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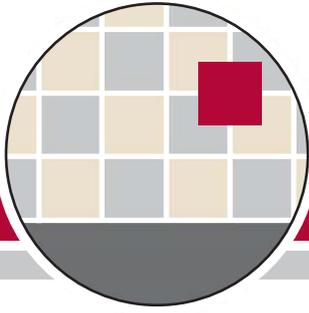
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## Patent Claiming in the United States: Central, Peripheral, or Mongrel?

Martin J. Adelman\*

The debate over whether the United States patent system should abandon its current approach to claiming and formally adopt the central claiming system has raged in the law review literature in the last few years.<sup>1</sup> However, because of the Seventh Amendment, a central claiming system would not work well in the United States even if such a system were otherwise superior—which it is not. Nevertheless, the United States patent system has aspects of a central claiming system although it is usually considered to have a peripheral claiming system. The basic difference between them is that a peripheral system uses claims to define the grant whereas a central claiming system uses claims to define the invention, with judges or juries deciding what is covered by the patent grant using a doctrine of equivalence or the like, i.e. non-textual infringement. I will argue in this paper that the United States should eliminate the central claiming features of its patent system and move fully to a peripheral claiming system with central claiming aspects limited to situations that properly call for central claiming.

While the history of the development of law of patent claiming in the United States is fairly well known,<sup>2</sup> it is helpful to review its recent history. The most important modern case is *Graver Tank & Manufacturing Co. v. Linde Air Products Co.*,<sup>3</sup> which considered an important invention disclosed and claimed in the *Jones et al.* patent.<sup>4</sup> Jones taught certain welding fluxes containing metal silicates, with the preferred metals being alkaline earth metals.<sup>5</sup> One embodiment of the invention, however, used a non-alkaline earth metal, manga-

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1. See, e.g., Dan L. Burk & Mark A. Lemley, *Fence Posts or Sign Posts? Rethinking Patent Claim Construction?*, 157 U. PA. L. REV. 1743 (2009).

2. See *id.* at 1765-77.

3. 339 U.S. 605 (1950).

4. U.S. Patent No. 2,043,960 (Filed Mar. 15, 1949).

5. Which consist of the elements in Group 2 of the periodic table: beryllium, magnesium, calcium, strontium, barium and radium. Steven S. ZUMDAHL & SUSAN A. ZUMDAHL, *CHEMISTRY* 885 (7th ed. 2007).

nese.<sup>6</sup> Thus an available strategy for the infringers was to invalidate claims broad enough to cover the use of manganese silicate, such as claim 24,<sup>7</sup> and then argue that the accused magnesium silicate flux did not infringe any of the alkaline earth claims, such as claim 22.<sup>8</sup> This strategy suffered a setback when the trial court found that manganese was the equivalent of an alkaline earth metal and thus held the alkaline earth claims infringed although it found the broader metal silicate claims which covered manganese silicate invalid.<sup>9</sup> The

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6. “We have used calcium silicate and silicates of sodium, barium, iron, manganese, cobalt, magnesium, nickel and aluminum, both in binary and ternary combinations, in various proportions. We have also used calcium titanate and various titano-silicates, these being used when it is desired to introduce titanium into the weld metal. While a number of these conductive welding compositions are more or less efficacious in our process, we prefer to use silicates of the alkaline earth metals, such as calcium silicate, and we also prefer to add to these silicates minor proportions of alumina and of a substance adapted to lower the melting point, for example, a halide salt.” ‘960 Patent, 2 col.1 ls.62-76 (emphasis added).

7. “A fluxing material for electric welding comprising metallic silicate and calcium fluoride.” ‘960 Patent cl.24.

8. “A finely-divided unbonded fusible electric welding composition containing a fluoride and a major proportion of an alkaline earth metal silicate.” ‘960 Patent cl.22.

9. *Linde Air Prods. Co. v. Graver Tank & Mfg. Co.*, 86 F. Supp. 191, 199-200 (N.D. Ind. 1947). The court explained:

Inasmuch as claims 18, 20, 22 and 23 are valid, the question of infringement becomes pertinent. Essentially the accused welding composition comprises manganese silicate to which has been added a small amount of calcium fluoride. The following comparison between the Unionmelt and the Lincolnweld compositions was made by Dr. Willard: ‘So we have here in one case (Unionmelt) a silicate of calcium and magnesium with a little aluminum, and with calcium fluoride, and in the case of Lincolnweld we have silicate of calcium and manganese with a little aluminum and calcium fluoride added.’

The two compositions are identical in operation, and the same kind of weld is produced by them. The mechanical methods in which these compositions are employed are essentially similar. A fair construction of the evidence is that Lincolnweld 660 flux can be substituted for Unionmelt Grade 20 without any change in operation or result except that Lincolnweld composition induces a greater amount of manganese into the weld metal. It is clear then that for all practical purposes, manganese silicate can be efficiently and effectually substituted for calcium and magnesium silicates as the major constituent of the welding composition.

