

CHAPTER 6: NOVELY UNDER PRE-AIA LAW

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Chapter 6

NOVELTY UNDER PRE-AIA LAW

The forms of action we have buried, but they still rule us from
their graves.

—Frederic William Maitland¹

A. INTRODUCTION TO THE PRE-AIA VERSION OF § 102

The most fundamental difference between the AIA and pre-AIA law is, of course, the abandonment of the older “first-to-invent” approach to determining novelty and priority. Thus, one of this Chapter’s most important tasks is to cover the complex rules by which the older system determined a date of invention.

Beneath that one important difference between the two systems, there are many similarities, and as you will see, the vast bulk of references that qualify as prior art under the AIA would also qualify under pre-AIA law. Because those similarities are so practically important, this Chapter will begin with them.

If you have developed a reasonable understanding of the AIA’s system for determining novelty, you will not have too much difficulty learning the pre-AIA system provided that you begin your study by learning one point—and learning it well: The so-called “**statutory bar**” provisions in the pre-AIA § 102(b) closely parallel the basic prior art-defining categories in AIA § 102(a)(1). The categories of references in pre-AIA § 102(b)—“patented,” “described in a printed publication,” “in public use” or “on sale”—are pretty much the same as those in AIA § 102(a)(1). Moreover, the pre-AIA statutory bar provisions can be applied without knowing any dates of invention. Like the novelty provisions in AIA § 102(a)(1), the “critical date” for applying the statutory bars is based on the *filing date* of the application being tested for novelty. A difference is that the statutory bar critical date is *one year before the application filing date*, but simple subtraction of a year makes that difference easy.

Because of the obvious legal parallels between the AIA system of prior art and the pre-AIA statutory bars, this Chapter will begin with the statutory bars in subchapter B, *infra*. First, however, we will give an overview of the structure of the pre-AIA § 102.

Pre-AIA § 102 contains three different kinds of provisions covering three issues that are considered distinct under the “first-to-invent” philosophy of the older system. True “**novelty**” provisions define what is considered true “prior” art—i.e., references qualifying as art *prior to the applicant’s date of invention*. Thus, all the novelty-defining subsections of the pre-AIA § 102 require calculation of the applicant’s date of invention. The other issues addressed in the pre-AIA § 102 are the so-called **statutory bars** to patenting and the prohibition on **derivation**, which operate without regard to invention dates. Reproduced below is the statutory text marked to

¹ F.W. MAITLAND, THE FORMS OF ACTION AT COMMON LAW 2 (1909).

indicate the issue addressed by each subsection (N, D, and SB for, respectively, Novelty, Derivation and Statutory Bar):

Pre-AIA § 102. CONDITIONS FOR PATENTABILITY; NOVELTY AND LOSS OF RIGHT TO PATENT

A person shall be entitled to a patent unless—

- N (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
- SB (b) 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, or
- SB (c) he has abandoned the invention, or
- SB (d) 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 this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the United States, or
- N (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for the purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language; or
- D (f) he did not himself invent the subject matter sought to be patented, or
- N (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 (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.

Subsection (f) is easily recognized as the prohibition on derivation — i.e., the requirement that the applicant have actually invented the subject matter of the patent, not derived it or stolen it from someone else. As mentioned in the prior chapter, AIA § 102 lacks any provision quite like it.

As shown by the statutory text, the novelty provisions of the statute (a, e & g) are directed *only to events that occur before the applicant's time of invention*. See pre-AIA § 102 (a) (“before the invention thereof by the applicant”), (e) (same language), and (g) (“before such person's [the applicant's] invention thereof”). In contrast, the statutory bar provisions operate without regard to a date of invention.

Under the first-to-invent philosophy, if an invention passes the novelty requirements in subsections (a), (e) and (g), then the law considers the invention to be new and the inventor *may* obtain a patent on it (provided, of course, that the invention meets other requirements such as utility and nonobviousness). The inventor's right to a patent will, however, be lost if subsequent events trigger one of the statutory bars found in subsections (b), (c) & (d). Thus, the statutory bars are described in the statutory title to old § 102 as “loss of right to patent.” As we will see below, however, the actual operation of the main statutory bar provision in § 102(b) is highly similar to the operation of the AIA prior art system.

B. § 102(b): THE GENERAL STATUTORY BARS

We begin our study of the pre-AIA version of § 102 by studying § 102(b), which closely parallels categories of prior art in the AIA system. A schematic of the language in § 102(b) helps to show the parallels:

Schematic Representation of § 102(b)

§ 102: A person shall be entitled to a patent unless— ...

(b) the invention was

[i] patented [in this or a foreign country] or
[ii] described in a printed publication in this or a foreign country or

[iii] in public use [in this country] or
[iv] on sale in this country,

more than one year prior to the date of the application for patent in the United States[.]

As this schematic reveals, the pre-AIA § 102(b) is very much like the AIA § 102(a)(1), with only three explicit differences and, perhaps, a fourth less visible difference. Those four differences are:

(1) *The “Public Use” and “On Sale” Categories Are Geographically Limited.* While the pre-AIA § 102(b) categories of “patented” and “described in a printed publication” have a global

reach (just as those categories do in the AIA), the categories of non-documentary prior art in pre-AIA § 102(b)—references “in public use” or “on sale”—are limited to activities occurring only inside the United States. As we will see throughout this chapter, the pre-AIA statute includes more geographic restrictions on prior art than the AIA does. In general, the AIA is a much more thoroughly international statute.

(2) *The Critical Date Is “More Than One Year Prior” to the Application Filing Date.* Obviously, the pre-AIA timing rule is different than the AIA’s, but it is a relatively simple and easily understood difference: the critical date is *a year prior to the application filing date*.² As explained in Chapter 5, the pre-AIA statute does not need to have “grace period” exceptions to prior art because the old statute does not include into the prior art any of the inventor’s own activities (publications, sales, etc.) unless those activities occurred more than one year before the inventor’s filing date. Thus, once an inventor completes her invention, nothing that she or anyone else does in the next year can destroy her right to a patent under the pre-AIA system.

The one-year period in pre-AIA § 102(b) can be seen as the mirror image of the one-year period applicable to the AIA’s prior art exceptions. During the year period in pre-AIA § 102(b), references *are not included into* the prior art. During the year period under the AIA, reference *can be excluded from* the prior art. The statutes’ different approaches to the year period also explains why the grace period under the AIA is fundamentally weaker than under pre-AIA law : It is a lot easier for an inventor if references are never included as prior art in the first place than if the inventor has to prove the applicability of an exception to exclude those references.

(3) *The Relevant Application Filing Date Is the Earliest U.S. Filing Date, Not the Global Effective Filing Date.* The last phrase in pre-AIA § 102(b)—“the date of the application for patent *in the United States*”—refers to the filing date in the U.S. PTO, not a foreign “effective filing date.” Where a U.S. application is a continuation or divisional application of an earlier-filed U.S. application (an earlier-filed “parent” U.S. application), that earlier U.S. filing date can be used in applying § 102(b), but not foreign filing dates. Thus, the relevant application filing date under pre-AIA § 102(b) is the *earliest* U.S. filing date of the application. The pre-AIA statute’s disregard of foreign filing dates is just another example of how the old statute is less international than the AIA.

(4) *The Prior Art Categories in pre-AIA § 102(b) Might Be Subtly Different Than the Corresponding AIA Categories.* Here we flag once again the possibility that the AIA’s categories of prior art might be interpreted differently than the pre-AIA § 102(b) categories, even though the new statute borrowed the categories of the old statute. In particular, the PTO and at least one district court have taken the position that AIA’s “public use” and “on sale” categories do not include the inventor’s own secret uses and sales, even though such secret commercial exploitation

² The one-year period can even be a tiny bit longer, due to weekends and holidays. As the PTO explains:

Where the last day of the year dated from the date of publication falls on a Saturday, Sunday or Federal holiday, the publication is not a statutory bar under [pre-AIA] § 102(b) if the application was filed on the next succeeding business day.

U.S. PATENT AND TRADEMARK OFFICE, MANUAL OF PATENT EXAMINING PROCEDURES § 706.02 at 700-32 (9th ed. rev. 7.2015, Nov. 2015). Isn’t patent law great?

by the inventor herself clearly does create prior art under the “public use” and “on sale” categories of pre-AIA § 102(b). In applying the pre-AIA statute, however, you generally do not have to worry about this potential difference because the existing case law—including the case law set forth in Chapter 5.A.1—was decided under the pre-AIA statute. Any differences between the two statutes may be a problem for applying the new statute, but not for applying the old.

How important are these differences? Let’s consider the geographic limitation on the “public use” and “on sale” categories of prior art. Three points suggest that the geographic limitation does not have a huge practical effect. First, in an era of global trade, most innovations are likely to find their way to the U.S. economy rather quickly. Second, internet commerce means that, in many circumstances where a foreign company sells an invention online, it might also be considered on sale in the United States. For example, an invention could be deemed to be on sale in the U.S. if a foreign company advertises the invention on its website, the website is accessible in the United States, and the foreign company is willing to accept internet orders originating in the U.S. *See In re Caveney*, 761 F.2d 671, 676 (Fed. Cir. 1985) (holding an invention is on sale in the United States where the offer of sale originated in a foreign country but was “directed to” a consumer in the United States).

Third and finally, foreign sales catalogs often constitute “printed publications” under the holding of *Jockmus v. Leviton*, 28 F.2d 812 (2nd Cir. 1928) (L. Hand, J.), and printed publications qualify as prior art without regard to nationality. Also, more recent Federal Circuit precedent maintains that “availability of an invention through foreign sales may be considered in determining whether a printed publication” meets the enablement standard, so that “foreign sales may enable an otherwise non-enabling publication.” *In re Elsner*, 381 F.3d 1125, 1130-31 (Fed. Cir. 2004). In sum, the information embodied in foreign sales and public uses rarely stays outside the U.S. for long.

The two other significant differences between the prior art categories in the AIA and those in pre-AIA § 102(b)—calculating the critical date one year prior to filing, and using only the U.S. filing date—are significant, but their practical importance should not be overemphasized. The differences affect only the prior art arising in the last few months prior to filing. The two differences, it should also be noted, tend to counteract each other for any U.S. patent application that was first filed overseas. In fact, if an applicant filed first in a foreign country and then waited one full year to file in the U.S., the critical date would be the same under both the pre-AIA § 102(b) (one year prior to the U.S. filing date) and the AIA (the global effective filing date, which for these facts would be one year prior to the U.S. filing date).

In any event, we do not want to dwell too much on *comparing* the pre- and post-AIA systems because, in actual practice, you will know in advance which of the two systems applies to any particular patent or patent application. And in applying the pre-AIA system, you will merely need to remember (i) to ignore foreign public uses and sales; and (ii) to use as the critical date the time *one year prior to earliest U.S. filing date*.

Once you have applied the statutory bars in § 102(b), you will have identified the vast bulk of references qualifying as prior art, and it will serve as a solid baseline of the relevant prior art. The remainder of this Chapter will focus on the few additional items to be added to this baseline of prior art.

C. §§ 102(c) & (d): RARE STATUTORY BARS

1. Section 102(c): Abandonment

The text of pre-AIA § 102(c) is both simple and rarely applied. Subsection (c) provides that an inventor is not entitled to receive a patent on an invention if “he has abandoned the invention.” The verb “abandoned” in the statute has long been interpreted to mean *abandoned the right to patent the invention*, not abandon the invention in the sense of leaving it in the corner of a basement for years. See *Macbeth-Evans Glass Co. v. General Electric Co.*, 246 F. 695, 702 (6th Cir. 1917) (holding that “abandonment of patent privileges is in every sense material to the patent laws tantamount to abandonment of the invention itself”); see also *Bates v. Coe*, 98 U.S. 31, 46 (1878) (holding that “[i]nventors may ... keep their inventions secret ... for any length of time” and still “not forfeit their right to apply for a patent”).

Under the case law, there are two ways to abandon the right to patent within the meaning of § 102(c). The first is for the inventor to dedicate the invention to the public. Not surprisingly, such abandonments are rarely litigated because, for the issue to be litigated, the inventor would have to be both altruistic and fickle. The inventor would have to dedicate the invention to the public (the altruistic part), but then change her mind and seek patent rights after all (the fickle part). Moreover, PTO precedent holds that such an “intent to abandon the invention will not be imputed, and every reasonable doubt should be resolved in favor of the inventor.” *Ex parte Dunne*, 20 USPQ2d 1479 (Bd. Pat. App. & Inter. 1991). Not surprisingly, such a set of facts has not arisen in at least decades.

A second way for an inventor to abandon the right to invent is to take actions that are inconsistent with patenting. Historically, one set of such actions is where the inventor commercially exploits the invention in secret for a long time prior to seeking a patent. The leading case on that type of abandonment is the 1917 *Macbeth-Evans Glass* cited above. In that case, patentee had exploited the invention (an innovative process for making glass) as a trade secret “for almost ten years before the patent in suit was applied for.” 246 F. at 697. The court held the secret commercial exploitation of the invention to be inconsistent with seeking patent rights and thus invalidated the patent on the grounds that the invention was abandoned. *Id.* at 702-707.

Macbeth Evans Glass, however, has not been applied once to find abandonment in many decades. This second branch of the abandonment doctrine is thus essentially defunct, but it is defunct *not* because the factual predicates (secret commercial exploitation prior to patenting) are so rare. Rather, it is because modern courts adjudicating pre-AIA cases apply the holding of *Metallizing Engineering* and thereby treat secret commercial use by a patent applicant as a “public use” under the statutory bar provisions of § 102(b). Furthermore, the courts also held that any secret commercial use should normally not be considered abandonment if the inventor files a patent application within one year of the secret use. See *Mendenhall v. Astec Indus.*, 13 U.S.P.Q.2d 1913 (E.D. Tenn. 1988), *aff’d in unpublished opinion*, 887 F.2d 1094 (Fed. Cir. 1989). Under that holding, any secret commercial exploitation that might possibly constitute abandonment is completely encompassed with the statutory bar provisions of pre-AIA § 102(b).

In sum, the second branch of possible abandonments has been completely subsumed within pre-AIA § 102(b), and the first branch of the doctrine involves extremely unusual facts. For those reasons, pre-AIA § 102(c) was nearly a dead letter even before it was supplanted by the enactment of the AIA.

One final point: The verb “abandon” is also used in PTO practice where a patent applicant discontinues the prosecution of her application at any time prior to issue. The PTO describes such a discontinuance as an “abandonment” and labels the application “abandoned.” Yet that type of abandonment (abandonment *of the application*) is not the same as abandonment *of the invention* under § 102(c). See *Peterson v. Fee Int’l Ltd.*, 381 F. Supp. 1071, 1079 (W.D. Okla. 1974) (abandoned application does not bar later patent application for improved version of same invention); 2 DONALD CHISUM, PATENTS § 6.03[2] n.3 (2016) (collecting cases holding that abandoning an application is not abandonment for purposes of § 102(c)). In sum, don’t confuse *application* abandonment with *invention* abandonment under § 102(c)!

2. § 102(d): Late U.S. Application After Foreign Patenting

The pre-AIA § 102(d) statutory bar requires the confluence of two highly unusual factual circumstances. First, an inventor who has first filed a foreign patent application must mistakenly wait more than one year after the foreign filing to file in the United States. We say “mistakenly” because the inventor has strong incentives to file within a year. Not only does a more-than-one-year-later filing satisfy one of the prerequisites of the § 102(d) bar, but the inventor loses the benefit of the earlier filing date under the Paris Convention (as codified in the United States in 35 U.S.C. § 119). As previously discussed, § 119 allows a U.S. patent applicant to treat a foreign filing date as the effective U.S. filing date (for most purposes), but only if the U.S. filing is no more than one year after the foreign filing. Thus, an inventor who delays a U.S. filing for more than a year after a foreign filing faces a double penalty: loss of the priority right afforded under § 119 and the possibility of a complete bar to patenting under § 102(d).

Yet even if an inventor does mistakenly delay filing in the U.S. for more than a year after a foreign filing, the § 102(d) bar will not arise without a second circumstance: the foreign patent must actually issue as a patent before the inventor files the U.S. patent application. Applications in Europe, Japan and other countries often remain pending for much longer than one year. Under the European Patent Convention and in Japan, patent applicants can even control the timing of patent issuance to some extent by postponing the active examination of the application. Thus, the § 102(d) bar can only arise where an inventor is doubly cursed by both negligence (professional malpractice in filing the U.S. application late) and bad luck (having a foreign patent bureaucracy move swiftly at just the wrong time).

The leading case on pre-AIA § 102—and pretty much the only case on it—is *In re Kathawala*, 9 F.3d 942 (Fed. Cir. 1993). The time line in that case was a bit complicated, which perhaps explains how the mistake was made:

November 22, 1982: The inventor files a U.S. patent application on some new pharmaceutical compounds with the ability inhibit a key enzyme in the biosynthesis of cholesterol.

November 21, 1983: The inventor files applications in Greece and Spain. Crucially, these applications disclose and claim certain ester derivatives of the compounds originally disclosed and claimed in the 1982 U.S. application. Thus, the Greek and Spanish applications were the inventor's first patent applications on the ester derivatives.

October 2, 1984: The Greek patent issues.

January 21, 1985: The Spanish patent issues.

April 11, 1985: The inventor files a continuation-in-part application in the United States that, for the first time in a U.S. application, discloses and claims the ester derivatives. The disclosure in Kathawala's original 1985 U.S. filing did not support the claims to the ester compounds. Thus, with respect to the new claims on the ester derivatives, his 1985 application was not entitled to claim the benefit of the original 1982 U.S. filing date.

Based on that time line, the PTO rejected all of the claims to the ester derivatives under § 102(d), and the Federal Circuit affirmed. The key problem is that, for the ester derivatives, the inventor's first patent applications were the overseas applications. When did the inventor file a U.S. patent application disclosing and claiming the ester derivatives? Not until April 11, 1985—more than sixteen months after the filing of the foreign applications. That sixteen month delay was almost certainly an attorney error, and it meant that the first pre-condition of the § 102(d) statutory bar was satisfied.

Still, the inventor in *Kathawala* would not be have been barred from patenting the ester derivatives in the United States except that the Greek and Spanish patents had issued so swiftly—with the Greek application pending for less than eleven months and the Spanish application pending for only fourteen. Such the quick work by foreign patent offices is more an aberration than the rule. See KENNETH J. BURCHIEL, *BIOTECHNOLOGY AND THE FEDERAL CIRCUIT* 73 (1995) (noting “remarkably short time” for issuance of Greek and Spanish patents in *Kathawala*). And that aberrantly fast work came at just the wrong time for the inventor in *Kathawala*.

Just how rare are the facts in *Kathawala*? Exceedingly rare. In the 23 years since *Kathawala*, § 102(d) has been asserted in court only against one issued patent. Although it generated two court opinions, that challenge was ultimately rejected. See *Bayer AG v. Barr Laboratories*, 39 U.S.P.Q.2D 1862 (S.D.N.Y. 1996) (permitting a § 102(d) challenge to the validity of Bayer's U.S. Patent 4,670,444 to survive a motion for summary judgment); *Bayer AG & Bayer Corp. v. Schein Pharm.*, 129 F. Supp. 2d 705, 725 (D.N.J. 2001) (rejecting the § 102(d) challenge and sustaining the validity of Bayer's patent). During that time, PTO rejections based on § 102(d) have not generated any reported judicial decisions.

Two final points about § 102(d): First, the Federal Circuit's opinion in *Kathawala* interpreted § 102(d) to require only that the foreign patent application “disclosed and provided the opportunity to claim all aspects of [the] invention” later claimed in the tardy U.S. application. 9 F.3d at 947 (emphasis added). That interpretation provides § 102(d) a fairly generous scope (albeit only in those rare cases where it applies) and has generated some criticism. See BURCHIEL, *supra*, at 72–77 (criticizing statements in *Kathawala* minimizing the distinction between disclosed and claimed subject matter in foreign patents). By contrast, for purposes of “patented” prior under pre-AIA §§ 102(a) and (b), *Reeves Bros. v. United States Laminating Corp.*, 282 F. Supp. 118 (E.D.N.Y. 1966), *aff'd*, 417 F.2d 869 (2d Cir. 1969), held that a foreign

patent “is a reference only for what is patented, i.e., for what it claims and not for what is disclosed in its specifications.” 282 F. Supp. at 136. *Kathawala* takes a different approach; perhaps the court was uncharitable to a patent applicant whose attorneys had clearly blundered in delaying the U.S. filing too long.

Second, in calculating whether a foreign application is “filed more than twelve months before the filing of the application in the United States” for purposes of § 102(d), courts use the *actual filing date in the United States*, not an earlier foreign filing date claimed as the effective U.S. filing date pursuant to § 119. The issue can arise only where the applicant has filed at least two foreign applications — a first foreign application filed more than a year before the U.S. application, and a second application filed less than a year of the U.S. application. Though the text of § 119 would seem to give the second foreign filing “the same effect as the same application would have if filed in this country” (subject to certain exceptions not relevant in this context), the court in *Bayer AG v. Barr Laboratories*, 39 U.S.P.Q.2D 1862 (S.D.N.Y. 1996), held that the effective filing date provided by § 119 could not be used to avoid the § 102(d) bar:

It is clear that § 119 was intended to preserve the priority of a foreign applicant’s invention against novelty defeating references. However, there is no authority indicating that § 102(d) is a novelty or priority provision... [A]llowing § 119 to modify § 102(d) would give foreign applicants two years within which to file counterpart applications in the United States. In light of the policy behind § 102(d) — the encouragement of prompt filing of U.S. applications after filing abroad — this result would seem unreasonable. Therefore, the effective filing date of a United States application under § 102(d) is the actual date of filing in the United States.

Id. at 1863–64.

PROBLEMS: § 102(d)

Under the following hypotheticals, is Jan’s United States patent application barred under § 102(d)?

1. Jan, a French inventor, developed a new type of food processor which packages food, in addition to dicing, slicing and making puree. She files a French patent application June 17, 2000. On July 8, 2001, she files for a U.S. patent. On October 15, 2002, she receives a French patent based on her earlier application.

2. Jan files a patent application in Estonia on June 17, 2000. It issues on October 15, 2000. She files her U.S. patent application May 14, 2001.

3. Jan files a Japanese patent application June 17, 2000. It issues on January 1, 2001. On June 18, 2001, Jan files her United States patent application.

4. Jan files her Japan application on June 17, 2000. It issues on January 1, 2001. On February 1, 2001, Jan files an application in Italy and, on June 18, 2001, she files in the United States. In her U.S. application, Jan claims the benefit of her Italian filing under § 119.

Discussion

1. Even though her United States filing date is more than a year after her French filing date, Jan escapes a § 102(d) problem because the French patent application did not issue before her U.S. filing date. For purposes of priority, however, Jan would lose the benefit of her foreign filing date under the Paris Convention in this case.

2. Jan avoids a § 102(d) bar because the U.S. application was filed within one year of her Estonian filing date. It is therefore irrelevant that the Estonian patent issued prior to her U.S. filing date. (Do you see why this result is necessary for compliance with the Paris Convention “priority year”?)

3. Jan’s United States patent is barred since her Japanese application, which was filed more than twelve months before her United States application, issued as a Japanese patent before she filed in the United States.

4. Jan’s U.S. application is likely barred by § 102(d). See the discussion of *Bayer AG v. Barr Laboratories*, 39 U.S.P.Q.2D 1862 (S.D.N.Y. 1996), *supra*.

D. NOVELTY (REFERENCES TESTED BY INVENTION DATE)

The statutory bars covered so far do not require any calculation of a time of invention. We now turn to the categories of prior art that do require such calculations. As a preface, we note that, in applying the pre-AIA § 102, many patent examiners and lawyers first apply the § 102(b) statutory bars because they establish a large baseline of prior art—essentially, all publicly available materials one year prior to the U.S. filing date—without the difficulties and uncertainties associated with calculating with time of invention. That approach also seems best for students learning patent law in the post-AIA era because the AIA system must be studied and the § 102(b) statutory bars have so much in common with the AIA.

A complete study of the pre-AIA system does, of course, require learning the four categories of “true” prior art—references tested by the applicant’s date of invention. We say “true” prior art because, under the pre-AIA first-to-invent system, *prior* art was theoretically considered to be the art existing *prior to the applicant’s invention date*, not *prior to the applicant’s filing date* (which, with exceptions, is the approach of the AIA). In general, we think you can safely ignore this semantic point, and for purposes of both pre- and post-AIA law, you can use the term “prior art” to describe anything that qualifies as a reference under any provisions of § 102. We nonetheless note the distinction because some of the older cases distinguish between “prior art” and “statutory bar art.” That distinction, however, does not make a difference in how the art is used in evaluating a patent claim because, under the pre-AIA statute, claims are tested for patentability against the combined set of all prior art *and* all statutory bar art.

The four prior art categories of pre-AIA § 102 are:

(i) **§ 102(a): Prior publicly available art.** This category includes the publicly available art (e.g., printed publications) generated by others (not the applicant herself) that became publicly available *prior to the applicant's date of invention*.

(ii) **§ 102(e): Prior art *disclosed* in U.S. applications.** This category includes anything disclosed in a U.S. patent application that was filed by another (not the applicant herself) in the U.S. *prior to the applicant's date of invention* and that was eventually published or issued as a patent.

(iii) **§ 102(g)(1): Prior inventions *claimed* in U.S. applications.** This category includes any invention claimed in a U.S. patent application filed by another inventor where *the other inventor's date of invention is prior to the applicant's date of invention*.

(iv) **§ 102(g)(2): Prior inventions made in the U.S.** This category includes any invention made in U.S. by another inventor where *the other inventor's date of invention is prior to the applicant's date of invention*.

The italicized phrases show that, for each category of prior art, at least one invention date must be calculated because the critical date for all four categories is the applicant's date of date of invention. To apply the last two categories, *two* invention dates must be calculated because both the critical date for testing novelty (the *applicant's* invention date) and the effective date of the reference (the date of invention by the *other inventor*) require calculation of an invention date.

Below we provide a brief overview of these four categories of prior art. In this discussion, we will assume that dates of invention are known. In Chapter 6.E, *infra*, we will address the complex issues associated with calculating invention dates.

1. § 102(a): Publicly Available Prior Art

Section 102(a) covers all of the prior art that is publicly available when the reference qualifies as prior art. Below, we break the statutory text into its various components:

[Pre-AIA] § 102. CONDITIONS FOR PATENTABILITY; NOVELTY ...

A person shall be entitled to a patent unless—

(a) the invention was

[i] known [by others in this country] or

[ii] used by others in this country, or

[iii] patented [in this or a foreign country] or

[iv] described in a printed publication in this or a foreign country,

before the invention thereof by the applicant for patent

As the schematic shows, pre-AIA § 102(a) has four categories of prior art, just as pre-AIA § 102(b) does. The final two categories—“**patented**” and “**described in a printed publication**”—are textually identical to categories in pre-AIA § 102(b) and AIA § 102(a)(1), with the major difference being that the categories include only work before the applicant’s date of invention. The first two categories—“**known**” and “**used**” by others in this country—are differently phrased than the categories studied so far, but together they cover essentially all publicly known art, albeit only art within the United States.

