Loyola University Chicago Law Journal

Volume 45
Issue 2 *2013 Winter*

Article 3

2013

Patent Law's Disclosure Requirement

Jason Rantanen
University of Iowa College of Law

Patent Law's Disclosure Requirement

*Jason Rantanen**

The requirement that recipients of patents disclose information about their inventions is a fundamental attribute of patent systems. Yet, despite being a core element of patent law, the disclosure requirement is rarely thought of in those terms; rather, it is conventionally approached by first dissecting it in two ways: in terms of its doctrinal mechanisms (primarily enablement and written description) and in terms of its theoretical basis. While this dissection can be useful in understanding issues within the disclosure requirement, the resulting compartmentalization also imposes limits on this approach.

This Essay approaches patent law's disclosure requirement from a more holistic perspective, treating it as a foundational component of patent law that can be studied and analyzed as a collective whole. In doing so, this Essay brings together different perspectives on the disclosure requirement, explaining how its seemingly independent purposes are actually closely intertwined and exploring the consequences for the patent law that flow from that relationship.

TABLE OF CONTENTS

* Associate Professor of Law, The University of Iowa College of Law. Thanks to the organizers of and participants in the Loyola University Chicago Law Journal conference on *Patents, Innovation, and Freedom to Use Ideas*, as well as comments on an earlier draft from Timothy Holbrook, Jeffrey Lefstin, and Sean Tu.

INTRODUCTION

The requirement that recipients of patents disclose information about their inventions is a fundamental attribute of patent systems. Whether it be through doctrinal mechanisms such as enablement or written description, or through other articulations, providing information about the invention in the patent document itself is a foundational component of a patent system,[1] a basic axis of patentability.[2] Two explanations for the requirement are typically offered: (1) it allows others to learn from the technological advance developed by the inventor; and (2) it limits the potential scope of what the applicant can claim.[3]

Scholarship on patent law's disclosure requirement has largely treated these purposes as independent, focusing either on the disclosure requirement's role in providing the public with information about cutting-edge technological advancements *or* on the way in which the requirement operates to limit claim scope.[4] These approaches tend to treat the two

1. Courts, scholars, and practitioners often speak of the "quid pro quo" of patent law: the idea that in return for providing a technological advance to the public, the inventor receives an exclusive right to make, use, and sell that advance for a limited period of time. We can further break down the inventor's contribution into two components: the invention itself, which may provide a benefit to the public, and the information about that invention. *See* Timothy Holbrook, *Possession in Patent Law*, 59 SMU L. REV. 123, 131 (2006). It is ensuring the latter that patent law's disclosure requirement is directed at.

2. To be clear: when I speak of patent law's disclosure requirement, I am speaking about a fundamental axis of patentability; a meta-principle of patent systems rather than a formal doctrinal incantation of that principle. I approach the concept of disclosure from this perspective for several reasons. First, I think there is benefit to considering patent law's disclosure requirement at a relatively high level, rather than in doctrinal terms, because it allows us to more clearly see what the ultimate purpose of the rule is. Second, both courts and commentators often treat the requirement of disclosure at this more abstract level when examining its purpose. *See, e.g.*, Bonito Boats v. Thunder Craft Boats, Inc., 489 U.S. 141, 151 (1989) (discussing the role of disclosure in the patent system); Jeanne Fromer, *Patent Disclosure*, 94 IOWA L. REV. 539, 542, 544–53 (2009) (noting the centrality of the disclosure requirement in the patent system). Third, the primary doctrinal mechanisms embodying the disclosure requirement—enablement and written description—are highly entangled, and scholars, courts, and practitioners have spent years attempting to tease them apart with limited success. *See, e.g.*, Mark D. Janis & Timothy R. Holbrook, *Patent Law's Audience*, 97 MINN. L. REV. 72, 115 (2012). That is not to say, however, that there is no value in formal doctrinal articulations of the disclosure requirement; to the contrary, as discussed later, these doctrinal articulations are extremely important in affording parties and courts the ability to more clearly express the disputed issue.

3. Enablement, for example, "serves the dual function of ensuring adequate disclosure of the claimed invention and of preventing claims broader than the disclosed invention." MagSil Corp. v. Hitachi Global Storage Techs., Inc., 687 F.3d 1377, 1380–81 (Fed. Cir. 2012).

4. *See infra* Part II (exploring recent scholarship's bifurcated approach to the disclosure requirement).

purposes as if they have little to do with one another—the word "dichotomous" has even been used to describe them.[5]

Despite this tendency, the two purposes of the disclosure requirement are not as independent as commonly portrayed. To the contrary, they are closely interrelated. Recognizing the interrelated nature of the teaching and scope-limiting purposes of the disclosure requirement has substantial ramifications for proposals to improve the patent law: proposals that are based on only one approach to the requirement may be impossible to implement without radical changes to the structure of patent law as it currently exists. By understanding the relationship between the dual purposes, scholars and attorneys can better identify those reform proposals that stand the best chance for successful implementation.

This Essay explains how the two purposes of the disclosure requirement are linked together and the consequences for the law produced by that relationship. Part I begins by articulating the concept of patent law's disclosure requirement and identifying the benefits it provides. These benefits can be grouped into those that relate to "teaching" and those that relate to "scope limiting." Part II explores recent scholarship's approach to these two purposes, which is to treat them as independent and mutually exclusive. As Part III explains, however, the teaching and scope-limiting purposes of the disclosure requirement are actually tightly intertwined. Part IV concludes with a discussion of what this relationship means for proposals to improve on patent law's disclosure requirement.

I. DEFINING PATENT LAW'S DISCLOSURE REQUIREMENT

As used in this Essay, the phrase "patent law's disclosure requirement" refers to the basic idea that inventors must disclose information about their inventions—the technological advances that they have made—in order to obtain a patent.[6] Although embodied in formal legal structures, the concept of requiring disclosure extends beyond any single legal articulation. Think of it as an axis of patentability that intersects with the newness and subject matter characteristics of the technological advance. Thus, although this Essay uses the below examples to illustrate the idea of the disclosure requirement, it would be a mistake to treat the disclosure requirement in overly rigid doctrinal terms, at least as a starting point for discussing its purpose.