Although manganese in its bivalent form has some characteristics of an alkaline earth metal, it is not classed as such in chemical literature. Since the accused flux is composed principally of manganese silicate, it does not literally infringe composition claims 18, 20, 22 and 23. Whether it actually infringes these claims depends upon what application is made of the doctrine of equivalents. In that connection, no determination need be made whether it is a known chemical fact outside the teachings of the patent that manganese is an equivalent of calcium or magnesium. In the patent the inventors state, ‘We have used calcium silicate and silicates of sodium, barium, iron, manganese, cobalt, magnesium, nickel and aluminum, both in binary and ternary combinations, in various proportions.’ Thus, the fact that manganese is a proper substitute for calcium silicate as a major ingredient of the welding composition invented by Jones, Kennedy and Rotermund is fully disclosed in the specification of their patent. The defendants have urged a construction that would have the sentence in question read, ‘We have used calcium silicate with or plus silicates of sodium, etc.’ It is my view that the correct construction of the sentence is, ‘We have used calcium silicate and also silicates of sodium, etc.’ That this in the correct view is borne out by the first application. That document in part recites: ‘. . . and there are other materials suitable to form the main body of the flux. Magnesium silicate, manganese silicate or these in combination serve admirably. . . . Particular fluxes that we have used are as follows: . . . (2) manganese silicate MnO.SiO<sub>2</sub> . . . .’ Accordingly, it is concluded that the patent itself fully discloses

court of appeals reversed, finding all of the contested claims valid.<sup>10</sup> The Supreme Court then reversed reinstating the district court's decision.<sup>11</sup> This set the stage for the famous *Graver Tank* opinion on rehearing. With the broad claims invalidated and a rehearing granted on infringement of the alkaline earth claims under the doctrine of equivalents, it seemed a certainty that the Supreme Court would overturn the equivalents finding of the trial court. Otherwise why grant a rehearing, one of only a handful of such grants in the preceding 50 years. But it turned out very differently.

*Graver Tank* is the only doctrine of equivalents case on the books since 1950 where the accused products were actually disclosed and claimed in the patent. It did not involve a draftsman's error as do almost all of the doctrine of equivalents cases decided both before and after *Graver Tank*. In any event, the opinion reads like the opening statement of the prosecutor in a murder case. The opinion writer for the Court, Mr. Justice Jackson, was the chief American prosecutor at Nuremburg. However, this time there were a pair of alleged patent infringers in the dock, rather than German war criminals. Unfortunately, the unusual nature of the case was missed by the lower courts dealing with it in the aftermath of the resurgence of trials by jury in patent cases. Instead it was treated as a case where the inventors mistakenly failed to claim the accused product.

While jury trials have been available at law since the beginning of the American patent system, most cases were tried to judges in equity in the 100 years prior to *Graver Tank*. Juries of course were never authorized by American patent statutes, but are required by the Seventh Amendment of the Constitution in cases at law.<sup>12</sup> No sane country would create a jury system for complex patent trials, but as a practical matter the Seventh Amendment will not be changed to accommodate sound patent law. In any event with *Graver Tank* and juries who were believed to favor patentees, the American system essentially reverted to a central claiming system after 1950.<sup>13</sup>

However, in the late eighties I co-authored an article in the University of Pennsylvania Law Review that criticized the system of essentially having juries deciding claim scope.<sup>14</sup>

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that welding compositions composed chiefly of manganese silicate and prepared according to the teachings of the patent are equivalent to those in which the alkaline earth metals are the principal constituents.

In this connection, the lack of any evidence of independent research or experiments by the Lincoln Electric Company in originating Lincolnweld 660 flux creates an inference that the teaching of the patent in suit was the sole origin of that composition.

10. *Linde Air Prods. Co. v. Graver Tank & Mfg. Co.*, 167 F.2d 531, 539 (7th Cir. 1948).

11. *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 336 U.S. 271, 280 (1949).

12. "*In Suits at common law*, where the value in controversy shall exceed twenty dollars, *the right of trial by jury shall be preserved*, and no fact tried by a jury, shall be otherwise re-examined in any Court of the United States, than according to the rules of the common law." U.S. CONST. AMEND. VII (emphasis added).

13. The role of juries in patent cases in the United States is extensively discussed in 5 MARTIN J. ADELMAN, PATENT LAW PERSPECTIVES, 7-153 to 7-313 (2d ed. 1982).

14. Martin J. Adelman & Gary L. Francione, *The Doctrine of Equivalents in Patent Law: Questions That Pennwalt Did Not Answer*, 137 U. PA. L. REV. 673 (1989).

It proposed limiting the doctrine of equivalents to covering newly developed technologies while prohibiting its use in correcting patent drafting mistakes. The Federal Circuit shortly thereafter joined in the attack, which first led to the landmark case of *Markman v. Westview Instruments, Inc.*,<sup>15</sup> the most important American commercial law case of the 1990s. *Markman* made it clear that judges, even in the face of the Seventh Amendment, are to decide the meaning of claims, just as they do in every other patent system in the world.<sup>16</sup> But if juries decided equivalents, the American system would remain a central claiming system controlled by juries in spite of *Markman* because it would make little difference whether the juries were interpreting the words of the claims along with deciding equivalents or the judges were deciding the meaning of the words in the claim, but juries would decide what was equivalent to those words. This led to two key Supreme Court decisions, *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.*<sup>17</sup> and, five years later, *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*<sup>18</sup>

The first blow to equivalents was struck by *Warner Jenkinson*. The Supreme Court's opinion began by setting forth a brief description of its facts:

Petitioner Warner-Jenkinson Co. and respondent Hilton Davis Chemical Co. manufacture dyes. Impurities in those dyes must be removed. Hilton Davis holds United States Patent No. 4,560,746 ( '746 patent), which discloses an improved purification process involving "ultrafiltration." The '746 process filters impure dye through a porous membrane at certain pressures and pH levels, resulting in a high purity dye product.

