

CHAPTER TWENTY
**Requirements for Patent
Protection: Novelty**



35 U.S.C. 102 Conditions for patentability; novelty.

[Editor's Note: Applicable to any patent application subject to the first inventor to file provisions of the AIA. See 35 U.S.C. 102 (pre-AIA) for the law otherwise applicable.]

(a) Novelty; Prior Art.—A person shall be entitled to a patent unless—

- (1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention; or**
- (2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.**

(b) Exceptions.—

(1) Disclosures Made 1 Year or Less Before the Effective Filing Date of the Claimed Invention.—A disclosure made 1 year or less before the effective filing date of a claimed invention shall not be prior art to the claimed invention under subsection (a)(1) if—

- (A) the disclosure was made by the inventor or joint inventor or by another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor; or**
- (B) the subject matter disclosed had, before such disclosure, been publicly disclosed by the inventor or a joint inventor or another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor.**

(2) Disclosures Appearing in Applications and Patents.—A disclosure shall not be prior art to a claimed invention under subsection (a)(2) if—

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

(c) Common Ownership under Joint Research Agreements.—Subject

matter disclosed and a claimed invention shall be deemed to have been owned by the same person or subject to an obligation of assignment to the same person in applying the provisions of subsection (b)(2)(C) if—

- (1) the subject matter disclosed was developed and the claimed invention was made by, or on behalf of, 1 or more parties to a joint research agreement that was in effect on or before the effective filing date of the claimed invention;**
- (2) the claimed invention was made as a result of activities undertaken within the scope of the joint research agreement; and**
- (3) the application for patent for the claimed invention discloses or is amended to disclose the names of the parties to the joint research agreement. . . .¹**

Introduction

Editors of intellectual property casebooks generally begin the section on novelty by saying that the law involved is not a model of clarity. They are right. The Patent Act jumbles together provisions on novelty and statutory bars to patentability. The section on non-obviousness, which we will deal with in the next chapter, is not limpidly clear either. And then, into this existing fog, came the America Invents Act, which dramatically changed the United States from a first-to-invent, to a first-to-file system. Joy.

But there is a simple set of ideas to get into one's head that makes the whole thing a lot easier to understand.

- Novelty and statutory bar are both provisions that bar patentability because the public already “has” the invention and so we do not need—and should not grant—the statutory monopoly of the patent.
- The fundamental question in *novelty* is whether *someone else* has already invented the thing you are trying to patent and has either patented it, sold it, offered it to the public or described it in a printed publication. If *they* have then *you* do not get the patent.
- The fundamental question in *statutory bar* is whether *you* have done something to reveal the details of *your own* invention and have done it long enough ago and publicly enough, that the public already has access to the invention. If *you* have then *you* do not get the patent.
- Both provisions are subject to limitations—some statutory and some common law—that aim to make sure we do not punish inventors for doing things we want them to do, like experimenting with their inventions to make sure they work, or publishing their work less than a year in advance of the patent, or collaborating with other inventors who are under a joint research agreement.

Not so hard, really?

Onto this basic frame we add the America Invents Act and the move to first to file. In the statutory supplement there appears—courtesy of the USPTO—an annotated set of the statutory provisions applicable to pre-AIA and post-AIA patents. We are not going to

¹ [USPTO] Note: “The provisions of 35 U.S.C. 102(g), as in effect on March 15, 2013, shall also apply to each claim of an application for patent, and any patent issued thereon, for which the first inventor to file provisions of the AIA apply (see 35 U.S.C. 100 (note)), if such application or patent contains or contained at any time a claim to a claimed invention which is not subject to the first inventor to file provisions of the AIA.” This is not the entire text of § 102. You can find that in your statutory supplement.

recapitulate all that here. Two larger points bear mentioning, however.

