ARTICLE

RETHINKING THE UNITED STATES FIRST-TO-INVENT PRINCIPLE FROM A COMPARATIVE LAW PERSPECTIVE: A PROPOSAL TO RESTRUCTURE § 102 NOVELTY AND PRIORITY PROVISIONS

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I. INTRODUCTION

Patent professionals trained in first-to-file countries wonder why the novelty and priority provisions set forth in 35 U.S.C. § 102 are complex and difficult to understand because the novelty and priority provisions of first-to-file countries are short and simple. Only after studying the historical backgrounds of each provision, and the policy considerations related to the terms used in those provisions, can they understand the complex structure of defining prior art and the unique interpretation given to the terms. However, the more familiar they become with U.S. case law and the policies emphasized by U.S. judges, the more they question whether the United States actually follows the first-to-invent system, which U.S. patent scholars and professionals claim to follow.[1] The policies U.S. judges emphasize are similar to the policies emphasized by first-to-file patent systems. Furthermore, the examination practice followed by the United States Patent and Trademark Office (USPTO) is very similar to that of patent offices in first-to-file countries.[2]

Nevertheless, many U.S. commentators emphasize a well-established perception that the first-to-invent principle favors small inventors, and therefore argue against adopting a first-to-file system like those adopted by most other countries.[3] The adherence by the United States to the first-to-invent principle

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1. Many commentators compare the U.S. first-to-invent system with the first-to-file systems, presuming that they are very different. *See, e.g.*, Stephanie Gore, Comment, *"Eureka! But I Filed Too Late . . .": The Harm/Benefit Dichotomy of a First-to-File Patent System*, 1993 U. CHI. L. SCH. ROUNDTABLE 293, 305–09 (1993) (comparing and contrasting the first-to-invent and first-to-file systems in terms of the harms and benefits of each as defined from a natural rights baseline).

2. Refer to Part II.B *infra*.

3. *See, e.g.*, Ned L. Conley, *First-to-Invent: A Superior System for the United States*, 22 ST. MARY'S L.J. 779, 782–89, 792–93 (1991).

creates a significant obstacle to the creation of a global patent system.[4] The United States was criticized by its trading partners, principally Europe and Japan, when it suddenly withdrew from international negotiations to execute the Patent Law Treaty[5] that would have led the United States to give up its first-to-invent system.[6] This strong resistance against the adoption of the first-to-file principle is motivated by the belief that a first-to-invent system favors small inventors.[7]

On its face, the § 102 novelty and priority provisions under the U.S. first-to-invent policy are very different from novelty and priority provisions under the first-to-file principle. The first provision defining novelty in § 102(a) sets forth a determination of novelty as of the invention date, and § 102(g) provides a rule that determines priority based on the date of first invention rather than the date of the first application.[8] However, are all these differences in fact real? Are these differences so fundamental and thus irreconcilable with concepts of novelty and priority under the first-to-file principle?

This Article first examines the novelty and priority provisions of first-to-file countries, and then compares them with U.S. counterparts to identify major differences and determine why these differences result.[9] The Article discusses the origins of the complex structure adopted by § 102 to define prior art and the difficult interpretation given to terms used in the novelty definition.[10] This Article then reviews the USPTO's practice of the novelty examination and the priority determination in interference proceedings.[11] This review confirms the first-to-file patent professional's perception that the United States, in fact, follows the first-to-file principle, although it also provides an exception to first-to-invent. Further, this Article will reveal that

4. Kim Taylor, Note, *Patent Harmonization Treaty Negotiations on Hold: "The First to File" Debate Continues*, 20 J. CONTEMP. L. 521, 544–45 (1994) (concluding that without concessions of equal magnitude from first-to-file countries, the United States is unlikely to sacrifice its first-to-file system).

5. Patent Law Treaty, June 1, 2000, 39 I.L.M. 1047, *available at* http://www.wipo.int/clea/docs/en/wo/wo038en.htm (last visited July 25, 2002).

6. *See* Taylor, *supra* note 4, at 525–26 (noting that the decision by the United States to put patent harmonization treaty negotiations indefinitely "on hold" in 1994 was due in substantial part to an unwillingness to dispose of its first-to-invent system in favor of a first-to-file system).

7. *See* Conley, *supra* note 3, at 782–88, 792 (arguing that small inventors would be harmed by a first-to-file system because they would have to file their invention before they have had the chance to fully develop it).

8. *See* 35 U.S.C. § 102(a) (2000); *id.* § 102(g).

9. Refer to notes Part II.A *infra*.

10. Refer to notes Part II.B *infra*.

11. Refer to notes Part II.C *infra*.

labeling U.S. novelty and priority rules as a first-to-invent approach not only is misleading, but the well-established perception of favoring small inventors does not reflect the reality of USPTO practice.[12]

To protect U.S. inventors from being misled by false perception and labeling and to reflect the USPTO's examination and interference practices and thus make clear the first-to-file principle the USPTO follows, this Article proposes a revision of § 102 by an ad hoc exception showing an invention date with corroborative evidence.[13] Modeling the simple structure used to define novelty and priority in first-to-file countries, the revised § 102 this Article proposes is simple and easily understood by inventors without any knowledge of U.S. case law. To simplify the examination practice further, this Article concludes with a proposal to limit the amount of time and the type of applicants who can establish priority.[14]

II. REVIEW OF NOVELTY AND PRIORITY PROVISIONS

A. *The Simple Structure of First-to-File Novelty and Priority*

1. Novelty. Novelty provisions of major first-to-file countries, namely those of the European Patent Convention (EPC)[15] and Japanese Patent Law (JPL),[16] have simple and short definitions of prior art; any form of disclosure gives rise to the prior art, regardless of the actor of such disclosure. For example, the EPC provides the following definition of novelty:

> (1) An invention shall be considered to be new if it does not form part of the state of the art.
>
> (2) The state of the art shall be held to comprise everything made available to the public by means of a written or oral

12. Refer to notes 187–202 *infra* and accompanying text.

13. Refer to Part III.A *infra*.

14. Refer to Part III.B *infra* (providing examples of modest changes that would limit the scope of the first-to-invent exception without moving completely to a first-to-file system).

15. Convention on the Grant of European Patents, Oct. 5, 1973, art. 54, 1065 U.N.T.S. 255, 272 [hereinafter European Patent Convention] (entered into force on Oct. 7, 1977). The Convention represents the substantive patent law for seven European nations: Germany, Netherlands, United Kingdom, Switzerland, France, Luxembourg, and Belgium. *Id.* at n.1.

16. TOKKYO HO [Japanese Patent Law], Law No. 121 of 1959, arts. 29–30 [hereinafter Japanese Patent Law].

> description, by use, or in any other way, before the date of filing of the European patent application.[17]

The novelty definition of JPL is similar to the EPC definition, except the Japanese definition also lists items that constitute the prior art, including information available via the Internet.[18] Unlike the U.S. provision, neither the European nor Japanese provisions distinguish the definition of prior art by actors and thus do not have separate provisions for the inventor's and others' actions. Terms used to define the prior art are given ordinary meaning. The simple, key concept to make information give rise to prior art is public accessibility.[19] Under the European and Japanese novelty approaches, any information made publicly available in any form of publication anywhere in the world, as of the date of application, constitutes prior art.[20] In other words, European and Japanese novelty does not discriminate between disclosures by the form or the place of disclosure.

Although technically not available as of the application date of the subject matter under examination, first-to-file countries also view subject matter described in an application pending in their own patent office as prior art, provided that the application is later published through an eighteen-month publication, thereby becoming publicly available.[21] This distinction is required

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17. European Patent Convention, *supra* note 15, art. 54, at 272.

18. Japanese Patent Law, *supra* note 16, art. 29 reads:

> (1) Any person who has made an invention which is industrially applicable may obtain a patent therefor, except in the case of the following inventions:
>
> (i) inventions which were publicly known in Japan or elsewhere prior to the filing of the patent application;
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> (ii) inventions which were publicly worked in Japan or elsewhere prior to the filing of the patent application;
>
> (iii) inventions which were described in a distributed publication or made available to the public through electric telecommunication lines in Japan or elsewhere prior to the filing of the patent application.

19. ROMUALD SINGER & MARGARETE SINGER, THE EUROPEAN PATENT CONVENTION 221 (Ralph Lunzer trans., Sweet & Maxwell rev. ed. 1995) (1989) (noting that, when the situation of simultaneous inventors arises, the principle that the right to patent goes to the first to file is limited to the extent that the earlier application must be published).

20. *See, e.g.*, European Patent Convention, *supra* note 15, art. 54, at 272; Japanese Patent Law, *supra* note 16, art. 29(1)(iii).

21. SINGER & SINGER, *supra* note 19, at 165. The European Patent Convention reads:

> (3) Additionally, the content of European patent applications as filed, of which the dates of filing are prior to the date referred to in paragraph 2 and which were published under Article 93 on or after that date, shall be considered as comprised in the state of the art.
>
> (4) Paragraph 3 shall be applied only in so far as a Contracting State designated in respect of the later application, was also designated in respect of the earlier application as published.

European Patent Convention, *supra* note 15, art. 54(3)–(4), at 272.

because the subject matter will soon become publicly available, at least to the patent office. Both the EPC and JPL adopted the "whole contents" approach, making the whole contents of European and Japanese applications the prior art as of the filing date.[22] With respect to applications claiming priority right under the Paris Convention, the whole contents of applications become the prior art as of the priority date.[23]

As an exception to this simple novelty principle, most first-to-file countries provide a grace period provision.[24] One commentator from a first-to-file country defines grace period as a specific period of time prior to the filing of a patent application by the inventor or his or her successor in title, during which time disclosures of an invention do not forfeit a right to patent the invention.[25] Under the first-to-file system, grace period provisions are provided as an exception to the principle that novelty is determined as of the application date. Because grace periods are an exception and not a rule, conditions that allow one to take advantage of the grace period are very restrictive. Among those countries that provide a grace period, the majority, 57%, adopted a six-month grace period; only 30% adopted a one-year grace period.[26] To limit the scope of subject matter that can take advantage of the exception, the vast majority of countries have adopted a disclosure-specific grace period, in which only certain categories of disclosure are qualified to take advantage of a grace period.[27] The most common disclosure-qualified categories include: experimental use, disclosure by an applicant, disclosure by a third party, abuse of right, display at an international exhibition, and presentation at a scientific meeting.[28] Further, applicants cannot take advantage of the system unless they

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22. SINGER & SINGER, *supra* note 19, at 165 (stating that under the European Patent Convention, earlier patent applications constitute prior art even if they do not result in the grant of a patent, as long as the application is published).

23. *Id.* (indicating that, according to the European Patent Convention "whole content approach," the filing date of the first application is the priority date).

24. According to the survey conducted by AIPPI Japan Group, 87% of 121 national and regional patent systems provide for some type of grace period system. Japanese Group of AIPPI, *A Study of Grace Period and Other Conditions of Patentability in National and Regional Patent Systems* (summary report), at 1 (Mar. 2000) [hereinafter AIPPI Study].

25. Joseph Straus, *Grace Period and the European and International Patent Law: Analysis of Key Legal and Socio-Economic Aspects*, 20 IIC STUDIES: STUDIES IN INDUS. PROP. & COPYRIGHT L. 1, 3 (Gerhard Schricker ed., 2001).

26. AIPPI Study, *supra* note 24, at 2.

27. *Id.* at 3–4.

28. *Id.* at 2.

invoke the grace period at the date of application and submit evidence of the claimed subject matter.[29]

One extreme example of the first-to-file grace period is the system under the EPC. The scope of disclosure that can take advantage of the EPC grace period is very limited, and applicants must meet procedural requirements to invoke the system.[30] In contrast, the Japanese grace period is more general than that of the European system and includes a broad range of inventors' activities to take advantage of the system.[31] Under the Japanese

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29. *E.g.*, European Patent Convention, *supra* note 15, art. 55, at 272–73 (mandating that a supporting certificate must be filed if the inventor is to take advantage of the grace period after disclosure at an official exhibition); Japanese Patent Law, *supra* note 16, art. 30(4) (requiring any person seeking an exception for disclosure to file documentation with the patent office commissioner).

30. The EPC provides two categories of disclosures that can take advantage of the grace period:

> (1) For the application of Article 54 a disclosure of the invention shall not be taken into consideration if it occurred no earlier than six months preceding the filing of the European patent application and if it was due to, or in consequence of:
>
> > (a) an evident abuse in relation to the applicant or his legal predecessor, or
> >
> > (b) the fact that the applicant or his legal predecessor has displayed the invention at an official, or officially recognised, international exhibition falling within the terms of the Convention on international exhibitions signed at Paris on 22 November 1928 and last revised on 30 November 1972.
>
> (2) In the case of paragraph 1(b), paragraph 1 shall apply only if the applicant states, when filing the European patent application, that the invention has been so displayed and files a supporting certificate within the period and under the conditions laid down in the Implementing Regulations.

European Patent Convention, *supra* note 15, art. 55, at 272–73.