The '746 patent issued in 1985. As relevant to this case, the patent claims as its invention an improvement in the ultrafiltration process as follows:

"In a process for the purification of a dye . . . the improvement which comprises: subjecting an aqueous solution . . . to ultrafiltration through a membrane having a nominal pore diameter of 5-15 Angstroms under a hydrostatic pressure of approximately 200 to 400 p.s.i.g., at a pH from approximately 6.0 to 9.0, to thereby cause separation of said impurities from said dye . . . ." . . . (emphasis added).

The inventors added the phrase "at a pH from approximately 6.0 to 9.0" during patent prosecution. At a minimum, this phrase was added to distinguish a previous patent (the "Booth" patent) that disclosed an ultrafiltration process operating

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15. 517 U.S. 370 (1996).

16. Nicholas Pumfrey et al., *The Doctrine Of Equivalents in Various Patent Regimes--Does Anybody Have It Right?*, 11 YALE J.L. & TECH. 261 (2009).

17. 520 U.S. 17 (1997).

18. 535 U.S. 722 (2002).

at a pH above 9.0. The parties disagree as to why the low-end pH limit of 6.0 was included as part of the claim.

In 1986, Warner-Jenkinson developed an ultrafiltration process that operated with membrane pore diameters assumed to be 5-15 Angstroms, at pressures of 200 to nearly 500 p.s.i.g., and at a pH of 5.0. Warner-Jenkinson did not learn of the '746 patent until after it had begun commercial use of its ultrafiltration process. Hilton Davis eventually learned of Warner-Jenkinson's use of ultrafiltration and, in 1991, sued Warner-Jenkinson for patent infringement.

As trial approached, Hilton Davis conceded that there was no literal infringement, and relied solely on the doctrine of equivalents. Over Warner-Jenkinson's objection that the doctrine of equivalents was an equitable doctrine to be applied by the court, the issue of equivalence was included among those sent to the jury. The jury found that the '746 patent was not invalid and that Warner-Jenkinson infringed upon the patent under the doctrine of equivalents.<sup>19</sup>

It then announced in a rather cold opinion that it was not going to eliminate the doctrine of equivalents even though it conflicted with the legal certainty provided by peripheral claiming. However, it insisted on the all elements rule previously announced by the Federal Circuit<sup>20</sup> along with a no vitiation requirement, explaining:

We concur with this apt reconciliation of our two lines of precedent. Each element contained in a patent claim is deemed material to defining the scope of the patented invention, and thus the doctrine of equivalents must be applied to individual elements of the claim, not to the invention as a whole. *It is important to ensure that the application of the doctrine, even as to an individual element, is not allowed such broad play as to effectively eliminate that element in its entirety.* So long as the doctrine of equivalents does not encroach beyond the limits just described, or beyond related limits to be discussed, we are confident that the doctrine will not vitiate the central functions of the patent claims themselves.<sup>21</sup>

The Federal Circuit has occasionally applied the emphasized language above by refusing to expand an element in a claim in a way that it asserts vitiates the language of the claim.<sup>22</sup> In any event, in addition to affirming the all elements rule and its associated vitiation doctrine, the Supreme Court emphasized the role of prosecution history estoppel in limiting equivalents, and then left for another day the question of whether the Seventh Amendment required the use of juries to decide the question of equivalency. The Supreme Court

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19. 520 U.S. at 22-23.

20. See Adelman & Francione, *supra* note 14, at 684-90.

21. 520 U.S. at 29-30. (citation omitted) (emphasis added).

22. See *Nystrom v. Trex Co.*, 580 F.3d 1281, 1286-87 (Fed. Cir. 2009) (Rader, J., additional views).

did indicate in footnote 8 that most of the problems with the use of juries could be alleviated through the use of special questions or interrogatories.<sup>23</sup> However, the Supreme Court left enough confusion regarding the doctrine of prosecution history estoppel that it had to return to it five years later in *Festo* after the Federal Circuit announced *en banc* that equivalents were barred with respect to an element of a claim if a broader claim element had been cancelled during prosecution for reasons of patentability.<sup>24</sup>

An important event in this narrative occurred just before the Supreme Court returned to prosecution history estoppels, Judge (now Chief Judge) Rader's concurring opinion in *Johnson & Johnston Associates Inc. v. R.E. Service Co.*<sup>25</sup> *Johnson & Johnston* dealt with a doctrine independently developed by the Federal Circuit known as the dedication doctrine. Under this doctrine no equivalent could cover an embodiment that was *disclosed* but not claimed in the patent. Chief Judge Rader in his concurring opinion argued that the dedication doctrine should be expanded beyond embodiments disclosed in the patent. He explained:

Few problems have vexed this court more than articulating discernible standards for non-textual infringement. On the one hand, the Supreme Court has recognized that the doctrine of equivalents provides essential protection for inventions: “[T]o permit imitation of a patented invention which does not copy every literal detail would be to convert the protection of the patent grant into a hollow and useless thing . . . leav[ing] room for - indeed encourage[ing] - the unscrupulous copyist to make unimportant and insubstantial changes.” *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.* The protective function of non-textual infringement, however, has a price. Recently, the Supreme Court acknowledged that a broad doctrine of equivalents can threaten the notice function of claims: “There can be no denying that the doctrine of equivalents, when applied broadly, conflicts with the definitional and public-notice functions of the statutory claiming requirement.” *Warner-Jenkinson*