First, it is possible to overstate the changes produced by the AIA. Yes, the AIA fundamentally changes the patent law of the United States, particularly the rules of *priority*—what times matter in determining who gets the patent. But the novelty defense to patentability applies both to patents filed before and after the AIA. (Though the versions of the section governing novelty, § 102, are different, as we noted above.) Pre-AIA, if Joe has invented something and started selling it and Fred tries to file for a patent on the same invention, novelty bars the patent. Post-AIA? Fred gets to the USPTO first. Joe has been out there for a couple of years selling his invention, but has never bothered to file? Novelty bars the patent. There are differences to be sure, huge ones. For example, in cases where someone else has invented and not yet made the invention public or sold it, and is scooped by the quicker filer. Or in the dates applicable to determining priority, or the point at which we tell the person filing that prior art discovered after their filing will not defeat the patent. But both before and after the AIA, if an invention is truly non-novel (and we will learn what that means) then it cannot be patented. (Bonus question: is that fundamental result constitutionally required?)

Second, while the AIA certainly changed some fundamental aspects of the patent system, it was careful to retain a lot of the old statutory language. This means that courts (and inventors) can continue to rely on the body of case law that has elucidated that language.

1.) Novelty: Basics

Gayler v. Wilder
51 U.S. 477 (1850)



Mr. Chief Justice TANEY delivered the opinion of the court.

Three objections have been taken to the instructions given by the Circuit Court at the trial, and neither of them is, perhaps, entirely free from difficulty. . . .

The [third] question is upon the validity of the patent on which the suit was brought.

It appears that James Conner, who carried on the business of a stereotype founder in the city of New York, made a safe for his own use between the years 1829 and 1832, for the protection of his papers against fire; and continued to use it until 1838, when it passed into other hands. It was kept in his counting-room and known to the persons engaged in the foundery; and after it passed out of his hands, he used others of a different construction.

It does not appear what became of this safe afterwards. And there is nothing in the testimony from which it can be inferred that its mode of construction was known to the person into whose possession it fell, or that any value was attached to it as a place of security for papers against fire; or that it was ever used for that purpose.

Upon these facts the court instructed the jury, “that if Conner had not made his discovery public, but had used it simply for his own private purpose, and it had been finally forgotten or abandoned, such a discovery and use would be no obstacle to the taking out of a patent by Fitzgerald or those claiming under him, if he be an original, though not the first, inventor or discoverer.”

The instruction assumes that the jury might find from the evidence that Conner’s safe was substantially the same with that of Fitzgerald, and also prior in time. And if the fact was so, the question then was whether the patentee was “the original and first inventor or discoverer,” within the meaning of the act of Congress.

The act of 1836, ch. 357, § 6, authorizes a patent where the party has discovered or invented a new and useful improvement, "not known or used by others before his discovery or invention." And the 15th section provides that, if it appears on the trial of an action brought for the infringement of a patent that the patentee "was not the original and first inventor or discoverer of the thing patented," the verdict shall be for the defendant.

Upon a literal construction of these particular words, the patentee in this case certainly was not the original and first inventor or discoverer, if the Conner safe was the same with his, and preceded his discovery.

But we do not think that this construction would carry into effect the intention of the legislature. It is not by detached words and phrases that a statute ought to be expounded. The whole act must be taken together, and a fair interpretation given to it, neither extending nor restricting it beyond the legitimate import of its language, and its obvious policy and object. And in the 15th section, after making the provision above mentioned, there is a further provision, that, if it shall appear that the patentee at the time of his application for the patent believed himself to be the first inventor, the patent shall not be void on account of the invention or discovery having been known or used in any foreign country, it not appearing that it had been before patented or described in any printed publication.

In the case thus provided for, the party who invents is not strictly speaking the first and original inventor. The law assumes that the improvement may have been known and used before his discovery. Yet his patent is valid if he discovered it by the efforts of his own genius, and believed himself to be the original inventor. The clause in question qualifies the words before used, and shows that by knowledge and use the legislature meant knowledge and use existing in a manner accessible to the public. If the foreign invention had been printed or patented, it was already given to the world and open to the people of this country, as well as of others, upon reasonable inquiry. They would therefore derive no advantage from the invention here. It would confer no benefit upon the community, and the inventor therefore is not considered to be entitled to the reward. But if the foreign discovery is not patented, nor described in any printed publication, it might be known and used in remote places for ages, and the people of this country be unable to profit by it. The means of obtaining knowledge would not be within their reach; and, as far as their interest is concerned, it would be the same thing as if the improvement had never been discovered. It is the inventor here that brings it to them, and places it in their possession. And as he does this by the effort of his own genius, the law regards him as the first and original inventor, and protects his patent, although the improvement had in fact been invented before, and used by others.

