ENHANCING PATENT DISCLOSURE FOR FAITHFUL CLAIM CONSTRUCTION

by
Joseph Scott Miller[*]

Claim construction jurisprudence is in disarray. The United States Court of Appeals for the Federal Circuit reverses trial court claim construction decisions at a worryingly high rate. The proportion of Federal Circuit claim construction opinions that include separate concurrences or dissents continues to grow. And the muddled mix of issues the Federal Circuit framed for en banc review in the Phillips *case suggests that the court cannot reach consensus on what the central questions are, much less on how to answer them. Perhaps the path to adequately predictable claim construction is continued tinkering with the analytical constructs internal to the Federal Circuit's claim construction jurisprudence, but that is not likely. In this Article, the author takes a sharply different approach to the question, how can we make claim construction more predictable? Inspired by the maxim "garbage in, garbage out," he looks to the patent system actor that has plenary power, within the broad outline set by the Patent Act, over the details of all patent disclosures—namely, the Patent Office. Specifically, he examines additional, low-cost disclosures that would assist claim construction and that the Patent Office can demand from all patent applicants. Carefully chosen new disclosures would make all patents far more helpful tools in their own construction, providing social benefits that far outweigh the added patent preparation costs. In any subsequent claim construction process, whether for licensing, design-around, or litigation purposes, parties would have the benefit of patents enriched with this new information. The patent document, enhanced in this way, would better fulfill its role as claim construction's central resource.*

[*] Assistant Professor, Lewis & Clark Law School. I wrote this Article with the benefit of helpful and challenging suggestions from participants at the Tenth Annual Lewis & Clark Law School Fall Business Law Forum, entitled "*Markman v. Westview Instruments*: Lessons from a Decade Experience," and from Chris Cotropia, Tim Holbrook, Andy Johnson-Laird, Mark Lemley, Lydia Loren, and Jim Speta. Comments are welcome at jsmiller@lclark.edu.

> "A review of the contemporary patent instrument cannot be a charitable one. In terms of their format and fit with the patent statute, modern patents do a woefully poor job of recording the proprietary interests of inventors."
>
> – Prof. John R. Thomas[**]

I. INTRODUCTION

The modern U.S. patent system, which began in 1836 with the creation of the Patent Office,[1] is now 169 years old. The modern patent claim requirement is almost as old, having been codified in an 1870 amendment to the Patent Act.[2] When one reads, for example, the Supreme Court's 1877 claim construction decision in *Merrill v. Yeomans*,[3] a case about a disputed oil deodorizing process, it appears quite contemporary. Indeed, *Merrill*'s continued vitality as a teaching tool[4] is but one indication of the patent claim's enduring role as the defining statement of a patent owner's right to exclude others from the marketplace.[5]

[**] John R. Thomas, *On Preparatory Texts and Proprietary Technologies: The Place of Prosecution Histories in Patent Claim Interpretation*, 47 UCLA L. REV. 183, 230 (1999).

[1] Act of July 4, 1836, ch. 357, 5 Stat. 117.

[2] Act of July 8, 1870, ch. 230, § 26, 16 Stat. 198, 201 (mandating that an applicant "shall particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery"). For a concise review of the history of claiming practice in the 1800s, see William Redin Woodward, *Definiteness and Particularity in Patent Claims*, 46 MICH. L. REV. 755, 757–60 (1948). Today's Patent Act contains essentially the same language as the 1870 amendment. *See* 35 U.S.C. § 112, para. 2 (2000) ("The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.").

[3] 94 U.S. 568, 574 (1877) (resolving whether the word "manufacture," in the claim in dispute, meant "process" or "product").

[4] One leading patent law casebook presents *Merrill* as a principal case. *See* ROBERT PATRICK MERGES & JOHN FITZGERALD DUFFY, PATENT LAW AND POLICY: CASES AND MATERIALS 872–78 (3d ed. 2002). Another quotes from *Merrill* in support of the proposition that "[t]he Supreme Court has emphasized for over a century that the claims of a patent should be clear and should control the determination of infringement." DONALD S. CHISUM ET AL., PRINCIPLES OF PATENT LAW 860 (3d ed. 2004). As Professor Duffy observes, "[A] claim drafted at the very beginning of the twentieth century could easily serve as an examination question for law students at the end of the century." John F. Duffy, *On Improving the Legal Process of Claim Interpretation: Administrative Alternatives*, 2 WASH. U. J.L. & POL'Y 109, 109–10 (2000).

[5] *See* Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1248 (Fed. Cir. 1998) ("[T]he claims define the scope of the right to exclude; the claim construction inquiry, therefore, begins and ends in all cases with the actual words of the claim."). This right to exclude is the heart of the patent: "The franchise which the patent grants, consists altogether in the right to exclude every one from making, using, or vending the thing patented, without

There is more to a patent, of course, than its numbered claims. The Patent Act generally requires the patent document to put the claims it contains in their technological context. Specifically, the patent's written disclosure must support the claims with information that describes the claimed invention, enables people of ordinary skill in the relevant art to make and use the claimed invention, and provides the best mode (assuming there is one) of practicing the claimed invention.[6]

The Patent Act casts these disclosure requirements in open-textured language. One can thus imagine varied sets of more particularized content and format requirements, each of which would fulfill the Patent Act's demands. The Patent Office, which Congress first empowered to "establish rules and regulations . . . for the conduct of [its own] proceedings"[7] in the very same 1870 statute that codified the claim requirement,[8] has been charged with providing a set of detailed content and format requirements for the patent document. In other words, Congress has "delegated plenary authority over PTO practice" to the Office itself.[9] Today, we find these requirements in Title 37 of the *Code of Federal Regulations*.[10] The Federal Circuit, for its part, gives a Patent Office rule governing content or format "'controlling weight unless [it is] arbitrary, capricious, or manifestly contrary to the statute.'"[11]

The Office should strive, in framing its content and format requirements, to produce a patent the claims of which a person having ordinary skill in the art

---

the permission of the patentee. This is all that he obtains by the patent." Bloomer v. McQuewan, 55 U.S. (14 How.) 539, 549 (1852) (Taney, C.J.).

[6] 35 U.S.C. § 112, para. 1 (2000).

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Id. For a concise review of the enablement, written description, and best mode requirements, see ROGER E. SCHECHTER & JOHN R. THOMAS, PRINCIPLES OF PATENT LAW § 6.1 (2004).

[7] Act of July 8, 1870, ch. 230 § 19, 16 Stat. 198, 200. The current grant of regulatory power to the Patent Office is in 35 U.S.C. § 2(b)(2)(A) (2000), which provides that "[t]he Office . . . may establish regulations, not inconsistent with law, which . . . shall govern the conduct of proceedings in the Office." From 1952 to 1999, this grant of power was set forth in 35 U.S.C. § 6. *See* Intellectual Property and Communications Omnibus Reform Act of 1999, Pub. L. No. 106-113, app. I, § 4712, 113 Stat. 1501A-521, 572 to 573 (codified as 35 U.S.C. § 2 (2000)).

[8] *See* Act of July 8, 1870, § 26, 16 Stat. 198, 201.

[9] Gerritsen v. Shirai, 979 F.2d 1524, 1527 n.3 (Fed. Cir. 1992); *see also* Stevens v. Tamai, 366 F.3d 1325, 1333 (Fed. Cir. 2004); *In re* Bogese, 303 F.3d 1362, 1368 (Fed. Cir. 2002) ("The PTO has inherent authority to govern procedure before the PTO, and that authority allows it to set reasonable deadlines and requirements for the prosecution of applications.").

[10] *See* 37 C.F.R. §§ 1.51–1.59 (application), 1.63–1.69 (inventor's oath), 1.71–1.79 (specification), 1.81–1.85 (drawings), 1.97–1.98 (information disclosure statement), 1.801–1.825 (biotechnology invention disclosures) (2004).

[11] *In re* Sullivan, 362 F.3d 1324, 1328 (Fed. Cir. 2004) (quoting Chevron U.S.A., Inc. v. Natural Res. Def. Council, 467 U.S. 837, 844 (1984)) (rejecting challenge to validity of Patent Office rule); *Stevens*, 366 F.3d at 1333–34 (upholding reasonableness of Patent Office rule).

can understand without the need for routine court intervention.[12] The patent document itself should, in other words, contain the information that is vital to its proper construction. A novice to the patent system might thus predict that, as technologies progressed and multiplied and the demands placed on the patent system increased (as they surely have),[13] the Patent Office would have updated its disclosure requirements to better achieve the goal of predictable patent claim boundaries. How, then, have the patent disclosure rules changed to ensure clear and predictable claim boundaries amidst increasing complexity? Sadly, the rules have barely changed at all. As former Patent Office solicitor Nancy Linck recently observed, "[T]he rules governing patent examination are much the same today as they were in 1920."[14]

When we look at patent exemplars that span the last century, we see that the patent's basic form and content has changed but a little. Consider, for example, the three patents that issued first in the years 1904, 1954, and 2004, all of which are provided in the appendix to this paper. All three patents begin with illustrative drawings and end with claims. The illustrative drawings help one interpret the patent claims by showing the invention as a real-world

---

[12] *See, e.g.*, Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996) ("[C]ompetitors are entitled to review the public record, apply the established rules of claim construction, ascertain the scope of the patentee's claimed invention and, thus, design around the claimed invention."). The Patent Office's regulations embrace this goal. *See* 37 C.F.R. § 1.75(d)(1) (2004) ("The claim or claims must conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description."); *see also* U.S. PATENT & TRADEMARK OFFICE, DEP'T OF COMMERCE, MANUAL OF PATENT EXAMINING PROCEDURE § 608.01(o) (8th ed. 2001, rev. 2 May 2004) [hereinafter MANUAL OF PATENT EXAMINING PROCEDURE] ("The meaning of every term used in any of the claims should be apparent from the descriptive portion of the specification with clear disclosure as to its import[.]"); *id.* § 1302.01 ("There should be clear support or antecedent basis in the specification for the terminology used in the claims."). The *Manual of Patent Examining Procedure*, just cited, is the Patent Office's official "set of instructions to the examining corps." *In re* Kaghan, 387 F.2d 398, 401 (C.C.P.A. 1967). Although "[t]he MPEP does not have the force and effect of law . . . it is entitled to judicial notice as the agency's official interpretation of statutes or regulations." Refac Int'l, Ltd. v. Lotus Dev. Corp., 81 F.3d 1576, 1584 n.2 (Fed. Cir. 1996).

[13] Professors Allison and Lemley present a compelling comparison of two groups of 1,000 randomly selected utility patents from the 1976–1978 and 1996–1998 timeframes. John R. Allison & Mark A. Lemley, *The Growing Complexity of the United States Patent System*, 82 B.U. L. REV. 77, 79 (2002). They conclude, on the basis of a series of statistical comparisons, that "[b]y almost any measure—subject matter, time in prosecution, number of prior art references cited, number of claims, number of continuation applications filed, number of inventors—the patents issued in the late 1990s are more complex than those issued in the 1970s." *Id.* The marked increase in utility patent application and grant rates since the early 1990s is both well-documented and frequently discussed, often in terms of "exploding" or an "explosion." *See, e.g.*, Nancy J. Linck et al., *A New Patent Examination System for the New Millenium*, 35 HOUS. L. REV. 305, 307 (1998); Note, *Estopping the Madness at the PTO: Improving Patent Administration Through Prosecution History Estoppel*, 116 HARV. L. REV. 2164, 2165 (2003). For an elegant graphical depiction of the growth in annual patent application filings and grants from 1960 to 2001, see WILLIAM M. LANDES & RICHARD A. POSNER, THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW 340, fig. 12.1 (2003).