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23. “With regard to the concern over unreviewability due to black-box jury verdicts, we offer only guidance, not a specific mandate. Where the evidence is such that no reasonable jury could determine two elements to be equivalent, district courts are obliged to grant partial or complete summary judgment. If there has been a reluctance to do so by some courts due to unfamiliarity with the subject matter, we are confident that the Federal Circuit can remedy the problem. Of course, the various legal limitations on the application of the doctrine of equivalents are to be determined by the court, either on a pretrial motion for partial summary judgment or on a motion for judgment as a matter of law at the close of the evidence and after the jury verdict. Thus, under the particular facts of a case, if prosecution history estoppel would apply or if a theory of equivalence would entirely vitiate a particular claim element, partial or complete judgment should be rendered by the court, as there would be no further *material* issue for the jury to resolve. Finally, in cases that reach the jury, a special verdict and/or interrogatories on each claim element could be very useful in facilitating review, uniformity, and possibly postverdict judgments as a matter of law. We leave it to the Federal Circuit how best to implement procedural improvements to promote certainty, consistency, and reviewability to this area of the law.” 520 U.S. at 39 n.8 (citations omitted).

24. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558 (Fed. Cir. 2000) (*en banc*).

25. 285 F.3d 1046 (Fed. Cir. 2002) (*en banc*).

*Co. v. Hilton Davis Chem. Co.* These competing policies make it difficult to set a standard that protects the patentee against insubstantial changes while simultaneously providing the public with adequate notice of potentially infringing behavior.

In general, the Supreme Court and this court have attempted to deal with these competing principles by placing limits on non-textual infringement. Thus, in furtherance of the notice objective, *Pennwalt* and *Warner-Jenkinson* require an equivalent for each and every element of a claim (applying the doctrine of equivalents to the claim as a whole gives too much room to enforce the claim beyond its notifying limitations). Similarly, to enhance notice, *Festo*<sup>26</sup> and *Warner-Jenkinson* propose to bar patentees from expanding their claim to embrace subject matter surrendered during the patent acquisition process . . . .

Perhaps more than each of these other restraints on non-textual infringement, a foreseeability bar would concurrently serve both the predominant notice function of the claims and the protective function of the doctrine of equivalents. When one of ordinary skill in the relevant art would foresee coverage of an invention, a patent drafter has an obligation to claim those foreseeable limits. This rule enhances the notice function of claims by making them the sole definition of invention scope in all foreseeable circumstances. When the skilled artisan cannot have foreseen a variation that copyists employ to evade the literal text of the claims, the rule permits the patentee to attempt to prove that an “insubstantial variation” warrants a finding of non-textual infringement. In either event, the claims themselves and the prior art erect a foreseeability bar that circumscribes the protective function of non-textual infringement. Thus, foreseeability sets an objective standard for assessing when to apply the doctrine of equivalents.

A foreseeability bar thus places a premium on claim drafting and enhances the notice function of claims. To restate, if one of ordinary skill in the relevant art would reasonably anticipate ways to evade the literal claim language, the patent applicant has an obligation to cast its claims to provide notice of that coverage. In other words, the patentee has an obligation to draft claims that capture all reasonably foreseeable ways to practice the invention. The doctrine of equivalents would not rescue a claim drafter who does not provide such notice. Foreseeability thus places a premium on notice while reserving a limited role for the protective function of the doctrine of equivalents.

This court actually already has articulated this foreseeability principle in the context of the doctrine of equivalents. Six months after the Supreme Court decided

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26. Chief Judge Rader was referring to the *Festo* opinion of the Federal Circuit, 234 F.3d. 558 (Fed. Cir. 2000) (en banc), rather than the Supreme Court’s *Festo* opinion.

*Warner-Jenkinson*, this court decided *Sage Prods. Inc. v. Devon Indus., Inc.* In that case, this court found no infringement, either literally or under the doctrine of equivalents, of a patent on a disposal system for sharp medical instruments. When addressing the doctrine of equivalents issue, this court applied the foreseeability bar:

The claim at issue defines a relatively simple structural device. A skilled patent drafter would foresee the limiting potential of the “over said slot” limitation. No subtlety of language or complexity of the technology, nor any subsequent change in the state of the art, such as later-developed technology, obfuscated the significance of this limitation at the time of its incorporation into the claim. If Sage 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. Had Sage done so, then the Patent and Trademark Office (PTO) could have fulfilled its statutory role in helping to ensure that exclusive rights issue only to those who have, in fact, contributed something new, useful, and unobvious. Instead, Sage left the PTO with manifestly limited claims that it now seeks to expand through the doctrine of equivalents. However, 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.

The *Sage* court emphasized that a “skilled patent drafter would foresee the limiting potential of the ‘over the slot’ limitation.” Thus, the court barred application of the doctrine of equivalents “for this foreseeable alteration of [the] claimed structure.”

In *Sage*, this court also noted specifically some types of subject matter that may not be foreseeable during the application process - subject matter arising from a “subsequent change in the state of the art, such as later-developed technology.” . . .

. . . .