So, too, as to the lost arts. It is well known that centuries ago discoveries were made in certain arts the fruits of which have come down to us, but the means by which the work was accomplished are at this day unknown. The knowledge has been lost for ages. Yet it would hardly be doubted, if any one now discovered an art thus lost, and it was a useful improvement, that, upon a fair construction of the act of Congress, he would be entitled to a patent. Yet he would not literally be the first and original inventor. But he would be the first to confer on the public the benefit of the invention. He would discover what is unknown, and communicate knowledge which the public had not the means of obtaining without his invention.

Upon the same principle and upon the same rule of construction, we think that Fitzgerald must be regarded as the first and original inventor of the safe in question. The case as to this point admits, that, although Conner's safe had been kept and used for years, yet no test had been applied to it, and its capacity for resisting heat was not known; there was no evidence to show that any particular value was attached to it after it passed from his possession, or that it was ever afterwards used as a place of security for papers; and it

appeared that he himself did not attempt to make another like the one he is supposed to have invented, but used a different one. And upon this state of the evidence the court put it to the jury to say, whether this safe had been finally forgotten or abandoned before Fitzgerald's invention, and whether he was the original inventor of the safe for which he obtained the patent; directing them, if they found these two facts, that their verdict must be for the plaintiff. We think there is no error in this instruction. For if the Conner safe had passed away from the memory of Conner 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 Fitzgerald made his discovery by his own efforts, without any knowledge of Conner's, he invented an improvement that was then new, and at that time unknown; and it was not the less new and unknown because Conner's safe was recalled to his memory by the success of Fitzgerald's.

We do not understand the Circuit Court to have said that the omission of Conner to try the value of his safe by proper tests would deprive it of its priority; nor his omission to bring it into public use. He might have omitted both, and also abandoned its use, and been ignorant of the extent of its value; yet, if it was the same with Fitzgerald's, the latter would not upon such grounds be entitled to a patent, provided Conner's safe and its mode of construction were still in the memory of Conner before they were recalled by Fitzgerald's patent.

The circumstances above mentioned, referred to in the opinion of the Circuit Court, appear to have been introduced as evidence tending to prove that the Conner safe might have been finally forgotten, and upon which this hypothetical instruction was given. Whether this evidence was sufficient for that purpose or not, was a question for the jury, and the court left it to them. And if the jury found the fact to be so, and that Fitzgerald again discovered it, we regard him as standing upon the same ground with the discoverer of a lost art, or an unpatented and unpublished foreign invention, and like him entitled to a patent. For there was no existing and living knowledge of this improvement, or of its former use, at the time he made the discovery. And whatever benefit any individual may derive from it in the safety of his papers, he owes entirely to the genius and exertions of Fitzgerald.

Upon the whole, therefore, we think there is no error in the opinion of the Circuit Court, and the judgment is therefore affirmed.

Mr. Justice McLEAN, dissenting. [Omitted.]

Questions:

1.) We invite you to muse on the business of a “stereotype founder.”

2.) In one of its key passages, the opinion says:

For if the Conner safe had passed away from the memory of Conner 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 Fitzgerald made his discovery by his own efforts, without any knowledge of Conner's, he invented an improvement that was then new, and at that time unknown; and it was not the less new and unknown because Conner's safe was recalled to his memory by the success of Fitzgerald's.

What does this tell you about the basic concept of novelty? Is it a metaphysical question of true priority in invention—in the sense that if we discovered a hidden stash of papers

showing that someone had developed calculus 100 years before Leibniz and Newton, we would say they were the “true inventor of calculus”? Or is it a question of meaningful public access? If the latter, how does that square with the wording of the Intellectual Property Clause?