Given that these categories are highly similar to categories previously studied, the notes below will focus only on the small number of special points to be considered in applying these familiar categories in the special context of pre-AIA § 102(a).

NOTES ON PATENTS AND PRINTED PUBLICATIONS

As previously discussed, the category of “printed publications” includes all or almost all of the patents issued by any modern country because almost all patents in the world today are published with a sufficient degree of organization and public accessibility to meet the printed publication standard. Thus, although the points below are equally true for patents and printed publications, the examples given will focus on printed publications.

1. The Date of Invention Is the Critical Date. Consistent with the philosophy of the pre-AIA first-to-invent system, references count as prior art under § 102(a) only if they qualified as art (e.g., were patented or published) prior to the date of the applicant’s invention. Another way to state the same point is to say simply that the critical date is the applicant’s date of invention. This point is easy to comprehend, even though determining the date of invention is not necessarily easy in practice.

2. Only Work by Others Qualifies as Prior Art under § 102(a) (Inventors Cannot Destroy Their Own Novelty). Though § 102(a) does not expressly limit the categories of “patented and “printed publication” prior art to references generated by “other” inventors, the courts have interpreted all of § 102(a) to exclude work done by the inventor herself. This interpretation is not immediately apparent from the language of the statute, as one court observed:

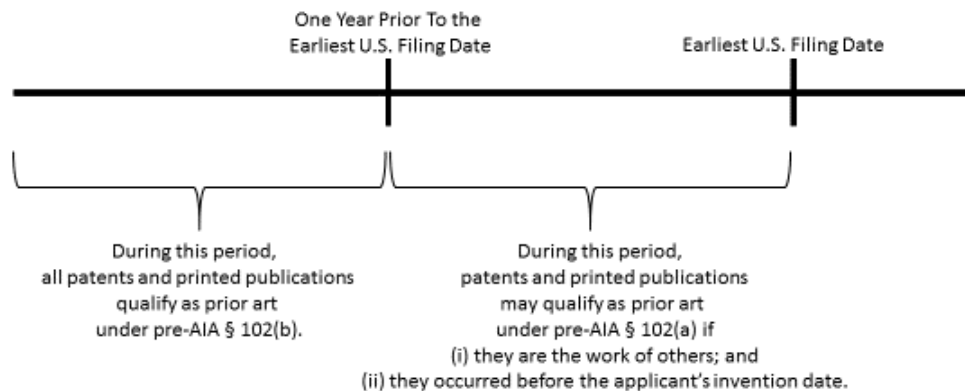
It may not be readily apparent from the statutory language that a printed publication cannot stand as a reference under § 102(a) unless it is describing the work of another. A literal reading might appear to make a prior patent or printed publication “prior art” even though the disclosure is that of the applicant’s own work.

See In re Katz, 687 F.2d 450, 454 (CCPA 1982). Nonetheless, the courts have uniformly required that all references under pre-AIA § 102(a) must be from *others*, not the inventor’s work.

One basis for this interpretation is that it is logically impossible for an inventor to destroy her own novelty—she cannot have publicly disclosed an invention before she had invented it. *See id.* Another rationale for the result is that a contrary holding would undermine the statutory bar provisions in § 102(b), which are intended to give inventors one year to publicize and exploit their inventions prior to filing. *See In re Facius*, 408 F.2d 1396, 1406 (CCPA 1969) (“But certainly one’s own invention, whatever the form of disclosure to the public, may not be prior art against oneself, absent a statutory bar.”).

In stating this straightforward limitation, we should note that, under the complicated rules governing time of invention, an inventor could technically publish an article prior to any date that would be recognized as her date of invention. For example, the rules for deciding time of invention under the pre-AIA system do not allow inventors to rely on inventive activity in some foreign countries to prove their dates of invention. Thus, technically, it might seem possible for a foreign inventor to have published an article at a time *before* any time that the technical rules of the pre-AIA system would recognize as the inventor's date of invention. Yet court and agency decisions set aside all of the normal formalisms associated with proving a date of invention and look to the realities of the situation. *See In re Lemieux*, 115 U.S.P.Q. 148, 149 (Pat. Bd. App. 1957) (foreign inventor's own publication cannot be cited against him under § 102(a) even though, under the normal rules governing date of invention, the inventor could not prove an invention date prior to the publication). *See also* Alton D. Rollins, *Inventor's Own Prior Inventions as Prior Art*, 64 J. PAT. OFF. SOC'Y 352 (1982); Alton D. Rollins, *Return of "One Man in the World"*, 64 J. PAT. OFF. SOC'Y 481 (1982).

3. Putting Together the Rules of § 102(a) and § 102(b) on Patents and Printed Publications. Despite their apparent complexity, the rules in §§ 102(a) & (b) concerning patents and printed publications have a combined effect that is easy to describe. All patents and printed publications arising more than one year prior to an applicant's earliest U.S. filing date are included in the prior art (all qualify under § 102(b); most qualify also under § 102(a)). Patents and printed publications arising within the year before the earliest U.S. filing date can also be included in the prior art but only if (i) they are not the work of the inventor; and (ii) they occur before the date of invention. The timeline below shows the combined effect of §§ 102(a) & (b):



NOTES ON PRIOR ART “KNOWN” OR “USED” IN THIS COUNTRY

1. The Date of Invention Is the Critical Date. As with all other novelty provisions in the pre-AIA § 102, the critical date for this category of prior art is the applicant’s date of invention.

2. Only Knowledge or Use “By Others” Qualifies. Just as for the categories of patents and printed publications, the categories of “known” or “used” prior art also look only to the work of other inventors, and the statute makes this requirement explicit in the statute by referring only to knowledge and use “by others.”

The judicial interpretive gloss on § 102(a)—that inventors cannot anticipate their own inventions under § 102(a)—still has a role here, for it forecloses the possibility of having knowledge imparted to others from the inventor herself be prior art. As previously discussed, the rules for determining a date of invention are sufficiently technical and geographically limited that an inventor have complete knowledge of her invention well before any date of invention recognized under the pre-AIA system. In such cases, the inventor could reveal information about her invention to others so that it would be known and perhaps even used “by others.” Nevertheless, such knowledge and use, being derived from the inventor’s own work, would not count against the inventor as § 102(a) prior art because the case law under § 102(a) follows the principle that inventors cannot destroy their own novelty.

3. “In this Country”: Knowledge and Use Must be *In the United States*. The pre-AIA system includes many more geographic limitations than the AIA system, and § 102(a) includes one such limitation. For documentary prior art (patents and printed publications), everything in the world could qualify as § 102(a) art, but not so for non-documentary prior art. In this respect, the pre-AIA versions of §§ 102(a) and (b) parallel each other, for both limit the non-documentary prior art categories to the boundaries of the United States.

As previously mentioned in the discussion on § 102(b), the geographic limitations on non-documentary prior likely have less impact in a modern world dominated by global trade and internet commerce. Things known and used in foreign countries usually quickly become known and used in the United States.

One final note: Prior to the enactment of the AIA, the geographic limitations on prior art were controversial. As early as 1966, the President’s Commission on the Patent System recommended abolition of the “foreign bias” in § 102(a):

Foreign knowledge, use and sale would be included as prior art.
Present arbitrary geographical distinctions would be eliminated.
... The anomaly of excluding, from prior art, public knowledge, use or sale in a border town of Mexico or Canada, and including the same kind of disclosure in Alaska or Hawaii, would be eliminated [This change] would be another step toward conformity with European patent laws and would promote acceptance of a common definition of universal prior art.

PRESIDENT’S COMMISSION ON THE PATENT SYSTEM, “TO PROMOTE THE PROGRESS OF ... USEFUL ARTS” IN AN AGE OF EXPLODING TECHNOLOGY 6 (1966). Years later, one prominent scholar argued that, given modern developments in communications and trade, the geographic limitations on prior art were in conflict with the constitutionally prescribed goal of “promot[ing] the Progress of ... useful Arts.” See Margo A. Bagley, *Patently Unconstitutional: The Geographical Limitation on Prior Art in a Small World*, 87 MINN. L. REV. 679 (2003). “[T]he inclusion of all publicly accessible information as prior art in patentability determinations” is constitutionally necessary, Professor Bagley argued, because “the Framers of the [the Constitution’s] Intellectual Property Clause sought to avoid the granting of patents on ‘old’ information.” *Id.* at 685-86.

Those and other criticisms of the old geographic limitations culminated in the enactment of the AIA, which now includes into the prior art all publicly accessible information no matter where in the world the information resides. Still, for pre-AIA patents and patent applications, the geographic limitations of the old statute must be remembered and applied.

4. Secret Information Does Not Qualify as § 102(a) Prior Art. The pre-AIA version of 102(a) does not explicitly require knowledge and use to be *public* in order to qualify as prior art. While a secret known and used by only *one* person would literally not qualify as knowledge or use by others, a secret known to *multiple* people seemingly could satisfy the statutory text. Nevertheless, the courts have consistently held that secret information is not prior art under § 102(a).

On this point, one of the most memorable cases decided under the old statute is *National Tractor Pullers Ass’n v. Watkins*, 205 U.S.P.Q. 892 (N.D. Ill. 1980). The case involved the technology of the “sleds” used in tractor pulling competitions—devices that provide increasing resistance as they are pulled by competing tractors. The National Tractor Pullers Association (now at www.ntpapull.com) sought a declaratory judgment that Watkins’ patent on a sled (U.S. Patent 3,491,590 (filed Apr. 24, 1968; issued Jan., 27, 1970)). The evidence of invalidity was testimony from three individuals named Huls, Harms, and Sage that they invented such a sled in 1963 or 1964. The trio of supposedly prior inventors claimed that they made drawings of their invention on the underside of a tablecloth in the kitchen of Huls’ mother. The kitchen tablecloth was lost over the years.

In analyzing the facts, the court first provided the numerous reasons why the tablecloth did not qualify as a “printed publication”:

The no longer existing alleged tablecloth drawings were never available to the public. They were drawn on the underside of the tablecloth and remained in the kitchen of Mr. Huls mother’s home and were never printed nor otherwise published before being destroyed.

Because the tablecloth was not a printed publication and the alleged earlier invention had never been placed “on sale” or “used” (it had never been built), nothing in the allegations of Huls, Harms, and Sage could constitute prior art under § 102(b). Still, National Tractor Pullers argued that it was prior art under § 102(a) because it was “known” to three individuals. The court disagreed, holding that “[t]he knowledge required by § 102(a) involves some type of public disclosure and is not satisfied by knowledge of a single person, or a few persons working together.” The same rule has been endorsed by the Federal Circuit. See, e.g., *Woodland Trust v.*

FlowerTree Nursery, 148 F.3d 1368, 1370 (Fed. Cir. 1998) (“in order to invalidate a patent based on prior knowledge or use, that knowledge or use must have been available to the public”).

National Tractor Pullers might seem to present unusual facts, but the principle at stake goes much beyond those facts. If the “known or used by others” category reached secret knowledge and uses, then the category would include all trade secrets. *National Tractor Pullers*, *Woodland Trust* and other cases preclude trade secrets from entering the pre-AIA § 102(a) prior art and thus leave those secret technologies available for patenting.

5. A Single Use in the Ordinary Course of Business Constitutes Prior Art Under § 102(a). Under both AIA § 102(a)(1) and pre-AIA § 102(b), the category of “in public use” includes even a single non-confidential use in the ordinary course of business. The same rule applies for the “use by others” category of prior art under pre-AIA § 102(a).

A leading case on the subject is *Rosaire v. Baroid Sales Division, National Lead Co.*, 218 F.2d 72 (5th Cir. 1955), which involved two patents on methods to prospect for oil and gas. Prior to the work of inventors named in those two patents, another individual invented the same methods and used them in the course of his work for Gulf Oil Corporation at locations near Palestine, Texas. The court held that the prior uses by Gulf Oil invalidated the patents because the methods were “known or used by others in this country” within the meaning of § 102(a). The court reasoned that § 102(a) did not require proof of “some affirmative act to bring the work to the attention of the public at large” if the “work was done openly and in the ordinary course of the activities of the employer, a large producing company in the oil industry.” *Id.* at 75.

Rosaire seems fundamentally consistent with case law dating back at least to *Egbert v. Lippmann*, 104 US 333 (1881), one of the principal cases discussed in Chapter 5. The key insight from *Egbert* is that even one non-confidential use of the invention constitutes use by the public.

Consider the consequences of the alternative. If the rule were otherwise, the law would have to decide how many members of the public would have to use an invention before the use was public enough to prior art. Not only would that be a difficult line to draw, but also any exclusion of prior uses by others would mean that patents could preclude some members of the public from using technology that had been invented before the patentee’s work and that was being practiced by some members of the public without any secrecy. Would that be fair? Is it consistent with a Lockean notion of property rights? See JOHN LOCKE, TWO TREATISES OF GOVERNMENT 129, 131 (Everyman ed. 1924) (the initial creation of property rights to private hands should not produce “any prejudice to any other man”). Setting aside fairness and property rights theories, would conferring a patent on the second inventor serve any other goal of the patent system? How frequently is the situation likely to arise where a profit-seeking business creates a significant invention but does nothing to protect the invention?

6. The Breadth of the “Known ... By Others” Category of Prior Art. Publicly known inventions may constitute prior art under § 102(a) even though they are not “in public use” or “on sale.” In this respect, the “known ... by others” category of prior art in pre-AIA § 102(a) may have a breadth similar to the new “otherwise available to the public” category in AIA § 102(a)(1). Consider, for example, a hypothetical introduced in Chapter 5, *supra*: An innovative product is displayed at a trade show encased in a glass box underneath a sign reading: “This invention is not for sale and no member of the public is permitted to use it!” Still, the invention might qualify as

“known ... by others” under pre-AIA § 102(a) if members of the public can look through the glass box and perceive sufficient information to understand the invention. (Of course, under pre-AIA § 102(a), the relevant public would have to be people in this country (the United States), and the critical date is different.)

7. The Lost Art Doctrine. In *Gayler v. Wilder*, 51 U.S. (10 How.) 477 (1850), the Supreme Court held that a prior art device built by one Connor, which had been lost and whose details of construction had been forgotten by all concerned, did not anticipate the patented invention at issue in the case. The Court reasoned:

[I]f the Connor safe had passed away from the memory of Connor himself, and of those who had seen it, and the safe itself had disappeared, the knowledge of the improvement was as completely lost as if it had never been discovered. The public could derive no benefit from it until it was discovered by another inventor. And if [the patentee] made his discovery by his own efforts, without any knowledge of Connor’s, he invented an improvement that was then new, and at that time unknown.

Id. at 495. Two dissenters from the majority opinion pointed out problems with this holding. Justice McLean made the pragmatic point that it was impossible to be sure that the patentee had not somehow learned of Connor’s prior art safe. The other dissenter, Justice Daniel, said that an invention once “given to the public” could not be withdrawn, even though the public had in effect “lost” what it had been given.

The views of the majority and the dissents in *Gayler* might be characterized as “relative” vs. “unqualified” novelty. Which makes more sense? Even without a “lost art” doctrine, can *Gayler* be decided the same way on the theory that there’s insufficient evidence to prove the components of the lost safe? In a later case, *Coffin v. Ogden*, 85 U.S. 120, 125 (1874), the Court questioned whether *Gayler* should be read as creating a special doctrine exempting “lost art” from the normal rules of prior art.

2. § 102(e): Disclosures in U.S. Patent Applications

Pre-AIA § 102(e) is similar to AIA § 102(a)(2) in that both provisions are descended from the Supreme Court’s decision in *Alexander Milburn Co. v. Davis-Bournonville Co.*, 270 U.S. 390 (1926), and both define a category of “two-time-period”—art that enters the prior art as of one date (the application filing date) only if a certain later event occurs (publication of the application or issuance as a patent). Pre-AIA § 102(e) and AIA § 102(a)(2) are also similar in that both refer *only* (i) to patent applications filed *by others*¹ (ii) that are seeking *U.S. patent rights* (i.e., U.S. applications and also Patent Cooperation Treaty (PCT) applications seeking U.S. patent rights).²

¹ Pre-AIA § 102(e) refers to applications “by another,” while AIA § 102(a)(2) refers to an application that “names another inventor.” Obviously, both phrases exclude applications filed by the inventor named in the application being tested for novelty.

² Pre-AIA § 102(e) refers to applications “filed in the United States” and international treaties “filed under the treaty defined in [35 U.S.C. §] 351(a),” which is the PCT. AIA § 102(a)(2) refers to the disclosures in

1. The Date of Invention Is the Critical Date. As with all other novelty provisions in the pre-AIA § 102, the critical date for this category of prior art is the *date of invention* of the applicant whose application is being tested for novelty. For this category of prior art, you must be careful not to confuse the application being tested for novelty with the application that may be prior art. There are two different applications involved here, but only one application is being tested to determine whether the invention described in that application was novel as of the critical date. The filing date of that application is not necessarily relevant to the inquiry; rather, the critical date is that applicant's date of invention.

2. The Reference Date of the Prior Art Is the Earliest U.S. Filing Date, Not Any Foreign Filing Date. The “reference date” for this category of prior art—the date at which the disclosure in the other U.S. application becomes part of the prior art—is the earliest U.S. filing date, not any foreign filing date. Like prior art applications under AIA § 102(a)(2), applications under pre-AIA § 102(e) may not become prior art until they are published or issued as U.S. patents, but they are then backdated to an application filing date sometime in the past. Under AIA, that application filing date is the *global effective filing date*—the earliest date to which that application can claim priority. Not so for pre-AIA § 102(e). Applications are backdated only to the *earliest U.S. filing date* to which they are entitled.

Thus, for example, if an application was filed at the PTO on June 1, 2005, was never published, and then after several continuation applications, eventually issued as a U.S. patent in 2010, the patent's disclosure would be backdated as a reference to June 1, 2005—the earliest U.S. application filing date in the chain of continuation applications. The situation would be different, however, for an application first filed in Germany on June 1, 2005, and then filed at the U.S. PTO on September 1, 2005. When that application is published or issues as a U.S. patent, it will become prior art under pre-AIA § 102(e) as of September 1, 2005. This result holds true even though, under pre-AIA law, an application first filed in Germany on June 1, 2005 and then filed at the PTO with a year would be recognized by the PTO for many purposes—but not for purposes of § 102(e)—as having been effectively filed in the PTO as of June 1, 2005.

The legal basis in pre-AIA law for this discrimination against foreign-filed applications is that pre-AIA § 102(e) uses phrase “filed in the United States before” the critical date of the application being tested for novelty. That language was construed in the controversial case of *In re Hilmer*, 359 F.2d 859 (C.C.P.A. 1966), to refer only to *actual* filing dates in the United States. We refer to *Hilmer* as “controversial” for two reasons. First, even before the AIA, many lawyers and commentators thought *Hilmer* wrongly decided because pre-AIA § 119—the statute implementing the Paris Convention—promised foreign applicants that, if they filed first in a foreign country and then within the next year at the PTO, their U.S. patent applications would “have the same effect as” if they had been filed at the PTO on the foreign filing date. The *Hilmer*

patents “issued under [35 U.S.C. §] 151,” which is the statutory authority to issue U.S. patents, and disclosures in application “published or deemed published under [35 U.S.C. §] 122(b),” which is the authority to publish U.S. patent applications. The AIA's “deemed published” language is defined in another statute, AIA § 374, to include PCT publications that designate the United States. The complications of old and new statutes can be succinctly summarized as covering applications *seeking U.S. patent rights* because patent rights within the U.S. can be obtained only by filing a U.S. or PCT application.

decision created a significant judicial exception to the apparent statutory rule in § 119 and seemed to thwart the goals of the Paris Convention.

A second reason why we are confident in calling *Hilmer* controversial is that, in enacting § 102(a)(2) of the AIA, Congress did ultimately side with the critics of the decision and overruled it. Congress's rejection of *Hilmer* was prospective only; it applies only to patent applications subject to the AIA's first-to-file system of priority. For all patents and patent applications still subject to the pre-AIA system, *Hilmer*'s interpretation of § 102(e) still holds, and thus the disclosures in issued U.S. patents and published U.S. patent applications enter the prior art only as of their earliest U.S. filing date.

3. Pre-AIA § 102(e) Does Not Govern Interferences. Pre-AIA law draws a big distinction between the *prior art* effects of other inventors' patent applications and the *priority implications* of those other applications.

In priority contests—contests known as “interferences” in which two or more rival inventors are seeking U.S. patent rights—pre-AIA § 102(g)(1) governs the effect that each of the rival application has on the others. In that context, pre-AIA § 102(g)(1) allows the rival applicants to rely on their foreign filing dates as their effective U.S. filing date. In other words, the *Hilmer* rule articulated in the prior note does not apply to § 102(g)(1).

Thus, pre-AIA § 102(e) applies only where the other patent application is being used as prior art—i.e., where the other application is *not* claiming sufficiently identical invention so as to generate an interference. It is sometimes said—somewhat accurately—that pre-AIA § 102(e) applies only to material disclosed but not claimed in another application, but that's not quite right. Pre-AIA § 102(e) applies to the whole of the disclosure in other applications (to both claimed and unclaimed matter), but only where the application is being used to prove prior art. In that context, the restrictive *Hilmer* rule will make the entirety of the disclosure prior art only as of the earliest U.S. filing date.

For example, consider a hypothetical patent application filed in the U.S. PTO in July of 2000 that covers a new mousetrap invented in June of 2000. The new mousetrap includes (i) an innovative helical spring and (ii) an innovative trigger. Suppose that several months earlier, in January of 2000, two separate inventors had filed two separate *foreign* patent applications, with one application disclosing and claiming the same innovative helical spring and the other application disclosing and claiming the same innovative trigger. In December of 2000, those two separate inventors file U.S. patent applications and both assert a right of priority to their January foreign filing dates. (No interference would be declared in this situation because all three applications claim very different inventions.) Can the applications on the spring or the trigger be considered prior art against the July 2000 application for the mousetrap? The clear answer here is “no.” Under pre-AIA § 102(e) and *Hilmer*, the applications for the spring and trigger become prior art only as of the applications' actual U.S. filing dates—here December 2000—while the critical date for the mousetrap invention is June of 2000 (the date of invention). The references therefore did not enter the art before the critical date and cannot be considered prior art.

The easiest way to apply § 102(e) and § 102(g)(1) is to apply § 102(e) to the entire disclosure of a U.S. patent application (i.e., both to claimed and unclaimed matter) but to remember that § 102(g)(1) might *also* apply to matters claimed in the application.

4. Provisional Applications. If a provisional application filed under § 111(b) (see Chapter 1) matures into an application that is published under § 122 or that issues as a patent, is disclosure in the application effective prior art under § 102(e) as of the filing date of the provisional application? “Yes,” the Federal Circuit held in *In re Giacomini*, 612 F.3d 1380, 1383 (Fed. Cir. 2010). *Giacomini* confirmed a position that the PTO had long taken, and that most commentators had thought correct. See MPEP § 2136.03; see also E. Van Horn, *Practicalities and Potential Pitfalls When Using Provisional Patent Applications*, 22 AM. INTELL. PROP. L. ASS’N Q.J. 259 (1994).

5. “Secret Prior Art” or “Backdated Prior Art”? Section 102(e) prior art is sometimes referred to as “secret prior art” because the effective date of the reference is the date on which the reference application was filed and, as noted above, the PTO holds patent applications in secrecy for at least eighteen months after filing. The “secret” nature of this prior art has made § 102(e), as well as the old *Milburn* on which § 102(e) is based, unpopular with commentators. For example, in Paul W. Leuzzi, *A Re-evaluation of the Use of 35 U.S.C. 102(e), Secret Prior Art, in Obviousness Determinations*, 29 IDEA 167, 170 (1988), the author criticizes the fiction of the *Milburn* rationale:

The “rationale” of *Milburn* has been explained as residing in the theory of Patent Office delay, i.e., “but for” the delays in the Patent Office, the patent would have been prior art known to the public as of the filing date. ... Thus arose the fiction that the § 102(e) patent could be treated as if it had issued on its filing date. Clearly, this is a fiction that finds no basis in fact for as any patent practitioner knows, the Patent Office rarely considers a patent application for several months. Even when allowed on a first action, the delays attendant in the mails and obtaining payment of the official fees can take weeks and the actual issuance and publication of the patent often will not occur until months after the applicant is notified that he has allowable subject matter.

Similarly, in *Patent Law Simplification and the Geneva Patent Convention*, 14 AM. INTELL. PROP. J. 154, 176 (1986), Harold C. Wegner objects to the very notion of secret prior art:

“Secret” prior art is a contradiction in terms. Prior “art” should refer to the *known* (or at least knowable) state of the art at the time the invention is made: at the time of the invention, was the sum total of knowledge from public use, printed publications, and patents *then available* such that the claimed invention would have been *at that time* [novel or] obvious to the worker with ordinary skill in the art?

The term “secret prior art” does, however, obscure an important point: Disclosures in patent applications become prior art under § 102(e) only if in fact they eventually become public. If they remain secret, they are not prior art. Thus, the really important feature of § 102(e) is that it permits publicly available material to be *backdated* to a time prior to public disclosure. More generally we will see that prior art references need not always be publicly available as of their effective date, but they must be on a trajectory toward public disclosure. See also Chapter 6.E.2, which discusses § 102(g)(2) — the other novelty provision that permits references to have effective dates prior to their public availability.

3. § 102(g)(1): Inventions Claimed in U.S. Applications

Pre-AIA § 102(g)(1) is the heart and soul of the first-to-invent system of priority. It applies only in interferences—i.e., it applies only where two or more inventors are seeking U.S. patent rights to the same invention or to inventions that are not patentably distinct (i.e., one is an obvious variation of the other). Though it might be tempting to say that this provision is similar to AIA § 102(a)(2), it is probably best to resist that temptation because § 102(g)(1) is so thoroughly different from any statutory provision in a “first-to-file” system of priority.

One major difference between § 102(g)(1) and other pre-AIA prior art provisions previously discussed is that both the critical date *and* the date of the reference are dates of invention. Because *at least* two dates of invention (the dates of invention of the competing inventors) are relevant—and, in fact, more than two invention dates can be relevant if the interference involves more than two applicants—§ 102(g)(1) is more easily understood as simply a contest to determine who invented first. Thus, the rules for calculating dates of invention are pretty much everything here. For this reason, we will put off further discussion of § 102(g)(1) until the next subchapter (Chapter 6.E, *infra*), which focuses explicitly on invention dates.

4. § 102(g)(2): Inventions Made In the United States

Pre-AIA § 102(g)(2) is similar to (g)(1) except that (g)(2) is applied outside interferences. The function of (g)(2) is to block an applicant from patenting something where another inventor was the first to invent in the United States, but that other inventor, instead of seeking U.S. patent rights, merely began to practice the invention in the United States.

The operation of the (g)(2) is similar to (g)(1) in that both require comparison of multiple dates of invention to determine who will be recognized as first. But (g)(2) is different because only one person is seeking U.S. patent rights so there is no possibility of an interference. In this situation, the basic fairness of (g)(2) is evident: If the first to invent is does not want U.S. patent rights, there’s no good reason to award those rights to the second to invent.