In this case, Johnston’s ‘050 patent claimed only a “sheet of aluminum” and “the aluminum sheet” - twice specifying the aluminum limitation. The patent specification then expressly mentioned other potential substrate metals, including stainless steel. Johnston’s patent disclosure expressly admits that it foresaw other metals serving as substrates. Yet the patent did not claim anything beyond aluminum. Foreseeability bars Johnston from recapturing as an equivalent subject matter not claimed but disclosed. In *Sage* terms, “as between [Johnston] who had a clear opportunity to negotiate broader claims but did not do so, and the public at large, it is [Johnston] who must bear the cost of its failure to seek protection for this foreseeable alteration of its claimed structure.”

Foreseeability relegates non-textual infringement to its appropriate exceptional place in patent policy. The doctrine of equivalents should not rescue claim drafters who fail to give accurate notice of an invention's scope in the claims. The Patent Act supplies a correction process for applicants who have claimed "more or less than [they] had a right to claim in the patent." 35 U.S.C. §§ 251, 252 (2001). The doctrine of equivalents need not duplicate the statute's means of correcting claiming errors.

Implicit in the protective function of the doctrine of equivalents is the notion that the patentees could not have protected themselves with reasonable care and foresight. Enforcing this *Sage* principle more aggressively will help achieve a better balance between the notice function of claims and the protective function of non-textual infringement.<sup>27</sup>

Two months after *Johnson & Johnston* came *Festo*. The Supreme Court began its analysis by setting out its understanding of the Federal Circuit's en banc *Festo* decision:

The en banc court reversed, holding that prosecution history estoppel barred *Festo* from asserting that the accused device infringed its patents under the doctrine of equivalents. The court held, with only one judge dissenting, that estoppel arises from any amendment that narrows a claim to comply with the Patent Act, not only from amendments made to avoid prior art. More controversial in the Court of Appeals was its further holding: When estoppel applies, it stands as a complete bar against any claim of equivalence for the element that was amended. The court acknowledged that its own prior case law did not go so far. Previous decisions had held that prosecution history estoppel constituted a flexible bar, foreclosing some, but not all, claims of equivalence, depending on the purpose of the amendment and the alterations in the text. The court concluded, however, that its precedents applying the flexible-bar rule should be overruled because this case-by-case approach has proved unworkable. In the court's view a complete-bar rule, under which estoppel bars all claims of equivalence to the narrowed element, would promote certainty in the determination of infringement cases.

Four judges dissented from the decision to adopt a complete bar. In four separate opinions, the dissenters argued that the majority's decision to overrule precedent was contrary to *Warner-Jenkinson* and would unsettle the expectations of many existing patentees. Judge Michel, in his dissent, described in detail how the complete bar required the Court of Appeals to disregard 8 older decisions of this Court, as well as more than 50 of its own cases.<sup>28</sup>

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27. 285 F.3d at 1057-59 (citations omitted) (emphasis omitted).

28. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 729-30 (2002) (citations omitted).

The Supreme Court then adopted in the main the principles set out in Chief Judge Rader's concurring opinion in *Johnson & Johnston* to those claim limitations impacted by prosecution history estoppel:

Just as *Warner-Jenkinson* held that the patentee bears the burden of proving that an amendment was not made for a reason that would give rise to estoppel, we hold here that the patentee should bear the burden of showing that the amendment does not surrender the particular equivalent in question. This is the approach advocated by the United States, see Brief for United States as *Amicus Curiae* 22-28, and we regard it to be sound. The patentee, as the author of the claim language, may be expected to draft claims encompassing readily known equivalents. A patentee's decision to narrow his claims through amendment may be presumed to be a general disclaimer of the territory between the original claim and the amended claim. [*Exhibit Supply Co. v. Ace Patents Corp.*] ("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"). There are some cases, however, where the amendment cannot reasonably be viewed as surrendering a particular equivalent. The equivalent may have been unforeseeable at the time of the application; *the rationale underlying the amendment may bear no more than a tangential relation to the equivalent in question*; or there may be some other reason suggesting that the patentee could not reasonably be expected to have described the insubstantial substitute in question. In those cases the patentee can overcome the presumption that prosecution history estoppel bars a finding of equivalence.

This presumption is not, then, just the complete bar by another name. Rather, it reflects the fact that the interpretation of the patent must begin with its literal claims, and the prosecution history is relevant to construing those claims. When the patentee has chosen to narrow a claim, courts may presume the amended text was composed with awareness of this rule and that the territory surrendered is not an equivalent of the territory claimed. In those instances, however, the patentee still might rebut the presumption that estoppel bars a claim of equivalence. The patentee must show that at the time of the amendment one skilled in the art could not reasonably be expected to have drafted a claim that would have literally encompassed the alleged equivalent.<sup>29</sup>

The one factor that did not come from Chief Judge Rader's opinions through the brief of the Government as *Amicus Curiae* referenced above by the Supreme Court is the *tangential* language emphasized above. Of course we all know that a line that touches a curve at one point is a tangent to the curve. Something that merely touches something may be considered tangential. How this relates to prosecution history estoppels is uncertain. If a

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29. *Id.* at 740-41 (emphasis added) (citation omitted).

judge doesn't want to bar the use of the doctrine of equivalents all he or she needs to do is to call the narrowing amendment, for purposes of patentability, tangential. In an important concurring opinion, Chief Judge Rader explaining why this requirement was unwise as it undermines *Festo*.<sup>30</sup> However, the Federal Circuit has continued the practice of occasionally undermining *Festo* by finding that some amendment is tangential when it wants to apply the doctrine of equivalents.<sup>31</sup>