[14] Linck et al., *supra* note 13, at 306 n.4.

object.[15] All three patents state both the date the application for the patent was filed and the date the patent issued. These dates help put the claimed invention in its technological context, marking the invention as an event in the flow of technological change within a given field.

The first example patent, U.S. Patent No. 748,567 to Thomas Adamson, entitled "Distance or Range Finding Instrument," claims a "distance-finding instrument for marine vessels."[16] The Adamson patent's disclosure suggests some of the problems with existing instruments, stating that Adamson's goals include offering an instrument that "is simple in its construction and organization, besides not liable to get out of order, and possessing the capacity for long and repeated service."[17] The disclosure then describes the operation of the claimed range-finder in some detail,[18] along the way defining a claim term—"abreast line"—that Adamson appears to have coined for use in this patent.[19]

The second, U.S. Patent No. 2,664,562 to Joseph Cameron, entitled "Positioning Device for Stapling Machines," claims a "positioning device" with a "base plate" and a "sliding member" that is "reciprocable," for use with a "stapling machine."[20] This device is specially adapted "to position fabric wicks around wire wick supports in preparation for stapling the wicks to the supports,"[21] and the stapled wicks are adapted "to diffuse deodorant or perfuming vapors . . . into the air of a room."[22] Like the Adamson patent, the Cameron patent suggests shortcomings in prior art—this time, prior art stapling operations.[23] It then describes the claimed positioning device in detail.[24] Unlike the Adamson patent, however, the Cameron patent also provides a list of prior art references that the Patent Office had before it when assessing the patentability of Cameron's claims.[25]

The third, U.S. Patent No. 6,671,884 to Henry Griesbach and Linda Harris, entitled "Method for Defining Areas of a Protective Garment Subjected to Stretching Forces When Worn by Wearer," claims a "method for making a protective production garment," such as a surgical gown, "having at least one patch of elastomeric material" in the garment.[26] The list of prior art documents before the Patent Office has moved to the front page of the patent, joined there by category codes for prior art searches and an "Abstract" that summarizes the

---

[15] *See* Christopher A. Cotropia, *Patent Claim Interpretation and Information Costs*, 9 LEWIS & CLARK L. REV. 57, 84 (2005) (discussing patent drawings' interpretive aid).

[16] U.S. Patent No. 748,567, cols. 5–6 (issued Jan. 5, 1904) (stating five claims).

[17] *Id.* col. 1, lns. 27–32.

[18] *Id.* cols. 2–4.

[19] *Id.* col. 3, lns. 22–32 (defining "abreast line"), cols. 5–6 (using the term in all five claims).

[20] U.S. Patent No. 2,664,562, cols. 3–4 (issued Jan. 5, 1954) (stating four claims).

[21] *Id.* col. 1, lns. 2–4.

[22] *Id.* col. 1, lns. 16–18.

[23] *Id.* col. 1, lns. 10–15.

[24] *Id.* cols. 2–3.

[25] *Id.* col. 4, lns. 35–43 (listing six "References Cited in the file of this patent").

[26] U.S. Patent No. 6,671,884, cols. 11–12 (issued Jan. 6, 2004) (stating fourteen claims).

invention.[27] Although longer than the Adamson and Cameron patents, the '884 patent's narrative structure is essentially the same as the earlier patents: after identifying the general field of the invention,[28] and discussing some shortcomings with prior art approaches to the subject,[29] the patent describes the claimed invention in detail.[30]

As even this decidedly unsystematic review of three patents from the last century demonstrates, the content and format rules that shape patents have proved remarkably stable in the face of more complex technologies. To the degree the patent document serves its purposes—to teach new information to artisans in the field and to set clear boundaries on the patentee's right to exclude others—this stability is desirable. However, where the patent document demonstrably falls short of these goals, the duty to reform the patent document falls squarely on the Patent Office.

If we have learned nothing else from the case law upheavals in the decade after *Markman v. Westview Instruments, Inc.*,[31] where the Federal Circuit held that judges—not juries—construe disputed claim terms,[32] we have learned that patents provide far less aid to their readers than they could. The courts, faced with paltry patent disclosures, turn to expert witnesses and external reference sources for aid.[33] Having licensed resort to these extra-patent sources, the courts struggle to bring the patent disclosure back to pride of place at claim construction's core.[34] The result is disarray. Professor Moore has found that from 1996 through 2003 the Federal Circuit has reversed 34% of the claim construction decisions brought before it on appeal, and (what's worse) that the claim construction reversal rate is on an upward trend.[35] The Federal Circuit is increasingly fractured, issuing more and more claim construction decisions over a panel member's dissent.[36] Perhaps the best proof of the patent

---

[27] *Id.*, first page. For discussion of the advent of the Abstract section, see *infra* notes 82–88 and accompanying text.

[28] *Id.* col. 1, lns. 8–10, lns. 58–61.

[29] *Id.* col. 1, lns. 11–57.

[30] *Id.* cols. 3–11. Also, like Adamson, the inventors of the '884 patent opt to provide express definitions of some key terms used in the disclosure. *Id.* col. 3, ln. 37 to col. 5, ln. 30.

[31] 52 F.3d 967 (Fed. Cir. 1995) (en banc).

[32] *Id.* at 979. A year later, the Supreme Court affirmed the Federal Circuit's decision in the face of a Seventh Amendment attack. *See* Markman v. Westview Instruments, Inc., 517 U.S. 370, 372 (1996).

[33] *See, e.g.*, Novartis Pharm. Corp. v. Eon Labs Mfg., Inc., 363 F.3d 1306, 1307–08 (Fed. Cir. 2004); Tex. Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1202–03, 1212 (Fed. Cir. 2002); Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996).

[34] *See, e.g.*, Vanderlande Indus. Nederland BV v. Int'l Trade Comm'n, 366 F.3d 1311, 1318 (Fed. Cir. 2004); J.T. Eaton & Co. v. Atl. Paste & Glue Co., 106 F.3d 1563, 1565 (Fed. Cir. 1997).

[35] Kimberly A. Moore, Markman *Eight Years Later: Is Claim Construction More Predictable?*, 9 LEWIS & CLARK L. REV. 231, 241, 243, 246 (2005).

[36] *See* John R. Thomas, *Claim Re-Construction: The Doctrine of Equivalents in the Post*-Markman *Era*, 9 LEWIS & CLARK L. REV. 153, 163 & n.69 (2005) (listing claim construction cases with dissents). At his claim construction data site, http://www.claimconstruction.com, Professor Wagner reports that, among the Federal Circuit's claim construction decisions from April 1996 to June 2004, the 100-case moving

document's shortcomings and the gyrations they produce is that, nearly ten years after its *Markman* decision, the Federal Circuit has granted en banc review in a case to grapple with such basic questions as whether, and how, to use dictionaries in claim construction, and whether to scrutinize underlying claim construction facts by de novo or deferential review.[37] Further judicial tinkering with the machinery of claim construction is unlikely to help, however, if the central problem is the patent document itself.

The Patent Office can and should help improve claim construction by enhancing the patent document's disclosures as only it can, making all patents more helpful in their own construction. I offer here some analysis that may aid in that enhancement. My plan for this paper, which grows out of a proposal a co-author and I recently made,[38] is straightforward. First, I explore the principles to which claim construction should remain faithful and the means for putting them into practice, one of which is striking a balance between claim text and technological context through the presumption in favor of the ordinary meaning of claim terms to a person having ordinary skill in the art. Second, I establish the Patent Office's plenary power to shape, and thus to improve, the basic patent document to help bring about more faithful claim construction. This *ex ante* plenary power contrasts with the Federal Circuit's *ex post* role in resolving disputes, which makes the court largely powerless to change the patent document wholesale.[39] Third, I show that all patents should be required

---

average number of alternative opinions (i.e., dissents and concurrences) is now at about 25%. The 20-case moving average number of alternative opinions now varies between 30% and 40%. *See* CLAIMCONSTRUCTION.COM, CLAIM CONSTRUCTION AT THE FEDERAL CIRCUIT: TRENDS IN ALTERNATIVE OPINIONS, *at* http://www.claimconstruction.com (last visited Nov. 15, 2004) (graph incorporating all Federal Circuit claim construction opinions from April 1996 to June 2004).

[37] *See* Phillips v. AWH Corp., 376 F.3d 1382 (Fed. Cir. 2004) (order granting en banc review). Chief Judge Mayer's dissent from en banc review in *Phillips v. AHW Corp.* paints an especially bleak picture:

> Nearly a decade of confusion has resulted from the fiction that claim construction is a matter of law, when it is obvious that it depends on underlying factual determinations which, like all factual questions if disputed, are the province of the trial court, reviewable on appeal for clear error. To pretend otherwise inspires cynicism. Therefore, and because I am convinced that shuffling our current precedent merely continues a charade, I dissent from the *en banc* order.

Id. at 1384 (Mayer, C.J., dissenting).

[38] *See generally* Joseph Scott Miller & James A. Hilsenteger, *The Proven Key: Roles & Rules for Dictionaries at the Patent Office & the Courts*, 54 AM. U. L. REV. (forthcoming May 2005) on file with author, *available at* http://ssrn.com/abstract=577262) (proposing that the Patent Office make dictionary selection more predictable in infringement disputes by requiring patent applicants to state their reference source preferences on the face of their applications at the time of filing).

[39] Indeed, the courts cannot even remedy patents at retail. *See* John R. Thomas, *On Preparatory Texts and Proprietary Technologies: The Place of Prosecution Histories in Patent Claim Interpretation*, 47 UCLA L. REV. 183, 220 (1999) ("U.S. courts have historically been unable to reform [individual] patent instruments during enforcement proceedings.").

In its relative impotence to bring about basic change in the patent document's content and form, the Federal Circuit resembles no one so much as an oft-disappointed purchaser of a monopolist's shoddy product. The court's opinions are like unhappy letters to the echoless

to contain four additional bits of information that will help make claim construction more predictable, and at a social cost far outweighed by the social benefit of more certain claim scope. Specifically, the Patent Office should require that every applicant state on the face of any patent (*a*) the field of art to which the claimed invention pertains; (*b*) all problems that the claimed invention helps solve; (*c*) a lexicon of all claim terms to which the applicant gives a meaning other than its accustomed meaning to people having ordinary skill in the pertinent art; and (*d*) a list of preferred objective reference sources, such as technical treatises and dictionaries (general or specialized), to which an interested reader should refer to learn about the ordinary meaning of the remaining claim terms to a person having ordinary skill in the art. In any subsequent claim construction process, whether for licensing, design-around, or litigation purposes, parties would look to patents enriched with this new information. The patent document, enhanced in this way, would better fulfill its role as claim construction's central resource.

II. FAITHFUL CLAIM CONSTRUCTION

To specify the full range of marketplace conduct that a patent claim empowers the patentee to exclude, we confront a tension that arises necessarily from trying to grasp the world of things—actual inventions in real space—with words.[40] On the one hand, the text of the patent must have some force in limiting the patent's scope. Patentees, who are responsible for the text in their claims, can choose words of greater or lesser generality to define their inventions—for example, "nail" or "fastener"—and their choices should thus make a difference to claim scope. After all, if claim text does not help confine claim scope, claims are not worth the trouble it takes to write them. On the other hand, if a patent's power to exclude reached no further than its claim's literal terms, patent protection would unfairly "place the inventor at the mercy of verbalism"[41] and thus, too weak to attract investments in innovation, would

---

void of "customer service." Perhaps the Patent Office's lack of regulatory response to the past decade of claim construction cases is rooted in its monopoly hold on examining and granting U.S. patents. If so, one route to change might be a competitive market of multiple patent-granting firms. After being certified to examine and to grant U.S. patents, these firms could compete to offer better patents, limited only by the substantive standards of the Patent Act. Such competing Patent Offices might offer varied content and format options to their customers. The government's role could be limited to certifying patent-granting firms, tracking the courthouse success (or other quality metric) of each firm's patents, and providing the quality data to the public. Elaboration of the idea must wait for another day.