2.) Novelty: Novel to whom?

Gayler has the following interesting clause:

And if the jury found the fact to be so, and that Fitzgerald again discovered it, we regard him as standing upon the same ground with the discoverer of a lost art, *or an unpatented and unpublished foreign invention*, and like him entitled to a patent.

With those words, it indicates the thrust of U.S. novelty doctrine—patents are defeated if there is already meaningful access for the American public and American inventors. *Gayler* assumes, reasonably in 1850, that unpatented and unpublished foreign inventions are, for all practical purposes, unavailable to American consumers and inventors. That idea was later given statutory form. The pre-AIA version of § 102 contained these words:

A person shall be entitled to a patent unless—

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or
- (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. . . .

What of an invention that was being sold in Bulgaria, but had not been patented there, nor described in a printed publication, nor been made known to, or sold to the American public? Could that same invention be patented in the United States? The answer is yes.

After the AIA, the section was amended to read as follows:

- (1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention

There will still be questions of interpretation for the courts to flesh out. What does “available to the public” mean? What if it is on a Bulgarian e-commerce site? In a local neighborhood store in the countryside? But clearly some of the distinctions between foreign and domestic have been removed.

Questions:

- 1.) What role do search costs have in the analysis of novelty? Why remove the sharp distinction between foreign and domestic uses? How does the Internet change our assumptions about what information, and what products, are available to American inventors and consumers?
- 2.) How should the courts interpret “printed publication” in the online world? What about a prestigious scientific journal that is only made available online? A Russian physicist’s blog?

3.) Novelty: Anticipation of Every Element

Coffin v. Ogden
85 U.S. 120 (1873)



Mr. Justice SWAYNE stated the case, recited the evidence, and delivered the opinion of the court.

The appellant was the complainant in the court below, and filed this bill to enjoin the defendants from infringing the patent upon which the bill is founded. The patent is for a door lock with a latch reversible, so that the lock can be applied to doors opening either to the right or the left hand. It was granted originally on the 11th of June, 1861, to Charles R. Miller, assignee of William S. Kirkham, and reissued to Miller on the 27th of January, 1863. On the 10th of June, 1864, Miller assigned the entire patent to the complainant. No question is raised as to the complainant's title, nor as to the alleged infringement by the defendants. The answer alleges that the thing patented, or a material and substantial part thereof, had been, prior to the supposed invention thereof by Kirkham, known and used by divers persons in the United States, and that among them were Barthol Erbe, residing at Birmingham, near Pittsburg, and Andrew Patterson, Henry Masta, and Bernard Brossi, residing at Pittsburg, and that all these persons had such knowledge at Pittsburg. The appellees insist that Erbe was the prior inventor, and that this priority is fatal to the patent. This proposition, in its aspects of fact and of law, is the only one which we have found it necessary to consider.

Kirkham made his invention in March, 1861. This is clearly shown by the testimony, and there is no controversy between the parties on the subject.

It is equally clear that Erbe made his invention not later than January 1st, 1861. This was not controverted by the counsel for the appellant; but it was insisted that the facts touching that invention were not such as to make it available to the appellees, as against the later invention of Kirkham and the patent founded upon it. This renders it necessary to examine carefully the testimony upon the subject.

Erbe's deposition was taken at Pittsburg upon interrogatories agreed upon by the parties and sent out from New York. He made the lock marked H.E. He made the first lock like it in the latter part of the year 1860. He made three such before he made the exhibit lock. The first he gave to Jones, Wallingford & Co. The second he sent to Washington, when he applied for a patent. The third he made for a friend of Jones. He thinks the lock he gave to Jones, Wallingford & Co. was applied to a door, but is not certain.