The real question is why the great divide between peripheral and central claiming in the United States should in the main be policed by prosecution history estoppel. In short, why does the cancelation of a broad claim render all of the remaining claims impacted by the cancelation of the broad claim subject to the peripheral claiming system, while the same claim that underwent the same scrutiny in the PTO without such a broad claim enjoys the benefit of the central claiming system? That this mongrel system is incoherent is demonstrated by comparing *Felix v. American Honda Motor Co., Inc.*,<sup>32</sup> with *Depuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*<sup>33</sup> In both cases, the element of the claim involved in the infringement by equivalents was not expressly inserted into the claim to avoid prior art or for any other specific reason relating to patentability, except for the reason that all limitations are fundamentally in the claim for reasons of patentability. Nevertheless, in *Felix* no equivalents were permitted<sup>34</sup> while in *Depuy Spine* an equivalent carried the day for the patentee.<sup>35</sup> In neither case was there a credible claim that the equivalent was not reasonably foreseeable and in neither case was the element inserted in the claim for any reason other than mistake. These cases demonstrate clearly that it is irrational to base the availability of equivalents on claim amendments.

*Felix* is a classic case of a reversal of parts. It involved a seal for a lid covering a depression in the truck bed of a truck to create a closed-car trunk-like unit. One can put the seal on the lid or on the edges (lip) of the top of the hole in the truck bed, but the claim in suit only claimed one of the two obvious possibilities.<sup>36</sup> *Depuy Spine* is slightly different. It involved the claim of a spherically shaped section for receiving the spherical head of a screw. The accused section was conical rather than spherical.<sup>37</sup> Fortunately for *Depuy Spine* the words "spherically-shaped" were in all of the claims as filed; but in *Felix*, the position of the seal in *Felix* was not, as the application as filed included one broad omnibus type claim that was

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30. *Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc.*, 480 F.3d 1335, 1346 (Fed. Cir. 2007) (Rader, J., concurring).

31. *Funai Elec. Co., Ltd. v. Daewo Elecs. Corp.*, 616 F.3d 1357, 1369 (Fed. Cir. 2010); *Intervet Inc. v. Merial Ltd.*, 617 F.3d 1282, 1292 (Fed. Cir. 2010).

32. 562 F.3d 1167 (Fed. Cir. 2009).

33. 567 F.3d 1314 (Fed. Cir. 2009).

34. 562 F.3d at 1171.

35. 567 F.3d at 1319-20.

36. 562 F.3d at 1171-74.

37. 567 F.3d at 1336-37.

obviously not patentable and which didn't even claim a seal let alone which of the two obvious places the seal could be placed. In *Felix*, the claim in suit, essentially claim 8 as filed, reads:

In combination with a vehicle including a vehicle bed, the improvement of a storage system which includes: a) an opening formed in the vehicle bed and including an opening rim; b) a compartment with an interior; c) said compartment being mounted on said bed with said compartment interior accessible through said opening; d) a lid assembly including lid mounting means for mounting said lid in covering relation with respect to said opening; e) a channel formed at the rim of said bed opening and including an inner flange; f) *a weathertight gasket mounted on said flange and engaging said lid in its closed position*; and g) a plurality of drain holes formed in said channel.<sup>38</sup>

Element (f) was the focus of the case and it could have easily been written “a weathertight gasket mounted to provide a seal between the lid and the rim.” The inventor chose not to attempt to claim putting the seal on the lid. However, had the inventor started with a claim that contained elements (a) through (f) he could have used the doctrine of equivalents even if that claim were rejected for reasons of patentability by the examiner. Indeed that actually happened in *Felix* as a claim without element (g) was rejected for reasons of patentability.<sup>39</sup> However, because his application as filed included a claim without element (f), Felix was denied the opportunity to assert the doctrine, even though the rejected claim was so broad that it had no chance of allowability.

The Federal Circuit in *Felix* explained in some depth how prosecution history estoppel applied:

We first consider which amendment—if any—gave rise to a presumption of surrender of claim scope encompassing the equivalent at issue. The limitation at issue here is the gasket limitation. That limitation was not contained in original independent claim 1, but was present in dependent claim 7. In Felix's *first amendment* on September 10, 1999, he cancelled original claim 1 and rewrote original dependent claim 7 in independent form as claim 14 to contain all of the limitations of claims 1 and 7. It was this *first amendment* that had the effect of adding the channel and gasket limitations of dependent claim 7 to the broader claim that was cancelled. “[T]he rewriting of dependent claims into independent form coupled with the cancellation of the original independent claims creates a presumption of prosecution history estoppel.” Thus, Felix's decision in the *first amendment* to cancel original claim 1 and to rewrite original claim 7 in independent form as claim 14 gave rise to a presumption of surrender.<sup>40</sup>

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38. 562 F.3d at 1173.

39. *Id.* at 1175.

40. Here the court's footnote reads: “We leave open the question of whether the presumption of surrender would have attached as to the gasket limitation if, in response to the first office action, Felix had cancelled both claim 1 and claim 7, and had rewritten claim 8 in independent form, instead of attempting to secure the broader coverage of rewritten claim 7 as an intermediate step.” *Id.* at 1182 n.4.