31. The JPL provides:

> (1) In the case of an invention which has fallen under any of the paragraphs of Section 29(1) by reason of the fact that the person having the right to obtain a patent has conducted an experiment, has made a presentation in a printed publication, has made a presentation through electric telecommunication lines, or has made a presentation in writing at a study meeting held by a scientific body designated by the Commissioner of the Patent Office, such invention shall be deemed not [to] have fallen under any of the paragraphs of Section 29(1) for the purposes of Section 29(1) and (2) to the invention claimed in the patent application which has been filed by such person within six months from the date on which the invention first fell under those paragraphs.
>
> (2) In the case of an invention which has fallen under any of the paragraphs of Section 29(1) against the will of the person having the right to obtain a patent, the preceding subsection shall also apply for the purposes of Section 29(1) and (2) to the invention claimed in the patent application which has been filed by such person within six months from the date on which the invention first fell under any of those paragraphs.
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> (3) In the case of an invention which has fallen under any of the paragraphs of Section 29(1) by reason of the fact that the person having the right to obtain a patent has exhibited the invention at an exhibition held by the Government or by any local public entity (hereinafter referred to as the "Government, etc.") or at one which is not held by the Government, etc. but is designated by the

system, an applicant can take advantage of the grace period not only with subject matter that is identical to the subject matter disclosed prior to the date of application, but also obvious subject matter.[32]

2. Priority. The priority provisions of major first-to-file countries are predicated on a simple rule: a patent should be granted to the first applicant. For example, EPC Article 60, Paragraph 2 provides:

> If two or more persons have made an invention independently of each other, the right to the European patent shall belong to the person whose European patent application has the earliest date of filing; however, this provision shall apply only if this first application has been published under Article 93 and shall only have effect in respect of the Contracting States designated in that application as published.[33]

Because priority is granted based on the date an applicant files an application to be examined by the European Patent Office (EPO),[34] a procedure to decide the priority among more than one

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> Commissioner of the Patent Office, or at an international exhibition held in the territory of a country party to the Paris Convention or of a Member of the World Trade Organization by its government, etc. or by a person authorized thereby, or at an international exhibition held in the territory of a country not party to the Paris Convention nor a member of the World Trade Organization by its government, etc. or by a person authorized thereby where such exhibition has been designated by the Commissioner of the Patent Office, Subsection (1) shall also apply for the purposes of Section 29(1) and (2) to the invention claimed in the patent application which has been filed by such person within six months from the date on which the invention first fell under those paragraphs.
>
> (4) Any person who desires the application of Subsection (1) or the preceding subsection shall submit a written statement to that effect to the Commissioner of the Patent Office simultaneously with the patent application and within 30 days of the filing of the patent application, he shall also submit to the Commissioner of the Patent Office a document proving that the invention that has fallen under any of the paragraphs of Section 29(1) is the invention for which the provision of Subsection (1) or the preceding subsection may be applicable.

Japanese Patent Law, *supra* note 16, art. 30.

32. *Id.* (making the grace period applicable to both types of subject matter).

33. European Patent Convention, *supra* note 15, art. 60(2), at 273. The JPL similarly provides:

> (1) Where two or more patent applications relating to the same invention are filed on different dates, only the first applicant may obtain a patent for the invention.

Japanese Patent Law, *supra* note 16, art. 39(1).

34. The European Patent Office was established under Article 4 of the Convention on the Grant of European Patents. European Patent Convention, *supra* note 15, art. 4, at 259. News, updates, and general information concerning the European Patent Office can be found at http://www.european-patent-office.org (last visited Aug. 29, 2002).

application is unnecessary as long as the dates are clear. When more than two applicants file applications for the same invention on the same date, the EPO gives patents to both applicants.[35]

The Japanese rule is very similar to the European rule, except in the manner that the Japanese rule handles more than one application with the same application date.[36] The JPL requires applicants who filed for the same invention on the same date to negotiate for an agreement to identify one applicant who will obtain the patent.[37] If applicants cannot reach an agreement, the Japan Patent Office (JPO)[38] refuses to give a patent to either party.[39] This practice avoids an expensive proceeding to award the priority among applicants who filed their applications on the same day.

These rules also apply to the determination of priority during the grace period. Under the grace period provisions of first-to-file countries, if a third party files prior to the date of application by the inventor who disclosed the same invention during the grace period, the inventor's application is rejected for being the second to file.[40] If the third party's date of application is after the inventor's date of disclosure, the disclosure destroys the novelty of the third-party application, and thus a patent is granted to neither party.[41]

B. *Complex and Confusing: U.S. First-to-Invent Novelty and Priority*

In contrast to the European and Japanese systems, the novelty and priority provisions under 35 U.S.C. § 102 adopt a complex structure to define the prior art and use confusing terms without giving a clear definition to them. Courts give terms used to define the prior art an interpretation that is vastly different from their ordinary meanings. As a result, these terms are very

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35. SINGER & SINGER, *supra* note 19, at 221 (discussing how the EPC resolves conflicts between two people that have independently invented the same subject matter at issue).

36. Japanese Patent Law, *supra* note 16, art. 39(1) (providing that "[w]here two or more patent applications relating to the same invention are filed on different dates, only the first applicant may obtain a patent for the invention").

37. *Id.* art. 39(4).

38. Information about the JPO is available at http://www.jpo.go.jp/homee.htm (last visited Sept. 15, 2002).

39. Japanese Patent Law, *supra* note 16, art. 39(2).

40. *See, e.g.*, European Patent Convention, *supra* note 15, art. 60(2), at 273; Japanese Patent Law, *supra* note 16, art. 29bis.

41. *See, e.g.*, European Patent Convention, *supra* note 15, art. 54(2), at 272; Japanese Patent Law, *supra* note 16, art. 29.

difficult for inventors to understand without extensive knowledge of U.S. case law clarifying the meaning of terms used in § 102.

1. Novelty.

a. § 102(a) and (b). The U.S. novelty provisions, § 102(a) and (b), determine the novelty of the invention as of the date of invention, thereby making the first-to-invent novelty rule clear.[42] The approach adopted by § 102(a) and (b) is very different from the first-to-file approach of the EPC and JPL, both of which determine the novelty of invention as of the filing date.[43]

However, like the novelty definition of first-to-file countries, § 102(b) defines the prior art as of the date one year prior to the date of application.[44] The substance of the condition provided in § 102(b) removing pre-filing disclosures during a specific period, one year from the filing date, seems to fit the definition of the grace period.[45] However, the significance of a grace period is very different between the U.S. first-to-invent system and the first-to-file systems. Under a true first-to-invent rule, a grace period is not an exception, but a principle, because the novelty is determined as of the date of invention.[46] A true first-to-invent rule requires that a patent office grant a patent on subject matter that was published and has become old prior to the date of application, as long as the subject matter is new and non-obvious as of the invention date.[47] Under such a rule, the subject matter's condition as of the date of filing has nothing to do with its patentability. However, the U.S. patent system does not follow the true first-to-invent rule because it has exceptions to the rule—statutory bars—that prevent inventors from obtaining a patent after the expiration of a grace period once inventors

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42. 35 U.S.C. § 102(a) (2000).

43. *E.g.*, European Patent Convention, *supra* note 15, art. 54(2), at 272; Japanese Patent Law, *supra* note 16, art. 29(1).

44. 35 U.S.C. § 102(b).

45. For the definition of grace period, see Straus, *supra* note 25, at 3. U.S. legal scholars also view the similarity between § 102(b) and first-to-file novelty provisions. *See* MARTIN J. ADELMAN ET AL., CASES AND MATERIALS ON PATENT LAW 206 (1998) (recognizing that § 102(b) statutory bars appear similar to the novelty provisions inherent in first-to-file systems).

46. Canadian patent law long followed this true type of first-to-invent rule until it was revised to adopt a first-to-file rule. Christiana v. Rice, [1931] A.C. 770, 777–79, 782–83 (appeal taken from Can.) (interpreting the Canadian Patent Act of 1923 to hold that the right to a Canadian patent goes to the first inventor regardless of where that invention occurred, even if the first inventor had not made his invention accessible to the public in any way). *See generally* ADELMAN, *supra* note 45, at 318 (explaining the evolution of Canadian patent law).

47. *See Christiana*, [1931] A.C. at 776 (citing the Canadian Patent Act of 1923, which outlined how Canada, a true first-to-invent country, granted patents).

engage in one of the activities listed in § 102(b), (c), or (d).[48] Thus, under the current U.S. first-to-invent rule, granting a patent on subject matter that is disclosed prior to the date of application is a principle; a statutory bar that prevents the patent office from granting a patent on subject matter that is disclosed prior to the grace period is an exception.

As a result, the conditions for taking advantage of the grace period under § 102(b) are much more generous than the conditions under the first-to-file principle. Where § 102 is concerned, there is no restriction on the type of disclosures that can take advantage of the grace period and that are automatically removed from the prior art for examination of both novelty and non-obviousness.[49] Further, the grace period is one year from the actual U.S. filing date,[50] instead of the six-month period adopted by the majority of first-to-file countries.

Compared with the novelty provisions of first-to-file countries, such as the EPC and JPL, 35 U.S.C. § 102 is much more complex and difficult to understand. This complexity results from the types of disclosures listed in both § 102(a) and (b), but that overlap each other. For example, both § 102(a) and (b) list subject matter that may be patented and described in a printed publication.[51] With respect to these disclosures, only the actor distinguishes § 102(a) from § 102(b).[52] If subject matter is patented or described in a printed publication more than one year prior to a third party's date of invention for the same subject matter, an examiner can cite both § 102(a) and (b) to reject the third party's claim for the subject matter.[53] Because the substance of the conditions for § 102(b) is essentially the same as first-to-file novelty in excluding inventors' activities during the grace period, patent professionals wonder why the U.S. patent statute avoids defining the prior art by actors separately, which would remove redundant items of disclosure from the prior art definition.[54] Only after reading early court decisions and finding out the historical reason for separating the prior art definition by

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48. *See, e.g.*, Pennock v. Dialogue, 27 U.S. 1, 23–24 (1829) (clarifying the inventor's rights by positing the principle that an inventor loses the right to a patent if he puts his invention into public use before filing a patent application). Although the concept of a grace period did not yet exist in American patent law at the time of *Pennock*, the Court established that, despite the emphasis on the first-to-invent principle, the first inventor's rights are not without boundary. *Id.* at 22–24.

49. 35 U.S.C. § 102(b) (2000).

50. *Id.*

51. *Id.* § 102(a)–(b).

52. *Id.*

53. *Id.*

54. *Id.*

actors of disclosure can they understand these complex provisions.

The origin of separate provisions by actors can be found in the 1829 *Pennock* case.[55] In *Pennock*, a major flaw of a true first-to-invent system was highlighted when the first inventor publicly used his invention and filed an application only after a competitor started to sell the invention.[56] In interpreting the novelty provision of the 1793 Patent Act, the U.S. Supreme Court, in a decision authored by Justice Story, excluded inventors from the category of persons who knew or used the invention prior to the date of invention.[57] With respect to acts of inventors, reflecting the policy of promoting an early disclosure through patent application, the Court held that inventors were prevented from commercial exploitation of their inventions prior to the date of application to avoid an extension of a statutorily limited patent term.[58] Later, § 102(b) was added to codify this holding regarding an inventors' activity.[59] Following the rationale adopted by Justice Story that the policy of early disclosure only relates to acts of inventors, the U.S. novelty rule provides novelty for inventors and for third parties separately.

Another confusing aspect regarding the definition of the prior art under § 102(a) and (b) is an unclear distinction among the listed subject matter. Although § 102(a) and (b) list "being patented" and "described in a printed publication" separately, both subject matters become the prior art when the subject is made available to the public even in a minimal way.[60] Even

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55. Pennock v. Dialogue, 27 U.S. 1 (1829).

56. *Id.* at 7–8.

57. *Id.* at 18–20.

58. *Id.* at 6–8.

59. 2 DONALD S. CHISUM, CHISUM ON PATENTS § 6.02[1][b], at 6-10 to 6-11 (2002) [hereinafter CHISUM ON PATENTS].

60. For an analysis of "being patented," see *Dulplan Corp. v. Deering Milliken, Inc.*, 353 F. Supp. 826, 832–33 (D.S.C. 1973), *aff'd*, 487 F.2d 459 (4th Cir. 1973), which explains the difference between patents issued on the date the patent is granted as opposed to the date of publication. *See also* 1 CHISUM ON PATENTS, *supra* note 59, § 3.06[4], at 3-111 (noting the importance of foreign patent filing dates when considering novelty under § 102(a), (b), and (d): in the United States the date of patenting is the date the patent is (1) issued to the patentee, (2) available to the public, (3) fully published, (4) effective in terms of the exclusive rights conferred, and (5) effective in terms of the statutory period of the monopoly, while in many foreign patent regimes several of these significant events may occur on different dates). For an analysis of "described in a printed publication," see *In re Hall*, 781 F.2d 897, 899–900 (Fed. Cir. 1986), which held that a doctoral thesis was prior art because it was a printed publication that was available to the public even though the thesis was in a single catalogue index in a single library. *See also* 1 CHISUM ON PATENTS, *supra* note 59, § 3.04[2], at 3-52 to 3-63 (discussing what constitutes a printed publication and to what extent it must be accessible to the public to satisfy statutory bars).

though courts limit the scope of what is patented to claimed subject matter, and they try to distinguish it from being described in a printed publication,[61] as long as the content of a patent is made available to the public, both claimed and unclaimed subject matter become the prior art under § 102(a) and (b) as a printed publication. Further, the narrow view adopted by the majority of U.S. courts is criticized for failing to find a sound justification for distinguishing claimed and unclaimed subject matter in a single document.[62] Therefore, first-to-file patent professionals wonder why the U.S. novelty provision adopts a simple definition tied to public accessibility, instead of listing redundant subject matter definitions.

Moreover, a variety of foreign patents, which are vastly different from U.S. patents, present serious problems.[63] Parties dispute whether foreign patents, whose term and scope of exclusive right are not as extensive as those of U.S. patents, fall within the meaning of "being patented" in § 102(a) and (b).[64] Parties also dispute the date that a foreign patent has become "patented" because the content of a foreign patent does not necessarily become available to the public on the same day that an exclusive right is vested.[65]

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61. *See* Carter Prods., Inc. v. Colgate-Palmolive Co., 130 F. Supp. 557, 566 (D. Md. 1955), *aff'd*, 230 F.2d 855 (4th Cir. 1956) (concluding that information that appears in specifications, but is not actually claimed in the patent, does not constitute prior art); 1 CHISUM ON PATENTS, *supra* note 59, § 3.06[3], at 3-109 to 3-110 (elucidating that the *Carter* rule is prevailing law despite its unsoundness as a matter of policy).

