Prior art under the new patent reform law

Lee A. Hollaar
University of Utah

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Introduction

On September 16, 2011, the United States enacted substantial changes to its patent laws. The result of more than six years of Congressional effort,[1] the "Leahy-Smith America Invents Act"[2] makes substantial changes to what is prior art, and in the process changed the United States from its currently-unique "first to invent" priority rule to the rest of the world's "first-to-file" (actually, first-*inventor*-to-file).

The biggest change, which takes effect on March 16, 2013, eighteen months after enactment, is to the definition of what is prior art that prevents a person from getting a patent. (The old definition will still be used for applications filed before March 16, 2013, and patents issuing from those applications.) While the old definition has a number of different components, the one of primary importance is old Section 102(a):[3]

> A person shall be entitled to a patent unless—
>
> (a) 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, or ...

It is replaced by:

> A person shall be entitled to a patent unless—
>
> (1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention; or ...

There are three major changes made. First, any prior art must be "public." Previously, prior art could arguably have been "know or used by others" in secret, such as when a trade-secret process is being used to produce a product. The difficulty with allowing such secret prior art is that it is impossible for the examiner to know of such art before granting a patent, so that every patent has a cloud over it that it might be invalid because of secret prior art not considered by the examiner.

Second, what is prior art is now uniform world-wide. Previously, the only prior art from a foreign country that could be considered was a printed

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[1] The Patent Reform Act of 2005, H.R. 109-2795, was introduced on June 8, 2005. At that time, its sponsor predicted "In a couple of weeks, there should be general agreement on a piece of legislation."

[2] Public Law No: 112-29.

[3] 35 U.S.C. § 102(a). For simplicity, throughout the rest of this guide I'll use the term "old Section X" to refer to 35 U.S.C. § X before the changes made by the legislation, and "new Section X" to refer to the section afterwards.

publication or a patent. Now, it makes no difference where the public use or sale takes place. This is a step toward harmonization by removing one way that different people were could get a patent in different countries, a problem in a world-wide economy and particularly with things involving the Internet.

"Invention"

But perhaps the biggest change is the date to which the prior art is compared. Previously, it was "before the invention thereof by the applicant for the patent," but now it is "the effective filing date of the claimed invention." To understand the difference, it is important to know when "invention" takes place under the old patent laws.

"Invention" is not simply having an idea, no matter how brilliant it may be. As interpreted by the courts, invention consists to two distinct events: conception and reduction to practice.

> The conception of the invention consists in the complete performance of the mental part of the inventive act. All that remains to be accomplished, in order to perfect the act or instrument, belongs to the department of construction, not invention. It is therefore the formulation, 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 to practice, that constitutes and available conception, within the meaning of the patent law.[4]

In other words, it is not enough to just recognize a problem and a possible solution, but one also has to have resolved all the loose ends regarding how to implement the invention before there is conception. And while conception is a mental act on the part of the inventor, since it is not possible to read the inventor's mind to show that it occurred and, more importantly, when, "Conception must be proved by corroborating evidence which shows that the inventor disclosed to others his 'completed though expressed in such clear terms as to enable those skilled in the art' to make the invention."[5]

But that's only the first step toward "invention." Following conception, there must be a reduction to practice.

> Actual reduction to practice requires a showing by the inventor that "the invention is suitable for its intended purpose," which may require actual testing for a complicated invention or may require only the complete construction of a prototype for a simple invention with obvious purpose and workability. For an inventor to establish by testimony that he actually reduced his invention to practice, his testimony must be corroborated by independent evidence, which is evaluated under a rule of reason considering all the evidence.[6]

Alternatively, there is a "constructive reduction to practice" when a patent application is filed, if that the application meets the statutory requirement for

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[4] *Merganthaler v. Schudder*, 11 App. D.C. 264, 276 (1897).
[5] *Coleman v. Dines*, 754 F.2d 353, 359 (Fed. Cir. 1985), quoting *Fields v. Knowles*, 183 F.2d 593, 601 (CCPA 1950).
[6] *K&K Jump Start/Chargers v. Schumacher Elec.*, 52 Fed. Appx. 135, 139 (Fed. Cir. 2002), quoting *Mahurkar v. C.R. Bard*, 79 F.3d 1572, 1578 (Fed. Cir. 1996)..

teaching how to make and use the invention.[7] This is the date that the patent examiner initially uses for the invention date, because it is known by the examiner, does not require additional proof, and if something is not prior art when compared to the application filing date, it won't be prior art for any earlier invention date based on actual reduction to practice.