The interesting wrinkle in this case is that even after Felix cancelled original independent claim 1 and rewrote original dependent claim 7 in independent form, the examiner still did not allow the rewritten dependent claim. In other words, even though Felix amended the claim and thereby narrowed its scope in an effort to secure allowance, that effort did not succeed.<sup>41</sup> It was only after claim 8 was rewritten in independent form to include the limitations of claims 1, 7, and 8 that the claim was allowed. The fact that the *first amendment* did not succeed and that a further amendment was required to place the claim in allowable form, however, is of no consequence as to the estoppel. It is the patentee's response to a rejection—not the examiner's ultimate allowance of a claim—that gives rise to prosecution history estoppel. ("When the patentee responds to the rejection by narrowing his claims, this prosecution history estops him from later arguing that the subject matter covered by the original, broader claim was nothing more than an equivalent." ("[A patentee's] decision to forgo an appeal and submit an amended claim is taken as a concession that the invention as patented does not reach as far as the original claim.") ("A patentee's decision to narrow his claims through amendment may be presumed to be a general disclaimer of the territory between the original claim and the amended claim."; *Deering Precision Instruments, L.L.C. v. Vector Distribution Sys., Inc.* ("Deering's addition of [a rewritten independent claim], coupled with the clear surrender of the broader subject matter of the deleted original independent claim presumptively bars Deering from arguing infringement under the doctrine of equivalents.")). We therefore hold that the presumption of prosecution history estoppel attaches when a patentee cancels an independent claim and rewrites a dependent claim in independent form for reasons related to patentability, even if the amendment alone does not succeed in placing the claim in condition for allowance.

It is also immaterial in this case that the cancellation and amendment were to application claims 1, 7, and 14—rather than to application claims 8 and 16, which resulted in the asserted claim. The presumption of surrender "applies to all claims containing the [added] [l]imitation, regardless of whether the claim was, or was not, amended during prosecution." (. . . To hold otherwise would be to exalt form over substance and distort the logic of this jurisprudence, which serves as an effective and useful guide to the understanding of patent claims. The fact that the [the limitation in question] was not itself amended during prosecution does not mean that it can be extended by the doctrine of equivalents to cover the precise subject matter that was relinquished in order to obtain allowance of [another claim]."). Thus, in this case, the cancellation of original independent claim 1 coupled with the rewrit-

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41. Here the court's footnote reads: "It is immaterial that the obviousness rejection following this amendment was based on different references (Cooper '890 in view of Cooper '519) than the original obviousness rejection (Cooper '890 in view of Williams Flues)." *Id.* at 1182 n.5.

ing of original dependent claim 7 as independent claim 14 gave rise to a presumption of surrender applicable to all limitations, found in any of the claims of the '625 patent, that correspond to the limitations of claim 7.

We next turn to the scope of the presumptive surrender. “[W]hen a claim is rewritten from dependent into independent form and the original independent claim is cancelled . . . the surrendered subject matter is defined by the cancellation of independent claims that do not include a particular limitation and the rewriting into independent form of dependent claims that do include that limitation. Equivalents are presumptively not available with respect to that added limitation.” Equivalents are therefore presumptively not available as to any of the subject matter added in Felix’s *first amendment*. It is immaterial that Felix chose to add both the channel and the gasket limitations, rather than just one. The resulting estoppel attaches to each added limitation. Felix is therefore presumptively barred from relying on the doctrine of equivalents to prove that Honda’s In-Bed Trunk meets the gasket limitation—one of the two limitations added by amendment.<sup>42</sup>

Of course the answer to all of this incoherence is to apply the approach advocated by Chief Judge Rader in *Johnson & Johnston Associates*. His view is essentially to apply the Federal Circuit’s dedication doctrine to all equivalents that were reasonably foreseeable. After all, it makes little sense to rule, as does the Federal Circuit, that if one skilled in the art of reading a specification would know of obvious equivalents to those disclosed in the specification, then those undisclosed but foreseeable equivalents should have more favorable treatment with respect to the dedication doctrine than those equivalents that are actually disclosed in the patent. A famous former patent judge, Prof. Jan Brinkhof of Utrecht University, essentially adopted this approach when he was a panel member in an landmark Dutch patent case decided by the Court of Appeal in 2000, *Van Bentum v. Kool*.<sup>43</sup> Before, however, discussing in detail *Van Bentum* and its approach, it is worthwhile to look more closely at *DePuy Spine*. It involved a pedicle screw which included a compression member, a screw with a spherical head, and a member that receives the pedicle screw. A key issue was the shape of the area of the receiving member that receives the screw.<sup>44</sup> One skilled in the art would have known that one could substitute a conical shaped area for the spherical shaped area taught in the specification and claimed in both the originally filed claims.

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42. *Id.* at 1182-84 (emphasis added) (emphasis omitted) (citations omitted).

43. This case was reversed by the Supreme Court of the Netherlands two years later. *See* HR 29 maart 2002, NJ 2002, 530 m.nt. ChG (Van Bentum B.V./Kool Transport B.V.) (Neth.) (reversing the lower courts’ interpretation of Dutch law that the DOE does not protect an applicant in circumstances where he or she could have foreseen the claim device: “[E]ven if . . . it is assumed that the claim in that sense is negligently drafted . . . when interpreting a claim a middle must be sought between a fair protection of the patentee and a reasonable certainty for third parties.”).

44. *Depuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1319-21 (Fed. Cir. 2009).