---

5. Janis & Holbrook, *supra* note 2, at 115.

6. For consistency and stylistic reasons, this Essay refers to the disclosure requirement in terms of patentability; it should be understood that the validity of issued patents can generally be challenged on this ground as well.

The idea of requiring disclosure is not new. In fact, the first United States Patent Act required:

> That the grantee or grantees of each patent shall, at the time of granting the same, deliver to the secretary of state a specification in writing, containing a description, accompanied with drafts or models, and explanations and models (if the nature of the invention or discovery will admit of a model) of the thing or things, by him or them invented or discovered, and described as aforesaid, in the said patents; which specification shall be so particular, and said models so exact, as not only to distinguish the invention or discovery from other things before known and used, but also to enable a workman or other person skilled in the art or manufacture, whereof it is a branch, or wherewith it may be nearest connected, to make, construct, or use the same, to the end that the public may have the full benefit thereof, after the expiration of the patent term[.][7]

More recently, 35 U.S.C. § 112(a) provides that:

> 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[.][8]

Nor is a disclosure requirement some peculiar artifact of United States law. To the contrary, it is an internationally recognized condition for obtaining a patent. For example, disclosure is established as a core requirement under the Agreement on Trade Related Aspects of Intellectual Property Rights ("TRIPS Agreement"), which provides minimum standards for patent systems (among other forms of intellectual property protections).[9] Article 29.1 states that "[m]embers shall require that an applicant for a patent shall disclose the invention in a manner sufficiently clear and complete for the invention to be carried out by a

7. Patent Act of 1790, ch. 7, § 2, 1 Stat. 109, 110–11 (1790) (current version at 35 U.S.C. § 112(a) (2012)) .

8. 35 U.S.C. § 112(a) (2012). The current version contains only minor variations from the section as it was enacted in 1952, which itself uses similar language to earlier statutory articulations.

9. Agreement on Trade Related Aspects of Intellectual Property Rights, Apr. 15, 1994, 108 Stat. 4809, 1869 U.N.T.S. 299 [hereinafter TRIPS Agreement], *available at* http://www.wto.org/english/docs_e/legal_e/27-trips.pdf. Ratification of the TRIPS Agreement is required for membership in the World Trade Organization and thus has been joined by the vast majority of countries (159 as of March 2, 2013). *See* FREDERICK M. ABBOTT, THOMAS COTTIER & FRANCIS GURRY, INTERNATIONAL INTELLECTUAL PROPERTY IN AN INTEGRATED WORLD ECONOMY 23–25 (2d ed. 2011); *Understanding the WTO: Observers and Members*, WTO, http://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm (last visited June 20, 2013).

person skilled in the art."[10] The European Patent Convention, the tray underlying the European patent system, contains a nearly identical requirement.[11] While there are some differences in articulation, each of the above examples represents a variation on the theme that applicants must disclose information about the technological underpinnings of their invention in order to receive exclusive rights.[12]

Why is disclosure considered to be a basic component of patent law? A robust disclosure requirement can produce many desirable results:

1) It ensures that the inventor teaches others—specifically, others who would be able to make use of the information—how to replicate the technological advance that the inventor has discovered.[13] For example, if an applicant invents the four-legged chair, a robust disclosure requirement would allow others to make four-legged chairs as well.
2) It ensures that patents provide information about cutting-edge technological advances that others can use to improve on the new technology.[14] Building on the chair example, a robust disclosure requirement would allow others not just to reproduce the applicant's four-legged chair, but perhaps to develop three-legged chairs, or chairs that fold, or chairs with little writing surfaces attached to them. It may even provide the foundation for others to invent the four-legged table.
3) It creates higher quality prior art.[15] Because the applicant has

10. TRIPS Agreement, *supra* note 9, art. 29.1.

11. Convention on the Grant of European Patents art. 83, Oct. 5, 1973, 1065 U.N.T.S. 255 [hereinafter European Patent Convention] ("The European patent application shall disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art."). Article 84 adds the additional requirement that the patent claims "shall . . . *be supported by the description*." *Id.* art. 84 (emphasis added). However, Article 84 is limited to the original examination. *See* Mark D. Janis, *On Courts Herding Cats: Contending with the "Written Description" Requirement (and Other Unruly Patent Disclosure Doctrines)*, 2 WASH. U. J.L. & POL'Y 55, 89 (2000).

12. This Essay merely provides these examples to illustrate the concept of the disclosure requirement; this Essay is not intended in any way to represent a comparative examination of formal articulations of the requirement or to address tensions inherent in the Article 83/84 divide. As a starting point for that issue, see *id.*

13. *Accord* MPEP § 2164, at 2100–98 (8th ed. Rev. 9, Aug. 2012), *available at* http://www.uspto.gov/web/offices/pac/mpep/mpep-2100.pdf [hereinafter PATENT EXAMINING PROCEDURE] ("The purpose of the requirement that the specification describe the invention in such terms that one skilled in the art can make and use the claimed invention is to ensure that the invention is communicated to the interested public in a meaningful way.").

14. Fromer, *supra* note 2, at 541 ("[P]atent disclosure indirectly stimulates future innovation by revealing the invention's design so that others can use it fruitfully when the patent term expires and design around, improve upon, or be inspired by the invention, even during the patent term.").

15. Lee Petherbridge & Jason Rantanen, *In Memoriam Best Mode*, 64 STAN. L. REV. ONLINE

disclosed the chair invention in detail, it will be more difficult for others to claim obvious variants on that invention, or to claim broad categories of chairs that encompass four-legged chairs. Patent examiners will also have a much easier time finding and using the applicant's disclosure as prior art since it has taken the form of a patent.[16]

4) It limits the maximum scope of patent claims.[17] It ensures that the applicant is not claiming every novel and nonobvious variant of the invention regardless of the degree to which it is actually related to the thing invented. Simply because the applicant has invented a four-legged chair does not mean that she should necessarily receive the exclusive right to all chairs, no matter how many legs they have. Building a one-legged chair, for example, may require a technological advance beyond what the applicant could have come up with on her own. A robust disclosure limit helps limit the applicant to what she has actually invented and taught, even if she tries to claim something that is far broader.
5) It helps the drafter of the patent to express, and the reader of the patent to understand, what the claims are actually saying.[18] Sometimes claims use language that is subject to multiple interpretations; sometimes claims must use novel language due to the cutting-edge nature of the invention.[19] A robust disclosure requirement gives the reader of the patent a better chance at understanding what the inventor is actually claiming in these

125, 129 (2012), *available at* http://www.stanfordlawreview.org/sites/default/files/online/articles/64-SLRO-125.pdf (explaining how the best mode produces a more "complete" disclosure that enhances the prior art).

