

# Article

## **An Overview of U.S. Patent Law's First-to-Invent System**

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### ABSTRACT

*Most countries have adopted the first-to-file system, with the U.S. unique in having a first-to-invent system. Notwithstanding the historical tie between the U.S. and England, however, there was no rule of priority in England around the eighteenth century, so the U.S. had independently established the first-to-invent system. As a result of the dual sovereignty of state and federal governments, and under the influence of natural law concepts, the U.S. established a first-to-invent system.*

*While the U.S. still embraces its first-to-invent system, other countries and international organizations continue to demand the U.S. to convert to the first-to-file system. And in the U.S., several proposals to harmonize patent law with the rest of the world have been introduced over the past decade, but none has yet to include conversion from the first-to-invent rule of priority. The Patent Reform Act of 2010 also dramatically changes this landscape.*

*U.S. patent law's first-to-invent system involves two primary functions, i.e., the novelty and priority determination. Under the U.S.' first-to-invent system, the first of many inventors to reduce an invention to practice around the same time will be the sole party to obtain a patent, unless another was the first to conceive and couples a later-in-time reduction to practice with diligence from a time just prior to when the second conceiver entered the field to the first conceiver's reduction to practice.*

*Labelling the U.S. patent practice as first-to-invent is misleading, because it in fact contains the mechanisms of the first-to-file approach as well. This mechanism*

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*can be seen in the rule of priority, in that the first person who reduces the subject matter to practice, either actually or constructively, is deemed the first inventor. Thus first inventorship status can be established through constructive reduction to practice, referring to the filing date instead of the invention date. Therefore, the U.S. Patent Law system is not a pure first-to-invent system, but rather a mixed system with features of both first-to-invent and first-to-file approaches. Additionally, the recently enacted Patent Reform Act of 2010 has further modified the first-inventor-to-file system.*

**Keywords:** *First-to-Invent, First-to-File, First-Inventor-to-File, Natural Right, Inference, Reduction to Practice*

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## I. FOREWORD

Most countries have adopted the first-to-file system whereby disputed claims of different inventors to the same invention are resolved by reference to their respective filing dates with the first to file an application for a patent prevailing. However, the United States (U.S.) is unique in having the first-to-invent system, where a party who is second to file may establish priority by proving an earlier date of invention.

As a result of the historical ties between the U.S. and England, the U.S. legal system has been greatly influenced by the British legal system. A review of the history of early intellectual property law is thus necessary in order to appreciate the degree of influence from the English legal system on U.S. patent law in general, and with regard to the first-to-invent system in particular. Also, the ideological concepts underlying the first-to-invent system merit analysis so that the foundations of the system can be understood.

Regarding the adoption of the first-to-invent system by the U.S., the question of whether any other country in the world has also adopted the same or a similar system deserves some attention. Further, given that the U.S. has withstood pressure from the rest of the world regarding its adoption of the first-to-invent system, the issue of international harmonization which demands the U.S. convert to the first-to-file system needs review. Additionally, it may be informative to understand the rationales embraced by the U.S. Congress regarding their legislative action on the conversion issue and proposed statutory treatment.

Compared to the simple rule of the first-to-file system, the U.S. first-to-invent system is rather complex in terms of its novelty and priority determination mechanisms. Also, it is necessary to take a further review at the statutory framework and case law in order to compare the American system with the first-to-file system. In addition, it should be noted that there is a gap between the black letter statutory language and actual practice involving the rule of priority, and the first-to-file mechanism often can be found in the center of that gap. Thus, whether the U.S. patent law system is truly a pure first-to-invent system or a mixed system of both first-to-invent and first-to-file should also be considered.

In Part II, this article will discuss the history of the U.S. first-to-invent system, its underlying ideology the historical ties between England and the U.S., the influence of natural rights, and whether the system favors the small entities. Interestingly, the U.S. can be said to be the first inventor of the only first-to-invent country in the world. In Part III, this article addresses the first-to-invent system in the U.S., introducing the mechanisms for novelty and priority determination. The former include documentation evincing

memorialization or acts as prior art, the place or actor involved in the disclosure, statutory bars and grace periods, abandonment, foreign patenting, and the content or scope of any claimed or unclaimed subject matter. Priority determination includes matters relating to interference proceedings, circumstances of the conception of the invention, reduction to practice, reasonable diligence, and abandonment, suppression or concealment. In Part IV, this article explains another aspect of the mixed system, i.e., the effective first-to-file system, which includes the application of the doctrine of constructive reduction to practice. The concepts of the presumption of invention date, reference date for grace periods, and interference proceedings and burden of proof are to be discussed. In Part V, this article discusses the harmonization of priority rules in patent law, identifying those events which have given rise to demands for converting the current U.S. first-to-invent system to the more universal first-to-file system, along with an overview of the U.S. Congress's various Patent Reform Acts. In particular, arguments in favor and against the first-to-invent system of U.S. patent law are provided by addressing related issues of harmonization, administration, equity, and the Constitution. Part VI presents the conclusion.

## II. HISTORY AND IDEOLOGIES INFORMING U.S. PATENT LAW'S FIRST-TO-INVENT SYSTEM

This part reviews the history of the U.S. adoption of the first-to-invent rule, making the U.S. the only first-to-invent jurisdiction, and explains the ideological reasons for its attachment to the rule. Further, this part addresses why a rule of priority could be designed which would accommodate both the federalist view of sovereignty as set forth in the U.S. Constitution and the natural law theory of rights. Also, the issue of whether the system favors small entities will be discussed.

### A. *The Federalist Form of Sovereignty*

Although England had issued patents under the Statute of Monopolies for more than a century, there are no historical court records of any priority disputes at the end of the eighteenth century.<sup>1</sup> Since there was no statutory or common law rule of priority in England during that period of time, the U.S. must have independently established its first-to-invent system.<sup>2</sup> There were legal precedents for a rule of priority for patents on inventions in the

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1. Edward C. Walterscheid, *Priority of Invention: How the United States Came to Have a "First-to-Invent" Patent System*, 23 AIPLA Q.J. 263, 267-68 (1995).

2. Michael F. Martin, *The End of the First-to-Invent Rule: A Concise History of Its Origin*, 49 IDEA: INTELL. PROP. L. REV. 435, 445 (2009).

American colonies before the late eighteenth century. In fact, the American colonies began issuing patents in the mid-seventeenth century and continued to do so after they became states of the United States. Indeed the states had already dealt with several priority cases by the time the U.S. Constitution was ratified.<sup>3</sup>

After declaring their independence, a system of dual sovereignty of state and federal governments was established. The states each managed to build domestic industries, with new industry growing in major cities such as Baltimore, Boston, New York and Philadelphia.<sup>4</sup> Pennsylvania issued its first patent in 1780, and New York followed with a patent to the same inventor later the same year.<sup>5</sup> In 1783, Connecticut issued a patent.<sup>6</sup> Different patent prosecution systems can be seen in these states during that period of time.

Pursuant to the Articles of Confederation, there were two approaches available to a patentee for handling infringement that occurred in different states.<sup>7</sup> In the first approach, the patentee would petition for a patent in each state where infringement occurred. In the second approach, the patentee would petition for a patent in one state but request that the patent also prohibit importation or permit confiscation.<sup>8</sup> However, the need to petition for patents in multiple states created a problem as it led to disputes over priority of patents in the same invention.<sup>9</sup>

Under these approaches, although there was no constitutional or practical reason which would prevent a first-to-file rule of priority from being adopted by the U.S., a first-to-file rule would nevertheless have been inconvenient for patent prosecution given the dual sovereignty of state and federal governments. Commentators have argued that were it not for the dual sovereignty of state and federal governments as envisioned by the Constitution, the U.S. might have adopted the first-to-file rule of priority.<sup>10</sup> Thus, it appears that it was the dual sovereignty of states and the federal government which presented an obstacle preventing the U.S. from adopting a first-to-file rule of priority.<sup>11</sup>

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3. *Edgeberry v. Stephens*, 2 Salk. 447, 1 Abbott's P.C. 8 (K.B. 1691).

4. BRUCE W. BUGBEE, *GENESIS OF AMERICAN PATENT AND COPYRIGHT LAW* 14, 85 (1967).

5. *Id.* at 87.

6. *Id.* at 88-89.

7. *Id.* at 89-90.

8. *Id.*

9. *Id.* at 95-99.

10. Martin, *supra* note 2, at 440.

11. *Id.* at 467.

### B. *Influence of Natural Rights*

Patents were not considered property rights in England before the eighteenth century.<sup>12</sup> However, the U.S. system rejected the English models of ownership, in which all property rights existed at the discretion of the Crown,<sup>13</sup> instead embracing a model of ownership based on a theory of individual rights that values discovery and industry.<sup>14</sup> In fact, the first-to-invent system which grants entitlements on the basis of inventorship reflects a broader system of values that may be seen from other U.S. property regimes' laws of appropriation and ownership, and not merely in patent grants.<sup>15</sup>

Advocates of natural rights believed that inventors had a right to inventions that preexisted the grant of patents, therefore, the U.S. government is not creating rights through the patent grant but rather securing to inventors their pre-existing rights to a fixed temporospatial technology monopoly.<sup>16</sup> In the adoption of the first-to-invent rule, the most important advocate was John Fitch, who had orchestrated an influential protest to Governor Randolph's suggestion of a first-to-file rule in 1791. Although Fitch didn't effectively prevail in his priority dispute, he and others believed in a natural right to protection of an invention,<sup>17</sup> and eventually their efforts saw the adoption of the first-to-invent rule as a result.<sup>18</sup>

Natural rights conceptions are based on the theory that an individual enters into society with certain basic rights and that no government can deny or deprive one of these rights. With the growth of the idea of individualism, natural law doctrines were modified to stress the fact that individuals, because they are natural beings, have rights that cannot be violated by anyone else or governments.<sup>19</sup>

Indeed, natural law theories influenced the drafting and enactment of the first patent laws in the U.S., resulting in adoption of a first-to-invent rule of priority. Although natural law views have not been accepted as a valid approach to the intellectual property clause, interference proceedings in the U.S. are still governed by a natural law informed rule of priority.<sup>20</sup>

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12. *Id.* at 442.

13. *Gibbons v. Ogden*, 22 U.S. 1, 147-48 (1824).

14. Edward C. Walterscheid, *Charting a Novel Course: The Creation of the Patent Act of 1790*, 25 *AIPLA Q.J.* 445, 448 (1997).

15. *See, e.g.*, U.C.C. § 9-310 [A].

