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Counterproductive Notice in Literalistic Versus Peripheral Claiming

by

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COUNTERPRODUCTIVE NOTICE IN LITERALISTIC VERSUS PERIPHERAL CLAIMING

JOHN F. DUFFY*

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Providing clear notice of property rights is a worthwhile goal, but legal requirements for notice can also thwart that goal. If the law imposes unrealistic notice requirements and invalidates the whole right as a penalty for non-compliance, the enforcement mechanism can weaken notice by transforming imprecision at the edges of the property right (where uncertainty is greatest) into uncertainty throughout the entirety of the right. The paradox associated with such notice requirements is evident in modern patent claiming doctrine. Under current Federal Circuit law, patent claims are treated as precise verbal descriptions demarcating the outer edges of patent rights, and with minor exceptions, the patentee is assumed to have rights to everything that falls within the literal bounds of the claim. That “literalistic claiming” method deviates sharply from the “peripheral claiming” method that was dominant throughout most of the twentieth century. This essay gives reasons for believing (1) that the Federal Circuit’s current approach to claiming is inconsistent with both Supreme Court and prior circuit case law in several significant respects; (2) that the Federal Circuit’s current approach is irreconcilable with principles of rights definition in other areas of property law; and (3) that a seemingly less precise approach to patent claiming might produce better notice and otherwise be more consistent with good patent policy. The essay concludes with practical suggestions concerning how the Federal Circuit’s approach to patent claiming can be changed.

INTRODUCTION

The case of *Liebel-Flarsheim Co. v. Medrad, Inc.*,¹ is an excellent poster child for everything that is wrong with the Federal Circuit’s approach to patent

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claiming. The case involved “powered fluid injectors,” which are “used to inject fluids into patients during medical procedures.”² In the litigation’s first trip through the judicial system, the district court granted the defendant’s motion for summary judgment of non-infringement after the court interpreted the claims to refer to an injector with a “pressure jacket.”³ In reaching that interpretation, the court noted that in every embodiment of the invention disclosed in the patent specification, the injector included a pressure jacket.⁴

The case then went to the Federal Circuit, which reversed because it found “no ambiguity [in the claim language] and no reason to resolve the purported ambiguity by reading [the relevant language] restrictively.”⁵ In the course of its opinion, the Federal Circuit specifically rejected the district court’s reasoning that the claims should be construed narrowly because otherwise they would be invalid.⁶ “[T]he axiom regarding the construction to preserve the validity of the claim does not apply,” the Federal Circuit reasoned, “unless the court concludes, after applying all the available tools of claim construction, that the claim is still ambiguous.”⁷ The case was remanded to the district court for more litigation—now using, in the Federal Circuit’s view, a more accurate determination of the patentee’s property rights as expressed in the literal language of the claims.⁸

Three years later, the case returned to the Federal Circuit. Once again deciding against the patentees, the district court this time ruled that the claims were invalid because an injector without a pressure jacket was not enabled in the specification.⁹ The Federal Circuit affirmed, explaining—apparently without any sense of irony given its earlier reversal of the district court—that “nowhere does the specification describe an injector . . . without a pressure jacket.”¹⁰

¹ 358 F.3d 898 (Fed. Cir. 2004) (first appeal); 481 F.3d 1371 (Fed. Cir. 2007) (second appeal).

² *Liebel-Flarsheim Co.*, 358 F.3d at 900.

³ *Id.* at 901 (setting forth the district court’s claim interpretation).

⁴ *Id.* (recounting the district court’s reasoning).

⁵ *Id.* at 905.

⁶ *See id.* at 911.

⁷ *Id.*

⁸ *See id.* at 911-12 (remanding the case after having established the “proper construction” of the patent claims, which the court found “clear”). The text will refer to a single patentee even though Mallinckrodt Inc., the corporate parent of the patentee Liebel-Flarsheim, was also a party plaintiff in the case. *See* Brief of Plaintiffs-Appellants at 4 n.1, *Liebel-Flarsham Co. v. Medrad, Inc.*, 358 F.3d 898 (Fed. Cir. 2004) (Nos. 03-1082, 03-1165), 2003 WL 24028252, at *4 n.1 (noting that Mallinckrodt Inc. was joined as a party upon motion by the defendant).

⁹ *Liebel-Flarsheim Co.*, 481 F.3d at 1375 (explaining the district court’s decision).

¹⁰ *Id.* at 1379.

While the ultimate outcome in *Liebel-Flarsheim* seems correct in the sense that the patentee should have lost,¹¹ the process by which that outcome was reached can only be viewed as a public policy disaster. The litigation was brought in 1998 and concluded in 2007—or about half the normal lifespan of a patent. Much of that time was spent litigating to obtain a precisely correct interpretation of the relevant claim language (or at least the Federal Circuit’s view of the correct interpretation) only to have that interpretation lead to the invalidation of all twenty-seven of the asserted claims in their entirety.

To the Federal Circuit, that lengthy litigation merely exposed the weakness of the litigation strategy devised by the patentee’s lawyers.¹² But the real problem here is the enormous waste of resources devoted to finding a precise and certain meaning of patent claims that are then determined to be invalid and thus worthless *for the same reason that the district court originally gave for construing the claims narrowly*. That process is surely a private loss not only to the defendant (which must have spent millions across the many years it was defending itself against worthless patent claims) but even to the patentee (which also must have spent millions litigating ultimately worthless claims).

Indeed, even that criticism understates the problem. Spending vast resources to find a supposedly precise and correct interpretation of claims, only to have that interpretation lead to the invalidation of the claims, is not merely wasteful but also counterproductive. If there is a justification for spending millions of dollars during years of litigation to find the correct interpretation of a patent claim, that justification must be that such litigation might lead, in the future, to better and more certain notice of property rights. Yet a precedent such as *Liebel-Flarsheim*—which allows ambiguous claims to be interpreted sufficiently broadly to invalidate the claims in their entirety—expands uncertainty at the boundary of a claim across the entire range of property covered by claims. Even where a claim might cover some validly patentable invention, the whole claim can be held invalid where the claim’s boundaries are imprecisely broad. The winners from such uncertainty are not patentees, infringement defendants, or the researchers who develop new inventions. The winners are the lawyers who litigate the cases.

¹¹ Indeed, the patentee in the case seemed to have engaged in strategic alterations of the claim language precisely to cover a competitor’s product that the patentee had not originally contemplated at the time the patent was filed. *See id.* at 1374 (explaining that, after the patent had been filed, “the applicants became aware of [their competitor’s] jacketless injector system and then deleted all references to a pressure jacket in the asserted claims in order to encompass [their competitor’s] injector within the scope of the claims”).

¹² The court noted that “Liebel successfully pressed to have its claims include a jacketless system, but, having won that battle, it then had to show that such a claim was fully enabled, a challenge it could not meet.” *Id.* at 1380. To make clear that it was laying blame on the patentee’s lawyers, the court concluded its analysis by stating: “The motto, ‘beware of what one asks for,’ might be applicable here.” *Id.* at 1380

In addition to revealing that overarching problem, *Liebel-Flarsheim* also shows a number of more specific, doctrinal problems with the Federal Circuit's current approach to property rights definition, including: (1) refusing to limit the scope of claimed patent rights to the structures disclosing the specification and their equivalents; (2) treating the canon of construing claims to preserve validity as a last resort, not a first principle; and (3) eschewing any attempt to discover the real merit of the invention as a step in defining rights. Those doctrinal points create uncertainty for both patentees and defendants. It is true, of course, that current doctrine permits patent applicants to respond to such uncertainty by adding ever more claims to their patent applications,¹³ but the increased number of claims provides merely a convenient measure of the legal doctrine's failure to give good notice (who, after all, knows for certain what is covered by a patent having hundreds of claims?).

Many modern commentators would agree with the points made so far in this essay, but they might think that the problems all lie in the system of "peripheral" claiming that arose in the second half of the nineteenth century.¹⁴ The commentators are wrong. As demonstrated in Part I, below, the traditional approach to "peripheral claiming"—an approach that worked well for nearly a century prior to the creation of the Federal Circuit—was nothing like the more literalistic approach applied by the Federal Circuit.

Part II discusses the other substantial modifications the Federal Circuit has made to traditional claiming interpretation practices. In general, those modifications have deemphasized the merits of inventions and elevated the importance of lawyerly skills in claim drafting. There is no good reason to believe—and perhaps substantial reason to doubt—that those changes have made the scope of patent rights more certain and predictable to the public.