16. *See generally* Dan L. Burk, *The Role of Patents in Knowledge Codification*, 23 BERKELEY TECH. L.J. 1009 (2008) (exploring the use of patents as mechanisms for knowledge codification); Christopher A. Cotropia, Mark Lemley & Bhaven Sampat, *Do Applicant Patent Citations Matter*, 42 RES. POL'Y 844, 846 (2013) (reporting empirical evidence that patents are the type of prior art that is most commonly cited by examiners).

17. Holbrook, *supra* note 1, at 147 (arguing that "[e]nablement performs the role of demonstrating what the inventor possessed as her invention when filing her application."). Written description can also fulfill this function. *See* Ariad Pharm., Inc. v. Eli Lilly & Co., 598 F.3d 1336 (Fed. Cir. 2010). Note that here I am talking about the maximum possible scope that the inventor might claim, rather than how claim terms, once they are drafted, are interpreted.

18. *See* Fromer, *supra* note 2, at 550 (noting that the disclosure requirement "helps competitors comprehend the metes and bounds of the patent so they can avoid liability for patent infringement"). I am not arguing here that the claim should be construed so as to be limited to the embodiments provided in the specification, but simply the relatively uncontroversial idea that the specification necessarily plays *some* role in how a person of skill in the art interprets the claims.

19. Autogiro Co. of Am. v. United States, 384 F.2d 391, 397 (Ct. Cl. 1967) ("Often the invention is novel and words do not exist to describe it.").

circumstances.

6) It establishes the outer boundaries of what the applicant *might* claim, at least with respect to priority based on that effective filing date.[20] This is particularly important in an era of routine continuation practice. Given that applicants can write new claims within the same patent family years after filing the original application and those claims are potentially entitled to the benefit of the original application date, a robust disclosure requirement helps potential infringers figure out whether or not new claims that might cover their product are even possible. The weaker the disclosure requirement, the easier it is to later stretch the scope of the patent to encompass competitors' products.[21]

These benefits can be grouped into those that relate to the teaching function of patents and those that relate to limiting the scope of patents—a concept often referred to as "commensurability."[22] The first three (replicability, improvability, and prior art forming) are associated with what are conventionally understood to fall within the teaching function of patents. All three invoke the idea that the disclosure requirement helps to fill the storehouse of publicly available technical information. The second three purposes envision the disclosure requirement as fulfilling a claim scope-limiting function. By linking the breadth of valid claims to the material disclosed, unduly expansive claims are reined in.

II. THE BIFURCATED APPROACH TO THE DISCLOSURE REQUIREMENT

Discussions about patent law's disclosure requirement generally

20. *Liebel-Flarsheim Co. v. Medrad, Inc.* offers an example of how this can work in practice: during prosecution of the patents-in-suit, Liebel modified its claims by removing a key component so that they would read on a competitor's product. 481 F.3d 1371, 1374 (Fed. Cir. 2007). The Federal Circuit held that the amended claims were invalid for lack of enablement based on the original disclosure. *Id.* at 1375; *see also* Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 911 (Fed. Cir. 2004) (previous appeal in which the Federal Circuit concluded that claims should be interpreted to encompass embodiments in which the component had been removed). This benefit is somewhat different from benefit #4, in that benefit #4 involves the validity or patentability of what the patent owner has claimed in the present while benefit #6 relates to what the patent owner might conceivably claim dominion over in the future.

21. Disclosures may also serve the interests of the disclosing party. Other scholars have noted the signaling value of the disclosure, *see* Fromer, *supra* note 2, at 550 (citing Clarisa Long, *Patent Signals*, 69 U. CHI. L. REV. 625, 636–37, 648 (2002)), and I have previously written about the benefits that patent holders may gain by making technological disclosures to others, *see* Jason Rantanen, *Peripheral Disclosure*, 74 U. PITT. L. REV. 1 (2012). These types of disclosures will occur whether or not they are required (although, as I have argued, patents may free companies to engage in greater disclosure), and thus aren't directly part of the work that the disclosure requirement performs.

22. *See, e.g.*, CRAIG ALLEN NARD, THE LAW OF PATENTS 87 (2d ed. 2011).

revolve around one of these two purposes to the exclusion of the other.[23] As explained in Parts III and IV, this separation has consequences, both for how we understand the disclosure requirement and proposals to improve the law.[24]

One school of thought about the disclosure requirement focuses on the role it plays in teaching the public about new technological advances.[25] This approach tends to be directed at examining the informational benefit to society that patents and the patent system provide.[26] Jeanne Fromer explains the benefits of patent disclosures as seen through this lens:

> Disclosure of information about inventions stimulates productivity in at least two ways. First, it permits society at large to apply the information by freely making or using the patented invention after the expiration of the patent. Second, the disclosure can stimulate others to design around the invention or conceive of new inventions—either by improving upon the invention or by being inspired by it—even during the patent term.[27]

Other recent scholarship has drawn on this rationale for requiring disclosure. Sean Seymore, in particular, has developed a substantial and important body of work directed at enhancing the teaching function of

---

23. Although the general trend has been to focus on one or the other function of the requirement, it would be an overstatement to suggest that the two approaches operate as if in the dark of each other. In addition, Robin Feldman's article, *The Inventor's Contribution*, presents an argument against a separate written description requirement that recognizes the dual functions the disclosure requirement serves to some with these dual purposes (although notably it comes at the earlier end of the scholarship discussed in this Essay and thus tends to illustrate rather than undermine the trend toward separation of the two purposes). *See* Robin Feldman, *The Inventor's Contribution*, 6 UCLA J.L. & TECH. 1, 22 (2005).