In *Deputy Spine* the original claims were filed in Germany and that German application was used as a priority document in both the USPTO and the EPO. The translation of the original German claims was filed in the U.S. in Serial No. 07/817,659 as original application claims 1 through 8.<sup>45</sup> Presumably the US attorneys then studied the application and claims and added by preliminary amendment application claims 9 through 15, claims which ultimately issued. However, the examiner acted on the application as filed without the preliminary amendment and rejected claims 1 through 4 as anticipated by EP 242,708 (or DE 3711013), which has the same disclosure.<sup>46</sup> Claims 5 through 8 were objected to because they were not in proper form. Numerous other references were cited but they were not used to reject any of the original 8 claims. In a response dated October 30, 1992 the applicants canceled original claims 1 through 8 and resubmitted claims 9 through 15 asserting simply that these claims define over the cited art. A notice of allowability followed on November 16, 1992. No reasons were given so the examiner accepted that the new claims which were rewritten after the anticipation rejection defined over the art of record. Hence, no omnibus claims were in the originally filed application. Although the claims had to be studied by the US attorneys thoroughly in view of the anticipation rejection of four of the original claims, that study did not lead to a surrender of a conical shape because the spherical limitation was in the originally filed claims. Now that is form over substance for you.

Turning now to the opinion of former judge Prof. Jan Brinkhof, there is no English translation of the opinion available but it is described in an article by Prof. Brinkhof written in 2007:

A noteworthy judgment was the judgment of the Court of Appeal of 30 March 2000. Put simply, the matter related to a patent for a vehicle for transporting pallets. The vehicle had two loading platforms positioned one above the other and means to move at least one loading platform vertically between a loading position and a drive position. The vehicle was characterised in that, positioned above the lower platform, which could be moved vertically, there was a platform that could not be moved vertically, whilst the roof of the vehicle did not form a hindrance, in any event during loading and unloading. A competitor entered the market with a vehicle that was distinguished from the vehicle according to the patent in that the lower platform could not be moved whilst the upper platform could be moved. As was the case with the vehicle according to the patent, the roof of the vehicle did not form a hindrance during loading and unloading. Is this infringement?

2. The description mentions a French application for a vehicle with a non-movable lower platform floor and a second loading platform positioned above it

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45. U.S. Patent Application No. 07/817,659 (filed Jan. 7, 1992).

46. The corresponding disclosure is found in U.S. Patent No. 4,946,458 (filed Feb. 28, 1989).

that could be moved vertically. The disadvantage is that the pallets on the lower platform could not be unloaded independently of the pallets on the upper platform since this would require that the upper platform bearing the pallets be moved in an upward direction. This was impossible due to the permanent roof.

3. According to the Court of Appeal, the crucial question is whether a vehicle with a movable upper loading platform and a permanent non-movable lower loading platform falls within the scope of protection of the patent. The Court held that one does not need to be a person skilled in the art to realise that what is intended with the invention can be achieved in an almost identical manner by, rather than equipping a vehicle with a movable lower loading platform and a permanent upper loading platform, equipping it with a movable upper loading platform and a permanent lower loading platform. The person who drew up the claim must have been aware of this. Such is the opinion of the Court. Nevertheless, the person who drew up the claim that must, according to Art. 22A (1) Dutch Patents Act, contain a description of that for which an exclusive right is sought, chose to include in the characterising part of the claim only that the vehicle is equipped with a movable lower loading platform and a permanent upper loading platform. In the opinion of the Court, a third party who examines the claim and attempts to understand it in the light of the description and the drawings may, in this case, reasonably come to the conclusion that protection has only been sought for a vehicle as claimed, in other words a vehicle equipped with a movable lower loading platform and a permanent upper loading platform. This conclusion is all the more justified since, according to the description, the cited French patent application, which discloses a vehicle equipped with an upper loading platform that can be moved vertically, is part of the state of the art. Taking all the above into consideration, a third party will assume that the applicant had reasons for limiting the exclusive right that was sought to a vehicle equipped with a movable lower loading platform and a permanent upper loading platform. The Court considered that the legal certainty which third parties are entitled to rely on would be unacceptably compromised if the scope of protection were to be extended to vehicles equipped with a movable upper loading platform and a permanent lower loading platform, since such third party may reasonably assume that the applicant apparently deliberately chose not to seek protection for such a vehicle in the granting procedure.

*4. Even if the vehicle of a third party were to be deemed an equivalent embodiment, an extended scope of protection could not be deemed reasonable in a case like the present one. Anyone who, as in this case, could easily have drafted a claim that included the embodiment of the third party and who neglected to do so is not entitled, in all fairness, to any protection for this equivalent embodiment that was apparent and obvious at the time the claim was drafted. The doctrine of equivalence, the framework of which is formed by balancing fair protection for the pat-*

*entee and a reasonable degree of certainty for third parties, cannot be applied as a remedy against careless drafting. If that were the case, insufficient justice would be done to the principle of legal certainty.*<sup>47</sup>

In essence Chief Judge Rader and Prof. Brinkhof correctly understand that the dedication doctrine should not be limited to an embodiment that is expressly disclosed but not claimed in the patent. Thus if the teaching was reasonably foreseeable from the teachings of the patent, that teaching should be presumed to have been considered by those intimately involved with obtaining the patent and should have been claimed. The patentee should not then be allowed to invoke central claiming to obtain what should have been expressly obtained. In short, the classic English patent statement that “what is not claimed is disclaimed” should be applied to all asserted equivalents that were reasonably foreseeable. This would eliminate the incoherence of the mongrel patent claiming system currently operating in the United States. ■

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47. INTERPRETATION OF PATENTS IN EUROPE 165 (Jochen Pagenberg & William R. Cornish eds., 2006) (emphasis added).