[40] *See* Autogiro Co. of Am. v. United States, 384 F.2d 391, 397 (Ct. Cl. 1967).

> An invention exists most importantly as a tangible structure or a series of drawings. A verbal portrayal is usually an afterthought written to satisfy the requirements of patent law. This conversion of machine to words allows for unintended idea gaps which cannot be satisfactorily filled. Often the invention is novel and words do not exist to describe it. The dictionary does not always keep abreast of the inventor. It cannot. Things are not made for the sake of words, but words for things.

Id.

[41] Graver Tank & Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605, 607 (1950).

fail of its essential purpose. The tension is, in short, between literalism and fairness.

The terrain in which we confront this tension openly is the doctrine of equivalent infringement, according to which one can infringe a claim notwithstanding a departure from the claim's literal scope.[42] The Supreme Court, in cases spanning the 1900s, both hews to the insight 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,"[43] and stresses that "the doctrine of equivalents, when applied broadly, conflicts with the definitional and public-notice functions of the statutory claiming requirement."[44] In its most recent equivalents case, the Supreme Court described thusly the predictability and fairness goals that the doctrine sits astride:

> The [patent] monopoly is a property right; and like any property right, its boundaries should be clear. This clarity is essential to promote progress, because it enables efficient investment in innovation. A patent holder should know what he owns, and the public should know what he does not. . . .
>
> Unfortunately, the nature of language makes it impossible to capture the essence of a thing in a patent application. . . . The language in the patent claims may not capture every nuance of the invention or describe with complete precision the range of its novelty. If patents were always interpreted by their literal terms, their value would be greatly diminished. Unimportant and insubstantial substitutes for certain elements could defeat the patent, and its value to inventors could be destroyed by simple acts of copying. For this reason, the clearest rule of patent interpretation, literalism, may conserve judicial resources but is not necessarily the most efficient rule. The scope of a patent it not limited to its literal terms but instead embraces all equivalents to the claims described.[45]

The equivalents cases most clearly engage the inevitable tension in regulating things with words. The tension, however, permeates all claim construction questions.

This tension in claim construction between *ex ante* conventional literalism and *ex post* individualized fairness is, of course, endemic to legal interpretation generally.[46] To move comfortably in this dynamic tension, which can blur "the

---

[42] For a concise review of the doctrine of equivalents, see SCHECHTER & THOMAS, *supra* note 6, § 8.2.2.

[43] *Graver Tank & Mfg. Co.*, 339 U.S. at 607.

[44] Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 29 (1997); *see also id.* at 33 (insisting on a doctrine of equivalents that gives "proper deference to the role of claims in defining an invention and providing public notice").

[45] Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 730–32 (2002).

[46] *See* Philip P. Frickey, *Faithful Interpretation*, 73 WASH. U. L.Q. 1085, 1086 (1995).

> [T]he law is attempting to accomplish two rather contradictory things. It is attempting, first, to communicate duties to the citizenry in general and to officials in particular, a use of language perhaps substantially captured in the linguist's focus on conventional understandings. Simultaneously, the law seeks to channel the discretion of enforcement

line separating faithful and faithless enforcement and interpretation,"[47] one must identify the principles that should animate a claim construction method to keep it faithful to the patent system's goal of promoting advances in the useful arts by giving inventors property-like rights to exclude.[48] There are, I think, three such central principles.

First, even as we strive to construe a given claim term correctly, we should resolve doubts in favor of promoting, not retarding, free competition. This benefit of the doubt for free competition means narrower, not broader, patent claims. Such an approach is amply justified by the standard economic account of intellectual property protection as a solution to a market failure in the production of information goods,[49] according to which "intellectual property is a necessary evil."[50] In our economy, which relies on interfirm competition to provide consumers with the things they desire at lower quality-adjusted prices, firms are generally free to use public information to compete, even if the information is found through a competitor's offering. "In general, unless an intellectual property right such as a patent or copyright protects an item, it will be subject to copying."[51] Moreover, the rights to exclude that patents and copyrights confer "are part of a 'carefully crafted bargain,' under which, once the patent or copyright monopoly has expired, the public may use the invention or work at will and without attribution."[52] In this milieu, with its normative tilt

---

> officers and judges to maximize justice in widely divergent circumstances. Accordingly, the law superimposes on ordinary meaning all manner of canons of interpretation, maxims, and exceptions (*e.g.*, purpose trumps plain meaning; avoid absurd results).

Id. (footnote omitted).

[47] *Id.* at 1089.

[48] *See* U.S. CONST. art. I, § 8, cl. 8 (giving Congress the power "[t]o promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries"). As Professor Frickey observes, "[i]t is only by capturing the broader assumptions about the enterprise that we can make sense out of the lesser included function to be performed by interpretation for that enterprise." Frickey, *supra* note 46, at 1093.

[49] *See generally* Joseph Scott Miller, *Building a Better Bounty: Litigation-Stage Rewards for Defeating Patents*, 19 BERKELEY TECH. L.J. 667, 680–83 (2004) (reviewing standard account).

[50] Mark A. Lemley, *Ex Ante versus Ex Post Justifications for Intellectual Property*, 71 U. CHI. L. REV. 129, 131 (2004). As Professor Lemley notes, the standard account has its limitations and critics. *See id.* at 130–31.

[51] TrafFix Devices, Inc. v. Marketing Displays, Inc., 532 U.S. 23, 29 (2001); *see also* L.A. Gear, Inc. v. Thom McAn Shoe Co., 988 F.2d 1117 (Fed. Cir. 1993) ("[T]he public has the right to copy the design of goods that are unprotected by patent or copyright, absent consumer confusion or deception."). As Professor Mueller puts it, "In free market economies such as that of the United States, the general rule is that competition through imitation of a competitor's product or service is permitted, so long as that competition is not deemed legally 'unfair.'" JANICE M. MUELLER, AN INTRODUCTION TO PATENT LAW 7–8 (2003). *See also* Pamela Samuelson & Suzanne Scotchmer, *The Law and Economics of Reverse Engineering*, 111 YALE L.J. 1575, 1582–85 (2002) (discussing longstanding legal approval of reverse engineering as a method for discovering and using another's trade secret information).

[52] Dastar Corp. v. Twentieth Century Fox Film Corp., 539 U.S. 23, 33–34 (2003) (quoting Bonito Boats, Inc. v. Thunder Craft Boats, Inc., 489 U.S. 141, 150–51 (1989)).

toward free competition, the patentee bears the burden of claiming an invention in terms the interested public can readily understand. Only a readily understood claim marks off territory sufficiently to put it under the patentee's sole control, and not all claim construction errors are created equal. Claim construction errors that short patentees with underprotection cause less social harm than claim construction errors that short the public with overprotection. As a result, even as we strive to avoid making any interpretive errors, we should prefer a claim construction error that confers less patentee control over competitors' conduct than an error that confers more patentee control.

Second, a patentee's precise choice of claim terms is critically important in determining claim scope. The Patent Act expressly requires that we take this approach,[53] and the cases remind us that claim construction "begins and ends in all cases with the actual words of the claims."[54] Quite apart from the demands of the Patent Act and case law, however, heavy reliance on a patentee's choice of words is a matter of common sense. A patentee, cognizant of the free competition norm and the burden it places on her to use terms the interested public can understand, must choose the words in her patent claims with care; otherwise, she risks sacrificing patentable subject matter to the public. Within this pro-competition framework, patentees have virtually unfettered freedom to choose the particular claim words that best capture their inventions. The patentee's freedom of linguistic choice imposes, of course, a corresponding responsibility on the court system—namely, to enforce the patentee's word choices for the benefit of the public. The doctrine of equivalents alleviates the unfairness that might result from this focus on a patentee's word choice,[55] and thus supports the claim text's central role in determining claim scope.[56]

Third, the text of the patent claim must be tied firmly, throughout the claim construction process, to the claimed invention's technological context. This is so because individual patents, although they have legal significance, are primarily about technology. Thus, the patent disclosure requirements focus on technological information.[57] One cannot hope to understand the art-specific words in a patentee's claims correctly unless one keeps that particular technological context in mind. The importance of context to accuracy is most apparent when we consider common terms that have richly varied, field-dependent meanings, e.g., bank, card, channel, chip, cord, file, table, thread, and tile. If we take such words out of context, we can badly misconstrue them. It is not surprising, then, that the courts emphasize the need, in claim construction, to view claim terms from the perspective of a person having

---

[53] *See* 35 U.S.C. § 112, para. 2 (2000).

[54] Searfoss v. Pioneer Consol. Corp., 374 F.3d 1142, 1149 (Fed. Cir. 2004); Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1248 (Fed. Cir. 1998).

[55] *See* Royal Typewriter Co. v. Remington Rand, Inc., 168 F.2d 691, 692 (2d Cir. 1948) (Hand, J.) (noting that courts "resort to the 'doctrine of equivalents' to temper unsparing logic and prevent an infringer from stealing the benefit of the invention").

[56] The Supreme Court has emphasized, in this regard, that "the doctrine of equivalents must be applied to individual elements of the claim, not to the invention as a whole." Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 29 (1997).

[57] *See supra* note 6 and accompanying text.

ordinary skill in the art.[58] A person of skill in the art naturally reads claim terms in their proper technological context. Moreover, given the importance of technological context to accuracy, it seems plain that augmenting the patentee's technological disclosure with carefully selected contextualizing information should help courts more reliably identify disputed claim terms' technologically proper meanings.

These three principles—err on the side of free competition, focus on text, and stay in context—are the key precepts to which claim construction should adhere. One important practical way to remain faithful to these principles is to maintain an unwavering focus on the whole patent document as the lodestar of the claim construction process. The whole patent document, which the patentee creates, provides the patentee's chosen text and context for the invention. The Supreme Court's *Markman* decision, adopting this method, anchors claim construction firmly to the information that the patent shows on its face. In explaining why it agreed with the Federal Circuit's allocation of claim construction to judges, the Court emphasized that documentary coherence is just as vital to claim construction as is technological acumen:

> In the main, we expect, any credibility determinations [about technology expert witnesses] will be subsumed within the necessarily sophisticated *analysis of the whole document*, required by the standard construction rule that *a term can be defined only in a way that comports with the instrument as a whole*. Thus, in these cases a jury's capabilities to evaluate demeanor, to sense the mainsprings of human conduct, or to reflect community standards, are much less significant than a trained ability to *evaluate the testimony in relation to the overall structure of the patent*. The decisionmaker [now] vested with the task of construing the patent [i.e., the court] is in the better position to ascertain whether an expert's *proposed definition fully comports with the specification and claims* and so will *preserve the patent's internal coherence*.[59]

The Court's mandate, reflected in such phrases as "comports with the instrument as a whole," "overall structure of the patent," and "preserve the patent's internal coherence," is unmistakable: the courts must construe claims, first and foremost, according to the patent document.

An equally important, practical way to ensure claim construction's fidelity to free competition, text, and context, is a strong presumption that, absent evidence to the contrary, the patentee has used claim words according to their

---

[58] *See, e.g.*, Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1477 (Fed. Cir. 1998).

> It is the person of ordinary skill in the field of the invention through whose eyes the claims are construed. Such person is deemed to read the words used in the patent documents with an understanding of their meaning in the field, and to have knowledge of any special meaning and usage in the field. The inventor's words that are used to describe the invention—the inventor's lexicography—must be understood and interpreted by the court as they would be understood and interpreted by a person in that field of technology.

Id.

