

Taking a Step Beyond *Maxwell* to Tame the Doctrine of Equivalents

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INTRODUCTION

The doctrine of equivalents creates uncertainty in the scope of patent rights, spawns litigation, and clashes with other doctrines of patent law, namely the requirement for clarity of notice and the provisions for reissue of defective patents. For these reasons, many have attempted to criticize, limit and even abolish the doctrine of equivalents. The doctrine has more or less withstood all attacks and is a permanent fixture in patent law for the foreseeable future, because it serves an important purpose -- bolstering patent protection in circumstances that would otherwise undermine the incentive to innovate and disclose technology via patenting.

This paper analyzes the law and policies animating the doctrine of equivalents and other patent law doctrines with which it clashes. This paper proposes a limitation on the doctrine of equivalents that minimizes these clashes in a manner that furthers the goals of the patent system while fairly balancing the equitable interests of the parties involved. Part I of the paper provides basic background about the doctrine of equivalents. Part II reviews the tensions between the doctrine of equivalents and the notice function of claims. Part III presents reissue proceedings as a preferable alternative to the doctrine of equivalents. Part IV proposes that the doctrine of equivalents should be reserved only for after-arising technology, with justification based on an extension of the dedication rule of *Maxwell v. Baker*.¹ Finally, Part IV contrasts the proposal's justification from Part IV with other justifications that have been advanced in support of the same proposal.

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¹ *Maxwell v. J. Baker Inc.*, 86 F.3d 1098, 39 U.S.P.Q.2d 1001 (Fed. Cir. 1996).

I. THE DOCTRINE OF EQUIVALENTS IS A JUDICIALLY CREATED
DOCTRINE THAT EXTENDS THE RIGHT TO EXCLUDE BEYOND THE
LINGUISTIC LIMITS OF A CLAIM

The doctrine of equivalents is a judicially-created doctrine that extends the right to exclude beyond the linguistic limits of a patent claim.² Although the doctrine of equivalents does not extend or expand claim scope,³ it does provide patent rights that are different from the literal language of the claims. When there is no literal infringement, the doctrine of equivalents is invoked by considering the differences between the accused article/process and the literal meaning of the claims.⁴ Generally, if the differences are “insubstantial,” then the accused device/process is said to be infringing.⁵ Various factors are pertinent to the issue of whether the differences are substantial. These factors include known interchangeability, the purpose of the different part of the accused device, the qualities of the different part of the accused device when combined with other parts, and the function that it performs.⁶ In particular, a popular test for equivalence of mechanical differences is the function-way-result test, by which the differences between two things are insubstantial if they perform substantially the same function in substantially the same way to achieve the same result.⁷

Infringement under the doctrine of equivalents is typically determined by a jury. The determination of whether a given part of an accused device is insubstantially different from an element of a patent claim is a question of fact.⁸ The fact finder reaches the issue of equivalence in fact unless one of the legal doctrines described in Part B, *infra*, precludes infringement under the

² See *Wilson Sporting Goods Co. v. David Geoffrey & Assoc.*, 904 F.2d 677, 684, 14 U.S.P.Q.2d 1942, 1948 (Fed. Cir. 1991).

³ See *id.*

⁴ See *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 38, 41 U.S.P.Q.2d 1865, 1875 (1997).

⁵ See *Hilton Davis Chem. Co. v. Warner-Jenkinson Co.*, 62 F.3d 1512, 1521-22 (Fed. Cir. 1995), *acq.* *Warner-Jenkinson*, 520 U.S. at 38, 41 U.S.P.Q.2d at 1875.

⁶ See *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 605, 609, 85 U.S.P.Q. 328, 330-31 (1950).

⁷ See *Warner-Jenkinson Co.*, 520 U.S. at 38, 41 U.S.P.Q.2d at 1875.

⁸ See *Graver Tank*, 339 U.S. at 609, 85 U.S.P.Q. at 331. See also *Warner-Jenkinson*, 520 U.S. at 37-38, 41 U.S.P.Q.2d at 1874-75.

doctrine of equivalents as a matter of law.⁹

A. *The Rationale for the Doctrine of Equivalents is Preventing Competitors From Easily Avoiding Infringement by Strengthening Patent Rights and thus Further Encouraging Innovation and Disclosure*

The doctrine of equivalents serves an important purpose:

[C]ourts have also recognized that to permit imitation of a patented invention which does not copy every literal detail would be to convert the protection of the patent grant into a hollow and useless thing. Such a limitation would leave room for – indeed encourage – the unscrupulous copyist to make unimportant and insubstantial changes and substitutions in the patent which, though adding nothing, would be enough to take the copied matter outside the claim, and hence outside the reach of law. One who seeks to pirate an invention, like one who seeks to pirate a copyrighted book or play, may be expected to introduce minor variations to conceal and shelter the piracy. Outright and forthright duplication is a dull and very rare type of infringement. To prohibit no other would place the inventor at the mercy of verbalism and would be subordinating substance to form. It would deprive him of the benefit of his invention and would foster concealment rather than disclosure of inventions, which is one of the primary purposes of the patent system.¹⁰

⁹ See The Honorable Paul R. Michel, *Speech of the Honorable Paul R. Michel Given to the New Jersey Intellectual Property Law Association*, 9 FED. CIR. B.J. 139, 140 (1999).

¹⁰ *Graver Tank*, 339 U.S. at 609, 85 U.S.P.Q. at 330. See also *Hilton Davis*, 62 F.3d at 1532 (Newman, J., concurring) (“If minor improvements are likely to be captured by the doctrine of equivalents, . . . the doctrine of equivalents, like the grant of broad claims, could encourage ‘leapfrogging’ advances instead of minor improvements and substantial imitation.”).

B. The Doctrine of Equivalents is Limited by Prior Art, Prosecution History Estoppel, the "All-Elements" Rule and Public Dedication

Four doctrines limit application of the doctrine of equivalents. First, prior art limits the scope of equivalents to that which is novel and nonobvious over the prior art.¹¹ One conceptual method for testing whether this limit has been reached, first involves construction of a hypothetical claim that would literally cover the accused device/process.¹² Next, the hypothetical claim is tested for patentability in terms of novelty and nonobviousness over the prior art.¹³

Second, the prosecution history of a patent can limit the doctrine of equivalents by estopping a patentee from recapturing, as an equivalent, subject matter surrendered during prosecution before the Patent and Trademark Office ("PTO").¹⁴ The rationale for prosecution history estoppel is that patent examiners and the public, by inspection of the prosecution history, reasonably rely upon the representation by the patent applicant that subject matter is being surrendered.¹⁵ At this time, more exact contours of prosecution history estoppel are being considered by the Federal Circuit in the case of *Festo v. SMC*.¹⁶

A third limitation on the doctrine of equivalents is the "all-elements" rule, which precludes from permissible equivalents those that are only equivalent to the claimed invention as a whole.¹⁷ The all-elements rule forces the equivalence analysis to

¹¹ See *Wilson Sporting Goods*, 904 F.2d at 684, 14 U.S.P.Q.2d at 1948-49.

¹² *Id.*

¹³ *Id.*

¹⁴ See, e.g., *Warner-Jenkinson*, 520 U.S. 17, 41 U.S.P.Q.2d 1865 (1997).

¹⁵ See *Haynes Int'l, Inc. v. Jessop Steel Co.*, 8 F.3d 1573, 28 U.S.P.Q.2d 1652 (Fed. Cir. 1993), *on rehearing*, 15 F.3d 1076, 29 U.S.P.Q.2d 1958 (Fed. Cir. 1994). See also *Mark I Marketing Corp. v. R.R. Donnelly & Sons Co.*, 66 F.3d 285, 36 U.S.P.Q.2d 1095 (Fed. Cir. 1995).

¹⁶ See *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 187 F.3d 1381, 1382, 51 U.S.P.Q.2d 1959, 1960 (Fed. Cir. 1999) (*withdrawing* *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 172 F.3d 1361, 50 U.S.P.Q.2d 1385 (Fed. Cir. 1999)) (rehearing *en banc* ordered with briefing requested on issues of: (1) whether amendments not traversing art rejections create estoppel; (2) whether voluntary amendments create estoppel; (3) the range of equivalents available when estoppel is explicitly present; and (4) the range of equivalents available when estoppel is presumed.)

¹⁷ See generally *Pennwalt Corp. v. Durand-Wayland Inc.*, 833 F.2d 931, 4 U.S.P.Q.2d 1737 (Fed. Cir. 1987). See also *Warner-Jenkinson*, 520 U.S. 17, 41

proceed on a more focused, element-by-element basis. The all-elements rule has been emphasized by the Supreme Court as an important tool for preventing overreaching of the doctrine of equivalents.¹⁸ Presently, there is uncertainty in the law as to what is an “element” for purposes of this rule. *Festo v. SMC* will likely address this issue as well.¹⁹

A fourth limitation on the doctrine of equivalents is a limitation against recapturing, by equivalents, subject matter that was disclosed but unclaimed, and thus not regarded by the applicant as her invention during prosecution of the patent application.²⁰ This limitation is discussed in detail in Part V *infra*.

II. THE DOCTRINE OF EQUIVALENTS FRUSTRATES THE NOTICE FUNCTION OF CLAIMS

A. *The Patent Statute Requires That Claims Give Clear Notice to Competitors*

The patent statute requires that the claims of a patent “particularly point[] out and distinctly claim[]” what the applicant considers to be his invention.²¹ There are at least two reasons that this requirement was included in the Patent Act. First, claims that particularly and distinctly define the periphery of an invention help focus examination and facilitate meaningful prosecution of patent applications to arrive at issued claims that ideally are carefully tailored to protect the invention as much as possible within the requirements of patentability.²² Indeed, the system of patent

U.S.P.Q.2d 1865.