Part III provides theoretical reasons for returning to a more traditional approach to patent claiming. Many courts and commentators have compared patent claiming to the traditional "metes-and-bounds" system for defining real property rights, but they have drawn the wrong lesson from that comparison. Contrary to prevailing opinion in patent scholarship, the metes-and-bounds method of defining property rights is a good analogy to patent claiming *not* because each system seeks precision but because each system tolerates ad hoc and imprecise definitions of property rights. Thus, the metes-and-bounds analogy suggests not that patent courts should seek ever greater precision of rights (a quest that might ultimately be counterproductive) but that they should instead reinvigorate pragmatic doctrines, such as peripheral claiming, for managing the inevitable ambiguity in patent rights.

¹³ See *In re Wakefield*, 422 F.2d 897, 900 (C.C.P.A. 1970) (reversing the Patent Office's finding that a patent application included an "undue multiplicity" of claims and holding that "an applicant should be allowed to determine the necessary number and scope of his claims, provided he pays the required fees and otherwise complies with the statute").

¹⁴ See *infra* Part I (discussing modern criticisms of peripheral claiming).

The Conclusion offers some practical suggestions for how lawyers might change current practices.

I. LITERALISTIC VS. PERIPHERAL CLAIMING

Modern critics of current claim interpretation doctrine describe their target as “peripheral claiming,” but in fact they are criticizing a much more recently developed approach to claiming that differs markedly from peripheral claiming as it was traditionally practiced throughout most of the twentieth century. The newer approach to defining patent rights—which this essay will term “literalistic claiming”—was developed by the Federal Circuit and sharply diverges from what should be controlling Supreme Court precedent.

To understand this point, we begin with the critics of modern patent claiming techniques who define peripheral claiming as the practice of setting forth a precise verbal description that serves to define *the complete extent of rights*. For example, Jeanne Fromer describes “peripheral claiming” in patent law as “requiring patentees to articulate their inventions’ bounds by the time of the patent grant, usually by listing their *necessary and sufficient* characteristics.”¹⁵ The key in that quotation—the assertion that is, or at least should be, controversial—is that the listed characteristics are “sufficient” in describing the characteristics of the invention. Similarly, Dan Burk and Mark Lemley assert that, under the theory of the “peripheral-claiming system,” the “claims define the scope of the patent” such that competitors of the patentee can “read the patent claims and know whether their actions will infringe the patent.”¹⁶

While Professors Fromer, Burk, and Lemley are not fans of the system they describe as “peripheral claiming” (they level cogent criticisms against current claiming practices), other scholars not especially critical of current claiming practices also define “peripheral claiming” in nearly the same way. Thus, Henry Smith describes “today’s ‘peripheral’ approach to patent claims” as “focus[ing] on the outer bounds of what is claimed as an invention, without the need to specify the interior.”¹⁷

The critics of peripheral claiming, as well as more agnostic commentators like Professor Smith, all contrast peripheral claiming with an older system of “central claiming” that defined patent rights by core examples and left courts later to work out the precise extent of protection by judging whether the products or processes accused of infringing were sufficiently similar to the

¹⁵ Jeanne C. Fromer, *Claiming Intellectual Property*, 76 U. CHI. L. REV. 719, 721 (2009) (emphasis added). Professor Fromer believes that peripheral claiming requires infringement analysis to turn on whether “the [accused] embodiment possesses the claimed features.” *Id.* at 729.

¹⁶ Dan L. Burk & Mark A. Lemley, *Fence Posts or Sign Posts? Rethinking Patent Claim Construction*, 157 U. PA. L. REV. 1743, 1749 (2009).

¹⁷ Henry E. Smith, *Intellectual Property as Property*, 116 YALE L.J. 1742, 1807 (2007).

core examples.¹⁸ As Professors Burk and Lemley correctly point out, judging similarity under a central claiming methodology involved the consideration of heterogeneous factors to determine the scope of protection, including “how important the patentee’s invention was, and how different the accused device is.”¹⁹ A remnant of that central claiming approach, at least according to modern commentators, is the “doctrine of equivalents, under which the scope of a claim can be extended beyond the literal reading.”²⁰

The modern commentators are right to distinguish peripheral from central claiming, but they are wrong about what the difference is. Writing in the 1949 first edition of his treatise on patent claiming, Ridsdale Ellis was the first commentator to describe a “peripheral definition” method of claiming an invention and to distinguish that methodology from the older “central definition” system.²¹ At first blush, Ellis’s description of the two systems appears similar to that of modern commentators. He asserts that under a “central definition” system, a patent attorney drafts “a narrow claim setting forth a typical embodiment,” with the full scope of the right being determined later though “interpretation by the courts to include all equivalent constructions.”²² “Peripheral definition,” by contrast, “involves marking out the periphery or boundary of the area covered by the claim and holding as infringements only such constructions as lie within that area.”²³ So far, all might seem consistent with modern commentators. Yet a very careful reader would note that, in his description of peripheral claiming, Ellis states merely that “*only* such constructions” covered within the claim can constitute infringements. He does not say “*all* such constructions” constitute infringement. The key issue is whether, under a peripheral claiming methodology, a patentee has property rights to *all* that lies within the literal bounds of the patent claim.

The resolution of that key issue becomes clear just a few pages later in Ellis’s treatise. Ellis states that, “for a decree of infringement under the peripheral system there are two prerequisites: (1) The claim must read in terms on the alleged infringing structure. (2) The alleged infringing structure must be the equivalent of that disclosed by the patentee.”²⁴ That second step in the infringement analysis means that all embodiments within the literal language of a claim do not infringe, for the second step requires proof that products or processes literally within the claim language are equivalent to what the

¹⁸ *Id.* (describing “[t]he earlier central claiming method, in which the central case of the invention was specified and the boundaries were worked out ex post”).

¹⁹ Burk & Lemley, *supra* note 16, at 1746 (footnote omitted).

²⁰ Smith, *supra* note 17, at 1807.

²¹ See RIDSDALE ELLIS, PATENT CLAIMS (1949).

²² *Id.* § 4, at 4.

²³ *Id.*

²⁴ *Id.* §10, at 10.

patentee disclosed. That step is utterly missing from modern Federal Circuit doctrine and from modern commentators' descriptions of what they refer to as "peripheral claiming." Indeed, modern commentators repeatedly make the historical mistake of asserting that the doctrine of equivalents is a remnant of the central claiming system.²⁵ It is not. Both central claiming and peripheral claiming, as traditionally practiced, rely heavily on the doctrine of equivalents. As Ellis explains, the doctrine of equivalents was used in the central claiming methodology "to expand a claim beyond its literal terms," but it is also used in peripheral claiming "to determine whether or not the claim literally interpreted is too broad."²⁶ As Ellis summarizes the point in one of his treatise's section headings, "[u]nder the central system the doctrine of equivalents broadens claims—under the peripheral system the doctrine of equivalents narrows them."²⁷

Other mid-twentieth-century commentators agreed with Ellis's views about how peripheral claiming operated, and his views about peripheral claiming accurately reflected the practice of the courts at the time. Indeed, a 1964 law review note surveyed infringement decisions from across the federal courts of appeals and concluded that the courts' methodology for defining patent rights was "based almost entirely on the peripheral definition theory."²⁸ To reach that conclusion, however, the authors of the note relied on a traditional conception of peripheral claiming. While stating that the claim specifies the "metes and bounds" of the property,²⁹ the authors recognized that, in a peripheral claiming system, "portions of the territory within the metes and bounds may not be reserved exclusively to the patentee due to a limiting application of the doctrine of equivalents."³⁰ The authors also explicitly embraced Ellis's view that the doctrine of equivalents was used in both central and peripheral claiming, but it was used to "expand" claims in the former and to "restrict" them in the latter.³¹ Thus, the authors counted several decisions as demonstrating the proper use of peripheral claiming methodology where the court had employed the doctrine of equivalents to determine whether, despite

²⁵ See Smith, *supra* note 17, at 1807 (describing the doctrine of equivalents as a "pale reflection" of the central claiming method).

²⁶ ELLIS, *supra* note 21, § 8, at 8.

²⁷ *Id.* § 10, at 10.