16. JOHN LOCKE, *TWO TREATISES OF GOVERNMENT* 163 (Mark Goldie ed., Everyman 1993) (1690); Paul M. Schoenhard, *Reconceptualizing Inventive Conception Strengthening, Not Abandoning the First-to-Invent System*, 17 *FED. CIR. B.J.* 567, 582-83 (2008).

17. Martin, *supra* note 2, at 460.

18. *Id.* at 467.

19. LLOYD L. WEINREB, *NATURAL LAW AND JUSTICE* (1987).

20. Martin, *supra* note 2, at 468.



### C. *The Myth of Favoring Small Entities*

In addition to the ideology of natural right, the first-to-invent system is often recognized as being more favorable to small entities, mainly independent inventors, small businesses and nonprofit institutions. In particular, one commentator noted that a small entity would be advantaged by the first-to-invent system if the small entity was the junior party in an interference, i.e., the second person to file a patent application on the invention, and received a favorable decision. On the other hand, a small entity would be disadvantaged by the first-to-invent system if the small entity was the senior party in an interference, i.e., the first person to file a patent application on the invention, and received an adverse decision. However, this assessment reflects a myth because the statistics show the contrary to be true.<sup>21</sup>

In fact, during 1983 and 2000, of the total of 2,858 interference cases brought to court, 1917 were resolved favorably to the senior party and 941 decisions were favorable to the junior party. Of the 941 decisions favorable to the junior party, 203 favored small entities and 738 favored large entities. In summary, the data provided by the U.S. Patent and Trademark Office (USPTO) confirms that the current first-to-invent system does not favor small entities.<sup>22</sup>

An alternative approach may provide essential advantages to small entities instead. That is, allowing low-cost and easily filed provisional applications could prove to be of significant benefit to small entities.<sup>23</sup> It is generally considered that small entities by their nature can move faster than larger bureaucracies, and when a U.S. provisional applicant moves to file a complete disclosure of their invention, a small entity can readily secure priority rights in a first-inventor-to-file system without significant expenditure of resources. This approach then affords the small entity a one year provisional protection period in which to file a well prepared patent application,<sup>24</sup> without necessarily requiring implementation of a

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21. 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, 429-30 (2002).

22. *Id.* at 426; Mark A. Lemley & Colleen V. Chien, *Are the U.S. Priority Rules Really Necessary?*, 54 HASTINGS L.J. 1299 (2003).

23. Since June 8, 1995, the USPTO has offered the provisional application for patent which was designed to provide a lower-cost first patent filing in the U.S. Applicants are entitled to claim the benefit of a provisional application in a corresponding non-provisional application filed not later than twelve months after the provisional application filing date. The corresponding non-provisional application would benefit in three ways: (1) patentability would be evaluated as though filed on the earlier provisional application filing date, (2) the resulting publication or patent would be treated as a reference under 35 U.S.C. § 102(e) as of the earlier provisional application filing date, and (3) the twenty-year patent term would be measured from the later non-provisional application filing date. *See* 35 U.S.C. § 119(e) (2002).

24. Toshiko Takenaka, *Rethinking the United States First-to-Invent Principle from a Comparative*

first-to-invent system.

D. *The Single Country Adopting the First-to-Invent System*

Although it has been argued that similar first-to-invent rules can be found in Canada and Philippines,<sup>25</sup> the U.S. first-to-invent rule of priority is in fact the only one in the world.<sup>26</sup> The law in the Philippines, in particular, contributes only an affirmative defense of prior invention analogous to the novelty rules of U.S. Patent Act Subsection 102(a), (e), and (g)(2), but not the first-to-invent rule of priority set forth in Subsection 102(g)(1) as applied by the USPTO.<sup>27</sup>

Canadian patent law had initially followed this type of a pure first-to-invent rule, but later revised it to adopt a first-to-file rule. That is, the Canadian Patent Act of 1923 holds 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.<sup>28</sup> However, although Canada joined the U.S. in applying a first-to-invent rule in priority disputes, its first-to-invent rule differed from the U.S. rule by deeming the act of invention complete with conception, while a reduction to practice is required by the U.S. Act's Subsection 102(g).<sup>29</sup> In 1989, Canada decided to abandon its first-to-invent rule in favor of a first-to-file rule of priority.<sup>30</sup> Thus, the U.S. first-to-invent system remains unique as compared to the first-to-file systems adopted by the rest of the world's patent regime jurisdictions.

### III. U.S. PATENT LAW'S FIRST-TO-INVENT SYSTEM

U.S. Patent Law's first-to-invent system is mainly accomplished through two operations, i.e., the novelty determination and the priority determination. The former relates to the patentability of the subject matter and its attendant inventorship, while the latter arises in interference proceedings for resolution of priority disputes. The U.S. first-to-invent system is quite different from the first-to-file system adopted by the rest of the world.

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*Law Perspective: A Proposal to Restructure § 102 Novelty and Priority Provisions*, 39 HOUS. L. REV. 621, 622 (2002).

25. George E. Frost, *The 1967 Patent Law Debate—First-to-Invent vs. First-to-File*, 1967 DUKE L.J. 923, 925 (1967).

26. Gerald J. Mossinghoff & Vivian S. Kuo, *World Patent System Circa 20XX, A.D.*, 38 IDEA 529, 548 (1998).

27. *Id.*

28. *Id.*

29. *Christiani v. Rice*, [1930] S.C.R. 443 (Can.).

30. Canadian Patent Act, R.S.C., ch. P-4, s. 28.2 (1985), amended by 1993 S.C., ch. 15, s. 33 (Can.).

## A. Novelty Determinations

### 1. Documentation or Act as Prior Art

The language of the Act's Subsection 102 provisions stipulates that the novelty of the invention is determined as of the date of invention, clearly indicating the adoption of a first-to-invent novelty rule. And, the underlying approach of 102 is very different from the first-to-file approach adopted by the rest of the world, which determine the novelty of invention as from the date of filing.<sup>31</sup>

The Section 102 provision contains the novelty determination framework, wherein the documentation and act requirements are set forth as subject matters to be defined in reference to the prior art. Specifically, Subsection 102(a) provides that a person shall be entitled to a patent unless the invention was known or used by others in this country, or "patented" or "described in a printed publication" in this or a foreign country, before the invention thereof by the applicant for patent.<sup>32</sup> In a similar vein, Subsection 102(b) provides that a person shall be entitled to a patent unless the invention was "patented" or "described in a printed publication" in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the U.S.<sup>33</sup>

However, it should be noted that some confusion exists regarding the definition of the prior art due to their unclear distinction, i.e., although Subsections 102(a) and (b) list "being patented" and "described in a printed publication"<sup>34</sup> separately, both forms of memorialized subject matters become prior art when the subject is made available to the public.<sup>35</sup> These subject matters listed as prior art differ from the first-to-file approach adopted by the rest of the world, which determine the prior art by setting forth rather simple declarations of subject matter. Therefore, first-to-file patent commentators argue that the U.S. novelty provision adopts a definition tied to public accessibility, instead of listing redundant subject matter definitions.<sup>36</sup>

On the other hand, regarding an act as constituting prior art, the terms "being known or used" in Subsection 102(a) and "public use or on sale" in Subsection 102(b) seem to overlap each other when applied literally. A distinction can only be found by parsing the facts and ratio decidendi of the

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31. Takenaka, *supra* note 24, at 629-43.

32. 35 U.S.C. § 102(a) (2002).

33. 35 U.S.C. § 102(b) (2002).

34. *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).

35. *In re Hall*, 781 F.2d 897, 899-900 (Fed. Cir. 1986).

36. Takenaka, *supra* note 24, at 632-33.

case law. Specifically, the courts have ruled that a common requirement of public access applies to “being known or used” and “public use or on sale” with respect to an act of a third party,<sup>37</sup> however, no requirement of public access is needed to give rise to “public use or on sale” with respect to an act of an inventor.<sup>38</sup>

Additionally, courts have introduced another difficulty in interpreting “public use” by developing the experimental-use exception doctrine. Specifically, when 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 Subsection 102(b).<sup>39</sup> However, nothing in the patent statute explicitly mentions this exclusion of public experimentation.<sup>40</sup> Thus, only by interpreting U.S. case law can a person appreciate that as far as an inventor’s act is concerned the statutory term of art, “public use” includes a secret use but excludes public experimental use. In summary, the subject matter listed as prior art are quite different from the first-to-file approach adopted by the rest of the world.<sup>41</sup>

## 2. *Place or Actor of Disclosure*

U.S. Patent Law provisions contains the novelty determination framework, wherein the place and actor are set forth as subject matters to be disclosure in the application. Subsections 102(a) and (b) are more complex than their counterpart provisions in first-to-file systems in terms of the place of disclosure for foreign and domestic prior art.<sup>42</sup> Under U.S. Patent Law, only information described in a published patent or printed publication, wherever it may be, constitutes the prior art.<sup>43</sup> If information is merely “known or used” or “in public use or on sale,” such information must be available in the jurisdiction of the U.S. to constitute prior art under Subsections 102(a) and (b).<sup>44</sup> And, electronic publication can be “printed publication” if it meets statutory requirements, without distinguishing foreign from domestic sources of information.<sup>45</sup> However, first-to-file

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37. See *Conn. Valley Enters., Inc. v. United States*, 348 F.2d 949, 951-52 (Ct. Cl. 1965); *W.L. Gore & Assocs. v. Garlock, Inc.*, 721 F.2d 1540, 1549-50 (Fed. Cir. 1983); *Takenaka*, *supra* note 24, at 634.

38. See *Egbert v. Lippmann*, 104 U.S. 333, 336-37 (1881); *Takenaka*, *supra* note 24, at 634.

39. *Elizabeth v. Am. Nicholson Pavement Co.*, 97 U.S. 126, 134-35 (1877); 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).

40. 35 U.S.C. § 102(b) (2002).

41. *Takenaka*, *supra* note 24, at 634-36.

42. 35 U.S.C. §§ 102(a)-(b) (2002).

43. *Id.*

44. See *Robbins Co. v. Lawrence Mfg. Co.*, 482 F.2d 426, 434-35 (9th Cir. 1973).

45. §§ 102(a)-(b).

countries remove the distinction between foreign and domestic prior art, and between written and unwritten forms, providing that prior art means any information that has become available in any form anywhere.<sup>46</sup>

Further, both Subsections 102(a) and (b) include subject matter that may be patented and described in a printed publication.<sup>47</sup> With respect to these disclosures, it is only the actor which distinguishes Subsection 102(a) from 102(b). Therefore, 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, USPTO office action can be rendered citing both Subsections 102(a) and (b) to reject the third party's claim for the subject matter.