Like the non-documentary categories of prior art in pre-AIA § 102(a), the prior art category of subsection (g)(2) is geographically limited to “the United States.” Subsection (g)(2) prior art is also explicitly limited to inventions made by “another.”

E. DATES OF INVENTION AND PRIORITY

Pre-AIA § 102(g) provides the law governing “priority of invention.” Priority of invention is a simple concept: In a world where inventors race against each other, precise rules are necessary to determine which of the competing inventors will be recognized as the first, the winner of the race. Importantly, the priority rules developed under § 102(g) have been applied to

define the “date of invention” in other subsections of pre-AIA § 102. Thus, in studying the rules of priority, remember that § 102(g)’s framework for determining the time of invention applies more generally, in all contexts which a date of invention is necessary under the pre-AIA law.

At first glance, the precise rules governing victory in any race may seem somewhat arbitrary. For example, in a close foot race, which athlete should be recognized as the winner? The runner whose *hand* first crosses the finish line? Or the one who had the first *foot* over the line? Or the one who first crossed the line with *any part* of the body? In fact, for human track & field races, the winner is defined as the competitor whose *torso* (or any portion of the torso)¹ reaches the finish line first. But one can easily imagine many other possible rules to define the winner. In swimming, victory is defined by the first *touch*; in horse racing, it is the first *nose*.

Yet despite their seemingly arbitrary nature, the fine points in these rules are informed by policy considerations, including the administrative ease of applying the rule. For example, the ideal rule in track races might define the winner as the competitor whose *center of gravity* first crosses the finish line. Administering that rule would be difficult, and so a convenient proxy (any part of the torso) is used. The choice of the particular rule will also affect the behavior of contestants — *e.g.*, in track, competitors push both arms backward and lean into the finish line. In a close race, a slightly slower runner with a better “lean” can prevail over a slightly faster competitor.

As in other races, so too in patent races. As you examine the precise rules that define priority of invention, consider both the policy concerns undergirding the rules and the likely behavioral effects that the rules will have on competing inventors. Finally, you should keep in mind that, even before enactment of the AIA in this country, all other countries in the world were using a strict “first-to-file” rule to determine priority. One of the principal justifications for that rule is administrative convenience: The filing date of a patent application is usually known with certainty, while the date of invention is, as we will see, not always easy to determine. Consider whether the first-to-file rule of the AIA and foreign patent systems is beneficial, or whether the benefits of the rule come at too high a cost in terms of potentially depriving first inventors of their “rightful” rewards.

Pre-AIA § 102(g) may seem to be a very intricate statute, but it is less complicated than it first seems. The following schematic diagram helps organize the component parts of the statute.

¹ The precise articulation of the priority rule for track races mattered quite a bit in, for example, the women’s 200 meter race at the 2016 U.S. Olympic trials. The race for third place—the final qualifying spot for the U.S. Olympic team in that event—was intensely close. A few feet before the finish line, Jenna Prandini stumbled and fell as she was leaning toward the finish line. Luckily for her, she fell forward and—crucially—*sideways* with the right side of her torso twisting toward the finish line. The photo finish showed that that the foot of the other runner, Allyson Felix, crossed the finish line well ahead of Prandini. Yet a small portion of Prandini’s torso near her right shoulder was just a bit ahead of Felix’s torso, and that was enough for Prandini to claim the third spot and a trip to the Olympics. Under many other reasonable priority rules (first foot, first part of the body, etc.), the outcome would have been different. See the race and the incredible photo of the finish, here <http://www.nbcolympics.com/news/allyson-felix-will-run-400m-rio-misses-200m-spot-01-seconds> (finishing photo is at time index 2:50 of the accompanying video).

Pre-AIA § 102. Novelty and loss of right

An inventor shall be entitled to a patent unless — ...

(g)

(1) during the course of an interference conducted under [pre-AIA] section 135 or [pre-AIA] section 291, another inventor involved therein establishes, to the extent permitted in [pre-AIA] section 104, that

[a] before such person's invention thereof the invention was

[b] made by such other inventor and

[c] not abandoned, suppressed, or concealed,

or

(2) [a] before such person's invention thereof, the invention was

[b] made in this country by another inventor who

[c] had not abandoned, suppressed, or concealed it.

[3] In determining priority of invention under this subsection, there shall be considered not only

[a] the respective dates of conception and reduction to practice of the invention, but also

[b] 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.

As this schematic shows, pre-AIA § 102(g) has three component parts — clauses (1) and (2) and a final sentence, which we have labeled [3]. Clauses (1) and (2) are largely parallel, with clause (1) applying only in interferences (*i.e.*, true priority fights where the alleged “other inventor” is also seeking U.S. patent rights) and clause (2) applying where the other inventor did not seek U.S. patent right but nonetheless “made” the invention “in this country.” Both (1) and (2) state a similar rule, which is that the second-in-time inventor will be denied a patent provided that the first inventor has not “abandoned, suppressed, or concealed” the invention.

The difference between (1) and (2) concerns the territorial scope of the inquiry, and this difference is reflected in the language in (1)[b] and (2)[b]. Under clause (2)[b], any applicant for a patent must overcome inventions “made in this country” by another inventor. Under clause (1)[b], however, an applicant involved in an interference must also overcome *all* inventions of other inventors who are seeking U.S. patent applicants in the interference. In establishing their dates of invention, inventors in interferences may prove foreign inventive activity (e.g., activities establishing conception, diligence, reduction to practice, etc.) only “to the extent permitted in [pre-AIA] section 104.” Pre-AIA § 104, in turn, imposes certain limits on the ability of applicants to prove foreign invention dates unless the inventive activity occurred in any “NAFTA country or a WTO member country.” Those limitations, however, are not so significant now because the WTO (the World Trade Organization) has a membership well in excess of 150 countries, including the three NAFTA countries (U.S., Canada and Mexico) and almost all other industrial

nations. And even for inventions made in non-WTO countries, inventors may still rely on their foreign filing dates as establishing their date of invention. *See* pre-AIA § 104(a)(1). (The AIA repealed § 104 in its entirety because the issue addressed in the statute—evidence for proving a date of invention—is irrelevant in a priority system that never uses invention dates.)

To summarize then, § 102(g)(1) requires that, in an *interference*, patent applicants must overcome *all* non-suppressed inventions by *other inventors involved in the interference* (i.e., other inventors who are also seeking U.S. patent rights on the same invention), with the modest limitations set forth in § 104 on proving a foreign invention date. Section 102(g)(2) requires generally that patent applicants must overcome *only* the non-suppressed inventions *made in the United States* by *other inventors who are not seeking U.S. patent rights*.

The sentence labeled [3], while somewhat cryptic, contains the specific rules for determining priority of invention. Under this provision, priority will generally be granted to the first inventor who accomplishes a “reduction to practice of the invention,” which means either actually building a working version of the invention *or* filing a patent application with the disclosure required by § 112 (what is known as a “constructive reduction to practice”). The only exception is stated in § 102(g)[3][b]: If the second to reduce to practice was the first to think up (conceive) the invention, she will be recognized as the first inventor if she exercised diligence from a time prior to the other inventor’s conception through to her own reduction to practice.

Thus, priority of invention may be summarized in four simple rules:

1. The first to reduce the invention to practice usually has priority.
2. Filing a valid application constitutes a constructive reduction to practice.
3. The first to conceive may prevail over the first to reduce to practice if the first to conceive was diligent from a time prior to the other inventor’s conception through to her own reduction to practice (either actual or constructive).
4. Any reduction to practice that has been “abandoned, suppressed, or concealed” is disregarded.

Under these rules, the date of invention can never be later than the application filing date or earlier than the date of conception. The details of these rules, and their rationales, are explained in the cases below. Also, note that neither the statute nor the rules as stated here include important procedural details — e.g., the applicable burdens of proof. Such rules have been developed in the case law and, as we will see, they are highly important, indeed often determinative.

1. § 102(g)(1): Determining Priority in Interferences

The priority rules of § 102(g)(1) are best studied by dividing the topic into two separate inquiries. First, each inventor’s date of invention should be determined by applying the basic rules associated with conception, diligence and reduction to practice. Those basic rules are usually determinative because inventors generally view themselves as competing to invent first,

and thus, when they succeed in inventing, they typically do something with their work (patent it or begin to practice it). The facts necessary to support findings of abandonment, suppression or concealment are rare. Nevertheless, such facts do arise, and when they do, they are best addressed as a second distinct inquiry.

a. Conception, Diligence and Reduction to Practice

We begin our exploration of pre-AIA § 102(g) by examining a case involving an appeal from an interference proceeding. In reading this case, you should note that an interference “**count**” represents a quasi-claim defining an invention the priority of which is under review in an interference. You may think of an interference count as a claim shared in common by the parties to the interference, i.e., a claim that each party asserts should issue in a patent to them (in fact, the specific language of count is usually distilled from the overlapping claims made by the rival inventors). The counts define the boundaries of the interference. *See generally* 37 C.F.R. § 41.201.

BROWN v. BARBACID

276 F.3d 1327 (Fed. Cir. 2002)

RADER, CIRCUIT JUDGE.

In an interference over a new assay to identify anti-cancer compounds, the United States Patent and Trademark Office Board of Patent Appeals and Interferences (Board) awarded priority to Mariano Barbacid and Veeraswamy Manne (collectively Barbacid) over Michael Brown, Joseph Goldstein, and Yuval Reiss (collectively Brown). [Eds. note — The patent rights of Barbacid and Brown are owned by, respectively, Bristol-Myers Squibb Co. and the University of Texas.] Because the Board did not consider evidence that Brown conceived the invention before Barbacid reduced it to practice and diligently pursued the invention from the time of Barbacid’s reduction to practice through Brown’s filing date, this court vacates the award of priority to Barbacid and remands.

BACKGROUND

This case involves an interference between U.S. Patent No. 5,185,248 (the Barbacid patent) and U.S. patent application Serial No. 07/937,893 (the Brown application). The Barbacid patent and the Brown application both claim an assay for identifying new anti-cancer compounds that inhibit farnesyl transferase (FT), an enzyme involved in the control of cell growth. FT functions in the cell by adding farnesyl (a branched-chain polyunsaturated hydrocarbon alcohol intermediate of sterol biosynthesis) to a cysteine amino acid near one end of the protein chain, namely the carboxy-terminus. An important protein susceptible to addition of farnesyl is “ras.” The farnesylation reaction activates the ras protein (which stimulates cell growth) by moving ras to the vicinity of the cell membrane. Once near the membrane, ras stimulates cell growth. Thus, an FT inhibitor would reduce the amount of ras reaching the membrane and therefore reduce ras-stimulated growth (including “cancerous” growth).

The sole count in the interference [covers an assay for identifying compounds that inhibit ras activity comprising, *inter alia*, the use of (i) FT and (ii) a test or candidate substrate that inhibits FT and therefore also inhibits ras protein activity.]

The Barbacid patent application was filed on May 8, 1990, and issued on February 9, 1993. The Brown application was filed on December 22, 1992, but was accorded the benefit of an earlier related application filed on April 18, 1990. Thus, Brown was the senior party. Barbacid, as the junior party, had the burden to prove priority by a preponderance of the evidence.

The Board found that Barbacid showed an actual reduction to practice no later than March 6, 1990. The Board also found that Brown did not show reduction to practice of the count before March 6, 1990. Specifically, the Board found that Dr. Yuval Reiss' September 20, 1989 FT experiment did not satisfy every limitation of the count because it did not include a test or candidate substance in the assay. The Board also discounted a September 25, 1989 experiment (which may have satisfied the count) because Dr. Reiss could not authenticate his lab notebooks and autoradiographs. Moreover Dr. Patrick Casey could not corroborate Dr. Reiss' testimony and documents relating to the September 25 experiment. [T]he Board awarded priority to Barbacid. Brown appealed.

DISCUSSION

...

II.

Brown alleges that the Board erred in denying authentication to Dr. Reiss' lab notebooks and autoradiographs under 37 C.F.R. § 1.671(f). [Eds. note: An "autoradiograph" is a type of X-ray used to detect the presence of certain chemicals in an experiment; in this case, all of the autoradiographs included the date on which they occurred.] Paragraph (f) of § 1.671 (entitled "Evidence must comply with rules") states: "*The significance of documentary and other exhibits identified by a witness in an affidavit or during oral deposition shall be discussed with particularity by a witness.*" 37 C.F.R. § 1.671(f) (emphasis added). The Board noted that § 1.671(f) requires a witness to explain the entries of various pages of the lab notebooks and exhibits. Cf. Fed. R. Evid. 902 (excluding notes and lab notebooks from the list of self-authenticating extrinsic evidence). The Board found that Dr. Reiss did not give sufficient testimony regarding specific entries in his lab notebook or on relevant autoradiographs (i.e., Exhibit 32). Without an adequate explanation of Exhibit 32, the Board rejected the exhibit for lack of authentication.

Exhibit 32 refers to notebook pages and autoradiographs from Dr. Reiss' experiments from August to October 1989, including experiments dated September 20 and September 25, 1989. With regard to the September 25 experiment, Dr. Reiss stated in paragraph 24 of his declaration:

On September 25, 1989, I conducted an assay to determine the pH dependence of the farnesyl transferase preparation currently under use (Exhibit 32; pages 0035 to 0039). This study employed a peptide considered to be a potential inhibitor of ras farnesylation. This peptide comprised the carboxy-terminus ten amino acids of the ras molecule. The format of this assay was the gel electrophoresis format, described above in paragraph 20 [discussing the September 20 experiment]. The radioautograph developed from the corresponding gel (Exhibit 32; page 0038) clearly shows that inclusion of peptide at 10 and 20 g (lanes 14 and 15, respectively) inhibited farnesyl transferase-mediated

labeling of ras by ^{14}C -FPP, as determined by the reduction/absence of ras-specific bands in these lanes.

This explanation informs one of skill in the art, upon a review of the relevant autoradiographs and lab notebook pages in Exhibit 32, that Dr. Reiss conducted an FT experiment on September 20, 1989, and then conducted another FT assay using a peptide inhibitor on September 25, 1989. Moreover, an examination of the September 25 autoradiograph from those experiments [see Figure 6-1], specifically lanes 14 and 15 (which can be identified by counting lanes starting from the left), shows that farnesyl transferase-mediated labeling of ras by ^{14}C -FPP was reduced in the presence of the inhibiting peptide.

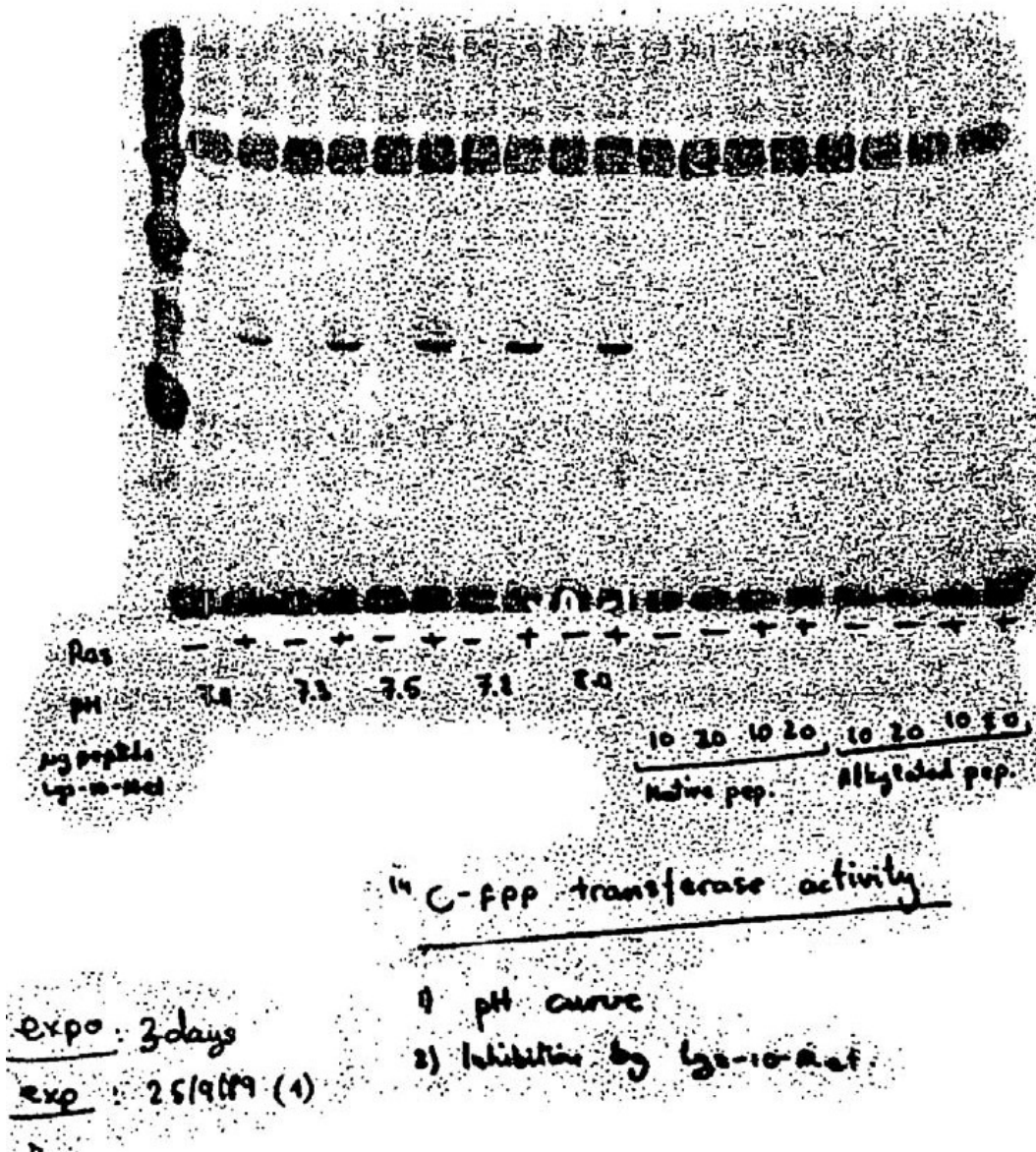


Figure 6-1 Dr. Reiss's Autoradiograph from September 25, 1989. (The date 25/9/89 is barely visible in the lower left hand corner.)

Dr. Reiss did not analyze every lane in the autoradiograph. [Nevertheless,] one of skill in this art would understand that Dr. Reiss had inhibited ras farnesylation in the presence of the peptide.

While Dr. Reiss could have discussed the September 25 experiment in more detail, the Board must nonetheless weigh that evidence from the vantage point of one of skill in the art. In this case, the notebook data itself explains the methods and results of the September assays. Thus, in light of Dr. Reiss' testimony, one of skill in this art would understand Exhibit 32 relating to the September experiments.

In excluding Exhibit 32 for lack of authentication, the Board applied its own rule. This court reviews the Board's application of its rules for an abuse of discretion. Notwithstanding that high standard of review, this court finds that the Board abused its discretion by excluding evidence within the understanding of skilled artisans when considering authentication requirements.

III.

Brown further argues that the Board erred in refusing to allow an inventor's own documentation to corroborate his conception or reduction to practice. A party seeking to prove conception via the oral testimony of a putative inventor must proffer evidence corroborating that testimony. This corroboration rule does not apply with the same force to proof of inventive facts with physical exhibits. *Mahurkar* [v. *C.R. Bard, Inc.*, 79 F.3d 1572, 1577–78 (Fed. Cir. 1996)] (“This court does not require corroboration where a party seeks to prove conception through the use of physical exhibits. The trier of fact can conclude for itself what documents show, aided by testimony as to what the exhibit would mean to one skilled in the art.”).

Thus, Brown's physical evidence, such as Dr. Reiss' notebooks and autoradiographs, do not require corroboration to demonstrate the content of the physical evidence itself, namely that FT assay experiments took place on September 20 and 25, 1989. Conversely, however, the physical evidence in this case may not single-handedly corroborate Dr. Reiss' testimony. See *Price* [v. *Symsek*, 988 F.2d 1187, 1195 (Fed. Cir. 1993)] (“Unlike a situation where an inventor is proffering oral testimony attempting to remember specifically what was conceived and when it was conceived ... ‘corroboration’ is not necessary to establish what a physical exhibit before the board includes. Only the inventor's testimony requires corroboration before it can be considered.”). Thus, an inventor's testimonial assertions of inventive facts require corroboration by independent evidence.

This court applies a “rule of reason” analysis to determine sufficient corroboration. *Price*, 988 F.2d at 1195. In applying the “rule of reason” test, this court examines “all pertinent evidence” to determine the credibility of the “inventor's story.” *Price*, 988 F.2d at 1195. This “rule of reason” analysis does not alter the requirement of corroboration for an inventor's testimony. The inventive facts must not rest alone on testimonial evidence from the inventor himself. ...

Thus, independent evidence must corroborate Dr. Reiss' testimony of conception or actual reduction to practice. The Board did not err in holding that an inventor's own unwitnessed documentation does not corroborate an inventor's testimony about inventive facts.

IV.

Conception 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.” *Singh [v. Brake]*, 222 F.3d 1362, 1367 (Fed. Cir. 2000).] A conception must encompass all limitations of the claimed invention, see *id.*, and “is complete only when the idea is so clearly defined in the inventor’s mind that only ordinary skill would be necessary to reduce the invention to practice, without extensive research or experimentation,” *Id.*

As correctly found by the Board, Dr. Reiss did not satisfy every limitation of the count when he conducted his FT assay experiment on September 20, 1989. The laboratory notebook and autoradiograph themselves show that the September 20 experiment did not include the use of a test/candidate substrate (i.e., an inhibitor of FT) — an element of the count. Likewise, in the only independent testimony corroborating Dr. Reiss’ experiments, Dr. Casey did not suggest that the September 20 experiment included an FT inhibitor. Thus, the physical and testimonial evidence regarding the September 20 experiment do not show conception or reduction to practice.

V.

Unlike the September 20 experiment, the September 25 experiment included a peptide inhibitor of FT in the FT assay. Thus, the September 25 experiment contained all of the limitations of the count. As discussed above, however, independent evidence (testimony or physical evidence from a source other than Dr. Reiss) must corroborate Dr. Reiss’ testimony to show an actual reduction to practice. In other words, Dr. Casey’s testimony, the only other relevant independent evidence available, must corroborate Dr. Reiss’ own statements and documents to show a reduction to practice on September 25, 1989. Dr. Casey’s testimony could not corroborate Dr. Reiss’ testimony regarding the September 25 experiment, however, because Dr. Casey did not purport to witness the September 25 autoradiograph. Nor did Dr. Casey purport to discuss the September 25 experiment in particular with Dr. Reiss at any time.

In his declaration submitted to the Board, Dr. Casey stated:

8. On Thursday, September 14, 1989, Dr. Janice Buss came to Southwestern Medical School to present a seminar. I recall that within a week or so of that date, Dr. Reiss showed me the results of a study in which he had demonstrated farnesyl transferase activity in a gel-based assay... . [Description of the experiment] I distinctly recall this study, as it was a very important showing. The notebook page shown in Exhibit 32 as page 0031 [dated September 20, 1989] is the experiment Dr. Reiss showed to me... .

9. In the latter part of September, 1989, there was a major development in my own research project that consumed my efforts, and distracted me from the farnesyl transferase project, for about one month. I recall, however, that by at least about the end of October or the beginning of November, I was aware that Dr. Reiss had demonstrated that short peptides, derived from ras, inhibited farnesyl transferase in vitro in the gel-based assay described above.

Thus, Dr. Casey did not discuss the September 25 experiment in his declaration. Consequently, the Board did not err when it determined that evidence regarding the September 25, 1989 experiment did not show a reduction to practice.

On the other hand, the physical evidence itself — the September 25 lab notebook pages and autoradiographs — show that an experiment containing all elements of the count took place on that date. As discussed above, this physical evidence requires no further corroboration to demonstrate the content of the physical evidence itself. In addition, while Dr. Casey's vague testimony does not corroborate Dr. Reiss' testimony of an actual reduction to practice, Dr. Casey's testimony certainly suggests that Dr. Reiss had the idea of combining the FT assay with the use of FT peptide inhibitors sometime before the end of October or the beginning of November 1989. Thus, Dr. Casey's independent testimony corroborates Dr. Reiss' testimony of a conception before November 1989. ...

CONCLUSION

Because the Board did not consider the September 25, 1989 experiment or Dr. Casey's corroborating testimony with regard to conception by Brown, or any evidence of reasonable diligence by Brown ... , this court vacates the award of priority to Barbacid [and] remands this case back to the Board for further proceedings on Brown's conception and reasonable diligence.

VACATED and REMANDED.

[A dissenting opinion by Judge Newman is omitted. She argued, *inter alia*, that the court itself should decide the case by awarding priority to Brown. Deciding the case quickly was appropriate, she argued, "in view of the rapid evolution of technology and the time and resources consumed by the administrative patent process."]

NOTES ON PRIORITY FIGHTS

1. The Devil in Details. *Brown v. Barbacid* well illustrates the reality of a priority fight between two large and sophisticated research organizations — Bristol-Myers Squibb and the University of Texas. Three overarching points should not be missed here. First, although the pre-AIA "first-to-invent" rule is easy enough to articulate, application of the rule requires delving into mountains of evidence involving inventors' testimony, handwritten notes, complex science and intricate corroboration requirements.

Second, as one might expect, the process of going through that evidence can take a long, long time. In *Brown*, the competing applications were filed in 1990. The interference proceedings continued through 2006, when the Federal Circuit again reversed the PTO *and remanded the case for further proceedings*. See *Brown v. Barbacid*, 436 F.3d 1376 (Fed. Cir. 2006). The case ultimately ended after the Board finally awarded the contested patent rights to Brown, and Barbacid filed a late notice of appeal, which led to the Federal Circuit dismissing Barbacid's appeal. See *Barbacid v. Brown*, 2007 U.S. App. LEXIS 7090 (Fed. Cir. 2007). And so, 17 years after the competing patent applications were filed (which was the full term of a patent at the time the applications were filed), the first-to-invent system of priority finally produced a definitive answer as to which party was entitled to the patent rights. It is perhaps a further embarrassment to the first-to-invent system that the definitive answer was the result of a procedural default rather

than any substantive agreement between the PTO and the Federal Circuit as to which party had invented first.

Third, the difference between first-to-invent vs. the first-to-file system may not affect research incentives much. Interferences are so complex and contingent on evidence that their outcomes are typically unpredictable even after proceedings have begun. It is therefore very hard to believe that, at the beginning of a research project, some inventors could know that they would systematically win in first-to-invent interferences but systematically lose under a first-to-file rule. Indeed, in *Brown* itself, the ultimate outcome of the interference was that priority was awarded to the first-to-file (Brown and the other researchers from the University of Texas). *See Barbacid v. Brown, supra*.

Thus, while economists have noted the subtle effects of priority rules, *see, e.g.*, Suzanne Scotchmer & Jerry Green, *Novelty and Disclosure in Patent Law*, 21 RAND J. ECON. 131 (1990), the most obvious feature of the first-to-invent rule is that it is expensive to administer. Even assuming that it is fairer to reward the true first inventor, is the extra fairness worth the cost? *See* Charles R.B. Macedo, *First-to-File: Is American Adoption of the International Standard in Patent Law Worth the Price?*, 18 AM. INTELL. PROP. L. ASS'N Q.J. 193 (1990) (noting that the average cost of an interference that goes to a final hearing was \$100,000 in the early 1990s and that the total amount spent on interferences was estimated to be over \$15 million per year).