[59] Markman v. Westview Instruments, Inc., 517 U.S. 370, 389–90 (1996) (emphasis added) (internal citations and quotations omitted).

ordinary, accustomed meaning to a person having ordinary skill in the art. This is so because a strong default in favor of a word's ordinary meaning to the skilled artisan keeps the focus on text from slipping into an unthinking, acontextual verbalism, while at the same time it keeps the focus on context from drifting into a rootless, atextual ad hocery. In short, an ordinary meaning default strikes the proper dynamic balance between text and context.

An ordinary meaning default also pushes patentees to draft claims with boundaries that a person having ordinary skill in the art can readily grasp, which push helps support the free competition principle. To appreciate how the ordinary meaning default rule plays this role, imagine that one party is trying to communicate with another in writing. The only thing the writer knows about the reader is that he is a competent user of, e.g., standard written American English. How should the writer choose her words and phrases to maximize the likelihood that the reader will construe the writing correctly? The writer concludes that, because a competent reader of standard written American English knows the ordinary meanings of words and phrases in this idiom, she should frame her communication with those same ordinary meanings in mind, i.e., she should use words according to their contextualized ordinary meanings or expressly flag departures from those ordinary meanings. The reader, for his part, is likely to make the corresponding set of assumptions about the writer's strategy for choosing and using words in her written communication.[60] A strong, ordinary meaning default rule grounds patent drafting in this set of cooperative, interlocking assumptions by writer and reader, and thus rejects an errant patentee's efforts to prevail against the public by using ordinary-seeming words in secretly self-serving ways.[61] This default rule also provides another example, in legal interpretation, of Grice's maxims of cooperative conversation.[62]

---

[60] These interlocking assumptions about ordinary meaning and context are basic to all successful communication in a natural language. *See generally* GEORGIA M. GREEN, PRAGMATICS AND NATURAL LANGUAGE UNDERSTANDING 47–61 (2d ed. 1996) (exploring at length the manner in which natural language interpretation and communication relies upon a series of corresponding assumptions by both speaker and addressee about one another's beliefs about word choice and word meaning). As Judge Posner has put it, "We understand a message by putting ourselves in the speaker's shoes." RICHARD A. POSNER, THE PROBLEMS OF JURISPRUDENCE 101 (1990).

[61] *Cf.* Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584 (Fed. Cir. 1996) ("Nor may the inventor's subjective intent as to claim scope, when unexpressed in the patent documents, have any effect. Such testimony cannot guide the court to a proper interpretation when the patent documents themselves do so clearly."); Markman v. Westview Instruments, Inc., 52 F.3d 967, 985 (Fed. Cir. 1995) (en banc) ("The subjective intent of the inventor when he used a particular term is of little or no probative weight in determining the scope of a claim (except as documented in the prosecution history)."), *aff'd*, 517 U.S. 370 (1996).

[62] Paul Grice, whose 1967 William James Lectures at Harvard University gave rise to the branch of linguistics known as "pragmatics" (i.e., the study of natural language understanding and how context affects meaning), described the basic framework we use when interpreting statements in an exchange in which "[t]he participants have some common immediate aim." PAUL GRICE, STUDIES IN THE WAY OF WORDS 29 (1989). In the claim construction context, that common end is the successful communication, by the patentee to the world, of the scope of the patentee's right to exclude.

We cannot eliminate the tension in claim construction between the calls of literalism and fairness. We can, however, mediate the tension, consistent with patent law's social goal of promoting technological progress, by construing claim terms in light of the whole patent document according to a strong default in favor of a word's ordinary meaning to the skilled artisan. This interdependence of the whole patent document and the ordinary meaning default underscores the need to ensure that the patent disclosures we demand are well-suited to produce the information we need to construe the claim text in technological context. It is to the Patent Office's plenary power over the details of these disclosures that I now turn.

III. PATENT OFFICE POWER OVER THE PATENT DOCUMENT

It may seem odd, at first blush, to lift claim construction improvements on the fulcrum of Patent Office procedure. Claim construction, whether in licensing or litigation, occurs after Patent Office procedures have taken their course. All patents, however, result from an examination process.[63] It is therefore certain that any patent that is in license negotiations or litigation today was the subject of patent examination in the past. This basic fact of patent administration indicates that the best way to guarantee that each patent contains the core information that one needs to construe it is to mandate the disclosure of that information on the patent's face.[64] This strategy also comports with the Supreme Court's focus in *Markman* on preserving documentary coherence.

According to Grice, communicants interpret each other's statements by assuming mutual adherence to a "Cooperative Principle"—namely, "Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged." *Id.* at 26. Grice formulates four "maxims," or conventions, that implement the Cooperative Principle, and the fourth of these—styled "Manner"—demands that one "[a]void obscurity of expression," "[a]void ambiguity," "[b]e brief," and "[b]e orderly." *Id.* at 27. Recasting Grice's maxims in slightly different terms, Professor Green states that "agents will not speak obscurely in attempting to communicate." GREEN, *supra* note 60, at 91.

Grice's "Manner" maxim readily explains the strong default in favor of ordinary meaning so commonly used in statutory interpretation cases, as Professors Miller and Sinclair have each demonstrated. *See* Geoffrey P. Miller, *Pragmatics and the Maxims of Statutory Interpretation*, 1990 WIS. L. REV. 1179, 1220–24; M.B.W. Sinclair, *Law and Language: The Role of Pragmatics in Statutory Interpretation*, 46 U. PITT. L. REV. 373, 391–92 (1985). Ordinary meaning is no less a linchpin for successful communication in claim construction than it is in statutory interpretation.

[63] 35 U.S.C. § 111 (requiring patent application), § 131 (requiring patent examination) (2000).

[64] *See generally* R. Polk Wagner, *Reconsidering Estoppel: Patent Administration and the Failure of* Festo, 151 U. PA. L. REV. 159, 194–209 (2002) (explaining the importance of using information-forcing rules during patent examination to maintain the "integrity" of patent law's links among "innovation, disclosure, and patent scope").

As Professor Cotropia cogently demonstrates, the most efficient place to accumulate claim construction information from the patentee is in the resulting patent itself. Cotropia, *supra* note 15, at 83. Five years ago, Professor Thomas quite rightly critiqued the way that reliance on prosecution history documents from outside the patent itself, which are voluminous and costly to obtain, distorts the claim construction process. *See* Thomas, *supra* note 39, at 200–16. He also proposed specific changes that would incorporate needed

The Federal Circuit strives to stay true to the Supreme Court's insistence that the patent document itself remain claim construction's lodestar, with mixed results. Time and again the Federal Circuit observes that "evidence intrinsic to the patent—particularly the patent's specification, including the inventors' statutorily required written description of the invention—is the primary source for determining claim meaning."[65] The court has also, however, looked outside the patent document for interpretive aid (usually to a general purpose English language dictionary) with increasing frequency.[66] This increased reliance on dictionaries and the like for claim construction aid appears rooted in a desire to obtain adequate information about the meaning of claim terms to people having ordinary skill in the art (the necessary vantage point[67]) without falling prey to biased advocacy masquerading as expert testimony.[68] The watershed *Telegenix* case speaks openly in these terms, contrasting objective reference sources (which offer "unbiased reflections of common understanding") with expert testimony (which is classed with material "colored by the motives of the parties" and "inspired by litigation").[69] Whatever its root cause(s), the court's great appetite for more reliable claim construction inputs points out a need for Patent Office action. And the Patent Office has the power to act by making the patent itself a better claim construction resource.

A. Patent Office Power Over Procedure

The Patent Act gives the Patent Office the power to "establish regulations, not inconsistent with law, which . . . shall govern the *conduct of proceedings* in the Office,"[70] i.e., to make procedural rules that have the force and effect of law for those who seek patent protection by filing an application with the Office. Given the procedural focus of this congressional grant, one might fairly wonder whether the Patent Office's power extends to requiring applicant disclosures that will determine the substantive scope of the resulting patent. Are such

---

information from the prosecution history into the resulting patent document. *Id.* at 231–36. In a sense, this paper simply follows the trail that Professor Thomas blazed.

[65] Astrazeneca AB v. Mutual Pharm. Co., 384 F.3d 1333, 1336 (Fed. Cir. 2004); *see, e.g.*, Jack Guttman, Inc. v. Kopykake Enters., Inc., 302 F.3d 1352, 1360 (Fed. Cir. 2002); Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998); Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996); Autogiro Co. of Am. v. United States, 384 F.2d 391, 397–98 (Ct. Cl. 1967).

[66] *See* Miller & Hilsenteger, *supra* note 38 (manuscript at 24–29) (documenting increase in Federal Circuit use of objective reference sources from April 1995 to June 2004).

[67] *See, e.g.*, K-2 Corp. v. Salomon S.A., 191 F.3d 1356, 1362 (Fed. Cir. 1999); Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1477 (Fed. Cir. 1998); Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed. Cir. 1996).

[68] *See* Miller & Hilsenteger, *supra* note 38 (manuscript at 20). The court's need for expert information pushes it to seek expert help, and the same lack of expert information leaves the court ill-equipped to separate useful technical information from partisan cant (or worse). The resulting approach-avoidance conflict is endemic to court use of expert testimony. *See* Ronald J. Allen & Joseph S. Miller, *The Common Law Theory of Experts: Deference or Education?*, 87 NW. U. L. REV. 1131, 1131–33 (1993).

[69] Tex. Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1202–03 (Fed. Cir. 2002).

[70] 35 U.S.C. § 2(b)(2)(A) (2000) (emphasis added).

disclosure rules procedural in the relevant sense? If so, the Patent Office has the power to promulgate them.

The scope of the Patent Office's procedural power is best measured by the nature of the proceedings it is commanded to conduct—that is, patent examination proceedings. The Patent Act provides that, when it receives an application for patent, the Patent Office "*shall* cause an examination to be made of the application and the alleged new invention" to assess its patentability under the Act.[71] The applicant receives a patent "if on such examination it appears that the applicant is entitled to a patent under the law."[72] "It is," in short, "the PTO's duty to assure that the statutory requirements for patentability are met."[73] To perform this duty, the Patent Office must construe the scope of each claim under review, for only then can it adjudge whether the claimed invention is useful, new, nonobvious, and properly supported by the remainder of the patent specification.[74] Patent examination thus entails claim construction. And the Patent Office, having been charged with patent examination, has the power to structure its proceedings to ensure efficient and accurate claim construction.

---

[71] 35 U.S.C. § 131 (2000) (emphasis added).

[72] *Id.*

[73] *In re* Morris, 127 F.3d 1048, 1054 (Fed. Cir. 1997). The Patent Office recognizes that this basic duty is central to its mission. *See* U.S. PATENT & TRADEMARK OFFICE, DEP'T OF COMMERCE, PERFORMANCE AND ACCOUNTABILITY REPORT: FISCAL YEAR 2003, at 15, http://www.uspto.gov/web/offices/com/annual/2003/2003annualreport.pdf [hereinafter PERFORMANCE AND ACCOUNTABILITY REPORT: FISCAL YEAR 2003] ("The core process of the Patent Organization is the examination of an inventor's application for a patent by comparing the claimed subject matter of the application to a large body of technological information to determine whether the claimed invention is new, useful, and non-obvious to someone knowledgeable in that subject matter.").

Sadly, the Patent Office also badly distorts its performance of this duty by viewing patent applicants, rather than the general public, as its "customers." *See, e.g.*, U.S. PATENT & TRADEMARK OFFICE, DEP'T OF COMMERCE, FISCAL YEAR 2002 CORPORATE PLAN 15 (2001), http:www.uspto.gob/offices/com/corpplan/fy2002/FY2002CorpPlan.pdf [hereinafter FISCAL YEAR 2002 CORPORATE PLAN] ("The mission of the Patent Business is to help customers get patents."). Commentators have noted that this "help customers get patents" approach likely leads to underscrutinized patent applications. *See, e.g.*, *Edited & Excerpted Transcript of the Symposium on Ideas Into Action: Implementing Reform of the Patent System*, 19 BERKELEY TECH. L.J. 1053, 1112–13 (2004) (remarks of Prof. Mark Lemley). I fear that the "help customers get patents" approach also impedes the Patent Office from ensuring that the disclosures it mandates from applicants keep pace with the information demands that the claim construction case law points up.

