed a portion of the invention as "two concentric springs bearing against one end of [a] pin."⁵⁵ The defendant's product avoided this limitation by using "a single spring and a plug fitting into the spring"⁵⁶ instead. Although both Judge Rader and the panel majority found no infringement, either literal or equivalent, Judge Rader would have reached this result through the application of the patent drafter estoppel doctrine.

Judge Rader saw a direct parallel between *Vehicular Technologies* and *Sage Products*. In both cases, "a skilled patent drafter would readily foresee the limiting potential of" the relevant patent claim limitation.⁵⁷ In neither case would the inventor or patent agent or attorney "confront the need for particularly subtle or ambiguous language."⁵⁸ Again, the patent drafter estoppel doctrine appears here as a foreseeability limitation. If a reasonable inventor should have

⁵² 212 F.3d 1377 (Fed. Cir. 2000).

⁵³ *Id.* at 1384 (Rader, J., concurring).

⁵⁴ *Id.* at 1378-79.

⁵⁵ *Id.* at 1379 (quoting U.S. Patent No. 5,413,015 (issued May 9, 1995)).

⁵⁶ *Id.*

⁵⁷ *Id.* at 1384 (Rader, J., concurring).

⁵⁸ *Id.*

foreseen the defendant's product and still chose not to claim so as to cover that product literally, the inventor cannot get patent protection against that product.

Judge Rader noted that the facts in *Vehicular Technologies* were particularly damning from a patent drafter estoppel perspective. The plaintiff had initially learned of the defendant's allegedly infringing product early enough that it could still have sought a broadening reissue of its patent, redrafting its claims so as to cover the defendant's product literally.⁵⁹ Here, the plaintiff made two errors from the perspective of the patent drafter estoppel doctrine. First, it did not draft its claims broadly enough to cover products it should have foreseen.⁶⁰ Second, even though it had an opportunity after learning of the infringement to redraft its claims to cover actual products of which it was aware, it failed to take advantage of that opportunity.⁶¹

2. *Johnson & Johnston Associates*

The majority in *Johnson & Johnston Associates Inc. v. R.E. Service Co., Inc.*⁶² used the case to help establish the rule that equivalent structures that appeared in the patent specification but were left unclaimed cannot give rise to liability under the doctrine of equivalents.⁶³ As in *Vehicular Technologies*, though, Judge Rader authored a concurring opinion, this time joined by Chief Judge Mayer, arguing that the patent drafter estoppel doctrine should have been applied.⁶⁴

Johnson & Johnston Associates developed and patented a process for protecting large sheets of thin copper foil, used in manufacturing printed circuit boards, by attaching the foil to a sturdier metal substrate sheet.⁶⁵ The patent specification described substrate sheets made of

⁵⁹ *Id.* (citing 35 U.S.C. § 251).

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² 285 F.3d 1046 (Fed. Cir. 2002).

⁶³ *Id.* at 1054-55. As the court noted, the specification dedication rule was first established in *Maxwell v. J. Baker, Inc.*, 86 F.3d 1098, 1107 (Fed. Cir. 1996).

⁶⁴ *Johnson & Johnston Associates*, 285 F.3d at 1056-59 (Rader, J., concurring).

⁶⁵ *Id.* at 1048-49 (citing U.S. Patent No. 5,153,050 (issued Oct. 6, 1992)).

several materials, including aluminum, nickel alloys, stainless steel, and polypropylene.⁶⁶

However, the claim at issue referred specifically to aluminum substrates, omitting any reference to sheets made of other materials.⁶⁷

In his concurring opinion, Judge Rader once again employed the patent drafter estoppel doctrine to limit the application of the doctrine of equivalents. In terms even more explicit than those employed in his concurrence in *Vehicular Technologies*, he referred to patent drafter estoppel as a foreseeability limitation on the doctrine of equivalents: “the doctrine of equivalents does not capture subject matter that the patent drafter reasonably could have foreseen during the application process and included in the claims.”⁶⁸ Adopting this reasoning would help to balance “the preeminent notice function of patent claims” against “the protective function of the doctrine of equivalents.”⁶⁹ Judge Rader made clear his belief that what he termed a “foreseeability bar”⁷⁰ had already been adopted by the Federal Circuit in *Sage Products*.⁷¹

Thus, in both *Vehicular Technologies* and *Johnson & Johnston Associates*, some Federal Circuit judges argued that the proper interpretation of *Sage Products* was that the case had created a new doctrine placing a legal limitation on the application of the doctrine of equivalents. This new doctrine precluded doctrine of equivalents protection against equivalent structures that the patentee reasonably should have foreseen during patent prosecution and neglected to claim literally. However, as discussed below, the majority of the Federal Circuit judges do not agree with this reading of *Sage Products*; now that the case has been interpreted multiple times, it can be said with confidence that the proper interpretation of *Sage Products* is that it did nothing more

⁶⁶ *Id.* at 1050.

⁶⁷ *Id.*

⁶⁸ *Id.* at 1056 (Rader, J., concurring).

⁶⁹ *Id.*

⁷⁰ *Id.* at 1057 (Rader, J., concurring).

⁷¹ *Id.* at 1057-58 (Rader, J., concurring).

than reaffirm and apply the all-elements rule precluding a patentee from using the doctrine of equivalents to entirely vitiate a claim limitation.

B. Opinions Applying the All-Elements Rule

Under the *Warner-Jenkinson* all-elements rule, to equivalently infringe a patent, the accused device must have an equivalent to each element of the relevant patent claim.⁷² This requirement was not met in *Sage Products*, since any interpretation of the claim that found equivalents to all the structural pieces required under the claim required one or more of those structures to be in a location at odds with the patent claim.⁷³ Under this interpretation of *Sage Products*, the Federal Circuit did not actually create any new doctrine; it simply applied the uncontroversial all-elements rule. The language in *Sage Products* that seems to create a doctrine barring patentees from seeking protection for objectively foreseeable equivalents is then dictum. This interpretation of the case has been adopted by the majority in several Federal Circuit cases.