Brossi. In 1860 he was engaged in lockmaking for the Jones and Nimmick Manufacturing Company. He had known Erbe about seventeen years. In 1860 Erbe was foreman in the lock shop of Jones, Wallingford & Co., at Pittsburg. In that year, and before the 1st of January, 1861, he went to Erbe's house. Erbe there showed him a lock, and how it worked, so that it could be used right or left. He says: "He (Erbe) showed me the follower made in two pieces. One piece you take out when you take the knob away. The other part—the main part of the follower—slides forward in the case of the lock with the latch, so you can take the square part of the latch and turn it around left or right, whichever way a person wants to." He had then been a lockmaker eight years. He examined the lock carefully. He had never seen a reversible lock before. He has examined the exhibit lock. It is the same in construction. The only difference is, that the original lock was made of rough wrought iron. It was a complete lock, and capable of working. Erbe thought it a great thing. . . .

Masta. In 1860 he was a patternmaker for Jones, Wallingford & Co. Had known

Erbe fourteen or fifteen years. Erbe showed him his improvement in reversible locks New Year's day, 1861. He examined the lock with the case open. "You had to pull out the spindle, and the hub was fitted so that it would slide between the spindle and the plate and let the latch forward." . . . "The whole hub was made of three pieces. One part was solid to the spindle or hub shanks, and then the hub that slides between the plate and case, and a washer at the other side of the spindle." "There is not a particle of difference between the exhibit and the original lock. It is all the same." He identifies the time by the facts that he commenced building a house in 1861, and that year is marked on the water conductor under the roof. . . .

The case arose while the Patent Act of 1836 was in force, and must be decided under its provisions. The sixth section of that act requires that to entitle the applicant to a patent, his invention or discovery must be one "not known or used by others before his invention or discovery thereof." The fifteenth section allowed a party sued for infringement to prove, among other defences, that the patentee "was not the original and first inventor of the thing patented, or of a substantial and material part thereof claimed to be new."

The whole act is to be taken together and construed in the light of the context. The meaning of these sections must be sought in the import of their language, and in the object and policy of the legislature in enacting them. The invention or discovery relied upon as a defence, must have been complete, and capable of producing the result sought to be accomplished; and this must be shown by the defendant. The burden of proof rests upon him, and every reasonable doubt should be resolved against him. If the thing were embryotic or inchoate; if it rested in speculation or experiment; if the process pursued for its development had failed to reach the point of consummation, it cannot avail to defeat a patent founded upon a discovery or invention which was completed, while in the other case there was only progress, however near that progress may have approximated to the end in view. The law requires not conjecture, but certainty. If the question relate to a machine, the conception must have been clothed in substantial forms which demonstrate at once its practical efficacy and utility. The prior knowledge and use by a single person is sufficient. The number is immaterial. Until his work is done, the inventor has given nothing to the public. In *Gayler v. Wilder* the views of this court upon the subject were thus expressed: "We do not understand the Circuit Court to have said that the omission of Conner to try his safe by the proper tests would deprive it of its priority; nor his omission to bring it into public use. He might have omitted both, and also abandoned its use and been ignorant of the extent of its value; yet if it was the same with Fitzgerald's, the latter would not, upon such grounds, be entitled to a patent; provided Conner's safe and its mode of construction were still in the memory of Conner before they were recalled by Fitzgerald's patent." Whether the proposition expressed by the proviso in the last sentence is a sound one, it is not necessary in this case to consider.

Here it is abundantly proved that the lock originally made by Erbe "was complete and capable of working." The priority of Erbe's invention is clearly shown. It was known at the time to at least five persons, including Jones, and probably to many others in the shop where Erbe worked; and the lock was put in use, being applied to a door, as proved by Brossi. It was thus tested and shown to be successful. These facts bring the case made by the appellees within the severest legal tests which can be applied to them. The defence relied upon is fully made out.

DECREE AFFIRMED.

Question:

1.) To prove that an invention was not novel (or to prove “anticipation,” in the language of patent law) one has to show that *every element of the innovation* was present in a *single prior art reference*. (Students sometimes mistakenly think a “prior art reference” has to be an article in a scholarly publication, or some highly technical piece of knowledge possessed by a scientist. In this case, the “prior art reference” was the latch.)