[74] *See* 35 U.S.C. §§ 101, 102, 103, 112 paras. 1–2 (2000) (referring throughout to "the invention"); Rockwell Int'l Corp. v. United States, 147 F.3d 1358, 1362 (Fed. Cir. 1989) ("The first step in any invalidity or infringement analysis is claim construction."); *In re* Van Geuns, 988 F.2d 1181, 1184 (Fed. Cir. 1993) ("It is axiomatic that the claims define the invention which an applicant believes is patentable."); *In re* Wilson, 424 F.2d 1382, 1385 (C.C.P.A. 1970) ("All words in a claim must be considered in judging the patentability of the claim against the prior art."); *see also* MANUAL OF PATENT EXAMINING PROCEDURE, *supra* note 12, at §§ 2111, 2173.05 (providing examiners with claim construction principles). See generally SCHECHTER & THOMAS, *supra* note 6, chs. 3–6, for background on the utility, novelty, nonobviousness, and written disclosure requirements.

Many of the Patent Office regulations governing patent applications appear designed to facilitate an examiner's efficient comprehension of the scope of the applicant's proposed claims.[75] For example, to implement the Patent Act's open-textured mandate of a specification that describes the invention and ends with numbered claims,[76] the Patent Office details both the materials the specification must contain and the order in which those materials must be arranged.[77] Similarly, to implement the Patent Act's broadly framed provision allowing for illustrative drawings,[78] the Patent Office maintains highly detailed regulations governing the form and content of patent drawings.[79] All these regulations, each of which more or less directly affects the substantive scope of the resulting patent rights, are framed with the primary goal of structuring the examination process to facilitate accurate and efficient patentability assessments. These rules are thus procedural, i.e., they are designed not to shape the primary behavior of inventors (e.g., inventors' decisions to invent new solutions to problems or, instead, use known solutions), but rather to improve the accuracy and efficiency of inventors' engagement with the government officials who assess their legal rights.[80]

Most interestingly, for purposes of this discussion, the Patent Office has already promulgated a procedural rule that directly targets helping an examiner readily understand the words in the claims. Specifically, the Patent Office expressly requires that a patent application "[b]e in the English language or be accompanied by a translation of the application . . . into the English language together with a statement that the translation is accurate."[81] This rule, by making the very words in which the applicant frames the claim more readily accessible to the patent examiner, clearly helps the Office more accurately and efficiently determine the scope of the claim to which the applicant asserts an entitlement. And the rule, by dictating the very language in which they are

---

[75] This analysis is adapted from Miller & Hilsenteger, *supra* note 38 (manuscript at 49).

[76] 35 U.S.C. § 112, paras. 1–2.

[77] 37 C.F.R. §§ 1.71–1.75 (prescribing content), 1.77(b) (prescribing arrangement) (2004).

[78] 35 U.S.C. § 113 (2000).

[79] 37 C.F.R. §§ 1.83–1.84 (2004).

[80] I owe the formulation to LAWRENCE B. SOLUM, PROCEDURAL JUSTICE 19–21, 20 n.49 (Public Law & Legal Theory Research Paper Series, Research Paper No. 04–02, 2004), http://ssrn.com/ abstract=508282. *See also* Hanna v. Plumer, 380 U.S. 460, 475 (1965) (Harlan, J., concurring) (One can distinguish substantive and procedural rules "by inquiring if the choice of rule would substantially affect . . . primary decisions respecting human conduct."); S.A. Healy Co. v. Milwaukee Metropolitan Sewerage District, 60 F.3d 305, 310 (7th Cir. 1995) (Posner, J.) (A state rule has a substantive goal if it is "designed to shape conduct outside the courtroom and not just improve the accuracy or lower the cost of the judicial process."); Thomas W. Merrill, *The Common Law Powers of Federal Courts*, 52 U. CHI. L. REV. 1, 46 n.200 (1985) ("Substantive rules . . . guide the conduct of persons outside the courtroom, before they are drawn into litigation. By negative implication, 'procedural' rules are those that would not affect behavior in . . . 'everyday, prelitigation life.'").

[81] 37 C.F.R. § 1.52(b)(ii) (2004); *see also* 37 C.F.R. § 1.52(d) (2004) (requiring English translations of non-English applications). There is a similar provision requiring translation of any non-English documents that parties submit in an interference proceeding at the Patent Office. *See* 37 C.F.R. § 1.647 (2004).

written, just as clearly determines the substantive scope of the resulting patent claims.

How, then, are these Patent Office rules generally rooted in the Federal Circuit's claim construction jurisprudence? On at least one recent occasion, the Patent Office has adjusted its patent application content rules to take account of the Federal Circuit's post-*Markman* cases. Specifically, in June 2003, the Patent Office modified the longstanding rule requiring an "Abstract" in every application,[82] first promulgated in 1966,[83] to conform the rule to the Federal Circuit's claim construction case law.[84] From 1966 to 2003, the rule requiring an abstract had ended with the statement that "[t]he abstract shall not be used for interpreting the scope of the claims."[85] In *Hill-Rom Co. v. Kinetic Concepts, Inc.*,[86] however, the Federal Circuit concluded that, notwithstanding the text of the Office's abstract rule, there was "no legal principle that would require [it] to disregard [a] potentially helpful source of intrinsic evidence as to the meaning of claims."[87] The Patent Office expressly relied on *Hill-Rom* to explain its deletion of the final sentence in its 2003 revision to the rule.[88] This admittedly minor rule change, informed by Federal Circuit case law, sets a useful precedent for further improvements to the patent document.

B. Deploying Procedural Power for Substantive Benefit

The mere fact of a power's existence does not, of course, justify any particular exercise of it. Nor does the Federal Circuit's apparent desire for improved claim construction inputs by itself warrant any particular Patent Office response. Patent Office action to augment the patent disclosure in the specific ways suggested here is justified, however, by two companion considerations. First, issued patents are themselves a form of commercial regulation, albeit in property rights form, and, as a result, the public is entitled to see them made as clear and predictable in scope as is practicable. Second, the particular additions to the patent document I propose will, for a small cost increase imposed on patent applicants, yield large cost savings for the general public, as well as some offsetting savings for applicants.

---

[82] 37 C.F.R. § 1.72(b) (2004).

[83] Rules of Practice in Patent Cases, 31 Fed. Reg. 12,922, 12,922 (Oct. 4, 1966) (to be codified at 37 C.F.R. pt. 1).

[84] Changes to Implement Electronic Maintenance of Official Patent Application Records, 68 Fed. Reg. 38,611, 38,614 (describing new rule), 38,621 (Comment 18), 38,628 (text of new version of 37 C.F.R. § 1.72(b)) (June 30, 2003) (to be codified at 37 C.F.R. pt. 1).

[85] *See, e.g.*, 37 C.F.R. § 1.72(b) (1967); 37 C.F.R. § 1.72(b) (1983); 37 C.F.R. § 1.72(b) (2003).

[86] 209 F.3d 1337 (Fed. Cir. 2000).

[87] *Id.* at 1341 n.*.

[88] Changes to Implement Electronic Maintenance of Official Patent Application Records, 68 Fed. Reg. at 38,614, 38,621. Interestingly, this amendment brings the text of the abstract rule full circle. When it was first proposed in 1966, the rule did not include the statement that the Patent Office would not use the abstract for claim construction. Rules of Practice in Patent Cases, 31 Fed. Reg. 4412, 4412 (proposed Mar. 15, 1966) (to be codified at 37 C.F.R pt. 1).

That issued patents are commercial regulations that govern the general public's conduct is not open to serious question.[89] An issued patent claim, conferred by a government agency after a process that excludes public participation,[90] empowers its owner credibly to assert that others may not compete with it in the market space covered by the patent claim.[91] And the Federal Circuit has recently reaffirmed that one who knows about a patent has a duty of care to avoid infringing it, although an adverse inference that any infringement was likely willful no longer flows from the mere failure to obtain a lawyer's opinion about the scope of the patent.[92] The fact that patents are commercial regulations—indeed, nationwide regulations with several extraterritorial effects[93]—counsels that patent claims, the operative regulatory language, should have a clear and predictable scope. The Patent Office is primarily responsible for obtaining (or failing to obtain) this result.

Both due process norms and the economic analysis of property law support the view that claim scope should be predictable. On the due process side, a law

---

[89] *See* John R. Thomas, *The Responsibility of the Rulemaker: Comparative Approaches to Patent Administration Reform*, 17 BERKELEY TECH. L.J. 727, 741–44 (2002); MARK A. LEMLEY, PROPERTY, INTELLECTUAL PROPERTY, AND FREE RIDING 56 (John M. Olin Program in Law and Economics, Working Paper No. 295, 2004), http://ssrn.com/abstract =582602. Professor Ghosh shows that, notwithstanding patent's plainly regulatory nature, we often prefer to talk of it in social contract terms by invoking the grand quid pro quo metaphor that appears in the case law. *See* SHUBHA GHOSH, PATENTS AND THE REGULATORY STATE: RETHINKING THE PATENT BARGAIN METAPHOR AFTER *ELDRED* 3–11 (Aug. 9, 2004), http://ssrn.com/abstract=574141. This "patent as social contract" approach can be especially distracting where, as here, we are trying to ascertain how readily the general public should be able to interpret a legal instrument (namely, the patent) that it had no hand in formulating.

[90] *See* 35 U.S.C. § 122(c) (2000) (barring pre-grant "protest" or "opposition" proceedings). I confess to wry amusement that, on the one hand, the process for obtaining a patent—with its exclusion of the public and resulting self-authored, government-backed power to chase others from the market—produces about 180,000 utility patents a year but attracts little more than the proverbial yawn, while, on the other hand, allegations that Vice President Cheney's energy task force secretly let energy business players effectively write self-dealing legislation spawns federal litigation and howls of protest. *See* Linda Greenhouse, *Justices' Ruling Postpones Resolution of Cheney Case*, N.Y. TIMES, June 25, 2004, at A19; Don Van Natta, Jr., *Enron's Many Strands: The Overview*, N.Y. TIMES, Jan. 31, 2002, at A1.

[91] A particular patentee's assertion may, of course, be wrong, either because the patentee mistakes the scope of its claims or because the asserted claims ought never to have been granted in the first place. In this sense, patent rights are probabilistic, conferring more of a right to sue than a right to exclude. *See* Herbert Hovenkamp et al., *Anticompetitive Settlement of Intellectual Property Disputes*, 87 MINN. L. REV. 1719, 1761 (2003); Joseph Scott Miller, *This Bitter Has Some Sweet: Potential Antitrust Enforcement Benefits from Patent Law's Procedural Rules*, 70 ANTITRUST L.J. 875, 881–82 (2003); MARK A. LEMLEY & CARL SHAPIRO, PROBABILISTIC PATENTS 2 (John M. Olin Program in Law and Economics, Working Paper No. 288, August 2004) (prepared for J. ECON. PERSPECTIVES), http://ssrn.com/abstract=567883.

[92] Knorr-Bremse Systeme Fuer Nutzfahrzeuge GmbH v. Dana Corp., 383 F.3d 1337, 1343 (Fed. Cir. 2004) (en banc).