1. *Overhead Door*

Perhaps the clearest expression of the all-elements rule interpretation of *Sage Products* comes in *Overhead Door Corp. v. Chamberlain Group, Inc.*⁷⁴ This case involved a patent on improved automatic garage door openers.⁷⁵ The patentee had developed and patented a system whereby a garage door opener could “learn” the codes associated with several transmitters; this prevented the installer or user from having to set DIP switches identically on each transmitter and on the garage door opener itself.⁷⁶ The patent claimed a system for allowing the opener to learn the code associated with a transmitter that required the user to choose a memory location

⁷² *Warner-Jenkinson*, 520 U.S. at 29-30.

⁷³ *Sage Products*, 126 F.3d at 1424 (“Each theory [of equivalent infringement] suffers from one of two alternative problems—either the elongated slot is not substantially “at the top of the container body” or there is no first constriction that extends substantially “over said slot.”).

⁷⁴ 194 F.3d 1261 (Fed. Cir. 1999).

⁷⁵ *Id.* at 1264 (citing U.S. Patent No. Re. 35,364 (issued Oct. 29, 1996)).

⁷⁶ *Id.* at 1264-65.

manually by setting a physical switch.⁷⁷ However, the accused device accomplished this learning function automatically, using software to determine where in its memory to store the new transmitter code.⁷⁸ The district court had granted summary judgment to the defendant, holding that the accused device did not infringe the patent either literally or under the doctrine of equivalents.⁷⁹

In reversing the district court, the Federal Circuit explicitly held that *Sage Products* did not limit the scope of equivalents available to the patentee.⁸⁰ It described the earlier case as applying a doctrine preventing the use of the doctrine of equivalents to “utterly writ[e] out of the claim not one, but at least two (maybe more) express limitations of the claim.”⁸¹ The doctrine of equivalents argument was clearly precluded by the actual, express language of the claim at issue.⁸² This is an interpretation of *Sage Products* as applying the all-elements rule. Noting that the plaintiff’s equivalence argument in *Overhead Door* did not require the complete vitiation of a claim element, the Federal Circuit remanded the case for consideration of the doctrine of equivalents issue.⁸³

Overhead Door did not expressly reject the patent drafter estoppel doctrine interpretation of *Sage Products*, but it did characterize the earlier case in a radically different way, as a simple application of the all-elements rule to “a relatively simple structural device.”⁸⁴ However, if *Sage Products* actually did create a new doctrine limiting the application of the doctrine of equivalents, the Federal Circuit has been remarkably reluctant to apply that doctrine. *Overhead Door* provided the court with an opportunity to interpret *Sage Products* as creating the doctrine

⁷⁷ *Id.* at 1265 (quoting U.S. Patent No. Re. 35,364).

⁷⁸ *Id.* at 1266.

⁷⁹ *Id.*

⁸⁰ *Id.* at 1271.

⁸¹ *Id.*

⁸² *Id.*

⁸³ *Id.*

⁸⁴ *Id.* (quoting *Sage Products*, 126 F.3d at 1425).

of patent drafter estoppel, but the court declined the invitation and instead merely applied an existing limitation on the doctrine of equivalents.

2. *Johnson & Johnston Associates*

As noted in Judge Rader's concurrence, discussed above, the majority opinion in *Johnson & Johnston Associates* is consistent with either interpretation of *Sage Products*. The Federal Circuit held that, because the patentee in *Johnson & Johnston Associates* had disclosed several possible substrate materials but had chosen to claim only aluminum, there could be no doctrine of equivalents protection against a defendant whose products used one of the disclosed but unclaimed substrate materials.⁸⁵ Judge Rader, in his concurring opinion, argued that doctrine of equivalents protection was unavailable because the disclosure of other substrate materials in the patent specification showed that those materials were foreseeable to the patentee at the time of application.⁸⁶ However, the majority refused to go this far, holding instead that disclosure of an equivalent combined with a failure to claim that equivalent precluded protection for that equivalent because it showed a conscious decision on the part of the patentee to dedicate the disclosed and unclaimed subject matter to the public.⁸⁷

Johnson & Johnston Associates, then, is another example of the Federal Circuit's reluctance to adopt patent drafter estoppel as a new legal limitation on the doctrine of equivalents. As an en banc decision, it is highly indicative of the opinion of the court as a whole, rather than simply of a few renegade judges. The Federal Circuit seems either to believe that no new doctrine was created in *Sage Products* or that the new doctrine should be subordinated to existing limits on the doctrine of equivalents.

⁸⁵ *Johnson & Johnston Associates*, 285 F.3d at 1055.

⁸⁶ *Id.* at 1056 (Rader, J., concurring).

⁸⁷ *Id.* at 1054-55.

3. *Fin Control Systems*

The Federal Circuit also rejected the patent drafter estoppel interpretation of *Sage Products* in *Fin Control Systems Pty, Ltd. v. OAM, Inc.*⁸⁸ This case involved a patent on removable fins for surfboards.⁸⁹ In relevant part, the patentee had claimed a system for attaching the removable fins to a surfboard that involved parts of the fin being “laterally engage[ed] . . . [by] means applying lateral force to” those parts.⁹⁰ The allegedly infringing product used a similar system that attached the removable fins to a surfboard at the front surface of the relevant structure (rather than at the left or right side, as would be required to meet the “operating laterally” limitation).⁹¹

In holding that the accused product did not infringe the patent under the doctrine of equivalents, the Federal Circuit used *Sage Products*. The court affirmed the lower court’s holding that finding equivalent infringement “would improperly read the ‘lateral’ and ‘side’ limitations out of [the claim at issue].”⁹² In making this holding, the court cited *Sage Products*, implicitly suggesting that the holding of that case related more to the rule against vitiating a claim limitation than to a new doctrine imposing a foreseeability limitation on the doctrine of equivalents.⁹³ In a parenthetical comment, the court described *Sage Products* as holding that “reading limitations out of the claims, including by interpreting limitations in such a way that they do not have their normal meaning, is inappropriate in an analysis pursuant to the doctrine of equivalents,”⁹⁴ a clear endorsement of the view that *Sage Products* merely applied the all-

⁸⁸ 265 F.3d 1311 (Fed. Cir. 2001).