62. 1 CHISUM ON PATENTS, *supra* note 59, § 3.06[3], at 3-110 (asserting that treating some disclosures in a single document, but not others, is unsound when the disclosures are germane to the same subject).

63. *Id.* § 3.06, at 3-100 to 3-114.

64. *See, e.g.*, *In re* Carlson, 983 F.2d 1032, 1034, 1038 (Fed. Cir. 1992) (holding that a German "Geschmacksmuster," or design registration, constitutes a patent for § 102 purposes); Atlas Glass Co. v. Simonds Mfg. Co., 102 F. 643, 646–47 (3d Cir. 1900) (concluding that a Danish "eneret," which means "monopoly," constitutes a patent within the statutory language); Reeves Bros., Inc. v. U.S. Laminating Corp., 282 F. Supp. 118, 134–36 (E.D.N.Y. 1968), *aff'd*, 417 F.2d 869 (2d Cir. 1969) (finding that a "Gebrauchsmuster" (utility patent) constitutes a patent for § 102 purposes).

65. *See In re* Monks, 588 F.2d 308, 308–10 (C.C.P.A. 1978) (addressing whether a British patent takes effect "on the date the complete specification is published or on the date when the patent is sealed"); *In re* Ekenstam, 256 F.2d 321, 322–25 (C.C.P.A. 1958) (holding that a Belgium patent issued on March 31, 1950, but kept secret, did not become a patent until it became available to the public on July 1, 1950); Trico Prods. Corp. v. Delman Corp., 180 F.2d 529, 533 (8th Cir. 1950) (resolving a dispute over the date of an Italian patent); Duplan Corp. v. Deering Milliken, Inc., 353 F. Supp. 826, 829–31 (D.S.C. 1973), *aff'd*, 487 F.2d 459 (4th Cir. 1973) (scrutinizing a French patent whose U.S. application was filed after the French delivery date but prior to its publication); *Ex parte* Fujii, 13 U.S.P.Q.2d (BNA) 1073, 1074–75, 1989 WL 274403 (Bd. Pat. App. & Interf. 1989) (rejecting a patent application on grounds that the date of an unexamined laid-open publication does not qualify for the benefit of a "first filed" application under 35 U.S.C. § 119).

Literally interpreted, subject matter "being known or used" in § 102(a) and subject matter in "public use or on sale" in § 102(b) seem to overlap each other. Although the language of § 102(a) and (b) uses distinct terms, courts interpret the terms "being known or used" and "public use or on sale" in the same way by requiring public access to the subject matter information when an act of a third party is concerned.[66] However, when the terms are interpreted with respect to an act of an inventor, courts distinguish "being known or used" from "public use" or "on sale" because they do not require public access to give rise to "public use or on sale."[67]

Even worse, although the language of § 102(b) does not define an "actor," courts apply this peculiar interpretation of "public use or on sale," including confidential use, only with respect to the acts of inventors.[68] One can understand this distinction only when one investigates U.S. case law and finds that this interpretation is included to prevent inventors from extending the limited patent term by secretly exploiting their inventions.[69] Because third party activities have nothing to do with the policy of encouraging inventors to disclose early, courts give ordinary meaning to "public use or on sale" and require public accessibility and knowledge.[70]

Additionally, U.S. courts introduced another difficulty in interpreting "public use" by developing the experimental-use exception doctrine. The doctrine originates from the 1877 *City of Elizabeth* Supreme Court decision in which the Court found no

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66. For an interpretation of "being known or used," see *Conn. Valley Enters., Inc. v. United States*, 348 F.2d 949, 951–52 (Ct. Cl. 1965), which recognized that "[t]he prior knowledge or use in order to negative novelty must also be accessible to the public." For an interpretation of "public use or on sale," see *W.L. Gore & Assocs. v. Garlock, Inc.*, 721 F.2d 1540, 1549–50 (Fed. Cir. 1983), which refused to find "public use" with respect to subject matter that a third party used secretly.

67. *See* Egbert v. Lippmann, 104 U.S. 333, 336–37 (1881) (concluding that a public use occurred when an inventor gave several completed products to a friend to use for more than two years before applying for a patent on the product); Metallizing Eng'g Co. v. Kenyon Bearing & Auto Parts Co., 153 F.2d 516, 517–18 (2d Cir. 1946) (positing that public use can result "regardless of how little the public may have learned about the invention").

68. *See Metallizing Engineering*, 153 F.2d at 520 (reciting that a condition of an inventor's right to a patent is "that he shall not exploit his discovery after it is ready for patenting" lest he forfeit his right to a patent).

69. *See* Pennock v. Dialogue, 27 U.S. 1, 19–20 (1829) (recognizing that allowing an inventor to publicly exploit an invention and refrain from seeking patent protection until faced with competition contravenes the constitutionally-prescribed policy of promoting the progress of science and the useful arts).

70. *See W.L. Gore*, 721 F.2d at 1549–50 (conceding that secret third party's commercialization of a process without public disclosure does not bar a patent on that process).

public use when the inventor installed his street pavement on the public road to check the durability of the pavement.[71] When U.S. courts find a public use of an invention by the inventor to be experimental, such public use does not fall under the meaning of "public use" in § 102(b).[72] However, nothing in the patent statute mentions exclusion of public experimentation.[73] Thus, only those

71. City of Elizabeth v. Am. Nicholson Pavement Co., 97 U.S. 126, 134–35 (1877) (finding a six-year use prior to the filing of a patent to be experimental).

72. *See* 2 CHISUM ON PATENTS, *supra* note 59, § 6.02[7], at 6-123 to 6-124 (noting "that activity that would otherwise constitute the placing of an invention in 'public use' or 'on sale' will not trigger the [§] 102(b) statutory bar if the use or sale was incidental to experimentation"); Eric M. Lee, *Public Use and On Sale Issues Arising from Clinical Testing of Medical Devices*, 75 J. PAT. & TRADEMARK OFF. SOC'Y 364, 367–77 (1993) (examining whether clinical testing of a medical device results in a public use or on sale bar); Herbert H. Mintz & Richard B. Racine, *Anticipation and Obviousness in the Federal Circuit*, 13 AM. INTELL. PROP. L. ASS'N Q.J. 195, 198–203 (1985) (reviewing the Federal Circuit's analysis of § 102 and recognizing the "substantial development" in federal case law involving the on sale and public use bars); Charles F. Pigott, Jr., *The Concepts of Public Use and Sale*, 49 J. PAT. OFF. SOC'Y 399, 411–26 (1967) (summarizing the courts' application or refusal to apply the experimental use exception); William C. Rooklidge & Matthew F. Weil, *The Application of Experimental Use to Design Patents: A Square Peg in a Round Hole*, 77 J. PAT. & TRADEMARK OFF. SOC'Y 921, 921–22 (1995) (criticizing the Federal Circuit's approach to the experimental use exception as negating the public use and on sale bars to patentability); William C. Rooklidge & W. Gerard von Hoffmann, III, *Reduction to Practice, Experimental Use, and the 'On Sale' and 'Public Use' Bars to Patentability*, 63 ST. JOHN'S L. REV. 1, 5–49 (1988) (chronicling the genesis and development of the on sale and public use bars and proposing a simple test for each bar that would incorporate the bars' underlying policies and "the analytical framework of the Supreme Court's early cases"); Gerald T. Welch, *Patent Law's Ephemeral Experimental Use Doctrine: Judicial Lip Service to a Judicial Misnomer* or *the Experimental Stage Doctrine*, 11 U. TOL. L. REV. 865, 866–92 (1980) (critiquing the courts' application of the experimental use doctrine, and asserting that the courts actually employ a reasonableness standard in tandem with the doctrine, effectively creating an "experimental stage doctrine"); Charles C. Wells & Wayland H. Riggins, *Public Use and Sale as a Bar to Obtaining a Patent and Its Application to Government Activities*, 18 AM. U. L. REV. 43, 51–57 (1968) (analyzing the public use bar and the experimental use exception as they apply to research and developmental projects of the federal government); Roger M. Fitz-Gerald, Comment, *Experimentation and Public Use of Inventions—An Analysis of Appellate Anemia*, 1960 U. ILL. L. F. 585, 585–89 (1960) (advancing that the two inconsistent theories underlying the experimental use doctrine—the "exclusion theory" and the "exception theory"—have been applied without distinction by the appellate courts, resulting in "an improper adjustment of the complementary goals of development and disclosure"); Note, *The Public Use Bar to Patentability: Two New Approaches to the Experimental Use Exception*, 52 MINN. L. REV. 851, 852–71 (1968) (canvassing the problems faced by the courts in applying the experimental use exception); Jay David Schainholz, Note, *The Validity of Patents After Market Testing: A New and Improved Experimental Use Doctrine?*, 85 COLUM. L. REV. 371, 373–95 (1985) (examining the treatment of market testing under the experimental use doctrine and advocating a more liberal application of the doctrine in the case of market testing); John C. Vassil, Note, *Public Use: The Inventor's Dilemma*, 26 GEO. WASH. L. REV. 297, 298–311 (1958) (illustrating the courts' inability to distinguish between experimental use and public use and commenting on the difficulties faced by inventors when attempting to take advantage of the experimental use exception).

73. *See* 35 U.S.C. § 102(b) (2000).

who are familiar with U.S. case law understand that the term "public use" includes a secret use but excludes public experimental use when an inventor's act is concerned.

These doctrines relating to the interpretation of "public use or on sale" introduce uncertainty to the validity of U.S. patents. First, inclusion of secret commercial use within the meaning of "public use or on sale" introduces a significant uncertainty in U.S. patent validity. Although the duty of disclosure requires patentees to disclose such use,[74] it is impossible for the patent office or competitors to show that the inventor in fact used the invention more than one year from the date of application if the inventor fails to disclose the use. Such use is only revealed through discovery when the inventor tries to enforce his patent despite his violation of the duty to disclose.

Uncertainty in patent validity also results from a difficulty in applying the doctrines. To prevent inventors from extending the grace period by drafting a claim slightly different from subject matter that was in "public use or on sale," U.S. courts apply a different and relaxed identity standard for the claimed invention and the disclosed subject matter under § 102(b).[75] However, there are still some courts that use the same standard used for § 102(a) novelty, which requires all elements of the claim to be in the prior art.[76]

Another difficulty results from a common-sense requirement that an invention must be complete to make an offer to sell.[77] However, U.S. courts struggle to clarify the degree of an invention's completeness that is required in order to be defined as commercial activity with respect to the invention that will give rise to "on sale."[78] Both courts and parties are confused by the

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74. 37 C.F.R. § 1.56 (2000).

75. *See, e.g.*, Tool Research & Eng'g Corp. v. Honcor Corp., 367 F.2d 449, 454 (9th Cir. 1966). For a general discussion of prior art, see Edward C. Walterscheid, *The Ever Evolving Meaning of Prior Art (Part 6)*, 65 J. PAT. OFF. SOC'Y 658, 659–78 (1983) and Alton D. Rollins, Comment, *Loss of Right as "Prior Art,"* 63 J. PAT. OFF. SOC'Y 663, 665–66 (1981).

76. *See, e.g.*, Delong Corp. v. Raymond Int'l, Inc., 622 F.2d 1135, 1141–43 (3d Cir. 1980).

77. This requirement is known as the "on hand" doctrine. 2 CHISUM ON PATENTS, *supra* note 59, § 6.02[6][a], at 6-71 to 6-75.

78. For a discussion of U.S. courts' attempts to clarify the on sale bar doctrine, see Vincent J. Allen, Comment, *The On Sale Bar: When Will Inventors Receive Some Guidance?*, 51 BAYLOR L. REV. 125, 131–46 (1999) (pulling together the various methods used by the courts in applying the on sale bar); Jonathan Pavlovcak, Note, *The Clock Starts Running Before Substantial Completion*—Pfaff v. Wells Electronics, Inc., 17 TEMP. ENVTL. L. & TECH. J. 177, 179–82 (1999) (discussing the *Pfaff* ruling); Note, *Supreme Court Finds Invention Was "On Sale" Before It Was Made*, 11 SOFTWARE L. BULL. 236 (1998) (reporting on the Supreme Court's ruling in *Pfaff*, which declared an inventor's

concepts used to determine the completion of invention, which are similar to the concepts used for interference—conception and reduction to practice—and the concepts used for the on sale bar—an invention on hand for sale—although interference practice and the on sale bar relate to different policies.[79] Although the Supreme Court announced a "ready for patenting" standard to replace the Federal Circuit's "substantial completion" standard, supposedly to bring more certainty,[80] parties still dispute the definition of "ready for patenting" in relation to conception and reduction to practice.[81]

Another factor that causes difficulty in the application of the doctrines associated with "public use or on sale" is the requirement of commercial nature in inventors' acts.[82] To give rise to "on sale," courts only require an offer to sell and not an acceptance or delivery.[83] However, even if the subject matter was delivered to others, courts may find an offer to be a sham.[84] The same degree of difficulty exists in establishing a standard to determine "experimental use."[85]

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patent to be invalid due to a violation of the on sale bar even though the disputed "sale" occurred before the invention was physically constructed); Daniel J. Whitman, Note, *The "On-Sale" Bar to Patentability: Actual Reduction to Practice Not Required in* Pfaff v. Wells Electronics, Inc., 32 AKRON L. REV. 397, 410–19 (1999) (surveying the background of the on sale bar doctrine and addressing the implications of the *Pfaff* decision and the Supreme Court's considerations in deciding that reduction to practice is not necessary to trigger the on sale bar).