²⁸ J. Dennis Malone & Richard L. Schmalz, Note, *Peripheral Definition Theory v. Central Definition Theory in Patent Claim Interpretation: A Survey of the Federal Circuits*, 32 GEO. WASH. L. REV. 609, 610-11 (1964).

²⁹ See *id.* at 610.

³⁰ *Id.*

³¹ See *id.*

literal correspondence with the terms of the patent claim, the accused product or process should be deemed infringing.³²

The case law employing peripheral claiming was also quite clear that the doctrine of equivalents remained an essential part of infringement analysis in *all* cases, even where the patent claim language literally described the accused product or process. A clear statement of this “well settled” law is found in *Foster Cathead Co. v. Hasha*,³³ in which the Fifth Circuit emphasized that “merely because the claims in suit taken literally read element by element on the accused device does not establish infringement, nor does it establish a presumption of infringement.”³⁴ Rather, to prove infringement, the patentee “has the burden of showing that the accused structure is the equivalent of the particular embodiment of the claimed structure disclosed in the specification and drawings.”³⁵ Further, “[u]nless the patentee can carry this burden, the mere fact that his claims are broad when taken literally and clearly read on the accused device will avail him nothing.”³⁶

While the language in *Foster Cathead* was exceptionally clear, the Fifth Circuit’s decision was not at all exceptional in its articulation of the law. Oddly enough, one of the Federal Circuit’s predecessor courts (i.e., one of the courts whose precedents were expressly adopted by the Federal Circuit³⁷) articulated the law in identical terms. *Autogiro Co. of America v. United States*³⁸—a case widely cited and even included as a principal case in patent law casebooks for many years³⁹—emphasized that “[i]f the claims read literally on the accused structures, an initial hurdle in the test for infringement has been cleared,” but “[t]he race is not over; it has only started.”⁴⁰ Even where literal correspondence was established, infringement liability still required a determination that those accused also “do the same work, in substantially the

³² See *id.* at 616 (asserting that the Second Circuit was using the “peripheral technique” when it asked first whether the claim “read on the accused infringing device” and second whether “the accused device was equivalent to that described in the patent”); see also *id.* at 618-20, 624 (describing the Third, Fourth, Fifth, and Sixth Circuits’ methodologies).

³³ 382 F.2d 761 (5th Cir. 1967).

³⁴ *Id.* at 765 (quoting Charles F. Pigott, *Equivalents in Reverse*, 43 J. PAT. OFF. SOC’Y 291, 291-92 (1966)).

³⁵ *Id.* (quoting Pigott, *supra* note 34, at 292).

³⁶ *Id.*

³⁷ See *South Corp. v. United States*, 690 F.2d 1368, 1370-71 (Fed. Cir. 1982) (adopting all of the precedents of the Court of Claims in the first opinion of the Federal Circuit).

³⁸ 384 F.2d 391 (Ct. Cl. 1967).

³⁹ See, e.g., ROBERT PATRICK MERGES, *PATENT LAW AND POLICY* 641-44 (1st ed. 1992) (using the *Autogiro* case as the first principal case in the casebook’s chapter on infringement); MARTIN J. ADELMAN ET AL., *CASES AND MATERIALS ON PATENT LAW* 744-47 (2d ed. 2003) (same); see also F. SCOTT KIEFF ET AL., *PRINCIPLES OF PATENT LAW* 825 (5th ed. 2011) (including a lengthy quote from the *Autogiro* opinion).

⁴⁰ *Autogiro*, 384 F.2d at 399.

same way, and accomplish substantially the same result.”⁴¹ That last passage—with its reference to doing the “same work” in the “same way” to produce the “same result”—is nothing more than a classic “triple identity” framing of the doctrine of equivalents.⁴²

The *Autogiro* court then closed its discussion of infringement with a confirmation that its view of infringement analysis was not novel or controversial in the least. The court explained that the “approach of making literal overlap only a step and not the entire test of infringement has been consistently applied by the courts since *Westinghouse v. Boyden Power Brake Co.*”⁴³

A sophisticated modern reader will recognize the citation to *Westinghouse v. Boyden Power Brake Co.*⁴⁴ and may therefore assume that the discussion presented here relates to what the Federal Circuit has consistently called “the defense of the ‘reverse doctrine of equivalents.’”⁴⁵ But under the traditional approach to peripheral claiming, the analysis in *Boyden Power Brake* was not a defense; it was a required part of infringement analysis. As *Foster Cathead* and other pre-Federal Circuit cases make clear, the plaintiff had the burden of proving that the accused structures were equivalent to what was disclosed in the specification.⁴⁶

A reader familiar with Federal Circuit jurisprudence will also know that, as a supposed “defense” to infringement, the reverse doctrine of equivalents is largely a joke under present circuit law. Indeed, the Federal Circuit has gone so far as to describe the doctrine as an “anachronistic exception, long mentioned

⁴¹ *Id.* at 399-400 (quoting *Dominion Magnesium Ltd. v. United States*, 320 F.2d 388, 396 (1963)).

⁴² The phrase “triple identity” has been used to describe this test in modern opinions. *See* *Abbott Labs. v. Sandoz, Inc.*, 566 F.3d 1282, 1296 (Fed. Cir. 2009) (“The primary test for equivalency is the ‘function-way-result’ or ‘triple identity’ test, whereby the patentee may show an equivalent when the accused product or process performs substantially the same function, in substantially the same way, to achieve substantially the same result, as disclosed in the claim.”). The test itself, however, dates back well into the nineteenth century. *See, e.g.,* *Union Paper-Bag Mach. Co. v. Murphy*, 97 U.S. 120, 125 (1877) (“Authorities concur that the substantial equivalent of a thing, in the sense of the patent law, is the same as the thing itself; so that if two devices do the same work in substantially the same way, and accomplish substantially the same result, they are the same, even though they differ in name, form, or shape.”).

⁴³ *Autogiro*, 384 F.2d at 400 (citation omitted).

⁴⁴ 170 U.S. 537 (1898).

⁴⁵ *See, e.g.,* *Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 869 n.6 (Fed. Cir. 1985) (emphasis added) (citing *Boyden Power Brake*, 170 U.S. at 568).

⁴⁶ *See* *Foster Cathead Co. v. Hasha*, 382 F.2d 761, 765 (1967) (“The patentee in order to prove infringement has the burden of showing that the accused structure is the equivalent of the particular embodiment of the claimed structure disclosed in the specification and drawings.” (quoting *Pigott*, *supra* note 34, at 292)).

but rarely applied” and to tout that “[n]ot once has this court affirmed a decision finding noninfringement based on the reverse doctrine of equivalents.”⁴⁷ The Federal Circuit’s rejection of *Boyden Power Brake* even led one district judge to impose \$10.4 million in sanctions and attorney fees against attorneys who dared to raise arguments based on the reverse doctrine of equivalents.⁴⁸ Such arguments, the district judge reasoned, “‘threatened to mislead and confuse the jury’ and ‘flouted the governing claim construction as set forth by the Federal Circuit.’”⁴⁹ While the Federal Circuit ultimately vacated that sanction,⁵⁰ the faithful application of the Supreme Court’s *Boyden Power Brake* precedent has—to put it mildly—not been much helped by patent attorneys getting the message that, while arguments based on that precedent have never succeeded at the Federal Circuit, sanctions imposed because an attorney has raised the precedent *might* be vacated on appeal.

The approach to peripheral claiming articulated in pre-Federal Circuit treatises, as well as the infringement analysis articulated in pre-Federal Circuit cases such as *Foster Cathead* and *Autogiro*, is essentially identical to the approach required by § 112(f) for means-plus-function claims. That section authorizes elements in patent claims to “be expressed as a means or step for performing a specified function” and provides that “such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.”⁵¹

Under Federal Circuit law, the claim construction rule articulated in § 112(f) is a special rule, applicable only to means-plus-function elements, and if claim drafters want “[t]o avoid having [patent] claims *limited*” by that narrowing rule of claim construction, they must be sure to “have chosen language *to avoid application*” of § 112(f).⁵² In other words, § 112(f) is a trap for the unwary

⁴⁷ *Tate Access Floors, Inc. v. Interface Architectural Res., Inc.*, 279 F.3d 1357, 1368 (Fed. Cir. 2002).

⁴⁸ *See Depuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314 (Fed. Cir. 2009).

⁴⁹ *Id.* at 1322 (quoting the district court’s order).

