

Intellectual property issues around nanotechnology

Uncle Sam wants you to be the first-inventor-to-file for nanotechnology inventions

U.S. switches to the “first-inventor-to-file” system under the America Invents Act

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Abstract

By the Leahy-Smith America Invents Act (AIA), the U.S. patent system is experiencing the most significant reform since the U.S. Patent Act was enacted some 60 years ago. This article focuses on one aspect of the AIA that has perhaps triggered the biggest debate, namely the conversion under the U.S. Patent laws from a “first-to-invent” system to a “first-inventor-to-file” system. The change to the first-inventor-to-file system has broad implications to all entities filing patents in the U.S. Under the new first-inventor-to-file system, the emphasis is now on filing patent applications in the U.S. Patent Office even more quickly than before. Thus, a strategy to file early and often (including using provisional applications) will generally better protect against a later inventor winning the race to the U.S. Patent Office.

Keywords: America Invents Act; first-inventor-to-file; intellectual property; patent.

1. Introduction

Last year, on September 16, President Obama signed the Leahy-Smith America Invents Act (AIA). By this Act, the U.S. patent system is experiencing the most significant reform since the U.S. Patent Act was enacted some 60 years ago. There has been widespread praise of the AIA, which the President predicted would “speed up the patent process so that innovators and entrepreneurs can turn a new invention into a business as quickly as possible” [1]. There have also been critics asserting the AIA will suppress patent activities, such as for universities, emerging companies, and small inventors. Regardless of where one falls in this debate, it is important to understand what these changes are, what effects these changes can potentially have, and what new or modified steps can and should be done to take advantage of this new law. This is because in fast

evolving and cutting edge technologies (typically the case for nanotechnology inventions), there is often heavy competition to stake out one’s own intellectual property rights (and thereby preclude others from its space) and, coordinately, there is also a need to have a strong patent portfolio that will attract investors for commercializing the underlying technologies.

This article focuses on one aspect of the AIA that has perhaps triggered the biggest debate, namely the conversion under the U.S. Patent laws from a “first-to-invent” system to a “first-inventor-to-file” system [2].

2. The first-inventor-to-file system

The change to a “first-inventor-to-file system” is without doubt a major departure from the current “first-to-invent” system. This change will impact invention disclosure and patent application filing practices across the board. This transition to the first-inventor-to-file system will officially take effect on March 16, 2013 (18 months after the enactment of the AIA) [3]. For applications filed after that date, the first-inventor-to-file system will control except under certain defined circumstances (generally due to a claim of priority from an application filed before March 16, 2013).

Under this new first-inventor-to-file system, the first inventor to apply for a patent on a new invention will get the right to try to obtain a patent for its invention regardless of whether this first applying inventor was the first inventor to invent the invention. This is distinct from the prior first-to-invent system, in which the first inventor to invent had the superior right to patent the invention, regardless of which inventor filed first. In short, to obtain a patent, the race used to be the inventor who first invented; now, the race is to be the inventor who first filed its patent application in the U.S. Patent Office.

As a point of distinction, this modified system is not a “first-to-file” system; rather, it is a first-inventor-to-file system. The change in the U.S. Patent laws maintains the bedrock principle that only a true inventor of the invention can be awarded a patent.

There are some exceptions to the first-inventor-to-file rule. As noted above, when the first applicant obtained the subject matter from someone else (such as the second applicant), the first applicant has no right to seek a patent. In such case, the first applicant is considered to have “derived” the invention from another (and is, thus, not an inventor), in which case the second applicant is actually the first-inventor-to file [4].

Another exception is when the second inventor to file has published or publicly disclosed the invention before the first inventor filed its own application [5]. In such instance, the second filing inventor is the inventor allowed to proceed forward to try to obtain a patent (provided the second inventor files its application within 12 months of its publication/public disclosure), while the first filing inventor is precluded from going forward to try to obtain a patent on this subject matter.