⁸⁹ *Id.* at 1313 (citing U.S. Patent No. 5,464,359 (issued Nov. 7, 1995)).

⁹⁰ *Id.* at 1316 (quoting U.S. Patent No. 5,464,359 (issued Nov. 7, 1995)). The specification also included language with the same “operating laterally” limitation. *Id.* at 1313 (quoting U.S. Patent No. 5,464,359 (issued Nov. 7, 1995)) (“The tabs may be fixed within the plug recesses by means which laterally engage the tabs. . . .”).

⁹¹ *Id.* at 1314.

⁹² *Id.* at 1320.

⁹³ *Id.* (citing *Sage Products*, 126 F.3d at 1424-26).

⁹⁴ *Id.* (citing *Sage Products*, 126 F.3d at 1424-26).

elements rule rather than creating a new doctrine. Even the language used by Judge Rader to support the patent drafter estoppel interpretation of *Sage Products* was appropriated by the majority in *Fin Control Systems* as support for the all-elements rule interpretation.⁹⁵

In *Overhead Door* and *Johnson & Johnston Associates*, the Federal Circuit majority was able to avoid adopting the patent drafter estoppel interpretation of *Sage Products* by applying an already-existing doctrine to limit the application of the doctrine of equivalents, leaving open the question of whether, under some circumstances, *Sage Products* might later be interpreted as Judge Rader suggested it should be. *Fin Control Systems* forecloses this possibility, though, since the language that arguably could support the patent drafter estoppel interpretation is shown to be merely an amplification of the rule against entirely vitiating a claim limitation.

4. *SciMed Life Systems*

In *SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc.*,⁹⁶ the Federal Circuit clearly articulated its interpretation of the ambiguous language in *Sage Products*. The earlier case was described as having “determined that because the scope of the claim was limited in a way that plainly and necessarily excluded a structural feature that was the opposite of the one recited in the claim, that different structure could not be brought within the scope of patent protection through the doctrine of equivalents.”⁹⁷ This interpretation makes no mention of a foreseeability limitation; rather the important inquiry under the *SciMed Life Systems* interpretation of *Sage Products* is whether the patent in some way “clearly exclude[s] certain subject matter, [thereby] implicitly disclaim[ing] the subject matter that was excluded.”⁹⁸

⁹⁵ *Id.* at 1321 (quoting *Sage Products*, 126 F.3d at 1425) (“A skilled patent drafter would foresee the limiting potential of the [‘lateral’] limitation.”).

⁹⁶ 242 F.3d 1337 (Fed. Cir. 2001).

⁹⁷ *Id.* at 1346 (citing *Sage Products*, 126 F.3d at 1425; *Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp.*, 149 F.3d 1309, 1317 (Fed. Cir. 1998)).

⁹⁸ *Id.*

From these cases, the appropriate interpretation of *Sage Products* can be derived. Far from creating a new doctrine denying doctrine of equivalents protection to objectively foreseeable equivalents, as suggested by Judge Rader, the Federal Circuit merely reaffirmed the all-elements rule precluding a patentee from reclaiming under the doctrine of equivalents subject matter that was disclaimed under the literal claim language.

The cases interpreting *Sage Products* demonstrate the ways in which a patentee might disclaim subject matter that could not be reclaimed under the doctrine of equivalents. In *Johnson & Johnston Associates*, the patentee declined to claim an allegedly equivalent structure, even though it described that structure in the patent specification.⁹⁹ In *Fin Control Systems*, finding the defendant's structures equivalent to the patent claim limitations would have required giving those limitations meanings widely divergent from their normal definitions.¹⁰⁰ *Sage Products*, then, merely provides yet another way in which a patentee can inadvertently disclaim subject matter: the patentee in *Sage Products* worded its claim such that finding an equivalent to one limitation necessarily required reading another limitation out of the claim.¹⁰¹ This is the correct interpretation of *Sage Products* in light of subsequent cases. A patentee cannot recover via the doctrine of equivalents any subject matter that is disclaimed in her patent, either explicitly or implicitly. *Sage Products* slightly expanded the all-elements rule; in addition to requiring an equivalent to each element, the rule post-*Sage Products* clearly also precludes eliminating one element in order to find an equivalent to another element.

⁹⁹ 285 F.3d at 1050.

¹⁰⁰ 265 F.3d at 1320.

¹⁰¹ 126 F.3d at 1424.

IV. SHOULD THE PATENT DRAFTER ESTOPPEL INTERPRETATION HAVE PREVAILED?

As is clear from the discussion above, the Federal Circuit has discarded the patent drafter estoppel interpretation of *Sage Products*, and no such foreseeability limitation on the application of the doctrine of equivalents appears to exist under current Federal Circuit jurisprudence. Was this the correct interpretation? The Federal Circuit had the opportunity after *Sage Products* to use the case to define a new doctrine requiring patentees to claim literally any equivalent structure that was reasonably foreseeable; was the court correct to decline to take this opportunity? As shown below, these questions can be answered in the affirmative. The court's decision was correct both because it avoided creating intractable litigation problems and because it comports with relevant patent law policy.

A. The Best Argument for the Patent Drafter Estoppel Doctrine

As Judge Rader phrased it, the best argument for adopting the doctrine of patent drafter estoppel is that it greatly amplifies the degree to which patent claim language can notify the interested public of the actual scope of issued patents.¹⁰² This argument sounds reasonable in light of the enhancement to the public notice function provided by other legal limitations on the doctrine of equivalents. In fact, while each of the patent system policies discussed above¹⁰³ is advanced by some limitations on the doctrine of equivalents and restrained by others, the policy of providing the interested public with adequate notice of the scope of issued patents is uniformly advanced by all of the existing doctrines limiting the application of the doctrine of

¹⁰² *Johnson & Johnston Associates*, 285 F.3d at 1056 (Rader, J., concurring) (the principle that “the doctrine of equivalents does not capture subject matter that the patent drafter reasonably could have foreseen during the application process and included in the claims . . . enhances the notice function of claims by making them the sole definition of invention scope in all foreseeable circumstances”).