2. Burdens of Proof. *Brown* states that the “junior party” (the second filer) bears the burden of proof in an interference. In an omitted portion of the opinion, the court interpreted then-existing PTO regulations as maintaining the ultimate burden of proof always on the junior party, even after the junior party had proven a date of invention earlier than the senior party’s filing date. In practice, this “ultimate” burden of proof did not much matter because each party had to prove its priority dates under stringent corroboration rules.

After *Brown* was decided, the PTO changed its regulations to make clear that *any* party attempting to prove a priority date earlier than its filing date bears the burden of proving the alleged priority date. *See* 37 CFR § 41.207(a)(2). The burden of proof is typically set at a “preponderance of the evidence” standard, with one exception: The junior party must prove its priority dates by “clear and convincing evidence” if its filing date was later than the date on which the senior party’s application was issued as a patent or was published under the 18-month publication rule of 35 U.S.C. § 122. The policy behind this increased burden is clear: It is to protect against possible fraud. Once the first filer’s application is published or issued as a patent, another party could copy parts of the disclosure and seek to patent the discovery. By falsifying documentation or obtaining false testimony, that party could then trigger an interference by asserting an earlier invention date. The heightened standard provides some protection to the early filer. Indeed, older cases often articulated the increased standard as proof “beyond a reasonable doubt,” but modern law has settled on the “clear and convincing standard.” *See Price v. Symsek*, 988 F.2d 1187, 1192–94 & n.2 (Fed. Cir. 1993).

Note that because most patent applications are published 18-months after they are filed, a junior party now must file fairly quickly after the senior party or else face a very difficult burden.

3. The Corroboration Requirement. *Brown* highlights the importance of the corroboration requirement that has traditionally restricted the ability of inventors to provide

evidence of their dates of invention. The requirement and the policies underlying it have remained constant for over a century:

Conception by an inventor, for the purpose of establishing priority, can not be proved by his mere allegation nor by his unsupported testimony [S]uch facile means of establishing priority of invention would, in many cases, offer great temptation to perjury, and would have the effect of virtually precluding the adverse party from the possibility of rebutting such evidence. Hence it has been ruled in many cases that the mere unsupported evidence of the alleged inventor . . . can not be received as sufficient proof of . . . prior conception.

Price v. Symsek, 988 F.2d 1187, 1194-95 (Fed. Cir. 1993) (internal quotations omitted). The traditional distrust of uncorroborated testimony in patent cases goes back at least to the Supreme Court's decision in *The Barbed Wire Patent*, 143 U.S. 275 (1891).

The general rule in interference proceedings is that some evidence other than inventor's testimony is necessary to establish each of the key inventive facts (i.e., conception, reduction to practice, and diligence). See *Mikus v. Wachtel*, 504 F.2d 1150 (C.C.P.A. 1974); see also 41 CFR § 41.204(a)(2) (requiring corroboration for conception, reduction to practice and diligence). A wide range of evidence may be introduced for this purpose, including documentary evidence and the testimony of others. *Gianladis v. Kass*, 324 F.2d 322, 51 C.C.P.A. 753 (1963). Where the invention is more intricate, more detailed corroboration is required than in cases involving comparatively simple inventions. See *Honeywell, Inc. v. Diamond*, 499 F. Supp. 924 (D.D.C. 1980).

Perhaps the best advice for inventors comes from the Bible: "Now go, write it before them in a table, and note it in a book." *Isaiah* 30:8. An inventor's notebook records, witnessed by someone else in the research department, are often determinative in these cases. In *Brown*, of course, Reiss's crucial research notes concerning the September 25th experiment were not witnessed or authenticated by anyone other than Reiss himself. Luckily for Reiss, however, Dr. Casey was able to provide sufficient corroborating evidence that, by at least November 1989, Reiss had conceived of the invention.

4. Actual Reduction to Practice. Actual reduction to practice requires the inventor (i) to have practiced an embodiment of the invention encompassing all elements of the interference count, and (ii) to have appreciated that the invention worked for its intended purpose. It is worth reviewing this standard in a bit more detail.

a. All Elements of the Count. For a party to establish an actual reduction to practice in an interference, "well-established precedent requires that the constructed embodiment or performed process include the precise elements recited in the count." *Eaton v. Evans*, 204 F.3d 1094, 1097 (Fed. Cir. 2000). The rigor of this rule can be seen in *Brown*. Reiss's September 20th experiment (which may have been adequately corroborated) simply could not prove a reduction to practice — or even conception — because it failed to include one element of the invention described in the interference count.

b. Recognition of Invention's Features. An inventor must also understand what she has invented to claim conception or reduction to practice. For example, in *Estee Lauder Inc. v. L'Oreal, S.A.*, 129 F.3d 588 (Fed. Cir. 1997), the inventors had actually created their invention (a new sunscreen); the invention had been sent to a laboratory for testing to determine whether it worked for its intended purpose; and those tests had been completed. However, because the inventors had not received and analyzed the results of their tests (and therefore did not know of their success), they were held not to have reduced their invention to practice: “[I]n addition to preparing a composition, an inventor must establish that he ‘knew it would work,’ to reduce the invention to practice. This suggests that a reduction to practice does not occur until an inventor, or perhaps his agent, knows that the invention will work for its intended purpose.” *Id.* at 593.

This requirement may have been part of the reason why Reiss's September 25th notes and autoradiograph did not prove reduction to practice. Even if the autoradiograph proved that an experiment comprising all elements of the count occurred on September 25th (as the court seems to assume), Reiss had only his own uncorroborated testimony to demonstrate that he was the one who undertook the experiment and that he understood its results. Dr. Casey could corroborate that Reiss understood the invention some weeks later, but that subsequent understanding does not demonstrate that Reiss had practiced the invention in September.

c. Commercial Viability. Finally, there is no requirement that a prior invention be commercialized in order for it to be reduced to practice. See *Friction Div. Prods., Inc. v. E.I. DuPont de Nemours & Co.*, 658 F. Supp. 998 (D. Del. 1987). This point is clearly visible in *Brown*, for everyone assumed that Reiss's September 25th experiment — though plainly far from commercialization — would have been a reduction to practice if it had been properly corroborated.

5. Defining Conception. Though in common parlance the word “conception” may carry the connotation of a very vague idea, it does not have that meaning in patent law. As *Brown* makes clear, “conception” in patent law demands rigor: There must be a “definite” and “permanent” idea of the “complete” and “operative” invention. Conception does not occur until the inventive idea is “crystallized in all of its essential attributes and becomes so clearly defined in the mind of the inventor as to be capable of being converted to reality and reduced to practice by the inventor or by one skilled in the art.” Completeness of the invention must be stressed here, for as with reduction to practice, conception is tested under an “all elements” rule. The standard is best viewed as being quite stringent, with only two forgiving features:

a. Not Every Nut and Bolt. Though the inventor must know all elements of the invention, she does not have to have a complete blueprint in her mind. As the court noted in *In re Tansel*, 253 F.2d 241 (C.C.P.A. 1958), “the final size and shape of every part and location of every nut, screw, and bolt [need not] be exactly foreseen before the conception of an apparatus can be said to be complete. It is sufficient if the inventor [discloses enough to] enable a person of ordinary skill in art to construct the apparatus without extensive research or experimentation.”

b. Uncertainty as to Successful Operation. In *Burroughs Wellcome Co. v Barr Labs., Inc.*, 40 F.3d 1223, 1228 (Fed. Cir. 1994), the court rejected the argument that conception demands “a reasonable expectation that the invention will work for its intended purpose.” Rather, the court ruled:

But an inventor need not know that his invention will work for conception to be complete. He need only show that he had the idea; the discovery that an invention actually works is part of its reduction to practice.

40 F.3d at 1228. In order to *constructively* reduce to practice, does the inventor need to have a reasonable expectation that the disclosed invention will work for its intended purposes?

6. Diligence. After the remand in *Brown*, the PTO considered and rejected the evidence of diligence put forward by the Brown inventive group. That decision was appealed, and once again the Federal Circuit reversed. The court reasoned that the Brown inventive group had proven sufficient diligence during the “critical period” (from a time just prior to Barbacid’s reduction to practice through to Brown’s constructive reduction to practice):

Brown provided evidence of laboratory work during this period performed by Debra Morgan, a scientist working in the Brown laboratory, as evidence of diligence and as corroboration of Dr. Reiss’ testimony... . The Board found that Ms. Morgan’s notebook records along with those of Dr. Reiss filled all but six days of the critical period, and that each of the six remaining days was a single-day gap; this was deemed sufficient to show substantially continuing activity. The Board found that Ms. Morgan “worked for the inventors” and that “her work could inure to the benefit of the inventors to establish reasonable diligence over the entire period.” However, the Board refused to credit any of Ms. Morgan’s evidence, criticizing what it described as the absence of explanation of the content and purpose of these experiments. The Board stated that it was not clear from the face of the notebook pages what Ms. Morgan had done and why

We conclude that the Board erred in law, in failing to view the proffered evidence as it would be viewed by persons experienced in the field of the invention. The Board is charged with expertise appropriate to the invention under examination, and with understanding that a laboratory notebook recording daily experimentation, reasonably considered from the viewpoint of persons experienced in the field, need not reproduce on each page a statement of the larger research purpose; this purpose may reasonably be shown in the various declarations.

Brown v. Barbacid, 436 F.3d 1376, 1380-82 (Fed. Cir. 2006).

Students, and even lawyers and courts, sometimes make mistakes when talking about diligence. Here are some important points to remember:

a. Diligence Only Relevant in One Situation. Diligence in the sense of § 102(g) is relevant *only* when one party to the interference claims an earlier conception date, but a later reduction to practice date. Where one party is both the first to conceive and the first to reduce to practice, that party has priority — period. (After the reduction to practice, however, the first inventor must not wait too long to file a patent application, but that is an issue involving abandonment, suppression, and concealment.) Even if there is a very long and unexplained delay

between the first inventor's conception and reduction to practice, there is no viable priority issue under § 102(g) as long as the inventor was first on both.

b. No "Diligence Contest." Diligence is relevant only for the inventor who is first to conceive but last to reduce to practice. The behavior of the second to conceive but first to reduce to practice has no relevance under this section of the statute. *See Steinberg v. Seitz*, 517 F.2d 1359, 1364 (C.C.P.A. 1975). In comparison, note that after reduction to practice occurs, any inventor may face an abandonment problem if there is delay between the reduction to practice and filing.

c. Simultaneous Conception and Reduction to Practice. Where an inventor can establish only a reduction to practice but not a date of conception, the conception date is assumed to be the date of reduction to practice. In other words, where the claimant is unable or unwilling to produce sufficient evidence on the subject of conception, the conception date is "collapsed" into the reduction to practice date — actual or constructive. *Bates v. Coe*, 98 U.S. 31, 34 (1878). *See generally* Note, *Date of Invention: The Varying Standards of Proof*, 57 GEO. L.J. 162 (1968). Because of this rule, patent lawyers often state that the diligence period begins just prior to the first-reducer's "entry into the field." *See, e.g., Brown v. Barton*, 102 F.2d 193, 197 (C.C.P.A. 1939).

d. Critical Period Not Flexible. There is no flexibility regarding the period during which diligence must be shown. The Patent Act says this period *begins* "just prior" to the conception of the second conceiver and *ends* with the first conceiver's reduction to practice. No amount of diligence commencing after the beginning point in this period matters in the eyes of the law.

e. Excuses for Inactivity. In *Brown*, the inventive group was able to prove experimental activity during all but a half dozen one-day periods. Such smallish gaps do not preclude finding, as in *Brown*, "substantially continuing activity" throughout the critical period. 436 F.3d at 1381. Where more substantial gaps exist (gaps of weeks or months), the inventor will have to find an excuse for the period of inactivity. Some excuses that have been accepted as *potentially* excusing inactivity include (1) poverty and illness; (2) regular employment; and even (3) scheduled vacations. Some invalid excuses include: (1) attempts to commercialize the invention; (2) doubts about value or feasibility; (3) work on other inventions; and (4) seeking grants to fund a reduction to practice where the entity had sufficient funds itself to pay for a reduction to practice. *See generally, Griffith v. Kanamaru*, 816 F.2d 624 (Fed. Cir. 1987); *see* 3 DONALD S. CHISUM, PATENTS § 10.07[4][d] & [f] (2002).

Yet even where the inventor has a potentially valid excuse, the courts are unlikely to forgive substantial delays extending many weeks or months. For example, in *Christie v. Seybold*, 55 F. 69 (6th Cir. 1893), the court refused to excuse three years of inactivity where the inventor claimed to have insufficient funds to buy the necessary tools for building his invention but could probably have contracted to have someone else build the invention. The court held that, although poverty can be a "circumstance" that will be considered in judging diligence, it is not a blanket excuse.

7. Constructive Reduction to Practice. One reason that courts demand a relatively high degree of diligence — and are relatively unforgiving in excusing long delays — is that the filing of a valid patent application has long been recognized as a "constructive reduction to practice." *See Porter v. Loudon*, 7 App. D.C. 64, 70 (D.C. Ct. App. 1895) (describing this rule as "the well

settled practice of the Patent Office”). Moreover, diligence toward a constructive reduction to practice is treated in the same fashion as diligence to an actual reduction to practice. For many inventions, the cost of filing a patent application, including all attorney’s fees, should not exceed ten or twenty thousand dollars — a sum well within the means of small businesses and even many middle-income individuals. Thus, the relatively cheap course of constructive reduction to practice is always open for inventors of modest means, and even if they are busy with other things, they can hire a patent attorney to be diligent in preparing the application.

Confidence in the technical sufficiency of the patent specification provides the basis for treating patent applications as equivalent to actual reductions to practice. That confidence is well-placed, *if* the inventor meets the requirements of § 112 of the Patent Act. Thus, courts have consistently held that a patent application must be enabling for the application to constitute a constructive reduction to practice. *See, e.g., Feldman v. Aunstrup*, 517 F.2d 1351 (C.C.P.A. 1975). The underlying theory is that, if the inventor writes a truly enabling disclosure, the specification should be just as useful to the art as a completed invention. (More so, perhaps; it is much easier to email a specification than transport many inventions.)

This theory, however, applies *only* to patent applications. While a printed publication or manuscript submitted for publication can be evidence of conception, it does not constitute a reduction to practice. *See, e.g., In re Schlittler*, 234 F.2d 882, 43 C.C.P.A. 986 (1956); *Kear v. Roder*, 115 F.2d 810 (C.C.P.A. 1940) (same). It might well be asked, however, why special preference should be shown for patent applications. Why, for instance, cannot a scientific or technical article, which meets the requirements of § 112, be considered a constructive reduction to practice? Why is the *form* of technical disclosure — the patent specification — the dominant consideration?

Scientist/inventors often race not only to patent their inventions but to publish their results. Thus researchers often submit essentially the same manuscript to their patent attorneys and a scientific publication. The resulting patent application is often quite similar to the publication, except that the attorney adds patent claims. Why are scientists who publish but delay filing not deemed to have constructively reduced to practice?

One justification is that the special treatment of patent applications encourages applicants to file quickly, and earlier filing produces earlier patent expiration. (This point is clear under the modern 20-year-from-filing patent term, which guarantees that earlier filings produce earlier expiration dates. But it was also true even when patent terms were measured from the date of patent issuance, assuming that the Patent Office delays would be the same.) Since patent expiration places the invention in the public domain, the constructive reduction to practice doctrine rewards early-filers for their willingness to give their inventions to the public sooner.

One final point: If a patent application is abandoned, it can no longer be used to establish a constructive reduction to practice, although it can be used as evidence of conception if the applicant later re-files. *See In re Costello*, 717 F.2d 1346, 1350 (Fed. Cir. 1983). Note that, as evidence of the applicant’s conception, an abandoned application can be relevant only where the applicant also was the first to reduce the invention to practice — otherwise the applicant would have to prove diligence, and the abandonment is clearly inconsistent with diligence.

8. Effect of a Provisional Patent Application. Constructive reduction to practice has become even easier to achieve with the advent of the provisional patent applications under

§ 111(b). In the past, the stiff requirements of filing a full-blown application, together with the cost, kept many inventors from filing too early. Provisional applications, created by the 1994 GATT legislation, provide an easier and less expensive way to constructively reduce an inventive concept to practice. *See* 37 CFR § 1.16(k) (2007) (establishing the filing fees for provisional applications at \$100 for a small entity and \$200 for all others); Peter G. Dilworth, *Some Suggestions for Maximizing the Benefits of the Provisional Application*, 78 J. PAT. & TRADEMARK OFF. SOC'Y 233, 234 (1996). Note, however, that the disclosure required in a provisional application is the same as that required by § 112 for regular applications. The benefit of the provisional application is that the applicant does not have to draft claims immediately and can delay the prosecution process and its associated expenses for one year.

9. Ties. Ties in priority fights are rare, but occasionally do happen. From the basic rule of priority articulated in the statute, it is easy to predict the correct outcome where two parties conceive simultaneously but one reduces to practice before the other: The first to reduce to practice wins; the rule concerning diligence is irrelevant because neither party was first to conceive.

But what of the situation where both parties reduce to practice (*e.g.*, by filing patent applications) on the same day? In such cases, which are understandably rare, the rule has been that the first to conceive wins, without regard to diligence. *See McParland v. Beall*, 45 App. D.C. 162 (D.C. Cir. 1916). This result seems consistent with § 102(g). The final clause in the statute (§ 102(g)[3][b]) is inapplicable because neither party is “last to reduce to practice.” Clause [3][a] is applicable, however, and it instructs courts to consider both the dates of conception and reduction to practice. If reduction to practice is a tie, the date of conception is the logical tie-breaker.

Finally, what happens when both parties file on the same day and neither is able to prove a date of conception? In *Lassman v. Bossi*, 159 U.S.P.Q. 182, 185–86 (Bd. Pat. Int'f. 1967), the Patent Office Board of Interferences held that priority is then a dead heat and *neither party gets the patent!* For an argument that *Lassman* is wrongly decided and *both* inventors should be issued a patent, *see* Alton D. Rollins, *PTO Practice: Ties Goes to the Runner*, 69 J. PAT. & TRADEMARK OFF. SOC'Y 407 (1987). Rollins notes that, in cases of a tie, § 102(g) does not prohibit awarding a patent to both inventors because the statute is framed in the negative: It merely precludes awarding a patent where another invents before the applicant's invention. *See id.* at 408. Moreover, Rollins notes that, though the two patents will overlap completely, the problem of overlapping patent rights is “relatively common” and “it is difficult to discern why it would make any difference whether the [overlapping] patents were different or identical in scope.” *Id.* at 409. *See also* 3 DONALD S. CHISUM, CHISUM ON PATENTS § 10.03[1][d] (1978 & Supp. 2000) (noting problems with priority ties). Arguably, the same question arises under the AIA. Section 102(a)(2) of the AIA says that an application is prior art if it is “effectively filed before the effective filing date of the claimed invention.” An application filed simultaneously with another application is not filed “before” the other one, so is arguably not prior art to the other one. One way to resolve this might be to keep track not only of the date on which an application is filed but also the time of day. This may prove burdensome, so perhaps issuing two patents makes sense.

10. Collusive Settlements. The Patent Act recognizes that the settlement of an interference dispute presents an excellent opportunity for two competitors to engage in anticompetitive behavior, *e.g.*, market division, price fixing or the like. Thus, 35 U.S.C. § 135(c)

requires all agreements entered into as part of an interference settlement to be filed in the Patent Office, where it is available for inspection by government agencies and any other person who shows “good cause.” *See also* 37 CFR § 41.205.

Could the parties in *Lassman v. Brossi*, *supra*, have settled their “tie” by one party conceding defeat in exchange for a share of the royalties from the other’s patent?

11. Mental Versus Tangible Invention. A classic definition of invention was provided by Professor William Robinson:

[T]he mental part of the inventive act ... is an exercise of the creative faculties, generating an idea which is clearly recognized and comprehended by the inventor, and is both complete in itself and capable of application to a practical result... . Two ideas are present to the mind of the inventor: (1) The idea of an end to be accomplished; (2) The idea of a means by which that end can be attained. The same ideas are manifest in the invention when reduced to practice and engaged in the production of its appropriate result.

1 WILLIAM ROBINSON, ROBINSON ON PATENTS §§ 86-87 (1890). Robinson also reveals what might be termed his “mentalist” or psychological bias when he states: “To him alone whose mind conceives the perfect, practical, operative idea, — that idea which, when embodied in tangible materials, will accomplish the desired result, — belongs the right of the inventor and the credit of performing the inventive act.” *Id.*, at § 80 (footnote omitted). In other sections, Professor Robinson develops his view that the mental component is the essence of invention. With Browning, he believes in the significance of one who is “stung by the splendour of a sudden thought.” (Robert Browning, *A Death in the Desert* 1, 59). This view has some interesting implications.

For example, Robinson believes that the reduction of an idea to practice is mere *evidence* of the true invention: “[I]t is evident that no idea can be embodied in a practical art or instrument until it is sufficiently developed in the mind of the inventor to be thus applied.” *Id.*, at § 80 n. 2. In Robinson’s view, this explains cases such as *In re Seaborg*, 328 F.2d 996 (C.C.P.A. 1964), and *Tilghman v. Proctor*, 102 U.S. 707 (1880), where “accidental” and unappreciated prior discoveries were held not to preclude the patentability of an invention. *See* Chapter 5.C, *supra*. The prior discovery, not being appreciated or understood, does not even qualify as an invention in Robinson’s eyes. Thus it cannot properly be considered true prior art.

The Robinsonian or “mentalist” view of invention has a worthy adversary, a noted figure in the history of patent law: Justice Joseph Story. Confronted with the argument that, as he put it, “[a]n invention is the finding out by some effort of the understanding,” Justice Story stated:

It does not appear to me ... that this mode of reasoning upon the metaphysical nature, or the abstract definition of an invention, can justly be applied to cases under the Patent Act. That Act proceeds upon the language of common sense and common life, and has nothing mysterious or equivocal in it... . The thing to be patented is not a mere elementary principle, or intellectual discovery, but a principle put in practice, and applied to some art, machine, manufacture, or composition of matter... .

The law looks to the fact, and not to the process by which it is accomplished. It gives the first inventor or discoverer of the thing, the exclusive right, and asks nothing as to the mode or extent of his genius to conceive or execute it.

Earle v. Sawyer, 1 Robb's Pat. Cas. 490, 494, 4 Mason Pat. Cas. 1, 8 F. Cas. 254, No. 4,247 (C.C.D. Mass. 1825). According to Story, this emphasis on the *fact* of invention — the actual artifact produced by the inventor — explains why the law rewards a lucky, serendipitous invention equally as well as one whose conception was arduous and whose execution required painstaking care. It is the invention — the “fact” or “thing” — that matters in the eyes of the law. In these matters, a philosopher might tag Story as either a pragmatist or perhaps a materialist.

As interesting as this contrast is, it must be noted that both of these towering figures arrive more or less at the same destination: a focus on the invention itself, the actual artifact. For Robinson, of course, this is important only as an indirect indicator of true invention, i.e., conception in the mind of the inventor; while for Story, it is the physical device, the thing itself, that is of value to society and hence of interest to the law. But both recognize the legal primacy of the inventor's artifact. This accords well with the general tenor of patent jurisprudence in this country, which sees patents as a way to advance technology, rather than as a way to reward meritorious thoughts in engineering and applied science.

12. Foreign Inventive Activities and Pre-AIA § 104. Although the implementation of the Paris Convention permitted foreign inventors to establish constructive reductions to practice based on foreign filings, U.S. law throughout most of the twentieth century precluded reliance on other foreign activities to establish priority or a date of invention in most circumstances. *See, e.g., Ex parte Grosselin*, 1901 Dec. Comm'n Pat. 248 (holding that an inventor could not rely on foreign activity to establish a date of invention for determining priority or for overcoming prior art references).

The bar to proving foreign dates of invention was, in many ways, a direct descendant of the mercantilist philosophy that had influenced early patent law (*see* the historical overview in Chapter 1, *supra*). The mercantilist view maintained that patent laws were intended to encourage not only invention, but also the importation of new techniques and knowledge into a country. The view can clearly be seen in the Patent Office's justification for refusing to consider foreign activities:

The primary consideration upon which patents are granted is a full and complete disclosure of the invention to the public in this country. ... The purpose of the patent law is, as stated in the Constitution, “to promote the progress of science and the useful arts,” and this means progress in this country. Anything which does not give the invention to the public *in this country* will not promote such progress.

Ex parte Grosselin, 1901 Dec. Comm'n Pat. at 251 (emphasis added). As the twentieth century unfolded, such a view seemed less and less justifiable as advances in communications and increases in trade led to ever more rapid diffusion of technology. By the 1990s, the view articulated in the 1901 *Grosselin* decisions seemed obviously outdated.

Reform came in 1994, when Congress amended 35 U.S.C. § 104, which had previously codified the rule that foreign inventors could not rely on their foreign inventive activities to prove their dates of invention. As the U.S. (as well as most other industrialized countries) acceded to the TRIPs agreement, Congress had to amend § 104 to eliminate discrimination against foreign invention because TRIPs Article 27 requires member countries to award patent rights “without discrimination as to the place of invention.” The 1994 amendments to § 104 establish a quite simple rule: They “allow a patent applicant or patentee to establish a date of invention using evidence of inventive activity occurring in any WTO member country.” S. Rep. 412, 103rd Cong., 2d Sess. 227 (1994).

While inventive activity in non-WTO countries still cannot be used to establish priority or a date of invention to defeat prior art, that situation must now be considered the extreme exception, rather than the rule, because far more than 150 countries are now part of the WTO. Even Russia, which had been one of the last major countries outside the WTO, joined in 2012. Thus, the 1994 amendments to § 104 have worked a major change in U.S. law now covering almost all nations (some of the few nations not yet in the WTO include Iran, Lebanon and Algeria).

The liberalization of § 104 might very well have increased the complexity of interferences temporarily as foreign inventors who previously had to rely solely on their filing dates for priority were permitted to introduce evidence of overseas conception, diligence and reduction to practice. Of course, such complexities are coming to an end generally as the AIA’s first-to-file regime takes effect. The AIA also repealed § 104 on a going forward basis because, under the first-to-file system, invention dates are irrelevant.

13. The Continuing Importance of Conception Under the AIA. For patents subject to the AIA, it might seem as though the pre-AIA “milestones”—conception, reduction to practice, etc.—are no longer relevant. That is not quite true, however. Patent doctrine has grown up organically over centuries, so it should not be surprising that concepts from one part of the law have been imported into other parts. The best example of this in the pre-AIA § 102(g) context is the law of inventorship. As you will see in some detail in Chapter 11, patent law has developed a detailed set of rules for determining who is an inventor. A crucial aspect of the inventorship test is whether one who participates in a research project has contributed something substantial to the conception of one or more claims in a patent. *See, e.g., Burroughs-Wellcome v. Barr Laboratories*, 40 F.3d 1223 (Fed. Cir. 1994), excerpted and discussed Chapter 11, *infra*.