¹⁸ See *Warner-Jenkinson*, 520 U.S. at 24-25, 41 U.S.P.Q.2d at 1869.

¹⁹ See *Festo*, 187 F.3d at 1382, 51 U.S.P.Q.2d at 1960 (briefing also requested on the effect of the all-elements rule in this case).

²⁰ See *Maxwell v. J. Baker Inc.*, 86 F.3d 1098, 39 U.S.P.Q.2d 1001 (Fed. Cir. 1996).

²¹ 35 U.S.C. § 112 (1994).

²² See *Manual of Patent Examining Procedure* § 2173, 6th ed., rev. 3 (1997).

The primary purpose of this requirement of definiteness of claim language is to ensure that the scope of the claims is clear so the public is informed of the boundaries of what constitutes infringement of the patent. A secondary purpose is to provide a clear measure of what applicants regard as the invention so that it can be determined whether the claimed invention meets all the criteria for patentability and whether the specification meets the criteria of 35 U.S.C. 112, first paragraph, with respect to the claimed invention.

Id.

procurement in the United States is based upon the notion that pending claims give notice to the patent examiner as to the extent of the patent rights sought by the applicant.

A second and more important reason for the requirement of section 112 of Title 35 of the U.S.C., second paragraph, is that it allows competitors to discern with some certainty the scope of the patent rights of issued patents so that the competitors can plan their activities to conform with the law.²³ The phrase “the notice function” is most often used to refer to this second situation, and it is that sense that is the subject of this paper.

B. Clear Notice of Patent Rights to Competitors is Socially Desirable

In the realm of claim construction, the courts have emphasized the importance of the notice function of claims. In *Markman v. Westview Instruments Inc.*²⁴ (hereinafter “*Markman I*”), the Federal Circuit sitting *en banc* stated:

It is only fair (and statutorily required) that competitors be able to ascertain to a reasonable degree the scope of the patentee’s right to exclude. *Merrill v. Yeomans*, 94 U.S. 568, 573-74 (1877) (“It seems to us that nothing can be more just and fair, both to the patentee and to the public, than that the former should understand, and correctly describe, just what he has invented, and for what he claims a patent.”). They may understand what is the scope of *the patent owner’s rights* by obtaining the patent and prosecution history—“*the undisputed public record*”—and applying established rules of construction to the language of the patent claim in the context of the patent. Moreover, competitors should be able to rest assured, if infringement litigation occurs, that a judge, trained in the law, will similarly analyze the text of the patent and its associated public record and apply the established rules of construction, and in that way arrive at

²³ See, e.g., *Warner-Jenkinson*, 520 U.S. at 28-29, 41 U.S.P.Q.2d at 1871.

²⁴ 52 F.3d 967, 34 U.S.P.Q.2d 1321 (Fed. Cir. 1995) (*en banc*) (hereinafter “*Markman I*”), *aff’d*, *Markman v. Westview Instruments Inc.*, 517 U.S. 370, 38 U.S.P.Q.2d 1461 (1996) (hereinafter “*Markman II*”).

the true and consistent scope of *the patent owner's rights* to be given legal effect.²⁵

The Supreme Court echoed the same concern in *Markman v. Westview Instruments Inc.*²⁶ (hereinafter "*Markman II*"), as one of the "functional considerations" that compels claim construction by the courts.²⁷ In *Markman II*, Justice Souter quoted two cases for a similar proposition, as follows:

"[T]he limits of a patent must be known for the protection of the patentee, the encouragement of the inventive genius of others and the assurance that the subject of the patent will be dedicated ultimately to the public." *General Elec. Co. v. Wabash Appliance Corp.*, 304 U.S. 364, 369 (1938). Otherwise, a "zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement [of] claims would discourage invention only a little less than unequivocal foreclosure of the field[.]" *United Carbon Co. v. Binney & Smith Co.*, 317 U.S. 228, 236 (1942).²⁸

C. *The Penumbra of Equivalents Frustrates the Notice Function*

The preceding statements by the two highest courts of patent law seem to have been written as if there were no doctrine of equivalents, because the claims alone, no matter how they are interpreted, do not completely define "the patent owner's rights" (the phrase used in *Markman I*). "The patent owner's rights" are the rights to exclude others from making, using, selling, etc., what the claims literally cover plus their equivalents under the doctrine of equivalents.²⁹ The scope of equivalents cannot be determined from the "undisputed public record" (another phrase from *Markman I*). Furthermore, the determination of equivalence usually is not decided by a judge.³⁰ Rather, equivalence is a

²⁵ *Id.* at 979, 34 U.S.P.Q.2d at 1329 (emphasis added).

²⁶ 517 U.S. 370, 38 U.S.P.Q.2d 1461 (1996).

²⁷ *Id.* at 388, 38 U.S.P.Q.2d at 1470.

²⁸ *Id.*

²⁹ See, e.g., John R. Thomas, *On Preparatory Texts and Proprietary Technologies: The Place of Prosecution Histories in Patent Claim Interpretation*, 47 UCLA L. REV. 183, 191 (1999).

³⁰ See *Markman II*, 517 U.S. 370, 38 U.S.P.Q.2d 1461.

question of fact that a jury often decides.³¹

For the same reasons that claim construction should be predictable and certain, the scope of infringing activity should also be predictable and certain. Literal infringement meets this goal. Indeed, there is usually little dispute regarding literal infringement after a claim construction is settled.³² However, the doctrine of equivalents takes us away from this goal. The doctrine of equivalents sacrifices some certainty for the sake of equity.³³ The doctrine of equivalents frustrates certainty on many levels, including legal issues and factual issues.

There are presently legal uncertainties in the doctrine of equivalents,³⁴ and satisfactory resolution of these legal uncertainties is unlikely. For example, the hypothetical claim exercise for determining when an equivalent runs afoul of prior art,³⁵ though theoretically satisfying, is awkward in practice and rarely invoked.³⁶ As another example, the doctrine of prosecution history estoppel is gray in areas regarding “patentability,” other than patentability over prior art, as to whether voluntary amendments create estoppel and the range of equivalents available when estoppel is present. Though these issues are unsettled at this time, the courts should be able to articulate certain and satisfactory guidelines for these aspects of prosecution history estoppel.

However, the all-elements rule is much more troubling. The definition of an “element” is slippery and probably cannot be settled without some resort to arbitrariness. Presently, an element seems to be more than just a single word, but potentially less than an entire step in a method or an entire constituent part of an apparatus (as is typically demarcated by semicolons).³⁷ It is quite possible that the courts will settle on a totality of circumstances approach for determining whether a given word or phrase is an

³¹ *See id.*

³² *See Markman I*, 52 F.3d at 989, 34 U.S.P.Q.2d at 1337 (Mayer, J., concurring) (“[T]o decide what the claims mean is nearly always to decide the case.”).

³³ *See* Donald S. Chisum, *The Scope of Protection for Patents After the Supreme Court's Warner-Jenkinson Decision: The Fair Protection - Certainty Conundrum*, 14 SANTA CLARA COMPUTER & HIGH TECH. L.J. 1, 7 (1998).

³⁴ *See Festo*, 187 F.3d 1381, 1381, 51 U.S.P.Q.2d 1959, 1959 (Fed. Cir. 1999).

³⁵ *See Wilson Sporting Goods*, 904 F.2d 677, 14 U.S.P.Q.2d 1942 (Fed. Cir. 1991).

³⁶ John R. Thomas, Lecture at the Patent & Trademark Office (Spring 1997).

³⁷ *See, e.g., Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 9 U.S.P.Q.2d 1962 (Fed. Cir. 1989).

“element” or not, and such a result will add further uncertainty to the doctrine of equivalents. Given that the Supreme Court has placed so much importance on the all-elements rule as a means for curtailing broad application of the doctrine of equivalents,³⁸ defects in the all-elements rule will propagate through to affect the doctrine of equivalents significantly.

In addition to the legal uncertainties behind the doctrine of equivalents, there are numerous factual uncertainties in any case. First, under the function-way-result test for substantiality of differences, many possible functions, ways, and results are possible. Plaintiffs invariably argue for broader functions, ways, and results, while defendants argue for narrower ones.³⁹ The formulations of a function, way, and result become additional issues to litigate.

Perhaps the biggest uncertainty regarding the doctrine of equivalents is that the decision can be made by a jury.⁴⁰ *Markman II* confirms that the right to a jury trial is required by the Seventh Amendment, and that the jury’s role is only to decide the ultimate infringement issues.⁴¹ Of course, summary judgment is possible when the facts are such that no reasonable jury could find against the weight of the evidence or when certain legal issues like the prior art limits, prosecution history estoppel, the all-elements rule, or the dedication rule preclude a finding of infringement by equivalents.⁴² In fact, there appears to be a movement towards use of these tools by the court (as opposed to the jury) to resolve issues under the doctrine of equivalents.⁴³ Perhaps this movement is due to the court’s (particularly the Federal Circuit’s) sense that greater predictability is needed in this area of the law.

³⁸ See Warner-Jenkinson, 520 U.S. 17, 24-25, 41 U.S.P.Q.2d 1865, 1869 (1997).

³⁹ See DONALD S. CHISUM ET AL., PRINCIPLES OF PATENT LAW: CASES AND MATERIALS 1114 (1998).

⁴⁰ See Graver Tank, 339 U.S. 605, 609, 85 U.S.P.Q. 328, 331 (1950). See also Warner-Jenkinson, 520 U.S. at 35-39, 41 U.S.P.Q.2d at 1874-75.