The substance of the conditions for Subsection 102(b) are essentially the same as first-to-file novelty determinations in excluding inventors' activities during the grace period. In order to explore the reasons behind why the U.S. patent statute avoids defining the prior art by actors separately, it is necessary to read early court decisions to find out the historical reasons for separating the prior art definition by actors of disclosure. For example, consideration of these factors with regard to the actors involved can be found in the 1829 Pennock case.<sup>48</sup> In Pennock, a major flaw of a true first-to-invent system was revealed when the first inventor publicly used his invention and filed an application after a competitor started to sell the invention.<sup>49</sup>

### 3. *Statutory Bar and Grace Period*

Like the novelty definition in first-to-file countries, Subsection 102(b) defines the reference date to prior art as of the date one year prior to the date of application,<sup>50</sup> to apply as the statutory bar for the subject matter. Since the substance of the condition set forth in Subsection 102(b) seems to mirror the definition of the grace period in first-to-file systems, some commentators claim the existence of similarity between Subsection 102(b) and first-to-file novelty provisions.<sup>51</sup>

In fact, the significance of a grace period is very different between the U.S. first-to-invent system and the foreign first-to-file systems. Under a true first-to-invent rule, a grace period is not an exception, but a principal

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46. Takenaka, *supra* note 24, at 637-38.

47. §§ 102(a)-(b).

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

49. *Id.* at 7-8; Takenaka, *supra* note 24, at 632.

50. § 102(b).

51. See generally MARTIN J. ADELMAN ET AL., CASES AND MATERIALS ON PATENT LAW 206 (1998).

mandate, because the novelty is determined as of the date of invention.<sup>52</sup> A true first-to-invent rule requires that a patent office grant a patent on subject matter that was published prior to the date of application, as long as the subject matter is new and non-obvious as of the invention date. Under such a rule, the subject matter's condition as of the date of filing has nothing to do with its patentability.<sup>53</sup>

It is noted that the U.S. patent system does not completely follow the true first-to-invent rule because it has exceptions to the rule, i.e., statutory bars, that prevent inventors from obtaining a patent after the expiration of a grace period once inventors engage in one of the activities listed in Subsections 102(b), (c), or (d).<sup>54</sup> 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 principal mandate, while 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 to this mandate.<sup>55</sup>

Further, there are at least two more items which can differentiate the U.S. from first-to-file countries in terms of a grace period. First, the conditions to be satisfied for applying the grace period under Subsection 102(b) are much more generous than the conditions under the first-to-file principle. Where Section 102 is concerned, there is no restriction on the type of disclosures for applying the grace period.<sup>56</sup> Second, the grace period is set forth as one year from the actual U.S. filing date, instead of the six-month period adopted by the majority of first-to-file countries.<sup>57</sup>

#### 4. *Abandonment*

Under the U.S. first-to-invent approach, the statutory bar includes additional grounds for preventing an inventor from obtaining a patent, i.e., Subsection 102(c).<sup>58</sup> The Subsection 102(c) provision stipulates that a person shall be entitled to a patent unless he has abandoned the invention.<sup>59</sup>

Subsection 102(c) provides that an inventor's abandonment of an invention prevents an inventor from obtaining a patent on the invention.<sup>60</sup> This act of abandonment should be read as different from the abandonment set forth in Subsection 102(g) because, once Subsection 102(c) abandonment

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52. *Christiana v. Rice*, [1931] A.C. 770, 777-79, 782-83 (Can.).

53. *Id.* at 776.

54. *See Pennock v. Dialogue*, 27 U.S. 1, 23-24 (1829); *Takenaka*, *supra* note 24, at 630-31.

55. *Takenaka*, *supra* note 24, at 630-31.

56. 35 U.S.C. § 102(b) (2002).

57. *Id.*

58. 35 U.S.C. § 102(c) (2002).

59. *Id.*

60. *Id.*

is found, an inventor loses his right to obtain a patent permanently and is then unable to recover the right.<sup>61</sup> However, Subsection 102(g) abandonment does not result in a loss of right to obtain a patent.<sup>62</sup> In particular, when the first inventor resumes her work before the second inventor to reduce the invention to practice conceives the same invention, the first inventor can rely on the date of resuming the activity to file an application and obtain a patent.<sup>63</sup> This difference results from thorough investigation of court interpretations of Subsections 102(c) and (g).<sup>64</sup>

An even more confusing aspect of Subsection 102(c) abandonment is its relationship with “public use or on sale” under Subsection 102(b). The leading 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 that acts of an inventor indicating an intent to abandon the right will suffice.<sup>65</sup> 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.<sup>66</sup> However, the acts the Kendall Court listed to constitute abandonment are now subsumed into Subsection 102(b),<sup>67</sup> because courts include a delay in filing an application while commercially exploiting an invention within the meaning of “public use or on sale.”<sup>68</sup>

It is not clear whether any act that does not give rise to being a “public use or on sale” falls within the meaning of Subsection 102(c). No court has found an abandonment relying on an act during the grace period,<sup>69</sup> as a result, Subsection 102(c) abandonment is seldom relied upon to reject or invalidate a patent.<sup>70</sup>

### 5. Foreign Patenting

Another statutory bar provision that does not exist under the first-to-file principle is foreign patenting under Subsection 102(d). The Subsection 102(d) language provides that a person shall be entitled to a patent unless the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in

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61. DONALD S. CHISUM, CHISUM ON PATENTS: A TREATISE ON THE LAW OF PATENTABILITY, VALIDITY AND INFRINGEMENT, § 6.03[2] (2000).

62. 35 U.S.C. § 102(g) (2002).

63. *Paulik v. Rizkalla*, 760 F.2d 1270, 1275-76 (Fed. Cir. 1985).

64. *See, e.g., Kendall v. Winsor*, 62 U.S. 322, 329 (1858).

65. *Id.*

66. *Id.* at 328-31.

67. CHISUM, *supra* note 61, § 6.03[1][c][i].

68. *Mahurkar v. Impra, Inc.*, 71 F.3d 1573, 1577 (Fed. Cir. 1995).

69. CHISUM, *supra* note 61, § 6.03[1][c][i].

70. *Id.*

this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the U.S.<sup>71</sup>

This bar poses the same problems as Subsections 102(a) and (b) regarding the question of when and whether a foreign patent falls within the meaning of Subsection 102(d). This section was originally enacted to encourage foreign applicants who obtain patent protection abroad to promptly file with the USPTO.<sup>72</sup> When the U.S. joined the Paris Convention,<sup>73</sup> 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 priority date.<sup>74</sup> Satisfying the requirement under the Paris Convention automatically meets the one-year filing requirement under Subsection 102(d).<sup>75</sup> Therefore, Subsection 102(d) is seldom relied upon for rejecting claims or invalidating patents, resulting in low practical enforcement value.

Additionally, Subsection 102(d) has a serious problem in that it unfairly discriminates against inventions made outside the U.S. because it imposes an additional restriction on foreign-origination inventions. Further, it is arguable that Subsection 102(d) may violate the non-discrimination provision of the World Trade Organization Agreement on Trade-Related Aspects of Intellectual Property Rights (the TRIPS Agreement) with respect to the place of invention.<sup>76</sup> Not only is Subsection 102(d) unnecessary and confusing when interpreting a foreign patent, but it also serves as a source of criticism from other countries. One commentator argues that this provision presents another obstacle for inventors and makes the novelty provision more complex than necessary.<sup>77</sup>

#### 6. *Claimed or Unclaimed Subject Matter*

Different policies related to novelty and with respect to actors of disclosures, introduce another complexity in determining novelty under Subsection 102(e). Subsection 102(e) provides that a person shall be entitled to a patent unless the invention was described in (1) an application for

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71. 35 U.S.C. § 102(d) (2002).

72. CHISUM, *supra* note 61, § 6.04.

73. Paris Convention for the Protection of Industrial Property, July 14, 1967, 21 U.S.T. 1583, 828 U.N.T.S. 305.

74. Donald S. Chisum, *Foreign Activity: Its Effect on Patentability Under United States Law*, 11 IIC: INT'L REV. INDUS. PROP. & COPYRIGHT L. 26, 44-47 (1980).

75. § 102(d).

76. 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).

77. Takenaka, *supra* note 24, at 640-41.



patent, published under Subsection 122(b), by another filed in the U.S. before the invention by the applicant for patent, or (2) a patent granted on an application for patent by another filed in the U.S. before the invention by the applicant for patent.<sup>78</sup>

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 Subsections 102(b), (c), and (d). In interpreting the effect of priority right under the Paris Convention Article, commentators read the article not to bind only a defensive patent-rejecting effect.<sup>79</sup>

Applying this interpretation to the definition of the prior art in Subsection 102(e), the USPTO and courts give effect to 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 right and only relates to a defensive effect.<sup>80</sup> 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.<sup>81</sup>

However, the language of Subsection 102(e) does not make clear the different timing required to become prior art with respect to claimed and unclaimed subject matter.<sup>82</sup> Literally interpreted, it requires that the invention be described in an application for a patent by another filed in the U.S. before the invention, and it does not specify in which part of the application the invention must be described.<sup>83</sup>

## B. *Priority Determinations*

### 1. *Interference Proceedings*

Under the U.S. first-to-invent system, the first of many to reduce an invention to practice around the same time will be the sole party to obtain a patent,<sup>84</sup> unless another was the first to conceive and couple a later-in-time reduction to practice with diligence from a time just prior to when the second

78. 35 U.S.C. § 102(e) (2002).

79. Takenaka, *supra* note 24, at 641.

80. *Id.*; *In re Hilmer*, 359 F.2d 859, 863 (C.C.P.A. 1966).

81. Reinhard Wiczorek, *Convention Applications as Patent-Defeating Prior Rights*, 6 IIC: INT'L REV. INDUS. PROP. & COPYRIGHT L. 135, 156-65 (1975).

82. § 102(e).

83. Takenaka, *supra* note 24, at 642.

84. *Radio Corp. of America v. Radio Eng'g Labs., Inc.*, 293 U.S. 1, 2 (1934).

conceiver entered the field to the first conceiver's reduction to practice.<sup>85</sup>

The basic rule of priority of invention is that the first person who reduces the subject matter in question to practice, either actually or constructively, is the first inventor. The rule is subject to one important exception. The first person to conceive the subject matter in question is the first inventor provided he exercises reasonable diligence in reducing to practice from a time just prior to when the first person to reduce to practice enters the field.<sup>86</sup>

Subsection 102(g)<sup>87</sup> provides the basis for determining priority of invention between two parties in interference disputes.<sup>88</sup> An interference is an *inter partes* proceeding directed at determining who is the first to invent as among the parties to the proceeding, involving two or more pending applications naming different inventors or one or more pending applications and one or more unexpired patents naming different inventors. The purpose of an interference proceeding is to resolve the question of priority of invention when more than one applicant seeks a patent on substantially the same invention.<sup>89</sup>

The U.S. is unusual in having a first to invent rather than a first to file system.<sup>90</sup> The conception and reduction to practice of the reference to be antedated are both considered to be as from the effective filing date of domestic patent or foreign patent or the date of printed publication. Various situations can be illustrated through the examples listed below:<sup>91</sup>

As shown in Chart 1, because A conceived the invention before B and constructively reduced the invention to practice before B reduced the invention to practice, A is awarded priority in an interference. The same result would be reached if the conception date was the same for both inventors A and B.