24. It is worth noting that there may be a pragmatic reason for this tendency. The "teaching" function of the disclosure requirement is frequently deployed as a justification for the patent system itself, *see, e.g.*, Jonas Anderson, *Secret Inventions*, 26 BERKELEY TECH. L.J. 917, 941 (2011), while the commensurability function of the disclosure requirement is generally applied in an effort to understand how the multiple components of the patent system operate together to create a coherent whole, *see, e.g.*, Jeffrey A. Lefstin, *The Formal Structure of Patent Law and the Limits of Enablement*, 23 BERKELEY TECH. L.J. 1142, 1150–51 (2008) (envisioning patent disclosure as an axiom of a conceptually ordered system of patent law). This is at best merely an explanation, however, and it fails to resolve the inherent duality of the disclosure requirement's purposes.

25. For examples of this type of scholarship, see e.g., Alan Devlin, *The Misunderstood Function of Disclosure in Patent Law*, 23 HARV. J.L. & TECH. 401, 410–11 (2010); Fromer, *supra* note 2, at 548; Lisa Larrimore Ouellette, *Do Patents Disclose Useful Information*, 25 HARV. J.L. & TECH. 545 (2012); Sean B. Seymore, *Making Patents Useful*, 98 MINN. L. REV. (forthcoming 2014) [hereinafter *Making Patents Useful*], *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2228956; Sean B. Seymore, *The Teaching Function of Patents*, 85 NOTRE DAME L. REV. 621 (2010) [hereinafter *Teaching Function*].

26. *See* Fromer, *supra* note 2, at 548.

27. *Id.* at 548–49. Professor Fromer continues on: "It is these uses of disclosure—for inventing around, improving upon, and inspiring both during and after the patent term, and for copying after the patent term—with which this Article is concerned." *Id.* at 549.

patents.[28] At the same time, critiques of patents' teaching function have proliferated, as scholars question whether current formulations of the disclosure requirement provide the public with any useful information about new technologies.[29]

Weaknesses in the teaching function of patent disclosures are primarily what reform proposals from Lisa Ouellette,[30] Jeanne Fromer,[31] and Sean Seymore[32] seek to remedy. At their core, these proposals attempt to answer questions such as: How can we get more informational bang out of patent disclosures? How can we ensure that patents actually provide useful information that advances the state of the art? On the flip side, what are the costs of a more robust disclosure requirement, or allowing for a more potent experimental use defense, or a higher threshold for willful infringement? Do the costs of increasing the teaching value of patents (such as a reduced incentive to invent) outweigh the additional benefits that more useful teachings might provide?

The second school of thought focuses on the role of the disclosure requirement in keeping claim scope on a leash.[33] This approach involves analyzing whether current legal doctrines relating to disclosure do a good or poor job of limiting the inventor to what she actually invented, a concept referred to as "commensurability."[34]

Scholars who focus on commensurability are less concerned with how much benefit society gets from the informational content of the patent and more focused on how broad the inventor's rights should be based on the disclosure. In *The Formal Structure of Patent Law and the Limits of Enablement*, for example, Jeffrey Lefstin explores whether the

---

28. *See generally Making Patents Useful*, *supra* note 25 (emphasizing the teaching function of patent disclosures as a central purpose of the patent system); *Teaching Function*, *supra* note 25.

29. One extreme example is Alan Devlin's argument that "one can safely conclude that society is better off with a patent system that incentivizes invention and commercialization without requiring disclosure than with a system that dilutes ex ante incentives and reduces the incidence of invention by demanding as much disclosure as possible." Devlin, *supra* note 25, at 406. For other examples of criticisms that patents fulfill a teaching function, see Rantanen, *supra* note 21, at 5 n.10.

30. *See* Ouellette, *supra* note 25, at 590–601 (offering proposals to improve the teaching function of patents).

31. *See* Fromer, *supra* note 2, at 564 (suggesting restructuring the patent document as a way to overcome its inadequacy as a teaching document).

32. *See Teaching Function*, *supra* note 25, at 641–56 (proposing a working example requirement to improve the teaching function of patents).

33. For examples of this type of scholarship, see Timothy Holbrook, *Patents, Presumptions, and Public Notice*, 86 IND. L.J. 779, 823 (2011) [hereinafter *Patents, Presumptions, and Public Notice*]; Holbrook, *supra* note 1; Lefstin, *supra* note 24.

34. *See, e.g.*, NARD, *supra* note 22, at 87 (noting that "a specification can . . . describe an invention without enabling the practice of the full breadth of its claims").

enablement doctrine "can satisfactorily limit claim scope in our modern peripheral claiming system or whether additional constraints—such as the written description requirement—are necessary to limit claim scope based on the inventor's disclosure."[35] Professor Lefstin concludes that enablement cannot do so by itself; that is why a separate written description doctrine is necessary.[36] Timothy Holbrook's work, on the other hand, argues that enablement alone must accomplish this task, as "the use of enablement to show possession is more consistent with the theoretical underpinnings of the patent system and would provide greater certainty and consistency."[37] Although reaching opposite conclusions as to whether there is a need for a formally separate written description doctrine within the broader framework of disclosure, Professor Lefstin's and Professor Holbrook's works approach the disclosure requirement as a scope-limiting mechanism, not a mandatory teaching requirement.

Reform proposals are directed to this end: Professor Lefstin, for example, suggests elevating the definitional content of the disclosure.[38] The effect would be to better identify the boundaries of the right to which the inventor is entitled. Professor Holbrook's more recent work advocates for the use of presumptions to address the challenge presented by the dual legal and technical nature of patents.[39] These presumptions would improve the public notice role of patents by balancing legal certainty with the role of the person having ordinary skill in the art, thus better serving the disclosure function of patents.[40]

III. HOW THE TEACHING AND SCOPE LIMITING PURPOSES OF THE DISCLOSURE REQUIREMENT ARE INTERTWINED

The gradual ossification of these two purposes has led to two distinct tracks that head off on their own; each branch emphasizes one of the two purposes to the exclusion of the other. Yet as discussed below, this tendency to disentangle the purposes of patent law's disclosure requirement is unnecessary and may lead in the wrong direction when proposing patent law reforms. The better view from both a descriptive and normative perspective is to recognize that the two purposes are intertwined and any changes adopted with the intent to affect one will

35. Lefstin, *supra* note 24, at 1159.
36. *Id.*
37. Holbrook, *supra* note 1, at 163.
38. Lefstin, *supra* note 24, at 1215–22 (explaining the contours of a definitional information requirement).
39. *Patents, Presumptions, and Public Notice*, *supra* note 33, at 823.
40. *Id.* at 808.

inevitably affect the other.