Likewise, conception may have continuing relevance for other issues as well. For example, we have already seen that, in a case involving the “on sale” statutory bar under pre-AIA § 102(b), the Supreme Court highlighted the importance of conception in determining the time at which an invention has been completed. *See Pfaff v. Wells Electronics*, 525 U.S. 55, 60, 66 (1998) (“The primary meaning of the word ‘invention’ in the Patent Act unquestionably refers to the inventor’s conception rather than to a physical embodiment of that idea.”). The lower courts are likely to continue applying *Pfaff* in deciding cases concerning the “on sale” prior art category in AIA § 102(a)(1). In that context and likely in others, older concepts such as inventive conception are likely to have continued importance in the post-AIA patent system.

b. “Abandoned, Suppressed or Concealed” Inventions

Our next case concerns the problem of “abandoned, suppressed, or concealed” work. Be careful to distinguish diligence from “abandonment, suppression and concealment.” Diligence is only relevant *prior to* reduction to practice. Abandonment, suppression and concealment can occur only *after* reduction to practice. Also, while relative short periods of inactivity may be a break in diligence, courts typically require months or years of inactivity to hold that an inventor abandoned, suppressed, or concealed an invention.

PEELER v. MILLER

535 F.2d 647 (C.C.P.A. 1976)

On January 4, 1968, inventors Peeler, Godfrey, and Furby (Peeler), filed a patent application on improved hydraulic fluid that was designed to reduce a problem known as “cavitation,” which is the formation of gas-filled pockets in the fluid. On April 27, 1970, an application on an identical fluid was filed by Miller and assigned to the Monsanto Company. On July 6, 1971, the PTO issued a patent to Peeler on the invention. Thereafter, the PTO declared an interference between the issued Peeler patent and the still-pending Miller application. The PTO Board of Patent Interferences awarded priority of invention in five counts to Miller. Peeler appeals.]

RICH, JUDGE.

Peeler took no testimony and relied on his filing date. Miller submitted testimony in the form of affidavits from himself, various Monsanto colleagues, and William Black, the Monsanto patent attorney who prepared and filed Miller’s application. Miller’s efforts, culminating in this invention, began in the fall of 1964 when he became aware of serious hydraulic valve leakage in British “Trident” aircraft using Monsanto’s SKYDROL 500A brand hydraulic fluid. He concluded that cavitation was responsible for the problem and began the search for a fluid additive to overcome the problem.

In 1965, in ultrasonic vibrating probe tests, in which a soft metal tip is vibrated at high frequency in a beaker containing SKYDROL 500A and the additive under test and the loss of metal from the tip measured, it was found that water as an additive would reduce cavitation damage substantially. This laboratory finding was confirmed in use in the Trident aircraft. In March 1966 Miller thought of using FREON 11 (the DuPont trademark for trichloromonofluoromethane) as the additive and also other halocarbons, which are fire-resistant and, like water, have high volatility in relation to the base fluid, as anti-cavitation additives. On March 8 Miller instructed a colleague (Stainbrook) to conduct ultrasonic vibrating probe tests using FREON 11 as the additive. Stainbrook performed one control run and one run with FREON 11 as the additive on that day. Stainbrook’s affidavit and Miller’s March 14 notebook page indicate that FREON 11 significantly reduced erosion of the probe tip in the experiment. In his notebook entry Miller indicated, “To better assess such additives, we are setting up hermetically sealed sample containers.” The record does not show that hermetically sealed containers were subsequently used by Miller.

On April 5, 1966, Miller submitted a “preliminary disclosure of invention,” which his superiors in the Research Department of Monsanto’s Organic Chemicals Division rated “A (Ready (to file))” on April 18, 1966. Presumably, this disclosure was forwarded to Monsanto’s patent department for action soon thereafter, but the record does not show when this occurred.

From the time when Miller's invention disclosure was rated "A (Ready)," more than four years elapsed until Miller's filing date. Miller continued working on cavitation inhibitors of undisclosed nature during this time, and in September 1966 he gave presentations at several U.S. aviation industry meetings on Monsanto's solution of the Trident valve damage problem. Stainbrook stated that he ran vibrating probe tests in October 1967 using FREON 112(a) (apparently tetrachlorodifluoroethane) as the additive and that he informed Miller of his results. What Miller did with this information is not indicated in the record. Meanwhile, there is no evidence of action in Monsanto's patent department until the arrival of Mr. Black in October 1968, some two and a half years after Miller's alleged actual reduction to practice. Mr. Black's affidavit states in material part: He was employed by Monsanto on October 14, 1968. He was assigned responsibility for the following areas: Petroleum Additives, Functional Fluids, Polyphenyl Ethers [&] Synthetic Lubricants. He was assigned four areas because the three attorneys who had previously handled them had resigned in the previous four months. He recalls that as of January 1969 he was responsible for: 1) about 60 to 70 pending U.S. Applications, 2) over 400 foreign pending applications, 3) over 100 active invention disclosures of which 27 were [classified] A — ready to file [and] 21 were [classified] A — not ready to file.

He recalls that as of that date, "(Miller's) invention disclosure ... was in order of filing priority, 31st on the list out of 48 cases." He generally filed invention disclosures according to their order of priority.

The Board Opinions

The board majority found that Miller had actually reduced the invention of the counts to practice in April 1966 and that he had not abandoned, suppressed, or concealed the invention within the meaning of 35 U.S.C. § 102(g). [One dissenter on the Board concluded that Miller had abandoned or suppressed the invention.]

Opinion

While we agree with the board majority that Miller proved by a preponderance of the evidence that he had actually reduced the invention to practice in March 1966, we also agree with the dissenting member of the board that Miller must be deemed to have suppressed the invention under 35 U.S.C. § 102(g) through the behavior of his assignee. Perforce, the decision of the board must be reversed. We reach both issues, since without an actual reduction to practice there is no invention in existence which can be abandoned, suppressed, or concealed under § 102(g).

Peeler argues that the one successful vibrating probe test relied upon by Miller to establish an actual reduction to practice was preliminary in nature and failed to show that the invention would work "as intended to work in its practical contemplated use, i.e., as an aircraft hydraulic fluid" Peeler also urges us to find that a single successful test is insufficient to establish reproducibility of results and that the probe test was an abandoned experiment because Miller lacked conviction of success.

We note that the counts are not directed to aircraft hydraulic systems, which are special environments with high speed flow and extremes of temperature and pressure causing accelerated wear of valves and other hydraulic system components, but to hydraulic systems generally. Thus Miller need show only that his invention is suitable for reducing cavitation damage in any hydraulic system. [I]t may be true that the vibrating probe test is a rapid screening method for choosing candidates for more rigorous testing, but that does not vitiate the conclusion by Miller

that the vibrating probe test was considered in 1966 by those in the art, based in part on the knowledge that the success of water as an additive was predicted by the probe test, to simulate conditions which would cause valve damage in aircraft. Miller's comment in the March 14 notebook entry indicating a need "to better assess such additives" does not, it seems to us, indicate that he considered FREON 11 unsuitable.

Finally, we hold that the March 1966 probe test was not an abandoned experiment. Except for Miller's September 1966 presentation, the record is devoid of any activity with respect to the invention by Miller personally after he filed the invention disclosure. This lack of activity is understandable in light of the realities of corporate research. Once he filed his invention disclosure with his superiors, Miller was finished with the invention. He had other work to do. If Monsanto desired protection for its employee's invention, any further action was in the hands of people other than Miller. That Stainbrook performed tests in 1967 on additives which the dissenting board member said were outside the scope of the counts is of no moment. There is no evidence that Miller changed his mind about the efficacy of the additives he found. In some cases the passage of a long period between reduction to practice and filing raises an inference that the purported reduction to practice was an abandoned experiment. This inference, however, only arises where there is doubt that the activities relied on constitute a reduction to practice. We have no reason to doubt that Miller considered his invention successful when he filed his invention disclosure; subsequent corporate inactivity does not raise the inference that Miller later thought his work incomplete or unsuccessful. As indicated *infra*, this passage of time redounds to the detriment of Monsanto, but not because of an inference that there was no reduction of the invention to practice.

Determining whether a de facto first inventor, Miller in this case, should also be considered the de jure first inventor under § 102 requires resolution of the policy question: which of the rival inventors has the greater right to a patent? *Brokaw v. Vogel*, 429 F.2d 476, 57 C.C.P.A. 1296 (1970). Under the facts of this case and the public policy inherent in § 102(g), we hold that the evidence has raised an inference of suppression of the invention by Miller's assignee, Monsanto, the real party in interest, which has not been rebutted. Monsanto's conduct is, of course, imputable to Miller under elementary legal principles. *In re Clark*, 522 F.2d 623 (C.C.P.A. 1975).

The evidence here is striking in its paucity. There is no evidence that Miller (or Monsanto) was spurred into filing his application by knowledge of Peeler's invention; spurring, however, is not an essential element of suppression. *Young v. Dworkin*, [489 F.2d 1277 (C.C.P.A. 1974)]. Neither Miller nor anyone else at Monsanto appears to have had any specific intent to suppress or conceal the invention. But proof of specific intent to suppress is not necessary where the time between actual reduction to practice and filing is unreasonable. This unreasonable delay may raise an inference of intent to suppress. *Young v. Dworkin*, *supra*, 489 F.2d at 1281 n. 3. The evidence shows, however, that over four years elapsed between the rating of Miller's invention disclosure "A (Ready)" and Miller's filing date and that much, if not all, of the delay occurred while the disclosure lay dormant in Monsanto's patent department.

In our opinion, a four-year delay from the time an inventor is satisfied with his invention and completes his work on it and the time his assignee-employer files a patent application is, prima facie, unreasonably long in an interference with a party who filed first. The circumstances surrounding the delay and Monsanto's attempted justification thereof serve only to persuade us of the correctness of our opinion. We make no criticism of Mr. Black; getting Miller's application filed in the time he did may have been an extraordinary effort. Monsanto, however, can take no comfort in that, since its neglect of Miller's application for the 2½ years preceding Mr. Black's

arrival and its failure to replace two of the three attorneys who resigned were at least partial causes of the backlog which greeted Mr. Black.

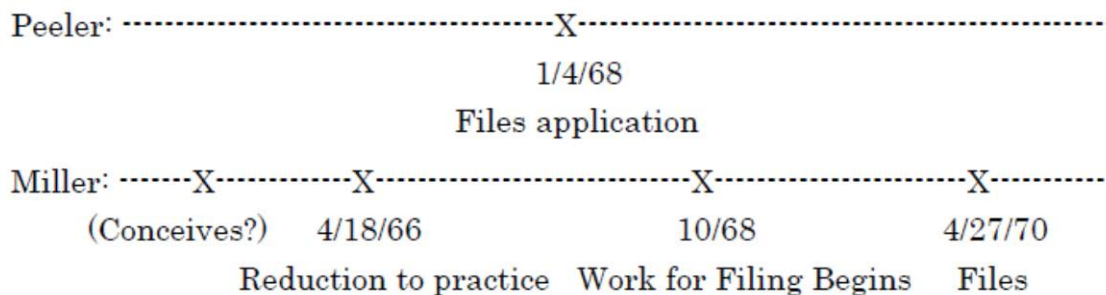
Miller and the board majority rely heavily on the statement, often repeated in varying language by this court, that “Mere delay, without more, is not sufficient to establish suppression or concealment.” *Young v. Dworkin*, *supra*, 489 F.2d at 1281, and cases cited therein. What we are deciding here is that Monsanto’s delay is not “mere delay” and that Monsanto’s justification for the delay is inadequate to overcome the inference of suppression created by its excessive delay. Surely, the word “mere” does not imply a total absence of a limit on the duration of the delay. “Mere” is a chameleonic word, whose meaning depends on the circumstances.

As Mr. Justice Holmes said in *Towne v. Eisner*, 245 U.S. 418, 425, 38 S. Ct. 158, 159, 62 L. Ed. 372 (1918), “A word is not a crystal, transparent and unchanged, it is the skin of a living thought and may vary greatly in color and content according to the circumstances and the time in which it is used.” The living thought clothed by the phrase “mere delay” is not susceptible of discernment as an absolute matter. Whether any delay is “mere” in contemplation of law is a policy decision that can be made only on a case-by-case basis. A delay may be of no legal consequence because it is not long enough. Or the delay may be excused by activities of the inventor or his assignee during the delay period. See, e.g., *Frey v. Wagner*, 87 F.2d 212, 24 C.C.P.A. 823 (1937). There may be other factors. At least since *Mason v. Hepburn*, 13 App. D.C. 86 (1898), the courts have implemented a public policy favoring, in interference situations, the party who expeditiously starts his invention on the path to public disclosure through the issuance of patents by filing a patent application. This policy is now implemented through § 102(g) even as it was in *Mason v. Hepburn* prior to that statute, by denying de jure first inventor status to de facto first inventors who, or whose assignees, frustrate this policy.

Reversed.

NOTES ON PEELER & ABANDONED, SUPPRESSED, OR CONCEALED WORK

1. Time Line. It can be helpful to sketch out a time line of the major events in an interference. For example, here is one for the preceding case:



2. The Time Scale in Abandonment, etc. v. Diligence. If an inventor reduces to practice and then delays filing a patent application for, say, six months, would that delay constitute abandonment, suppression or concealment?

The answer is pretty clearly “no.” Once an inventor actually reduces an invention to practice, the inventor is merely required to progress toward filing a patent application without any *extreme* period of delay (e.g. four years, as in *Peeler*). The relevant time scale is thus much more forgiving than that applied in diligence cases, where a break in activity for even a couple weeks has required an explanation and a break of a few months has been held fatal. *See, e.g., Reinhart v. Coursen*, 458 F.2d 516, 519–20 (CCPA 1972) (requiring patent applicant to explain a two week break in activity but finding the explanation reasonable and consistent with diligent efforts); *Griffith v. Kanamaru*, 816 F.2d 624 (Fed. Cir. 1987) (holding three month delay to constitute a break in diligence). Diligence means just that — steady, industrious efforts.

3. Intent, Delay and the Lollygagging Patent Attorneys. Miller submitted his patent disclosure to his employer and probably expected that the corporate patent attorneys would dutifully file the patent application. They didn’t. Instead, Miller’s disclosure gathered dust. Do the delays of Monsanto’s attorneys provide a good enough reason to deny Miller his rightful patent? Do those delays raise suspicions that Miller intended to abandon, suppress or conceal his invention? Does it matter that any patent would be assigned to Monsanto? Note that, during the period of delay, Miller “gave presentations at several U.S. aviation industry meetings.” Why aren’t those presentations sufficient to rebut suppression? Furthermore, why didn’t the presentations, which occurred in September of 1966, bar Peeler from obtaining a patent under § 102(a)? If the post-AIA system had been in place then, would either Miller or Peeler be able to get a patent?

The rule in *Peeler* has for the most part been followed. In general, suppression or concealment must be deliberate or intentional, *Piher, S.A. v. CTS Corp.*, 664 F.2d 122 (7th Cir. 1981), but a lengthy delay between the making of the invention and filing for a patent can give rise to an inference of concealment. *See, e.g., Horwath v. Lee*, 564 F.2d 948 (C.C.P.A. 1977) (the longer an inventor delays in filing application, the greater are the equities that may be raised on behalf of one who made the same invention and promptly filed); *see also Brokaw v. Vogel*, 429 F.2d 476, 57 C.C.P.A. 1296 (C.C.P.A. 1970) (five-year delay was too long). However, the inference created by delay can be overcome, as the Federal Circuit has explained:

An inference of suppression or concealment may be overcome with evidence that the reason for the delay was to perfect the invention. *See, for example, Dewey v. Lawton*, 347 F.2d 629, 632 (C.C.P.A. 1965), which permitted “testing and refinement” of the invention for more than one year after reduction to practice; and *Schnick v. Fenn*, 277 F.2d 935, 941–42 (C.C.P.A. 1960), which permitted a delay of about eleven months after reduction to practice while “continuing ‘the development of the best design’ ” in further perfecting the invention. When, however, the delay is caused by working on refinements and improvements which are not reflected in the final patent application, the delay will not be excused. *See Horwath v. Lee*, 564 F.2d at 952. Further, when the activities which cause the delay go to commercialization of the invention, the delay will not be excused. *See Fitzgerald v. Arbib*, 268 F.2d 763, 766 (C.C.P.A. 1959).

Lutzker v. Plet, 843 F.2d 1364 (Fed. Cir. 1988). The final sentence in this passage was later qualified by the decision in *Checkpoint Systems v. U.S. International Trade Comm’n*, *infra*.

4. The Incentive To Prove a *Later* Reduction to Practice. Because an invention cannot be abandoned, suppressed or concealed under § 102(g) until it has been reduced to practice, inventors may sometimes have an incentive to argue for a *later* reduction to practice than the one they might be able to prove. The later date will shorten the apparent delay in filing the patent application and thus decrease the chance that the inventor will be found to have suppressed or concealed the invention.

5. Resumed Efforts After Long Delay. How should an inventor’s priority claim be evaluated where the inventor suppresses or conceals an early reduction to practice, but later resumes efforts to obtain a patent? In *Paulik v. Rizkalla*, 760 F.2d 1270, 1275 (Fed. Cir. 1985) (*in banc*), a deeply divided Federal Circuit held that, where a lengthy delay bars the first inventor from relying on an early reduction to practice, the inventor will nonetheless “not be barred from relying on later, resumed activity antedating an opponent’s entry into the field.” In effect, the suppressed or concealed work is utterly disregarded in the priority analysis.

In *Paulik*, the first inventor in the case (Paulik) reduced to practice the relevant invention (a catalytic process for manufacturing certain chemicals) in November of 1970 and again in April of 1971. Paulik then submitted a disclosure of his invention to Monsanto’s hapless patent department, which was also responsible for the delays in *Peeler*. After nearly four years of inactivity, Monsanto’s patent solicitor began preparing the application in January or February of 1975. Monsanto filed on June 30, 1975, but Rizkalla had filed his application three months earlier (on March 10, 1975).

Paulik, the junior party in the ensuing interference, argued that even if the reductions to practice in 1970 and 1971 were suppressed or concealed by the long delay, the diligent efforts in 1975 to file the patent application should be considered in determining priority. Rejecting that argument, the PTO Board of Patent Appeals and Interferences held that Paulik could not rely on the resumed efforts because Paulik had been the first party to reduce to practice and, under § 102(g), the diligence of the party first to reduce to practice is irrelevant. In short, under the PTO Board’s ruling, Paulik’s early work could not count in his favor, but it could count against him in determining whether he could take advantage of the diligence rule.

In reversing, the majority of seven judges explained their rationale:

[I]f an inventor were to set an invention aside for “too long” and later resume work and diligently develop and seek to patent it, according to the Board he would always be worse off than if he never did the early work, even as against a much later entrant.

Such a restrictive rule would merely add to the burden of those charged with the nation’s technological growth. Invention is not a neat process. The value of early work may not be recognized or, for many reasons, it may not become practically useful, until months or years later. Following the Board’s decision, any “too long” delay would constitute a forfeiture fatal in a priority contest, even if terminated by extensive and productive work done long before the newcomer entered the field.

We do not suggest that the first inventor should be entitled to rely for priority purposes on his early reduction to practice if the intervening inactivity lasts “too long,” as that principle has evolved in a century of judicial analysis. [But there] is no authority that would estop Paulik from relying on his resumed activities in order to pre-date Rizkalla’s earliest date. We hold that such resumed activity must be considered as evidence of priority of invention. Should Paulik demonstrate that he had renewed activity on the invention and that he proceeded diligently to filing his patent application, starting before the earliest date to which Rizkalla is entitled — all in accordance with established principles of interference practice — we hold that Paulik is not prejudiced by the fact that he had reduced the invention to practice some years earlier.

Id. at 1272–73.

6. The Proper Approach to Interpreting § 102(g). In addition to its specific holding, *Paulik* also stands for the proposition that § 102(g) should not be interpreted as codifying any precise or rigid rules for priority. Instead, priority should be “based on equitable principles and public policy as applied to the facts of each case.” 760 F.2d at 1273. In a concurring opinion, Judge Rich (one of the drafters of the 1952 Patent Act) made this point clear:

It must be recognized that we are deciding a priority issue: which party is to be regarded as the “first” inventor *in law*, regardless of fact. The award, as the CCPA several times decided, should be to the one most deserving from a policy standpoint. In deciding who is prior in law, every fact has a “bearing” and is of “significance” and must be weighed on the scales of justice. It is of the utmost significance here whether Paulik was actively proceeding to patent his invention *prior* to any date established by Rizkalla, and thus the *first* to be on the way to giving the public the benefit of the invention. That is what a “priority” decision is all about.

[Section 102(g)] was not written to be given a hypertechnical construction but merely in an attempt to sum up concisely existing priority law based on over a century of precedents, an attempt which proved to be rather difficult even for experts.

Id. at 1280–81. In reaching his conclusion, Judge Rich drew upon “what I know to have been the intent of” § 102(g), “as a member of the group which drafted that section.” *Id.* at 1276. To what extent should Judge Rich’s colleagues have deferred to his assessment of the intent behind § 102(g)? How should a judge involved in the drafting of a statute approach the task of interpretation?

The five dissenters in the case argued for a completely different approach to deciding priority issues:

I do not think that the language in section 102(g) leaves any room for considering the respective equities of (i) an earlier inventor who admittedly has suppressed or concealed his invention for an unreasonably long period and (ii) a later

inventor who acted promptly in seeking the patent and was, in fact, first to file. Section 102(g) speaks in clear, simple, prohibitory terms. An inventor who has “abandoned, suppressed, or concealed” his invention is not entitled to priority as against a subsequent inventor who has not engaged in that conduct. Congress itself has made the judgment that in that situation the equities lie with the second inventor, not with the first. Under the statute, there is no room for the Board or the court to second-guess that congressional determination on the basis of the tribunal’s own perception of where the equities lie in a particular case.

Id. at 1285 (Friedman, J., dissenting) (the opinion was joined by four other judges).

Many of the cases involving priority disputes do seem to apply relatively well-defined rules; indeed, that is the manner in which priority issues have been treated in this Chapter. Does *Paulik* call for a fundamental reexamination of that approach to priority disputes? Should the court in each case weigh all the equities in the matter? Or is *Paulik* a relatively rare case in which the pre-existing rules of priority do not yield a clear answer?

TRADE SECRETS, § 102(g) AND THE SOFTWARE INDUSTRY

It is important to grasp the impact that § 102(g) has on inventions kept as trade secrets. An inventor who intentionally keeps an invention secret may lose her right to a patent in a priority contest. Moreover, she may wind up infringing the patent of the party who wins priority. In such a case, the second inventor will have in effect barred the first inventor from using her own invention. Thus, the inventor who relies on trade secret law to protect an invention risks losing everything to a subsequent independent inventor.

Judge Learned Hand delivered an important opinion on this point in *Gillman v. Stern*, 114 F.2d 28 (2d Cir. 1940). He held that a completed invention will be deemed abandoned, suppressed, or concealed if no steps are taken to make the invention publicly known within a reasonable time. The inventor, Haas, kept his invention completely secret from the outside world, including his employees and his wife. The court held that such a secret invention could not be prior art. An important point regarding *Gillman* is that the invention at issue was a pneumatic “puffing” machine for quilting. Only the *output* of the machine — its product — was offered for sale; the machine itself “was always kept as strictly secret as possible, consistently with its exploitation.” 114 F.2d at 30. *Gillman* has been called a good example of a “non-informing public use” case. Frank E. Robbins, *The Rights of a First Inventor-Trade Secret User As Against Those of the Second Inventor-Patentee (Part I)*, 61 J. PAT. OFF. SOC’Y 574, 591 (1979); *see also* Philip L. Burke, *The ‘Non-informing Public Use’ Concept and Its Application to Patent-Trade Secret Conflicts*, 45 ALB. L. REV. 1060 (1981). Such cases are to be distinguished from “hidden public use” cases, where the article in question is openly used, but it is impossible to determine its qualities from an inspection of it. Unlike the “non-informing” use, the “hidden use” has been said not to comprise abandonment, suppression or concealment. The rationale is that the “hidden use” is hidden only because of the nature of the invention, and not because of any intentional concealment by the inventor. Just because the inventor’s black box cannot be pierced by observers, the argument runs, does not mean that it is being consciously concealed by the inventor.

Many have argued that in terms of the incentives that the patent system tries to create, cases such as *Gillman* make a good deal of sense. An inventor who files an application ought not to be stymied by prior work she had no way of discovering. This is especially true of cases such as *Peeler*, where the first inventor delayed filing for a long time, see *Lutzker v. Plet*, 843 F.2d 1364 (Fed. Cir. 1988) (holding that delay of 51 months between reduction of invention to practice and the first disclosure of the patent was unreasonably long and gave rise to an inference of intent to abandon, suppress, or conceal the invention), and even more so of those cases where the second inventor's patent application "spurred" the first inventor into filing. See, e.g., *Nelson v. Lenning*, 96 F.2d 508, 25 C.C.P.A. 1119 (C.C.P.A. 1938). The same general point is made in criticisms of § 102(e) as "secret" prior art. See, e.g., Harold C. Wegner, *Patent Law Simplification and the Geneva Patent Convention*, 14 AM. INTEL. PROP. J. 154, 176–82 (1986). While the patent system allows such "secret" prior art in some situations, such prior art is always on a trajectory for public disclosure. Cases like *Peeler* demonstrate that society wants such public eventual disclosure rapidly, not delayed by years.

But from another perspective, cases such as *Gillman* are troubling. To rule that secret use renders a prior invention "abandoned, suppressed or concealed" under § 102(g) is to *punish* those who elect to keep their inventions as trade secrets. Under *Gillman* and related cases, a later inventor who files a patent application can avoid the prior art effect of earlier secret uses by arguing that the earlier inventor "abandoned, suppressed or concealed" the invention. This removes it from the definition of prior art under § 102(g), and clears the way for the later inventor/patent applicant to obtain a patent. (Note that this *assumes* that the earlier use of the secret invention will not constitute § 102(a) "known or used by others" prior art; it should be clear to you that, in cases like those of the preceding section, there is a strong possibility that § 102(a) would not defeat novelty, given the prevailing interpretation of knowledge or use as implying some degree of "publicity.")

Many industries rely heavily on trade secret protection to appropriate the value of their research and development. Indeed, one extensive empirical survey found that R & D personnel in many U.S. industries value trade secrets more highly than patents as a means to appropriate the value of their R & D. See Richard C. Levin, Alvin K. Klevorick, Richard R. Nelson & Sidney G. Winter, *Appropriating the Returns from Industrial Research and Development*, 1987 BROOKINGS PAP. ECON. ACTIVITY 783 (1987). Although several cases have held that state trade secret law may co-exist with federal patent law, see, e.g., *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470 (1974), § 102(g)'s implicit "punishment" for those who elect trade secret protection raises the question how far the patent statute can go in disfavoring state-law forms of protection.