⁴¹ *Markman II*, 517 U.S. 370, 38 U.S.P.Q.2d 1461 (1996).

⁴² See Warner-Jenkinson, 520 U.S. at 24-25, 39 n.8, 41 U.S.P.Q.2d at 1869, 1876 n.8. See also Sage Prod. Inc. v. Devon Indus. Inc., 126 F.3d 1420, 1423, 44 U.S.P.Q.2d 1103, 1106 (Fed. Cir. 1997).

⁴³ See Peter J. Ayers, *Armed and Ready: Defending Patent Infringement Claims by Summary Judgment*, 8 J. PAT. & TRADEMARK OFF. SOC’Y 421, 439 (1999). See also Jon D. Grossman & Eric Oliver, *A Step-By-Step Guide to Prosecuting Business Method Patents*, 17 No. 3 COMPUTER LAW. 6, 6 (March 2000) (“The current trend toward liming the scope of equivalents (under 35 U.S.C. § 112 (¶ 6) and under the Doctrine of Equivalents . . .”).

D. Frustration of the Notice Function Due to a Far-Reaching Doctrine of Equivalents Causes Business Uncertainty, Stifles “Designing Around” Innovations and Breeds Litigation

Uncertainty as to application of the doctrine of equivalents, like uncertainty as to claim construction, makes it more difficult for a competitor to determine the extent of patent rights.⁴⁴ This in turn makes it more difficult for the competitor to plan its activities (e.g., negotiate for a license, expect litigation, and predict the results of litigation). Patent practitioners feel the force of this uncertainty when they must provide an opinion as to whether a client is infringing a patent or not. This uncertainty can result in a less efficient system of competition.

Uncertainty as to application of the doctrine of equivalents also makes it less likely that a competitor will expend resources to “design around” patents,⁴⁵ i.e., find ways to achieve the advantage of the invention or solve the problem addressed by the invention without infringing the patent claims. If patent rights could be determined with certainty from the public record, a competitor might be more willing to invest in efforts to design around the patent rights. However, when the patent rights are less certain, a competitor must take a greater risk to allocate resources in an attempt to design around the patent rights. Lack of attempts to design around patents is undesirable for society for two reasons: first, designing around patents creates competition via cross elasticity of demand where a patent has foreclosed competition; second, designing around patent rights is in itself a form of innovation.⁴⁶ The overall goal of the patent system is to encourage innovation and its disclosure.⁴⁷ On one hand, the stronger patent

⁴⁴ See *Hilton Davis Chem. Co. v. Warner-Jenkinson Co.*, 62 F.3d 1512, 1535-36 (Newman, J., concurring) (Fed. Cir. 1995).

⁴⁵ Cf. *id.* (listing four pairs of factually similar cases in which opposite determinations of equivalency were found, prompting the statement: “It is not the doctrine of equivalents, but the uncertainty of its application, that causes the uncertainty in commercial relationships.”).

⁴⁶ See *Read Corp. v. Portec, Inc.*, 970 F.2d 816, 828 (Fed. Cir. 1992) (“We have often noted that one of the benefits of the patent system is the incentive it provides for ‘designing around’ patented inventions, thus creating new innovations.”). See also *Slimfold Mfg. Co. v. Kinkead Indus., Inc.*, 932 F.2d 1453, 1457 (Fed. Cir. 1991) (“Designing around patents is, in fact, one of the ways in which the patent system works to the advantage of the public in promoting progress in the useful arts, its constitutional purpose.”).

⁴⁷ See U.S. CONST. art. I, § 8, cl. 8. See also *Aronson v. Quick Point Pencil Co.*, 440

rights that accompany a more expansive doctrine of equivalents is an incentive to innovate. On the other hand, stifling designing around activities suppresses an important source of downstream innovation.⁴⁸

Finally, uncertainty of any form breeds litigation. This is certainly true in patent law.⁴⁹ Disputes are less likely to settle in the face of a disputable factual question, such as whether an accused device or process is equivalent to a patent claim.

U.S. 257, 262 (1979) (“First, patent law seeks to foster and reward invention; second, it promotes disclosure of inventions to stimulate further innovation and to permit the public to practice the invention once the patent expires.”).

⁴⁸ See *State Indus., Inc. v. A.O. Smith Corp.*, 751 F.2d 1226, 1235-36, 224 U.S.P.Q. 418, 424 (Fed. Cir. 1985). Cf. ROBERT A. GORMAN AND JANE C. GINSBURG, COPYRIGHT: CASES AND MATERIALS 24 (1999)

[B]eyond some level copyright protection may actually be counterproductive by raising the cost of expression . . . Creating a new work typically involves borrowing or building on material from a prior body of works, as well as adding original expression to it. A new work of fiction, for example, will contain the authors expressive contributions but also characters, situations, plot details, and so on, invented by previous authors. Similarly, a new work of music may borrow tempo changes and chord progressions from earlier works. The less extensive copyright protection is, the more an author, composer, or other creator can borrow from previous works without infringing copyright and thus lower, therefore, the costs of creating a new work. Of course, even if copyright protection effectively prevented all unauthorized copying from a copyrighted work, authors would still copy. But they would copy works whose copyright protection had run out, or they would disguise their copying, engage in costly searches to avoid copying protected works, or incur licensing and other transaction costs to obtain permission to copy such works. The effect would be to raise the cost of creating new works – the cost of expression, broadly defined – and thus, paradoxically, perhaps lower the number of works created.

Id.

⁴⁹ See Scott R. Boalick, Note, *The Dedication Rule and The Doctrine of Equivalents: A Proposal for Reconciliation*, 87 GEO. L.J. 2363, 2365 n.22 (1999) (citing Richard L. Wynne, Jr., *Patent Law: Warner-Jenkinson Co. v. Hilton Davis Chemical Co.: How Can the Federal Circuit Control the Doctrine of Equivalents Following the Supreme Court's Refusal to Set the Standard?*, 50 OKLA. L. REV. 425, 444-45 (1997) and James R. Farrand & Ronald L. Johnston, *Expanded Doctrine of Equivalents Extends Patents Old and New*, 14 No. 6 COMPUTER LAW 1, 9-10 (1997)).

III. REISSUE SHOULD BE PREFERRED OVER RESORT TO THE DOCTRINE OF EQUIVALENTS BECAUSE REISSUE PRESERVES THE NOTICE FUNCTION OF CLAIMS

Statutory reissue provisions allow a patentee to correct “defects” in patents in a proceeding at the PTO.⁵⁰ A correctable defect is claiming too little in an original patent.⁵¹ However, broad application of the doctrine of equivalents is a disincentive for a patentee to pursue a reissue patent. A patentee with literal claim scope that is too narrow is likely to assert the original patent while invoking the doctrine of equivalents, rather than making an application for reissue. This is unfortunate for competitors, because reissue patents preserve the notice function of claims whereas the doctrine of equivalents does not.⁵² The tension between the doctrine of equivalents and reissue provisions has been recognized frequently by the courts.⁵³

A. *Reissue Can Convert a Case of Infringement Under the Doctrine of Equivalents to a Case of Literal Infringement if the Equivalent is Disclosed but Unclaimed*

In a case where an equivalent is disclosed but unclaimed in the original patent, literal infringement of the original patent is not possible. If the doctrine of equivalents were allowed to reach disclosed but unclaimed equivalents, then the patent holder could prevail in an infringement action under the doctrine of equivalents. However, reissue proceedings followed by an infringement action, under a theory of literal infringement of the reissued claims, may be an alternative in this situation. Claims of a reissue patent, like all claims, must be supported by disclosure in the original application.⁵⁴ Furthermore, claims of a reissue patent must not

⁵⁰ See 35 U.S.C. § 251 (1994).

⁵¹ See *id.*

⁵² See, e.g., *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 605, 615-16, 85 U.S.P.Q. 328, 333 (Black, J., dissenting) (1950); *Hilton Davis Chem. Co. v. Warner-Jenkinson Co.*, 62 F.3d 1512, 1560 (Nies, J., dissenting) (Fed. Cir. 1995).

⁵³ See, e.g., *Graver Tank*, 339 U.S. at 615-16, 85 U.S.P.Q. at 333 (Black, J., dissenting).

⁵⁴ See 35 U.S.C. § 251 (1994) (“The provisions of this title relating to applications

broaden the scope of coverage in any respect unless filed within two years after the issuance of the original patent.⁵⁵ Assertion of the original patent under the doctrine of equivalents does not have this time constraint.⁵⁶

B. Competitors Have Notice of the Possible Scope and Extent of Reissue a priori as Well as Notice and Limited Participatory Rights in a Reissue Proceeding

Reissue preserves the notice function of claims for several reasons. First, the extent of possible reissue claims, whether broadened or not, is known *a priori* to competitors by inspection of the original disclosure.⁵⁷ Second, the time limit for application of broadening reissues gives competitors certainty that broadened claims will not be possible after a fixed time.⁵⁸ Third, an applicant for a reissue patent cannot recapture subject matter that was surrendered during prosecution of the original patent.⁵⁹ Thus, while reissue removes some of the certainty and precision from original patent claims, reissue does so in a controlled manner that preserves predictability to a large extent.

for patent shall be applicable to applications for reissue of a patent . . ."). See also Application of Hay, 534 F.2d 917, 919, 189 U.S.P.Q. 790 (C.C.P.A. 1976).

⁵⁵ See 35 U.S.C. § 251 (1994).

⁵⁶ See Hilton Davis, 62 F.3d at 1560 (Nies, J., dissenting).