⁵⁰ *See id.* at 1340.

⁵¹ 35 U.S.C. § 112(f) (2012). Prior to 2011, the language in § 112(f) was set forth in paragraph 6 of § 112 with no subsection indicator and was cited as “§ 112 ¶ 6.” This article will refer to the relevant statutory language using the modern citation of “§ 112(f)” even in discussing pre-2011 cases that would have cited the language using the older § 112 ¶ 6 format.

⁵² *Signtech USA, Ltd. v. Vutek, Inc.*, 174 F.3d 1352, 1358 (Fed. Cir. 1999) (emphasis added). *Signtech* also stresses “the importance of careful language choices in the specification and, particularly, in the claims” if the patent attorneys drafting a patent application want to avoid § 112(f). The Federal Circuit’s reading of § 112(f) as an especially narrow rule for claim construction traces back at least to *Valmont Industries, Inc. v. Reinke Manufacturing Co.*, 983 F.2d 1039 (Fed. Cir. 1993), which held that the equivalence analysis required under § 112(f) is more restrictive than general doctrine-of-equivalence

claim drafter, with savvy attorneys choosing the right language to get around the claim construction rule written into the statute. Yet all this is utterly novel. Prior to the creation of the Federal Circuit, means-plus-function language was not avoided by claim drafters. For example, John Landis—the premiere expert on claim drafting in the second half of the twentieth century—recognized that means elements would be construed to cover only the corresponding structure described in the specification plus equivalents, but he thought that rule of construction not limiting in the least because “this is the broadest protection one would ever be entitled to in any event.”⁵³

Thus, many cases can be found that, prior to the creation of the Federal Circuit, construed means elements as limited to the structures disclosed in the specification and equivalents.⁵⁴ What cannot be found is any indication that such an approach was *different* or *more limited* than the approach applied to construing any other claim element. Indeed, the pre-Federal Circuit case law often articulated the rule in general terms—that, because *all claims* had to be

analysis and covers only equivalents that “result[] from an insubstantial change which adds nothing of significance to the structure, material, or acts disclosed in the patent specification.” *Id.* at 1043. *Valmont’s* rule for narrowing the scope of claims containing means-plus-function elements was criticized by contemporary commentary as being based on “ipse dixit” and as “cast[ing] considerable doubt as to the utility of means-plus-function patent claims for protecting an invention.” Rudolph P. Hofmann, Jr. & Edward P. Heller, III, *The Rosetta Stone for the Doctrines of Means-Plus-Function Patent Claims*, 23 RUTGERS COMPUTER & TECH. L.J. 227, 232, 234 (1997).

⁵³ JOHN L. LANDIS, *THE MECHANICS OF PATENT CLAIM DRAFTING* 32 (1970). Contemporaneous commentary about the 1952 Patent Act, which first enacted the language now found in § 112(f), also suggested that the rule of claim construction in the statute was no less broad than the rule applicable to other claims. Thus, in January of 1952, U.S. Representative Bryson (who was the chair of the House subcommittee with jurisdiction over the then-pending patent bill) described the relevant language not as providing a new approach to claim construction but as “giv[ing] recognition to the existence of the doctrine of equivalents.” Joseph R. Bryson, *The Current Revision of Our Patent Laws*, 1952 AM. PAT. L. ASS’N BULL. 40, 46. Of course, in that era, “the doctrine of equivalents” would have been understood to mean the doctrine that *narrowed* claim language under the peripheral system of claiming.

⁵⁴ *See, e.g.,* *Rengo Co. v. Molins Mach. Co.*, 657 F.2d 535, 551-52 (3d Cir. 1981) (construing means-plus-function language to “a known method for performing the stated function identified in the specification”); *Bryan v. Sid W. Richardson, Inc.*, 254 F.2d 191, 194-95 (5th Cir. 1958) (construing claims with means language as covering only “corresponding structures or acts described in the specification and equivalents thereof”). Very old examples also exist. Thus, for example, Judge Learned Hand construed a crucial “means” element in the Wright Brothers’ patent as encompassing both the particular means disclosed in the specification and any “fair equivalent” of the disclosed means. *See* *Wright Co. v. Paulhan*, 177 F. 261, 264 (C.C.S.D.N.Y. 1910), *rev’d on other grounds*, 180 F. 112 (2d Cir. 1910); *see also* *Wright Co. v. Herring-Curtiss Co.*, 211 F. 654, 655 (2d Cir. 1914) (endorsing Judge Hand’s analysis in related litigation).

construed “in the light of the specifications,” “[m]eans other than those described in the specifications (or their equivalents) of an entirely different character do not infringe by bringing about the same results.”⁵⁵

One consequence of the Federal Circuit’s new approach to claim construction (which applies a literalistic approach generally and a more traditional peripheral claiming approach only to means-plus-function elements) is that a line of precedents has now developed at the Federal Circuit to govern whether a claim element should, or should not, be treated as a means-plus-function element.⁵⁶ Such cases did not occur prior to the creation of the Federal Circuit because nothing of consequence turned on the distinction. In fact, this whole line of precedents is of even more recent vintage—emerging only in the last two decades.

Consider, for example, the Federal Circuit’s recent decision in *Williamson v. Citrix Online, LLC*,⁵⁷ which made a small (though meritorious) adjustment to the court’s precedents as to whether a claim element should be viewed as a means-plus-function element.⁵⁸ In reviewing its case law on the issue, the *Williamson* court cited opinions back to 1996 but nothing earlier.⁵⁹ Moreover, examination of those early precedents does not lead to prior precedents on the issue.⁶⁰ Instead, even within the Federal Circuit, the case law prior to 1996

⁵⁵ *Leach v. Badger Northland, Inc.*, 385 F.2d 193, 197 (7th Cir. 1967). In support of that rule, *Leach* cited *Independent Pneumatic Tool Co. v. Chicago Pneumatic Tool Co.*, 194 F.2d 945 (7th Cir. 1952), which articulates the classical approach to interpreting all claims in a peripheral claiming system that (1) “in determining whether an accused device infringes a valid patent, resort must be had in the first instance to the words of the claim, but . . . (2) mere application of claim phraseology is not alone enough to establish infringement”; and (3) “[t]here must be real identity of means, operation and result.” *Id.* at 947.

⁵⁶ Peter S. Menell, Matthew D. Powers & Steven C. Carlson, *Patent Claim Construction: A Modern Synthesis and Structured Framework*, 25 BERKELEY TECH. L.J. 711, 766 (2010) (describing the Federal Circuit’s approach to establishing whether an element should be treated as a means-plus-function element).

⁵⁷ 792 F.3d 1339 (Fed. Cir. 2015).

⁵⁸ *Id.* at 1347-49.

⁵⁹ *See id.* (reviewing precedents on the “[a]pplicability” of § 112(f) with citations of cases from 2014, 2012, 2011, 2004, 2003, 2002, 2000, 1999, 1998 and 1996, but nothing earlier). In a separate opinion, Judge Reyna also perceptively noted that the court’s precedents in the area date back only about twenty years. *See id.* at 1356-57 (Reyna, J., concurring in part and dissenting in part). He rightly believed that the court needed to reconsider the “underlying fundamental issues” in the area. *Id.* at 1355.

⁶⁰ For example, the *Williamson* court pointed to *Personalized Media Communications, LLC v. International Trade Commission*, 161 F.3d 696 (Fed. Cir. 1998), as authority for a “rebuttable presumption” that “the use of the word ‘means’ in a claim element” triggers application of the claim construction rule in § 112(f). *Williamson*, 792 F.3d at 1348. The *Williamson* court mentioned that *Personalized Media* itself cited earlier cases for that rule, *see id.*, but an examination of the opinion in *Personalized Media* reveals that those prior precedents were from 1996 and 1997 only. 161 F.3d at 703-04. Tracing back those 1996 and

suggested that the rule of construction in § 112(f) both applied quite broadly⁶¹ and was not especially restrictive as compared with generally applicable rules of claim construction.⁶² In short, tracing back the case law cited by *Williamson* demonstrates the degree to which the Federal Circuit's current precedents in the area lack any historical foundation.