Trade secret protection has been important in the software industry, for example. As a consequence of § 102(g) and the growing importance of patents in this industry, some commentators express concern that software creators who keep their software as trade secrets could be forced to obtain licenses from later inventors, or even to stop using their software altogether. See George Gates, *Trade Secret Software: Is It Prior Art?*, 6 COMPUTER LAWYER 11 (1989). One commentator has noted, however, that patentees may be loath to risk having their patents invalidated by bringing infringement suits against such prior users, a risk that is presumably large in light of the equities favoring the earlier trade secret user. Consequently, according to this commentator, we would expect to see a settlement of any such disputes, perhaps by cross-licenses. Karl F. Jorda, *The Rights of the First Inventor-Trade Secret User as Against Those of the Second Inventor-Patentee (Part II)*, 61 J. PAT. OFF. SOC'Y 593, 601 (1979).

Fortunately, the suggested rule in *Gillman* has not yet clearly prevailed. The Federal Circuit has held, for instance, that where research is temporarily secret, it is not necessarily “abandoned, suppressed or concealed” under § 102(g). See *E.I. duPont de Nemours & Co. v. Phillips Petr. Co.*, 849 F.2d 1430 (Fed. Cir. 1988).

Can you think of a way to protect the prior inventor’s rights over her technology while still giving voice to the patent system’s policy of promoting disclosure? Note that, in the past few decades, the software industry underwent a transition from being a non-patent industry to one where patents are important. (See Chapter 2 for details.) Since many software firms have relied on, and to some extent, continue to rely on trade secret protection, those firms may be hurt by the § 102(g) rule.

Note, however, that the decision in *Paulik* could provide some relief. At least if the longstanding trade secret user begins to move toward filing a patent, her prior lack of patent-related activity will not necessarily be held against her under *Paulik*. The activity may, however, constitute a “public use” that precludes patenting (under pre-AIA § 102(b) or under AIA § 102(a)(1)).

Finally, note that “prior user” rights, such as those under § 273 of the AIA (*see below* and Chapter 8), and those in effect in Europe protect the rights of first inventors from a later inventor who files a patent application. Prior inventors are allowed to continue their use of the invention after a patent issues to the second inventor. See 35 U.S.C. § 273 (applies to all U.S. patents issued after March 16, 2013); John Neukom, *A Prior User Right for the Community Patent Convention*, 5 EUR. INTEL. PROP. REV. 165 (1990); Lisa M. Brownlee, *Trade Secret Use of Patentable Inventions, Prior User Rights and Patent Law Harmonization*, 72 J. PAT. & TRADEMARK OFF. SOC’Y 523 (1990). Kyla Harriel, *Prior User Rights in a First-to-Invent Patent System: Why Not?*, 36 IDEA 543 (1996). In 1999, U.S. law was amended to include a prior user defense, but it applied only against business method patents. The new § 273 prior commercial use right applies to all areas of technology.

NOTE ON THE MULTIPLE INTERFERENCE PARADOX

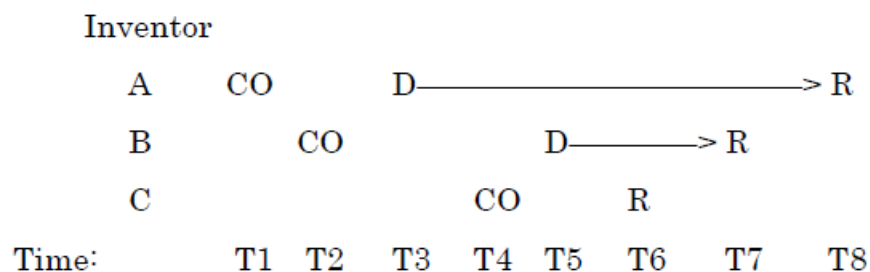
For the most part, we have been concerned up to this point with interferences between only two parties. While these are quite frequent, there are also a good number of interferences involving more than two parties. A good example is the five-party interference over the invention of polypropylene. See *Standard Oil Co. v. Montedison, S.p.A.*, 494 F. Supp. 370, 374 (D. Del. 1980). A more recent example involves the invention of “warm” superconducting materials in the late 1980s. See Robert Pool, *Superconductor Patents: Four Groups Duke It Out*, 245 SCI. 931 (1989). Such interferences can be expected to crop up whenever several teams of researchers are racing toward a common goal.

These multi-party interferences can be exceedingly expensive. The polypropylene interference, for example, was declared in 1958 and resolved by the District Court only in 1980. Final resolution of the matter came in 1989, more than thirty years after the invention was made! See *United States Steel Corp. v. Phillips Petr. Co.*, 865 F.2d 1247 (Fed. Cir. 1989) (upholding Phillips’ polypropylene product patent).

In general, interferences with three or more parties are no different than those with only two. In most cases, the question of priority is resolved by the application of the rules outlined above.

However, under a rare set of circumstances, these interferences can lead to a stalemate where no single party has clear priority. This results from the structure of the priority rules. While this is far from common, it has elicited interesting commentary — as much a function of the intellectually interesting nature of the “paradox” as of its practical importance.

To illustrate the kind of paradox the priority rules can produce, consider three inventors, *A*, *B* and *C*. *A* conceives of an invention at time *T1*. *B* conceives at time *T2*. At time *T3*, *A* begins a period of continuous diligence leading up to a reduction to practice. Meanwhile a third inventor, *C*, conceives at *T4*. At *T5*, inventor *B* begins a period of diligence that continues through her reduction to practice. *C* reduces to practice at *T6*, but was not continuously diligent from conception to reduction to practice. At *T7*, *B* reduces to practice. Finally, *A* reduces to practice at *T8*. The following diagram illustrates this sequence of events; CO is conception, D —> means continuous diligence, and R is reduction to practice. (This notation may be helpful as you sketch out various priority situations.)



In an interference between *A* and *B*, *B* wins because *A* was first to conceive and last to reduce to practice, but has not shown diligence since just prior to *B*’s conception. In an interference between *B* and *C*, *C* wins for the same reason: as between *B* and *C*, *B* was first to conceive and last to reduce to practice, but cannot show diligence since just prior to *C*’s conception. Finally, in an interference between *A* and *C*, *A* wins, since as between them *A* was first to conceive and last to reduce to practice *and* *A* can show diligence since before *C*’s entry into the field. This is the paradox: no single party beats the other two cleanly. See Thomas M. Ferrill Jr., *An Anomalous Situation in the Law of Interference as Applied in Multi-party Cases*, 33 J. PAT. OFF. SOC’Y 457 (1951). It has been shown by means of a wonderfully clever use of axiomatic logic that there is a whole family of interferences — potentially infinite in number! — that can yield the paradox. See Richard H. Stern, *Priority Paradoxes in Patent Law*, 16 VAND. L. REV. 131 (1962).

Several proposed solutions have been offered to resolve the paradox. The first is simply to award the patent to no one. See Stern, *supra*, 16 VAND. L. REV. at 140. The second is to eliminate the party with the worst claim to priority — on broadly equitable grounds — and resolve the remaining two-party interference. *Id.* at 140 n. 39. Inventor *B* in our example is perhaps a good candidate for elimination, since she was neither first to conceive nor first to reduce to practice. Third, it has been suggested that the interference be turned into a pure race of

conception or reduction to practice. *Id.* at 141. Finally, it has been suggested that the impasse be resolved by making the interference a race of diligence. In the example above, then, *A* would win the three-party interference. *Id.* at 143. As before *A* beats *C*. But under the modified rule, *A* beats *B* also. This is because *A*'s diligence commenced just prior to *B*'s diligence, and under the modified rule this is enough. (That is, unlike under the current rule, *A*'s diligence need not commence prior to *B*'s conception; only prior to her diligence.) Recall the general "equitable" approach of the *Paulik v. Rizkalla* court (*see* the notes following *Peeler, supra*) to interpreting § 102(g). Would that approach assist in resolving such an interference?

One sad result of the U.S.'s adoption of a first-to-file rule is that all this wonderful analysis will eventually become irrelevant!

2. § 102(g)(2) and Priority of Invention Outside Interferences

Although § 102(g) is most often invoked in interferences to resolve priority disputes between rival patent applicants, it can also be used outside of an interference as a source of prior art. This function of § 102(g) is clear from the division of the statute into two parts — subsection (g)(1) applies exclusively in interferences; subsection (g)(2) applies in other circumstances. The following case illustrates the latter use of § 102(g).

DOW CHEMICAL COMPANY v. ASTRO-VALCOUR, INC.

267 F.3d 1334 (Fed. Cir. 2001)

DYK, CIRCUIT JUDGE.

This case presents the question of whether, when challenging the validity of a patent under 35 U.S.C. § 102(g), a prior inventor must have known that he was an inventor. We conclude that such a state of mind is not required. Accordingly, we agree that the invention covered by the contested claims of U.S. Patent Nos. BI 4,640,933 (the "'933 patent"), 4,694,027 (the "'027 patent"), and 4,663,361 (the "'361 patent") assigned to the Dow Chemical Company ("Dow") was first invented by defendant Astro-Valcour, Inc. ("AVI"). Also, we agree that AVI did not abandon, suppress, or conceal its invention. Accordingly, we affirm the district court's decision invalidating claim 3 of the '933 patent, claim 1 of the '027 patent, and claim 1 of the '361 patent.

I.

Plastic foam products may be made by using a blowing agent to expand a polystyrene, polyethylene, or other polymer resin. A blowing agent is a chemical that produces an above atmospheric pressure inside the cells of a polymer, causing the individual cells to grow, thus transforming the polymer from a high density solid to a low density cellular product. Prior to the middle 1980s foam manufacturers commonly used chlorofluorocarbon ("CFC") blowing agents to produce polyethylene foam, but environmental concerns prompted the search for more environmentally sensitive, cost-effective blowing agents that could produce high-quality foam.

Non-party Japanese Styrene Paper Company ("JSP") held a patent claiming a process for producing foam using non-CFC blowing agents. JSP filed a patent application for a patent on the

process in the United States Patent and Trademark Office (“PTO”) on April 19, 1968, which resulted in U.S. Patent No. 3,808,300 issued to Miyamoto, et al. (the “Miyamoto patent”).

In 1983, AVI began to develop alternatives to the CFC blown foams. An AVI employee, Mr. Fred Collins, became aware of the Miyamoto patent and initiated negotiations for a license to use the patented invention. On March 3, 1984, in a laboratory in Glens Falls, New York, AVI tested the feasibility of making foam by following the teachings of the Miyamoto patent and using isobutane as the non-CFC blowing agent. On March 14, 1984, AVI purchased a license to the Miyamoto patent from JSP. On August 22, 1984, at its Glens Falls, New York production facility, AVI made foam by following the teachings of the Miyamoto patent, again using isobutane as a blowing agent.

Subsequently, AVI began to develop a commercially viable process of producing foam using isobutane as a blowing agent. Because of safety concerns due to the flammability of isobutane, AVI abandoned the implementation of the process at its Glens Falls facility and, in the winter of 1985–86, built a new facility in Plymouth, Indiana. AVI began commercial production of isobutane-blown foam by September 1986, and by October 13, 1986, had sold 190 rolls of isobutane-blown polyethylene sheet foam.

Dr. Chung Park, a scientist at Dow, also developed a process for producing isobutane-blown foam, which resulted in the ’933 patent, the ’027 patent, and the ’361 patent (collectively the “Park patents”), of which Dow is the assignee. The inventions claimed in the Park patents are directed to plastic foam products and methods of making the foam. The ’933 patent claims the finished foam; the ’361 patent claims the chemical composition that may be expanded to form the finished foam; and the ’027 patent claims the process for making the foam from the precursor chemical composition. Dr. Park recognized that the choice of blowing agent was an important factor in the quality and long-term stability of the finished foam product. His recognition that the use of isobutane as a blowing agent in conjunction with a stability control agent known as glycerol monostearate (“GMS”) could be used to make quality foam led to the patents in suit. The parties agree, for purposes of this appeal, that Dr. Park conceived the claimed inventions in late August 1984.¹ Dr. Park actually reduced the claimed inventions to practice on September 13–14, 1984, and constructively reduced the claimed inventions to practice on December 24, 1985, by filing patent applications.

The Miyamoto patent was not considered by the PTO during the prosecution of the applications leading to the Park patents. In 1994, however, both Dow and AVI filed requests for Reexamination of the ’933 patent with the PTO, citing the Miyamoto patent, among other references. The PTO merged the two requests, with the Miyamoto patent being the primary reference of concern, and on September 10, 1996, issued Reexamination Certificate No. BI 4,640,933, thus concluding that the Park invention claimed in the ’933 patent was patentable over the Miyamoto patent under 35 U.S.C. §§ 102, 103, and 112. Reexamination of the ’361 and the ’027 patents was not requested.

¹ The parties apparently cannot agree on the exact date. While AVI asserts that the conception date was August 28, 1984, Dow asserts that the inventions were conceived on August 24, 1984. This four-day difference is, however, immaterial to resolving the issues before us.

II.

[Dow sued AVI for infringing the Park patent, and AVI filed counterclaims seeking a declaratory judgment of patent invalidity.] AVI moved for summary judgment that claim 3 of the '933 patent, claim 1 of the '027 patent, and claim 1 of the '361 patent were invalid under 35 U.S.C. § 102(g) based on AVI's making of the foam claimed in the Park patents prior to Park's conception and reduction to practice of the invention. The United States District Court for the Northern District of New York found that AVI presented clear and convincing evidence that it had made the inventions prior to Park's inventive efforts and that Dow raised no genuine issue of material fact to dispute this. Accordingly, the district court granted AVI's motion for summary judgment of invalidity. *Dow Chem. Co. v. Astro-Valcour, Inc.*, 110 F. Supp. 2d 104 (N.D.N.Y. 2000). ...

IV.

At the outset, we note that this case does not present a question of anticipation under § 102(a). The PTO, in its Reexamination of the '933 patent, concluded that the Miyamoto patent does not anticipate the '933 patent under § 102(a), and no party on this appeal urges that the Park patents are anticipated by the Miyamoto patent under § 102(a). The issue before us is anticipation under § 102(g).

“[I]f a patentee's invention has been made by another, prior inventor who has not abandoned, suppressed, or concealed the invention, § 102(g) will invalidate that patent.” *Apotex USA, Inc. v. Merck & Co.*, 254 F.3d 1031, 1035 (Fed. Cir. 2001). Our recent decision in *Apotex* clarified the burdens of proof and production the parties bear when the validity of a patent is challenged under § 102(g). In *Apotex*, we held that the challenger of the validity of a patent must establish prior invention by clear and convincing evidence. If the challenger does so, the burden of production shifts to the patentee to produce evidence sufficient to create a genuine issue of material fact as to whether the prior inventor abandoned, suppressed, or concealed the invention. If the patentee carries this burden of production, the challenger may rebut the evidence of abandonment, suppression, or concealment, with clear and convincing evidence to the contrary. *Id.* at 1037–38.

A.

Dow urges that the district court erred in invalidating the claims at issue under § 102(g). The record establishes that the foam made by AVI in March and August 1984 was made with polyethylene, an isobutane blowing agent, and a GMS stability control agent. The district court found that by making this foam AVI made a product, “meeting the limitations of the Park patents, as early as March 3, 1984, and in any event no later than August 22, 1984.” Dow has made no showing on appeal that the making of this foam did not meet the limitations of the claims-at-issue.

Because the foam made by AVI would infringe the Park patents if made after the Park invention, it anticipates in fact the relevant claims of the Park patents, since it was made before Park's invention. *Lewmar Marine, Inc. v. Barient, Inc.* 827 F.2d 744 (Fed. Cir. 1987), (“That which would literally infringe if later in time anticipates if earlier than the date of invention.”).

Thus, AVI's production of foam on March 3, 1984, and August 22, 1984, would invalidate the relevant claims of the Park patents, if the other requirements of § 102(g) were met.

However, Dow asserts that the district court nonetheless improperly invalidated the Park patents. Dow urges that § 102(g) does not apply to this case because no one at AVI qualifies as an "inventor" under § 102(g), since no one at AVI believed he invented anything during AVI's March and August 1984 activities. Dow points to statements made by AVI employees, concerning the foam they produced, that "it never occurred to us to take a patent for something that we already licensed from JSP"; "this technology was brought in from Japan"; and "the Japanese are the inventors of the Miyamoto process and the AVI employees were applying that process to AVI's own production of foam." Dow urges that an "inventor" must be a person who conceives of an invention and reduces it to practice, either actually (by making the invention) or constructively (by filing a patent application), and that because the version of § 102(g) in effect at the time the Park patents were secured applied only to prior makings of the invention by another inventor, prior art under § 102(g) is limited to prior makings by someone who conceived the invention and reduced it to practice.

Before enactment of the American Inventors Protection Act of 1999, Pub. L. no. 106-113, 113 Stat. 1501A-552, on November 29, 1999, § 102(g) prohibited an applicant from receiving a patent if, prior to the applicant's invention, "the invention was made in this country *by another*" 35 U.S.C. § 102(g) (1994) (emphasis added). The 1999 Act changed this language to: "the invention was made in this country *by another inventor*" 35 U.S.C. § 102(g)(2) (1994) (emphasis added). In other words, the language of the pre-1999 statute did not specifically require that the invention be made by a prior inventor. Dow contends, however, that the statute was always understood to apply only to inventors, since § 102(g) deals with interference disputes between inventors with competing claims to an invention. No legislative history exists to explain the 1999 change in the statutory language. We agree with Dow that under the pre-1999 version of the statute, as with the current version, it must be shown that an "inventor" made the claimed invention to establish a first-inventor defense under § 102(g). However, we disagree with Dow's contention that no one at AVI was an inventor.

Dow's argument is that even if AVI reduced the Park invention to practice in 1984, AVI nevertheless failed to conceive of any invention that occurred as a result of its 1984 testing and production of foam, and thus no one at AVI can be considered to be an inventor, as required by 102(g). Dow cites *Heard v. Burton*, 51 C.C.P.A. 1502, 333 F.2d 239, 251 (CCPA 1964), and *Silvestri v. Grant*, 496 F.2d 593, 597 (CCPA 1974), for the proposition that one cannot be an inventor without recognizing or appreciating that he invented something.

We disagree. *Heard* and *Silvestri* reveal the weakness of Dow's argument and support AVI's position that its employees are prior inventors under § 102(g). In *Heard*, our predecessor court held, in the context of an interference contest, that a party who first reduced to practice, but who "failed to recognize that he had produced a new form [of matter] ... is indicative that he never conceived the invention." 333 F.2d at 243. *Heard* had used a method known in the prior art to produce a catalyst of alumina and platinum to reform naphtha and accidentally produced a new form of catalyst, but did not realize he had produced the new catalyst in his reaction until four years later and two years after the opposing party in the opposition filed a patent application for the new catalyst. *Silvestri* concerned a priority dispute, also in the context of an interference proceeding, over the inventorship of a new form of an antibiotic known as ampicillin. There, the CCPA re-affirmed the *Heard* rule that "there is no conception or reduction to practice where there

has been no recognition or appreciation of the existence of the new form,” 496 F.2d at 597, but stated that *Heard* “does not require that [a prior inventor] establish that he recognized the invention in the same terms as those recited in the count. The invention is not the language of the count but the subject matter thereby defined. [The prior inventor] must establish that he recognized and appreciated [the] new form.” 496 F.2d at 599.

Thus, the cases establish that the date of the conception of a prior inventor’s invention is the date the inventor first appreciated the fact of what he made. These cases do not establish that an inventor must be the first to appreciate the patentability of the invention, and we hold that he need not be.

We find undisputed, clear and convincing evidence in the record that AVI’s employees immediately appreciated what they had made, and indeed its significance, when they made isobutane-blown foam in March and August 1984. AVI presented documentary evidence and the testimony of witnesses who observed the production of foam in 1984 that AVI employees were aware the foam was made with polyethylene, an isobutane blowing agent, and a GMS stability control agent. AVI’s witnesses testified that at the time of the testing and production they were “surprised” and “elated” at the ease of making the “beautiful,” “good” foam that they made in March 1984. On March 14, 1984, eleven days after the first test of isobutane-blown foam, AVI purchased a license to the Miyamoto patent, evidencing its confidence that its invention would work for its intended purpose.⁵ On August 27, 1984, five days after the production run in Glens Falls, Mr. Collins wrote to a representative of JSP to express his pleasure with the results of the August run, and his expectation that having a license to use the Miyamoto patent to produce foam would give AVI an advantage over the industry. Thus, we find that AVI clearly recognized and appreciated the existence of its new process and product. Whether AVI understood that it had produced a legally patentable invention is immaterial for purposes of § 102(g)(2). It is enough that the AVI employees appreciated the fact of their invention.

B.

Dow also asserts that, even if AVI is a prior inventor, AVI suppressed or concealed the invention such that its invention does not qualify as § 102(g) prior art... .

Our case law distinguishes between two types of abandonment, suppression, or concealment. *Apotex*, 254 F.3d at 1038. The first is implicated when an inventor actively abandons, suppresses, or conceals his invention from the public. *Fujikawa v. Wattanasin*, 93 F.3d 1559, 1567 (Fed. Cir. 1996). The second occurs when abandonment, suppression, or concealment may be inferred based upon the prior inventor’s unreasonable delay in making the invention publicly known. *Int’l Glass Co. v. United States*, 408 F.2d 395, 403 (Ct. Cl. 1969). The latter type is allegedly involved here. The failure to file a patent application, to describe the invention in a published document, or to use the invention publicly, within a reasonable time after first making the invention may constitute abandonment, suppression, or concealment.

⁵ That AVI needed a license to the Miyamoto patent to produce its isobutane-blown foam does not mean that AVI did not advance the art over the Miyamoto invention, but only that AVI’s/Dow’s invention was an improvement over the dominant Miyamoto patent.

Our case law has not set strict time limits regarding the minimum or maximum periods between a prior inventor's first making of the invention and the subsequent disclosure of the invention necessary to establish or infer suppression, or concealment. Although unreasonable delay in bringing knowledge of the invention to the public may raise an inference of suppression or concealment, "mere delay, without more, is not sufficient to establish suppression or concealment," *Young v. Dworkin*, 489 F.2d 1277, 1281 (CCPA 1974). Rather, "each case involving the issue of suppression or concealment must be considered on its own particular set of facts." *Paulik [v. Rizkalla]*, 760 F.2d 1270, 1275 (Fed. Cir. 1985) (*in banc*).

In its main brief, Dow urges that the two and one-half year delay between AVI's first making and publicly disclosing its invention "gives rise to a presumption that AVI abandoned, suppressed and concealed its alleged invention." Appellant's Brief at 38–39. Dow does not cite any authority holding that a delay of a certain length of time gives rise to presumption of abandonment, suppression, or concealment. We are not aware of any such authority and decline to create any such rule.

Dow further urges in its brief that because the two and one-half year period between AVI's reduction to practice and public disclosure of its invention allegedly "was solely because AVI was waiting until it could commercialize its product" and not because AVI was improving or modifying the invention; and therefore this delay in disclosing the invention cannot be excused. *Id.* at 39 (citing *Lutzker v. Plet*, 843 F.2d 1364, 1367–68 (Fed. Cir. 1988) and *Young v. Dworkin*, 489 F.2d 1277, 1281–82). We note that, unlike this case, both *Lutzker* and *Young* involved interference disputes between two inventors who both had filed patent applications. The issue in those cases was whether the prior inventor had abandoned, suppressed, or concealed his invention between first making it and filing his patent application. In *Lutzker* we held a long delay between a prior inventor's first reduction to practice and subsequent filing of a patent application may be excused if the inventor worked during that period to improve or perfect the invention disclosed in the patent application, *Lutzker*, 843 F.2d at 1367, accord *Young*, 489 F.2d at 1281, but if the inventor's activities during that period were directed only to commercialization and were not "reflected in his patent application," they could not be excused, *Lutzker* 843 F.2d at 1368, accord *Young*, 489 F.2d at 1281–82. In *Checkpoint [Systems v. U.S. International Trade Comm'n]*, 54 F.3d 756, 762–63 (Fed. Cir. 1995), we distinguished *Lutzker* on the ground that *Checkpoint* involved a prior inventor who did not file a patent application but who publicly disclosed his invention by commercializing it four years after first making it. In *Checkpoint*, we stated that "the public thus received the benefit of [the prior inventor's] invention promptly when Checkpoint's integral commercial system was brought to market. [The prior inventor] was under no duty to file a patent application and, although he may have failed to establish his own right to a patent, there was no lack of diligence in his attempts to make the benefit of his invention available to the public." *Id.* at 763.

Checkpoint establishes that "in cases in which an invention is disclosed to the public by commercialization, courts have excused delay upon proof that the first inventor engaged in reasonable efforts to bring the invention to market." *Id.* at 762. Here, AVI's public disclosure of its isobutane-blown foam invention occurred through commercialization of its foam. Dow has produced no evidence showing that AVI's efforts to commercialize its prior invention entailed any abandonment, suppression, or concealment of the invention. To the contrary, during the 30 months between first making the isobutane-blown foam and selling the foam, AVI actively and continuously took steps towards the commercialization of the foam, including the procurement of

financing to build a new production plant and the attention to safety considerations associated with using isobutane as a blowing agent. A prior inventor is not required to take the fastest route to commercialization, but only to make “reasonable efforts to bring the invention to market.” *Id.* Because the undisputed evidence shows that AVI made reasonable efforts towards commercialization, Dow has not shown, even *prima facie*, that AVI suppressed or concealed its invention.

Because there is no genuine issue of material fact, and AVI has produced clear and convincing evidence that it made the Park invention prior to Park’s date of invention and Dow has not produced any evidence that AVI abandoned, suppressed, or concealed the invention, we find the claims-at-issue of the Park patents are invalid under § 102(g)(2). We accordingly affirm the decision of the district court.

NOTES ON DOW CHEMICAL AND § 102(g)(2)

1. Why Doesn’t § 102(g) “Swallow” All the Priority Rules in pre-AIA § 102? One thought that occurs to many students when they first delve into pre-AIA § 102 is that subsection (g) seems to subsume the other two novelty subsections ((a) and (e)). The idea is that, before there is public use, knowledge, publication or a patent under subsection (a), or before there is a prior-filed patent application under subsection (e), there had to be prior invention. Thus, it might seem that § 102(g) would encompass all of the prior art material that qualifies under § 102(a) and (e). But this is not so. Careful examination shows that § 102(a) and (e) are broader than § 102(g) in the following ways:

First, § 102(a) allows the mere publication of information to create prior art, even if the disclosed invention has never been reduced to practice. Section 102(g) is narrower because it requires prior *invention*, defined as conception *plus reduction to practice* (either actual or constructive).

Second, § 102(e) allows material disclosed in other patents and patent applications to become prior art even if the other patent or application *does not claim the material*. By contrast, material in another patent or patent application can be considered under § 102(g) only where the material *is claimed*.

Third, § 102(a) imposes no territorial limits on the patents and printed publications that can qualify as prior art. For inventions not claimed in U.S. patents and patent applications, § 102(g) does impose a territorial limit. The invention must be made “in this country” to qualify for prior under § 102(g)(2).

Far from swallowing all novelty provisions in § 102, § 102(g) could be accurately summarized as having two main effects: (1) It controls priority disputes between competing patent applicants; and (2) it allows certain inventions that ultimately become publicly available (and that therefore are likely to be § 102(a) prior art) to gain an effective date as a prior art reference that is before the invention became public.