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85. Hull v. Davenport, 90 F.2d 103, 105 (C.C.P.A. 1937).

86. CHISUM, *supra* note 61, § 10.03[1].

87. 35 U.S.C. § 102(g): (1) during the course of an interference conducted under sec. 135 or sec. 291, another inventor involved therein establishes, to the extent permitted in sec. 104, that before such person's invention thereof the invention was made by such other inventor and not abandoned, suppressed, or concealed, or (2) before such person's invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it. In determining priority of invention under this subsection, there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

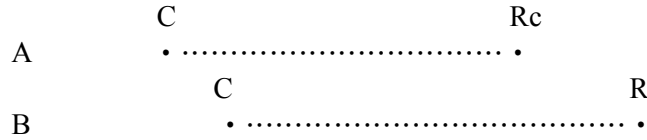
88. Bigham v. Godtfredsen, 857 F.2d 1415, 1416 (Fed. Cir. 1988) (2000) (referring to 35 U.S.C. § 135).

89. CHISUM, *supra* note 61, § 10.09[1].

90. Paulik v. Rizkalla, 760 F.2d 1270, 1272 (Fed. Cir. 1985).

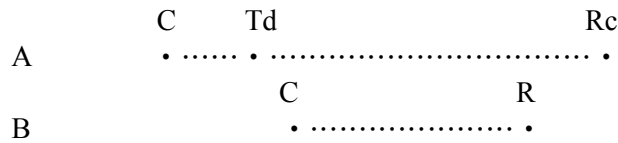
91. Referring to MPEP 2138.01. at 2100-104. Rev. 6, Sept. 2007 (in these charts, C = conception, R = reduction to practice (either actual or constructive), Ra = actual reduction to practice, Rc = constructive reduction to practice, and Td = Timely commencement of diligence).

**Chart 1:**



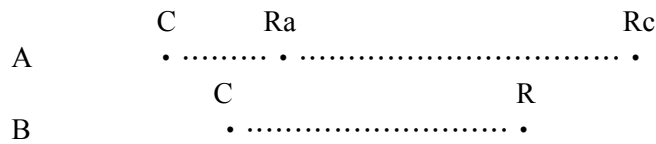
As shown in Chart 2, if A can show reasonable diligence from Td (a point just prior to B's conception) until Rc because A conceived the invention before B, and diligently constructively reduced the invention to practice even though this was after B reduced the invention to practice, A is awarded priority in an interference.

**Chart 2:**

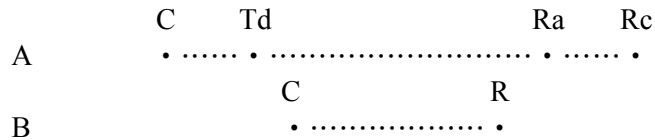


As shown in Chart 3, in the absence of abandonment, suppression, or concealment from Ra to Rc, A is awarded priority in an interference because A conceived the invention before B, actually reduced the invention to practice before B reduced the invention to practice, and did not abandon, suppress, or conceal the invention after actually reducing the invention to practice and before constructively reducing the invention to practice.

**Chart 3:**



As shown in Chart 4, if A can show reasonable diligence from TD (a point just prior to B's conception) until Ra in the absence of abandonment, suppression, or concealment from Ra to Rc, A is awarded priority in an interference because A conceived the invention before B, diligently actually reduced the invention to practice (after B reduced the invention to practice), and did not abandon, suppress, or conceal the invention after actually reducing the invention to practice and before constructively reducing the invention to practice.

**Chart 4:**2. *Conception*

Conception has been defined as the complete performance of the mental part of the inventive act and it is the formation in the mind of the inventor of a definite and permanent idea of the complete and operative invention as it is thereafter to be applied in practice.<sup>92</sup> Conception is established when the invention is made sufficiently clear to enable one skilled in the art to reduce it to practice without the exercise of extensive experimentation or the exercise of inventive skill.<sup>93</sup> And, the idea must be of specific means, not just a desirable end or result.<sup>94</sup>

The first critical point in the application process corresponds to the date on which an inventor conceives of an invention.<sup>95</sup> In some cases, conception is the result of a “light bulb moment.”<sup>96</sup> In others, conception is the product of years of painstaking, and often costly, research.<sup>97</sup> But in all cases, conception is more than simply a vague idea of how to approach a problem.<sup>98</sup> As a result, conception has been called the touchstone of inventorship, the completion of the mental part of the invention.<sup>99</sup>

The U.S. government has consistently assigned an entitlement to the first person to conceive of an invention, because this initial entitlement has been rooted in the Patent and Copyright Clause of the Constitution, providing the Congress shall have power “to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.”<sup>100</sup> Consistent with this mandate, Section 101 of the U.S. Patent Act indicates that an inventor has at least an expectancy interest in a future-issued patent by providing whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful

92. *Townsend v. Smith*, 36 F.2d 292, 295 (C.C.P.A. 1929).

93. *Hiatt v. Ziegler*, 179 U.S.P.Q. 757, 763 (Bd. Pat. Inter. 1973).

94. *Amax Fly Ash Corp. v. U.S.*, 514 F.2d 1041, 1047 (Ct. Cl. Trial Div. 1975), *aff'd*, 185 U.S.P.Q. 437 (Ct. Cl. 1975).

95. *Burroughs Wellcome Co. v. Barr Labs., Inc.*, 40 F.3d 1223, 1227-28 (Fed. Cir. 1994).

96. *See Cuno Eng'g Corp. v. Automatic Devices Corp.*, 314 U.S. 84, 91 (1941).

97. *Hoechst-Roussel Pharm., Inc. v. Lehman*, 109 F.3d 756, 763 (1997).

98. *Burroughs Wellcome Co.*, 40 F.3d at 1228.

99. *Id.* at 1227-28.

100. U.S. CONST. art. I, § 8, cl. 8.

improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.<sup>101</sup>

This initial interest in future patent rights is insufficient to prevent others from practicing the newly-conceived invention, but it is enforceable against competing claimants.<sup>102</sup> In particular, between competing claimants, whoever can establish an earlier date of conception has a “right of priority” in the invention.<sup>103</sup> As a result, the U.S. patent system is referred to as a “first-to-invent” system, as contrasted with other nations’ “first-to-file” or “first-inventor-to-file,” systems, in which conception does not give rise to a right of priority and patent rights are awarded instead to the first party to file a patent application.<sup>104</sup>

### 3. *Reduction to Practice*

Reduction to practice is important both as verification that the conceived invention is workable and as a step in putting the conceived subject matter in a form that will make it a link in the great chain constituting a permanent part of the art. Therefore, the first conceiver must exercise reasonable diligence in reducing the subject matter to practice from a time prior to the second conceiver’s entry into the field.<sup>105</sup>

Although neither the 1790 nor the 1793 Act defined the meaning of “first and true inventor,” in *Bedford v. Hunt*, Justice Story held that mere speculation was not sufficient to establish priority, and the intent of the statute is to determine the priority between parties based on the consideration of whether the invention had been reduced to practice.<sup>106</sup> While reduction to practice may be an actual reduction or a constructive reduction to practice which occurs when a patent application on the claimed invention is filed, the latter will be discussed in Part IV of this article.

To entitle a person to a patent as a first inventor, it is certainly not necessary for him to establish that he has put his invention into general use, or that he has made it generally known to artisans engaged in the same business.<sup>107</sup> Rather, the requirements to establish actual reduction to practice must specifically satisfy a two-prong test: “(1) the party constructed an embodiment or performed a process that met every element of the

101. 35 U.S.C. § 101 (2000).

102. *See Vaxiion Therapeutics Inc. v. Foley & Lardner L.L.P.*, 2008 WL 538446, 1-2 (S.D. Cal. Feb. 27, 2008).

103. *Pfaff v. Wells Electronics, Inc.*, 525 U.S. 55, 61 (1998); *Lutzker v. Plet*, 843 F.2d 1364, 1366 (Fed. Cir. 1988).

104. Rebecca C. E. McFadyen, *The “First-to-File” Patent System: Why Adoption is NOT an Option!*, 14 RICH. J.L. & TECH. 3, 46-49 (2007).

105. CHISUM, *supra* note 61, § 10.05[1].

106. *Bedford v. Hunt*, 3 F. Cas. 37, 38 (C.C. Mass. 1817).

107. *Id.*

interference count, and (2) the embodiment or process operated for its intended purpose.”<sup>108</sup>

It is noted that the same evidence sufficient for a constructive reduction to practice may be insufficient to establish an actual reduction to practice, which requires a showing of the invention in a physical or tangible form that shows every element of the interference count.<sup>109</sup> For an actual reduction to practice, the invention must have been sufficiently tested to demonstrate that it will work for its intended purpose, but it need not be in a commercially satisfactory stage of development.<sup>110</sup> If a device is so simple, and its purpose and efficacy so obvious, construction alone is sufficient to demonstrate workability.<sup>111</sup>

To establish an actual reduction to practice of an invention directed to a method of making a product, it is not enough to show that the method was performed. An invention is not reduced to practice until it is established that the product made by the process is satisfactory, and this may require successful testing of the product.<sup>112</sup> In addition, to establish an actual reduction to practice, testing is required. In fact, the nature of testing which is required to establish a reduction to practice depends on the particular facts of each case, and especially on the nature of the invention.<sup>113</sup>

#### 4. *Reasonable Diligence*

Being last to reduce to practice, a party cannot prevail unless he has shown that he was first to conceive and that he exercised reasonable diligence during the critical period from just prior to an opponent's entry into the field.<sup>114</sup> And, what serves as the entry date into the field of a first reducer is dependent upon what is being relied on by the first reducer, e.g., conception plus reasonable diligence to reduction to practice;<sup>115</sup> an actual reduction to practice or a constructive reduction to practice by the filing of either of a U.S. application.<sup>116</sup>

An applicant must account for the entire period during which diligence is required. Merely stating that there were no weeks or months that the invention was not worked on is not enough.<sup>117</sup> Simply stating that the subject matter “was diligently reduced to practice” is not a showing but a

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108. *Eaton v. Evans*, 204 F.3d 1094, 1097 (Fed. Cir. 2000).