79. *See* UMC Elecs. Co. v. United States, 816 F.2d 647, 656 (1987).

80. Pfaff v. Wells Elecs., Inc., 525 U.S. 55, 65–66 (1998).

81. *See* Abbott Labs. v. Geneva Pharms. Inc., 182 F.3d 1315, 1318–19 (Fed. Cir. 1999).

82. *See* Mahurkar v. Impra, Inc., 71 F.3d 1573, 1577 (Fed. Cir. 1995) (recognizing the importance of the commercial nature requirement in determining whether the invention is subject to the on sale bar).

83. *See, e.g.*, *In re* Theis, 610 F.2d 786, 791–92 (C.C.P.A. 1979).

> [F]or § 102(b) to apply, it is not necessary that a sale be consummated. It suffices that the claimed invention, reduced to practice, was placed on sale, i.e., offered to potential customers, prior to the critical date. . . . Even if no delivery is made prior to the critical date, the existence of a sales contract prior to that date has been held to constitute an "on sale" status for the invention if it has been reduced to a reality.

Id. (internal citations omitted).

84. *See, e.g.*, *Mahurkar*, 71 F.3d at 1577.

> [C]ommercialization is the central focus for determining whether the patented invention has been placed on sale. . . . Because we conclude that [the licensee's] sale to [the kidney center] was a sham that did not result in "commercialization" of the invention or place it in the public domain, no § 102(b) sale occurred even though the prototype was a reduction to practice of the invention.

Id. (internal citations omitted).

85. The Supreme Court criticized the Federal Circuit's "totality of the circumstances" approach, which had been applied to decide whether an act falls within the statutory "public use or on sale" or experimental use exception doctrine, as being

Another complexity in the current § 102(a) and (b) results from a distinction between foreign and domestic prior art depending on the place of disclosure.[86] Under the current U.S. patent statute, only information described in a published patent or printed publication constitutes the prior art.[87] If information is merely "known or used" or "in public use or on sale," such information must be available in the United States to constitute the prior art under § 102(a) and (b).[88] However, the progress of technology made electronic publication easy and, in turn, made it difficult to determine if such publication meets the statutory meaning of "printed publication." If information falls within the meaning of "printed publication," the USPTO does not need to distinguish foreign from domestic information.[89] Thus, the USPTO clarified that the meaning of "printed publication" includes electronic publication with the condition that such publication is available to those who relate to the field of subject matter disclosed in the publication.[90] First-to-file countries also addressed this difficulty and removed the distinction between foreign and domestic prior art, and between written and unwritten form, making prior art information that has become available in any form anywhere.[91]

b. § 102(c) and (d). The novelty rule, under the U.S. first-to-invent approach, includes additional grounds for preventing an inventor from obtaining a patent—§ 102(c) and (d) statutory bars.[92] These bars do not exist under the first-to-file principle and make the U.S. novelty provision lengthier.

Subsection 102(c) provides that an inventor's abandonment of an invention prevents an inventor from obtaining a patent on the invention.[93] This act of abandonment should be read as distinct from the abandonment outlined in § 102(g) because, once § 102(c) abandonment is found, an inventor loses his right to

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unnecessarily vague and uncertain. *See Pfaff*, 525 U.S. at 66 n.11.

86. 35 U.S.C. § 102(a)–(b) (2000).

87. *Id.*

88. *See, e.g.*, Robbins Co. v. Lawrence Mfg. Co., 482 F.2d 426, 434–35 (9th Cir. 1973).

89. 35 U.S.C. § 102(a)–(b); Manual for Patent Examining Procedure § 2128 (8th ed. 2001) [hereinafter MPEP], *available at* http://www.uspto.gov/web/offices/pac/mpep/documents/2100.htm (last visited July 23, 2002).

90. MPEP, *supra* note 89, at 2128.

91. *E.g.*, European Patent Convention, *supra* note 15, art. 54(2), at 272; Japanese Patent Law, *supra* note 16, art. 29(1).

92. 35 U.S.C. § 102(c)–(d).

93. *Id.* § 102(c).

obtain a patent forever and is then unable to recover the right.[94] In contrast, § 102(g) abandonment does not result in a loss of right to obtain a patent.[95] When an inventor resumes her work before the second person to reduce the invention to practice conceives the same invention, the inventor can rely on the date of resuming the activity to file an application and obtain a patent.[96] This distinction is only visible through investigating court interpretations of § 102(c) and (g).[97]

An even more confusing aspect of § 102(c) abandonment is its relationship with "public use or on sale" under § 102(b). The leading early Supreme Court case, *Kendall v. Winsor*, suggests that an inventor can abandon the right to obtain a patent not only by an express declaration of abandonment, but also when acts of an inventor indicate an intent to abandon the right.[98] Such acts include acquiescence in the use of the invention by others, delay in enforcing rights, or an attempt to withhold the benefit of the invention.[99] However, the acts the *Kendall* Court listed to constitute abandonment are now subsumed into § 102(b)[100] because courts include within the meaning of "public use or on sale" a delay in filing an application while commercially exploiting an invention.[101] It is not clear whether any act that does not give rise to a public use or on sale falls within the meaning of § 102(c). No court has found an abandonment relying on an act during the grace period.[102] An early Supreme Court decision suggests that a delay in filing an application while keeping the invention secret does not constitute abandonment.[103]

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94. 2 CHISUM ON PATENTS, *supra* note 59, § 6.03[2], at 6-208 to 6-210.

95. 35 U.S.C. § 102(g).

96. Paulik v. Rizkalla, 760 F.2d 1270, 1275–76 (Fed. Cir. 1985).

97. *See, e.g.*, Kendall v. Winsor, 62 U.S. 322, 329 (1858) (revealing particular actions that may result in a finding of abandonment that will prohibit an inventor from receiving a valid patent); *Paulik*, 760 F.2d at 1272–73 (analyzing and interpreting § 102(g) abandonment).

98. *Kendall*, 62 U.S. at 329 ("[I]t is the unquestionable right of every inventor to confer gratuitously the benefits of his ingenuity upon the public, and this he may do either by express declaration or by conduct equally significant with language.").

99. *Id.* at 328–31.

100. *See* 2 CHISUM ON PATENTS, *supra* note 59, § 6.03[1][c][*i*], at 6-204 (suggesting that § 102(b) may "give[] an inventor an absolute right during the grace period to decide whether or not to apply for a patent").

101. *See, e.g.*, Mahurkar v. Impra, Inc., 71 F.3d 1573, 1577 (Fed. Cir. 1995) (recognizing that commercial exploitation of an invention may place a device "on sale" for purposes of § 102(b)).

102. 2 CHISUM ON PATENTS, *supra* note 59, § 6.03[1][c][*i*], at 6-204.

103. Bates v. Coe, 98 U.S. 31, 46 (1878) ("Inventors may . . . keep their inventions secret; and if they do for any length of time, they do not forfeit their right to apply for a patent, unless another in the mean time has made the invention, and secured by patent the exclusive right to make, use, and vend the patented improvement.").

As a result, § 102(c) abandonment is seldom relied upon to reject or invalidate a patent.[104]

Another statutory bar provision that does not exist under the first-to-file principle is foreign patenting under § 102(d). This bar also shares the same problem as § 102(a) and (b) regarding the question of when and whether a foreign patent falls within the meaning of § 102(d).[105] This section was originally added to encourage foreign applicants who obtain patent protection abroad to promptly file with the USPTO.[106] When the United States joined the Paris Convention,[107] this goal was already well-served by the priority system under the Convention, which requires applicants who filed an application in one of the Paris Union member states to file in another country within one year of the application date of the early filing (priority) date.[108] Meeting the requirement under the Paris Convention automatically satisfies the one-year filing requirement under § 102(d).[109] Therefore, § 102(d) is seldom relied upon for rejecting claims or invalidating patents.

Additionally, § 102(d) has a serious flaw in that it unfairly discriminates against inventions made outside the United States because it imposes an additional bar to foreign-originated inventions. Thus, it is arguable that § 102(d) may violate the non-discrimination provision of the World Trade Organization Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) with respect to the place of invention.[110] Not only is § 102(d) unnecessary and confusing

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104. 2 CHISUM ON PATENTS, *supra* note 59, § 6.03, at 6-198 to 6-199.

105. Refer to notes 61–65 *supra* and accompanying text.

106. 2 CHISUM ON PATENTS, *supra* note 59, § 6.04, at 6-215.

107. Paris Convention for the Protection of Industrial Property, July 14, 1967, 21 U.S.T 1583 [hereinafter Paris Convention].

108. *Id.* art. 4A, C, at 1631–32. For a general discussion of § 102(d) and the Paris Convention, see Donald Chisum, *Foreign Activity: Its Effect on Patentability Under United States Law*, 11 IIC: INT'L REV. OF INDUS. PROP. & COPYRIGHT L. 26, 44–47 (Friedrich-Karl Beir et al. eds., 1980).

109. 35 U.S.C. § 102(d) (2000); Paris Convention, *supra* note 107, art. 4A, C, 21 U.S.T. at 1631–32 ("Any person who has duly filed an application for a patent . . . in one of the countries of the Union . . . shall enjoy, for purposes of filing in the other countries, a right of priority during the [one-year] periods hereinafter fixed [for patents]."). To give rise to the § 102(d) statutory bar, both of the following two conditions must be met: (1) issuance of a patent in a foreign country prior to filing of the U.S. patent application, and (2) filing of a foreign patent application more than twelve months before the U.S. application. 35 U.S.C. § 102(d).

110. Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, LEGAL INSTRUMENTS—RESULTS OF THE URUGUAY ROUND vol. 31, 33 I.L.M. 81 (1994) [hereinafter TRIPS Agreement], *available at* http://www.wto.org/english/tratop_e/trips_e/t_agm0_e.htm (last visited Aug. 17, 2002)

because of the interpretation of a foreign patent, but it also provides a source of criticism from U.S. trade partners.[111] Although there is very little justification, this provision presents another hurdle for U.S. inventors and makes the novelty provision complex.

c. § 102(e). The distinct policies related to novelty, with respect to actors of disclosures, introduced another complexity in determining novelty under § 102(e). The U.S. first-to-invent principle introduces two separate concepts by distinguishing (1) a priority or senior right in obtaining a patent from (2) the defensive effect of preventing a third party from obtaining a patent that relates to the statutory bar events under § 102(b), (c), and (d).[112] In interpreting the effect of priority right under the Paris Convention Article 4B, U.S. scholars read the article not to bind only a defensive patent-defeating effect.[113] Applying this interpretation to the definition of the prior art in § 102(e), the USPTO and U.S. courts give the effect of priority only with respect to claimed subject matter, while refusing to give the same effect to disclosed but unclaimed subject matter. This is because the latter subject matter does not relate to a priority or senior right and only relates to a defensive effect.[114] In contrast, to avoid this complexity, most first-to-file countries give the effect of priority under the Paris Convention to both claimed and unclaimed subject matter.[115] However, the language of § 102(e) does not make clear the different timings required to become prior art with respect to claimed and unclaimed subject matter.[116]

(declaring that "patents shall be available and patent rights enjoyable without discrimination as to the place of invention").

111. *See* Taylor, *supra* note 4, at 521–22 (acknowledging "the significance of patent harmonization as a trade issue" and the failure of the United States to adopt a patent system that is "in line with the rest of the world").

112. ADELMAN, *supra* note 45, at 824 (advancing that "the Paris Convention patentee is given a patent-defeating right retroactive to the priority date for what is claimed in the patent," but noting that most countries "employ a 'whole continents' patent-defeating effect that covers everything disclosed in the priority document that is carried forward into the patent application").

113. *Id.*

114. *See, e.g.*, *In re* Hilmer, 359 F.2d 859, 863 (C.C.P.A. 1966) (applying the *Milburn* rule, which proclaims "[t]hat a complete description of an invention in a U.S. patent application, filed before the date of invention of another, if it matures into a patent, may be used to show that the other was not the first inventor," and acknowledging that "[t]his was a patent-defeating judge-made rule and now is [§] 102(e)").

115. Reinhard Wieczorek, *Convention Applications as Patent-Defeating Prior Rights*, 6 IIC: INT'L REV. OF INDUS. PROP. & COPYRIGHT L. 135, 156–65 (Friedrich-Karl Beir et al. eds., 1975) ("The current international trend is clearly toward the adoption of a 'whole-contents approach.'").

116. 35 U.S.C. § 102(e) (2000).

Literally interpreted, it requires that the invention be described in an application for a patent by another filed in the United States before the invention, and it does not specify in which part of the application the invention must be described.[117] When one interprets the language in context of the benefit given to an early application in the operation of § 119, he or she would readily conclude that the same prior art effect would be given to both claimed and unclaimed subject matter.

This reasonable interpretation is supported by the fact that the USPTO once adopted this interpretation but gave it up when it was instructed by the *Hilmer* court to adopt a more complex interpretation for limiting the effect to claimed subject matter.[118] The *Hilmer* court upheld this complex interpretation only after extensively reviewing the legislative history and emphasizing the necessity of limiting secret prior art.[119] This practice of distinguishing a priority, or senior right, from a patent-defeating right confuses both U.S. and foreign inventors and makes it difficult to determine if their inventions are patentable with respect to an early application filed by a third party under § 102(e).

d. §102(g). Finally, § 102(g) provides another category of secret prior art—an invention by the first inventor that has become known only after the date of invention by the second inventor.[120] Secret prior inventions under § 102(g) introduce a significant uncertainty in U.S. patent validity because the USPTO cannot find such inventions during the examination. The inventor of the prior invention can challenge the validity of a patent only after it issues.