When scholars talk about the teaching function of patents, they are focusing on the question of whether the exclusive rights provided by a patent can be justified on the ground that it puts the public in possession of information about new technological advances.[41] In this view of the disclosure requirement, its purpose is to provide a benefit from having a patent system at all: the benefit of information about technological advances. Society must pay for that information, however, and it does so in the form of the exclusive rights that are claimed by the inventor. The cost of the information might be small or it might be great, but whatever the price, the claims must still be linked to the information itself. It is the claimed scope that dictates what information the inventor must give to the public.

Put another way, a patent is not required to be a general-purpose teaching tool about a technological advance or to describe the theoretical underpinnings of innovation at a particular cutting-edge of technological change; it is merely required to provide information about the invention that the applicant is claiming. Thus, the "teaching" function of patents asks whether each patent is providing adequate information about what the inventor is actually claiming.[42] When focusing on the issue of disclosure from the standpoint of teaching, the question is, "How much information about the claimed invention has the inventor provided, and is it sufficient?"[43]

This question leads to a corollary proposition: the concept of

---

41. To be fair, we are really talking about whether the informational disclosure is at least a partial justification for the existence of a patent system. As Mark Lemley and others have demonstrated, it is difficult to support the patent system by reference to a singular theory of patent law. *See, e.g.*, Mark A. Lemley, *The Myth of the Sole Inventor*, 110 MICH. L. REV. 709 (2012).

42. While from a formal doctrinal perspective, "teaching" lends itself to being easily articulated in enablement terms, given the current standard, *see* Wyeth v. Abbott Labs., 720 F.3d 1380, 1384 (Fed. Cir. 2013) ("A patent's specification must describe the invention and '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 . . . to make and use the same.'" (citation omitted)), written description can fill this role as well. *See* Capon v. Eshhar, 418 F.3d 1349, 1357 (Fed. Cir. 2005) ("The 'written description' requirement implements the principle that a patent must describe the technology that is sought to be patented; the requirement serves both to satisfy the inventor's obligation to disclose the technologic knowledge upon which the patent is based, and to demonstrate that the patentee was in possession of the invention that is claimed."). For example, the written description doctrine aids the teaching role of patents by providing for greater concreteness of disclosure, which may make the information more comprehensible.

43. In case it is not clear, all of these questions are asked from the vantage point of a person of skill in the art. *See* Janis & Holbrook, *supra* note 2, at 114. While recognizing the use of this heuristic device, however, Holbrook and Janis also offer a critique of whether this heuristic has been meaningfully implemented in the disclosure context. *See id.* at 115.

commensurability asks whether, given what the inventor disclosed, the inventor is entitled to what she has claimed.[44] Commensurability is based on the idea that we can determine what rights the inventor should be entitled to based on how much information the inventor has disclosed; in other words, how broad should the maximum possible scope of rights that the public will give to the inventor be? Commensurability is a way to limit the exclusive rights that the inventor receives; to tailor the exclusive rights to the information the inventor actually gave the public about the invention. Furthermore, because the breadth of patent scope is really just another way of thinking about how much society should pay for the invention,[45] commensurability analysis is thus effectively concerned with limits on the costs society pays for the information about the invention that it receives. If the inventor provides broad and adequately detailed information about a new technological advance, the inventor can receive broad rights, subject to prior art constraints. If the inventor provides only a narrow slice of information, or broad but shallow information in an area of technology where there is little pre-existing knowledge, the inventor is limited to narrow rights or no rights at all.[46]

Thus, the dual purposes can be conceptualized as follows: the teaching function of the patent system is concerned with the public's access to information about a claimed invention, while commensurability refers to the way we limit the size of the payment that the public makes for that

---

44. Robin Feldman articulates a similar duality, noting that "[t]he analysis of the inventor's contribution can be conceptualized either as a question of whether the inventor gave enough to receive rights or as a question of the scope of rights that the inventor will receive." *See* Feldman, *supra* note 23, at 23.

45. This is the case because broader patent rights mean more that society is granting greater exclusive rights that will restrict competitors and thus permit greater supracompetitive pricing.

46. Just as with the teaching function of the disclosure requirement, this purpose can be effectuated through either the doctrine of enablement or the doctrine written description. *Wyeth* provides an example of how enablement can fulfill a scope-limiting role: the court rejected Wyeth's attempt to claim a broad genus of compounds by concluding that a person of skill in the art would be unable to practice the full scope of the claims without undue experimentation. 720 F.3d. at 1385–86. In written description terms, *Ariad* illustrates how written description can fulfill this role via the "possession" inquiry. Ariad Pharm., Inc. v. Eli Lilly & Co., 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). *Wyeth* is particularly interesting in that the disclosure issue was presented to the Federal Circuit in both enablement and written description terms, with the court choosing to address it within the doctrinal framework of enablement. *Compare Wyeth*, 720 F.3d at 1381 (holding that the claims at issue "are invalid for nonenablement"), *with* Wyeth v. Abbott Labs., Nos. 08-230 (JAP), 08-1021 (JAP), 2012 WL 175023, at *1 (D.N.J. Jan. 19, 2012) (finding the patents at issue "invalid for failing to meet the written description and enablement requirements"). Herein lies the value of separately articulated enablement and written description doctrines: it is not that they are formally distinct requirements, but rather different lenses for addressing the same issue. Sometimes the issue will be better perceived through one lens; sometimes a different lens makes the picture clearer.

information.[47] Figure 1 illustrates this relationship:

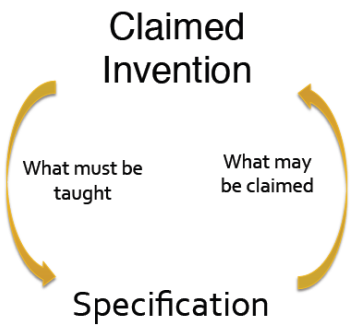

Figure 1

Importantly, although the teaching and commensurability functions of the disclosure requirement can be articulated in different ways, as Figure 1 illustrates they both are linked by the claim and the specification and are ultimately both part of the same equation. And though scholars, courts, lawyers, and policymakers might have many ideas about the purpose of patents—that they are teaching devices, that they improve the quality of the prior art, etc.—under either a teaching or commensurability theory, the analysis ultimately comes down to whether the inventor disclosed sufficient technological information about the claimed invention to be entitled to the rights that she purports to claim. In the end, both purposes are concerned with a single issue: how closely is the disclosed information related to the scope of the claim? The closer the relationship, the more a decision maker can feel comfortable concluding that the disclosure requirement is satisfied. On the other hand, the further the relationship, the less comfortable a decision maker will feel with that conclusion.