109. *Wetmore v. Quick*, 536 F.2d 937, 941-942 (C.C.P.A. 1976).

110. *Scott v. Finney*, 34 F.3d 1058, 1061-62 (Fed. Cir. 1994).

111. *King Instrument Corp. v. Otari Corp.*, 767 F.2d 853, 861 (Fed. Cir. 1985).

112. *Birmingham v. Randall*, 171 F.2d 957, 958 (C.C.P.A. 1948).

113. *Gellert v. Wanberg*, 495 F.2d 779, 783 (C.C.P.A. 1974).

114. *Rieser v. Williams*, 118 U.S.P.Q. 96, 100 (C.C.P.A. 1958).

115. *Fritsch v. Lin*, 21 U.S.P.Q.2d 1731, 1734 (Bd. Pat. App. & Inter. 1991).

116. *Rebstock v. Flouret*, 191 U.S.P.Q. 342, 345 (Bd. Pat. Inter. 1975).

117. *Gould v. Schawlow*, 363 F.2d 908, 919 (C.C.P.A. 1966).

mere pleading.<sup>118</sup> Diligence requires that applicants must be specific as to facts and dates.<sup>119</sup>

The work relied upon to show reasonable diligence must be directly related to the reduction to practice for the invention at issue.<sup>120</sup> The court distinguished cases where diligence was not found because inventors either discontinued development or failed to complete the invention while pursuing financing issues or other commercial activity.<sup>121</sup>

Under some circumstances an inventor should also be able to rely on work on closely related inventions as support for diligence toward the reduction to practice on an invention in issue.<sup>122</sup> The work relied upon must be directed to attaining a reduction to practice of the subject matter of the interference counts. It is not sufficient that the activity relied on concerns related subject matter.<sup>123</sup> An actual reduction to practice of the invention at issue which occurred when the inventor was working on a different invention is fortuitous, and not the result of a continuous intent or effort to reduce to practice the invention in issue. Such fortuitousness is inconsistent with the exercise of diligence toward reduction to practice of that invention.<sup>124</sup> If inventor was not able to make an actual reduction to practice of the invention, he must also show why he was not able to constructively reduce the invention to practice through the filing of an application.<sup>125</sup>

The diligence required in Subsection 102(g) relates to reasonable “attorney-diligence” and “engineering-diligence,”<sup>126</sup> which does not require that an inventor or his attorney drop all other work and concentrate on the particular invention involved.<sup>127</sup> Thus, the diligence of a patent attorney in preparing and filing a patent application enures to the benefit of the inventor.<sup>128</sup>

##### 5. *Abandonment, Suppression, or Concealment*

One who is the first to reduce an invention to practice, and therefore presumptively the first inventor, loses the right to priority of invention if he thereafter abandons, suppresses or conceals the invention.<sup>129</sup> A principal

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118. *In re Harry*, 333 F.2d 920, 922-23 (C.C.P.A. 1964).

119. *Kendall v. Searles*, 173 F.2d 986, 993; 81 U.S.P.Q. 363, 369 (C.C.P.A. 1949).

120. *Naber v. Cricchi*, 567 F.2d 382, 384-85 (C.C.P.A. 1977), *cert. denied*, 439 U.S. 826 (1978).

121. *Scott v. Koyama*, 281 F.3d 1243, 1248-49 (Fed. Cir. 2002).

122. *Ginos v. Nedelec*, 220 U.S.P.Q. 831, 836 (Bd. Pat. Inter. 1983).

123. *Gunn v. Bosch*, 181 U.S.P.Q. 758, 761 (Bd. Pat. Inter. 1973).

124. *Id.*

125. *Huelster v. Reiter*, 168 F.2d 542 (C.C.P.A. 1948).

126. *Keizer v. Bradley*, 270 F.2d 396, 397-98 (C.C.P.A. 1959).

127. *Emery v. Ronden*, 188 U.S.P.Q. 264, 268-69 (Bd. Pat. Inter. 1974).

128. *Haskell v. Coleburne*, 671 F.2d 1362 (C.C.P.A. 1982).

129. 35 U.S.C. § 102(g) (2002).

purpose of Subsection 102(g) is to ensure that a patent is awarded to a first inventor. However, it also encourages prompt public disclosure of an invention by penalizing the unexcused delay or failure of a first inventor to share the benefit of the knowledge of the invention with the public after the invention has been completed.<sup>130</sup> If a person guilty of such abandonment, etc., resumes activity on the invention prior to entry of a second independent inventor and diligently proceeds to file a patent application, he may rely on that resumption date as a date of invention.<sup>131</sup>

Subsections 102(f) and (g) codify the rule developed by U.S. courts to determine the “first and true inventor” under the patent statute.<sup>132</sup> However, U.S. courts give special interpretation to the terms used in Subsection 102(g); therefore, the rule is almost impossible to understand without a knowledge of the applicable U.S. court decisions. For example, Subsection 102(g) prevents an inventor from obtaining a patent even if the inventor is the first-to-invent when the inventor abandoned, suppressed, or concealed the invention.<sup>133</sup> Although the patent statute lists three separate acts, abandonment, suppression, and concealment, U.S. courts do not distinguish one from the other.<sup>134</sup> Instead, the three acts connote one concept relating a delay in disclosing the invention by filing a patent application<sup>135</sup> or commercializing the invention.<sup>136</sup>

Subsection 102(g) generally makes available as prior art within the meaning of Section 103, the prior invention of another who has not abandoned, suppressed or concealed it. That is, the result of applying the suppression and concealment doctrine is that the inventor who did not conceal, but was the de facto last inventor, is treated legally as the first to invent, while the de facto first inventor who suppressed or concealed is treated as a de jure later inventor. The de facto first inventor, by his suppression and concealment, lost the right to rely on his actual date of invention not only for priority purposes, but also for purposes of avoiding the invention of the counts as prior art.<sup>137</sup>

The courts have consistently held that an invention, though completed, is deemed abandoned, suppressed, or concealed if, within a reasonable time after completion, no steps are taken to make the invention publicly known. Thus failure to file a patent application; to describe the invention in a

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130. Checkpoint Systems, Inc. v. U.S. Int’l Trade Comm’n, 54 F.3d 756, 761 (Fed. Cir. 1995).

131. Paulik v. Rizkalla, 760 F.2d 1270 (Fed. Cir. 1985), *appeal after remand*, 796 F.2d 456 (Fed. Cir. 1986).

132. 35 U.S.C. §§ 102(f)-(g) (2002).

133. § 102(g)(2).

134. CHISUM, *supra* note 61, § 10.08[1].

135. Lutzker v. Plet, 843 F.2d 1364, 1367 (Fed. Cir. 1988).

136. Dunlop Holdings, Ltd. v. RAM Golf Corp., 524 F.2d 33, 37 (7th Cir. 1975).

137. *In re Bass*, 474 F.2d 1276 (C.C.P.A. 1973).



publicly disseminated document; or to use the invention publicly, have been held to constitute abandonment, suppression, or concealment.<sup>138</sup> In *Correge*, an invention was actually reduced to practice, seven months later there was a public disclosure of the invention, and eight months thereafter a patent application was filed. The court held filing a patent application within one year of a public disclosure is not an unreasonable delay, therefore reasonable diligence must only be shown between the date of the actual reduction to practice and the public disclosure to avoid the inference of abandonment.<sup>139</sup>

#### IV. U.S. PATENT LAW'S FIRST-TO-FILE MECHANISM

Denominating the U.S. Patent practice as a first-to-invent system is misleading,<sup>140</sup> because this system in fact contains the mechanism of the first-to-file as well. This can be seen from a look at the basic rule of priority of invention, in that the first person who reduces the subject matter in question to practice, either actually or constructively, is the first inventor.<sup>141</sup> That is, the first inventorship can be established by the constructive reduction to practice, rather than actual reduction to practice.

##### A. *Novelty Determination Under Constructive Reduction to Practice*

###### 1. *The Doctrine of Constructive Reduction to Practice*

Actual reduction to practice has long been viewed as of primary importance in establishing the date of invention, however, the doctrine of constructive reduction to practice strikes a balance in terms of policy. For example, an inventor who is first to conceive may, without loss of priority rights, delay filing for a patent, while he diligently seeks to reduce to practice. Yet the doctrine of constructive reduction to practice dispenses altogether with actual reduction to practice.<sup>142</sup>

The doctrine of constructive reduction to practice is applied primarily through deeming the date of filing of an application as the date of reduction to practice. The doctrine seems to have been considered in a number of decisions and was the policy of the Patent Office at least by the 1870s.<sup>143</sup> Further, the doctrine of constructive reduction to practice is strictly confined to filed patent applications adequately describing the invention in

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138. *Correge v. Murphy*, 705 F.2d 1326, 1330 (Fed. Cir. 1983).

139. *Id.*

140. Takenaka, *supra* note 24, at 646.

141. CHISUM, *supra* note 61, § 10.05[1].

142. *See In re Bundy*, 642 F.2d 430, 434 (C.C.P.A. 1981).

143. *Starr v. Farmer*, 23 O.G. 2325, 1883 C.D. 34 (Comm'r Pat. 1883).

question.<sup>144</sup>

The filing of an application for a patent disclosing the invention constitutes a constructive reduction to practice of the invention and may be relied on as the date of reduction to practice for purposes of determining priority and patentability even though the applicant never actually reduced the invention to practice.<sup>145</sup> Specifically, in order to constitute constructive reduction to practice as of its filing date, the application must comply with the requirements of the first paragraph of Section 112, of the Act, that is, the enablement requirement,<sup>146</sup> the description requirement,<sup>147</sup> and the best mode requirement.<sup>148</sup>

As mentioned, the filing of a patent application serves as conception and constructive reduction to practice of the subject matter described in the application. Thus the inventor need not provide evidence of either conception or actual reduction to practice when relying on the content of the patent application.<sup>149</sup> While the filing of the original application theoretically constituted a constructive reduction to practice at the time, the subsequent abandonment of that application also results in an abandonment of the benefit of that filing as a constructive reduction to practice.<sup>150</sup>

## 2. *Presumption of Invention Date*

Referring to the novelty and priority provisions under Section 102, there is a discrepancy between the statutory language and practice. Moreover, the constructive reduction to practice exists right amidst these ambiguous premises. That is, although Subsections 102(a) and (e) make clear that novelty is determined as of the date of invention, the USPTO, under the doctrine of constructive reduction to practice, determines novelty for the vast majority of applications as of the date of application. That is, the USPTO presumes the date of invention to be the date the application is filed.<sup>151</sup>

In fact, to avoid the necessity of showing an invention date for every application, the USPTO examines the novelty of a vast majority of applications under Subsections 102(a) and (e) as of the application date,<sup>152</sup> because the filing date of a U.S. patent application with an adequate disclosure of the invention is presumed to be the invention date.<sup>153</sup>

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144. *Gregg v. Coakwell*, 175 F.2d 575, 580 (C.C.P.A. 1949).