¹⁰³ See *supra*, notes 5–12 and accompanying text.

equivalents.¹⁰⁴ When Judge Rader suggests that the patent drafter estoppel doctrine will provide a similar “enhance[ment of] the public notice function of claims,”¹⁰⁵ he is relying on this presumed truism: the doctrine of equivalents limits the ability of the public to determine the scope of an issued patent from documents that are publicly available, such as the patent claims themselves, so any limitation on the application of the doctrine must increase public notice. However, as discussed below,¹⁰⁶ the issue is not nearly this simple, and Judge Rader’s reliance proves ill-placed.

1. Encouraging Significant Technological Advances

While limitations on the doctrine of equivalents consistently advance public notice, most of the doctrines limiting the doctrine of equivalents do not help to encourage significant, pioneering technical innovations, since these limiting doctrines generally operate by limiting the scope of protection available to the inventor, providing a smaller reward for creating a pioneering invention and thereby reducing the incentive to invent. However, the doctrine of prior art preclusion does at least indirectly advance the policy of encouraging pioneering technical innovation. The prior art preclusion doctrine precludes an inventor from receiving doctrine of equivalents protection against any equivalent structure which is a part of the prior art.¹⁰⁷ Thus, this doctrine tends to encourage inventors to direct their efforts towards inventions that have few equivalents in the public domain. Pioneering inventions, by definition, represent greater advances past the current state of the art than do inventions merely refining existing technology. Thus, pioneering inventions are incentivized by the doctrine of prior art preclusion.

¹⁰⁴ See *infra*, notes 107–109 and accompanying text.

¹⁰⁵ *Johnson & Johnston Associates*, 285 F.3d at 1056 (Rader, J., concurring).

¹⁰⁶ See *infra*, notes 109 and accompanying text.

¹⁰⁷ *Wilson Sporting Goods*, 904 F.2d at 684.

While the prior art preclusion doctrine helps advance the goal of encouraging significant technological advances, the other existing limitations on the doctrine of equivalents do not advance this goal. Since the limiting doctrines have inconsistent effects on the goal of encouraging pioneering technical advances, and because most of these doctrines do not help achieve this goal, the advancement of this policy cannot be the driving force behind the legal limitations on the doctrine of equivalents. Like most of the limiting doctrines, the doctrine of patent drafter estoppel also does not encourage inventors to pursue pioneering technical innovations.

2. Encouraging Refinement through Imitation

In contrast to the policy of encouraging significant technological advances, the limitations on the doctrine of equivalents generally do help achieve the goal of encouraging modest advances in technology and refinement through imitation. In each case, the limiting doctrine increases public notice of the scope of issued patents, which makes it easier for inventors to improve upon previously patented inventions without fear of being accused of infringement.

Once again, the exception to the general trend is the doctrine of prior art preclusion. This doctrine merely allows the public the freedom to practice the prior art where they might not otherwise be able to do so. Since the prior art represents neither a significant technological advance nor a modest advance achieved through refinement, allowing the public to practice the prior art can hardly be said to advance either policy encouraging technological innovation. However, because prior art preclusion has a different effect on the goal of encouraging refinement through imitation than do the other legal limitations on the doctrine of equivalents, this policy goal cannot be the chief driving force behind those limiting doctrines.

3. Preserving Knowledge Already in the Public Domain

With the exception of prior art preclusion, none of the doctrines limiting the application of the doctrine of equivalents has any great effect on achieving the goal of denying patent protection for any knowledge already within the public domain. For the most part, these legal limitations limit patent scope by denying protection to equivalent structures that are neither in the public domain nor protected under the literal language of the patent claims.

As with the policies of encouraging primary and secondary inventiveness, the exception here is again the doctrine of prior art preclusion. By denying the patentee protection for equivalent structures that appear in the prior art and that are therefore in the public domain, this doctrine helps to preserve the integrity of the public domain. Under the doctrine of prior art preclusion, patent protection is simply not available, under either a literal infringement or an equivalent infringement theory, for anything already available to the public.

Again, the various legal limitations on the doctrine of equivalents have differing effects on the advancement of the policies at work in the patent system. The doctrine of prior art preclusion advances the goal of denying protection for knowledge already within the public domain, while the remaining doctrines have no effect on the achievement of this goal. Since the doctrines largely do not advance this policy, and since they have differing effects, protecting the integrity of the public domain cannot be the driving force behind limitations on the doctrine of equivalents.

4. Encouraging Complete and Adequate Disclosure of Inventions

Perhaps the most complicated set of effects on patent policy of the various doctrine of equivalents-limiting doctrines occurs in the area of encouraging complete disclosure of new inventions. This policy does not drive the limits on the doctrine of equivalents, since the limiting

doctrines, to the extent they have any effect at all, generally have negative effects on the advancement of the goal of complete disclosure.

Neither the all-elements rule nor prior art preclusion has any significant effect on encouraging complete disclosure of inventions. However, the doctrine of prosecution history estoppel negatively impacts the policy of encouraging inventors to disclose their inventions fully. By making greater disclosure during patent prosecution, the patentee provides later accused infringers with the ammunition needed to mount a defense based on prosecution history estoppel. Thus, greater disclosure results in a patent whose scope is more limited. Patent applicants naturally seek the broadest patent protection possible, so the doctrine of prosecution history estoppel creates an incentive to disclose as little as possible.

The doctrine of specification dedication operates in a similar way. By removing from the scope of an issued patent any equivalent structures that appear in the specification but not in the literal claim language, this doctrine creates an incentive for patentees to disclose no more than absolutely necessary for their claims to be allowed. This is contrary to the patent policy of encouraging full disclosure of inventions.

While the doctrine of specification dedication might discourage a patentee from disclosing what he considers unpatentable equivalent structures, the doctrine of specification estoppel, or the all-advantages rule, creates an incentive for patent applicants to avoid disclosing all the advantages their design might possess. Any advantage disclosed could potentially be used against the patentee later to limit the scope of protection afforded under the issued patent.

Thus, the policy of encouraging complete disclosure of inventions cannot be the chief driving force behind the various legal limitations on the doctrine of equivalents. At best, those

limiting doctrines have no effect on the advancement of the disclosure policy, and at worst they discourage efforts to achieve full disclosure.