The precise statutory language of § 112(f) provides an additional clue that something is deeply wrong with the modern view that § 112(f) contains a special and more limited approach to claim interpretation. Under the statute, where a claim contains one or more elements expressed in means-plus-function form, the "claim"—not merely the means-plus-function *element*—is required to be limited to the structures disclosed in the specification and equivalents.⁶³ Yet if § 112(f) is a special rule designed to apply to the means-plus-function format, why should that interpretive rule apply to the *whole claim* (including

1997 precedents leads nowhere. For example, *Personalized Media* relied on the 1997 opinion in *Cole v. Kimberly-Clark Corp.*, 102 F.3d 524 (Fed. Cir. 1996), which cited a 1985 opinion for the proposition that courts should "decide on an element-by-element basis, based upon the patent and its prosecution history, *whether § 112[(f)] applies.*" *Id.* at 531 (emphasis added) (citing *Palumbo v. Don-Joy Co.*, 762 F.2d 969, 975 (Fed. Cir. 1985), *abrogated by Johnston v. IVAC Corp.*, 885 F.2d 1574 (Fed. Cir. 1989)). But the 1985 case cited by the 1997 *Cole* decision isn't on point. The 1985 precedent addressed not *whether* § 112(f) applies, but instead *how* courts should construe claims containing means-plus-function elements. *See Palumbo*, 762 F.2d at 975. Moreover, far from suggesting rules for differentiating claims containing means-plus-function elements from all other claims, the 1985 decision stated quite plainly that claims with means-plus-function elements are construed in the same manner as "other types of claims." *Id.* ("In construing a 'means plus function' claim, as also other types of claims, a number of factors may be considered, including the language of the claim, the patent specification, the prosecution history of the patent, other claims in the patent, and expert testimony.").

⁶¹ *Raytheon Co. v. Roper Corp.*, 724 F.2d 951, 957 (Fed. Cir. 1983) (holding that claim language introduced by the phrase "so that" would be interpreted as if it had been phrased in means-plus-function format).

⁶² In fact, the court in *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533 (Fed. Cir. 1991), stated that a claim with means-plus-function language was "broader" than a claim without that language because, "[l]iterally, [the] claim [with the means-plus-function language] covers the structure described in the specification *and equivalents* thereof," while the claim naming the structure "does not literally cover equivalents." *Id.* at 1538. While the *Laitram* opinion demonstrates that pre-1996 Federal Circuit law did not necessarily interpret means-plus-function claims narrowly, the opinion shows deep confusion about the relationship between claim interpretation and the doctrine of equivalents.

⁶³ *See* 35 U.S.C. § 112(f) (2012) ("An element in a *claim* for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such *claim* shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." (emphasis added)).

elements not written in means-plus-function format), rather than just to the claim elements written in the means-plus-function format?

Federal Circuit case law glosses over this point and reads the statute as if it requires “limit[ing] the scope of these claim *elements* [i.e., the means-plus-function elements] to the corresponding structure disclosed in the specification and its equivalents.”⁶⁴ But the statute doesn’t say that. The rule of construction dictated by the clear language of § 112(f) applies to the *entire claim* if any one element in the claim is set forth as a means-plus-function element or as a step in performing a function (e.g., in process claims). Of course, if the statutory rule of construction is meant to impose some special rule for means-plus-function elements, the statutory text would not make much sense because there would seem to be no good reason to apply that special rule to the entirety of a claim merely because one of the elements was in means-plus-function form. But the statute makes perfect sense if it is understood in the context of traditional peripheral claiming methodology. The statute was meant to authorize claims to contain means-plus-function elements and to provide that such claims would be subject to the *same* interpretive rule applicable to all other claims.⁶⁵

Finally, one last point about the switch from peripheral to literalistic claiming should be emphasized—it was a point presciently foretold in the *Autogiro* opinion. In explaining the traditional infringement analysis used in connection to peripheral claiming, the *Autogiro* court gave a reason why patentee’s rights were limited to encompassing only what was disclosed in the patent and equivalents: the goal was to ensure that the law operated “to benefit the inventor’s genius and not the scrivener’s talents.”⁶⁶ The bad consequences of the alternative approach were evident to the court. “To allow literality to satisfy the test for infringement,” the court wrote, “would force the patent law to reward literary skill and not mechanical creativity.”⁶⁷ Under Federal Circuit law, literality now does satisfy infringement analysis, and that approach has almost certainly shifted some of the rents associated with a patent system away from rewarding technological creativity and towards incentivizing creativity in claim drafting. That shift might not be an optimal allocation of the patent system’s incentives.

⁶⁴ *Signtech USA, Ltd. v. Vutek, Inc.*, 174 F.3d 1352, 1358 (Fed. Cir. 1999) (emphasis added).

⁶⁵ *See* 35 U.S.C. § 112(f) (“An element in a claim for a combination *may* be expressed as a means or step for performing a specified function . . .”).

⁶⁶ *Autogiro Co. of Am. v. United States*, 384 F.2d 391, 399 (1967) (explaining that the law must support invention, not literary creativity).

⁶⁷ *Id.*

II. COLLATERAL CONSEQUENCES OF LITERALISTIC CLAIMING: AVOIDING THE MERITS OF THE INVENTION

Fundamental changes in property rights definition are, by their nature, almost certain to have some significant collateral consequences, and the switch from peripheral to literalistic claiming is no exception.

Like its predecessor, the central claiming system, peripheral claiming relies heavily on an analysis of the appropriate degree of equivalents, and properly done, that analysis draws courts into an assessment of the true merits of the invention. Thus, twentieth-century Supreme Court case law admonishes courts to construe patent claims using certain canons of construction that demand an evaluation not merely of patent validity but also of the *degree of merit*. Yet any sort of analysis of merit is wholly or largely incompatible with literalistic claiming, and so the Federal Circuit has departed from that approach.

In a series of decisions, the Supreme Court articulated rules of patent claim construction that demand an assessment of the true merits of the invention as disclosed in the specification. The chain of precedent extends back into the nineteenth century, but this essay will focus primarily on twentieth-century cases so as to demonstrate that the precedents are fully consistent with peripheral claiming and not merely remnants of an abandoned central claiming system.

*Eibel Process Co. v. Minnesota & Ontario Paper Co.*⁶⁸ provides a good example of the traditional peripheral claiming approach.⁶⁹ The patent in the case was a novel improvement to industrial papermaking machines.⁷⁰ Prior to William Eibel's contribution, the standard industrial papermaking machine employed a "papermaking wire" that could be run only at about 500 feet per minute, with faster speeds producing defective paper.⁷¹ The inventor's small modification of the existing machine—he raised the pitch of the wire from two or three inches to twelve inches—led to a dramatic increase in the maximum speed of the machine.⁷²

Eibel Process is an interesting case for many reasons, but, for present purposes, the two most important aspects involve the method by which the Court construed the patent claims. First, the Court addressed the issue of patent validity *prior to engaging in any construction of the patent claims*. Thus, the second paragraph of the Court's opinion begins, "[t]he first and most important question is whether this was a real discovery of merit."⁷³

To modern patent lawyers familiar with Federal Circuit practice, that approach seems wrong precisely because modern claim construction occurs in

⁶⁸ 261 U.S. 45 (1923).

⁶⁹ *See id.* at 52-68 (considering both the validity of the patent and claim construction).

⁷⁰ *See id.* at 49.

⁷¹ *Id.* at 52.

⁷² *See id.* at 55.

⁷³ *Id.* at 52.

an informational vacuum, without the court understanding what is contained in the prior art and what is the inventor's alleged contribution. Indeed, the modern claim construction typically occurs at a pre-trial "*Markman*" hearing before either party has marshalled forward its evidence concerning validity. Yet, even though such hearings are named after a Supreme Court precedent (*Markman v. Westview Instruments, Inc.*⁷⁴), nothing in that precedent or in any other Supreme Court precedent requires claim construction to be conducted before the analysis of validity.

To the contrary, *Eibel Process* and other Supreme Court precedents suggest that validity concerns should be deeply connected with claim construction.⁷⁵ After raising the issue of the invention's "merit" in the opening paragraphs of its opinion, the *Eibel Process* Court spent the next sixteen pages in the opinion addressing validity and claim construction *together*.⁷⁶ That section of the opinion ends with the Court's conclusion about the validity of the patent—that "what [the inventor] saw and did was not obvious and did involve discovery and invention."⁷⁷ The next page of the opinion turns to the analysis of infringement.⁷⁸ The very opening statement in this analysis makes clear that the Court has already completed its claim construction, for the opinion states, "[i]f the Eibel patent is to be construed as we have construed it, there can be no doubt that the defendant uses the Eibel invention."⁷⁹ Thus, not only in its statements but also in its very structure, the opinion in *Eibel Process* shows the necessary connection between claim construction and the assessment of patent validity. It is the polar opposite of the approach seen in *Liebel-Flarsheim*.