145. *Pfaff v. Wells Electronics Inc.*, 525 U.S. 55, 61 (1998).

146. *In re Ziegler*, 992 F.2d 1197, 1200 (Fed. Cir. 1993).

147. *Hyatt v. Boone*, 146 F.3d 1348, 1352 (Fed. Cir. 1998), *cert. denied*, 525 U.S. 1141 (1999).

148. *Chiron Corp. v. Abbott Laboratories*, 902 F. Supp. 1103, 1129 (N.D. Calif. 1995).

149. *Hyatt v. Boone*, 146 F.3d at 1352.

150. *In re Costello*, 717 F.2d 1346, 1350 (Fed. Cir. 1983).

151. CHISUM, *supra* note 61, § 10.03[1][c][i].

152. *Id.*

153. *Compare Bates v. Coe*, 98 U.S. 31, 34 (1878), with *Credle v. Bond*, 25 F.3d 1566, 1573

The language of Subsections 102(a) and (e) would more accurately coincide with practice if they made clear that the novelty of an application is to be determined as of the date of application unless an inventor can establish an early date of invention with corroborative evidence. The current language of Subsections 102(a) and (e) does not make clear that the examiner's determination of novelty is as of the date of application, therefore, inventors may (be deemed to constructively or implicitly waive and thus) lose their right to a patent because they fail to provide corroborative evidence showing an early date of invention.<sup>154</sup>

The view that the U.S. effectively has a first-to file mechanism is also supported by the fact that Subsection 102(b) functions like the novelty provision in countries using a first-to-file system.<sup>155</sup> This can be seen in USPTO reliance on Subsection 102(b), when 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.<sup>156</sup>

In 1829, the U.S. Supreme Court's *Pennock* decision held that inventions shall be excluded from the definition of first inventions if they were publicly used or on sale prior to the filing date.<sup>157</sup> The 1836 Patent Act, after codifying *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.<sup>158</sup>

#### B. Reference Date for Grace Period

According to Subsection 102(b), 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.<sup>159</sup> The U.S. patent system rejects rewarding 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.<sup>160</sup> A good example for this rule is found with the invention in *Lough v. Brunswick Corp.*<sup>161</sup>

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(Fed. Cir. 1994).

154. *Gould v. Schawlow*, 363 F.2d 908, 920 (C.C.P.A. 1966).

155. *Takenaka*, *supra* note 24, at 647.

156. 35 U.S.C. § 102(b) (2002); *Id.*

157. *Pennock v. Dialogue*, 27 U.S. 1, 23 (1829); *Takenaka*, *supra* note 24, at 647-48.

158. Patent Act of 1836, ch. 357, 5 Stat. 117, 6; *Takenaka*, *supra* note 24, at 648.

159. *Takenaka*, *supra* note 24, at 648.

160. § 102(b); *Id.*

161. *Lough v. Brunswick Corp.*, 86 F.3d 1113 (Fed. Cir. 1996); *Takenaka*, *supra* note 24, at 648.

In *Lough*, the inventor, Mr. Lough, improved upon a seal and 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. Unfortunately, he did not keep records on his testing nor solicit comments on the quality of the prototypes. 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. 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 Subsection 102(b).<sup>162</sup> A panel of the Federal Circuit found that the court erred in denying Brunswick's motion, noting that the inventor did not have sufficient control over the prototypes nor did he receive feedback on their performance, which were requisite to a finding that their use was experimental, holding that the patent was invalid due to the public prior use.<sup>163</sup>

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 to a patent on his invention. With the presence of a provision that determines novelty as of the date of application even with a one-year grace period, labelling the U.S. novelty requirement as following a first-to-invent system may actually mislead inventors and cause many inventors, like Mr. Lough, who waited too long to file a patent, to lose their patent rights.<sup>164</sup> Thus it is important to remember that the date of reference for tolling of the grace period in the U.S. is the filing date as applied in the first-to-file countries.

### C. *Interference Proceedings and Burdens of Proof*

According to the U.S. federal regulations, the USPTO follows a first-to-file approach in interference proceedings by imposing on second-to-file inventors the ultimate burden of proving the priority.<sup>165</sup> Due to the difficulty in meeting this burden, the USPTO grants the priority to first-to-file inventors far more frequently than to second-to-file inventors. In practice, there is an approximate 75% success rate for senior parties over

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162. *Brunswick Corp.*, 86 F.3d at 1118; Takenaka, *supra* note 24, at 648.

163. *Brunswick Corp.*, 86 F.3d at 1122; Takenaka, *supra* note 24, at 648.

164. Takenaka, *supra* note 24, at 649.

165. 37 C.F.R. § 1.657 (2001).

junior parties.<sup>166</sup>

Basically, the priority rule provides an exception to the principle of the first in reduction to practice by allowing inventors to rely on the date of conception.<sup>167</sup> However, unless an inventor reduces the invention to practice, he cannot rely on the conception date.<sup>168</sup> Moreover, an inventor must continuously work on the invention to reduce it to practice because an inventor's (sustained) lack of activity on the invention gives rise to lack of diligence and prevents the inventor from relying on the date of conception.<sup>169</sup> Even if an inventor reduces the invention to practice, an unreasonable delay in filing an application with the USPTO gives rise to (a presumption of) abandonment and prevents an award of priority.<sup>170</sup>

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 their priority, an inventor must show continuous work through corroborating evidence.<sup>171</sup> Taking into account the actual hardships that a first-to-conceive but second-to-reduce-to-practice inventor encounters under the current priority rule in practice, the belief that the U.S. has a first-to-invent system is clearly false and misleading. Inventors from first-to-file countries should file with caution in order not to lose their chance to obtain a patent because they may be misled by the labelling of the U.S. patent system as being "first-to-invent," thus misleading inventors into believing their early conception of an invention can establish priority under Subsection 102(g).<sup>172</sup>

## V. REFORMING THE FIRST-TO-INVENT SYSTEM IN U.S. PATENT LAW

Jurisdictions around the globe have long been pursuing establishment of uniformly harmonized patent laws, including the rule of priority. And, there are demands from other countries and international organizations on the U.S. to convert its first-to-invent system to the first-to-file system in order to harmonize the rule of priority with the rest of the world. Therefore, reformation of U.S. patent law's first-to-invent system has long been a contentious issue for discussion over the past decades. This part of the article addresses the demands for harmonization, the arguments in favor and against

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166. See *Edwards v. Strazabosco*, 58 U.S.P.Q.2d 1836, 1840 (Bd. Pat. App. & Interf. 2001); *Takenaka*, *supra* note 24, at 646.

167. *Hybritech Inc. v. Monoclonal Antibodies*, 802 F.2d 1367, 1378 (Fed. Cir. 1986); *Takenaka*, *supra* note 24, at 652-53.

168. *Edwards v. Strazabosco*, 58 U.S.P.Q.2d at 1841-42; *Takenaka*, *supra* note 24, at 653.

169. *Gould v. Schawlow*, 363 F.2d 908, 919-21 (C.C.P.A. 1966); *Takenaka*, *supra* note 24, at 653.

170. *Lutzker v. Plet*, 843 F.2d 1364, 1366-67 (Fed. Cir. 1988); *Takenaka*, *supra* note 24, at 644.

171. *Gould*, 363 F.2d at 919-20; *Takenaka*, *supra* note 24, at 653.

172. *Takenaka*, *supra* note 24, at 653.

the current system, and the proposed reform measures.

A. *Demands for Harmonization from First-to-File Countries*

Most countries in the world now have property systems that include rules of priority for patents. Generally, they award the priority to the first filer for a patent, without evaluating inventorship beyond the application for patent. However, the U.S., under its first-to-invent system, is alone in awarding priority to the first inventor in fact and using interference proceedings to decide priority disputes between or among (concomitant) inventors.<sup>173</sup> The differences between these two systems are significant so that demands from a real need for harmonization have been raised.

The first major efforts to bring uniformity to patent systems around the world and to promote collaboration among patent offices started with the signing of the Paris Convention for the Protection of Industrial Property in 1883 (Paris Convention).<sup>174</sup> Uniformity of patent legislation was an important goal from the beginning of the negotiations.<sup>175</sup> However, after recognizing the significant differences in national laws and industrial developments, the Paris Union stopped pursuing a substantive uniform patent law and took the more realistic path of putting foreign patent applicants on an equal footing with domestic applicants.<sup>176</sup> As a result, the Paris Convention included provisions for, among others, the right of priority.<sup>177</sup>

Harmonization under the Substantive Patent Law Treaty (SPLT) proposed by the World Intellectual Property Organization (WIPO) has been another source of demand for change in respect to this issue as well. From its start in 2001, the SPLT has aimed to harmonize substantive aspects of patent law, focusing on issues such as the definition of prior art, patentability, the drafting and interpretation of claims, and the requirement of sufficient disclosure of an invention. WIPO further agreed that other issues related to substantive patent law harmonization, such as first-to-file versus first-to-invent systems would be considered at a later stage. However, while WIPO Member jurisdictions have agreed on a number of issues, it has proven more difficult to reach consensus on other topics. Therefore,

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173. Martin, *supra* note 2, at 439-40.

174. Paris Convention for the Protection of Industrial Property, Sept. 28, 1979, 21 U.S.T. 158314, 1967, 25, 828 U.N.T.S. 305.

175. Feidrich-Karl Beier, *One Hundred Years of International Cooperation—The Role of the Paris Convention in the Past, Present and Future*, 15 IIC: INT'L REV. INDUS. PROP. & COPYRIGHT L. 1, 5 (1984).

176. *Id.*

177. JOSEPH STRAUS, GRACE PERIOD AND THE EUROPEAN AND INTERNATIONAL PATENT LAW: ANALYSIS OF KEY LEGAL AND SOCIO-ECONOMIC ASPECTS 6 (2001).