The third exception concerns when the subject matter of the two applications was commonly invented, was subject to an obligation to be assigned to the same entity, or was subject to a joint research agreement entered into before the filing of the patent applications [5].

3. Transition between systems

While the AIA changes the U.S. Patent laws from a first-to-invent system to a first-inventor-to-file system, there is a period of transition because in some instances the former system will be applicable and, in other instances, the latter system will be applicable [3]. The determination as to which of the two systems is applicable for a particular application/patent is determined on a case-by-case basis. For applications filed before March 16, 2013, the first-to-invent system will still apply. For original applications filed on or after March 16, 2013 (i.e., applications that do not claim an earlier priority), the first-inventor-to-file system will apply.

However, for applications filed after March 16, 2013 that do claim priority to an application filed before March 16, 2013, further factors will dictate which of the two systems is applicable for that particular application (and resulting patent). Thus, during this transition, it is important for the applicant to determine which system will apply to each of his/her pending patent applications and subsequently issued patents. This determination is particularly critical because steps can be taken during the transition period that can affect which of the two systems will apply.

For that reason, should an inventor prefer that his/her applications be prosecuted under the prior first-to-invent system, the inventor should, when possible, file its applications on or before March 15, 2013. Indeed, it is anticipated that many patent applications will be filed on or right before March 15, 2013 to ensure that the first-to-invent system applies for those applications. This would be similar to what transpired in early June 1995, when inventors filed a tremendous number of applications so that the resulting patents received longer patent terms than they would have if filed on or after June 8, 1995 [6].

As this difference in systems affects patentability of the patent claims that issue from an application, the system under which a patent is reviewed and issued likewise applies throughout the life of that patent. Because patent infringement lawsuits include challenges to patent validity, the court systems will be dealing with the differences between the two systems for at least the next two decades.

4. Derivitization proceedings

As only the true inventor can file for and obtain a patent for the invention, under the new first-inventor-to-file system, the U.S. Patent Office must now review situations where there is an overlap between applications to determine whether the inventor of the first-filed application derived its invention from the inventor of the second-filed application [7].

A determination of “derivitization” is a much more straightforward question than the “interference” practice utilized by the U.S. Patent Office (and the courts) under the previous first-to-invent system. In an interference (under the first-to-invent system), the two inventors each tried to establish the earliest date of its respective invention, and whichever inventor established the earlier date could then proceed forward with its application [8]. This was a highly fact intensive investigation, and often hinged on how well the different inventors had kept and maintained records of their inventive efforts (which often had occurred many years before the interference). In some instances, relatively short time frames in which one party could not establish inventive activity could be the difference as to who prevailed as the first inventor during the interference. Thus, there was an inherent uncertainty as to who would (or should) prevail during an interference, which typically resulted in a large expense to all parties to the interference and utilized significant resources of the U.S. Patent Office.

Similarly, in litigation, a dispute over who was (or was not) the first inventor could mean the difference between whether the claims of the patent-in-suit were valid or invalid [9]. Given the magnitude of the costs associated with patent infringement litigation, the uncertainty as to who was (or was not) the first inventor resulted in greater costs to both the patentee and accused infringer.

Under the new first-inventor-to-file system, when an inventor (inventor A) can show that the other inventor (inventor B) had derived the invention from inventor A, inventor A is the true inventor, and can proceed with its application, regardless of whether inventor A or inventor B filed its application first. This result is the same as what would have happened under the prior first-to-invent system, because evidence that inventor B derived the invention from inventor A necessarily established inventor A to be the first inventor (i.e., inventor A would prevail in the interference) [10].

However, the uncertainty in the first-to-invent system arose in situations where each of the two inventors applying for a patent independently invented the invention (which can and does happen, particularly in fast evolving and/or highly investigated technologies). The question is no longer who actually invented the invention first. Instead, under the new system, the question is now which of the inventors filed their respective application first. As the filing date can be determined by reviewing a relatively narrow set of information (which information is generally indisputable and is within the application papers filed in the two competing applications), the first-inventor-to-file system provides a much clearer standard and mechanism for determining which inventor can proceed forward in trying to obtaining its U.S. patent.