IV. CONSEQUENCES FOR IMPROVING THE DISCLOSURE REQUIREMENT

The interrelated nature of the teaching and scope limiting functions of the disclosure requirement discussed in Part III has significant consequences when considering possible options for improving the patent law, carrying the potential for meaningful improvements to the patent system and offers stronger arguments for those reforms.

47. *See Teaching Function*, *supra* note 25, at 621.

Consider a hypothetical proposal based solely on enhancing the teaching function of patents by dramatically ratcheting up the amount of information that must be provided by the inventor. This seems like a worthy goal: if one of the primary benefits flowing from patents is the information they convey to the public domain, requiring that patents provide *more* information would be beneficial to society.[48]

The problem with this hypothetical proposal, however, is that it ignores the other side of the equation: that the scope of the disclosure requirement is necessarily tied to what is claimed, and that is the only mechanism by which the adequacy of the information being disclosed can be measured. Given the intertwined nature of patent law's disclosure requirement, such a proposal would be difficult to implement without a drastic change to the way the disclosure requirement is currently conceptualized. In short, a proposal that merely requires that more technical information be disclosed in the patent document is largely meaningless because there is no way to assess whether that information is sufficient other than by examining its relationship to the exclusive right being granted through the patent.

Other proposals that attempt to untether the patent disclosure's teaching role from its scope-limiting function encounter similar problems. One suggestion by Professor Fromer is to improve the quality of patent teachings by separating the technical and legal components of patents into discrete layers.[49] This proposal seeks to enhance the disclosure as a teaching document by eliminating the confusing jumble of legal and technical assertions that make it difficult for persons of skill in the art—the audience of students being taught by the document—to comprehend the technological advance.[50] The jumble occurs because all parts of the patent document are necessarily written with a legal goal in mind: to maximize claim scope, and thus any technical contributions will be "sanitized, modulated, or otherwise transformed by the legal pencil."[51] Disentangling these layers would allow the technical audience to read its portion, unencumbered by legal jargon.

---

48. Some commentators have argued that requiring more information imposes a cost on inventors that may reduce the incentive to invent. *See* Devlin, *supra* note 25, at 419; *see also* Anderson, *supra* note 24, at 921 (arguing that increased private value increases the incentive to invent). This Essay advances a different argument here: it is not the possibility of increased costs of disclosure that limit our ability to implement a broader disclosure requirement, but rather the lack of any mechanism that does not also fulfill a scope-constraining role.

49. *See* Fromer, *supra* note 2, at 543.

50. *Id.* at 568.

51. *Id.*; *see also Teaching Function*, *supra* note 25, at 629 (discussing the challenges to the teaching function of patents that are posed by the inherent nature of patents as legal documents).

Yet, Professor Fromer's proposal would be difficult to accomplish without a drastic change to the disclosure requirement as it currently exists. Professor Fromer's proposal would require, in essence, a new axis of patentability—the applicant would need to satisfy the current requirement of enablement, and also convince the person having ordinary skill in the art ("PHOSITA")[52] that the technical layer is a meaningful technical disclosure. In the language of the enablement doctrine, this would require separating the requirement itself into two distinct components: one that relates to the claimed invention, and the other that is a self-contained technical disclosure measured by a different standard untethered to the patent claim itself. While crafting a new "quality of the technical teaching" requirement for patents could be a possible solution, there are currently no doctrinal levers to enforce such a requirement, at least in terms that allow it to be severed from the commensurability approach to disclosure.[53]

Furthermore, since claims are a set of legal boundaries, written in a special language that has more meaning to lawyers than it does to technologists, there will inevitably be a gap between what a PHOSITA reading the patent would desire to learn from it and what is actually required to satisfy the law. For this reason, proposals to enhance the teaching function of patents that go beyond the invention as it is actually claimed are likely to be futile. While it might be beneficial from an information dissemination point of view if patents were as useful as a scientific or technical article, the reality is that the disclosure requirement was never intended to make patents look like scientific or technical articles—it simply requires that the relatively narrow advance that the

52. A PHOSITA is a hypothetical construct similar to that of the "reasonable person" that is employed in a variety of contexts in patent law in order to provide an objective standard. As an example, the requirement of nonobviousness is measured based on whether the claimed invention would have been obvious to a person having ordinary skill in the art before the patent's filing date. *See* 35 U.S.C. § 103 (2012). For a further discussion about the nature of the PHOSITA, see *infra* note 66.

53. As a more extreme example, consider Alan Devlin's suggestion that a patent system without a disclosure requirement would be better than a patent system with any disclosure requirement. *See* Devlin, *supra* note 25, at 406. While such a patent system might make sense when viewed from the perspective of disclosure-as-teaching, its implausibility becomes clear when viewed through the lens of disclosure-as-scope limiting. While one might plausibly argue that the patent system cannot be justified on the ground that it provides valuable disclosures of technological advances, it is impossible to uncouple the teachings of the patent from the exclusive rights that the inventor receives. In order for an inventor to obtain an exclusive right over an invention, he must necessarily disclose the information about that invention at least somewhere. Because patent scope and disclosure are necessary intertwined, proposals to eliminate the requirement of disclosure are ultimately futile: society cannot give an exclusive right if the boundaries of that right are as amorphous as smoke.

inventor is claiming be taught at a level sufficient to practice that advance. This, alone, is always likely to place an outer boundary on the teaching value of patents.