5. Increasing Public Notice of the Scope of Issued Patents

The final patent law policy, that of ensuring that the interested public is well-informed of the scope of issued patents, is advanced by all of the doctrines that limit the application of the doctrine of equivalents. This policy, then, must be the main driver behind the limitations, and an argument that the new doctrine of patent drafter estoppel advanced this policy would therefore be the best argument for the adoption of the new doctrine.

With the all-elements rule, the interested public is at least made aware of the elements that must be present to infringe an issued patent. This allows later inventors seeking to design around the patent to focus their efforts on removing an element or creating a design with a non-equivalent structure in place of a necessary element. Without the all-elements rule, the doctrine of equivalents might be applied to a patent claim as a whole, greatly expanding the number of possible equivalent structures and making the exact scope of the patent claim difficult to ascertain. Thus, the all-elements rule advances the patent system's goal of increasing public notice of the scope of issued patents.

Similarly, the doctrine of prosecution history estoppel greatly advances the interested public's knowledge of the scope of issued patents. The doctrine limits the scope of issued patents based entirely upon the prosecution history, which is available to any interested member of the public. The limitation is also applied in a mostly predictable way. At the very least, with the doctrine of prosecution history estoppel, the interested public knows that no equivalent structures disclaimed in the prosecution history may be claimed under the doctrine of equivalents.

Specification dedication has a similar effect on the goal of increasing public notice of the scope of issued patents, although its effect is smaller than that of either the all-elements rule or the doctrine of prosecution history estoppel. With the doctrine of specification dedication, competitors and other interested members of the public know for certain that any equivalent structure disclosed in the specification but not claimed is fair game for use in an invention that attempts to design around the patent in question. Without the doctrine, these structures might be within the scope of patent protection under the doctrine of equivalents, and competitors might be forced to guess at the actual scope of the patent.

Similarly, the doctrine of prior art preclusion makes it clear to the interested public that any equivalent structure falling within the public domain may be incorporated into a later invention. The rule helps to make the limits of patent scope clear to the public.

Finally, the doctrine of specification estoppel helps to increase public notice of the scope of issued patents by making the scope of patent protection depend upon the advantages disclosed in the specification. The specification is public information, easily available to anyone aware of the patent. The specification estoppel doctrine ensures that the publicly-known specification is tied to the scope of patent protection, increasing public notice of the patent's scope.

Thus, the existing doctrines that limit the application of the doctrine of equivalents all advance the patent system's goal of increasing public notice of the scope of issued patents. If there is an argument to be made for the adoption of the patent drafter estoppel doctrine, it must be that it also helps achieve this goal. This is exactly what the proponents of the new doctrine suggest. In his concurrence in *Johnson & Johnston Associates*, Judge Rader suggests that adopting the patent drafter estoppel doctrine would "enhance[] the notice function of claims."¹⁰⁸ The reasoning behind this view is simple and, at first glance, beguiling. The doctrine of

¹⁰⁸ *Johnson & Johnston Associates*, 285 F.3d at 1056 (Rader, J., concurring).

equivalents provides a patentee with a broader scope of protection than mere literal interpretation of his patent claims would allow. This excess protection is ill-defined, since its contours are never explicitly located and are held to encompass a particular device only after extensive litigation. Thus, the doctrine of equivalents is a barrier to achieving complete public notice of the scope of patent claims. Any limitation on the application of the doctrine of equivalents, then, must increase public notice. As shown below,¹⁰⁹ even this best argument for the adoption of the patent drafter estoppel doctrine does not hold up under closer scrutiny.

B. Litigation Implications of the Patent Drafter Estoppel Doctrine

Had the Federal Circuit created a new patent drafter estoppel doctrine in *Sage Products*, it would have created serious problems for patent infringement litigants and for courts adjudicating patent infringement cases. Thus, the court made the correct decision when it declined to interpret its *Sage Products* decision as creating such a doctrine.

To understand the problems the patent drafter estoppel doctrine would create in patent infringement litigation, one need only recognize that the doctrine would require the court to assess whether a given structure, found to be equivalent to a limitation contained in the patent claim at issue, would have been foreseeable to the reasonable inventor at the time the patentee applied for her patent.¹¹⁰ The term of a patent generally ends 20 years after date on which the patent's application was filed.¹¹¹ Thus, a foreseeability determination under the patent drafter estoppel doctrine might be made as long as 20 years after the date on which the foreseeability is to be evaluated.¹¹² In many cases, the patent itself would offer insufficient evidence to determine

¹⁰⁹ See *infra*, note 140, and accompanying text.

¹¹⁰ *Johnson & Johnston Associates*, 285 F.3d at 1056 (Rader, J., concurring); *Vehicular Technologies*, 212 F.3d at 1384 (Rader, J., concurring).

¹¹¹ 35 U.S.C. § 154(a)(2) (2000).

¹¹² In fact, given that litigation in patent infringement cases can be lengthy, the determination may occur even later than this.

exactly what was foreseeable at the time the patent was prosecuted. Thus, expert testimony would be needed, creating a significant new expense for litigants on both sides and requiring judges and juries to assess the credibility of witnesses in an entirely new area.

In many ways, the foreseeability determinations that would need to be made under the patent drafter estoppel doctrine resemble the determinations that courts already struggle with in the area of patent obviousness. Obviousness determinations require the court to investigate whether the invention “would have been obvious at the time the invention was made to a person having ordinary skill in the art to which [the invention] pertains.”¹¹³ This is similar to the foreseeability determination that the patent drafter estoppel doctrine would require, because it forces courts to evaluate the knowledge of typical practitioners in a relevant field at a point in time remote from that when the determination is made.

Given that the two determinations are qualitatively similar, they might be expected to experience similar pitfalls. For example, in determining whether an invention is obvious, courts have been warned against using hindsight, since all inventions seem more obvious after they are made than they did beforehand.¹¹⁴ To ensure that the disclosure of the patentee’s own invention is not used against her in order to render the invention obvious, courts have developed “objective evidence of nonobviousness,”¹¹⁵ factors which must be considered when making an obviousness determination. These factors include “commercial success, long felt but unsolved needs, [and] failure of others,”¹¹⁶ and, “when present [they must] always be considered as an integral part of the analysis.”¹¹⁷

¹¹³ 35 U.S.C. § 103(a) (2000).