Yet the Supreme Court's combined treatment of validity and claim construction makes perfect sense given the second remarkable aspect of the opinion, which is that the Court *adjusts* its claim construction based on the merits of the inventor's contribution.⁸⁰ As a preface to its rules of construction, the Court wrote that "[i]n administering the patent law the court first looks into the art to find what the real merit of the alleged discovery or invention is and whether it has advanced the art substantially."⁸¹ The outcome of that "first" step governs the construction of the patent, with a court being "liberal in its construction of the patent to secure to the inventor the reward he deserves"

⁷⁴ 517 U.S. 370 (1996).

⁷⁵ See, e.g., *Eibel Process*, 261 U.S. at 65-66 (considering together whether the claim is sufficiently definite and the validity of that claim).

⁷⁶ See *id.* at 52-68.

⁷⁷ *Id.* at 68.

⁷⁸ See *id.* at 69.

⁷⁹ *Id.*

⁸⁰ See *id.* at 63 ("It is this differing attitude of the courts toward genuine discoveries and slight improvements that reconciles the sometimes apparently conflicting instances of construing specifications and the finding of equivalents in alleged infringements.").

⁸¹ *Id.*

where the invention advances the art substantially, and conversely, affording the patent a “narrow scope” where the invention is “on the border line between mere mechanical change and real invention.”⁸²

Eibel Process’s statements about construing patents are heresy to modern Federal Circuit practice because the interpretation of patent claims is simply not affected by the *degree* of merit disclosed in the patent. That point can be seen quite clearly in the fate of the “pioneer” patent doctrine at the Federal Circuit. Under the Supreme Court’s case law, “pioneer” patents referred to highly meritorious inventions that were entitled to expansive claim constructions.⁸³ The doctrine was mentioned in *Eibel Process*, even though the Court did not believe Eibel’s invention rose to quite that level.⁸⁴ But an examination of the Federal Circuit’s precedents on “pioneer” patents reveals only the extreme degree of divergence between those precedents and Supreme Court authority, for the Federal Circuit has long maintained that an invention’s “‘pioneer’ status does not change the way infringement is determined.”⁸⁵

Indeed, the Federal Circuit’s position on pioneer patents is most clearly articulated in *Augustine Medical, Inc. v. Gaymar Industries, Inc.*,⁸⁶ which held “that no objective legal test separates pioneers from non-pioneers.”⁸⁷ Rather, the court explained, “[p]ioneers enjoy the benefits of their contribution to the art in the form of broader claims.”⁸⁸ The court explained, “[w]ithout extensive prior art to confine and cabin their claims, pioneers acquire broader claims than non-pioneers who must craft narrow claims to evade the strictures of a crowded art field. Thus, claim scope itself generally supplies broader exclusive entitlements to the pioneer.”⁸⁹

That passage fully embraces the assumption of literalistic claim interpretation: patent claims—all patent claims—are to be given their full literal reach, without any of the limiting equivalents analysis that was part of

⁸² *Id.*

⁸³ See *Westinghouse v. Boyden Power-Brake Co.*, 170 U.S. 537, 561-62 (1898) (stating that the degree of “liberality of construction” due patent claims depended on whether the invention was “what is termed in ordinary parlance a ‘pioneer,’” and defining a “pioneer” patent as “a patent covering a function never before performed, a wholly novel device, or one of such novelty and importance as to mark a distinct step in the progress of the art, as distinguished from a mere improvement or perfection of what had gone before”).

⁸⁴ See *Eibel*, 261 U.S. at 63 (explaining that Eibel’s invention “was not a pioneer patent, creating a new art; but a patent which is only an improvement on an old machine may be very meritorious and entitled to liberal treatment”).

⁸⁵ *E.g.*, *Texas Instruments, Inc. v. U.S. Int’l Trade Comm’n*, 846 F.2d 1369, 1370 (Fed. Cir. 1988).

⁸⁶ 181 F.3d 1291 (Fed. Cir. 1999).

⁸⁷ *Id.* at 1301.

⁸⁸ *Id.*

⁸⁹ *Id.*

traditional peripheral claiming.⁹⁰ Under that system, pioneering inventors must hire excellent lawyers to encode a broad scope into the literal terms of the claim, with those lawyers having to be careful not to craft too broad of a claim lest the entirety of the right be invalidated. If pioneering inventors have such skilled lawyers, they will then be able to receive their rewards not from liberal judicial interpretation of the claim but from “claim scope itself.”⁹¹ While that approach may initially sound reasonable, it requires the true inventive pioneer to hire very good lawyers, who must be good at word-smithing claims and at predicting how judges will interpret the claim language one or even two decades in the future. That approach raises the expense of patenting and, in any event, is quite different from the peripheral claiming approach found in Supreme Court precedent.

While the Federal Circuit has eschewed entirely the traditional pioneer patent doctrine and any thorough-going inquiry into the merits of the disclosed invention as a step in claim construction, the court has retained one vestigial remnant of the Supreme Court’s traditional doctrine. The Federal Circuit still pays lip service to the “claim validity” canon—i.e., the canon that “claims should be so construed, if possible, as to sustain their validity.”⁹² But even here, the court has done everything possible to minimize the importance of the doctrine—pushing it to the very end of its interpretive process and holding it to be “a last resort, not a first principle.”⁹³ As the Federal Circuit candidly acknowledged in its en banc decision in *Phillips v. AWH Corp.*,⁹⁴ “we have limited the [claim validity] maxim to cases in which ‘the court concludes, after applying all the available tools of claim construction, that the claim is still ambiguous.’”⁹⁵ That approach obviously marginalizes the claim validity canon, which is itself merely a shadow of the Supreme Court’s much different approach to claim construction.

Eibel Process is not the only Supreme Court precedent holding both that patent claims should be interpreted in light of the patent’s validity or merit and that the degree of merit matters in the interpretation. Twelve years after *Eibel*,

⁹⁰ See *Vitronics Corp. v. Conceptor, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996) (“A literal patent infringement analysis involves two steps: the proper construction of the asserted claim and a determination as to whether the accused method or product infringes the asserted claim as properly construed.”).

⁹¹ See *Augustine Med., Inc.*, 181 F.3d at 1301 (“[C]laim scope itself generally supplies broader exclusive entitlements to the pioneer.”).

⁹² *Rhine v. Casio, Inc.*, 183 F.3d 1342, 1345 (Fed. Cir. 1999) (quoting *Carman Indus., Inc. v. Wahl*, 724 F.2d 932, 937 n.5 (Fed. Cir. 1983)).

⁹³ *MBO Labs., Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1331 (Fed. Cir. 2007).

⁹⁴ 415 F.3d 1303 (Fed. Cir. 2005).

⁹⁵ *Id.* at 1327 (quoting *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 911 (Fed. Cir. 2004)).

the Court in *Smith v. Snow*⁹⁶ restated its preference for considering validity issues as an important part of claim construction.⁹⁷ The Court wrote that, where claims are “fairly susceptible” of two different constructions, courts should favor the one that “will secure to the patentee his actual invention, rather than to adopt a construction fatal to the grant.”⁹⁸ But the merits of the invention were not merely a tie-breaker, for “the character of the patent and its commercial and practical success” entitled the inventor both “to broad claims” and “to a liberal construction of those [claims].”⁹⁹ That statement was not dicta because *Smith v. Snow* involved an invention that was “novel and revolutionary in the industry,” and a “striking advance” as compared to “the history of the prior art.”¹⁰⁰ The Court directly relied on those findings in ruling that it would not “restrict” the claims of the patent.¹⁰¹ Yet the key point about *Smith* is that restricting the scope of the claims was an *option*, and the Court’s decision not to restrict claim scope depended on an assessment of the inventor’s contribution.