[93] *See* 35 U.S.C. § 271 (2000). For a concise discussion of patent infringement rules involving extra-territorial conduct, see Timothy R. Holbrook, *Territoriality Waning? Patent Infringement for Offering in the United States to Sell an Invention Abroad*, 37 U.C. DAVIS L. REV. 701, 717–23 (2004).

is constitutionally infirm if it is so vague that the public is left to guess at the boundary between blameless and culpable conduct; fundamental fairness requires that public legal obligations pass a basic clarity threshold.[94] The Supreme Court sounded just this theme in *Merrill v. Yeomans*, observing 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."[95] On the economic analysis side, it is well-accepted that clearer property boundaries promote efficiency by lowering the transaction costs associated with bargaining over rights.[96] Whether one views the matter through the lens of due process or efficiency, patent claims should have boundaries that are as clear and predictable as is practicable.

The only general question that remains is whether there are steps that the Patent Office can take to improve the form and content of the patent document and that offer a social benefit large enough to cover the added cost to patent applicants. Given that many patents will never be enforced by their owners or consulted by the public, it would of course be foolish to mandate new disclosure rules so exacting that the increased cost of patent preparation swamps any predictability benefit that the changes would produce. This cost-benefit analysis is an important one that any reform proposal must confront, as Professor Lemley demonstrated in his much-discussed 2001 essay on the balancing of benefits and costs in improving patent quality.[97] The additional disclosures I propose will produce benefits far in excess of their costs. The estimates upon which I base my conclusion are admittedly limited by the lack of solid data on the frequency and cost of patent licensing negotiations, as well as the near-impossibility of monetizing the inefficiencies, static and dynamic, generated by uncertain claim scope. Even with these limitations, however, I think the estimates make a compelling case for the wisdom of enhancing patent disclosures in the way I propose.

The primary cost of compelling the additional disclosures in the patent document that I enumerated earlier, apart from the cost of promulgating the

---

[94] *See generally* 3 RONALD D. ROTUNDA & JOHN E. NOWAK, TREATISE ON CONSTITUTIONAL LAW—SUBSTANCE AND PROCEDURE § 17.8, at 104-07 (3d ed. 1999); LAURENCE H. TRIBE, AMERICAN CONSTITUTIONAL LAW § 12-31 (2d ed. 1988). The importance to patent law of this vagueness constraint on public regulation has grown as the scope of patentable subject matter has expanded to embrace expressive activities that raise First Amendment concerns. *See* John R. Thomas, *Liberty and Property in Patent Law*, 39 HOUS. L. REV. 569, 580–92 (2002) (documenting the expansion of patentable subject matter into areas of expressive activity).

[95] 94 U.S. 568, 573–74 (1877).

[96] *See, e.g.*, ROBERT COOTER & THOMAS ULEN, LAW AND ECONOMICS 87–94 (3d ed. 2000). As Professor Moore has argued, "[U]ncertainty in the boundaries of the patent holder's property right . . . will divert resources from innovative efforts (research and development) to enforcement (transaction or litigation costs), decreasing the value of the property right and thereby decreasing its efficacy as a means for promoting innovation." Kimberly A. Moore, *Forum Shopping in Patent Cases: Does Geographic Choice Affect Innovation?* 79 N.C. L. REV. 889, 928 (2001) (footnote omitted).

[97] Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495 (2001).

disclosure regulation itself, is the increased cost of preparing a patent application for its initial filing.[98] How big is this cost likely to be? Of the four types of information I propose adding, two—the field of art and problems solved—can be disclosed at virtually no extra cost, because a patent lawyer has already assessed these matters en route to forming an adequately grounded pre-filing legal judgment about the patentability of the inventor's claims.[99] Of the remaining two types, one—a list of preferred objective reference sources—can also be formulated and disclosed at very low cost.[100] The final type, a list of explicit definitions for all claim terms to which the inventor attaches an other-than-ordinary meaning, is the one most likely to impose noticeable increased drafting costs. Using the added time it would take to formulate these new disclosures as the primary cost-driver, let us assume for the sake of discussion that the disclosures I propose would result in a 5% increase in patent preparation costs.[101] What does that mean in dollar terms?

According to the American Intellectual Property Law Association's ("AIPLA") most recent biennial survey of, among other things, patent prosecution and litigation costs, the national median costs of preparing and filing "relatively complex" applications in the three main technological areas are as follows: (*a*) biotechnology/chemical, $10,001; (*b*) electrical/computer, $9,995; and (*c*) mechanical, $8,001.[102] The average median cost across these technologies is $9,332.33. A 5% increase translates to $466.62 per application. The Patent Office receives just over 330,000 utility patent applications a year,[103] about 28% of which are continuation applications,[104] i.e., applications

---

[98] Like Professor Thomas, I do not put much stock in the notion that a modest increase in patent application costs will drive many people away from the patent system in favor of trade secret protection, or diminish the general level of innovation: "our experience suggests that the demand for patent examination services is relatively inelastic." Thomas, *supra* note 89, at 743.

Once again, I draw heavily here on Miller & Hilsenteger, *supra* note 38 (manuscript at 54).

[99] *See infra* Part IV.

[100] *See* Miller & Hilsenteger, *supra* note 38 (manuscript at 55).

[101] I think this estimate is on the high side, and thus leads to an overstated cost. If, however, the benefits of the proposal appear to outweigh even this overstated cost, the proposed change is all the more likely to yield a net social benefit.

[102] AM. INTELLECTUAL PROP. LAW ASSOC., REPORT OF THE ECONOMIC SURVEY 2003, at 88 tbl.21 (2003) [hereinafter REPORT OF THE ECONOMIC SURVEY 2003].

[103] *See* PERFORMANCE AND ACCOUNTABILITY REPORT: FISCAL YEAR 2003, *supra* note 73, at 106 tbl.1, http://www.uspto.gov/web/offices/com/annual/2003/2003annualreport.pdf.

[104] The principal empirical study of these applications reports that, during fiscal years 1993–1998, "28.4% of the utility, plant, and reissue (UPR) applications filed in those years were not new or original applications, but were continuing applications claiming the benefit of the filing dates of previously filed applications." Cecil D. Quillen, Jr. & Ogden H. Webster, *Continuing Patent Applications and Performance of the U.S. Patent and Trademark Office*, 11 FED. CIR. B.J. 1, 3 (2001); *see also id.* at 16 tbl.1. The Quillen & Webster data group utility patent applications with plant and reissue applications. Only the utility applications, however, are of interest in this study. Their 28% figure remains a good estimate for continuing applications for utility patents alone because reissue and plant patent applications make up such a small portion of the total number of applications filed in a given year. For example, in fiscal year 2003, the Patent Office received 331,729 utility

that simply re-initiate the examination process on an application that had already been filed at least once before.[105] Of course, an application will entail the added disclosure costs only the first time it is filed. Using the 5% increase assumption, the estimated annual increase in total preparation costs $110,868,912.[106]

Would augmenting the patent disclosure in the ways I propose allow us to capture a social savings of at least $110.8 million per year? I think it would. The first source of savings will go directly back to the applicant's bottom line—namely, reduced costs in the remainder of patent prosecution. The patent examiner's improved ability to assess the scope of the claims that the applicant has proposed should translate into more focused (i.e., cheaper) exchanges between the applicant and Patent Office. The size of this savings is hard to estimate, but it doubtless exists.

Another source of savings would be court cases that are not filed at all because greater agreement on the likely construction of an arguable claim term makes litigation unnecessary. And, because litigation is quite expensive, even a small number of avoided infringement suits generates considerable savings. According to the AIPLA's most recent biennial survey, the national median cost of a full patent trial in which $1 to $25 million is at risk is $2 million per side, i.e., $4 million.[107] If 28 such trials are avoided every year, the new rule has both paid for itself and yielded a small social benefit; additional avoided trials are pure benefit. Given that about 1,900 utility patent infringement cases are filed every year,[108] and that about 95 of these cases are fully tried,[109] avoiding 28 trials seems unlikely. Avoiding, for example, five such trials seems reasonably likely and would generate a savings of $20 million, i.e., 18% of the increased cost of greater disclosure.

In addition to helping avoid full trials, an improved patent document should help litigation parties settle their cases earlier than they otherwise would and thereby save costs. The national median cost of taking through discovery a patent infringement case in which $1 to $25 million is at risk is $1,001,000 per side, i.e., about $2 million.[110] If discovery costs are cut in half in 111 median-cost cases per year (or cut by a quarter in 222 median-cost cases, etc.), the new

---

applications, 785 plant applications, and 938 reissue applications. PERFORMANCE AND ACCOUNTABILITY REPORT: FISCAL YEAR 2003, *supra* note 73, at 106 tbl.1, http://www.uspto.gov/web/offices/com/annual/2003/2003annualreport.pdf. Similarly, in fiscal year 2002, the Patent Office received 331,580 utility applications, 1,134 plant applications, and 974 reissue applications. *Id.*

[105] For a concise explanation of continuation applications in U.S. patent practice, see Quillen & Webster, *supra* note 104, at 4–6.

[106] (330,000 applications per year) x (72% originally filed) x ($466.62 per application) = $110,868,912.00 per year.

[107] *See* REPORT OF THE ECONOMIC SURVEY 2003, *supra* note 102, at 93 tbl.22.

[108] *See* Moore, *supra* note 96, at 902 (indicating that, from 1995 to 1999, U.S. district courts resolved about 1,900 cases per year).

[109] *See* Kimberly A. Moore, *Judges, Juries, and Patent Cases—An Empirical Peek Inside the Black Box*, 99 MICH. L. REV. 365, 384 tbl.1 (2000) (reporting that from 1983 to 1999, the annual number of full patent trials ranged from a low of 73 to a high of 112, with an average of 95).

[110] *See* REPORT OF THE ECONOMIC SURVEY 2003, *supra* note 102, at 93 tbl.22.

disclosures have paid for themselves. With an annual patent infringement case filing rate of 1,900, it appears feasible to save discovery expenses in an amount sufficient to cover the increased patent preparation costs of these new disclosures.

Another source of savings would be less costly license negotiations. The savings mechanism, as with avoided litigation, is greater agreement among the parties on the likely construction of an arguable claim term. There are virtually no reliable data about how many of the roughly 180,000 patents that issue each year[111] are licensed for revenue.[112] Professor Lemley, in his study of the costs and benefits of various patent law reform proposals, estimates that about 3.5% of issued patents are licensed for revenue without litigation, and that the cost to an industry of negotiating a license with the patentee is $100,000.[113] Using these assumptions, along with my admittedly subjective estimate that the enhanced disclosures I propose will lower that licensing cost by 2%, the annual savings is $12,600,000.[114] This licensing savings alone covers 11% of the increased patent preparation cost of my proposal. Using a licensing cost discount of 10%, which I think is a more likely figure, the enhanced disclosures generate an annual licensing cost savings of $63,000,000,[115] i.e., 57% of the estimated increase in annual patent preparation costs.

Finally, a key source of savings would be avoided dead weight loss arising from more effective competition against patentees from those who have designed around their patents. An improved patent document will reduce the uncertainty of a competitor's analysis of the scope of the claim; the reduced uncertainty will, in turn, facilitate more rapidly achieved and more numerous design-arounds. Competition from these design-arounds will help drive down the patentee's price to marginal cost sooner than would otherwise occur, thereby helping trim dead weight loss. I cannot begin to estimate the size of this effect, but it is hard to believe that it would fall below $110.8 million per year in an economy, like ours, with an annual GDP of about $11 trillion.

Importantly, the savings from enhanced certainty take nothing from patentees that they are entitled to keep. One of the core policies underlying the public notice function that clear claim language serves is the desirability of facilitating design-arounds by the patentee's competitors.[116] As the Federal Circuit once put it, "Designing around patents is, in fact, one of the ways in which the patent system works to the advantage of the public in promoting

---

[111] *See* PERFORMANCE AND ACCOUNTABILITY REPORT: FISCAL YEAR 2003, *supra* note 73, at 106 tbl.1, http://www.uspto.gov/web/offices/com/annual/2003/2003annualreport.pdf (reporting annual number of allowed patents for 1999–2003).