⁵⁷ But cf. J. Christopher Carraway, *The Uncertain Future of Enforcing Patents that have been Broadened Through Reissue*, 8 FED. CIR. B.J. 63, 70-75 (1998) (arguing that reissue provisions conflict with the notice function of precise claiming during the two years after issuance, when claims are subject to change in a reissue proceeding).

⁵⁸ See *id.*

⁵⁹ See *Ball Corp. v. United States*, 729 F.2d 1429, 1436, 221 U.S.P.Q. 289, 295 (Fed. Cir. 1984)

The recapture rule bars the patentee from acquiring, through reissue, claims that are of the *same* or of *broader scope* than those claims that were canceled from the original application. On the other hand, the patentee is free to acquire, through reissue, claims that are *narrower* in scope than the canceled claims. If the reissue claims are narrower than the canceled claims, yet broader than the original patent claims, reissue must be sought within 2 years after grant of the original patent. (footnotes omitted).

Id.; see also *In re Clement*, 131 F.3d 1464 (Fed. Cir. 1997); *Hester Indus., Inc. v. Stein, Inc.*, 142 F.3d 1472 (Fed. Cir. 1998).

C. *Reissue Law is the Appropriate Vehicle to Compromise the Competing Policies at Stake*

The competing policies at play in reissue law include tolerance of some imperfection in original patents, fairness to competitors who have relied on original patent claims, and efficient operations of the PTO.⁶⁰ For example, the two-year limit for seeking broadened claims is Congress' choice for balancing the first two policy interests, and intervening rights directly concern the second. These competing policies are important ones that need to be addressed.⁶¹ Though some commentators are critical of the way reissue law balances these policies,⁶² reissue law provides the framework in which these policies can best be balanced. The doctrine of equivalents, on the other hand, is an awkward framework for satisfactorily addressing these important policy concerns.

IV. THE DOCTRINE OF EQUIVALENTS SHOULD BE RESERVED FOR ONLY EQUIVALENTS THAT ARISE AFTER FILING OF THE ORIGINAL APPLICATION FOR PATENT

A. *Equivalents Known at the Time of Filing of the Original Application for Patent Can and Should be Disclosed and Claimed*

"Equivalents" known at the time of filing of an original patent application can be disclosed. The terminology here deserves explanation. It is not typical to refer to an "equivalent" at the time of filing. "Equivalents" are the subject of infringement analysis long after filing. An equivalent at the time of filing would more

⁶⁰ Cf. *In re Graff*, 111 F.3d 874, 877, 42 U.S.P.Q.2d 1471 (Fed. Cir. 1997) ("The reissue statute balances the purpose of providing the patentee with an opportunity to correct errors of inadequate claim scope, with the public interest in finality and certainty of patent rights.") (citing *Wollensak v. Reiher*, 115 U.S. 96, 100 (1885)).

⁶¹ See 35 U.S.C. § 252 (1994). See also *Seattle Box Co. v. Indus. Crating and Packing Inc.*, 756 F.2d 1574, 225 U.S.P.Q. 357 (Fed. Cir. 1985).

⁶² See MARTIN J. ADELMAN ET AL., *CASES AND MATERIALS ON PATENT LAW* 800 (1998) (citing Martin J. Adelman & Gary L. Francione, *The Doctrine of Equivalents in Patent Law: Questions Pennwalt Did Not Answer*, 137 U. PA. L. REV. 673 (1989)). See also Carraway, *supra* note 57 at 90-91.

likely be referred to as a “variation” or “alternative embodiment” of the invention, and that is what is meant herein by the term “equivalent” in the context of the time of filing, i.e., a variation or alternative to the invention that would later be asserted as an equivalent in an infringement context. By simply describing the equivalents as alternative embodiments in the original patent application, so long as the description conforms with the requirements of section 112 of Title 35 of the U.S.C., first paragraph, the equivalents can be claimed in the original application and perhaps in a later reissue patent application as well.

As a practical matter for the patent drafter, it is good practice to disclose alternative embodiments liberally. In so doing, the drafter is better able to generalize the various disclosed embodiments to arrive at a broad claim. Disclosure of alternative embodiments also affords the patent prosecutor flexibility to avoid prior art cited by the patent examiner. Finally, liberal disclosure is advantageous for defensive reasons. When the patent issues, the disclosure becomes prior art (as of its filing date) that can preclude others from patenting what is disclosed.⁶³ On the other hand, failure to disclose an alternative embodiment, if it is separately patentable, leaves open the possibility that another will invent the alternative embodiment and patent it himself.

B. Disclosed But Unclaimed Equivalents Can and Should be Claimed in a Reissue Patent Under Appropriate Circumstances

If an equivalent is disclosed in an original patent application, it can be claimed in a later reissue patent application, regardless of the scope of the reissue patent claims, provided the reissue application is filed within two years from the issuance of the original patent,⁶⁴ and there is no attempt to recapture subject matter surrendered during the original prosecution. If claiming the equivalent does not broaden the scope of a claim in the original patent, then the equivalent can be claimed in a reissue filed anytime during the term of the original patent.⁶⁵ To maximize the

⁶³ See 35 U.S.C. § 102(e) (1994).

⁶⁴ See 35 U.S.C. § 251 (1994).

⁶⁵ See 35 U.S.C. § 251 (1994).

opportunity for tailoring patent claims during reissue, it is important to obtain broad claims in the original patent.

C. Disclosed But Unclaimed Embodiments Should be Barred From the Doctrine of Equivalents

Various thoughts have emerged from the bench regarding the relationship between the doctrine of equivalents and disclosed but unclaimed embodiments of the invention. *Graver Tank & Manufacturing Co. v. The Linde Air Products Co.*⁶⁶ (hereinafter “*Graver Tank*”) entertained and dismissed the proposal that the doctrine of equivalents should be limited to only that which is disclosed in the patent specification.⁶⁷ *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.*⁶⁸ (hereinafter “*Warner-Jenkinson*”) reiterated that dismissal.⁶⁹ On the other hand, the much more recent case of *Maxwell v. J. Baker Inc.*⁷⁰ (hereinafter “*Maxwell*”) held that an embodiment that is disclosed but unclaimed is barred from the doctrine of equivalents,⁷¹ although the holding of *Maxwell* has been limited by *YBM Magnex v. U.S. International Trade Commission*⁷² (hereinafter “*YBM*”). It is difficult to reconcile *Maxwell* and *YBM*.⁷³ The better reasoned holding is that of *Maxwell*. Both cases are described in detail below.

1. Maxwell v. Baker

In *Maxwell*, the patent in suit was directed at a system for attaching together mated pairs of shoes. As claimed, *Maxwell*’s (the inventor) invention comprised an integral fastening tab having two parts.⁷⁴ The first part of the fastening tab was secured between the inner sole and outer sole inside the shoe.⁷⁵ The second part

⁶⁶ 339 U.S. 605, 85 U.S.P.Q. 328 (1950).

⁶⁷ *Id.* at 609, 85 U.S.P.Q. at 330-31.

⁶⁸ 520 U.S. 17, 41 U.S.P.Q.2d 1865 (1997).

⁶⁹ *Id.* at 37-38, 41 U.S.P.Q.2d at 1874.

⁷⁰ 86 F.3d 1098, 39 U.S.P.Q.2d 1001 (Fed. Cir. 1996).

⁷¹ *Id.*

⁷² 145 F.3d 1317, 46 U.S.P.Q.2d 1843 (Fed. Cir. 1998).

⁷³ *See, e.g.*, Boalick, *supra* note 49, at 2394.

⁷⁴ *See Maxwell*, 86 F.3d at 1102-04, 39 U.S.P.Q.2d at 1003-04.

⁷⁵ *See id.*

extended vertically upward along the shoe upper.⁷⁶ A filament extended through apertures in the second parts of the fastening tab in each shoe of the mated pair.⁷⁷ Maxwell disclosed, but did not claim, that the fastening tabs could be attached by being stitched into a lining seam at the side or back of the shoe, rather than being attached between the inner and outer soles.⁷⁸ Aware of Maxwell's patent, Baker designed attachment systems just as Maxwell had described but not claimed, i.e., with fastening tabs stitched along interior seams, not fastened between the inner and outer soles.⁷⁹

The Federal Circuit held that Maxwell was not entitled to a range of equivalents that included the disclosed but unclaimed embodiment.⁸⁰ In support of this holding, Judge Lourie cited the "well-established rule that 'subject matter disclosed but not claimed in a patent application is dedicated to the public.'"⁸¹ The rationale for this rule is to prevent patent applicants from filing narrow claims, thereby avoiding examination, and then seeking to enlarge the claim scope through the doctrine of equivalents.⁸² This argument has the flavor of estoppel. The premise of the argument is that a patentee should not get different treatment for her invention outside the PTO from that had inside the PTO. That is, if a patent applicant considered her invention to be one embodiment and not another at the PTO, then she as a patentee will be held to that choice.⁸³

According to the court, reissue is a statutory exception to this "well-established" rule.⁸⁴ Curiously, the court does not articulate an exception for continuing applications that claim the unclaimed embodiments. Because such an exception is surely present,⁸⁵ the term "unclaimed" in this context must be understood to be

⁷⁶ *See id.*

⁷⁷ *See id.*

⁷⁸ *See id.* at 1106.

⁷⁹ *See id.* at 1103.

⁸⁰ *See id.* at 1106.

⁸¹ *Id.* at 1106 (citing *Unique Concepts, Inc. v. Brown*, 939 F.2d 1558, 1562-63, 19 U.S.P.Q.2d 1500, 1504 (Fed. Cir. 1991)).