Under the new law, the imprecise definitions of conception and actual reduction to practice, along with the question of what documentation is necessary to demonstrate them, are replaced with the "effective filing date of the claimed invention." New Section 100 defines that term.

> (i)(1) The term 'effective filing date' for a claimed invention in a patent or application for patent means—
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> (A) if subparagraph (B) does not apply, the actual filing date of the patent or the application for the patent containing a claim to the invention; or
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> (B) the filing date of the earliest application for which the patent or application is entitled, as to such invention, to a right of priority under section 119, 365(a), or 365(b) or to the benefit of an earlier filing date under section 120, 121, or 365(c).
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> (2) The effective filing date for a claimed invention in an application for reissue or reissued patent shall be determined by deeming the claim to the invention to have been contained in the patent for which reissue was sought.
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> (j) The term 'claimed invention' means the subject matter defined by a claim in a patent or an application for a patent.

That last definition says that when we are looking for the effective filing date for a particular claim, we look to see when the thing ("subject matter") being claimed was first described in an application. This is normally the actual filing date of the application, unless the application is claiming the benefit of an earlier-filed application (described in [B], above).

Of particular interest is that the effective filing date can be the filing date of an earlier application if benefit of that date is claimed under section 120 in the later application. There are only minor amendments to that section in the new law, so that it now says:

> An application for patent for an invention disclosed in the manner provided by section 112(a) (other than the requirement to disclose the best mode) in an application previously filed in the United States, or as provided by section 363 of this title, which names an inventor or joint inventor in the previously filed application shall have the same effect, as to such invention, as though filed on the date of the prior application, if filed before the patenting or abandonment of or termination of proceedings on the first application or on an application similarly entitled to the benefit of the filing date of the first application and if it contains or is amended to contain a specific reference to the earlier filed application. …

Section 112 remains essentially unchanged in the new law. It now says:

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[7] See 35 U.S.C. § 112, first paragraph, now designated § 112(a).

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

Because Section 112(a) is the requirement for both a regular patent application and a provisional application, the effective date under the new law used for comparison of a claim against the prior art is the date of the first application, including a provisional application, that describes the invention of that claim.

Patent applications

Both old and new Sections 102 have a special prior art rule for patent applications. New Section 102 says:

> A person shall be entitled to a patent unless— ...
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> (2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

This is essentially the same as the old law, except that again the prior art date comparison is to the effective filing date rather than the date of invention.

Note that the application date is used for the prior art date, but only after the application has matured into a patent or has been published. Normally, publication occurs eighteen months after earliest filing date benefiting the application,[8] although an applicant can request earlier publication. An applicant can also request that an application not be published if the applicant certifies "that the invention disclosed in the application has not and will not be the subject of an application filed in another country."[9] (If the applicant later files in another country and does not notify the USPTO within 45 days, the application is regarded as abandon unless the delay in submitting the notice was unintentional.[10])

Grace period

The new law continues the one-year grace period for an applicant filing a patent application, but with a substantial change. Old Section 102(b) said that a person was 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 United States.

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[8] 35 U.S.C. § 122(b).
[9] 35 U.S.C. § 122(b)(2)(B)(i).
[10] 35 U.S.C. § 122(b)(2)(B)(iii).

This is a "general" grace period, in that it applies no matter who produced the prior art: the applicant or somebody unrelated to the applicant. However, this is not so much a grace period, but instead a forfeiture provision, saying that if an inventor does not enter the patent system promptly (within a year) of any of the indicated prior art, that inventor will lose any right to a patent no matter when the invention was conceived and reduced to practice.

The old grace period applies *only* if there has been an actual reduction to practice before the date of the prior art, or conception before the date of the prior art and diligence until the invention has been reduced to practice [11] Otherwise, old Section 102(a) applies and prevents a patent even if the date of the prior art is less than a year before the application date.

In contrast, the new grace period is "personal" to the applicant. New Section 102(b)(1) provides:

> A disclosure made 1 year or less before the effective filing date of a claimed invention shall not be prior art to the claimed invention under subsection (a)(1) if--
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> (A) the disclosure was made by the inventor or joint inventor or by another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor; or
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> (B) the subject matter disclosed had, before such disclosure, been publicly disclosed by the inventor or a joint inventor or another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor.