Members placed the SPLT negotiations on hold in 2006, considering that the time was not yet ripe to agree on a work plan for the WIPO in these matters.<sup>178</sup>

Nevertheless, responsiveness to international organizations' demands would lead to modifications of the first-to-invent system to comply with the first-to-file principle. One commentator suggests that this modification will cause only marginal changes in current U.S. practice, while the benefits resulting from the worldwide grace period substantially outweigh any disadvantages caused by the necessary changes.<sup>179</sup>

As the U.S. is the only first-to-invent jurisdiction, the harmonization and the first-to-file system appear to intertwine with each other, so the U.S. move to a first-to-file system can be considered as a step toward the goal of global harmonization of patent laws.<sup>180</sup> Also, in order to achieve meaningful harmonization, the U.S. has been under demand from many countries and international organizations to adopt a first-to-file system to better accord with the rest of the world.<sup>181</sup>

#### B. *Arguments in Favor and Against U.S. Patent Law's First-to-Invent System*

Whether the U.S. should maintain the status quo or adopt the first-to-file system has long been an arguable issue. Therefore, before rendering a decision as to whether the U.S. should convert, an evaluation of the first-to-invent system should be conducted. This article manages to evaluate first-to-invent by referring to arguments in favor and against this system from the perspectives of harmonization, administration, equity and the Constitution, respectively.

##### 1. *Harmonization Issues*

Advocates of patent harmonization have long articulated the benefits from a global patent law system. They claim that harmonization can reduce

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178. WORLD INTERNATIONAL PROPERTY ORGANIZATION, AN OVERVIEW (2009), available at [http://www.wipo.int/export/sites/www/freepublications/en/general/1007/wipo\\_pub\\_1007\\_2009.pdf](http://www.wipo.int/export/sites/www/freepublications/en/general/1007/wipo_pub_1007_2009.pdf); Substantive Patent Law Harmonization, <http://www.wipo.int/patent-law/en/harmonization.htm> (last visited Aug. 31, 2010).

179. 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*, 11 TEX. INTELL. PROP. L.J. 259, 350 (2003).

180. Bernarr R. Pravel, *Why the United States Should Adopt the First-to-File System for Patents*, 22 ST. MARY'S L.J. 797, 800-01 (1991).

181. Anneliese M. Seifert, *Will the United States Take the Plunge into Global Patent Law Harmonization? A Discussion of the United States' Past, Present, and Future Harmonization Efforts*, 6 MARQ. INTELL. PROP. L. REV. 173 (2002).

patent costs through exchange of results between examining patent offices, and further reduce problems and errors during the prosecution of patent applications in foreign countries, resulting in making worldwide patent protection more effective (and certain). They also claim that each step of harmonization is an incentive to further harmonization, and further step-by-step harmonization may finally motivate the U.S. to give up the principle of first to invent.<sup>182</sup>

Among these claimed benefits, cost reduction is perhaps the most important reason why major U.S. high tech corporations are lobbying for patent harmonization.<sup>183</sup> Any harmonization of laws would effectively reduce the costs associated with patent infringement litigation and thus would be a welcome initiative for these corporations. This notion can be better understood by reviewing the costs of actual cases, e.g., Microsoft reportedly spent nearly 100 million dollars on patent infringement litigation,<sup>184</sup> and, Intel also estimated that it had spent close to 20 million dollars on patent litigation.<sup>185</sup>

The U.S.'s first-to-invent system obviously would not be able to (immediately) enjoy (all of) the claimed benefits deriving from harmonization. However, there are commentators who argue that maintaining the status quo would be proper because of the ideological and economic barriers to be overcome in conducting harmonization of global patent laws.

Generally, the barriers to patent harmonization and a global patent law system include the reluctance of national governments to give up their current systems which favor their domestic entrepreneurs; the relinquishment of a portion of national (legislative) sovereignty for the sake of a global system; and the reconciliation of the different national interests of the developing countries and the developed countries.<sup>186</sup> Also, a commentator argues that, without harmonization, the current system enjoys the advantage of diversity which could be lost with harmonization of the first-to-file system.<sup>187</sup>

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182. Heinz Bardehle, *A New Approach to Worldwide Harmonization of Patent Law*, 81 J. PAT. & TRADEMARK OFF. SOC'Y 303 (1999).

183. See WENDY H. SCHACHT & JOHN R. THOMAS, *PATENT REFORM: INNOVATION ISSUES* 8 (Cong. Res. Serv. 2006).

184. *Id.*

185. *Id.*; Sarah Lai Stirland, *Will Congress Stop High-Tech Trolls?*, NAT'L J., Feb. 26, 2005, at 613.

186. Peter A. Jackman, *Adoption of a First-to-File Patent System: A Proposal*, 26 U. BALT. L. REV. 67, 76 (1997); Robert R. Willis, *International Patent Law: Should United States and Foreign Patent Laws Be Uniform? An Analysis of the Benefits, Problems, and Barriers*, 10 N.C.J.L. & TECH. 283, 301-02 (2009).

187. John F. Duffy, *Harmony and Diversity in Global Patent Law*, 17 BERKELEY TECH. L.J. 685 (2002).



## 2. *Administrative Issues*

Setting aside the arguments for harmonization, comparison between the first-to-invent and first-to-file systems from the administrative point of view reveals many of the respective advantages and disadvantages thereof.

In general, most debates over priority systems focus on conflicts among concerns for efficiency, accuracy, fairness and acceptability.<sup>188</sup> Proponents of the first-to-file system argue that the first-to-invent system fails to acquire a simpler and therefore more efficient system of priority, and therefore cannot provide faster public disclosure of inventions. So, it cannot maintain minimal effects on fairness for individual inventors and small businesses.<sup>189</sup> Also, the first-to-file system benefits from an increased administrative efficiency and certainty in deciding who should be awarded a patent.<sup>190</sup>

On the other hand, proponents of the first-to-invent system argue that this system encourages greater patent quality, while also providing administrative efficiency, and interference proceedings are not less efficient than inventors' rights contests.<sup>191</sup> Further, from the economic perspective on justifications for the first-to-invent system, advocates argue that the current system is carefully crafted to achieve the economically efficient goal of wealth maximization. So, the switch to a first-to-file system will not produce a net benefit to society and therefore is not justified economically. Moreover, the current system gives more inventors an incentive to compete, which thereby stimulates innovation and accomplishes the constitutional goal of "promoting the progress of Science and useful Arts."<sup>192</sup> Some proponents of the first-to-invent system simply don't believe a first to file system can provide significant real improvements to the patent community.<sup>193</sup>

## 3. *Equity Issues*

The first-to-invent enthusiasts assert that the U.S. patent system is superior to the first-to-file system because it is intended to protect the inventor who was the first to actually invent, not the first person to file.<sup>194</sup> In

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188. Charles R. B. Macedo, *First-to-File: Is American Adoption of the International Standard in Patent Law Worth the Price?*, 1988 COLUM. BUS. L. REV. 543 (1988).

189. Suzanne Konrad, *The United States First-to-Invent System: Economic Justifications for Maintaining the Status Quo*, 82 CHI.-KENT L. REV. 1629, 1637 (2007).

190. Brad Pedersen & Vadim Braginsky, *Recent Development: The Rush to a First-to-File Patent System in the United States: Is a Globally Standardized Patent Reward System Really Beneficial to Patent Quality and Administrative Efficiency?*, 7 MINN. J.L. SCI. & TECH. 757, 764 (2006).

191. *Id.* at 766-67.

192. Konrad, *supra* note 189, at 1643.

193. Lemley & Chien, *supra* note 22, at 1299.

194. Ryan M. Corbett, *Harmonizing of U.S. and Foreign Patent Law and H.R. 2795: The Patent Reform Act of 2005*, 18 FLA. J. INT'L L. 717, 719-22, 724 (2006).

other words, the first-to-invent system is inherently a more equitable system because it allows the original and true inventor to usurp an unsupported patent.<sup>195</sup> Since the U.S. patent system is based upon these principles of equity, changing the filing requirements would effectively take away the core of the system.<sup>196</sup>

The author agrees that the first-to-invent system indeed provides equity to the true inventor, over the first-to-file system. The unique interference proceedings serve as an equitable mechanism which the first-to-file system simply doesn't offer. Although the first-to-file system also protects the true inventor to a certain degree, however, that protection is limited.

For example, although the first-to-file system provides for revocation if the invention patentee is found being a person other than the person entitled to file the invention patent application.<sup>197</sup> However, this provision applies only to the circumstance where the person not entitled to file the application has been involved in certain illegal acts, e.g., stealing of the know-how from the true inventor. For situations such as where the individual inventor doesn't generate a patent application as quickly as corporate inventors do, and does not win the race to file, the first-to-file system would not be able to vest any property right for this individual inventor at all.

Although the opponents of the first-to-invent system argue that interference proceedings under the first-to-invent system bring about needless litigation,<sup>198</sup> this author argues that the associated litigation is not needless but rather a necessity in that it serves as a foundational pillar for ensuring systemic equity.

#### 4. *Constitutional Issues*

The vesting of property rights at the time of filing by converting the U.S. posture to a first-to-file system would harmonize global patent laws. However, such a change might entail its own constitutional issues, because the U.S. Constitution has provided that the Congress shall have power "to promote the progress of science and useful arts, by securing for limited times to authors and *inventors* the exclusive right to their respective writings and discoveries."<sup>199</sup> In fact, some believe that since Article I, Section 8 of the Constitution discusses securing exclusive rights to the (implicitly) first

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195. Vito J. DeBari, *International Harmonization of Patent Law: A Proposed Solution to the United States' First-to-File Debate*, 16 FORDHAM INT'L L.J. 687, 692 (1993).

196. Clifford A. Ulrich, *The Patent Systems Harmonization Act of 1992: Conformity at What Price?*, 16 N.Y.L. SCH. J. INT'L & COMP. L. 405, 418-19 (1996).

197. See, e.g., Chuanlifa [Patent Act], art. 67, para. 1(3) (2003) (Taiwan).

198. Sean T. Carnathan, *Patent Priority Disputes—A Proposed Re-Definition of "First-to-Invent"*, 49 ALA. L. REV. 755, 814 (1998).

199. U.S. CONST. art. I, § 8, Cl. 8.

“inventor(s),” changing to a first-to-file system would be literally unconstitutional.<sup>200</sup> Therefore, constitutional considerations should inform the conduct of any further patent reform.

Although proponents of the first-to-file system argue it is clear that nothing in the Constitution explicitly requires that Congress provide for the issuance of a patent to the original and first inventor,<sup>201</sup> however, the ideal of American patent law has been to interpret “inventor” to mean “first and true inventor.” And, a more rigorous analysis of the original intent of the framers and of the subsequent history of American patent law suggests that a narrower definition of inventors may be appropriate.<sup>202</sup> Therefore, an inventor in the constitutional sense should be construed as the true and first inventor.<sup>203</sup>

As for the constitutionality issue, the first-to-invent system has obviously acquired certain historical credit through its fulfillment of the Constitution's mandate. However, in view of the Supreme Court's broad interpretation of Congress' powers to enact patent legislation, it seems that a first-to-file system with a derivation provision would likely survive a constitutional challenge by a disappointed patent applicant, and the most current patent reform measures appear to provide just this mechanism.