To reduce this uncertainty, the U.S. patent system introduced a series of limitations to challenge patents based on secret prior inventions. First, the U.S. patent system introduced the concepts of abandonment, concealment, and suppression to prevent first inventors from challenging the validity of a patent issued to the second inventor.[121] When an inventor unreasonably delays in filing an application, courts find abandonment,

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117. *Id.*

118. *Hilmer*, 359 F.2d at 876–77 (reasoning that to give effect to both claimed and unclaimed subject matter "has the practical potential effect of pushing back the date of unpublished, secret disclosures, which ultimately have effect as prior art references in the form of U.S. patents, by the full one-year priority period of § 119").

119. *Id.* at 878.

120. ADELMAN, *supra* note 45, at 312 (canvassing the functions of § 102(g) including its role in an interference and its function as another category of prior art).

121. 35 U.S.C. § 102(g).

concealment, and suppression, thus the putative first inventors are precluded from challenging the validity.[122] Second, the U.S. patent system introduced a procedure that precludes a claim from the first inventor challenging the validity in an interference procedure unless the claim is raised within one year from the date of issuance of the U.S. patent.[123]

Despite court attempts to limit the challenge, § 102(g) secret prior inventions still bring significant uncertainty to the validity of U.S. patents because courts refuse to adopt a strict test to determine the time necessary to give rise to estoppel.[124] Moreover, courts may let first inventors rely on the conception as long as they can establish their continuous diligence up to the date of reduction to practice.[125] As a result, current practice allows inventors to predate the date of the second invention beyond the grace period, and has no limitation to date back to the conception as long as the first inventors continue to work on the invention to reduce it to practice.[126]

In short, the U.S. first-to-invent novelty provision is very complex and lengthy. Some terms are redundant and unnecessary and others are confusing, which makes it difficult for U.S. inventors to show the novelty of their invention. Moreover, the interpretation U.S. courts give to some of the terms departs from the ordinary meaning, thereby confusing inventors not familiar with U.S. case law.

2. Priority. Subsections 102(f) and (g) codify the rule developed by U.S. courts to determine the "first and true inventor" under the patent statute.[127] However, U.S. courts give special interpretation to the terms used in § 102(g); therefore, the rule is almost impossible to understand without knowledge of U.S. court decisions. For example, § 102(g) prevents an inventor

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122. *See, e.g.*, Dunlop Holdings Ltd. v. RAM Golf Corp., 524 F.2d 33, 35–37 (7th Cir. 1975) (clarifying the issues of abandonment, concealment, and suppression, and also "conclud[ing] that a public use of an invention forecloses a finding of suppression or concealment").

123. 35 U.S.C. § 135(b).

124. *See, e.g.*, Fujikawa v. Wattanasin, 93 F.3d 1559, 1568 (Fed. Cir. 1996) (acknowledging that "the circumstances surrounding the first inventor's delay and the reasonableness of that delay are important factors regarding the minimum and maximum periods necessary to establish an inference of suppression or concealment").

125. *See, e.g.*, Keizer v. Bradley, 270 F.2d 396, 399–400 (C.C.P.A. 1959) ("As long as Bradley was . . . diligent in working actually to reduce his invention to practice, he was not under an obligation to file a patent application.").

126. *See* 3 CHISUM ON PATENTS, *supra* note 59, § 10.03[1], at 10-24 (stating that the first person to conceive of the idea is still the first inventor as long as he is reasonably diligent in reducing the idea to practice prior to the date of the second invention).

127. 35 U.S.C. § 102(f)–(g).

from obtaining a patent even if the inventor is the first-to-invent when the inventor abandoned, suppressed, or concealed the invention.[128] Although the patent statute lists three separate acts—abandonment, suppression, and concealment—U.S. courts do not distinguish one from the other.[129] Instead, the three acts connote one concept relating a delay in disclosing the invention by filing a patent application[130] or commercializing the invention.[131] Such delay gives rise to the possibility of "abandonment, suppression, or concealment" regardless of the inventor's intent.[132] This interpretation departs from the ordinary meaning of the terms used in § 102(g) and misleads inventors not familiar with court interpretations.

In addition, although § 102(g) made clear a rule to consider both the dates of conception and reduction to practice to determine the priority of invention, courts made it a primary rule to give priority to the first person who reduces the invention to practice.[133] Giving priority to the first person who conceived the invention is an exception and applies only if the first-to-conceive exercised reasonable diligence in reducing the invention to practice from a time just prior to when the first person who reduces the invention to practice enters the field.[134] The second exception to the rule giving priority to a person who reduces the invention to practice is when the person has abandoned, suppressed, and concealed the invention.[135] However, the sentence of § 102(g) providing this exception uses the term "the invention was made."[136] Obvious questions from first-to-file patent professionals are: "What constitutes an act of invention?"

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128. *Id.* § 102(g)(2).

129. 3 CHISUM ON PATENTS, *supra* note 59, § 10.08[1], at 10-274.

130. *E.g.*, Lutzker v. Plet, 843 F.2d 1364, 1367 (Fed. Cir. 1988) ("[W]hen there is an unreasonable delay between the actual reduction to practice and the filing of a patent application, there is basis for inferring abandonment, suppression or concealment.").

131. *E.g.*, Dunlop Holdings, Ltd. v. RAM Golf Corp., 524 F.2d 33, 37 (7th Cir. 1975) ("[P]ublic use of an invention forecloses a finding of suppression or concealment even though the use does not disclose the discovery. . . . If the new idea is permitted to have its impact in the marketplace, . . . it surely has not been suppressed in an economic sense.").

132. *See* 3 CHISUM ON PATENTS, *supra* note 59, § 10.08[1], at 10-274 (stating that the subjective desire of an inventor not to abandon and to exploit the invention later may not suffice to preclude a finding of abandonment, suppression, and concealment).

133. *See* Price v. Symsek, 988 F.2d 1187, 1190 (Fed. Cir. 1993) ("Priority goes to the first party to reduce an invention to practice unless the other party can show that it was the first to conceive the invention and that it exercised reasonable diligence in later reducing that invention to practice."). For a general discussion of the priority rules, see 3 CHISUM ON PATENTS, *supra* note 59, § 10.03[1], at 10-24 to 10-47.

134. *See* 3 CHISUM ON PATENTS, *supra* note 59, § 10.03[1], at 10-24.

135. 35 U.S.C. § 102(g)(2) (2000).

136. *Id.* § 102(g).

and "How can one establish the date of invention?" The answers are not easily derived from the statute because, although § 102(g) requires an invention to be made in this country, it does not define the meaning of "made in this country." It simply describes the rule of priority using the terms such as "reduction to practice" and "conception" without explaining the relationship between the invention made and these terms.[137] Without reading U.S. case law, it is impossible to understand how the act of the invention "being made" relates to an act of reducing the invention to practice and conception.

Further, § 102(g) does not define the term of reducing an invention to practice, although the term is highly technical and not used other than by patent specialists. Courts interpret the term to include only two types of activity: (1) constructive reduction to practice by filing an application for a patent with a disclosure complying with § 112 requirements;[138] and (2) actual reduction to practice by constructing a product or performing a process that is read on by the claims and confirming the suitability of the product or process for its intended purpose.[139] Accordingly, the U.S. priority provision also is difficult for U.S. inventors to understand without fully appreciating U.S. case law on the priority rule under § 102(g) because the most important concept, "invention being made," is not clearly defined. The rule and its exceptions also are unclear from the language of § 102(g). The statute is simply user-unfriendly and written only for patent lawyers.

C. Discrepancy Between Statutory Language and Practice

A more serious problem presented by the novelty and priority provisions under 35 U.S.C. § 102 is a discrepancy

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137. *Id.*

138. An inventor may apply for a patent application on an invention before the invention is actually reduced to practice if the inventor is able to provide a disclosure sufficient to meet § 112, which requires a specification containing a disclosure "in such full, clear, concise, and exact terms as to enable any person skilled in the art . . . to make and use the [invention.]" 35 U.S.C. § 112. *See, e.g.*, Hyatt v. Boone, 146 F.3d 1348, 1352 (Fed. Cir. 1998) (stating that "[t]he filing of a patent application serves as conception and constructive reduction to practice of the subject matter described in the application"); *see also* Pfaff v. Wells Elecs., Inc., 525 U.S. 55, 62–63 (1998) (holding that an inventor was time-barred from obtaining a patent because he could have obtained a patent at least a year earlier when he provided a manufacturer with a description and drawings that had "sufficient clearness and precision to enable those skilled in the matter" to produce the device).

139. *See, e.g.*, Scott v. Finney, 34 F.3d 1058, 1061 (Fed. Cir. 1994) ("When testing is necessary to show proof of actual reduction to practice, the embodiment relied upon as evidence of priority must actually work for its intended purpose.").

between the statutory language and practice. Although § 102(a) and (e) make clear that novelty is determined as of the date of invention, the USPTO determines the novelty for the vast majority of applications as of the date of application.[140] In interference proceedings, the USPTO also follows a first-to-file approach by imposing on second-to-file inventors the ultimate burden of showing the priority.[141] Due to the difficulty in meeting this burden, the U.S. priority rule grants the priority to first-to-file inventors far more frequently than to second-to-file inventors.[142] Labeling the current U.S. practice as first-to-invent is misleading. Many U.S. inventors may have lost their patent rights, believing that the United States follows the first-to-invent approach and thus delaying an application.

1. Novelty.

a. §102(a) and (e). The language of § 102(a) and (e) requiring novelty as of the date of invention is misleading because it departs from the USPTO examination practice.[143] To avoid the necessity of showing an invention date for every application, the USPTO examines the novelty of a vast majority of applications under § 102(a) and (e) as of the application date,[144] because the filing date of a U.S. patent application with an adequate disclosure of the invention is presumed to be the

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140. *See* 3 CHISUM ON PATENTS, *supra* note 59, § 10.03[1][c][*i*], at 10-32 to 10-33 (noting that the USPTO presumes the date of invention to be the date the application is filed, and that the burden is on the inventor to prove an earlier date of invention if he wishes to carry back his date of invention to avoid citation of a reference in an *ex parte* prosecution of the application in the patent office).

141. 37 C.F.R. § 1.657 (2001).

142. *See* Edwards v. Strazzabosco, 58 U.S.P.Q.2d (BNA) 1836, 1840 (Bd. Pat. App. & Interf. 2001) (noting an approximate 75% success rate for senior parties over junior parties); Charles R.B. Macedo, *First-to-File: Is American Adoption of the International Standard in Patent Law Worth the Price?*, 18 AM. INTELL. PROP. L. Q.J. 193, 217 (1989) (same); Gerald J. Mossinghoff, *The U.S. First-to-Invent System Has Provided No Advantage to Small Entities*, 84 J. PAT. & TRADEMARK OFF. SOC'Y 425, 427 (2002) (demonstrating that during the period between 1983 and 2000, of the total of 2858 interference cases, 1917 were favorable to the first-to-file inventors). *But see* Charles L. Gholz, *A Critique of Recent Opinions in Patent Interferences*, 84 J. PAT. & TRADEMARK OFF. SOC'Y 163, 181 (2002) (noting a conflict between the approximate 75% success rate for senior parties stated in *Edwards* and the last interference statistics published by the USPTO, which reported a 52.5% success rate); Mark Lemley & Colleen Chien, *Are the U.S. Priority Rules Really Necessary?*, Draft address submitted for the 2002 CASRIP High Technology Summit Conference (July 20, 2002) (copy on file with author) (indicating that 43% of junior parties won in the cases that are litigated to judgment and actually resolved on priority grounds).

143. *See* 35 U.S.C. § 102(a), (e).

144. 3 CHISUM ON PATENTS, *supra* note 59, § 10.03[1][c][*i*], at 10-32 to 10-33.

invention date.[145] Only if an examiner finds a reference published earlier than the filing date is an inventor given a chance to eliminate the prior art reference by showing an earlier invention, unless the subject matter is claimed in a U.S. patent.[146] However, unsophisticated inventors often fail to take advantage of this practice because they do not keep records of the activities that resulted in the invention and cannot show an earlier invention with corroborative evidence.[147]

The language of § 102(a) and (e) indicates that the date of invention is the critical date at which novelty must be demonstrated and does not reflect accurately the USPTO practice of examining the novelty as of the invention date only on an ad hoc basis.[148] The language of the statute would more accurately coincide with practice if it made clear that the novelty of an application is examined as of the date of application unless an inventor can establish an early date of invention with corroborative evidence. Because the current language of § 102(a) and (e) does not make clear an examination of novelty as of the date of application, many U.S. inventors may have lost their right to a patent because they are unable to produce corroborative evidence showing an early date of invention.

b. §102(b) Grace Period. The view that the United States effectively has a first-to file system is also supported by the fact that § 102(b) functions like the priority and novelty provisions in countries using a true first-to-file system.[149] This is because when the USPTO relies on § 102(b), it determines the patentability of inventions based on the date of application, with certain activities occurring more than one year prior to the filing date serving as an absolute bar to patentability.[150] Since the Supreme Court's *Pennock* decision in 1829, inventions have been excluded from the definition of first inventions if they were publicly used or on sale prior to the

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145. *Compare* Bates v. Coe, 98 U.S. 31, 34 (1878) (recognizing that there is a presumption that the invention described in a patent was made at the time the application was filed), *with* Credle v. Bond, 25 F.3d 1566, 1573 (Fed. Cir. 1994) (holding that the filing date of an application did not constitute constructive reduction to practice when the application did not support all of the limitations of the claims).

146. 37 C.F.R. § 1.131. Further, an inventor can eliminate a prior art reference by showing that the reference is his own work. 37 C.F.R. § 1.132.

147. *See, e.g.*, Gould v. Schawlow, 363 F.2d 908, 920 (C.C.P.A. 1966) (finding that the inventor failed to establish his diligence because of a lack of corroborative evidence to support his activity).