New Section 102(b)(2) provides a similar rule for disclosures appearing in patents and applications:

> A disclosure shall not be prior art to a claimed invention under subsection (a)(2) if—
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> (A) the subject matter disclosed was obtained directly or indirectly from the inventor or a joint inventor;
>
> (B) the subject matter disclosed had, before such subject matter was effectively filed under subsection (a)(2), been publicly disclosed by the inventor or a joint inventor or another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor; or
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> (C) the subject matter disclosed and the claimed invention, not later than the effective filing date of the claimed invention, were owned by the same person or subject to an obligation of assignment to the same person.

Unlike the old forfeiture provision, these new rules address the case where somebody learns of an invention and discloses it before the inventor has a chance to apply for a patent.

"Disclosure" is not defined in the new act. Looking at the categories of prior art in new Section 102(a), it is clear that something described in a patent or a printed publication likely discloses the invention. But is "public use" or

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[11] 37 CFR § 1.131.

"otherwise available to the public" a "disclosure"? The drafters of the act tried to answer that question.

> We intend that if an inventor's actions are such as to constitute prior art under subsection 102(a), then those actions necessarily trigger subsection 102(b)'s protections for the inventor and, what would otherwise have been section 102(a) prior art, would be excluded as prior art by the grace period provided by subsection 102(b). Indeed, as an example of this, subsection 102(b)(1)(A), as written, was deliberately couched in broader terms than subsection 102(a)(1). This means that any disclosure by the inventor whatsoever, whether or not in a form that resulted in the disclosure being available to the public, is wholly disregarded as prior art. A simple way of looking at new subsection 102(a) is that no aspect of the protections under current law for inventors who disclose their inventions before filing is in any way changed.[12]

But until the courts have interpreted the language of the act, or Congress clarifies the language to better match the drafters' intentions, it is a good idea for an inventor to be conservative regarding whether the grace period applies to an act other than a publication.

Looking at new Section 102(b)(1) again, its first exception is:

> (A) the disclosure was made by the inventor or joint inventor or by another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor;

There are really two different situations covered. The first is when the disclosure has been made by the inventor. Then, that disclosure is not prior art for one year. The second is when the inventor told somebody else about the invention, most likely in confidence. (If not, it likely would be a public disclosure and the second exception, discussed below, would apply). That person then discloses it (perhaps improperly) to the public. The inventor has one year from the first public disclosure (either to the other person, if not in confidence, or by the other person) to file a patent application.

The second exception is similar:

> (B) the subject matter disclosed had, before such disclosure, been publicly disclosed by the inventor or a joint inventor or another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor.

In this case, the inventor has already disclosed the invention in a way that would otherwise be prior art. Any later disclosure by anyone else is not prior art if it occurs one year or less before the application is filed.

Because this is a personal grace period, it might be better to describe the new act as "first to publish" (if one considers an application as a publication).

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[12] Remarks of Sen. Patrick Leahy, sponsor of the Senate version of the patent reform bill (S. 23) during its debate on March 9, 2011. Congressional Record, 112th Congress, at S1496. Similarly, during the debate on the House bill (H.R. 1249): "We intend for there to be an identity between 102(a) and 102(b). If an inventor's action is such that it triggers one of the bars under 102(a), then it inherently triggers the grace period subsection 102(b)." Congressional Record, 112th Congress, at H4429.

Any public disclosure prevents any other inventor from getting a patent. And the first to publish must file a patent application within one year of that public disclosure.

Interferences

Most people likely think of patents as the way to prevent somebody from "stealing" an invention. But patents go far beyond misappropriation laws like copyright or trade secret.

- One does not have to have to have a product to receive patent protection. All one has to do is describe how to make or use an invention sufficiently for a patent application. Many patents are for inventions that have not been actually reduced to practice, so there is nothing for others to copy.
- The claims of a patent can be substantially broader than the embodiments described in the patent or present in a product, perhaps encompassing things that were not even contemplated by the inventor at the time of applying for a patent.
- Patents give the right to stop anybody besides the patent owner from making, using, selling, offering for sale, or importing the patent invention, even if they have independently come up with the invention.

Since the patent right is a right to exclude others, there should be only one patent granted for a particular invention. Otherwise, anybody wanting to make or sell the invention, including the patent holders themselves, would need to get permission from *every* patent holder.