The more recent case of *United States v. Adams*¹⁰² (one of the companion cases of *Graham v. John Deere Co.*¹⁰³) is yet another great example of the Supreme Court’s approach to claim construction and its use of inventive merit in construing claims. In that case, the inventor’s claim to a new type of battery failed to specify an electrolyte as an element in the claim.¹⁰⁴ That omission was significant because the inventor’s main argument in favor of the nonobviousness of the invention depended on the point that the battery could use even plain water as its electrolyte.¹⁰⁵

Yet the problem with the claim did not much trouble the Court, which reasoned that “it is fundamental that claims are to be construed in the light of the specifications *and both are to be read with a view to ascertaining the invention.*”¹⁰⁶ Based on that approach to claim interpretation, the Court relied on a variety of materials—including even a letter written by the inventor touting the commercial advantages of his new battery—to hold that the claim

⁹⁶ 294 U.S. 1 (1935).

⁹⁷ *See id.* at 14 (“If the matter were doubtful, it is plain from what has been said that the character of the patent and its commercial and practical success are such as to entitle the inventor to broad claims and to a liberal construction of those which he has made.”).

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ *Id.* at 7, 17.

¹⁰¹ *See id.* at 18.

¹⁰² 383 U.S. 39 (1966).

¹⁰³ 383 U.S. 1 (1966).

¹⁰⁴ *See Adams*, 383 U.S. at 42-44.

¹⁰⁵ *See id.* at 43.

¹⁰⁶ *Id.* at 49 (emphasis added).

should be interpreted as directed to water activated batteries.¹⁰⁷ Again, it is almost impossible to imagine that approach to claim interpretation at the Federal Circuit, and if that approach had not been taken, the inventor's claims in *Adams* could have been invalidated.¹⁰⁸

In sum, the transition from peripheral claiming to literalistic claiming means not only that patent claims are less tied to the patent's disclosure but also that the merits of the invention matter less in claim construction. Those two points might seem to be similar, but they are distinct. A judge interpreting a patent claim could consult a patent's disclosure very carefully and limit claims to that disclosure. Some Federal Circuit judges may interpret claims in this way, but none appear to do what Supreme Court precedent requires, which is to make an analysis of the real merits of the disclosed invention a primary part of claim interpretation.

III. THEORETICAL JUSTIFICATIONS FOR RESTORING TRADITIONAL PERIPHERAL CLAIMING: OPTIMAL CERTAINTY IN A METES-AND-BOUNDS SYSTEM

So far, this essay has made merely descriptive points—demonstrating that the Federal Circuit's approach to patent claim construction diverges quite sharply from the Supreme Court's approach. While fidelity to Supreme Court precedent would seem to be a good reason to prefer peripheral to literalistic claiming, that consideration does not address the central policy issue, which is whether the Supreme Court's approach is better or worse than the Federal Circuit's. It is possible, of course, that the Supreme Court's case law reflects not a *better* but merely an *older* view. This part of the essay will, however, advance two arguments in favor of restoring the Supreme Court's approach not merely to preserve the appropriate judicial hierarchy but also to make patent law function better as a property rights system.

The first and perhaps most important point is that an ad hoc, somewhat imprecise system for defining property rights might very well be optimal if the alternative system supplies too little additional precision at too great a price. The point can be made quite nicely by invoking the ubiquitous analogy drawn between patent claims and the "metes and bounds" of a physical deed to land.

While numerous courts and commentators have drawn the analogy between patent claims and the "metes-and-bounds" method of defining real property rights, those courts and commentators typically seem to view "metes and bounds" as a rather precise method of defining rights. Thus, for example, Mark

¹⁰⁷ See *id.* at 49 (referencing patentee's letter to the Department of Commerce).

¹⁰⁸ The Court distinguished one key piece of prior art raised by the Government—the Skrivanoff battery—on the grounds that the prior battery did not use water as an electrolyte though quite possibly it fell within the literal language of the claim. See *Adams*, 383 U.S. at 50 (explaining that "Skrivanoff disclosed . . . an electrolyte completely different from that used in Adams").

Lemley and Dan Burk correctly note that the Federal Circuit has been on a quest for “certainty” in defining patent boundaries, and they state that “[t]he idea that patent language could offer public notice comparable to the ‘metes and bounds’ of real property is an appealing, and as we have seen, pervasive trope.”¹⁰⁹ Similarly, in a different article, Mark Lemley and Brett Frischmann argue that “[w]hile courts sometimes talk about patent claims as defining the ‘metes and bounds’ of the right, patent claims lack the certainty associated with real property deeds.”¹¹⁰ So too, Adam Mossoff observes that patent claims are frequently “analogized to the metes and bounds of real property—the bright-line threshold that triggers absolute liability for trespass.”¹¹¹

These commentators are correct in thinking that, when courts draw the analogy between patent claims and “metes and bounds,” the courts appear to be making a plea for greater certainty and clarity in claims.¹¹² A good example is the Federal Circuit’s decision in *In re Buszard*.¹¹³ The court describes the back-and-forth negotiation between patent applicants and examiners as a process of “defining the metes and bounds of the invention to be patented,”¹¹⁴ and in the very next sentence of the opinion, the court identifies the goals of that process as “fashion[ing] claims that are precise, clear, correct, and unambiguous.”¹¹⁵ In sum, both courts and commentators seem to assume that the metes-and-bounds method of defining real property rights is a quite clear, certain, and bright line method of defining property.

That assumption is wrong. In the literature on property rights, the metes-and-bounds method of defining property rights has long been known as being ad hoc and highly uncertain.¹¹⁶ Ironically, the analogy between patent claims and “metes and bounds” may indeed be a good analogy because both systems are so *inaccurate*.

Yet the imprecision of the metes-and-bounds and peripheral patent claiming systems does not necessarily mean that either is suboptimal. Greater precision has costs, and in some fields (whether technological fields or physical property

¹⁰⁹ Burk & Lemley, *supra* note 16, at 1780.

¹¹⁰ Brett M. Frischmann & Mark A. Lemley, *Spillovers*, 107 COLUM. L. REV. 257, 274 (2007).

¹¹¹ Adam Mossoff, *Exclusion and Exclusive Use in Patent Law*, 22 HARV. J.L. & TECH. 321, 374 (2009).

¹¹² *See, e.g., id.* (“The pervasive use of trespass analogies in patent scholarship and case law reflects . . . the need for bright-line rules in patent law that provide ex ante certainty to patentees and the public.”).

¹¹³ 504 F.3d 1364 (Fed. Cir. 2007).

¹¹⁴ *Id.* at 1367.

¹¹⁵ *Id.* (quoting *In re Zletz*, 893 F.2d 319, 321-22 (Fed. Cir. 1989)).

¹¹⁶ *See, e.g.,* FRANK EMERSON CLARK, A TREATISE ON THE LAW OF SURVEYING AND BOUNDARIES § 3 (1922) (explaining that the metes-and-bounds system is “difficult and liable to error” and that because of the inaccuracies of the system many jurisdictions have moved to a “rectangular system” of defining property rights).

fields), those costs can be sufficiently large that they are not worth bearing. Thus, for example, the ad hoc, imprecise metes-and-bounds system of property rights definition might be optimal where the costs of more accurate property demarcation are too high relative to the value of the underlying property.¹¹⁷ Moreover, the economic benefits of greater precision are often experienced only in the long run.¹¹⁸

What does all that say about the optimal system for defining patent properties? First of all, there is no long run in patent property rights. Within two decades all patent rights expire, and many expire even earlier due to a failure to pay maintenance fees.¹¹⁹ Upon patent expiration, all rights enter the public domain, and the boundaries no longer matter. Second, it might seem that patent rights are valuable, but that's not true. The vast majority of patents (perhaps ninety percent or more) are worthless.¹²⁰ These two features of patent

¹¹⁷ See Gary D. Libecap & Dean Lueck, *The Demarcation of Land and the Role of Coordinating Property Institutions*, 119 J. POL. ECON. 426, 460 (2011) (explaining that the more inaccurate metes-and-bounds system of defining property rights might be superior where the costs of more precise property definition is "prohibitively costly").

¹¹⁸ See *id.* (concluding that the benefits from a more precise system of property rights definition arise mainly from "long-term gains," so such a system "is not worth the setup cost in all situations"). Libecap and Lueck also conclude that a less standardized metes-and-bounds system of property definition may have advantages where the property itself lacks natural uniformity—i.e., where the property is "rugged." *Id.* at 449 (explaining that, "as terrain becomes more rugged, there is a point at which the (per-acre) value of land under [metes-and-bounds] demarcation is larger than under" the more standardized rectangular system of demarcation). Obviously, some technological "terrains" or fields might be "rugged" in the sense that they lack natural uniformity and thus are poor candidates for anything other than the ad hoc system of property definition. Other technological fields—e.g., the chemical arts—might be better adapted to a more standardized approach.