5. Expansion of the prior art

Under this change to the first-inventor-to-file system, the new patent laws have also expanded the breadth of what now qualifies as prior art, which moves what is (and what is not) prior art closer to that found in foreign patent systems [5]. Under the AIA, the definition of prior art now includes inventions that have been patented or published, inventions that are in public use or on sale, and inventions that are otherwise available to the public anywhere in the world.

Thus, art that was not prior art under the former first-to-file system is now prior art under the new first-inventor-to-invent system. For instance, under the former U.S. Patent laws, an inventor could avoid certain art available before the filing date of its application by showing the inventor had invented its invention beforehand [11]. Under the new system, this is no longer the case; now (with a significant exception) information available to the public as of the effective filing date of the claimed invention is prior art, without regard to the inventor’s actual date of invention.

The significant exception is noteworthy: an inventor’s own publication/public disclosure is not prior art to the inventor provided that the inventor’s application was filed within a year of the inventor’s first publication/public disclosure. The AIA establishes that a publication/public use by an inventor will not be prior art to the inventor’s own application, but such a publication/public use is prior art to any other applicant for patent (even for an inventor who filed its application first) [12]. Again, in such a situation, the second inventor to file, not the first, can proceed forward with its application (provided it is timely filed within the prescribed 12-month period after the inventor’s publication/public use).

It is, however, generally unwise for an inventor to publish or publicly disclose its invention before filing its application (even though that will preclude another inventor from patenting the invention in the U.S. based upon a subsequent application). It is also not prudent for an inventor to blindly publish or publicly disclose its invention before applying for a patent without properly considering the potential loss of patent rights by such actions. Most foreign jurisdictions consider a prior publication/public use to be prior art that precludes patentability in those jurisdictions. Thus, while the inventor may save its U.S. patent rights by a pre-filing publication/public use, the inventor will have lost its foreign patent rights by the same activities.

That said, there may be times when a publication/public use can be used for defensive purposes to preclude others from patenting the technology (in which case the inventor consciously dedicated some of all of its potential patent rights to the public). The key, of course, is that this is an intentional dedication of rights by the inventor.

6. Balancing the pros and cons of the first-inventor-to-file system

The new first-inventor-to-file system introduces several benefits to the patent system. This change to a first-inventor-to-file system brings the U.S. patent system more in harmony with the

patent systems of most other countries, which likewise utilize a first-inventor-to-file rule. This harmonization simplifies the patent process and reduces confusion over foreign filing practices, which sometimes led to confusing/inconsistent results. For instance, due to the differences between a first-to-invent system and a first-inventor-to-file system, there have been circumstances when one inventor had superior patent rights in the U.S. and another inventor had superior patent rights abroad. This potentially chills importation and exportation of products falling within the scope of these patent rights, as these products may be authorized in one country but infringing in another. Although the change to a “first-inventor-to file” system in the U.S. does not completely eliminate these confusing/inconsistent results, it significantly reduces their occurrences.

Moreover, the standards that arise from having to determine who filed first, instead of who invented first, is more clear and ultimately less expensive and time consuming to determine. Furthermore, the standards as to what qualifies as prior art are more straightforward under the new system. The first-inventor-to-file system also encourages inventors and companies to file their patent applications quickly. This emphasis on a faster filing timeline generally benefits companies that are working in nanotechnology inventions because of the rapid evolution of such technologies.

That said, the first-inventor-to-file system also has drawbacks, particularly to small and early-stage companies, companies that are primarily research oriented, universities, and government entities. The most visible result of the new system is the need to race to the U.S. Patent Office to stake priority claims before competitors, a result that favors large, well-established companies that have better and deeper resources to file patent applications quickly and often. The pressure that the first-inventor-to-file system places on inventors to swiftly file applications may potentially result in weaker and less-detailed applications, particularly because these will likely be before the technology is completely understood.