In the rare instance where two or more people invent the same thing at approximately the same time, old Section 102 provided from a special proceeding, called an interference, to determine who should get the patent.

> (g) (1) during the course of an interference conducted under section 135 or section 291, another inventor involved therein establishes, to the extent permitted in section 104, that before such person's invention thereof the invention was made by such other inventor and not abandoned, suppressed, or concealed, or
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> (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.

Note that this provision depends heavily on the various steps of invention discussed above: conception and reduction to practice. The winner of the interference is the person who can show the earliest date where they started diligently reducing the invention to practice following their conception of the invention, and not suppressed or concealed the invention. This requires the timely filing of a patent application after reduction to practice.

> Public policy favors the early disclosure of inventions. This underlies the requirement for reasonable diligence in reducing an invention to practice, not unlike the requirement that, to avoid a holding of suppression or concealment, there be no unreasonable delay in filing an application once there has been a reduction to practice.[13]

Moreover, looking for funding or commercial development of the product are generally not considered diligence in reducing the invention to practice or filing a patent application. In *Griffith v. Kanamaru*,[14] Cornell University lost an interference because its inventor-professor waited three months for a graduate student to start on the project in the fall, as well trying to get outside funding. The Federal Circuit noted that:

> One having the first complete conception of an invention cannot hold the field against all comers by diligent efforts, merely, to organize and procure sufficient capital to engage in the manufacture of his device or mechanism for commercial purposes. This is a different thing from diligence in actual reduction to practice.[15]

The interference starts with the person who filed the first patent application assumed to be the first inventor. It is then up to the later filer to show through evidence such as witnessed notebooks or other documents that he had conceived of the invention as was diligently reducing it to practice at the time the first application was filed. Then, the first applicant gets to show with similar documentation that he was diligently reducing the invention to practice before that date. Unless one were familiar with what documentation is required to show the date of conception and diligence after that, and did everything right, the chance of winning an interference is small.

As Senator Leahy noted during the debate on the Senate version of the patent reform bill, quoting from a letter from Secretary of Commerce Locke:

> During the past 7 years, under the current outdated, cumbersome, and expensive system, of almost 3 million applications filed, only 1 patent was granted to an individual inventor who was the second to apply.[16]

In part, that is because even if in the rare instance they have the proper documentation, few inventors have the resources to successfully defend an interference. As Rep. Smith noted during the floor debate on the House version of the bill:

> Inventors forget that, to have any hope of winning an interference proceeding, they must comply with complex legal procedures and then spend over $500,000 to try to prove that they were the first-to-invent.[17]

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[13] *Naber v. Cricchi* , 567 F.2d 382, 385 n.5.
[14] 816 F.2d 624 (Fed. Cir. 1987).
[15] Quoting *Seeberger v. Dodge*, 24 App. D.C. 476, 485 (1905).
[16] *Congressional Record*, 112th Congress, March 3, 2011, page S1177.
[17] *Congressional Record*, 112th Congress, June 22, 2011, page H4421.

And the problem of somebody else getting the patent does not go away once a patent is issued, resulting in a cloud over every patent.[18] If a later applicant, even one applying after a patent has issued, can show conception before the patent's inventor and diligence (albeit slower than that of the patent's inventor) as well as the timely filing of an application following reduction to practice, he could take away the patent to the invention in an interference.

Derivation proceedings

The new patent statutes replace interferences with … *nothing*. If there are multiple applications for the same invention, the winner of the patent will always be the first inventor to file an application. There is no longer questions of conception, reduction to practice, diligence, concealment, or suppression. When the new patent statutes are finally effective, those ill-defined concepts will no longer be part of United States patent law (except when litigating previously-issued patents), and inventors will no longer have to worry about whether they have met those requirements. And a later applicant cannot take an issued patent through an interference, so that cloud is removed from future patents.

Well, not quite replaced by nothing. The old Section 135, that covered interferences, was replaced completely with a new Section 135, entitled "Derivation proceedings." But while the language is quite similar, the proceedings are substantially different.

As discussed above, the question in an interference is who was the first to invent something, considering such things as dates of conception and reduction to practice, and the level of diligence along the way. The question in a derivation proceeding is quite different: did an applicant find out about an invention from somebody else and beat him to the patent office?