¹¹⁴ *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983) (holding that courts should avoid “fall[ing] victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher.”).

¹¹⁵ *Id.* (citing *In re Sernaker*, 702 F.2d 989, 996 (Fed. Cir. 1983)).

¹¹⁶ *Graham*, 383 U.S. at 17.

¹¹⁷ *W.L. Gore & Associates*, 721 F.2d at 1555.

Determination of a given equivalent structure's foreseeability at the time of patenting would suffer from a similar problem. At the time of litigation, the defendant (and possibly others as well) will have developed the equivalent in question. It is not difficult to imagine the existence of the equivalent structure offering courts an opportunity to improperly use hindsight to determine that a reasonable inventor should have been able to foresee the equivalent at the time the patent was applied for. Objective considerations similar to those used in obviousness determinations would need to be developed, and these considerations would greatly add to the length and complexity of patent infringement litigation.

The difficulty inherent in making foreseeability determinations in patent infringement cases is not immediately apparent from the cases in which Judge Rader argued that the patent drafter estoppel doctrine should be applied. *Sage Products*, *Vehicular Technologies*, and *Johnson & Johnston Associates* all involved patents that provided completely intrinsic evidence of objective foreseeability of equivalents, making resort to evidence outside the patent unnecessary. In *Sage Products*, the invention was "a relatively simple structural device,"¹¹⁸ something that surely is not guaranteed in all doctrine of equivalents cases. A much more complicated invention would lead to foreseeability determinations that were more difficult to make and therefore required much more information and a greater commitment of judicial resources.

In *Johnson & Johnston Associates*, the equivalents in question were actually disclosed in the specification without being claimed.¹¹⁹ Clearly, if the patentee itself knew enough about the equivalent substrate materials to disclose them at the time it filed its patent application, those equivalent materials were foreseeable. Thus, the foreseeability determination in *Johnson &*

¹¹⁸ *Sage Products*, 126 F.3d at 1425.

¹¹⁹ *Johnson & Johnston Associates*, 285 F.3d at 1050.

Johnston Associates was trivial, masking the difficulty of the determination process in the typical patent infringement case.

Similarly, the patentee in *Vehicular Technologies* was aware of the defendant's equivalent structure very shortly after receiving its patent, since it had the opportunity to seek a broadening reissue that encompassed the defendant's product in its literal claim language.¹²⁰ The period during which a broadening (as opposed to a narrowing) reissue can be sought is only "two years from the grant of the original patent."¹²¹ Development of an equivalent within such a short time period may suggest that, at the time the patent was issued, there is a good chance that the equivalent technology was foreseeable. Such circumstances are unlikely to be present in all doctrine of equivalents cases, though. Judge Rader's patent drafter estoppel doctrine may be capable of being applied in cases where foreseeability determinations are so easy to make, but its application in more complicated cases would likely be much more impractical. Given that similar limits on the doctrine of equivalents are possible using only already-existing doctrines, the need for such an expensive and cumbersome new doctrine seems unclear.

C. Policy Implications of the Patent Drafter Estoppel Doctrine

In addition to creating serious practical problems for litigants and courts, the adoption of the patent drafter estoppel would be detrimental to the policies underlying the patent law system. Those policies include encouraging significant technological advances,¹²² encouraging secondary advances in technology that build upon prior significant advances,¹²³ ensuring that no knowledge is removed from the public domain,¹²⁴ encouraging dissemination of technological information

¹²⁰ *Vehicular Technologies*, 212 F.3d at 1384 (Rader, J., concurring).

¹²¹ 35 U.S.C. § 251 (2000).

¹²² *Bonito Boats*, 489 U.S. at 146-47.

¹²³ *Id.* at 146.

¹²⁴ *Graham*, 383 U.S. at 6.

via disclosure of new inventions,¹²⁵ and ensuring that the scope of issued patents is clear so that competitors can operate without committing infringement.¹²⁶ The patent drafter estoppel doctrine generally does a poor job of advancing these policy goals, compared with simple application of existing legal limitations on the doctrine of equivalents.

1. Encouraging Significant Technological Advances

A primary purpose of the patent law system is to encourage significant, pioneering technological advances.¹²⁷ This goal is achieved “by securing . . . to . . . Inventors the exclusive Right to their . . . Discoveries.”¹²⁸ Because the patentee has a right to exclude others from practicing the invention, she can invest time, money, and effort in opening a new area of technology, secure in the knowledge that her patent will allow her to recoup her investment through sales in a market where no one else is allowed to compete without first getting her permission. Because it depends for its advancement upon the creation of a patent monopoly, the goal of encouraging pioneering inventions is most greatly advanced when the terms of that monopoly are most favorable to the inventor. Thus, any restriction in the subject matter the patentee may protect under her patent reduces the incentive to invent and acts as a barrier to achieving the policy goal of encouraging pioneering technological advances.

From the perspective of this policy, the doctrine of equivalents is a useful tool. At worst, it ensures that the patent right is not completely gutted of all meaning, since it allows the patentee to defend her patent rights even when an infringer makes a few insubstantial changes to the invention. At most, it allows the patentee somewhat broader coverage than she would be allowed under her literal language. Either way, the scope of the patentee’s right to exclude is

¹²⁵ 35 U.S.C. § 112 (2000).

¹²⁶ *Id.*; *Wabash Appliance*, 304 U.S. at 369.

¹²⁷ *Bonito Boats*, 489 U.S. at 146-47.

¹²⁸ U.S. CONST. art. I, § 8, cl. 8.

greater with the doctrine of equivalents than without it. The doctrine of equivalents thus helps to encourage the development of significant and pioneering inventions.

If the doctrine of equivalents helps achieve the policy goal of encouraging significant technological advances, any legal limitation on the doctrine of equivalents must frustrate that goal. This is not to suggest that some limits are not necessary. After all, the language of the claims is paramount, and the doctrine of equivalents cannot be used to grant the patentee protection against equivalent structures that are clearly excluded by her chosen claim language.¹²⁹ However, the imposition of a new legal limitation, such as that represented by the patent drafter estoppel doctrine, is contrary to the policy of encouraging inventors to invest time and effort in developing pioneering technological advances.