148. 35 U.S.C. § 102(a), (e).

149. *See* ADELMAN, *supra* note 45, at 206. However, these provisions serve a philosophically different role in the first-to-invent system from the first-to-file system, as their functions are keyed with the patent-defeating activity, which removes the priority.

150. 35 U.S.C. § 102(b).

filing date.[151] The 1836 Patent Act, which codified *Pennock*'s holding, required novelty as of the date of application and thus functioned exactly like the novelty provision of first-to-file countries, although the underlying policy relating to the novelty provision differed from that of the first-to-file novelty provision.[152] The introduction of a grace period by the Patent Act of 1839 made it possible for inventors to obtain patents on publicly known inventions as of the filing date only if an application was filed within the grace period.[153] This means that the U.S. patent system awards patents to inventions that are new and non-obvious as of the filing date, with a one-year grace period during which inventors are allowed to exploit their inventions to find commercial value.

The U.S. patent system frequently fails to award first inventors when the inventors delay in filing an application and more than one year has passed from the time the invention is in "public use or on sale" in this country.[154] A good example is the invention in *Lough v. Brunswick Corp.*[155] In *Lough*, the inventor, Mr. Lough, constructed six prototypes of his invention—a marine propulsion device for boats—and gave them to his friends to allegedly conduct testing of the invention's performance more than one year prior to filing a patent application for the invention.[156] Unfortunately, he did not keep records on his testing.[157] Obviously, Mr. Lough's device functioned well and did not receive complaints from his friends using his device in their boats. Thus, he did not need to inspect or repair his device on his friends' boats.[158] A jury found Brunswick Corp. guilty of infringing Mr. Lough's patent, and the U.S. District Court for the Middle District of Florida denied Brunswick's motion for judgment as a matter of law that the patent was invalid under § 102(b).[159] A panel of the Federal Circuit found that the court erred in denying Brunswick's motion, noting that the inventor did not produce any objective evidence of experimentation such as a record of testing or inspection on the devices installed in his

151. *See* Pennock v. Dialogue, 27 U.S. 1, 23 (1829) (holding that a public use or sale of an invention prior to filing a patent application is a bar to obtaining a claim for the invention).

152. Patent Act of 1836, ch. 357, 5 Stat. 117, § 6, *reprinted in* 1 CHISUM ON PATENTS, *supra* note 59, app. 11.

153. Patent Act of 1839, ch. 88, 5 Stat. 353, § 7, *reprinted in* 1 CHISUM ON PATENTS, *supra* note 59, app. 13.

154. 35 U.S.C. § 102(b).

155. Lough v. Brunswick Corp., 86 F.3d 1113 (Fed. Cir. 1996).

156. *Id.* at 1116.

157. *Id.* at 1121.

158. *Id.*

159. *Id.* at 1118.

friends' boats.[160] In examining a request for *en banc* consideration of *Lough*, the dissent showed great sympathy for the inventor.[161] Nevertheless, the court declined to hear the case *en banc*.[162] Had the inventor known that he should file an application within one year from the date he made the invention known to his friends without any confidential relationship, he likely would have filed an application sooner and would not have lost the right for a patent on his invention. With the presence of a provision that determines the novelty as of the date of application even with a one-year grace period, labeling the U.S. novelty requirement as following a first-to-invent system misleads U.S. inventors and may have caused many inventors, like Mr. Lough, who waited too long to file a patent to lose their patent rights.

2. Priority Provision. The heart of the U.S. first-to-invent system, the priority rule under § 102(g), also in practice primarily follows the first-to-file principle.[163] This is because the procedural rule gives preference to inventors who file an application first.[164] In an interference procedure, the person who filed an application first for the particular subject matter in question is called a senior party and all other applicants filing later than the first applicant are called junior parties.[165] When an inventor is a senior party, she may simply rely on her application date as the date of invention and is still very likely to be awarded with priority, because junior parties bear a series of burdens of proof to establish the priority over the first applicant's date of invention.[166]

First, the USPTO declares an interference only when "(1) there is 'interfering subject matter in the applications or in the application and the patent,'" and (2) the "subject matter is patentable to the applicant."[167] An interference can be declared among applications and among applicants and patentees, but an interference among applications is declared only if an examiner happens to know the claims in the other applications and initiates an interference.[168] It was possible for an applicant to

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160. *Id.* at 1122.

161. Lough v. Brunswick Corp., 103 F.3d 1517, 1528 (Fed. Cir. 1997) (Rader, J., dissenting).

162. *Id.* at 1518.

163. 35 U.S.C. § 102(g) (2000).

164. 37 C.F.R. § 1.657 (2001).

165. *Id.* § 1.601(m).

166. For a short discussion of interference proceedings, see ADELMAN, *supra* note 45, at 322–24.

167. 3 CHISUM ON PATENTS, *supra* note 59, § 10.09[2][a], at 10-327 to 10-328.

168. *Id.* § 10.09[2][b], at 10-328.

provoke an interference; however, applicants were seldom able to do so because U.S. patent applications were kept secret until issuance before the 1999 Patent Act Revision introduced an early publication system.[169]

When an applicant-junior party tries to invoke an interference with a patent, and her application date is more than three months after a patentee's filing date, she must demonstrate a prima facie case for the entitlement of priority over the patentee.[170] This practice may present a high hurdle to overcome for unsophisticated inventors.[171] When an applicant-junior party fails to make a claim to substantially the same subject matter prior to one year from the issuance date of the patent, the junior party's attempt to challenge her claim for an interference is precluded by a procedural bar.[172] Even having the USPTO declare an interference is a difficult task for those who did not file first because they bear the burden of demonstrating that they are prima facie entitled to an earlier filing date.[173]

Even a junior party successfully having the USPTO declare an interference will bear the burden of going forward with evidence as to the date of actual reduction to practice or early conception.[174] Because the date of application, with a disclosure to meet the § 112 requirements, is presumed to be the date of invention,[175] a senior party has the initial burden only if he chooses to show an actual reduction to practice or an early conception with diligence.[176] A senior party may otherwise choose a strategy concentrating on disproving the date of invention the junior party tries to establish.

Throughout an interference proceeding, a junior party bears the ultimate burden of persuasion with respect to all issues of fact to establish the priority.[177] If the junior party filed an application before issuance of a patent to the first-to-file, the

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169. *Id.*; *see also* 35 U.S.C. § 122(b) (2000).

170. 37 C.F.R. § 1.608(b) (2001).

171. *See, e.g.*, Hahn v. Wong, 892 F.2d 1028, 1035 (Fed. Cir. 1989) (finding that an inventor was unable to show a prima facie actual reduction to practice because of a lack of corroborative evidence). *Hahn* also includes an excellent summary of the USPTO procedure for declaring an interference between an applicant and a patentee. *Id.* at 1030.

172. 35 U.S.C. § 135(b); *see also In re* Sasse, 629 F.2d 675, 680 (C.C.P.A. 1980) ("Essentially, [35 U.S.C. § 135(b)] operates as a statute of limitations on copying claims for the purpose of instigating interferences.").

173. 37 C.F.R. § 1.608(b).

174. 3 CHISUM ON PATENTS, *supra* note 59, § 10.03[1][c][*ii*]–[*iii*], at 10-34 to 10-35.

175. *E.g.*, Bates v. Coe, 98 U.S. 31, 34 (1878).

176. 3 CHISUM ON PATENTS, *supra* note 59, § 10.03[1][c][*ii*], at 10-34.

177. *E.g.*, Bosies v. Benedict, 27 F.3d 539, 541 (Fed. Cir. 1994) (stating that the junior party bears the burden of proving prior conception and reduction to practice).

burden of persuasion is on the junior party to show an earlier invention with proof by a preponderance of the evidence.[178] If a patent was issued to the first-to-file by the time the junior party filed an application, the junior party must show an earlier invention with proof by clear and convincing evidence.[179] Further, U.S. case law requires applicants to produce corroborative evidence regarding the complex legal concepts required to show priority.[180] Due to this heavy burden, in three out of four cases junior parties lose in interference proceedings.[181] Taking into account inventors who fail to establish a prima facie priority and thus are unable to have the USPTO declare an interference, the chance for second-to-file inventors being awarded with priority is slim.[182]

In addition to this difficulty of showing an early invention, the high cost associated with an interference proceeding discourages second-to-file inventors from taking advantage of the first-to-invent priority rule.[183] As a result, only a very small portion of U.S. applications, less than 0.1%, engage in the priority contest in an interference proceeding.[184] It thus follows that under the current USPTO interference practice, the scope of the first-to-invent exception is very narrow.

The first-to-invent system is often viewed as being more favorable to small inventors than the first-to-file system.[185]

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178. *Id.* at 541–42.

179. *E.g.*, Price v. Symsek, 988 F.2d 1187, 1192 (Fed. Cir. 1993) (noting that the Court of Customs and Patent Appeals rephrased the evidentiary standard from "beyond a reasonable doubt" to "clear and convincing" in order to bring it in line with recent Supreme Court decisions).

180. *E.g.*, Hahn v. Wong, 892 F.2d 1028, 1032–33 (Fed. Cir. 1989).

181. *See, e.g.*, Macedo*, supra* note 142, at 217 (indicating that senior parties win 75% of the interferences).

182. A conflict exists between the assessment of the *Edwards* panel and the last interference statistics published by the USPTO. *Compare* Edwards v. Strazzabosco, 58 U.S.P.Q.2d (BNA) 1836, 1840 (Bd. Pat. App. & Interf. 2001) (recognizing that a panel of the trial section at the USPTO Board noted a 75% success rate for senior parties over junior parties) *and* Mossinghoff, *supra* note 142, at 427 (suggesting that, during the period between 1983 and 2000, approximately 67% of the total 2858 interference cases were favorable to first-to-file inventors), *with* Charles L. Gholz, *supra* note 142, at 181 (contending that the board's latest statistics reveal that the senior party prevailed 52.5% of the time, and the junior party prevailed 31.7% of the time).

183. *See* Macedo, *supra* note 142, at 218–19 (estimating that conducting interferences costs patent applicants approximately $15,000,000 per year). According to a survey conducted by the American Intellectual Property Law Association (AIPLA) in 2001, the median of the estimated total cost, inclusive, in a two-party interference is $201,000. AIPLA, Report of Economic Survey 2001, 90 (2001).

184. Mossinghoff, *supra* note 142, at 427.

185. *See* Conley, *supra* note 3, at 782–83 (arguing that the current first-to-invent system, which does not require inventors to file immediately, encourages and protects inventors by allowing them to proceed slowly with the further development of the

However, this assessment is a myth.[186] It is doubtful that many inventors with limited budgets can afford to take advantage of the expensive interference regime. Small inventors believe the first-to-invent principle favors them in that they can rely on a mere conception of an invention and remove the financial burden of filing an application.[187] However, mere conception is never sufficient to show a date of invention under the current U.S. first-to-file priority rule.[188] Because the priority rule requires a reduction of the invention to practice,[189] the U.S. first-to-invent principle may in fact disfavor small inventors depending on the type of invention. Under the § 102(g) priority rule, granting patent rights to the first person who reduces the invention to practice is the primary rule.[190] This primary rule is supported by the patent policy that encourages not only creation of useful inventions but also disclosure of inventions through a reduction of the invention to practice.[191] An inventor can reduce his invention to practice by filing an application with the USPTO[192] or by constructing and testing a prototype.[193] Although small inventors express their concern over filing costs,[194] constructing and testing a prototype is often even more expensive than filing an application.[195] It follows that, in many cases, a first-to-file system in fact favors small inventors by saving costs for constructing and testing a prototype and attorneys' fees for establishing the priority.

The priority rule provides an exception to the first to reduce to practice principle by allowing inventors to rely on the date of

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invention).

186. *See* Mossinghoff, *supra* note 142, at 428 (analyzing USPTO data and concluding that the first-to-invent system provides no advantage to small entities); Lemley & Chien, *supra* note 142 (concluding that their empirical data do not support the contention that the first-to-invent system favors small inventors over large companies).

187. First-to-invent advocates focus solely on the cost of application but pay no attention to the cost of reducing the invention to practice, which is necessary for establishing the priority under the U.S. first-to-invent system. *See, e.g.*, Conley, *supra* note 3, at 783 (recognizing that before an inventor can profit from his invention, money must be expended to develop the invention to the point of commercialization).

188. 35 U.S.C. § 102(g)(2) (2000).

189. *See id.*

190. *See id.*; 3 CHISUM ON PATENTS, *supra* note 59, § 10.03[1], at 10-24 (providing a general discussion of the priority rule).

191. 3 CHISUM ON PATENTS, *supra* note 59, § 10.08[1], at 10-274.

192. *See, e.g.*, Hazeltine Corp. v. United States, 820 F.2d 1190, 1196 (Fed. Cir. 1987).

193. *See, e.g.*, Scott v. Finney, 34 F.3d 1058, 1061 (Fed. Cir. 1994).

194. *See* Conley, *supra* note 3, at 783.

195. This observation is based on University of Houston Law Center experience in trying to attract commercial backing for faculty inventions. *See* Professor Paul M. Janicke, Address at the Institute for Intellectual Property & Information Law Symposium in Santa Fe, New Mexico (May 31, 2002).

conception.[196] However, unless an inventor reduces the invention to practice, he or she cannot rely on the conception date.[197] Moreover, an inventor must continuously work on the invention to reduce it to practice because the inventor's lack of activity on the invention gives rise to lack of diligence and prevents the inventor from relying on the date of conception.[198] Even if an inventor reduces the invention to practice, an unreasonable delay in filing an application with the USPTO gives rise to abandonment and prevents an award of priority.[199] Unfortunately, lack of funding seldom justifies a delay caused by lack of diligence or abandonment.[200]

In short, the current U.S. first-to-file priority rule disfavors inventors who stop working on an invention before filing an application with the USPTO. To establish the priority, he or she must show continuous work by corroborative evidence.[201] It is very likely that a practice of maintaining records on the continuous work is more expensive than the practice of filing an application early. Moreover, taking into account the hardships that a first-to-conceive but second-to-reduce-to-practice inventor encounters under the current priority rule, the belief that the U.S. first-to-invent system favors small inventors is not only false, but also misleading. Many unsophisticated inventors may lose a chance to obtain a patent because they are misled by the labeling of the U.S. patent system as being "first-to-invent," thus believing their early conception of an invention can establish priority under § 102(g).