The new Section 135 starts out:

> (a) Institution of Proceeding- An applicant for patent may file a petition to institute a derivation proceeding in the Office. The petition shall set forth with particularity the basis for finding that an inventor named in an earlier application derived the claimed invention from an inventor named in the petitioner's application and, without authorization, the earlier application claiming such invention was filed. Any such petition may be filed only within the 1-year period beginning on the date of the first publication of a claim to an invention that is the same or substantially the same as the earlier application's claim to the invention, shall be made under oath, and shall be supported by substantial evidence. Whenever the Director determines that a petition filed under this subsection demonstrates that the standards for instituting a derivation proceeding are met, the Director may institute a derivation proceeding. The determination by the Director whether to institute a derivation proceeding shall be final and nonappealable.
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> (b) Determination by Patent Trial and Appeal Board- In a derivation proceeding instituted under subsection (a), the Patent Trial and

[18] "Whenever an application is made for a patent which, in the opinion of the Director, would interfere with any pending application, or with *any unexpired patent*, an interference may be declared …" 35 U.S.C. § 135(a), emphasis added.

> Appeal Board shall determine whether an inventor named in the earlier application derived the claimed invention from an inventor named in the petitioner's application and, without authorization, the earlier application claiming such invention was filed. In appropriate circumstances, the Patent Trial and Appeal Board may correct the naming of the inventor in any application or patent at issue. The Director shall prescribe regulations setting forth standards for the conduct of derivation proceedings, including requiring parties to provide sufficient evidence to prove and rebut a claim of derivation.

There is one thing missing here. Nowhere in the patent reform act does it say what it means to "derive a claimed invention from an inventor." Most inventions are "derived" from the work of others, in the Newtonian sense ("If I have seen further it is only by standing on the shoulders of giants."), but that shouldn't mean that those inventors can take over the application in a derivation proceeding.

While it will take years of cases to know what "derive" means (although the Webster's definition of "to take, receive, or obtain, especially from a specified source" is a good start), it is hard to image that it wouldn't include somebody who learns of an invention from its original inventor, and then files for the patent himself. But even with such a broad definition of "derive," for many types of inventions derivation proceedings, like the interference proceedings they replaced, may be difficult for the original inventor to win.

Derivation proceedings don't occur automatically. The original inventor has to file his own patent application and wait for his application to be published. After publication, which normally occurs in eighteen months although immediate publication can be requested when the application is filed, he has one year to file a petition to request a derivation proceeding.

But if the person filing the "derived" application has added his own contribution to his claimed invention, even if that contribution might be just an obvious change or improvement,[19] the original inventor may not be able to claim "substantially the same" invention that was claimed in the earlier application. His application's specification does not teach the new aspect of the invention added and claimed in the derived application. And he can't add that new aspect to his application, to support the derivation proceeding, because he is not the inventor of it. His copying it from the derived application makes his application also derived!

Derivation proceedings work best for chemical or pharmaceutical compounds. When you come up with a new drug, that's what the invention is and everything with the same chemical structure is the same invention. Any substantial changes in that chemical structure results in a different invention. But when, for example, an inventor has disclosed his software product and its techniques to another person, it's quite possible that that person will take the idea and develop it further, including his own ideas.

And if that weren't problem enough, the original inventor has to have "substantial evidence" of derivation to accompany the petition. What that

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[19] See Joshua D. Sarnoff, "Derivation and Prior Art Problems with the New Patent Act," 2011 Patently-O Patent Law Review 12, available at: (http://www.patentlyo.com/files/sarnoff.2011.derivation.pdf

evidence should be is not indicated, but a good analogy would be to the evidence required to show copyright infringement or trade secret misappropriation: how the alleged deriver had access to the invention, the similarity of the inventions compared to the prior art, and the shortness of time between the access and the alleged deriver's filing his application.

Unfortunately, unlike an interference where each party has all the evidence (if they have been keeping good documentation) related to their conception date and diligence, the key evidence of derivation – what, if any, effort went into the invention by the alleged deriver – is held by the other party. Hopefully, the rules for a derivation proceeding that the USPTO adopts will say that if the original inventor makes a prima facie case of derivation, the burden of showing actual invention shifts to the alleged deriver, much as when an examiner makes a prima facie case of unpatentability, the burden shifts to the applicant.

Clearly, it is best to avoid the need for a derivation proceeding by filing a patent application before talking about the invention to anybody who might then take the idea and file their own patent application.