All is not lost, however. Looking at both sides of the disclosure equation allows for the identification of proposals that are likely to enhance both the teaching and scope limiting functions of the requirement, thus resulting in generally higher quality disclosures. Seen through the dual teaching-scope limiting lens, proposals such as Professor Lefstin's suggestion that patent applicants be obligated to provide definitional information would enhance both the teaching and commensurability functions of the patent disclosure requirement.[54] This requirement enhances the claim scope purpose of the disclosure requirement because it "not only anchors the patent right at a particular level of generality but also serves to more precisely define the boundaries of the patent."[55] But an obligation to provide definitional information carries a benefit from a teaching perspective as well: satisfying the requirement can necessitate identifying additional representative members of that genus or properties that are common to the genus.[56] This

54. While including definitional information and examples in patents is a best practice for patent drafters, those definitions are typically deliberately crafted so as to be non-limiting. Lefstin's proposal goes further: it takes the definitions and examples and other information provided in the specification and uses them to anchor inventors to a particular level within the hierarchy of definitional genera. Lefstin, *supra* note 24, at 1212. The drafter's choice of non-limiting language thus becomes irrelevant; the information that is actually provided is what becomes important.

55. *Id.* at 1219.

56. Consol. Elec. Light Co. v. McKeesport Light Co., 159 U.S. 465 (1895) (*The Incandescent Lamp Patent Case*), provides a classic example of how definitional information of the type Lefstin discussed can both enhance the technical teaching of the patent disclosure and fulfill a scope constraining function. In holding Sawyer and Man's patent invalid, the Court commented:

> If, as before observed, there were some general quality, running through the whole fibrous and textile kingdom, which distinguished it from every other, and gave it a peculiar fitness for the particular purpose, the man who discovered such quality might justly be entitled to a patent; but that is not the case here. An examination of materials of this class carried on for months revealed nothing that seemed to be adapted to the purpose, and even the carbonized paper and wood carbons specified in the patent, experiments with which first suggested their incorporation therein, were found to be so inferior to the bamboo, afterwards discovered by Edison, that the complainant was forced to abandon its patent in that particular, and take up with the material discovered by its rival.

Id. at 475–76. If Sawyer and Man had provided the definitional information ("some general quality, running through the whole fibrous and textile kingdom, which distinguished it from every other and gave it a peculiar fitness for the particular purpose"), they not only would have been entitled to a broader claim scope but would have provided a greater teaching that would have allowed persons of skill in the art to avoid the costs discussed in the remainder of the passage. *Id.* Because they did not, the Court declined to hold the broad claims valid. *Id.*

information can then be used by other persons of skill in the art in their own technological and scientific endeavors.

Another possibility would be to mandate improvements to the communicatory content required of patent documents; in other words, to require the authors of those documents to write more clearly. Consider the use of "patentese," the "specialized language that patents are written in."[57] It is neither proper English nor technical language; it consists of indeterminate and deliberately confusing language chosen in order to maximize potential claim scope by characterizing the invention in broad terms and avoid being pinned down.[58] While some instances of patentese may actually involve a specific and widely accepted meaning among attorneys,[59] which at least means that *someone* can understand what is being said, many others use deliberately ambiguous words at whose meaning one can only weakly flail.[60]

Professor Seymore proposes stripping away the patentese from patents, although his proposal to achieve that goal—imposing a working example requirement—seeks to accomplish this via an indirect route.[61] There is room to approach the problem of patentese more directly by directly disincentivizing its use, either through a presumption that

---

57. *Teaching Function*, *supra* note 25, at 633–34. In this context, this Essay refers to "patentese" as the jargon and wiggle-words that patent drafters use when drafting specifications and claims rather than terms in substantive patent law (such as "written description" and "PHOSITA," terms used to refer to aspects of patent law doctrine). For a discussion of the latter, see Jed S. Rakoff, *Down With Patentese*, 21 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 839 (2011).

58. *See Teaching Function*, *supra* note 25, at 633–38 (describing patentese).

59. In many instances, patentese can have a specific meaning for patent attorneys; the terms "consisting of" and "comprising" are classic terms of art in patent law. *See* PATENT EXAMINING PROCEDURE, *supra* note 13, § 2111.03, at 2100–45 to 2100–47. Given that the intended audience for the technical disclosures of patents consists of persons of skill in the art, however, we ought not to be asking whether the terminology used in patents has a special meaning known only to patent agents and attorneys, but whether it has any meaning to those of skill in the art.

60. Terms such as "substantially" are prime examples. *See, e.g.*, Aventis Pharm. Inc. v. Amino Chems. Ltd., 715 F.3d 1363, 1374 (7th Cir. 2013) (construing "substantially pure" to have different meanings in different claims). One infamous example of a patent that uses patentese to obscure a simple concept is U.S. Patent No. 6,799,399 (filed Nov. 25, 2002) (burial structure for the interment of human remains and significant memorabilia). Professor Seymore provides other examples of patentese in *Teaching Function*, *supra* note 25, at 633–38. As Federal Circuit judges have themselves recognized, the use of patentese is often a deliberate drafting tactic. *See* Enzo Biochem, Inc. v. Applera Corp., 605 F.3d 1347, 1348 n.2 (Fed. Cir. 2010) ("Broad, to the point of inherently ambiguous, claim drafting is not just a matter of poor drafting skills on the part of some lawyers who prosecute patent applications. On the contrary, the art of broad claim drafting is a prized talent . . . .").

61. *See Teaching Function*, *supra* note 25, at 641. While I agree with Professor Seymore that the use of real examples is one of the best ways to teach a subject, there is room for the law to go further in requiring clarity in terms of patent document writing.

patentese cannot satisfy the disclosure requirement[62] or more directly by concluding that patentese does not constitute a meaningful technical disclosure. Judges and juries are smart enough to recognize many instances of meaningless techno-legal-babble.[63] The same applies to poor writing or ineffective examples—if no reader can reasonably understand the patent or claims, courts should not try to over-read the written material.[64] Not everything that is written down is necessarily right, useful, or comprehensible.[65]

Another area for improving patent disclosures would be to look outside the patent document itself to the purported audience of the disclosure: the person having ordinary skill in the art to which the patent pertains.

Currently, the law engages in some fiction when it comes to dealing with PHOSITAs.[66] It pretends that not only is the person having ordinary skill in the art knowledgeable about the relevant technical matters, but that she also understands a fair bit about the law and the way the law intersects with that technological knowledge. Claim construction illustrates this dimension of how the law treats the PHOSITA: claims are

---

62. This Essay borrows the idea of using presumptions in the disclosure context from Professor Holbrook, who addresses the subject in more detail in *Patents, Presumptions, and Public Notice*, *supra* note 33, at 779–80, 784, 823–24. As I envision the presumption here, it could also apply at the examination level.