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196. 35 U.S.C. § 102(g)(2) (2000); *see, e.g.*, Hybritech Inc. v. Monoclonal Antibodies, 802 F.2d 1367, 1378 (Fed. Cir. 1986) (holding that Hybritech was entitled to priority due to its earlier conception date); 3 CHISUM ON PATENTS, *supra* note 59, § 10.03[1], at 10-24 (noting that first-to-conceive is an exception to the priority rule provided that the inventor exercises diligence in reducing the invention to practice).

197. *See* 35 U.S.C. § 102(g)(2); Edwards v. Strazzabosco, 58 U.S.P.Q.2d (BNA) 1836, 1841–42 (Bd. Pat. App. & Interf. 2001) (stating that an inventor must construct a prototype to show an actual reduction to practice).

198. 35 U.S.C. § 102(g)(2); Gould v. Schawlow, 363 F.2d 908, 919–21 (C.C.P.A. 1966) (noting that reasonable diligence does not require one to give up his or her livelihood).

199. 35 U.S.C. § 102(g)(2); *see also* Lutzker v. Plet, 843 F.2d 1364, 1366–67 (Fed. Cir. 1988) (finding a delay of fifty-one months to be unreasonably long). *But see* 3 CHISUM ON PATENTS, *supra* note 59, § 10.07[4][b], at 10-261 (recognizing that "poverty or illness of the inventor may render periods of inactivity or the general pace of activity reasonable under the circumstances").

200. *E.g.*, Griffith v. Kanamaru, 231 U.S.P.Q. (BNA) 892, 893 (Bd. Pat. App. & Interf. 1986) (finding that a university policy requiring researchers to obtain outside financial support for projects did not excuse an inventor's lack of activity).

201. *See, e.g.*, *Gould*, 363 F.2d at 919–20 (noting the corroboration requirement and finding that the testimony of an inventor's wife did not sufficiently corroborate the inventor's claim of diligence).

III. PROPOSAL FOR REVISING § 102

A review of the language in § 102 has revealed that the complexity of defining the prior art and confusing interpretations given to the terms "public use or on sale" in the definition have resulted from the necessity to remedy the problems inherent to a true first-to-invent principle. The review has revealed that some categories of the prior art in § 102 are simply outdated or redundant, and thus unnecessary. It also has revealed categories of the prior art that are unique to the first-to-invent principle and that introduce a significant uncertainty in U.S. patent validity. The perception that the first-to-invent principle favors small inventors also misleads U.S. inventors. In short, the worst problem of the U.S. first-to-invent principle is not that it differs from patent systems from other countries, but that it is user-unfriendly due to its difficulty to understand, which, accordingly, harms U.S. inventors.

However, the examination and interference practice at the USPTO follows the first-to-file principle, and the first-to-invent is a narrow exception to the principle because inventors are given, on an ad hoc basis, the ability to show priority by establishing an early invention date. It follows that a revision of § 102, which will reflect the USPTO practice and make clear the adoption of the first-to-file principle, will not only simplify the definition of the prior art but will also eliminate confusing interpretations relating to "public use or on sale." Such a revision will alert inventors to the risk of relying on the date of conception, which is very expensive to establish and very likely to fail. Further, by modeling novelty provisions of first-to-file countries, the § 102(b) grace period should be restated in a separate provision as an exception to the definition of the novelty as of the invention date. Language allowing the determination of the novelty as of the date of application with a one-year grace period will protect inventors from losing a patent right for failure to file an application within the grace period. Such a revised revision may read:

> A person shall be entitled to a patent unless—
>
> (a) The invention was known or used in this country or a foreign country before the date of application by the applicant for patent, except that an applicant establishes a date of the invention prior to the date of the invention being known or used with corroborative evidence;
>
> (b) The invention was described in:
>
> (1) an application for patent, published under

section 122(b), by another filed in the United States before the date of application by the applicant for patent; or

(2) a patent granted on an application for patent by another filed in the United States before the date of application by the applicant for patent; or

(3) an application filed with the benefit of right of priority defined in section 119(a) and an international application filed under the treaty defined in section 351(a) shall have the same effect under this subsection of a national application published under section 122(b);

(c) He did not himself invent the subject matter sought to be patented.

Notwithstanding subsections (a) and (b), a person shall be entitled to a patent if the invention was made publicly known or used by the inventor in this country or a foreign country during the twelve months preceding the date of application.

Notwithstanding subsections (a) and (b), a person shall be entitled to a patent if the person can establish with corroborative evidence that the person made the invention (1) before the date that the invention was known or used as defined in subsection (a), or (2) before the date of the application filed by another defined in subsection (b).

In determining priority of invention under this section,

(a) Current section (g)(1)

(b) A priority is granted to a person who first reduces the invention to practice in this country unless the person has not abandoned the invention or a person who was first to conceive and last to reduce to practice can show the reasonable diligence from a time prior to the conception by the other to that person's date of reduction to practice.

A. Novelty

1. Merge § 102(a) and (b). The proposed revision of § 102(a) merges the current § 102(a) and (b); restates the prior art to reflect the first-to-file practice at the USPTO in examining the novelty under the current § 102(a); and adds an ad hoc exception to the first-to-invent principle under Rule 131. The second paragraph of the proposed revision provides separately for the one-year grace period under § 102(b) and makes clear that

inventors must file an application during the period once they make the invention publicly known or used. To remove redundant acts of disclosure, the proposed revision merges the current § 102(a) and (b) and removes confusing definitions of acts, such as "being patented," because disclosures through patenting are subsumed into acts of "being known."

Further, to address the complexity resulting from the geographical limitation on unwritten forms of prior art information,[202] the proposed revision does not discriminate foreign prior art information against domestic prior art information. The sole reason for including the categories of the prior art, described in a printed publication in the current § 102(a) and (b), is to distinguish written from unwritten forms of prior art information that is defined as being "known or used in this country."[203] This is because only former information becomes the prior art if the information is made available outside the United States. Because the proposed revision removes the geographical discrimination, the category of the prior art being described in a printed publication is also subsumed into the categories of the prior art being known in this country and thus also removed from the proposed revision.

The proposed revision not only simplifies the definition of the novelty and examination procedure, but also helps U.S. inventors. Under the current system, because foreign activities do not trigger the grace period, giving foreign applicants more time to exploit the invention prior to filing for a U.S. patent in their own countries, the geographical limitation functions against U.S. inventors.[204] Further, it is arguable that the geographical limitation on the prior art may violate the spirit of non-discrimination under the TRIPS Agreement by conditioning the effect of prior art on the place of invention.[205]

2. Removal of "Secret-Commercial-Use" and "Experimental-Use." The proposed § 102(a) does not include the term "public use" associated with the secret-commercial-use bar and experimental-use exception doctrines. Thus, the proposed

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202. *See* 35 U.S.C. § 102(a)–(b).

203. *Id.*

204. *See* William LaMarca, *Reevaluating the Geographical Limitation of 35 U.S.C. § 102(b); Policies Considered*, 22 U. DAYTON L. REV. 25, 36–37 (1996) (presenting arguments made by proponents who urge the elimination of the inconsistent treatment of U.S. and foreign inventors under § 102(b)).

205. *See* TRIPS Agreement, *supra* note 110, art. 27 ("[P]atents shall be available and patent rights enjoyable without discrimination as to the place of invention, the field of technology and whether products are imported or locally produced.").

§ 102(a) should be interpreted to give an ordinary meaning to "being known or used." The doctrines of the experimental-use exception and secret-commercial-use bar were introduced to promote the following four policies: (1) avoiding detrimental reliance by the public regarding inventions the public reasonably has come to believe are freely available; (2) encouraging early disclosure through a patent application; (3) preserving a reasonable time for the inventor to determine the potential value of the invention; and (4) preventing an inventor from attempting to extend the patent term by adding the period of secret use to the statutory twenty years.[206]

Because the proposed § 102(a) makes clear a determination of the novelty as of the date of application, all of these policies can be well-served without the secret-commercial-use bar and experimental-use exception doctrines. The novelty of the application date discourages inventors from disclosing their invention prior to filing an application with the USPTO, thereby preventing reliance by a third party. Such novelty also gives sufficient incentive for inventors to file early. The third policy is well served by introduction as long as the current one-year grace period is maintained. Because one year was selected as an appropriate time for evaluating the value of the invention and preparing a patent application, it is unreasonable to allow inventors to keep experimenting with their inventions indefinitely. The policy of early application is easily frustrated by the presence of these doctrines because inventors can avoid triggering a grace period by carefully drafting claims to distinguish subject matter on sale, which effectively extends the grace period.[207] The fourth policy has marginal value under the modern intellectual property system where trade secrets and patents coexist.[208] Under the first-to-file system, an inventor is given an option to protect the invention as a trade secret while taking the risk that a third party will file first.[209] Because patent

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206. *See* Tone Bros., Inc. v. Sysco Corp., 28 F.3d 1192, 1198 (Fed. Cir. 1994); *see also* 2 CHISUM ON PATENTS, *supra* note 59, § 6.02, at 6-5 to 6-8 (providing a general discussion of the underlying policies).

207. *See, e.g.*, UMC Elecs. Co. v. United States, 816 F.2d 647, 657 (Fed. Cir. 1987) (explaining that attempts to expand the grace period contravene the statute's policies).

208. *See* Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 491 (1974) (observing that "trade secret law does not produce any positive effects in the area of clearly patentable inventions, as opposed to the beneficial effects resulting from trade secret protection in the areas of the doubtfully patentable and the clearly unpatentable inventions").

209. Secret commercial use of an invention does not give rise to the prior art under the EPC or JPL. European Patent Convention, *supra* note 15, art. 54(2), at 272; Japanese Patent Law, *supra* note 16, art. 29(1). Like the Draft Substantive Patent Law Treaty (SPLT) Article 8, information must have been made publicly available to constitute the

owners in other countries enjoy this option, U.S. patent owners are unfairly disadvantaged unless the same option is given by adopting the first-to-file system.

The proposed § 102 eliminates the secret-commercial-use bar and the experimental-use exception to prevent inventors from being misled by the discrepancy between the statutory language and court interpretation of the terms used in the statute. It also increases the credibility of U.S. patent validity by eliminating the term "public use or on sale," a term that introduces a lot of uncertainty in patent validity. Thus, the removal of the term "public use or on sale" not only simplifies and makes understandable the novelty provision, but also improves the U.S. patent system.

3. Removal of § 102(c) and (d). The proposed § 102 revision will make the § 102(c) abandonment provision unnecessary; therefore, the proposed § 102 revision eliminates the current § 102(c). Even under the current novelty provision, § 102(c) has very little justification to provide the bar separately from § 102(b) and introduces only confusion with respect to § 102(g) abandonment. Thus, the removal of § 102(c) will not only contribute to the simplification of the U.S. novelty provision, but will also clarify the statutory interpretation of the novelty provision. The proposed § 102 revision will also remove § 102(d), which the Paris Convention already has made useless and which may also violate the TRIPS Agreement provision.[210]

4. Revision of § 102(e). The proposed § 102(b) is comparable to the current § 102(e) in defining an early application pending in the USPTO as the prior art.[211] However, it makes clear a determination of novelty as of the application date with an exception of an ad hoc opportunity to establish an early invention date and thus reflects the USPTO practice under Rule 131. The proposed revision expressly gives the same effect of a domestic application to both the benefit of priority under the Paris Convention and an international application filed under the Patent Cooperation Treaty. Thus, it overrules the *Hilmer* doctrine.[212]

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prior art. Draft Substantive Patent Law Treaty, art. 8 (Mar. 6, 2002) [hereinafter Draft Patent Treaty], *available at* http://www.wipo.int/scp/en/documents/session_6/pdf/scp6_2.pdf (last visited Sept. 3, 2002).

210. Refer to notes 107–11 *supra* and accompanying text.

211. Refer to Part III *supra* (proposing a new § 102(b)); 35 U.S.C. § 102(e) (2000).

212. The Fifth Circuit summarized the *Hilmer* doctrine as follows: "[U]nder the *Hilmer I* doctrine, a prior art reference patent is effective only as of its U.S. filing date." Studiengeselleschaft Kohle mbH v. Eastman Kodak Co., 616 F.2d 1315, 1337–38 (5th Cir.

A removal of the *Hilmer* doctrine will better serve U.S. inventors by removing the complex interpretation of the discriminating effect regarding claimed and unclaimed subject matter.[213] It also eliminates the illogical problems caused by the doctrine that U.S. legal commentators extensively criticize.[214] The *Hilmer* doctrine also has been extensively criticized by foreign legal commentators for violating the priority right provision under the Paris Convention, as well as the non-discrimination policy provision regarding the place of invention under the TRIPS Agreement.[215]

A worse problem is that the application of the *Hilmer* doctrine results in a double patenting problem through the issuance of separate multiple patents to obvious inventions.[216] The double patenting problem is somewhat remedied by the *Deckler* case because the *Deckler* court applied the interference estoppel doctrine broadly and prevented the applicant from seeking a second chance to request the priority contest with respect to obvious inventions through an interference proceeding.[217] This expansive use of the estoppel doctrine effectively prevents multiple patents from being issued on obvious inventions as long as claims are contested through an interference proceeding.[218] Accordingly, some commentators even

1980).