⁸² *See id.*

⁸³ *See id.*

⁸⁴ *See id.*

⁸⁵ *See In re Gibbs and Griffin*, 437 F.2d 486, 493 n.6, 168 U.S.P.Q. 578, 584 n.6 (C.C.P.A. 1971) ("A modicum of thought will demonstrate, as can be seen from the cases we are discussing herein, that the public does not necessarily get free use of an invention merely because *in a particular patent* it is disclosed and not claimed. It may be and often is claimed in another patent.").

unclaimed at all, not just unclaimed in the individual patent in suit. Claiming an alternative embodiment in a continuing application avoids the reach of the rule. This result is consistent with the rationale of the rule, because the filing of multiple applications to claim multiple embodiments does not signal that the applicant regards only limited embodiments to be her invention.

Maxwell explains why *Graver Tank* is consistent with the rule that disclosed but unclaimed embodiments cannot be equivalents.⁸⁶ In *Graver Tank*, the accused composition, a welding flux comprising manganese silicate, was disclosed in the patent in suit⁸⁷ (the “‘960 patent”) but not within the literal scope of the disputed claims, which required an “alkaline earth metal silicate” (which manganese silicate is not).⁸⁸ The Court found infringement under the doctrine of equivalents in *Graver Tank* and, in doing so, gave weight to the findings in the record that prior art to the ‘960 patent disclosed the use of manganese silicate in welding fluxes.⁸⁹ The Federal Circuit in *Maxwell* distinguished the facts before it over *Graver Tank* by noting that the ‘960 patent in *Graver Tank* contained broader claims than those at issue on appeal.⁹⁰ The broader claims read on welding fluxes containing manganese silicates, but the broader claims were earlier held invalid as embracing many inoperative cases.⁹¹ Thus, the equivalent was “claimed,” though not validly, and even invalid claims are sufficient to escape the well-established rule that bars equivalents extending to disclosed but unclaimed subject matter.⁹² Focusing the rule on issued claims, rather than valid claims, is consistent with the rationale of the rule. Issued claims, even if later held invalid, are fully examined by the PTO and represent what the applicant regards as her invention.

⁸⁶ See *Maxwell*, 86 F.3d 1098, 1107-08, 39 U.S.P.Q.2d 1001, 1006-07 (Fed. Cir. 1996).

⁸⁷ U.S. Patent 2,043,960.

⁸⁸ *Graver Tank*, 339 U.S. 605, 610, 85 U.S.P.Q. 328, 331 (1950).

⁸⁹ See *id.*

⁹⁰ See *Maxwell*, 86 F.3d at 1107-08, 39 U.S.P.Q.2d at 1006-07.

⁹¹ *Graver Tank & Mfg. Co. v. Linde Air Prod., Inc.*, 336 U.S. 271, 277, 80 U.S.P.Q. 451, 453 (1949), *aff'd*, 339 U.S. at 607, 85 U.S.P.Q. at 328.

⁹² See *Maxwell*, 86 F.3d at 1107, 39 U.S.P.Q.2d at 1007.

2. *YBM Magnex v. International Trade Commission*

The “well-established” rule invoked in *Maxwell* was limited by a totally diverse panel of the Federal Circuit in *YBM*.⁹³ In *YBM*, the patentee asserted U.S. Patent 4,588,439 (the “439 patent”), which was directed to a permanent magnet alloy containing various specified elements including oxygen.⁹⁴ The ‘439 patent claimed a magnet alloy with oxygen content in the range of 6,000-35,000 ppm (parts per million).⁹⁵ However, the ‘439 patent disclosed a wider range of oxygen content, including a lower range of 5,400-6,000 ppm, where the accused alloy lay.⁹⁶ An administrative law judge (“ALJ”) at the International Trade Commission (the “Commission”) found that the accused alloy infringed the ‘439 patent claims under the doctrine of equivalents.⁹⁷ However, the Commission, relying on *Maxwell*, reversed the ALJ’s determination.⁹⁸ The Federal Circuit panel then reversed the Commission.⁹⁹

In reversing the Commission, the Federal Circuit panel explained that the “well-established” rule of *Maxwell* must be limited to “distinct” embodiments to accord with Supreme Court precedent in *Graver Tank* and *Warner-Jenkinson*.¹⁰⁰ To support its view, the *YBM* panel refers to two facets of the *Graver Tank* case. First, the *YBM* panel notes that the district court in the *Graver Tank* litigation used the disclosure of manganese silicate as supporting its conclusion of equivalents.¹⁰¹ Second, the *YBM* panel notes that dissenters on the Supreme Court advocated a rule that unclaimed disclosure is dedicated to the public, yet the majority failed to adopt such a rule.¹⁰² To further support its view,

⁹³ See *YBM Magnex*, 145 F.3d 1317, 1320-22, 46 U.S.P.Q.2d 1843, 1845-7 (Fed. Cir. 1998).

⁹⁴ See *id.* at 1318.

⁹⁵ See *id.*

⁹⁶ See *id.* at 1319.

⁹⁷ See *id.*

⁹⁸ See *id.* at 1320.

⁹⁹ See *id.* at 1322.

¹⁰⁰ See *id.* at 1321.

¹⁰¹ See *id.* at 1320.

¹⁰² See *id.* at 1321.

the *YBM* panel refers to *Warner-Jenkinson*, in which the Court “rejected the . . . proposition that equivalents . . . must be disclosed.”¹⁰³

The *YBM* court’s analysis of Supreme Court precedent is unconvincing. With respect to the first facet of *Graver Tank* cited by the *YBM* panel, the Supreme Court majority in *Graver Tank* never refers to the fact that the specification of the ‘960 patent discloses the unclaimed manganese silicate ingredient. Although the trial court relied upon the disclosure, the majority noted other evidence in upholding the trial court’s finding of equivalents.¹⁰⁴ Thus, *Graver Tank* cannot properly be cited as Supreme Court precedent for the proposition that disclosure of a feature weighs in favor of finding that feature to be within the scope of equivalents to the claims.

With respect to the *YBM* court’s reference to the dissent’s positions in *Graver Tank*, that everything disclosed but unclaimed in the patent is dedicated to the public, it is improper to say that the Supreme Court rejected this argument. The Court simply failed to apply the rule in this case. The dissent notes that such a rule is required by precedent.¹⁰⁵ As explained in *Maxwell*, the facts of *Graver Tank* did not implicate the rule because the equivalent at issue was in fact “claimed.”¹⁰⁶

3. *Legal Analysis of Precedent Leading up to Maxwell and YBM is Not Conclusive*

Because the holdings of *Maxwell* and *YBM* are difficult to reconcile on their faces, it is worthwhile to examine precedent addressing the dedication rule. Supreme Court precedent in this area is scant. The earliest case is *Miller v. Brass Co.*¹⁰⁷ (hereinafter “*Miller*”). The patent at issue in *Miller* was a reissue

¹⁰³ *Id.* (quoting *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 41 U.S.P.Q.2d 1865, 1874 (1997)).

¹⁰⁴ *Graver Tank*, 339 U.S. 605, 610-11, 85 U.S.P.Q. 328, 331 (1950) (stating that use of expert testimony, learned treatises and prior art was “[p]articularly important”).

¹⁰⁵ *See id.* at 614 (Black, J., dissenting) (citing *Miller v. Brass Co.*, 104 U.S. 350, 352 (1881); *Marconi Wireless Co. v. United States*, 57 U.S.P.Q. 471, 481 (1943)). *See also id.* at 618 (Douglas, J., dissenting) (citing *Mahn v. Harwood*, 112 U.S. 354, 361 (1884)).

¹⁰⁶ *Maxwell v. J. Baker Inc.*, 86 F.3d 1098, 1107-08, 39 U.S.P.Q.2d 1001, 1006-07 (Fed. Cir. 1996).

¹⁰⁷ 104 U.S. 350 (1881).

patent that claimed a single dome combustion lamp with a chimney.¹⁰⁸ The original patent, which had been granted fifteen years before the reissue patent, had claimed a double-dome combustion lamp without a chimney and described the invention as an advance over the prior art because a chimney was not needed.¹⁰⁹ The Court invalidated the reissue patent and in so doing articulated the dedication rule: “[T]he claim of a specific device or combination, and an omission to claim other devices or combinations apparent on the face of the patent, are, in law, a dedication to the public of that which is not claimed.”¹¹⁰ The Court justified the dedication rule on the grounds that laches should bar enlargement of claim scope after two years.¹¹¹ This requirement was subsequently codified.¹¹²

The *Miller* Court also seems to criticize the adequacy of the disclosure in the original patent with respect to the reissue claims, stating “the invention specified in the . . . reissued patent . . . is not the same invention which was *described* and claimed in the original patent.”¹¹³ This statement suggests that the reissue patent claimed new matter not adequately described in the original patent disclosure. If true, then the dedication rule would be dictum in *Miller*.

Subsequent cases cite *Miller* in two divergent ways. In the first line of cases, *Miller* is cited for the general dedication rule under various circumstances. These circumstances include the same reissue context, as reaffirmed in *Mahn v. Harwood*¹¹⁴ (hereinafter “*Mahn*”) (“We deem it proper, therefore, to say, once for all, that the views announced in *Miller v. The Brass Company* on the subject of reissuing patents for the purpose of expanding and enlarging the claim, were deliberately expressed and are still adhered to.”).¹¹⁵ Another circumstance in which the dedication rule has been invoked is claim construction.¹¹⁶ Finally, the

¹⁰⁸ *Id.* at 351.

¹⁰⁹ *See id.*

¹¹⁰ *Id.* at 352.