2. Encouraging Secondary Technological Advances

The patent system seeks to encourage significant and pioneering technological innovations, but this is not the only goal of the system. It is balanced against “the recognition that imitation and refinement through imitation are both necessary to invention itself and the very lifeblood of a competitive economy.”¹³⁰ This balance recognizes that an important goal of the patent system is to encourage inventors to build upon the earlier advances of others. The patent system is designed to achieve this goal by requiring patentees to disclose their inventions before being granted patent protection. The disclosure of new inventions helps educate the interested public about the current state of the art, suggesting new avenues of inquiry and providing a baseline for further innovation.

Unlike the encouragement of primary innovation, the goal of encouraging secondary innovation is frustrated by a strong doctrine of equivalents. If the doctrine of equivalents is

¹²⁹ *SciMed Life Systems*, 242 F.3d at 1345 (“A particular structure can be deemed outside the reach of the doctrine of equivalents because that structure is clearly excluded from the claims. . .”).

¹³⁰ *Bonito Boats*, 489 U.S. at 146.

relatively unrestricted, patentees may use it to foreclose experimentation by others in areas closely related to the patented technology (but outside the literal claim language). By contrast, a closely circumscribed doctrine of equivalents allows secondary inventors to focus their efforts in technical areas very closely related to the patent in question without running the risk of infringing the patent. Thus, any legal limitation on the doctrine of equivalents will help to achieve the goal of encouraging secondary innovation via “refinement through imitation.”¹³¹

As a new legal limitation on the doctrine of equivalents, then, the doctrine of patent drafter estoppel could be expected to advance the policy goal of encouraging secondary innovation. Assuming that patentees would not radically change their claim drafting strategy in response to the new limitation, the doctrine of patent drafter estoppel would limit the range of equivalents available to a patent holder. Since fewer equivalent structures would therefore be protected under the patent, the patentee would have less ability to interfere with later innovators operating in closely related areas. With greater freedom to investigate related technologies, secondary innovators would be more encouraged to continue their work were the Federal Circuit to adopt the doctrine of patent drafter estoppel.

3. Ensuring No Knowledge is Removed from the Public Domain

In addition to balancing the encouragement of primary and secondary invention, the patent law system also has several other policy goals, including ensuring that no invention or knowledge becomes protected under a patent once it has entered the public domain.¹³² Neither the doctrine of equivalents nor its associated legal limitations have any significant effect on the achievement of this policy goal.

¹³¹ *Id.*

¹³² *Graham*, 383 U.S. at 6 (“Congress may not authorize the issuance of patents whose effects are to remove existent knowledge from the public domain, or to restrict free access to materials already available.”).

The classic operation of the doctrine of equivalents allows a patentee protection against products developed during his patent term that use technology that did not exist at the time the patent was applied for and issued, if those products accomplish the same result as the invention and do so in substantially the same way in order to carry out substantially the same function.¹³³ This simply gives the patentee protection against any embodiment of his invention, rather than only the subset of embodiments that can be easily described at the time the patent is prosecuted. The operation of the doctrine of equivalents has no effect on the removal of knowledge from the public domain, since this goal is achieved or frustrated at the time a patent is issued. Once the patent is issued, its scope is fixed, and any knowledge that will be removed from the public domain because of the patent is removed from the public domain at that point. While the operation of the doctrine of equivalents determines exactly what the scope of the patent will be, it is the issuance of the patent, rather than the exact scope of the patent, that determines whether knowledge is taken out of the public domain and made subject to patent protection.

Because the doctrine of equivalents itself has no effect on the advancement or frustration of the policy goal of ensuring that no knowledge already in the public domain becomes protected by a patent, no legal limitation on the doctrine of equivalents can affect the achievement of this goal. As a legal limitation on the doctrine of equivalents, patent drafter estoppel would therefore be neutral with respect to ensuring that knowledge in the public domain remains there.

¹³³ *Graver Tank*, 339 U.S. at 607 (quoting *Sanitary Refrigerator Co. v. Winters*, 280 U.S. 30, 42 (1929)) (“a patentee may invoke [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.’”); see, e.g., *Hughes Aircraft Co. v. United States*, 140 F.3d 1470 (Fed. Cir. 1998) (doctrine of equivalents provided protection against satellite incorporating recently-developed computer technology to accomplish on board the same function that the patent claimed would be performed by satellite operator on the ground).

4. Encouraging Full Disclosure of New Inventions

The patent system is designed to encourage full disclosure of new inventions, since this helps to ensure that society gets the maximum informational benefit from the patent *quid pro quo*.¹³⁴ This goal focuses not on the patent claims, but rather on the patent specification, where the patentee is to provide a complete description of the invention sufficient “to enable any person skilled in the art to which [the invention] pertains . . . to make and use the [invention].”¹³⁵ The doctrine of equivalents, as an infringement doctrine, does not create any significant incentive either for or against full disclosure, since it focuses in its operation on the patent’s claims and the accused device.

However, the patent drafter estoppel doctrine, if adopted, might create an incentive not to disclose inventions absolutely fully. In determining whether a given equivalent structure was foreseeable at the time the patent in question was prosecuted, a court will need contemporary evidence, and the court will likely find it necessary to examine the patent specification as a portion of that contemporary evidence. Judge Rader’s concurrence in *Johnson & Johnston Associates* provides a clear example of this tendency. There, the evidence that substrate materials other than aluminum were foreseeable at the time of patent prosecution was provided by the patent specification’s reference to other substrate materials, including steel, the material used by the defendant.¹³⁶ Without a broad disclosure like that in *Johnson & Johnston Associates*, it would be more difficult for a court conclusively to determine that a particular equivalent should have been foreseen.

Thus, were patent drafter estoppel to be adopted, unscrupulous patentees would have a reason to hide equivalent structures that they foresaw by failing to disclose them at all. In this

¹³⁴ 35 U.S.C. § 112 (2000).

¹³⁵ *Id.* This is known as the enablement requirement.