213. Richard A. Neifeld, *Viability of the* Hilmer *Doctrine*, 81 J. PAT. & TRADEMARK OFF. SOC'Y 544, 546, 561–62 (1999) (explaining the complexity resulting from the courts' interpretation that bifurcates (1) the date an application obtains priority from (2) the date the patent granted on the application obtains prior art effect for applications filed outside the United States).

214. *See* 4 CHISUM ON PATENTS, *supra* note 59, § 14.05[3], at 14-69 n.6 ("It would be illogical to give greater effect to a national filing in a foreign country than to an international filing under the Treaty."); DONALD S. CHISUM, ELEMENTS OF UNITED STATES PATENT LAW 104 (2000) [hereinafter CHISUM, ELEMENTS] (Japanese language source); Harold C. Wegner, *TRIPS Boomerang-Obligations for Domestic Reform,* 29 VAND. J. TRANSNAT'L L. 535, 558 (1996) (describing the *Hilmer* opinion as "a low point in judicial understanding of international patent practice and treaties"). *See generally* Kevin L. Leffel, Comment, Hilmer *Doctrine and Patent System Harmonization: What Does a Foreign Inventor Have at Stake?*, 26 AKRON L. REV. 355 (1992) (providing an historical analysis of the *Hilmer* doctrine and its effects).

215. Paris Convention, *supra* note 107, art. 4; TRIPS Agreement, *supra* note 110, art. 27(1). Professor Chisum also pointed out this problem. *See* 4 CHISUM ON PATENTS, *supra* note 59, § 14.05[3], at 14-70 n.6 ("Foreign scholars divide on whether *Hilmer* is contrary to Article 4B of the Paris Convention."); CHISUM, ELEMENTS, *supra* note 214, at 104.

216. *See* Leffel, *supra* note 214, at 357 (explaining that the USPTO is forced to grant multiple valid patents under *Hilmer II*).

217. *See In re* Deckler, 977 F.2d 1449, 1452 (Fed. Cir. 1992) (giving interference judgment preclusive effect through doctrines of res judicata and collateral estoppel).

218. *See id.* (stating that first interference judgment was used as "a basis for rejection of claims to the same patentable invention").

view the *Deckler* case as essentially overruling *Hilmer*.[219]

There are no justifiable reasons to keep the doctrine due to these serious problems. First, disclosure of patentably-indistinguishable inventions brings no benefits to the public.[220] Second, the *Hilmer* court's major concern in using the foreign priority date for a patent-defeating effect was to prevent the expansion of secret prior art.[221] This concern over secret prior art has been significantly remedied by the introduction of an early publication system under the American Inventor's Protection Act of 1999 because the content of all applications will be automatically published after eighteen months from the filing date.[222]

In essence, the proposed § 102(b) simply clarifies the holding of *Deckler* and removes the suspicion of violating the Paris Convention and the TRIPS Agreement. The revision results in very little impact on USPTO practice under § 102(e) because the *Hilmer* doctrine has been seldomly raised in the USPTO and court proceedings since its adoption.[223] However, it will help the USPTO greatly by removing the complex novelty determination of international applications.

5. Secret Prior Invention. The proposed revision removes secret prior inventions under the current § 102(g). Because secret prior inventions introduce uncertainty in patent validity, this removal significantly improves the U.S. patent system.[224] This removal also greatly simplifies the novelty rule by making the prior art only publicly available information, except for unpublished applications pending in the USPTO under current § 102(e).

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219. *See, e.g.*, Charles E. Van Horn, *Effects of GATT and NAFTA on PTO Practice*, 77 J. PAT. & TRADEMARK OFF. SOC'Y 231, 234 (1995) (noting that the doctrine of interference estoppel "precludes two patents from issuing on patentable indistinct inventions").

220. *See* CHISUM, ELEMENTS, *supra* note 214, at 104; Neifeld, *supra*, note 213, at 553 (arguing that indistinguishable inventions increase the threat of suit from multiple entities and "extend the temporal exclusive right on that patentable invention").

221. *In re* Hilmer, 359 F.2d 859, 877 (C.C.P.A. 1966) ("The board's new view, as expressed in this case . . . has the practical potential effect of pushing back the date of the unpublished, secret disclosures, which ultimately will have effect as prior art references in the form of U.S. patents, by the full one-year priority period of [§] 119.").

222. 35 U.S.C. § 122(b)(1) (2000).

223. Only forty-five cases cite *Hilmer* over the past four decades. The Federal Circuit has not cited *Hilmer* since *Deckler* was decided in 1992.

224. F. Andrew Ubel, *Who's on First?—The Trade Secret Prior Use or a Subsequent Patentee*, 76 J. PAT. & TRADEMARK OFF. SOC'Y 401, 405 (1994) ("The inherent uncertainty of our current first-to-invent system casts a shadow over the validity of the patent for its entire term and may lessen the market value of United States patents. This uncertainty exists because of our confusing treatment of secret prior art.").

6. Inventorship. Although patent systems of first-to-file countries do not require inventors to file an application under their names, they do provide a recourse designed to prevent applicants from obtaining a patent if the applicant did not legally obtain a right for patent from the true inventor; this is common to first-to-file countries.[225] Thus, the proposed revision keeps the current § 102(f) as it is.

B. Priority

1. Restatement of Current Practice. The third paragraph of the proposed revision restates the current priority rule to make clear the first-to-file principle in the USPTO interference procedure. This language will be enough of an alert to inventors who try to rely on the date of invention instead of the date of application. Although the novelty requirement is restated under the first-to-file principle, this revision decides a grant of patent, between two inventors who disclosed their invention during the grace period, by the first-to-invent principle. In other words, when a third party discloses or files an application prior to the date of application during the grace period, the patent is granted to the first-to-invent who is able to establish the priority under the current § 102(g) rule. This priority is established in an *ex parte* procedure under Rule 131[226] or an *intra parte* interference procedure.[227] Further, the revision restates the current priority rule to clarify the primary rule of reduction to practice and exceptions of conception with continuous diligence and abandonment by a person who first reduces the invention practice. It also removes the redundant expression for abandonment. This language will make it possible for inventors to understand the rule with ease and without the knowledge of court decisions to explain the rule.

2. Modest Proposal. The proposed revision will not change any aspect of the current first-to-invent priority rule; thus, all complexity in applying the priority rule and the current expensive procedure in administering the priority remains with the proposed revision. In addition, the proposed revision does not remedy a significant uncertainty in patent validity resulting from

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225. *See* European Patent Convention, *supra* note 15, art. 61, at 273–74 (allowing three months for the true inventor to object); Japanese Patent Law, *supra* note 16, art. 113(1)(ii) (providing an opportunity for any person to oppose a patent due to a patent being granted in contravention of Article 39(1)–(4)).

226. *See* 35 U.S.C. § 131.

227. *See id.* §§ 135, 291.

the secret prior art. To make the U.S. patent system simple and user-friendly, and to reduce the cost of administrating the expensive interference procedure, it is necessary to limit the scope of the exception of first-to-invent.

Although the most radical proposal should be to remove the exception and move to the simple first-to-file rule, there are modest options to limit the exception. The most modest option models the grace period of first-to-file countries and prevents inventors from establishing the date of invention beyond one year prior to the application date. Under the current practice, inventors are given opportunities to establish the date of invention longer than the one-year grace period only with respect to § 102(e), unpublished pending applications,[228] and § 102(g), prior inventions.[229] All other disclosures in § 102 require public access to the information of the invention and prevent inventors from obtaining a patent once the disclosures occur more than one year from the date of application.[230] The proposed revision will remove the § 102(g) secret prior invention, thus the limitation would only affect § 102(e) prior art.

Limiting the opportunity to remove § 102(e) prior art should be marginal. Because the newly introduced early publication system makes the content of early applications publicly available,[231] all early publications constitute § 102(b) prior art once they are published. It follows that inventors predate § 102(e) prior art up to thirty months under the current practice. The proposed limitation reduces thirty months to twelve months. However, even under the current practice, if inventors keep their inventions confidential after the completion of the invention and unreasonably delay in filing an application, courts may find abandonment under § 102(g). Case law suggests that courts may find abandonment for a fifteen- to seventeen-month delay.[232] A panel of the USPTO interference board also has supported an examiner's practice of issuing a patent that was seventeen months senior to another applicant.[233] Thus, it is not

228. *See id.* § 122(b) (defining publication and exceptions to publication).

229. Refer to notes 125–26 *supra* and accompanying text (discussing the extension of the grace period).

230. *See* 35 U.S.C. § 122(b), (d).

231. *Id.* § 122(b).

232. *See, e.g.*, Fujikawa v. Wattanasin, 93 F.3d 1559, 1568 (Fed. Cir. 1996) (stating that there is no per se minimum or maximum timeframe to establish suppression or concealment).

233. *See* Edwards v. Strazzabosco, 58 U.S.P.Q.2d (BNA) 1836, 1840–41 (Bd. Pat. App. & Interf. 2001).

unreasonable to limit the exception of first-to-invent within the grace period.

A more ambitious option is to limit the exception of first-to-invent by applicants. This proposal will expand the current exception to early publication for domestic inventors to include first-to-invent priority. Under this exception, only applicants who do not wish to file an application outside the United States will be allowed to take advantage of the first-to-invent exception and can establish an earlier invention date under the § 102(g) priority rule.[234] The impact of this limitation is also very marginal because the majority of U.S. patent applicants and owners already have adopted the practice of first-to-file if they are interested in obtaining patents outside the United States. Unless they follow the first-to-file principle, their rights for patent are lost for lack of novelty or priority in major markets, such as Europe and Japan. Thus, they are not significantly affected by the removal of access to the first-to-invent exception.

This proposal of limiting the first-to-invent exception to domestic applicants will greatly reduce the cases taken to an interference proceeding, thereby reducing the administration cost. Even if such an exception is provided, it is doubtful that many U.S. applicants will take advantage of the exception because it is very unlikely that the commercial value of an invention, exclusive to the U.S. market, will justify the high cost of an interference proceeding and the record-keeping necessary to establish priority.[235] Although it is too soon to decide the impact of the exception, lack of additional provisional right protection strongly discourages domestic applicants from taking advantage of the exception of early publication.[236]

This proposal will also make it possible for the USPTO to collaborate with patent offices of first-to-file countries and reduce its examination burden. Currently, the USPTO is engaging in negotiations to persuade first-to-file countries to adopt a one-year grace period with conditions as generous as the conditions under 35 U.S.C. § 102(b).[237] Through the negotiation, the United States

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234. 35 U.S.C. § 102(g).

235. Mossinghoff, *supra* note 142, at 428 (noting the high cost of filing an interference proceeding).

236. About 10% of applicants who are eligible to opt out of eighteen-month publication elect the option. E-mail from Stephen Kunin, Deputy Comm'r for Patent Examination Policy, USPTO, to Toshiko Takenaka, Assistant Professor of Law, University of Washington School of Law (July 3, 2002, 18:48:26 EST) (on file with author).

237. Draft Patent Treaty, *supra* note 209, art. 9, alt. B. For a general discussion of the treaty drafting process, see Toshiko Takenaka, *The Best Patent Practice or Mere Compromise?: A Review of the Current Draft of the Substantive Patent Law Treaty and a Proposal for a "First-to-Invent" Exception for Domestic Applicants* (Sept. 16, 2002)

aims to facilitate mutual recognition of examination results among participating patent offices.[238] Allowing applicants that file only in the United States to use the first-to-invent system will have no effect on this goal. Moreover, an adoption of the U.S. grace period by countries of major markets for U.S. industry will help small inventors and universities.

IV. CONCLUSION

A review of the current first-to-invent novelty and priority provisions in § 102 has revealed serious problems resulting from a complex structure to define the prior art and inclusion of confusing terms without definition. A review of the examination and interference practice at the USPTO also has revealed that a serious discrepancy between the language of the current novelty and priority provisions very likely misleads U.S. inventors. The well-established perception of first-to-invent favoring small inventors does not reflect the USPTO practice. It is necessary to revise § 102 to make the novelty and priority rules simple and user-friendly. Rewriting § 102 to reflect current USPTO practice results in a revised statute that inevitably looks more like first-to-file system novelty and priority provisions, with the exceptions of grace period and first-to-file priority. The language makes clear the first-to-file system protects inventors from losing their rights by delaying application filing. Further, eliminating secret prior art greatly improves the certainty in U.S. patent validity.

However, the complexity of determining the priority under the first-to-invent rule and the cost of administrating expensive interference proceedings will remain as long as the U.S. patent system maintains the first-to-invent exception. To further simplify the priority rule, the exception for establishing the priority should be limited. Although elimination of the first-to-invent exception and adoption of the first-to-file would simplify the rule and completely eliminate USPTO administration costs, such a drastic change would attract objections from those who have been misled by the well-established perception and may not be realistic. The more modest proposals of limiting the priority dispute to within the one-year grace period and limiting the exception to domestic applicants who do not wish to apply outside the United States are more realistic but still greatly reduce the scope of the first-to-invent exception. The proposals also move the

(unpublished manuscript, on file with HARV. J.L. & TECH.).

238. WORLD INTELL. PROP. ORG., STANDING COMM. ON PATENTS, Report, at 4 WIPO Doc. No. SCP/4/6 (Dec. 7, 2000), *available at* http://www.wipo.org/scp/en/documents/session_4/doc/scp4_6.doc (last visited Sept. 3, 2002).

U.S. patent system more in line with systems of first-to-file countries, and the proposals make it possible for the USPTO to share with other patent offices the administrative burden of examining applications, thereby reducing the cost and time for patent procurement.