### C. *The Patent Reform Acts Proposed by the U.S. Congress*

Over the past decade, several proposals to harmonize U.S. patent law with the rest of the world's patent laws have been considered in the U.S. Congress. The resulting amendments have changed many substantive rules of patent law in the U.S., however, the first-to-invent rule of priority has repeatedly stood up to proposals for amendment. In 1965 a Presidential Commission strongly recommended that the U.S. adopt the first-to-file system.<sup>204</sup> Thereafter, several Patent Reform Acts had been proposed by the Congress intending to convert the first-to-invent system to the first-to-file system.

Instead of pursuing a drastic change as proposed by these reform acts, some advocates of first-to-file patent systems suggest not converting to a true first-to-file system, but rather to a “first-inventor-to-file” system.<sup>205</sup> In such a system, patent rights are granted to the first applicant to seek a patent,

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200. Coe A. Bloomberg, *In Defense of the First-to-Invent Rule*, 21 AIPLA Q.J. 255, 256 (1993).

201. Macedo, *supra* note 188, at 560.

202. *Id.* at 560-61.

203. *Id.* at 563.

204. Carnathan, *supra* note 198, at 758.

205. Patent Act of 2007: Hearing on H.R. 1908 Before the Subcomm. on Courts, the Internet, and Intell. Prop. of the Comm. on the Judiciary, 110th Cong. (2007); Schoenhard, *supra* note 16, at 580.

but only if that applicant is an inventor.<sup>206</sup> By elevating inventor-filers above mere filers, first-inventor-to-file systems, like the U.S. first-to-invent system, assume that some entitlement naturally rests with the actual first inventor.<sup>207</sup> Therefore, how the U.S. is going to modify its first-to-invent system has turned from a mere dichotomy to multiple-choice situation.<sup>208</sup>

Notably, Senate bill S.515 (popularly known as “the Patent Reform Act of 2009”) reiterated in general that the U.S. stands alone among industrialized nations and argued that this results in a lack of international consistency, with a complex and costly system to determine inventors’ rights. The bill pointed out in particular that the current U.S. system awards a patent to the inventor who is the first to invent regardless of whether the application was the first to be filed in the patent office for that invention. As the bill proposed to reward an inventor who wins the race to the patent office and files the first application, it provided instead for the first-inventor-to-file system.<sup>209</sup>

Under the Senate bill S.515 language, interference proceedings are replaced with a derivation proceeding to determine whether the first-to-file applicant was not the proper applicant for the claimed invention. So, the bill will minimize issues such as: (1) abandonment, suppression, or concealment, (2) conception, (3) actual reduction to practice, and (4) reasonable diligence. The bill suggests that such a proceeding will be faster and less expensive than are interference proceedings.<sup>210</sup>

“Amendments to the Senate bill S.515” (mostly known as “the Patent Reform Act of 2010”) have recently been made public.<sup>211</sup> Like its predecessor, Senate bill S.515, the proposed amendment does not call for a first-to-file system as some people mistakenly believe, but rather a first-inventor-to-file system. Although it is not a pure first-to-file system, it does however contain the fundamental element of the first-to-file system, i.e., the first filing standard, and thus constitutes a big step forward in the harmonization of patent law.

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206. Patent Act of 2007; Schoenhard, *supra* note 16, at 580-81.

207. Schoenhard, *supra* note 16, at 581.

208. William A. Drennan, *The Patented Loophole: How Should Congress Respond to this Judicial Invention?*, 59 FLA. L. REV. 229, 320-21 (2007).

209. The Patent Reform Act of 2009 is a set of proposals introduced in the 111th U.S. Congress. The Act contains identical venue provisions in S.515, sponsored by Senator Leahy, and H.R. 1260, sponsored by Rep. Conyers. And, both S.515 and H.R. 1260 were introduced on Mar. 3, 2009. Another bill, S.610, was introduced on Mar. 17, 2009 by Senator Kyl. In particular, S.515 passed the Senate Judiciary Committee on Apr. 2, 2009.

210. See Todd Zubler et al., *A Review of Recent Decisions of the United States Court of Appeals for the Federal Circuit: Area Summary: 2008 Patent Law Decisions of the Federal Circuit*, 58 AM. U.L. REV. 747 (2009).

211. Vincent LoTempio, “Patent Reform Act of 2010” and “First Inventor to File” Rule Change, available at <http://www.lotemplolaw.com/2010/03/articles/patents/patent-reform-act-of-2010-and-first-inventor-to-file-rule-change/> (last visited Aug. 31, 2010).

Further, the bill claims to intend “to improve patent quality and the operations at the PTO.”<sup>212</sup> Therefore, it can be reasonably expected to provide a more administratively efficient system since derivation proceedings will be faster and less expensive than interference proceedings have been.

Since the bill proposes essentially the same first-inventor-to-file system as seen in the Senate bill S.515, the applicant will not be able to file a patent application in this system unless he/she is the inventor. In particular, this bill's system can be applied to resolve those situations where two people independently invent the same thing at different times and there is a race to the patent office by the two inventors. So, this bill can maintain the equity of protection for the true inventors as does the first-to-invention system.

Setting aside the practical arguments regarding the first-to-file system, constitutional considerations are also presented here and need to be discussed.<sup>213</sup> As mentioned above in section B of this part of the article, some scholars hold that the U.S. Constitution mandates a first-to-invent system because the language in Article I, Section 8, Clause 8, awards “inventors” with the exclusive rights associated with a patent, not filers.<sup>214</sup> In this regard, the bill should easily pass the muster due to its inventor requirement for applicants and associated derivation proceedings.

As discussed in section B of this part of the article, there are valid arguments on both sides of any point made for a change in the current system. Nevertheless, the proposed first-inventor-to-file system indeed ceases these dichotomous debates. If this bill is approved and signed into law, the U.S. patent system will enjoy administrative improvements, while sustaining equity principles but without violating the Constitution's mandate. The U.S. would thus be taking significant steps to harmonize its laws with foreign systems.

## VI. CONCLUSION

Most countries have adopted the first-to-file system, with the U.S. being unique in having a first-to-invent system. Although there are somewhat similar first-to-invent rules which can be found in Canada and Philippines, the U.S. first-to-invent rule of priority is in fact the only one of its kind existing in the world. Notwithstanding the fact that the U.S. legal system has been long influenced by the English legal system, there was no statutory or common law rule of priority in England around the eighteenth century, so the

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212. Senate Judiciary Committee Chairman Patrick Leahy (D-Vt.) spoke at an Executive Business meeting Feb. 25, 2010 about this amendment to the patent reform act.

213. Macedo, *supra* note 188, at 193.

214. *Id.*

rule of priority established in the U.S. was novel.

Although the view of natural law has been rejected as a valid theory for a source of rights underlying the Constitution's intellectual property clause, natural law advocates influenced drafting of the first patent laws, resulting in adoption of a first-to-invent rule of priority, with their attendant interference proceedings still with the U.S. today. However, even though there was no constitutional or practical reason that should prevent a first-to-file system from being adopted by the U.S., a first-to-file system would initially have been inconvenient under the Articles of Confederation due to their establishment of dual sovereignty of the state and federal governments. The first-to-invent system should not be regarded as being more favorable to small entities, because USPTO evidence clearly confirms that the current first-to-invent system does not in fact favor small entities.

U.S. Patent Law's first-to-invent system is mainly accomplished through two functions, i.e., the novelty determination and the priority determination. The former relates to the patentability of the subject matter and its inventorship, while the latter refers to the principles associated with determining interference proceedings for resolving competing priority disputes.

The U.S. first-to-invent system is quite different from the first-to-file system. Not only do the statutory provisions set forth that the novelty of the invention is determined as of the date of invention, indicating the adoption of a first-to-invent rule of novelty, but also the approaches of Section 102 are very different from the first-to-file approach. In particular, a confusing aspect arises in regard to the definition of the prior art as a result of their unclear statutory distinction. Further, Section 102's provisions are more complex than counterpart provisions of first-to-file systems in terms of the place of disclosure for foreign and domestic prior art as well. Yet another statutory bar provision under Section 102 that does not exist under the first-to-file principle is foreign patenting.

Under the U.S. first-to-invent system, the first of many to reduce an invention to practice around the same time will be the sole party to obtain a patent. However, labelling the U.S. Patent practice as first-to-invent is misleading, because it in fact contains many of the mechanisms of the first-to-file approach as well. This can be verified by referring to the basic rule of priority of invention, in that the first person who reduces the subject matter in question to practice, either actually or constructively, is the first inventor. That is, first inventorship can be established by the constructive reduction to practice, rather than actual reduction to practice. Thus, filing of an application for a patent disclosing the invention in compliance with Section 112 constitutes a constructive reduction to practice of the invention and may be relied on as the date of reduction to practice for purposes of

determining priority and patentability even though the applicant never actually reduced the invention to practice.

The USPTO also follows a first-to-file approach in interference proceedings by imposing on second-to-file inventors the burden of showing their priority. 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. Therefore, the U.S. Patent Law system is not a pure first-to-invent system, but rather a system mixed of both first-to-invent and first-to-file.

Patent regime jurisdictions around the globe have long been pursuing establishment of uniform patent laws, including for the rule of priority. There continue to be demands from other countries and international organizations on the U.S. to convert its first-to-invent system to the first-to-file system in order to harmonize the rule of priority with the rest of the world. The first major efforts to bring uniformity to patent systems around the world started with the Paris Convention over a century ago. Harmonization under the SPLT proposed by WIPO has been another source of demand regarding this issue as well.

Over the past decades, several proposals to harmonize U.S. patent law with the rest of the world's patent laws have been successfully introduced in Congress. The resulting amendments have changed many substantive patent law provisions in the U.S., however, the first-to-invent rule of priority has repeatedly stood up to proposals for amendment. The currently proposed amendments to Senate bill S.515, or the Patent Reform Act of 2010, propose to convert the U.S. patent system into a first-inventor-to-file system, replacing interference proceedings with a derivation proceeding.

Although there are valid arguments on both sides of the arguments advanced for or against changes in the current system, the proposed first-inventor-to-file system indeed appears to resolve the dichotomous approach to these debates with a sui generis solution that may bring U.S. patent law the best of both worlds, unifying first inventor with first to file. If this bill is approved and signed into law, the U.S. patent system would enjoy administrative improvement, while sustaining its principles of inventor equity without violating the Constitution's mandate. If adopted, these amendments will mean the U.S. would be taking significant steps to harmonize its laws with foreign systems, hopefully bringing benefits to inventors and their investors worldwide.

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