¹¹¹ *See id.*

¹¹² *See* 35 U.S.C. § 251.

¹¹³ *Miller*, 104 U.S. at 351 (emphasis added).

¹¹⁴ 112 U.S. 354 (1884).

¹¹⁵ *Id.* at 358.

¹¹⁶ *See* *Unique Concepts, Inc. v. Brown*, 939 F.2d 1558, 19 U.S.P.Q.2d 1500, 1504 (Fed. Cir. 1991).

dedication rule has been applied as a limit to the doctrine of equivalents.¹¹⁷

*Brunswick Corp. v. United States*¹¹⁸ (hereinafter “*Brunswick*”) is a case in the last category. In *Brunswick*, the claims at issue were directed at a radar camouflage screen and a recited resistivity “between . . .100 ohms and . . .1000 ohms but considerably different from 377 ohms.”¹¹⁹ The accused radar screens had a resistivity between 74 and 87 ohms.¹²⁰ The patent specification contained a table disclosing the accused range.¹²¹ The *Brunswick* majority applied *Maxwell* directly,¹²² and Judge Newman wrote a dissent that previewed almost exactly her majority opinion in *YBM*.¹²³ Both *Brunswick* and *YBM* involved numerical ranges and are extremely difficult to reconcile,¹²⁴ except for the fact that *Brunswick* is non-precedential. *YBM*, as noted above, attempts to draw a distinction on the basis of whether the disclosed but unclaimed subject matter is a distinct embodiment from what is claimed.¹²⁵

Another line of cases emphasizes the fact that *Miller* involved an inadequate disclosure. In *Application of Hay*,¹²⁶ an applicant for a reissue patent sought to introduce new matter into the reissue patent application so as to satisfy the best mode requirement.¹²⁷ The court held that traditional notions of new matter apply to reissue applications.¹²⁸ The court distinguished *Miller*, noting that in *Miller*, “the reissue corrected or clarified matter which had already been disclosed but in a defective fashion.”¹²⁹ Similarly, *YBM* cites *Miller* as a case in which “the original patent did not

¹¹⁷ See, e.g., *Maxwell v. J. Baker, Inc.*, 39 U.S.P.Q.2d 1001 (1996); *Brunswick Corp. v. United States*, 152 F.3d 946 (table), 46 U.S.P.Q.2d 1446, 1449-50, 1998 WL 163700, at *4 (Fed. Cir. 1998) (unpublished opinion).

¹¹⁸ *Brunswick*, 152 F.3d 946 (table), 46 U.S.P.Q.2d 1446.

¹¹⁹ *Brunswick*, 46 U.S.P.Q.2d at 1448.

¹²⁰ See *id.* at 1449.

¹²¹ See *id.* at 1450.

¹²² See *id.*

¹²³ See *id.* at 1454.

¹²⁴ See Boalick, *supra* note 49 at 2394.

¹²⁵ See *YBM Magnex, Inc. v. Int’l Trade Comm’n*, 145 F.3d 1317, 1321, 46 U.S.P.Q.2d 1843, 1846 (Fed. Cir. 1998).

¹²⁶ 534 F.2d 917, 189 U.S.P.Q. 790 (C.C.P.A 1976).

¹²⁷ *Id.* at 918-19, 189 U.S.P.Q. at 791.

¹²⁸ See *id.* at 919.

¹²⁹ *Id.* at 920.

describe the subject matter for which reissue was sought.”¹³⁰ Under this view, *Miller* disclosed too little rather than too much.

Whatever view of *Miller* is taken, *Mahn* is Supreme Court precedent in support of the dedication rule in a reissue context.¹³¹ Given that the dedication rule exists as a sound proposition of law in at least the reissue context, and perhaps claim construction, the issue is whether it rightfully extends to the doctrine of equivalents. An argument in support of this extension can be based on the rationale for the dedication rule. The primary rationale for the dedication rule is that patentees should not be able to assert patent rights broader than what the PTO examined, when there was an opportunity to obtain examination of claims covering the asserted rights.¹³² Another rationale is public notification.¹³³ Both rationales support extension of the dedication rule to the doctrine of equivalents.¹³⁴

However, there exists precedent for allowing patentees to apply the doctrine of equivalents to reach disclosed but unclaimed subject matter. As pointed out in *YBM*, these cases include *Uniroyal, Inc. v. Rudkin-Wiley Corp.*¹³⁵ (hereinafter “*Uniroyal*”), *Miles Laboratories, Inc. v. Shandon, Inc.*¹³⁶ (hereinafter “*Miles Labs*”), *Pall Corp. v. Micron Separations, Inc.*¹³⁷ (hereinafter “*Pall*”), and *Modine Manufacturing Co. v. U.S. International Trade Commission*¹³⁸ (hereinafter “*Modine*”). In *Uniroyal*, the

¹³⁰ *YBM Magnex*, 46 U.S.P.Q.2d at 1847. *Cf.* Mark V. Hurwitz, *YBM Magnex, Inc. v. International Trade Commission*, 14 BERKELEY TECH L.J. 191, 191-92 (1999) (proposing that “the presence of disclosed but unclaimed matter should bar the availability of the doctrine of equivalents . . . only when, as in *Miller*, the patentee explicitly distinguishes his invention from the disclosed but unclaimed matter”).

¹³¹ *See Mahn*, 112 U.S. 354 (1884).

¹³² *See Maxwell*, 39 U.S.P.Q.2d 1001. *See also* *Int’l Visual Corp. v. Crown Metal Mfg. Co.*, 991 F.2d 768, 26 U.S.P.Q.2d 1588, 1593 (Fed. Cir. 1993) (Lourie, J., concurring); *Genentech, Inc. v. Wellcome Found., Ltd.*, 29 F.3d 1555, 31 U.S.P.Q.2d 1161, 1167-68 (Fed. Cir. 1994) (citing *North Am. Vaccine, Inc. v. Am. Cyanamid Co.*, 7 F.3d, 1571, 1577, 28 U.S.P.Q.2d 1333, 1337 (Fed. Cir. 1993) (However, *North American Vaccine* does not support the proposition for which *Genentech* cites it. *North American Vaccine* states in the context of claim construction that claims should not be construed to cover what is neither disclosed nor enabled.); *Unique Concepts*, 19 U.S.P.Q.2d at 1504; *Boalick*, *supra* note 49, at 2382.

¹³³ *See Mahn*, 112 U.S. at 361.

¹³⁴ *See Boalick*, *supra* note 49, at 2382, 2384.

¹³⁵ 939 F.2d 1540, 19 U.S.P.Q.2d 1432 (Fed. Cir. 1991).

¹³⁶ 997 F.2d 870, 27 U.S.P.Q.2d 1123 (Fed. Cir. 1993).

¹³⁷ 66 F.3d 1211, 36 U.S.P.Q.2d 1225 (Fed. Cir. 1995).

¹³⁸ 75 F.3d 1545, 37 U.S.P.Q.2d 1609 (Fed. Cir. 1996).

claim at issue recited a specific numerical value of “approximately 0.7,”¹³⁹ but the specification disclosed a broader range of 0.5 to 0.9.¹⁴⁰ The *Uniroyal* court upheld a finding of infringement under the doctrine of equivalents of an accused device while citing the patent’s disclosure of the broader range as supporting the finding of equivalence.¹⁴¹ In *Miles Labs*, the claims at issue recited a “single cabinet,”¹⁴² while the accused device consisted of three cabinets.¹⁴³ However, the patent specification mentioned that “separate cabinets” could be used,¹⁴⁴ and the *Miles Labs* court upheld a finding of infringement under the doctrine of equivalents.¹⁴⁵

Modine is another case involving numerical ranges. In *Modine*, the claims recited a “relatively small hydraulic diameter.”¹⁴⁶ A parent application to the patent at issue disclosed a preferred hydraulic diameter of 0.015 - 0.070 inches and the patent disclosed a graph showing this broader range; however, the claim at issue narrowed this range to 0.015 - 0.040 inches.¹⁴⁷ The patent also incorporated by reference a document disclosing a hydraulic diameter up to 0.07 inches.¹⁴⁸ The accused devices had hydraulic diameters in the range 0.040 - 0.070 inches, i.e., outside the literal claimed range but within the disclosed range.¹⁴⁹ The patentee argued that the disclosure supports a range of equivalents up to 0.070 inches.¹⁵⁰ Without directly answering this argument, the Federal Circuit held that the patentee was estopped from asserting a range of equivalents having a hydraulic diameter above 0.04822 inches, due to amendments to avoid prior art.¹⁵¹ The Federal Circuit remanded the case for determination of infringement by equivalency within the permissible range of equivalents.¹⁵²

¹³⁹ *Uniroyal*, 939 F.2d at 1544.

¹⁴⁰ *Id.* at 1544 n.3.

¹⁴¹ *See id.* at 1544.

¹⁴² *Miles Lab.*, 997 F.2d at 876.

¹⁴³ *Id.*

¹⁴⁴ *Id.* at 877.

¹⁴⁵ *Id.*

¹⁴⁶ *Modine*, 75 F.3d at 1549.

¹⁴⁷ *See id.* at 1552.

¹⁴⁸ *See id.* at 1553.

¹⁴⁹ *See id.* at 1554.

¹⁵⁰ *See Modine*, 75 F.3d at 1551.

¹⁵¹ *See id.* at 1551-52, 1556.

¹⁵² *See id.* at 1556.