¹³⁶ *Johnson & Johnston Associates*, 285 F.3d at 1050.

way, they could ensure that full disclosure could not be used against them later. Patent applicants and their agents or attorneys would operate under the maxim “Aut tace, aut loquere meliora silentio.”¹³⁷ The goal of encouraging full disclosure of inventions to ensure that society receives the maximum return for its grant of monopoly power would be frustrated.

5. Providing Adequate Public Notice of the Scope of Issued Patents

The final policy underlying the patent system is that proper notice should be given to the public of the existence of issued patents and the scope of those patents.¹³⁸ This notice is necessary to allow competitors the opportunity to conduct their business without infringing the patent, and it assists secondary innovators in determining what areas of technology need investigation and which areas are closed to further investigation because they are the subject of patent protection.

To a certain degree, the doctrine of equivalents frustrates this policy goal. If patents could only be infringed by producing devices falling within the literal claim language, the scope of patent protection would be eminently clear. By creating a penumbra of protection surrounding the literal claim language, though, the doctrine of equivalents reduces the ease with which the scope of an issued patent can be determined. Competitors and secondary innovators must make their best guess as to what similar techniques, structures, and approaches the courts will deem equivalent.¹³⁹ If they are particularly risk-averse, competitors and secondary innovators will structure their activities so as to avoid any conceivably equivalent device, greatly

¹³⁷ “Be quiet, unless your speech be better than silence.” See National Gallery, London, *Self Portrait of Salvator Rosa (c. 1645)*, at <http://www.nationalgallery.org.uk/cgi-bin/WebObjects.dll/CollectionPublisher.woa/wa/work?workNumber=NG4680> (last visited Mar. 26, 2005).

¹³⁸ *Johnson & Johnston Associates*, 285 F.3d at 1056 (Rader, J., concurring) (describing patent claims as “providing the public with adequate notice of potentially infringing behavior.”) (quoting *Warner-Jenkinson*, 520 U.S. at 29).

¹³⁹ This is perhaps not quite as bad as it sounds, since even in the absence of the doctrine of equivalents, competitors seeking to operate in technical areas near the patent without infringing it will need to make their best guess as to the way a court will construe the literal claim language.

restricting the amount of further research and “refinement through imitation” that the patent system is supposed to encourage.

Since the doctrine of equivalents frustrates the policy goal of providing adequate public notice of the scope of issued patents, any limitation on the doctrine of equivalents should help achieve that goal.¹⁴⁰ However, one should resist the temptation to think that all legal limitations on the doctrine of equivalents are equally effective in reducing the size of the penumbra surrounding the literal claim language. In fact, the doctrine of patent drafter estoppel, if adopted, might make matters worse rather than better.

The concern with the doctrine of equivalents is that it does not permit competitors to determine the best course of action to avoid infringement *a priori*, because the determination of which structures are equivalent to the claim limitations at issue can be accomplished only by a court after the fact. The adoption of the patent drafter estoppel doctrine as a limitation on the doctrine of equivalents would not eliminate this problem, since the doctrine of equivalents would still be operable. The new doctrine would merely add yet another *post facto* inquiry to the doctrine of equivalents analysis. As with claim construction, determination of the foreseeability of a particular equivalent requires consideration of evidence not a part of the public record, such as expert witness testimony. The determination of whether an equivalent structure was objectively foreseeable at the time the patent in question was prosecuted simply cannot be carried out by a competitor or secondary innovator seeking the appropriate course of action; it must be accomplished by a court after the fact.

Without the patent drafter estoppel doctrine, a party interested in avoiding patent infringement need only make two guesses as to the scope of the patent. First, the party must try to determine how the patent claims will be construed. Second, the party must guess what

¹⁴⁰ See *supra*, note 109, and accompanying text.

structures will be held equivalent to the limitations of the claims as construed. The party may then proceed with its business in such a way that it does not use any structures that it believes will fall within either the construed literal claim language or the scope of equivalents to the claims.

Were the patent drafter estoppel doctrine to be adopted, competitors and secondary innovators would still be required to make these same inquiries before undertaking any activity within a technology area closely related to that covered by the patent in question. They would also need to make an additional guess about what a court would hold, though: in addition to trying to determine whether a contemplated structure would fall within the literal claim language or would be considered equivalent to a claim limitation, they would be required to guess whether the court would find the structure an objectively foreseeable technological development. The patent drafter estoppel doctrine thus increases the uncertainty surrounding the scope of issued patents, rather than decreasing it. The doctrine runs contrary to the policy goal of ensuring that there is adequate public notice of the scope of issued patents.

The patent drafter estoppel doctrine, then, generally would cause more problems than it would solve. The need for objective indicia of foreseeability and the requirement for additional extrinsic evidence would greatly complicate patent infringement litigation. At the cost of making litigation more cumbersome, no policy goal of the patent law system would be advanced more than moderately, and more goals would be frustrated than would be advanced. The policy goals of encouraging significant and pioneering technological advances, encouraging full disclosure of new inventions, and ensuring that there is adequate public notice of the scope of protection under issued patents would all be frustrated by the adoption of the patent drafter estoppel doctrine. The doctrine is neutral as to the policy goal of ensuring patent protection is

not given to any knowledge already within the public domain. It would only advance the goal of encouraging secondary innovation via “refinement through imitation.” The advancement of this single goal is not worth the frustration of several other policies, particularly when one considers the additional litigation costs that would be incurred were the doctrine to be adopted.

CONCLUSION

The *Sage Products* decision presented the Federal Circuit with an opportunity to adopt a new legal limitation on the doctrine of equivalents, the patent drafter estoppel doctrine. This new doctrine would have limited the application of the doctrine of equivalents by precluding equivalent infringement protection for any equivalent structure that the patentee reasonably should have foreseen during patent prosecution. Since *Sage Products*, the Federal Circuit appears to have declined the invitation to create this new foreseeability limitation on the doctrine of equivalents. This course of action was wise, because the patent drafter estoppel doctrine would have caused patent infringement litigation to grow more cumbersome and expensive with no corresponding increase in the advancement of patent law policy goals. In fact, the new doctrine would have frustrated more patent system policies than it advanced. In short, the doctrine of patent drafter estoppel is dead and should stay dead.