To protect against such circumstances, companies and inventors (of all types and sizes) should file applications that not only cover their core technology but also future improvements and alternative embodiments. This will potentially increase the breadth of the patent protection and likewise reduce a competitor’s ability to design around the resulting patent or patents. A prudent practice is for companies and inventors to file multiple provisional applications as their technology continues to evolve and then combine them into a single application (PCT, non-provisional in U.S., etc.) just before the 1-year anniversary of the filing date of the first provisional application. Such a process better secures the earliest possible effective filing date for all subject matter in the nonprovisional applications and makes it more likely that the applicant is the first-inventor-to-file.

It should be noted that the effective filing date for a claimed invention is determined on a claim-by-claim basis. The effective filing date is the date that the earliest application (provisional, nonprovisional, etc.) that discloses the entire invention “as claimed”. Thus, if the original provisional application did not fully support a particular claim of a patent application, but a second filed provisional application (in the chain of provisional application) does provide the requisite support, the

effective filing date is the filing of the second filed provisional application.

In concept, this is generally a fair result. If the applicant disclosed all aspects about its invention then known to it at the time of filing the original provisional application, presumably the applicant’s failure to disclose a complete disclosure supporting the particular claim probably was because the applicant had not yet invented the invention of that particular claim. This is precisely why subsequent provisional applications can and should be filed: to capture the additional inventions that inventors subsequently invented during the interim period between the original and second provisional applications.

A corollary to this is that to disclose the invention, the application (provisional or otherwise) must be an “enabling” disclosure (i.e., the disclosure must teach a person of ordinary skill in technology how to make and practice the claimed invention). Thus, to get the effective filing date of a particular application, the applicant must sufficiently disclose the invention to meet this enablement standard.

Moreover, companies and inventors should be educated in advance as to the ramifications of their publications/public uses and the need to fully investigate third party publications on the invention subject matter. To the extent that a third party publication/public use does exist, it will no longer be possible to overcome this prior art. By knowing of this prior art beforehand, the inventor (or assignee) can act more knowledgeably. For instance, the breadth of the invention can be crafted such that the claimed invention is patentable in view of this prior art. Alternatively, the inventor (or assignee) can decide that it is not worth the investment to pursue this invention and instead utilizes its resources for a different opportunity.

7. Conclusion

As highlighted above, the change to the first-inventor-to file system has broad implications to all entities filing patents in the U.S. under the new first-inventor-to-file system, the emphasis is now on filing patent applications in the U.S. Patent Office even more quickly than before. Thus, a strategy to file early and often (including using provisional applications) will



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generally better protect against a later inventor winning the race to the U.S. Patent Office.

Moreover, in view of the upcoming transition from the first-to-invent to first-inventor-to-file that will occur on March 16, 2013, applicants should consider whether they wish to maintain some or all applications that they can under the prior system, and take steps on or by March 15, 2013, to ensure the prior system will apply to those applications. Even after March 16, 2013, applicants should be proactive in their filings if they wish the prior first-to-invent system to be applicable for subsequent patents claiming priority before the date March 16, 2013.

Applicants should likewise be wary of other potential traps that have now arisen under the first-inventor-to-file system and the loss of some safeguards that have protected inventors under the prior first-to-invent system. To such end, inventors (and their assignees) are better served by educating themselves about these new rules and refining a strategy that will best serve them and their patent portfolios under their particular circumstances.

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- [8] 35 U.S.C § 135 (pre-America Invents Act).
- [9] 35 U.S.C § 102 (pre-America Invents Act).
- [10] 35 U.S.C §§ 102(f)–(g) (pre-America Invents Act).
- [11] 35 U.S.C §§ 102(a),(c) and (g) (pre-America Invents Act).
- [12] America Invents Act (AIA) § 3(b). Notably, this inventor’s publication/public disclosure could have been made by (a) the inventor; (b) another joint inventor; and/or (c) another who had obtained the subject matter published/publicly disclosed directly or indirectly from the inventor/joint inventor.

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