Unlike the three cases just discussed, *Pall* does not support the proposition for which *YBM* cites it. In *Pall*, the claim recited a numerical range of “about 5:1 to about 7:1,”¹⁵³ while the numerical value in the accused device was 4:1.¹⁵⁴ A first-filed patent specification broadly described the invention without numerical limits; however, a subsequent continuation-in-part application added the range limitation in the claims after the inventor conducted additional research and determined, to the best of his knowledge, that the invention was operable only in the claimed range.¹⁵⁵ Thus, the alleged equivalent numerical value of 4:1 was neither disclosed nor enabled in the patent at issue. Although there was infringement under the doctrine of equivalents in *Pall*, it is not a case where the claims were narrower than the disclosure, as *YBM* states. In fact, *Pall* is a case where the equivalent resulted from after-arising technology, as developments subsequent to the patent filing made commercially available material having the numerical value of 4:1.¹⁵⁶

Setting aside the *Pall* decision, *Uniroyal*, *Miles Labs* and *Modine* are three examples where the doctrine of equivalents was allowed without restraint by the dedication rule. However, none of the defendants in these cases raised a challenge under the dedication rule. The courts in these cases did not raise the dedication rule *sue sponte*, but one wonders if the outcomes would have been different had the defendants raised the dedication rule. In the absence of a direct challenge, it is difficult to say that these cases test the limits of the dedication rule.

In summary, both *Maxwell* and *YBM* find some support in precedent. Because *YBM* was decided by a panel, *Maxwell*, as the earlier decided case, is binding to the extent that the two cases are in conflict.¹⁵⁷ However, *YBM* arguably limits *Maxwell* rather than conflicts with *Maxwell*. The limitation is that only distinct embodiments that are disclosed but unclaimed are dedicated subject matter.

¹⁵³ *Pall*, 66 F.3d at 1217.

¹⁵⁴ *Id.*

¹⁵⁵ *See id.* at 1219.

¹⁵⁶ *See id.*

¹⁵⁷ *See, e.g., Atlantic Thermoplastics Co. v. Faytex Corp.*, 974 F.2d 1279, 1281 (Fed. Cir. 1992) (“[W]here there are conflicting precedents, the earlier precedent controls.”).

4. *As a Normative Matter, the Dedication Rule Should Not be Limited to Distinct Embodiments*

YBM, though technically defensible under precedent, attempts to draw a distinction that is dangerous. It is not clear what makes an embodiment “distinct.” The only guidance on this point from the *YBM* opinion is that systems for attaching together mated pairs are distinct when the attachment tags connect to different parts of the shoe, but that different numerical ranges are not distinct.¹⁵⁸ This line of reasoning has the potential of disparate impacts on different fields of technology. This line of reasoning may render mechanical variations, in general, as being more often viewed as distinct embodiments, but chemical variations, which are often numerical ranges in a composition, as not being distinct embodiments. The issue of whether a given alternative is distinct or not will undoubtedly become a contested issue in many future cases, if the distinctiveness distinction is allowed to stand.

Because *Maxwell* is better supported by direct precedent and its rationale, and because *YBM*'s distinctiveness criterion is likely too difficult to apply without considerable arbitrariness, the courts or Congress should overrule *YBM* and reaffirm as a bright line rule that disclosed but unclaimed features of the invention, whether distinct or not, are barred from the doctrine of equivalents.

D. *Proposal: Only in the Case Where an Equivalent Could Not Possibly Have Been Disclosed in the Original Application for Patent is the Extra Protection of the Doctrine of Equivalents a Sound Policy*

Taking one step beyond the recommendation above would resolve much of the dissatisfaction with the doctrine of equivalents. The needed additional step is to impute to a patent applicant knowledge of the prior art for the purpose of determining what she regards as her invention. That is, the dedication rule applied in *Maxwell* should be broadened to bar from equivalents unclaimed features that were disclosed or could have been disclosed by virtue of being known in the art at the time of

¹⁵⁸ See *YBM Magnex, Inc. v. Int'l Trade Comm'n*, 145 F.3d 1317, 1320, 46 U.S.P.Q.2d 1843, 1846 (Fed. Cir. 1998).

filing.¹⁵⁹ Put another way, the doctrine of equivalents should be barred from reaching all but later arising equivalents.

This proposal would have many benefits to the patent system. In particular, the proposal would reinvigorate the notice function of claims, attenuate difficulties with the doctrine of equivalents, encourage liberal disclosure by patentees, make reissue proceedings more important in patent enforcement, and preserve for “pioneer” inventions a deservedly larger range of equivalents. These and other points are discussed in the following subsections.

1. *The Proposal Would Reinvigorate the Notice Function of Claims*

Limiting the doctrine of equivalents to after-arising equivalents would strengthen the notice function of claims. The scope and content of both the disclosure and the prior art to the patent can be objectively determined by a competitor. The disclosure is a matter of public record. The prior art to the patent is fixed and can be investigated to whatever extent a competitor is willing to expend resources to do so. The prior art that is presumptively most relevant is, in fact, a part of the public record of the patent.¹⁶⁰ Although cases would arise in which a jury would decide a factual question about the scope and content of the prior art, that is exactly an issue that is regularly determined in anticipation and obviousness disputes, and, consequently, one that the courts and the bar are accustomed to handling.¹⁶¹

Given the disclosure and the scope and content of the prior art, it is straightforward to determine whether an accused equivalent is one that arises after the patent filing or not. The bar against all but later arising equivalents would be the judicial tool of first resort to prevent overreaching of the doctrine of equivalents. Because

¹⁵⁹ Cf. Jason Schultz, *Chiuminatta Concrete Concepts, Inc. v. Cardinal Industries, Inc. & Dawn Equipment Co. v. Kentucky Farms, Inc.*, 14 BERKELEY TECH L.J. 173, 189 (1999) (proposing a more flexible and equitable “reason to know” standard rather than simple existence in the context of the contemporary technology rule for the doctrine of equivalents for claim elements in means-plus-function form).

¹⁶⁰ See The Honorable Paul R. Michel and Lisa Schneider, *Side Bar: Vitronics – Some Unanswered Questions in CHISUM*, *supra* note 39, at 1101. Cf. *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1582-83, 39 U.S.P.Q.2d 1573, 1577 (Fed. Cir. 1996).

¹⁶¹ See *Graham v. John Deere*, 383 U.S. 1, 17, 148 USPQ 459 (1966) (“Under § 103, the scope and content of the prior art are to be determined.”).

fewer issues of equivalents would get over this bar, the precise language of the claims would take on greater significance. Competitors could rely on the precise language of the claims except in relatively well-defined cases of after-arising technology.

2. *The Proposal Would Attenuate the Confusing Legal Morass Surrounding the Doctrine of Equivalents, Thus Providing for More Efficient Resolution of Patent Disputes*

Because the bar against all but later rising equivalents would be a significant gatekeeper to the doctrine of equivalents, the significance of related doctrines such as prosecution history estoppel, prior art limitations and the all-elements rule would be diminished. First, these related doctrines would simply be implicated less often – only when the equivalents are after-arising. Prosecution history estoppel would rarely be applicable to after-arising technology, because prosecution history often involves amendments and remarks concerning the prior art and patentability over the prior art. Furthermore, prior art limitations would probably never be relevant in cases of after-arising limitation. The all-elements rule, on the other hand, would be equally relevant regardless of whether the equivalent is old or new.

3. *The Proposal Would Appropriately Encourage Liberal Disclosure in Original Patent Applications*

One of the fundamental policies animating the patent laws is the importance of disclosure of technology.¹⁶² A defect in the dedication rule from *Maxwell* is that it discourages disclosure. The proposal to bar everything known at the time of filing a patent application cures this defect. Under the proposal, failure to disclose what is known in the art at the time of filing would not save a patentee from the bar against equivalents. To the contrary, the proposal would encourage patent drafters to cover with claims as many features from the prior art that can be combined with core patentable elements of the invention. To support such claims, broad disclosure would be needed.

¹⁶² See, e.g., CHISUM, *supra* note 39, at 1 (citing DONALD S. CHISUM AND MICHAEL JACOBS, UNDERSTANDING INTELLECTUAL PROPERTY 1-2 n.1 (1992)).

Furthermore, because the proposal would place more importance on reissue of patents, as discussed below, the proposal would make it more prudent for patent drafters to include generous disclosure of optional and alternative features of the invention to provide support for claims to those features in a reissue patent. Of course, disclosure to most prior art technology can be easily and succinctly accomplished by the technique of incorporation by reference.¹⁶³

4. *The Proposal Would Make Reissue Proceedings More Important in Patent Enforcement*

Reissue patents would take on a greater importance because defective claims (i.e., ones that are literally too narrow) could not be expanded by the doctrine of equivalents unless the equivalent was after-arising. In all other cases where the literal scope of claims is inadequate, reissue proceedings would be necessary for enforcement of a broadened patent right. Perhaps as a result of the proposal's de-emphasis of the doctrine of equivalents and corresponding added emphasis on reissue, the two year time limit for seeking broadened reissue claims should be extended. Congress can determine the appropriate time limit by balancing the equitable interests of patent holders and competitors at risk of infringement.

5. *The Proposal Would Provide "Pioneer" Inventions with a Deservedly Larger Range of Equivalents*

"Pioneer" inventions are generally thought of as those inventions that have been preceded by very little prior art.¹⁶⁴ Because pioneer inventions represent relatively large leaps in technological progress, courts have been willing to afford them greater protection.¹⁶⁵ Of course, the shortage of prior art to a pioneer invention makes possible claims having broad literal scope. Notwithstanding broad literal claim scope, courts have been

¹⁶³ See generally Manual of Patent Examining Procedure § 608.01(p), 7th ed. (1998).