¹¹⁹ See 35 U.S.C. § 154(a)(2) (2012) ("[S]uch grant shall be for a term beginning on the date on which the patent issues and ending 20 years from the date on which the application for the patent was filed . . ."); see also Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1504 (2001) (setting forth data demonstrating that more than forty percent of patents expire before ten years and more than sixty percent expire after twelve years for failure to pay maintenance fees).

¹²⁰ See, e.g., GEORGE BASALLA, *THE EVOLUTION OF TECHNOLOGY* 69 (1988) (explaining that dating back to the nineteenth century, many commentators have estimated that only approximately ten percent of patents have commercial value). More recent commentary has tried to estimate the number of valuable patents more accurately, but it is difficult to do. Most patents are allowed to expire for failure to pay maintenance fees, so those patents can be safely assumed to be worthless (at least at the time they are allowed to lapse). Only about 1.5% of patents are litigated. See Lemley, *supra* note 118, at 1507. The number of valuable but never-litigated patents is not known with any degree of certainty in part because patentees may keep their licensing practices secret. See *id.* at 1507 n.53 (estimating that only one percent of non-litigated patents are valuable enough to be licensed but also acknowledging the difficulty of estimating that percentage); see also John R. Allison et al.,

rights lead to a stark formulation of the relevant policy question: What degree of precision is appropriate for demarcating boundaries for temporary property rights, the vast majority of which are worthless? The experience of the metes-and-bounds system of defining property rights might provide a clue to the right answer, but the analogy points 180 degrees away from the direction that the courts and commentators seem to believe.

Another argument for abandoning literalistic claiming is perhaps more conventional, at least among the modern commentators who are critical of the Federal Circuit's case law on patent claiming: a fair amount of objective evidence suggests that Federal Circuit's push for greater linguistic accuracy has not been successful in producing greater certainty of property rights. Part of this objective evidence arises from one peculiar feature of property rights demarcation in the patent system. Patentees are free to add multiple definitions of their property rights—they can keep adding patent claims. On this point, patents are truly different from deeds in a metes-and-bounds system. Deeds do not contain multiple different possible metes and bounds, but patents typically do.

The ability of a patentee to include multiple claims, as well as the costs associated with including multiple claims (at the very least the additional time for the lawyer to draft the claims), provides a natural barometer gauging the degree to which the patentees view their own claims as more or less certain. After all, if claim interpretation and patent validity analysis were perfectly predictable, patentees would pay their lawyers to write only one claim, and paying for additional lawyer time to draft more claims would be pointless.

The question is thus whether the patent system is anywhere close to being predictable enough that patentees can rely on merely a single claim to define their rights. The answer is obvious. Almost all patents contain multiple claims, and valuable patents contain dozens or even hundreds. If anything, the advent of the Federal Circuit and its literalistic claiming approach has pushed the number of claims higher.¹²¹ That observation provides objective evidence that literalistic claiming has not been especially successful in producing greater certainty.

Other objective metrics for determining the success of any push for greater certainty in patent claiming include the degree to which parties litigate the meaning of patent claims and the degree to which fair-minded, unbiased judges agree with each other on the meaning of claims. Both of these metrics suggest

Valuable Patents, 92 GEO. L.J. 435, 435-36 (2004) (highlighting the uncertainty about what happens to most patents).

¹²¹ See Dennis Crouch, *Claims in Issued Patents*, PATENTLYO (Feb. 22, 2013), <http://patentlyo.com/patent/2013/02/claims-in-issued-patents.html> [https://perma.cc/RXL7-XLNA] (showing that the average number of claims in a patent has risen more than fifty percent in the first thirty years of the Federal Circuit's existence—from approximately ten claims per patent in 1982, when the Federal Circuit was first created, to more than fifteen claims in 2012).

that literalistic claiming has not generated more certainty. Almost every patent litigation includes a *Markman* hearing at which the trial judge is asked to resolve multiple disagreements as to claim meaning. The mere fact of that litigation—which is very expensive—is an objective indication of continued uncertainty, for rational businesses do not fund expensive litigation if they are certain to lose. So too, patent claim construction cases are notorious for generating substantial reversal rates and splits in three-judge panels.¹²² Indeed, there is even empirical evidence that greater experience in interpreting patent claims does not produce greater agreement in the correct interpretation.¹²³

In sum, there is little evidence to suggest that the Federal Circuit's literalistic approach to patent claim interpretation has produced more certainty in property rights definition, and there are good theoretical reasons to believe that expending resources to obtain more certainty might not be worthwhile in any event. In those circumstances, the traditional peripheral claiming approach has much to recommend it. Indeed, because the traditional approach strives hard to match claim interpretations to an inventor's actual contribution, patentees would need fewer claims to be reasonably confident that their inventive contributions would be protected because the uncertainty at the boundary of the right would not undermine the certainty of the right's core. The traditional approach might also benefit potential defendants precisely because a smaller number of claims—each interpreted with an eye toward capturing the inventor's actual technological contribution—might be easier to understand than hundreds of claims, each with its own linguistic and technological ambiguities.

CONCLUSION: A PRACTICAL CODA AND PREDICTION

This essay closes with a small practical coda. If, as this essay has tried to demonstrate, the Federal Circuit's approach to claim construction diverges quite sharply from Supreme Court precedent, then that divergence creates a key litigation opportunity for numerous parties—indeed, for both patentees and defendants. For patent infringement defendants, the relevant issue might be framed as:

“Whether a patent claim may validly be interpreted to encompass subject matter not equivalent to anything disclosed in the patent specification.”

For patentees, the issue might be described as:

¹²² See David L. Schwartz, *Practice Makes Perfect? An Empirical Study of Claim Construction Reversal Rates in Patent Cases*, 107 MICH. L. REV. 223, 225 (2008) (“Previous studies have shown that the Federal Circuit reverses decisions on the issue of claim construction at an alarming rate.”).

¹²³ See *id.* at 223, 225 (concluding that “the data do not reveal any evidence that district court judges learn from appellate review of their rulings” or “a significant relationship between experience and performance”).

“Whether a patent claim must be interpreted to cover the real merit of the invention disclosed in the patent specification.”

The issue is phrased slightly differently for each side because the Federal Circuit’s literalistic claiming approach presents different risks to each side of patent infringement litigation. For defendants, the risk is that patent claims will be interpreted to go beyond any meritorious technological contribution made by the inventor. For patentees, the risk is that the patent claims will be interpreted in a way that leads to invalidation of the claim despite the merits of the disclosed invention or, through some linguistic glitch, that leads to exclusion from the claim scope of commercially valuable embodiments of the invention. In other words, literalistic claiming has risks for both patentees and defendants.

Sophisticated readers will note these issues are framed very much in the format of a so-called “question presented” for a petition for certiorari. That is quite deliberate, for the divergence between Supreme Court and Federal Circuit precedent creates the key opportunity for parties to seek Supreme Court review in any case where (1) the issue arises (and it arises in virtually any case having a dispute about claim interpretation) and (2) the party loses at the Federal Circuit. Raising and preserving that issue can thus be seen as a small insurance policy against a loss in litigation, for if the issue is preserved, a petition for certiorari has quite a reasonable chance of being granted.

That’s the practical advice—parties really should raise and preserve this issue, for even if their particular case is not ultimately accepted for Supreme Court review, they could still benefit from a Supreme Court decision provided that they have appropriately preserved the issue. Now for a prediction: the divergence between Supreme Court and Federal Circuit precedent on claim interpretation is so dramatic, and parties are now so accustomed to seeing the Supreme Court take an interest in patent law, that this issue will almost certainly come before the Supreme Court in the next five to ten years. That time frame might sound long, but since most patent litigation takes multiple years to complete, it really is not. Attorneys involved in patent litigation at this time should become more familiar with the Supreme Court’s different approach to claim interpretation—i.e., with the traditional approach to interpretation in a peripheral claiming system—for it may once again be the law of the land before many current patent litigations are finished. Such a development should be welcomed, for the traditional approach to peripheral claiming holds the promise of better property rights definition without unrealistic and counterproductive notice requirements.