[112] *See* Lemley, *supra* note 97, at 1507.

[113] *Id.* at 1507–08.

[114] (180,000 patents per year) x (3.5% licensed) x ($100,000 per license) x (2% savings per license) = $12,600,000 savings per year.

[115] (180,000 patents per year) x (3.5% licensed) x ($100,000 per license) x (10% savings per license) = $63,000,000 savings per year.

[116] *See* Mark A. Lemley & Kimberly A. Moore, *Ending Abuse of Patent Continuations*, 84 B.U. L. REV. 63, 95 n.126 (2004); Craig Allen Nard, *A Theory of Claim Interpretation*, 14 HARV. J.L. & TECH. 1, 40–43 (2000).

progress in the useful arts, its constitutional purpose."[117] To improve the helpful information shown on the face of the patent, and thereby make it a better input for its own construction, helps us capture savings that belong to the public.

The most important assumptions of the foregoing analysis are that the additional disclosures proposed here will cause only a small increase in patent preparation costs, and greatly enhance the patent document's value as a claim construction input. Indeed, unless they enhance the clarity and predictability of patent claim boundaries, the disclosures I suggest have no purpose. All that remains is to consider the degree to which the new disclosures I propose will make claim construction more predictable.

IV. SITUATING THE INVENTION WITHIN THE RELEVANT ART

Nearly every patent fits within a context of numerous prior art solutions to the problem that the new invention solves. The printed publications that reflect the state of this prior art at the time the invention was made also show how artisans in the field address each other in their favored idiom. It is no surprise, then, that the courts have recognized prior art documents, such as issued patents and technical publications, as a helpful claim construction resource. In *Markman*, the Federal Circuit explained that "the state of the prior art at the time of the invention . . . is useful 'to show what was then old, to distinguish what was new, and to aid the court in the construction of the patent.'"[118] Prior art that the patentee has cited within the patent itself is especially helpful in claim construction.[119] It is also true, however, that one can properly construe a claim by consulting prior art beyond that which the patentee cited or the Patent Office considered.[120]

In view of the established value of prior art to claim construction, it is passing strange that the Patent Office does not, at the very least, require an applicant to state on the face of the patent the field of art to which the claimed invention pertains. Such a statement would help anyone who wants to construe the patent's claims to more readily identify documents that show actual usage in the field.

What does the Patent Office require? The relevant rules require the applicant to state, in addition to the claims, a "[d]etailed description and specification of the invention,"[121] a "brief abstract of the technical disclosure in

---

[117] Slimfold Mfg. Co. v. Kinkead Indus., Inc., 932 F.2d 1453, 1457 (Fed. Cir. 1991).

[118] Markman v. Westview Instruments, 52 F.3d 967, 980 (Fed. Cir. 1995) (en banc) (quoting Brown v. Piper, 91 U.S. 37, 41 (1875)), *aff'd*, 517 U.S. 370 (1996).

[119] *See, e.g.*, Kumar v. Ovonic Battery Co., 351 F.3d 1364, 1367–68 (Fed. Cir. 2003).

[120] *See* Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584 (Fed. Cir. 1996) ("[A] court in its discretion may admit and rely on prior art proffered by one of the parties, whether or not cited in the specification or the file history. This prior art can often help to demonstrate how a disputed term is used by those skilled in the art.").

[121] 37 C.F.R. § 1.71 (2004).

the specification,"[122] and a "brief summary of the invention indicating its nature and substance."[123] In addition, in stating the order in which the parts of an application should be arranged, the rules call for a "[b]ackground of the invention" but do not indicate what the "background" should convey.[124]

Why, then, do some patents begin with a patentee's statement of the field of art to which the invention pertains? For example, the most recent of the three patents I discussed earlier—the '884 patent—states on its face that it "relates generally to the field of protective garments, and more particularly to an improved surgical gown configuration."[125] The answer lies in the rules that govern *examiners*, not applicants, set forth in the *Manual of Patent Examining Procedure* ("*MPEP*").

Specifically, the *MPEP* indicates that the "Background of the Invention" section of an application should contain both a "Field of the Invention" statement—"[a] statement of the field of art to which the invention pertains"—and a "[d]escription of the related art."[126] Examiners are told that this arrangement for the disclosure is "preferable."[127] Patentees, however, are free to disregard this guidance from the *MPEP*, because it "does not have the force and effect of law."[128] As a result, while some instructional books for new patent lawyers indicate that a patent application should state the invention's field of art,[129] others quite openly recognize that a statement of the field of art is not required and may recommend that it be avoided. For example, a Practising Law Institute treatise on patent drafting, in a section called "What the Background Section Should Not Include," quotes the *MPEP* information noted above and gives the following advice:

> There is no benefit to be obtained [for the applicant] from specifying the "Field of the Invention." Identification of the "field of the invention" can hurt the applicant. If the field of invention is described very broadly, this can be interpreted to be an admission that anything within the broad description is analogous art and can be used to reject the claims under 35 U.S.C. § 103. If the field of the invention is described unduly narrowly,

---

[122] 37 C.F.R. § 1.72(b) (2004). The purpose of the abstract is "to enable [one] to determine quickly from a cursory inspection the nature and gist of the technical disclosure." *Id.*

[123] 37 C.F.R. § 1.73 (2004).

[124] 37 C.F.R. § 1.77(b)(5) (2004). As the patents discussed earlier indicate, patentees often use this section to describe the shortcomings of the prior art. *See supra* notes 15–30 and accompanying text.

[125] U.S. Patent No. 6,671,884, col. 1, lns. 8–10 (issued Jan. 6, 2004).

[126] MANUAL OF PATENT EXAMINING PROCEDURE, *supra* note 12, § 608.01(c).

[127] *Id.* § 608.01(a). A pro se applicant seeking information from, e.g., the Patent Office website would find the same advice in A GUIDE TO FILING A NON-PROVISIONAL (UTILITY) PATENT APPLICATION, http://www.uspto.gov/web/offices/pac/utility/utility.htm#background (last modified Jan. 18, 2005).

[128] Refac Int'l, Ltd. v. Lotus Dev. Corp., 81 F.3d 1576, 1584 n.2 (Fed. Cir. 1996).

[129] *See, e.g.*, STEPHEN A. BECKER, PATENT APPLICATIONS HANDBOOK § 1:14 (2004).

> then the scope of the claims may be interpreted during litigation to be of commensurate narrow scope.[130]

According to this treatise, then, precisely because a statement of the field of invention can help the public construe the claim language, the patentee should not provide one. The treatise gives similar advice about the wisdom of describing the related art.[131]

It is common ground, or should be, that, to properly counsel a client on the patentability of an invention and to competently draft a patent application, the lawyer must know the range of prior art that is pertinent to the claims (even if she does not know every prior art item that falls in that range). This range of art is vital to claim drafting, as well as to the novelty and nonobviousness analyses. It is also clear, in generic terms, how far the range of pertinent prior art extends: The courts have long held that the pertinent prior art includes items that are either (*a*) from the same field of endeavor as the claimed invention, or (*b*) reasonably pertinent to the specific problems with which the inventor is involved.[132] The Patent Office should therefore require every applicant to state, on the face of the patent, this same basic information—namely, the field of art for the claimed invention, and the problem(s) that the claimed invention helps solve. The cost to applicants of the added disclosure would be minimal, because the lawyers who advise them will already have a considered view on these points. With the benefit of these explicit pointers to the pertinent prior art, anyone construing a claim term from the patent can focus on documents that show actual usage in the pertinent art with confidence that the documents are highly relevant to claim construction.

One may fairly wonder whether the Federal Circuit, in the wake of a Patent Office rule change of the type I propose, would treat these additional patent disclosures as having the great weight I ascribe to them. After all, one might argue, the example used earlier to show that the Patent Office takes regulatory steps to hew to the Federal Circuit's claim construction case law—namely, the Patent Office's modifying its abstract rule in the wake of the *Hill-Rom* case[133]—proves that the Federal Circuit does not feel bound in the least by Patent Office claim construction rules. It is true that, in *Hill-Rom*, the Federal Circuit rejected the contention that it was bound by the then-current abstract rule's limiting language,[134] according to which "[t]he abstract shall not be used for interpreting the scope of the claims."[135] But the reason the Federal Circuit gave for disregarding the abstract rule is far more important to the fate of the new rules I propose than the specific result in that case. According to *Hill-Rom*,

---

[130] JEFFREY G. SHELDON, HOW TO WRITE A PATENT APPLICATION § 7.5.7.2, at 7-58 (supp. 2001).

[131] *Id.*

[132] *See In re* Bigio, 381 F.3d 1320, 1325 (Fed. Cir. 2004); *In re* Clay, 966 F.2d 656, 658–59 (Fed. Cir. 1992); *In re* Deminski, 796 F.2d 436, 442 (Fed. Cir. 1986); *In re* Wood, 599 F.2d 1032, 1036 (C.C.P.A. 1979).

[133] *See supra* notes 82–88 and accompanying text.

[134] *See* Hill-Rom Co. v. Kinetic Concepts, Inc., 209 F.3d 1337, 1341 n.* (Fed. Cir. 2000).

[135] 37 C.F.R. § 1.72(b) (1983).

the paramount policy of using every interpretive clue that the patent disclosure provides trumped the abstract rule's purported limits: speaking of the abstract, the court stated it was "aware of no legal principle that would require us to disregard that potentially helpful source of intrinsic evidence as to the meaning of claims."[136] The court's approach in *Hill-Rom* is hardly surprising, given the many cases in which it has held that a patentee is bound in subsequent litigation by her statements in the intrinsic patent record.[137] The new disclosure rules I propose here take advantage of the Federal Circuit's decided preference for binding a patentee to the statements she makes on the face of her patent by mandating and recording additional informative statements from the patentee. The Federal Circuit will embrace, not reject, these disclosure rules and make full use of the new information they generate.

Patent applicants, at the time they file their applications, know (or should know) the two additional pieces of information identified here that help put a claimed invention in its technological context, i.e., a patentee's express statements of a field of art and the problems solved. Given the ease with which the patentee can provide this information at very small added patent preparation cost, and the way the information directly promotes more accurate claim construction, the Patent Office should require patentees to disclose this information to the public in all cases.

V. FORCING A LEXICON AND REFERENCE SOURCE INFORMATION

It is axiomatic that, absent sufficient indications to the contrary in the specification or the prosecution history, the courts give claim terms their ordinary and accustomed meanings to people skilled in the art.[138] This approach, which originates in regional circuit law more than 60 years old,[139] is

---

[136] *Hill-Rom Co.*, 209 F.3d at 1341 n.*.

[137] *See, e.g.*, Springs Window Fashions LP v. Novo Indus., L.P., 323 F.3d 989, 995 (Fed. Cir. 2003) ("The public notice function of a patent and its prosecution history requires that a patentee be held to what he declares during the prosecution of his patent."); Vectra Fitness, Inc. v. TNWK Corp., 162 F.3d 1379, 1384 (Fed. Cir. 1998) ("The public is entitled to rely upon the public record of a patent in determining the scope of the patent's claims."); Key Pharm. v. Hercon Labs. Corp., 161 F.3d 709, 716–17 (Fed. Cir. 1998) ("Competitors are entitled to rely on the public record of the patent, and if the meaning of the patent is plain, the public record is conclusive."); Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996) ("Competitors are entitled to review the public record, apply the established rules of claim construction, ascertain the scope of the patentee's claimed invention and, thus, design around the claimed invention."); *see also* Riverwood Int'l Corp. v. R.A. Jones & Co., 324 F.3d 1346, 1354 (Fed. Cir. 2003) ("This court and its predecessor have held that a statement by an applicant during prosecution identifying certain matter not the work of the inventor as 'prior art' is an admission that the matter is prior art.").