63. One critique of this proposal that Sean Tu raised is that it may be difficult to distinguish between "patentese" and legitimate attempts to explain new concepts. There may be difficult cases, but when viewed from the perspective of a PHOSITA, there are also many instances where it is not a close call.

64. Indeed, patents are sometimes treated as if they were divine texts whose underlying truth *must* be present even if it is elusive rather than documents crafted by humans who seek to maximize their business advantages by deliberately using wiggle words. *Cf.* Biosig Instruments, Inc. v. Nautilus, Inc., 715 F.3d 891, 898 (Fed. Cir. 2013) ("A claim is indefinite only when it is 'not amenable to construction' or 'insolubly ambiguous.'" (citing Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1347 (Fed. Cir. 2005))).

65. Along those lines, we might also consider eliminating the single sentence rule for claims, a stricture that has led to many an absurd and Faulkneresque claim.

66. The law actually engages in a lot of fiction when it comes to the PHOSITA—which it generally treats as a hypothetical person. For example, for purposes of obviousness, the PHOSITA is envisioned as having all the world's prior art references available on his desk, even if they are secret. *See* Daralyn J. Durie & Mark A. Lemley, *A Realistic Approach to the Obviousness of Inventions*, 50 WM. & MARY L. REV. 989, 993 (2008) ("[T]he PHOSITA is presumed to be familiar with all of the art in the area of his or her field, even if that art was secret and would not in fact have been known."). But here, I am discussing one specific fiction, that of the PHOSITA's legal understanding. For sources discussing the concept of the PHOSITA, see Jonathan J. Darrow, *The Neglected Dimension of Patent Law's PHOSITA Standard*, 23 HARV. J.L. & TECH. 227 (2009); Rebecca S. Eisenberg, *Obvious to Whom? Evaluating Inventions from the Perspective of PHOSITA*, 19 BERKELEY TECH. L.J. 885 (2004); Janis & Holbrook, *supra* note 2; Joseph P. Meara, *Just Who Is the Person Having Ordinary Skill in the Art? Patent Law's Mysterious Personage*, 77 WASH. L. REV. 267 (2002); John O. Tresansky, *PHOSITA—The Ubiquitous and Enigmatic Person in Patent Law*, 73 J. PAT. & TRADEMARK OFF. SOC'Y 37, 37–38 (1991).

to be interpreted from the perspective of a person of skill in the art,[67] but at the same time, various legal rules and canons affect that meaning.[68] The doctrine of claim differentiation is a term that possesses substantial meaning for a patent lawyer,[69] but probably much less so for a scientist or engineer. Yet the law assumes that a PHOSITA, too, is aware of that meaning as she interprets the patent claims.

This example can be carried through to the contents of the patent's technical disclosure. The law assumes that PHOSITAs understand not just the technical terminology of the patent, but also patent law's operation and terminology. The approach discussed above of enforcing an enablement requirement that penalizes the use of patentese or other terminology unfamiliar to a PHOSITA could be supported from this perspective as well.

An alternative approach would be to teach actual persons having ordinary skill in the art a bit about how the law works. This suggestion is based on the idea that inventors and others practicing in the art would be well served by a better grasp of the way that patents actually work from a legal perspective.[70] Perhaps the reality should come to match the fiction when dealing with issues such as the contents of the patent's disclosure or the scope of claims. For example, issues such as the narrowing effect of definitional language produce consternation because, as others have pointed out, no matter how high the PHOSITA's technical expertise, she will simply not be able to resolve issues of legal or linguistic scope.[71] The fiction then is that courts presume that the

67. Phillips v. AWH Corp., 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc) ("'It is the person of ordinary skill in the field of the invention through whose eyes the claims are construed.'" (quoting Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1477 (Fed.Cir.1998))); *see also* Janis & Holbrook, *supra* note 2, at 99.

68. *See* NARD, *supra* note 22, at 75 (describing canons of claim construction); *see also* ROBERT P. MERGES, PETER S. MENELL & MARK A. LEMLEY, INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE 313–22 (6th ed. 2012) (describing additional canons of claim construction); Timothy Holbrook, *Substantive versus Process-Based Formalism in Claim Construction*, 9 LEWIS & CLARK L. REV. 123, 133–46 (2005) (discussing Federal Circuit claim construction formalism).

69. Claim differentiation refers to the concept that "the presence of a dependent claim that adds a particular limitation raises a presumption that the limitation in question is not found in the independent claim." Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004). It is simply a presumption, however, and can be overcome by other patent law doctrines such as prosecution history disclaimer. *See* Biogen Idec, Inc. v. GlaxoSmithKline LLC, 713 F.3d 1090, 1097 (Fed. Cir. 2013) ("[T]his is a case where prosecution history disclaimer overcomes the presumption of the plain and ordinary meaning as we concluded above.").

70. For a strong example of this how disagreement between those knowledgeable about both law and science and those primarily knowledgeable about science can manifest, see Sean Tu et al., Letter to the Editor, *Legal Analysis of Patent Claims is Required to Determine Pervasiveness of Gene Patents*, GENOME MED. (forthcoming) (draft on file with author).

71. *See* John M. Golden, *Construing Patent Claims According to Their "Interpretive*

PHOSITA is aware of these issues; it would be more realistic if the PHOSITA *actually* were aware of them.

CONCLUSION

The most feasible proposals to improve patent law's disclosure requirement attempt to take into account both sides of the disclosure equation. Attempts to merely adjust the disclosure requirement as it currently exists cannot affect one purpose without affecting the other. Even if one argues that that the patent system cannot be justified on the grounds that it does not actually provide adequate disclosure of technological advances, one cannot uncouple the teachings of the patent from the inventor's exclusive rights. The ultimate issue remains: our system cannot determine the scope of the exclusive right for what was invented unless what was invented is actually disclosed.

Community": A Call for an Attorney-Plus-Artisan Perspective, 21 HARV. J.L. & TECH. 321, 385–86 (2008); *Patents, Presumptions, and Public Notice*, *supra* note 33, at 818–19. Professor Golden suggests moving the framework for assessing patent documents away from the PHOSITA and towards the patent attorney, at least when interpreting claims. Here, this Essay suggests the inverse: giving the PHOSITA a better appreciation of the patent law.