2. More “Secret” or “Backdated” Prior Art. Recall that § 102(e) has been criticized because it is a source of so-called “secret” or “backdated” prior art — art publicly unavailable as of its reference date. Section 102(g) is another source of such prior art.

However, under both § 102(e) and § 102(g), material does not qualify as prior art if it is destined to remain *permanently secret*. By excluding as abandoned, suppressed, or concealed material, § 102(g) demands that the prior art be on a trajectory for public disclosure. (See the caveats in notes 3 & 4 below.) Similarly, disclosures in an application do not constitute § 102(e) prior art unless the application is ultimately made public through publication of the application or issuance of the disclosure in a patent.

3. Noninforming Products Revisited. Recall in Chapter 5.C, *supra*, we discussed whether “noninforming” products can constitute part of the prior art. One possible solution — which the court in *Lockwood v. American Airlines*, 107 F.3d 1565 (Fed. Cir. 1997), seemed to adopt — is to exempt noninforming products from the normal requirements of the enablement standard of anticipation.

Another approach is seen in *Dunlop Holdings, Ltd. v. Ram Golf Corp.*, 524 F.2d 33 (7th Cir. 1975). The accused infringer in the case argued that Dunlop’s patent on golf balls covered with Surlyn (an artificial material that resists cuts) was invalid because, prior to Dunlop’s invention, an inventor named Butch Wagner made and sold similar Surlyn-covered golf balls. Wagner, however, kept his formula for making the golf balls secret, and an examination of the balls themselves would not necessarily reveal the secret. The case did not involve the enablement standard for anticipation because Wagner’s golf balls were asserted as prior art under § 102(g) and, as mentioned in the previous note, § 102(g) incorporates into the prior art an earlier inventor’s secret knowledge (which is enabling) provided that the earlier inventor had not “abandoned, suppressed, or concealed” the invention. The outcome in *Dunlop* thus turned on the suppression issue, and then-Judge (later Supreme Court Justice) John Paul Stevens set forth the court’s reasons for holding that, despite its secrecy, Wagner’s invention should not be considered suppressed for purposes of § 102(g):

There are three reasons why it is appropriate to conclude that a public use of an invention forecloses a finding of suppression or concealment even though the use does not disclose the discovery. First, even such a use gives the public the benefit of the invention. If the new idea is permitted to have its impact in the marketplace, and thus to “promote the progress of science and useful arts,” it surely has not been suppressed in an economic sense. Second, even though there may be no explicit disclosure of the inventive concept, when the article itself is freely accessible to the public at large, it is fair to presume that its secret will be uncovered by potential competitors long before the time when a patent would have expired if the inventor had made a timely application and disclosure to the Patent Office. Third, the inventor is under no duty to apply for a patent; he is free to contribute his idea to the public, either voluntarily by an express disclosure, or involuntarily by a non-informing public use. In either case, although he may forfeit his entitlement to monopoly protection, it would be unjust to hold that such an election should impair his right to continue diligent efforts to market the product of his own invention.

524 F.2d at 37. Stevens distinguished so-called “secret use” situations, where a machine or

process has been commercially exploited in secret — in such cases, the earlier invention and exploitation do not preclude a later inventor from obtaining a patent. *See id.* at 35-36 (citing *Gillman v. Stern*, 114 F.2d 28, 31 (2d Cir. 1940) (Hand, J.)). Note that, of the three policies given by Stevens, only the second policy can distinguish between secret uses and public but non-informing uses of inventions. Is it fair to presume that inventions will be relatively easy to reverse-engineer where the invention itself is available for study? If so, then *Dunlop* is consistent with the overarching principle that all prior art must be on a trajectory toward public disclosure.

4. The Timing of the Abandonment/Suppression/Concealment Inquiry. Read § 102(g)(2) carefully; it requires that “before [the applicant’s] invention thereof, the invention was made in this country by another inventor who *had* not abandoned, suppressed, or concealed it.” Why does the statute use “had” and not “has”? Does the inquiry concerning abandonment, etc. focus only on the period before the second inventor’s date of invention? In *Allen v. W. H. Brady Co.*, 508 F.2d 64, 67 (7th Cir. 1974), the court answered that question affirmatively:

As we read this language [in § 102(g)], the abandonment is irrelevant unless it occurred “before the applicant’s invention.” The use of the pluperfect tense — “had not abandoned” — plainly refers to an abandonment which occurred “before the applicant’s invention.”

Yet that interpretation of § 102(g) seems inconsistent with the way that both the *Peeler* and *Dow* courts calculated the relevant delay. In *Peeler*, the court found suppression based on a four-year delay but, if events after the second invention are irrelevant, then the time period should have been less than two years. Similarly, the *Dow* court considered AVI’s period of concealment as extending from 1984 to 1986, even though the *Dow* inventor completed his work in 1984 and filed in 1985. *See also Checkpoint Systems v. U.S. International Trade Comm’n*, 54 F.3d 756, 762 n.6 (Fed. Cir. 1995) (considering actions by a first inventor that occurred after a second invention in determining abandonment); *International Glass Co. v. United States*, 408 F.2d 395 (Ct. Cl. 1969) (same).

Despite this apparent inconsistency with Federal Circuit precedent, some lower courts continue to cite and to follow *Allen* as if it were good law. *See, e.g., System Mgmt. Arts, Inc. v. Avesta Techs., Inc.*, 87 F. Supp. 2d 258, 265 (S.D.N.Y. 2000); *Oak Indus., Inc. v. Zenith Electronics Corp.*, 726 F. Supp. 1525, 1533 (N.D. Ill. 1989).

The stakes on this point are fairly high. If the analysis in *Allen* is correct, then § 102(g) permits courts to invalidate patents on the basis of prior art that *would have never become public*. For example, under *Allen*, if a first inventor is trying to decide what to do with his invention when a second inventor concludes her work, any patent issued to the second inventor is invalid even if the first inventor subsequently decided to abandon his work. In contrast, if *Allen* is wrong on the timing issue, then § 102(g) merely pushes back the effective date of prior art that, one way or another, is eventually disclosed to the public.

Despite the analysis of the verb tense in *Allen*, the better view is probably that abandoned, suppressed or concealed work never qualifies under § 102(g), even if the abandonment occurs after the second invention. While “Congress’ use of a verb tense is significant in construing statutes,” *United States v. Wilson*, 503 U.S. 329, 333 (1992), it is not

necessarily determinative. *See, e.g., Costello v. INS*, 376 U.S. 120, 125 (1964). The traditional hostility of patent law to secret prior art and the overarching goal of achieving progress in publicly available knowledge seem better guides to the meaning of § 102(g) than the possible implications of the pluperfect tense.

5. “Made in this Country by Another Inventor.” Would an invention made in this country qualify as prior art under 102(g)(2) even if the inventor who thought up the invention remained *outside* “this country”? No, the court ruled in *Solvay S.A. v. Honeywell Intern’l, Inc.*, 622 F.3d 1367 (Fed. Cir. 2010). Honeywell International contracted with Russian engineers, who performed research and developed the relevant invention in Russia. Thereafter, the information about the invention was conveyed to Honeywell, and its engineers duplicated the invention in the United States. The court explained why the work of Honeywell in the U.S. (including the work of its U.S. employees) did not qualify as prior art under § 102(g)(2):

In this case, Honeywell did not have, or formulate, a definite and permanent “idea” of its own capable of being reduced to practice. Rather, it reproduced the invention previously conceived and reduced to practice by [the Russian engineers] in Russia. Such reproduction cannot be conception because, if it were, the result would be that one who simply followed another inventor’s instructions to reproduce that person’s prior conceived invention would, by so doing, also become an “inventor.” Although the district court declined to read the “originality” requirement of 35 U.S.C. § 102(f) into § 102(g), originality is, nevertheless, inherent to the notion of conception. ... Since it is undisputed that Honeywell did not originate the invention, but reproduced it in the United States by following [the Russians’] instructions, Honeywell cannot be said to have conceived of the invention and cannot, consequently, be an inventor for purposes of § 102(g)(2).

Id. at 1377–78. Would the making of the invention in the United States have qualified as prior art under § 102(g)(2) if Honeywell had flown the Russians to the United States and they had re-made the invention here? What if the Russians never came to the U.S. but supervised via video link other U.S. employees who made the invention?

Though *Solvay* involved foreign invention, a similar scenario could arise even if all of the activity occurs domestically. Consider the following:

1. Employee A of a Big Corporation conceives of an invention and writes down complete blueprints for the invention.
2. Employee A abandons the project and leaves Big Corp.
3. Employee B of Big Corp. makes the invention from the blueprints.

It is settled law that an actual reduction to practice is required (sooner or later) for an invention to

be considered “made” for purposes of § 102(g)(2). B, but not A, did make the product, but B is clearly not an inventor.

6. Foreign Activities and § 102(g). *Solvay* also highlights the very different approaches to foreign inventive activity taken by parts (1) and (2) of § 102(g). As *Solvay* shows, § 102(g)(2) looks exclusively to domestic U.S. activities. By contrast, where § 102(g)(1) applies — i.e., within an interference — foreign inventive activities (conception, diligence, and reduction to practice) may be used to prove a date of invention “to the extent permitted by [pre-AIA] section 104.” Pre-AIA § 104 now allows inventors to rely on foreign activities in all WTO countries to prove their dates of invention. This aspect of § 104 is required by Article 27 of the TRIPS agreement, which precludes WTO countries from discriminating as to place of invention (provided the place of invention is within any WTO country).

As the modern bifurcation of § 102(g) dramatically demonstrates, there is a strong traditional bias against using foreign non-documentary activities as prior art. This bias continued in pre-AIA U.S. patent law even after the changes wrought by TRIPs and the trend toward internationalization. Only with the enactment of the AIA has this bias been eliminated.

AN ECONOMIC PERSPECTIVE ON § 102(g) PRIOR ART

As we have seen, § 102(g) can be a source of so-called “secret” or “backdated” prior art: While § 102(g) prior art must be on a trajectory toward public disclosure, it may have an effective date prior to the time when it becomes public. Thus, a diligent inventor seeking to find all relevant prior art will simply not be able to find some § 102(g) material. Inventors might accurately view such secret prior art as a “wild card” that can emerge without warning to destroy their patent rights. One important question is whether such prior art will diminish the incentives to invent. To answer that question, we consider separately the uses of § 102(g) inside and outside of interferences. The two uses are separated because inside interferences § 102(g) is being used merely to allocate patent rights between parties; outside interferences, it can be used to destroy patent rights altogether. Yet the two situations actually have much in common.

1. Section 102(g) Inside Interferences. The possibility of becoming involved in an interference undoubtedly diminishes the incentives to invent. Only one party can win an interference so, inevitably, patent rights have to be denied to at least one party who invested in inventing the subject matter. *Ex ante*, rational inventors will discount expected patent rewards by the possibility that they will become involved in, and lose, an interference.

However, a similar sort of discounting occurs in every patent system, *including patent systems that follow a first-to-file rule and that have nothing similar to § 102(g)*. The root cause of the discounting here is the race to invent, not the interference. No patent system can perfectly eliminate patent races; first-to-file systems merely decide the winners of such races with greater administrative ease. But some rule must decide priority, and there will still be losers. *Ex ante*, firms underwriting research will discount expected patent rewards by the possibility that other firms may beat them to the finish line.

Thus, the apparent disincentives created by the use of § 102(g) in interferences are really the disincentives associated with any race to innovate. Those disincentives are unavoidable in any system that permits competition to obtain property rights in innovation. Indeed, we may

legitimately question whether the effect is properly considered a net disincentive. The threat of losing creates a disincentive to enter the race, but it also creates an incentive for speed once the competitor decides to enter.

2. Section 102(g) Outside Interferences. Once we realize that the disincentives associated with applying § 102(g) inside interferences are unavoidable, we can understand the argument for applying the statute more generally. Where § 102(g) is applied outside of interferences, a race to innovate has also occurred. The only difference is that one party sought to protect the invention through the patent system; the other did not. (The other party may have thought the invention unpatentable as seems to be the case in *Dow*; alternatively, the other party may have thought that the advantage of being first on the market with the innovation — a so-called “first mover” advantage — would provide sufficient protection.)

Once again the apparent disincentives caused by § 102(g) are really unavoidable: At least one inventor will be disappointed with the outcome of the innovation race and, *ex ante*, the possibility of such disappointment reduces the incentives to enter the race (though, as noted above, it also creates incentives for speed once the race has been entered). Restricting the application of § 102(g) to interferences would mean that the disincentive to enter innovation races will fall only on parties who do not seek patents. That rule might force more inventors into the patent system, but it would not eliminate the basic disincentive to enter the race. Therefore we can justify restricting § 102(g) to interferences only if we have some general reason to prefer patentees over those who are willing make public their inventions without patent protection.

Our initial instincts may be that, if any party should be favored, it should be the party willing to make the invention public without patent protection. Patents impose some governmental restrictions that raise the price of goods above competitive levels. Furthermore, patents create enforcement costs that are not entirely borne by the patentee. (Since the PTO funds its administrative operations through patent fees, patentees may bear the full administrative costs associated with patent prosecution, but they clearly do not bear the full costs of infringement actions. The accused infringer must pay an attorney, and the trivial court costs assessed litigants do not cover the costs of running the judicial system.) Finally, in some cases, § 102(g) prior art may provide a useful check on errors in the patent system. For example, in *Dow*, the employees of AVI did not believe that they had invented anything; they thought their work obvious extensions of the prior art. While the PTO disagreed with that assessment, perhaps the judgment of the AVI employees (who are knowledgeable in the art and have every incentive to seek patents for their inventions) casts some doubt on the decision of the PTO (which is staffed by bureaucrats who may have incentives to issue, rather than to deny, patents). The argument here is not that the AVI employees should get to decide the issue of obviousness (which is not, and should not be, the law). It is merely that § 102(g) prior art cases may encompass many marginal inventions, where the incentives of the patent system are not so important. Thus, permitting § 102(g) to apply (and thus to destroy patent rights) is not so troubling.

The matter is not so one-sided, however, for there are at least two arguments for preferring patentees over non-patentees. First, patents are sometimes justified as a means for encouraging *post-patent* investments that are necessary to develop a new technology further and to bring the technology to the market. See, e.g., Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J. L. & ECON. 265 (1977). One implication of this theory is that the law should systematically favor awarding patent rights because otherwise firms may not have the

proper incentives to develop a new technology into a commercially viable product. A case such as *Dow* — where the non-patentee has actually developed a commercial product — shows that this concern is not always present. *See also Thomson, S.A. v. Quixote Corp.*, 166 F.3d 1172 (Fed. Cir. 1999) (§ 102(g)(2) prior art found in the unpatented features of MCA Disco-vision laser discs, which were developed into a widely available commercial product during the 1970's).

A second reason to prefer patentees may be that patents decrease the costs of information and are therefore preferable to other forms of public disclosure. Patents are a readily available, organized and easily searched system of technical information. Once again, the point here cannot be stated in absolute terms. Some forms of public disclosure are equally effective in informing the art, and patent applications remain secret for a substantial period, which diminishes the efficiency with which they inform the art. (Note, for example, that AVI had been selling its product for months prior to the issuance of Dow's first patent. *See U.S. Pat. No. 4,640,933* (Feb. 3, 1987).) But still, the patent system does disseminate information more effectively than many hard-to-search forms of prior art.

In the final analysis, the arguments for and against favoring patentees may be of relatively equal weight. With no strong reason to prefer patentees absolutely, the law does not bar non-patentees from seeking protection under § 102(g). As discussed in *Dow*, however, the burdens on non-patentees are greater than on patent applicants involved in interferences: The patentee is protected by the presumption of patent validity, and the non-patentee can overcome that presumption only with clear and convincing evidence. By contrast, the law does discriminate dramatically against inventors who practice their inventions as trade secrets; they receive no protection from § 102(g), for they are viewed as having abandoned, suppressed or concealed their inventions.

3. Third-party § 102(g) Prior Art and Search Costs. In *Dow*, the § 102(g) prior art had been created by the infringement defendant. The case thus looked somewhat similar to an interference in that the assignees of the two inventors were fighting to obtain certain rights to the invention. Moreover, the party asserting the § 102(g) prior art, AVI, did not have to search long and hard to find the relevant prior art because it had created the art.

In cases where the relevant § 102(g) prior art was created by some third party, however, the costs of finding § 102(g) prior art may be substantial. We would accordingly expect such cases to be rare and, in fact, that does seem to be true. Only a small number of cases have considered § 102(g) prior art that has been created by third parties. The facts of those cases tend to be highly unusual. In some, for example, the third party actually had some relationship with the ultimate patentee; the information was therefore easier to find because it was discoverable during litigation.¹ In others, the third-party prior art was not difficult to find.² Cases involving truly

¹ *See, e.g., Checkpoint Systems v. U.S. International Trade Comm'n*, 54 F.3d 756 (Fed. Cir. 1995) ("third party" § 102(g) prior art created by another employee in the patentee's firm, but the employee had not agreed to assign his inventions to the firm); *Monsanto Co. v. Mycogen Plant Sci., Inc.*, 261 F.3d 1356 (Fed. Cir. 2001) (firm responsible for third-party § 102(g) prior art was later purchased by patentee firm); *In re Bass*, 474 F.2d 1276 (C.C.P.A. 1973) (§ 102(g) prior art was created by certain members of the inventive entity responsible for the patent application at issue).

² *See, e.g., Thomson v. Quixote Corp.*, 166 F.3d 1172 (Fed. Cir. 1999), where the third-party prior art was the original MCA Disco-vision laser discs technology, which debuted in December of 1972 with much

obscure § 102(g) prior art are rare.³ They arise only in situations where the litigation stakes are sufficiently high that the accused infringer has an incentive to seek out relatively obscure prior art. See *In re Bass*, 474 F.2d 1276, 1286 n. 7 (C.C.P.A. 1973) (Rich, J.) (suggesting that §§ 102(g)/103 defenses were not used much in the preceding 20 years because “it is a rare case where the effort of going back to the date of invention of a prior inventor is worth the cost.”). As a result, the availability of such § 102(g) prior art will not greatly impact the incentives to invent because the probability of having a patent invalidated on those grounds is so small.

3. Calculation of Invention Dates Outside of Interferences

As previously mentioned, § 102(g)’s priority framework applies more generally for determining the time of invention for all of the novelty subsections of § 102. Let us clarify this point as much as possible.

Subsections (a) and (e) of § 102 take as their critical date the date of invention, and only references with effective dates prior to the critical date are considered in determining novelty. Thus, an applicant who is confronted by an apparently anticipatory reference can overcome the reference by proving a date of invention prior to the reference’s effective date (*e.g.*, prior to a § 102(a) reference’s publication date, or a § 102(e) reference’s filing date). How will the applicant’s date of invention be determined in such cases? The answer is to apply the § 102(g) concepts of conception, diligence, and reduction to practice, by analogy.

These principles are contained in a very important Patent Office rule, known as Rule 131, codified at pre-AIA 37 C.F.R. § 1.131. The purpose of the rule is to allow a patent applicant to show invention before the date of a prior art reference — to “swear behind” or “antedate” the reference. The rule reads as follows:

§ 1.131. Affidavit or declaration of prior invention.

(a) When any claim of an application or a patent under reexamination is rejected, the inventor of the subject matter of the rejected claim, the owner of the patent under reexamination, or the party qualified under §§ 1.42, 1.43, or 1.47, may submit an appropriate oath or declaration to establish invention of the subject matter of the rejected claim prior to the effective date of the reference or activity on which the rejection is based. The effective date of a U.S. patent, U.S. patent application publication, or international application publication under PCT Article 21(2) is the

fanfare, *see, e.g., MCA Demonstrates New Disco-Vision for Use on Standard Home TV Sets*, AMERICAN CINEMATOGRAPHER (Feb. 1973) (available at www.blamlld.com/DiscoVision/AmericanCinematographer0273.htm).

³ *Oak Indus., Inc. v. Zenith Electronics Corp.*, 726 F. Supp. 1525 (N.D. Ill. 1989), is a relatively unusual example where obscure third-party § 102(g) art is used to invalidate a patent. However, the result in *Oak Industries* is undermined by the court’s reliance on *Allen v. W. H. Brady Co.*, 508 F.2d 64 (7th Cir. 1974), which, as discussed in the notes following *Dow*, seems inconsistent with current Federal Circuit law. Another frequently cited case on third-party art under § 102(g), *Int’l Glass Co. v. United States*, 408 F.2d 395 (Ct. Cl. 1969), actually held that the relevant prior invention was not § 102(g) prior art because it had been abandoned, suppressed or concealed.

earlier of its publication date or date that it is effective as a reference under 35 U.S.C. 102(e). Prior invention may not be established under this section in any country other than the United States, a NAFTA country, or a WTO member country. Prior invention may not be established under this section before December 8, 1993, in a NAFTA country other than the United States, or before January 1, 1996, in a WTO member country other than a NAFTA country. Prior invention may not be established under this section if either:

(1) The rejection is based upon a U.S. patent or U.S. patent application publication of a pending or patented application to another or others which claims the same patentable invention as defined in § 1.601(n); or

(2) The rejection is based upon a statutory bar.

(b) The showing of facts shall be such, in character and weight, as to establish reduction to practice prior to the effective date of the reference, or conception of the invention prior to the effective date of the reference coupled with due diligence from prior to said date to a subsequent reduction to practice or to the filing of the application. Original exhibits of drawings or records, or photocopies thereof, must accompany and form part of the affidavit or declaration of their absence satisfactorily explained.

37 C.F.R. § 1.131 (2001).

Note the two limitations on the use of Rule 131 contained in subsection (a)(1) and (a)(2). First, as subsection (a)(1) establishes, Rule 131 cannot be used where the allegedly anticipatory reference is a U.S. patent or U.S. patent application that claims the same invention. In those circumstances, an interference must be declared. The test for determining whether the two U.S. patents or patent applications claim the same invention is spelled out in 37 C.F.R. § 41.203(a) (stating that an interference exists “if the subject matter of a claim of one party would, if prior art, have anticipated or rendered obvious the subject matter of a claim of the opposing party and vice versa”).

Second, Rule 131 cannot be used where the examiner has rejected the patent application based on a statutory bar (§§ 102(b), (c), or (d)). The reason here is straightforward. The statutory bar subsections of § 102 do not depend at all on the date of the applicant’s invention. Therefore, proving an earlier date of invention does nothing to overcome the rejection.

While subsection (b) of Rule 131 suggests that the rules for establishing a date of invention to antedate prior art are generally similar to the priority rules in determining interference priorities under § 102(g), there are some important differences, as the following case demonstrates.

IN RE MOORE

444 F.2d 572 (Fed. Cir. 1987)

[On November 24, 1964, the appellant Earl Moore filed a patent application claiming a new chemical compound. The patent examiner rejected the application under § 102(a) on the basis of an article in a British chemistry journal published in December of 1963. The article did not disclose a utility for the compound.

To overcome the 102(a) rejection, Moore filed a Rule 131 affidavit demonstrating that he had identified and prepared the compound prior to the effective date of the British article. The affidavit did not, however, allege that Moore had discovered any utility for the compound prior to the article's effective date. Reaffirming the § 102(a) rejection, the examiner ruled that Moore's affidavit failed to prove invention prior to the article's effective date, and the Patent Office Board of Appeals (as the appellate board was then known) affirmed.

On appeal to the CCPA, the issue was framed as whether the Supreme Court's decision in *Brenner v. Manson*, 383 U.S. 519 (1966) (*see* Chapter 3, *supra*) undermined the CCPA's prior decision in *In re Wilkinson*, 304 F.2d 673 (CCPA 1962). *Wilkinson* had held that, in order to overcome a reference that disclosed a chemical compound but not a utility for it, the affidavits of the patent applicants had to prove only that they made and identified the compound prior to the date of the reference, not that they had found a use for the compound.]

BALDWIN, JUDGE.

The question of the pertinency of the *Brenner v. Manson* decision may be disposed of rather easily. We are of the opinion that that case is not sufficiently in point to be considered as controlling with regard to the narrow issue as we have defined it... .

The narrow holding in *Manson* was that a chemical process is not "useful" in the sense of 35 USC 101 unless the product of that process has a specific practical utility. That holding may be extrapolated to the further ruling that a chemical compound is not "useful" in the sense of the patent law merely because it is a chemical compound. Indeed, later cases of this court have held that even where the compound is readily recognizable as an intermediate for chemical synthesis, it is not "useful" unless the product of that synthesis possesses the requisite utility. *See In re Kirk*, 376 F.2d 936 (CCPA 1967); *In re Joly*, 376 F.2d 906 (CCPA 1967). Similarly, certain language in the *Manson* opinion may be interpreted as holding that a claimed process cannot be fully reduced to practice so as to justify an award of priority or the grant of a patent until a use for the product is discovered if one is not already obvious.

The fact remains, however, that the decision in *Manson* was made in the context of a priority contest between two inventors, one of whom was a patentee. The cases before us, on the other hand, are dealing with the ex parte question of patentability to a single inventive entity. The references are publications, no other inventors are involved, and nobody is trying to provoke an interference... .

A reference cited under [§ 102(a) or (e)] is not considered as "evidence" of a prior act of invention by someone else (although, in the case of subject matter disclosed and claimed in a patent such might be true). Rather it is cited as indicating that the particular subject matter disclosed therein is not "new", in the sense that it is already within the domain of public

knowledge. The language of § 102(a) and (e) thus makes it clear that if the applicant can prove “invention” on his part prior to the effective date of the reference, that reference will be overcome as a bar to patentability. Rule 131 and its predecessor, Rule 75, were promulgated to provide an applicant with a vehicle by which he can present evidence of such prior “invention”. Thus, part (a) of Rule 131 requires the applicant to “make oath to facts showing a completion of the invention” before the effective date of the reference. Part (b) of the rule requires that showing of facts to be such as to establish prior reduction to practice or prior conception “coupled with due diligence” to a subsequent reduction to practice, either actual or constructive. This parallels the requirements for establishing the completed act of invention in an interference proceeding, as authorized in the provisions of § 102(g) and sanctioned by many years of court-accepted practice.

It is the above-mentioned parallel with interference procedure that seems to be the stumbling block in the particular area of the law involved in the instant appeals. The assumption manifest in the solicitor’s interpretation of the requirements of the rule is that an applicant establishes prior “invention” only when he shows the completion of those acts which would justify an award of priority to the applicant in an interference with the inventor of the subject matter disclosed in the reference (assuming that the effective date of the reference was the earliest date to which that inventor would be entitled). Placing the Patent Office position in a statutory context, under the interpretation set out above, it translates to the following propositions: that wherever the act of invention is referred to in the patent statutes it must be presumed that Congress intended that act to possess the same essential elements; that the most comprehensive definition of the act of invention is that developed out of the law surrounding 35 USC 102(g); and that the proof of “prior invention” to remove a reference, whether it be cited under 35 USC 102(a) or 102(e), necessarily requires prior completion of every element of the act of invention (subject of course to the exceptions involving diligence).