[138] *See, e.g.*, ResQNet.com, Inc. v. Lansa, Inc., 346 F.3d 1374, 1378 (Fed. Cir. 2003) ("A fundamental principle for discerning the usage of claim language is the ordinary and accustomed meaning of the words amongst artisans of ordinary skill in the relevant art at the time of invention.").

[139] *See* Universal Oil Prods. Co. v. Globe Oil & Ref. Co., 137 F.2d 3, 6 (7th Cir. 1943) ("[W]ords will be given their ordinary and accustomed meaning unless it appears that the inventor used them differently.").

settled law at the Federal Circuit.[140] Indeed, the Federal Circuit has recently underscored its commitment to the ordinary meaning default, referring to a "heavy presumption in favor of the ordinary meaning of claim language" in more than 20 cases over the last three years.[141]

It is also axiomatic that a patentee is free to be her own lexicographer, i.e., to provide her own definitions for claim terms in the balance of the specification.[142] "The caveat is that any special definition given to a word must be clearly defined in the specification."[143] And this caveat has been, so far as I am concerned, the greatest single source of unpredictability in the Federal Circuit's post-*Markman* case law.

The reason that any special definition must be provided with sufficient clarity is plain enough: only a clear and deliberate special definition gives people of ordinary skill in the art, to whom the patent is directed, adequate notice of the change from ordinary meaning.[144] Operationalizing the requisite clarity for special definitions, however, has proved anything but plain. On the one hand, a leading claim drafting guide recommends that any special definition for a claim term be provided in the form, "As used in this description and in the appended claims, the word '__' means '__.'"[145] On the other hand, we know from everyday life that a writer can alter a word's meaning simply by consistent, targeted usage throughout a document.

In a small number of post-*Markman* cases, the Federal Circuit flirted with the notion of requiring expressly definitional syntax to specially define a claim term—most clearly in *Johnson Worldwide Associates v. Zebco Corp*.[146] The

---

[140] *See* Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1249–50 (Fed. Cir. 1998); Kegel Co. v. AMF Bowling, Inc., 127 F.3d 1420, 1427 (Fed. Cir. 1997); Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620 (Fed. Cir. 1995); *In re* Paulsen, 30 F.3d 1475, 1480 (Fed. Cir. 1994); Nike Inc. v. Wolverine World Wide, Inc., 43 F.3d 644, 646 (Fed. Cir. 1994); Carroll Touch, Inc. v. Electro Mech. Sys., Inc., 15 F.3d 1573, 1577 (Fed. Cir. 1993); Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1387 (Fed. Cir. 1992); Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759 (Fed. Cir. 1984).

[141] *See* Miller & Hilsenteger, *supra* note 38 (manuscript at 10).

[142] Citations for the point are legion. *See, e.g.*, Markman v. Westview Instruments, Inc., 52 F.3d 967, 980 (Fed. Cir. 1995) (en banc) ("As we have often stated, a patentee is free to be his own lexicographer."), *aff'd*, 517 U.S. 370 (1996).

[143] *Id.*

[144] *See In re Paulsen*, 30 F.3d at 1480.

[145] ROBERT C. FABER, LANDIS ON MECHANICS OF PATENT CLAIM DRAFTING § 19, at III-15 (4th ed. supp. 2001).

[146] Johnson Worldwide Assocs. v. Zebco Corp., 175 F.3d 985 (Fed. Cir. 1999). In *Johnson Worldwide*, explaining why it rejected the accused infringer's contention that two key claim terms had been narrowly defined in the specification, the Federal Circuit surveyed its cases and concluded that there are "two situations where a sufficient reason exists to require the entry of a definition of a claim term other than its ordinary and accustomed meaning." *Id.* at 990. The first of these occurs where "the patentee has chosen to be his or her own lexicographer by clearly setting forth *an explicit definition* for a claim term." *Id.* (emphasis added); *see also* Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1327 (Fed. Cir. 2002) ("[A] patentee demonstrate[s] an intent to deviate from the ordinary and accustomed meaning of a claim term by redefining the term or by characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or

court has since held, however, that a patentee can specially define a claim term not only expressly by a definitional statement, but also tacitly by, e.g., describing a particular structure as a part of "the invention" or as a key to "all embodiments."[147] As the court explained in the *SciMed* case, "the written description can provide guidance as to the meaning of the claims, thereby dictating the manner in which the claims are to be construed, even if the guidance is not provided in explicit definitional format."[148] The court's ad hoc approach to determining whether the patent specially defines a claim term comports with our everyday experience that we can often infer a more specialized word meaning from usage of that word in a particular document. This approach also preserves the likely expectations of patentees who obtained patents free of the strictures of a more exacting approach. The price of the court's flexibility, however, is far more uncertainty in litigation, and thus in business planning. It is hard to predict whether the courts will accept or reject the contention that a given patentee's usage in the specification rises to the level of a special definition for a claim term.[149] The Federal Circuit has acknowledged the quandary, for itself and the public, thus:

> Interpretation of descriptive statements in a patent's written description is a difficult task, as an inherent tension exists as to whether a statement is a clear lexicographic definition or a description of a preferred embodiment. The problem is to interpret claims "in view of the specification" without unnecessarily importing limitations from the specification into the claims.[150]

This "inherent tension" cannot be solved within the current framework's indulgence for tacit special definitions.

---

restriction, representing a clear disavowal of claim scope."); York Prods., Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1572 (Fed. Cir. 1996) ("Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning.").

[147] SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1342–44 (Fed. Cir. 2001).

[148] *Id.* at 1344 (rejecting SciMed's argument that, under *Johnson Worldwide*, only an express definition limits the meaning of a claim term); *see also* Bell Atl. Network Servs., Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1268 (Fed. Cir. 2001) ("However, a claim term may be clearly redefined without an explicit statement of redefinition. . . . In other words, the specification may define claim terms 'by implication.'").

[149] *E.g.*, *compare* Phillips v. AWH Corp., 363 F.3d 1207, 1212–14 (Fed. Cir. 2004) (accepting arguments that patent implicitly specially defines a disputed claim term), *vacated for en banc review*, 376 F.3d 1382 (Fed. Cir. 2004), E-Pass Techs., Inc. v. 3Com Corp., 343 F.3d 1364, 1368–69 (Fed. Cir. 2003) (same), Alloc, Inc. v. Int'l Trade Comm'n, 342 F.3d 1361, 1368–71 (Fed. Cir. 2003) (same), *and SciMed Life Sys. Inc.*, 242 F.3d at 1340–45 (same), *with* TI Group Auto. Sys. (N. Am.), Inc. v. VDO N. Am., L.L.C., 375 F.3d 1126, 1136, 1138 (Fed. Cir. 2004) (rejecting arguments that patent implicitly specially defines a disputed claim term), Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 904–09 (Fed. Cir. 2004) (same), Kumar v. Ovonic Battery Co., 351 F.3d 1364, 1368–72 (Fed. Cir. 2003) (same), ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1090–93 (Fed. Cir 2003) (same), *and Teleflex, Inc.*, 299 F.3d at 1327–28 (same). Many more instances of each type of case could be listed; this small sample, however, suffices to make the point.

[150] *E-Pass Techs., Inc.*, 343 F.3d at 1369.

The Federal Circuit's jurisprudence of autolexicography is a jurisprudence of doubt. Predictability finds no refuge in it. The Patent Office, with its plenary power over the patent document, can bring far greater predictability to claim construction by implementing two additional disclosure rules that will cut through the fog of tacit special definitions.

First, the Patent Office should amend the rules governing patent content and format to require that every patent contain a lexicon section. In this new lexicon section, an applicant would be required either (*a*) to provide an exclusive, exhaustive list of express definitions for any claim term to which the applicant gives a meaning other than it ordinary meaning to people having ordinary skill in the art, or (*b*) to state that none of the claims terms has a meaning other than its ordinary meaning to people having ordinary skill in the art. This new lexicon would work seamlessly with the existing claim construction approach that examiners employ, i.e., giving claim terms the broadest reasonable meaning consistent with the specification (including any special definitions therein).[151] It would also focus applicants on the need to make clear, from the outset, when they are using claim terms in an unconventional way. Later, whether in licensing or litigation, both the patentee and the public would know that it is not open to anyone to argue that a claim term missing from the lexicon has a special definition based on arguable vagaries of usage within the patent being construed. The argument would not be available because the patentee's own statements in the patent, which are binding, would foreclose it.[152]

Second, to help both patent examiners and the public obtain more reliable, predictable sources that show the ordinary meaning of claim terms at the time the application was filed, the Patent Office should amend its rules to require that every patent list, on its face, the patentee's preferred objective reference sources (i.e., dictionaries, encyclopedias, and technical treatises). Anyone who wants to learn more about a claim term's ordinary meaning can then consult the prior art and the objective reference sources the patentee has listed, confident that, in litigation, the courts would consult the same sources. This confidence would arise, again, from the binding nature of the patentee's statements in the patent.[153] A co-author and I have discussed the costs and benefits of this specific proposal in detail elsewhere.[154] For present purposes, it suffices to emphasize that this additional disclosure is likely to impose only minimally increased patent preparation costs. Patent drafters who regularly consult reference sources in preparing patents, as the handbooks urge,[155] have merely to identify the materials already at hand. Patent drafters who are not in the habit of consulting reference sources will quickly settle on the most suitable sources for the arts in which they practice.

---

[151] *See, e.g.*, *In re* Thrift, 298 F.3d 1357, 1364 (Fed. Cir. 2002); *In re* Hyatt, 211 F.3d 1367, 1372–73 (Fed. Cir. 2000); *In re* Morris, 127 F.3d 1048, 1055–56 (Fed. Cir. 1997).

[152] *See supra* note 137.

[153] *See supra* note 137.

[154] *See* Miller & Hilsenteger, *supra* note 38 (manuscript at 10).

[155] *See, e.g.*, FABER, *supra* note 145, § 19, at III-16; SHELDON, *supra* note 130, § 6.3.5.1.3, at 6-32.

These two additional disclosures will doubtless cost applicants more to provide than the two art-related disclosures described above. These disclosures also promise, however, profound enhancements to the predictability of claim construction. By requiring every patentee to put on the face of every patent both a lexicon that eliminates the search for implicit special definitions and a list of objective reference sources on which the public (including the courts) can rely for evidence of ordinary meaning, the Patent Office will make every patent a far more informative claim construction resource.

VI. CONCLUSION

The basic patent document contains the types of information that it does not by accident, or through Providence, but because the Patent Office, using a power delegated by Congress, requires that it do so. Judges, who come to claim construction disputes long after Patent Office rules have forced the patent's disclosure into a given shape, are relatively powerless to make the patent document a more informative claim construction input. The Patent Office, by contrast, has plenary authority to mandate a form of patent disclosure that both informs the relevant art and clearly defines the patentee's right to exclude others, all at a reasonable cost to patent applicants and patent readers alike. Within the broad outlines drawn by the Patent Act, the Patent Office is thus responsible for any basic shortcoming in the form of the patent disclosure that hinders the claim construction process.

Ten years of claim construction case law, when consulted by one who seeks to learn lessons about how the instrument itself can be improved, have taught us much about the present patent document's shortcomings. The Patent Office, heeding these lessons, should make every patent a better aid to predictable construction by requiring patentees to provide further information that casts much needed light on the claim construction inquiry. Well counseled patentees already possess this information—fields of art, problems solved, lexica for specially defined terms, and objective reference sources for remaining terms. Compelling applicants to disclose all the helpful information they possess as a matter of routine, and placing it on the face of the patent document, will yield predictability benefits that far outweigh the small increase in patent preparation costs.

Until the Patent Office lights this candle, there is little else for restive observers to do but curse the darkness of chaotic post-*Markman* case law.