¹⁶⁴ See, e.g., Harold C. Wegner et al., *The Future of the Doctrine of Equivalents*, 26 AIPLA Q.J. 277, 323 (1998) (citing John R. Thomas, *The Question Concerning Patent Law and Pioneer Inventions*, 10 HIGH TECH L.J. 35 (1995)).

¹⁶⁵ See, e.g., *Shields v. Halliburton Co.*, 667 F.2d 1232, 216 U.S.P.Q. 1066 (5th Cir. 1982); *John Zinck Co. v. Nat'l Airoil Burner Co.*, 196 U.S.P.Q. 554 (S.D. Tex. 1977).

willing to allow broad play in the doctrine of equivalents for pioneer inventions.¹⁶⁶ Prior art limitations to the doctrine of equivalents certainly do not restrain the scope of equivalents for a pioneer invention. The proposal to limit the doctrine of equivalents to after-arising equivalents would limit equivalents for pioneer inventions very little, if at all, because almost all technology related to a pioneer invention is after-arising.

6. *The Proposal Would Harmonize Doctrine of Equivalents Analysis Whether or Not Means-Plus-Function Claiming is Utilized*

When an element of a claim is recited in means-plus-function form, a type of equivalents (structural equivalents) is included within the literal scope of the claim.¹⁶⁷ Structural equivalents differ from equivalents under the doctrine of equivalents (“DOE”) in that structural equivalents must perform an identical function,¹⁶⁸ whereas a DOE equivalent need only perform a function that is substantially the same.¹⁶⁹ A structural equivalent also must be available at the time of issuance,¹⁷⁰ whereas a DOE equivalent can result from after-arising technology.¹⁷¹ Thus, when there is no literal infringement of a means-plus-function claim and the similarity of function is not at issue, the doctrine of equivalents is limited to only after-arising technology,¹⁷² much like the extended dedication rule proposed here.

¹⁶⁶ See, e.g., *Shields*, 667 F.2d at 1238, 216 U.S.P.Q. at 1071 (“[A] pioneer patent [is] entitled to a liberal range of equivalents.”); *John Zinck*, 196 U.S.P.Q. at 558 (“[The] patent qualifies as a pioneer patent. . . . A liberal construction of the breadth of the patent’s scope is, therefore, appropriate under the doctrine of equivalents.”).

¹⁶⁷ See 35 U.S.C. § 112 (1994).

¹⁶⁸ See *Al-Site Corp. v. VSI Int’l, Inc.*, 174 F.3d 1308, 1321, 50 U.S.P.Q.2d 1161, 1168 (Fed. Cir. 1999) (citing *Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc.*, 145 F.3d 1303, 1310, 46 U.S.P.Q.2d 1752 (Fed. Cir. 1998)).

¹⁶⁹ See *id.* 174 F.3d at 1321, 50 U.S.P.Q.2d at 1168 (citing *Cybor Corp. v. FAS Tech., Inc.*, 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc) and *Hughes Aircraft Co. v. U.S.*, 140 F.3d 1470, 1475 (Fed. Cir. 1998)).

¹⁷⁰ See *id.* (citing *Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc.*, 145 F.3d 1303, 1310, 46 U.S.P.Q.2d 1752 (Fed. Cir. 1998)).

¹⁷¹ See *id.*

¹⁷² See *Chiuminatta*, 145 F.3d 1303, 1310.

7. *The Proposal is Consistent with the Rule that Equivalents are Determined at the Time of Infringement*

Equivalents are determined at the time of infringement.¹⁷³ The proposal is consistent with this rule. After-arising equivalents, by definition, are known at the time of infringement but not necessarily any sooner. In stating this rule, *Warner-Jenkinson* explicitly set forth that after-arising equivalents should be within the scope of available equivalents, subject to the other pertinent limitations.¹⁷⁴

8. *The Proposal Rightfully Encourages Careful Drafting of Patent Applications*

A disadvantage of the proposal is that it places a greater importance on patent drafting and, consequently, higher costs on patent drafting, because the patent drafter must be careful to claim and disclose as much as possible.¹⁷⁵ This raises concern that patenting, which is already expensive, may become unaffordable for applicants with limited funding, such as some individual unaffiliated inventors and very small companies. This concern was recently addressed by the Federal Circuit:

[A]s 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. [citations omitted] This court recognizes that such reasoning places a premium on forethought in patent drafting. Indeed this premium may lead to higher costs of patent prosecution. However, the alternative rule – allowing broad play for the doctrine of equivalents to encompass foreseeable variations, not just of a claim element, but of a patent claim – also leads to higher costs. Society at large would bear these latter costs in the form of virtual foreclosure of competitive activity within the penumbra of each issued patent claim.

¹⁷³ See *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 37, 41 U.S.P.Q.2d 1865, 1874 (1997).

¹⁷⁴ See *id.*

¹⁷⁵ See Schultz, *supra* note 159, at 189 (discussing “equivalents searches”).

Because the doctrine of equivalents blurs the line of demarcation between infringing and non-infringing activity, it creates a zone of uncertainty, into which competitors tread only at their peril. [citation omitted] *Given a choice of imposing the higher costs of careful prosecution on patentees, or imposing the costs of foreclosed business activity on the public at large, this court believes the costs are properly imposed on the group best positioned to determine whether or not a particular invention warrants investment at a higher level, that is the patentees.*¹⁷⁶

V. OTHER ATTEMPTS TO REACH THE SAME RESULT HAVE FAILED

The proposal to limit the doctrine of equivalents to after-arising technology is not new.¹⁷⁷ The proposal has been made before with a justification based on similarities with structural equivalents of means-plus-function claim elements.¹⁷⁸ As noted in section 6 of Part IV, *supra*, DOE equivalents are sometimes limited to after-arising technology for claim elements in means-plus-function form. In *Kraft Foods, Inc. v. International Trading Co.*, the accused infringer tried to extend this rule to non-means-plus-function elements.¹⁷⁹ However, the Federal Circuit declined, explicitly stating that “infringement under the doctrine of equivalents is not limited to technology arising after the issuance of the patent.”¹⁸⁰

This attempt was properly rejected. The rule that DOE equivalents in a means-plus-function claim are sometimes limited to after-arising technology is based on judicial economy.¹⁸¹

¹⁷⁶ Sage Products, 126 F.3d 1420, 1425, 44 U.S.P.Q.2d 1103, 1107-08 (emphasis added).

¹⁷⁷ See, e.g., *Kraft Foods, Inc. v. Int'l Trading Co.*, 203 F.3d 1362, 1371 (Fed. Cir. 2000).

¹⁷⁸ See *id.*

¹⁷⁹ See *id.*

¹⁸⁰ *Id.* at 1371 (citing *Litton Sys., Inc. v. Honeywell, Inc.*, 140 F.3d 1449, 1464-65, 46 U.S.P.Q.2d 1321, 1332 (Fed. Cir. 1998) (“rejecting argument that doctrine of equivalents should be limited to after-arising equivalents, since ‘known interchangeability is often synonymous with equivalence’”).

¹⁸¹ See *Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc.*, 145 F.3d 1303, 1311 (Fed. Cir. 1998) (“[W]hy should the issue of equivalence have to be litigated a second time?”).

Because an analysis of structural equivalents for an element of a means-plus-function claim always precedes an analysis of DOE equivalents, and because the analysis of structural equivalents considers everything possibly equivalent up to the time of grant, then consideration of DOE equivalents from the same time period (assuming identical functions) would give the patentee “two bites at the apple.”¹⁸² This rationale is simply not present when the claim is not in means-plus-function form. That is, the concern of *Chiuminatta Concrete* is not a reason to limit the doctrine of equivalents to after-arising technology generally. Rather, the more encompassing policy concerns listed in Part IV, *supra*, are appropriate reasons to limit the doctrine of equivalents to after-arising technology generally.¹⁸³

CONCLUSION

The doctrine of equivalents will be tamed one way or another. The major battle over the doctrine was fought in *Warner-Jenkinson*, and the doctrine survived. Still, the doctrine’s friction with the notice function of precise claiming remains, and reissue proceedings are underutilized. Under the current paradigm, attempts to tame the doctrine of equivalents take the forms of the arbitrary all-elements rule, the much maligned doctrine of prosecution history estoppel, and the awkward analysis of hypothetical claims compared to prior art. A reinvigorated and augmented dedication rule offers a better approach. First, *YBM* should be expressly overruled, so that the dedication rule would apply regardless of whether the disclosed but unclaimed aspects of the invention are distinct from the claimed aspects. Otherwise, the dedication rule is likely to take an undesirable arbitrary quality. Second, and more importantly, the dedication rule should be extended to aspects of the invention that could have been disclosed at the time of filing. The first step can be taken by an *en banc* Federal Circuit to resolve conflicting precedent. The second step is best taken by Congress, because it treads where there is no

¹⁸² Kraft Foods, 203 F.3d at 1372, 1373 (quoting *Chiuminatta*, 145 F.3d at 1311).

¹⁸³ These concerns are: (1) the notice function of claims; (2) legal uncertainties surrounding the doctrine of equivalents; (3) encouragement of liberal disclosure; (4) proper utilization of reissue proceedings; (5) protection of pioneer inventions; (6) harmonization with means-plus-function style claiming; (7) determination of equivalence at the time of infringement; and (8) having the cost borne by patent applicants.

precedent. The result of this approach would be a doctrine of equivalents that is available only for equivalents resulting from after-arising technology. This result would benefit the patent system in a number of ways, including preservation of much of the notice function of claims, added importance to reissue law, encouragement of liberal disclosure by patent applicants, a deservedly greater range of equivalents for pioneer inventions, and a harmonious doctrine of equivalents whether or not means-plus-function claiming is present.