Accepting the logic of the Patent Office position however, requires that one ignore certain basic important distinctions between an interference proceeding on the one hand and an ex parte proceeding to obtain a patent on the other. In the former, one party is nearly always going to prevail, a patent will issue, and the knowledge pertaining to the involved invention will very likely become public and be exploited under the protection of that patent. In an ex parte proceeding, however, the principal question is the applicant’s right to a patent under the statute. The public may well gain knowledge only when a patent is granted. It happens to be the law that where there has been public disclosure by another of the subject matter of a patent claim along with enough enabling description to place the capability of preparing that subject matter within the possession of the public at a time prior to an applicant’s filing date, such publication will prima facie negative novelty in the subject matter and prevent its being claimed directly in a patent. *In re Wilder*, 429 F.2d 477 (CCPA 1970); *In re Brown*, 329 F.2d 1006 (CCPA 1964). Such a disclosure in an application would not, however, give an applicant the statutory right to a patent, even if there were no anticipating reference, unless that disclosure were also accompanied by a satisfactory description of how to use the claimed subject matter if such is not already obvious. 35 USC 112. *In re Hafner*, 410 F.2d 1403 (CCPA 1969). In a situation such as we have before us, where the applicants have, in their applications, fully satisfied the statutory requirements for obtaining a patent, in effect offering to give the public more than was described in the reference, policy considerations totally different from those prevailing in a priority contest command that the Patent Office logic be rejected... .

The basis of the *Wilkinson* decision was, simply, that an applicant need not be required to show any more acts with regard to the subject matter claimed than can be carried out by one of

ordinary skill in the pertinent art following the description contained in the reference. The discovery or identification of a chemical compound and the determination of how to make it are significant inventive acts with regard to that compound. Under the *Wilkinson* rationale, the third inventive act (i.e., the determination of a practical utility when one is not obvious), need not have been accomplished prior to the date of a reference unless the reference also teaches how to use the compound it describes. That case holds that an applicant may be compelled to prove only that he had prior possession of “the thing itself” in order to remove a reference which shows no more than that to the public. We believe that holding is consistent with the provisions of 35 USC 102(a) and are convinced that it is appropriate in view of the policy considerations we find governing in this set of circumstances... .

[I]t should be clear that, under *Wilkinson*, the “conception” and “reduction to practice” which must be established under [Rule 131] need not be the same as what is required in the “interference” sense of those terms. The parallel to interference practice found in Rule 131(b) should be recognized as one of convenience rather than of necessity... .

Reversed.

NOTES ON ANTEDATING PRIOR ART

1. Incomplete Symmetry Between the Interferences and Rule 131 Practice. The underlying issue in *Moore* arises because of the rule from *In re Hafner* (cited above and reproduced in Chapter 5.C, *supra*): An inventor cannot file a patent application claiming a new chemical compound until she finds a utility for the compound, but a prior art reference can anticipate the compound even though the reference does not disclose a utility. If that rule seems harsh, its effect is ameliorated, at least to some extent, by *Moore*, which allows inventors to antedate the prior art without proof of utility. Thus, the asymmetry that *Moore* creates between interferences and Rule 131 practice, which favors inventors, may be viewed as a response to the enablement asymmetry mandated by *Hafner*, which hurts inventors.

2. Finding Uses for New Compounds. Under *Moore*, will an inventor who was the first to identify and make a new chemical, and who later is the first to discover a use for it, invariably be able to obtain a patent on the chemical, notwithstanding intervening public disclosures of the chemical? If novelty were the only condition to patentability, the answer would be yes. If such an inventor filed promptly after the discovery of the utility, she could rely on *Moore* to antedate any intervening public disclosures and could thereby obtain the patent. But in addition to the novelty requirements, the patent applicant also has to overcome the statutory bars in pre-AIA § 102(b), including the bar on filing more than one year after the invention is disclosed in a printed publication, and *Hafner* is good law for applying the statutory bars. (In *Moore*, the article in the British chemistry journal was published less than a year prior to Moore’s filing.) Thus, an inventor first to make a new chemical has only one year after a public disclosure of that chemical to find a utility for the chemical. If none is found, no product patent can ever issue on the chemical. Note that this rule provides an incentive for inventors to keep a discovery of a new chemical secret until a use for the chemical is found.

3. Partial Versus Whole Invention. Where an applicant claims more subject matter than a reference discloses, must the applicant prove that she possessed her entire invention prior to the effective date of the reference, or only that portion of her invention disclosed in the reference?

From the logic of *Moore*, you should be able to guess the answer: The inventor need only have possessed that portion disclosed in the reference. *See In re Stempel*, 241 F.2d 755 (C.C.P.A. 1957). In *Stempel*, an applicant claiming an entire chemical genus needed to overcome a reference disclosing one species in the genus. The court held that the reference could be overcome by a Rule 131 affidavit showing that, prior to the effective date of the reference, the applicant had reduced to practice one chemical species disclosed by the reference. As the court explained:

When a reference is not a statutory bar, Rule 131 provides a procedure by which the applicant is permitted to show, if he can, that his date of invention was earlier than the date of the reference. The rule must be construed in accordance with the rights given to inventors by statute and this excludes a construction permitting the further use of a reference as a ground of rejection after all pertinent subject matter in it has been antedated to the satisfaction of the Patent Office.

Id. at 760.

4. Reference Removed if Obvious From Inventor's Work. Where a reference reveals an embodiment that is not identical to, but would be obvious in light of, the applicant's invention, the reference can be removed by a Rule 131 affidavit. Another way of stating this is that the law applies an "obviousness" test of possession with respect to the invention described in the affidavit when comparing that invention to the matter described in the reference. *See, e.g., In re Dardick*, 496 F.2d 1234 (C.C.P.A. 1974); *In re Stryker*, 435 F.2d 1340 (C.C.P.A. 1971).

5. No Corroboration Requirement. We have previously seen that, in infringement actions where the validity of an issued patent is challenged, the courts have held that the uncorroborated testimony of a single witness is never sufficient to invalidate a patent. *See Finnigan Corp. v. ITC*, 180 F.3d 1354, 1366–70 (Fed. Cir. 1999). Similarly, in an interference, the testimony of an alleged inventor as to inventive activities must be corroborated. *See Mikus v. Wachtel*, 504 F.2d 1150 (C.C.P.A. 1974); *Hahn v. Wong*, 892 F.2d 1028, 1032–33 (Fed. Cir. 1989). However, in antedating prior art, *no* corroboration is required. As the PTO's Manual of Patent Examining Procedure states:

[I]n interference practice, conception, reasonable diligence, and reduction to practice require corroboration, whereas averments made in a 37 CFR 1.131 affidavit or declaration do not require corroboration; an applicant may stand on his own affidavit or declaration if he so elects. *Ex parte Hook*, 102 USPQ 130 (Bd. App. 1953).

MPEP § 715.07 (<http://www.uspto.gov/web/offices/pac/mpep/s715.html>). Neither the MPEP nor *Hook* provides a rationale for not requiring corroboration. The doctrine here may seem to show a pro-patent bias: Corroboration is required where parties would invalidate a patent with prior art, but not where a patent applicant is trying to swear behind an allegedly prior art reference. Note, however, that any bias is relatively weak, for a patent applicant cannot use Rule 131 affidavits to remove the statutory bars in pre-AIA § 102(b), so the inventor can remove only those public disclosures that occur within the year prior to the filing of the application.

Moreover, in filing a Rule 131 affidavit, the inventor cannot simply make flat allegations

such as “I reduced to practice prior to the effective date of the reference.” As one court put it, “The Patent Office must have such facts as will enable it and its reviewing courts to judge whether there was construction and when it occurred, or whether there was diligence.” *In re Harry*, 333 F.2d 920, 922 (C.C.P.A. 1964). And a court will apply many of the same rigorous standards regarding conception, diligence, etc., as it does generally in determining priority. *See, e.g., In re Mulder*, 716 F.2d 1542, 1545 (Fed. Cir. 1983) (applicant’s attempt to antedate a reference using a Rule 131 affidavit fails where the applicant cannot claim diligence during a two-day period between the effective date of the reference and the date of constructive reduction to practice).

Finally, note that false statements in a Rule 131 affidavit can have severe consequences — for example, the patent may be declared invalid and an antitrust cause of action may lie with accused infringers for intentionally fraudulent procurement of the patent. *See* Chapter 10.D, “Inequitable Conduct,” *infra*.

F. § 102(f): DERIVATION FROM ANOTHER

CAMPBELL v. SPECTRUM AUTOMATION CO.

513 F.2d 932 (6th Cir. 1975)

PHILLIPS, CHIEF JUDGE.

Milford A. Campbell, the patentee of United States patent No. 3,002,600, brought this action against Spectrum Automation (Spectrum) for infringement. Spectrum counterclaimed, contending that the patent was invalid and that it therefore could not be infringed. District Judge Cornelia G. Kennedy held the patent to be invalid on a number of grounds. We affirm on one of these grounds that Campbell was not the inventor of the patent in suit. The patent discloses an article that is used in material handling as a flexible feed track. [See Figure 6-2, *infra*.]

Briefly described, wire is wound in closely adjacent loops around a square or rectangular mandrel and then coated with a flexible covering such as polyvinyl chloride. It is necessary to machine a groove through the length of this assembly to remove the article from the mandrel. Besides serving the purpose of releasing the assembly from the mandrel, the groove provides a useful access to the interior of the feed track. The resulting product, known as “Open-Flex,” consists of individual metal segments bound together by the flexible coating. This invention is described in claim 3 as follows:

3. A flexible feed track for delivering articles by gravity along an irregular path comprising a plurality of hollow formed, segmental frame members disposed side by side along the length of said track and joined together by a bonded flexible coating, said frame members and said coating defining a way for articles to be delivered by said track, each of said frame members having spring-like characteristics so as to alter the cross-section defined thereby when a force is applied thereto and return to its original shape when the force is removed so as to cooperate with the inherent flexibility of said coating to permit said track to be formed torsionally and accurately as required to conduct said articles along a desired path of travel.

3,002,600

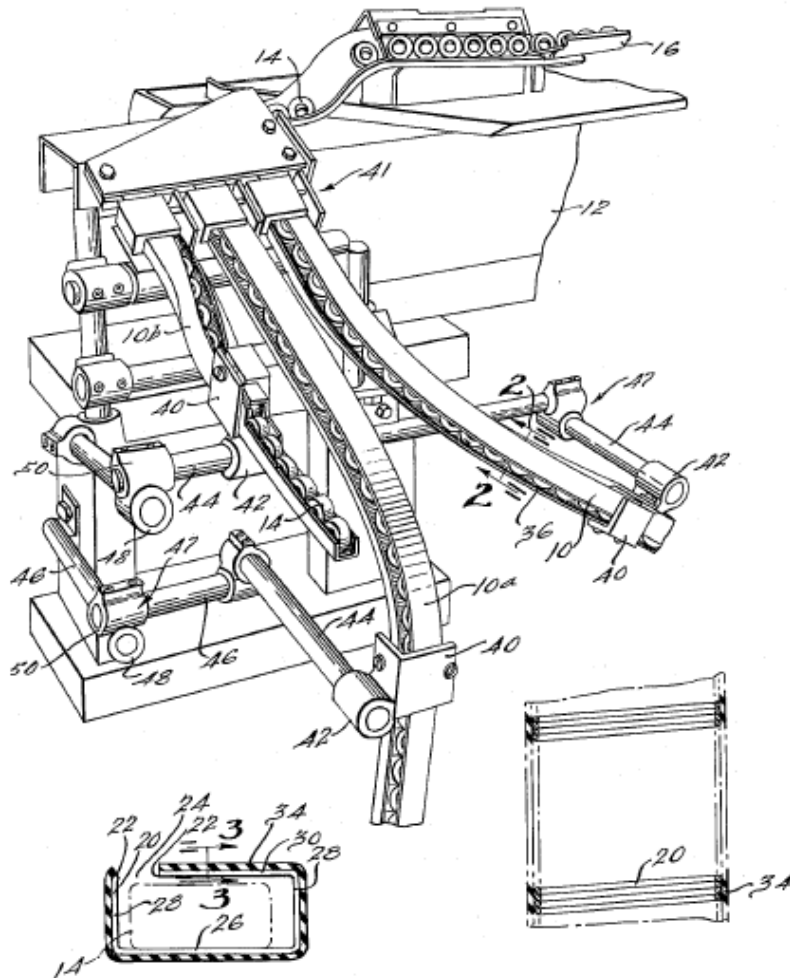


Figure 6-2 The Flexible Feed Track and Details of Spring Coils (20)

The two principals in this action, Richard Zimmerman and Campbell, both possess a high degree of technical expertise in this area. Zimmerman, who is now president of Spectrum, originally worked for Campbell and Campbell Machines Company during the period when Open-Flex was conceived. Later he formed his own company, Spectrum, and began to produce the product "Maxi-Flex," which Campbell contends infringes the patent in suit.

The only issue which we reach on this appeal concerns the identity of the true inventor of the flexible feed track. In the counterclaim for declaratory judgment of invalidity, Zimmerman alleged that he, not Campbell, was the true inventor of Open-Flex. If this is true, the patent would

be invalid under the provisions of 35 U.S.C. § 102(f), which states that a “person shall be entitled to a patent unless ... he did not himself invent the subject matter sought to be patented,”

The testimony in the District Court concerning inventorship is summarized in the following paragraphs. In early 1958, Campbell Machines Company received a purchase order for a number of storage feeders. Zimmerman was given the job of preparing the manufacturing information for the feeders and releasing the designs to the production shop. Although most of the feeder components were standard and had been produced previously, the lack of working space in the plant where the feeders were to be installed necessitated a new style of feed track.

Open-Flex was designed to fill this need. There is conflicting testimony as to the source of this idea and its reduction to practice. Campbell testified that confronted with this problem, he conceived the invention of Open-Flex just as it was later manufactured and patented, and that he gave full directions to Zimmerman as to how to manufacture it. These directions, he said, included the slot and were complete in all respects. [The trial judge] found this testimony not to be credible and expressly stated that: “The Court does not believe Mr. Campbell’s testimony.”

Zimmerman’s testimony included an express denial that he had ever been given such directions by Campbell. Zimmerman testified that he discussed with his father, who was an experienced and skilled tool and die maker, the problem of providing a flexible feed track to carry out the feeding function. Although the younger Zimmerman was also a tool and die maker, he did not know at that time that a spring could be wound in a rectangular shape. In the discussion with his father, Zimmerman reviewed hoses and tubes which use a spring wire spirally-wound body covered with a flexible coating, such as a vacuum hose. While with a previous employer Zimmerman had seen spirally-wound feed track or feed chutes. These were sometimes wrapped with electrical tape. Zimmerman’s father was wearing a spring tension belt buckle at that time with a rectangular cross-section. From this belt buckle Zimmerman conceived the idea of a spirally-wound, rectangularly-shaped feed track, a flexible feed track with a rectangular cross-section. Zimmerman’s father helped Zimmerman wind such a track which Zimmerman then showed to Campbell.

[The trial judge] made a finding of fact that Zimmerman’s testimony was a true statement of the events described, saying “The Court believes the testimony of Mr. Zimmerman.”

The winding of the coil is only part of the invention. After the coil is wound it must be removed from the mandrel. Zimmerman’s version, which also was corroborated by a coworker, was that “the slot was incorporated into the manufacturing process because of the inability to get the wound wire spring off the square mandrel.” [The trial judge] accepted this version and discredited Campbell’s testimony that “the slot was a part of his original invention as he conceived it.”

When the slot is created, the coherent spring is severed into as many segments as there are loops. To keep these from falling apart the flexible coating is applied prior to the slotting operation. [The trial judge] credited the testimony that this process was conceived by Zimmerman, rather than by any action on the part of Campbell.

Neither party had strong supporting evidence to corroborate his oral testimony. Neither Campbell nor Zimmerman had notes, journals or other records of their work. The corroboration which did exist supported Zimmerman. He produced a photograph of his father, taken at about

the time of the invention, which showed his father standing in front of a lathe, wearing the rectangular shaped, spiral wound belt buckle. This belt buckle was introduced into the record as an exhibit, was a part of the evidence considered by [the trial judge] and has been examined by this court.

Zimmerman's testimony concerning this belt buckle was as follows:

Q Now, what instructions if any did Mr. Campbell give you to make the first model?

A None.

Q How and when did you get the concept of making a spiral wound spring feed tube with coating?

A I conceived the basic idea at the home of my parents while discussing the problem of flexible feed track with my father... .

Q Now, I show you Exhibit 45 and ask you what relation if any does that exhibit have with the making of the first open-flex model?

A This particular exhibit is a belt my father was wearing that Friday night that we discussed the flexible feed track problem. Actually, my sight of the spring wire-wound buckle was the starting concept of coming up with an answer for flexible feed track. I had never seen rectangularly wound springs before and this particular belt buckle caused me to ask my father why we couldn't wind such a rectangular spring, and his indication was, at that point was there was no reason as long as the lathe and the spring winding attachment could be adapted to it.

Q You said you had never seen rectangular wound spring wire. You mean at the time you made your first model.

A That's right. At the time I saw this belt, this was the first time I ever even imagined it would be done or could be done... .

Q Now, is there any relation between the belt of Exhibit 45 and 44?

A Exhibit 44, the picture of my father, shows him wearing the belt.

Another witness, who was also employed by Campbell Machines Company at the time of the invention, corroborated the testimony that the covering did not bond to the first prototype, and that the slot was machined primarily for the purpose of removing the track from the mandrel, both in accordance with Zimmerman's testimony.

The District Court recognized that this corroboration was circumstantial, but found that in view of all the evidence Spectrum had met the "heavy burden" of proving that Zimmerman, not Campbell, was the true inventor.

Campbell contends that, in spite of the express factual findings of the District Court, the

validity of the patent is established as a matter of law by the statutory presumption of validity, 35 U.S.C. § 282, and by the related requirement that oral testimony must be corroborated.

Section 282 requires that: “A patent shall be presumed valid. The burden of establishing invalidity of a patent shall rest on a party asserting it.” This provision codifies the law prior to its enactment, *see* S. Rep. No. 1979, 82d Cong., 2d Sess. (2 U.S. Code Cong. & Ad. News, pp. 2394, 2422 (1952)). Even though this presumption makes patentees “heavily favored as a class of litigants,” *Blonder-Tongue Laboratories, Inc. v. University of Illinois Foundation*, 402 U.S. 313, 335 (1971), it leaves unspecified the quantum of proof necessary to meet the “burden of establishing invalidity.”

The Supreme Court first commented on the presumption of validity in *Coffin v. Ogden*, 85 U.S. (19 Wall.) 120, 124 (1873), stating that “every reasonable doubt” should be resolved against the party asserting invalidity. Oral testimony of unpatented prior art was found in that case to defeat the patent. The Supreme Court emphasized that the unreliability of such oral testimony “[brings] the case made by the appellees within the severest legal tests which can be applied” *Id.* at 125. Subsequently *Cantrell v. Wallick*, 117 U.S. 689 (1886), involved a contention of prior use sought to be proven by oral testimony. The Court again held that “every reasonable doubt” should be resolved against the party asserting invalidity. *Id.* at 696. In *The Barbed Wire Patent*, 143 U.S. 275, 284 (1891), the Court held that when an unpatented device, the existence and use of which are sought to be established by oral testimony, is set up as a complete anticipation of a patent, the proof sustaining it must be “clear, satisfactory and beyond a reasonable doubt.” ...

The source of the “clear and convincing” standard springs from these early decisions, wary of the dangers of accepting parol evidence exclusively to prove facts which are established more reliably by documentary evidence... .

Consideration of the record in the present case convinces us that the evidence is sufficiently strong to satisfy the “clear and convincing” standard, and that the District Court was correct in finding that Spectrum has carried this “heavy burden.”

Campbell’s assertion that the proof is insufficient as a matter of law because of the need for corroboration also must fail... . It is to be emphasized that in the present case there is not a complete lack of corroboration. The circumstantial evidence heretofore summarized in this opinion, including the father’s belt buckle, substantiates Zimmerman’s testimony. We hold that [the trial judge’s] findings of fact and determinations of credibility, coupled with the corroboration, sustain the heavy burden necessary to establish that Zimmerman, not Campbell, is the true inventor.

Since the patent is invalid because Campbell is not the true inventor, it is unnecessary to reach the other issues of validity or infringement decided adversely to Campbell in the District Court.

Affirmed.

NOTES ON DERIVATION

1. Derivation: A Simple Inquiry. Unlike the other provisions of § 102, which contain somewhat complicated rules, § 102(f) involves a fairly straightforward rule: No one is entitled to a patent if the invention was derived from someone else's work. The other person's work may be public or private, written or oral, domestic or foreign. In all circumstances, the patent law does not reward the thief.

Because § 102(f) demands a global inquiry, any foreign act may be used to establish derivation without regard to the pre-AIA statutory provisions that prohibit reliance on foreign activities to establish a date of invention (specifically, the pre-AIA § 104). *See* P. J. Federico, *Commentary on the New Patent Act*, 35 U.S.C.A. (1952), at 24. *See also* *Hedgewick v. Akers*, 497 F.2d 905, 908 (C.C.P.A. 1974) (“[T]he testimony presented on behalf of Hedgewick relating to acts, knowledge, or use of the invention in Canada was admissible for the purpose of the derivation issue”).

2. Heavy Burdens: Standards of Proof and the Corroboration Requirement. The Federal Circuit has created rules demanding corroboration of witness testimony in order to invalidate a patent, and those rules apply equally where the alleged ground of invalidity is derivation. *See* *Price v. Symsek*, 988 F.2d 1187, 1194 (Fed. Cir. 1993). Moreover, an issued patent is protected by the presumption in § 282, which requires clear and convincing evidence to invalidate a patent.

Where a patent has not yet issued — for example, in an interference between co-pending applications, where one party is alleged to have derived the invention from the other party — the presumption in § 282 and the clear and convincing standard of proof do not apply. *See* *Bosies v. Benedict*, 27 F.3d 539, 542 (Fed. Cir. 1994). In such cases, a party charging derivation must prove the charge by a mere preponderance of the evidence. *See* *Davis v. Reddy*, 620 F.2d 885, 889 (C.C.P.A. 1980). However, the corroboration requirement does still apply. *See id.* A charge of derivation requires proof of prior conception by another, and allegations of conception require corroboration even in proceedings governed by the preponderance of the evidence standard. *See* *Mikus v. Wachtel*, 504 F.2d 1150 (C.C.P.A. 1974); *Hahn v. Wong*, 892 F.2d 1028, 1032–33 (Fed. Cir. 1989).

In determining whether corroborating evidence is sufficient, however, the Federal Circuit has followed a “rule of reason” approach. *See* *Price v. Symsek*, 988 F.2d at 1195. What was the corroborating evidence in *Campbell*? Was it sufficient? Why didn't the court discuss one very important piece of circumstantial evidence — that Campbell applied for a patent and Zimmerman didn't?

3. How Much Help Is Too Much: The Agawam Rule. In *Campbell*, both the named inventor and his employee claimed to have thought of the invention without any assistance from the other. The testimony of Campbell and Zimmerman was diametrically opposed, and the case turned on who was lying. Thus, the *Campbell* court did not discuss an issue that is important in many derivation cases, which is whether, assuming the inventor did receive some assistance from another person, the assistance rendered was sufficient to establish the other person as the true inventor. For further discussion of inventorship issues, *see* Chapter 11.A, *infra*, “Inventorship and Misjoinder.”

An early Supreme Court case addressing this issue is *Agawam Co. v. Jordan*, 74 U.S. (7 Wall.) 583 (1869). There the accused infringer alleged that the inventor named in the patent had received valuable suggestions from one of his employees and that those suggestions were essential to Goulding's completion of the patented invention. The Court held that, even accepting those allegations as true, they were insufficient to prove derivation. Such suggestions, the Court held, can defeat an issued patent only if they "embraced the plan of the improvement" and "would have enabled an ordinary mechanic, without the exercise of any ingenuity and special skill on his part, to construct and put the improvement in successful operation." *Id.* at 602–603.

In *Agawam*, the inventor had already begun experiments to produce his improved machine when he received the suggestions from his employee, and the employee had been specifically hired to help in the experiments. *See id.* at 602. *Agawam* has not, however, been limited to its facts; it has been read as stating a general test for derivation. *See, e.g., Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573 (Fed. Cir. 1997). Note that the *Agawam* test is consistent with the general standard for anticipation: Help from another does not constitute derivation unless it (1) encompasses the "plan of the improvement" — i.e., possesses all the elements of the invention — and (2) is fully enabling.

One final caveat: Suggestions *not* encompassing the whole plan of the invention may sometimes be used as prior art for obviousness analysis under § 103. *See Oddzon Products, Inc. v. Just Toys, Inc.*, 122 F.3d 1396 (Fed. Cir. 1997); *see also* the pre-AIA's version of 35 U.S.C. § 103(c) (exempting § 102(f) materials from nonobviousness analysis where such materials and the invention at issue were commonly owned or assigned at the time of invention).

4. Shop Rights and Joint Inventors. Under some circumstances, an employer who employs someone specifically to invent retains a "shop right" in the employee's inventions even if the employee is not under a contractual duty to assign inventions to the employer. Why did Campbell not argue that his company had a shop right in Zimmerman's invention? (Hint: look at Zimmerman's job description.)

It is also possible in some cases for those in Zimmerman's position to argue that they are joint inventors with the patentee. Each joint inventor has an undivided partial interest in the invention, and each can exploit it fully without permission of the other joint owner(s). For more on this, and the shop right mentioned above, *see* Chapter 11.B, *infra*. Nevertheless, it is quite clear that ownership must never be confused with inventorship. For example, in *O.M.S., Inc. v. Dormont Mfg. Co.*, 39 U.S.P.Q.2d 1151, 1152 (W.D. Pa. 1996), a case in which an inventor named his business partners as co-inventors because "that's the way we did things [in our partnership]," the court awarded summary judgment of invalidity under § 102(f) for misjoinder of inventors.

How do written employment/assignment agreements interact with § 102(f) challenges? *Cf. Q.G. Prods., Inc. v. Shorty, Inc.*, 992 F.2d 1211 (Fed. Cir. 1993) (applying the doctrine of assignor estoppel (see Chapter 12) to prevent assignor from challenging validity of patent under § 102(f) by virtue of alleged exclusion of an inventor from patent application). Should assignees be permitted to eliminate a § 102(f) defense by contract? If they could not, how would that affect the market for assignable inventions?

5. A Case Study of Derivation: The Original Digital Computer. A famous instance of derivation involved the first multi-purpose, programmable digital computers. Two early researchers at the University of Pennsylvania, Eckert and Mauchly, filed a patent covering this technology, which they claimed to have developed in the course of constructing their ENIAC computer. But in a later patent suit, a district court in Maryland determined that in fact the two inventors had derived some of their ideas from Professor John Atanasoff, a researcher at Iowa State University. For a thorough review of the matter, which supports the trial court's decision on derivation, see ALICE R. BURKS & ARTHUR W. BURKS, *THE FIRST ELECTRONIC COMPUTER: THE ATANASOFF STORY* (1988). *See also* CLARK MOLLENHOFF, *ATANASOFF: FORGOTTEN FATHER OF THE COMPUTER* (1988). Interestingly, the lack of a basic patent on digital computer design may actually have helped speed the development of the industry. *See* Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839 (1990).