The invention or discovery relied upon as a defence, must have been complete, and capable of producing the result sought to be accomplished; and this must be shown by the defendant. The burden of proof rests upon him, and every reasonable doubt should be resolved against him. If the thing were embryotic or inchoate; if it rested in speculation or experiment; if the process pursued for its development had failed to reach the point of consummation, it cannot avail to defeat a patent founded upon a discovery or invention which was completed, while in the other case there was only progress, however near that progress may have approximated to the end in view. The law requires not conjecture, but certainty.

Why require every element to be present?

Verdegaal Brothers, Inc. v. Union Oil Co. of California

814 F.2d 628 (Fed. Cir. 1987)



NIES, Circuit Judge.

. . . Verdegaal brought suit against Union Oil in the United States District Court for the Eastern District of California charging that certain processes employed by Union Oil for making liquid fertilizer products infringed all claims of its '343 patent. Union Oil defended on the grounds of non-infringement and patent invalidity under 35 U.S.C. §§ 102, 103. The action was tried before a jury which returned a verdict consisting of answers to five questions. Pertinent here are its answers that the '343 patent was “valid” over the prior art, and that certain of Union Oil’s processes infringed claims 1, 2, and 4 of the patent. None were found to infringe claims 3 or 5. Based on the jury’s verdict, the district court entered judgment in favor of Verdegaal.

Having unsuccessfully moved for a directed verdict under Fed.R.Civ.P. 50(a), Union Oil timely filed a motion under Rule 50(b) for JNOV seeking a judgment that the claims of the '343 patent were invalid under sections 102 and 103. The district court denied the motion without opinion.

**II
ISSUE PRESENTED**

Did the district court err in denying Union Oil’s motion for JNOV with respect to the validity of claims 1, 2, and 4 of the '343 patent?

III

Our precedent holds that the presumption of validity afforded a U.S. patent by 35 U.S.C. § 282 requires that the party challenging validity prove the facts establishing invalidity by clear and convincing evidence. Thus, the precise question to be resolved in

this case is whether Union Oil's evidence is so clear and convincing that reasonable jurors could only conclude that the claims in issue were invalid.

Anticipation

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. See, e.g., *Structural Rubber Prods. Co. v. Park Rubber Co.* (Fed. Cir. 1984); *Connell*; *Kalman v. Kimberly-Clark Corp.* (Fed. Cir. 1983), *cert. denied*, 465 U.S. 1026 (1984). Union Oil asserts that the subject claims of the '343 patent are anticipated under 35 U.S.C. § 102(e)[1] by the teachings found in the original application for U.S. Patent No. 4,315,763 to Stoller, which the jury was instructed was prior art.

From the jury's verdict of patent validity, we must presume that the jury concluded that Union Oil failed to prove by clear and convincing evidence that claims 1, 2, and 4 were anticipated by the Stoller patent. Under the instructions of this case, this conclusion could have been reached only if the jury found that the Stoller patent did not disclose each and every element of the claimed inventions. Having reviewed the evidence, we conclude that substantial evidence does not support the jury's verdict, and, therefore, Union Oil's motion for JNOV on the grounds that the claims were anticipated should have been granted.

The Stoller patent discloses processes for making both urea-phosphoric acid and urea-sulfuric acid fertilizers. Example 8 of Stoller specifically details a process for making 30-0-0-10 urea-sulfuric acid products. There is no dispute that Example 8 meets elements b, c, and d of claim 1, specifically the steps of adding water in an amount not greater than 15% of the product, urea in an amount of at least 50% of the product, and concentrated sulfuric acid in an amount of at least 10% of the product. Verdegaal disputes that Stoller teaches element a, the step of claim 1 of "providing a non-reactive, nutritive heat sink." As set forth in claim 2, the heat sink is recycled fertilizer.

The Stoller specification, beginning at column 7, line 30, discloses:

Once a batch of liquid product has been made, it can be used as a base for further manufacture. This is done by placing the liquid in a stirred vessel of appropriate size, adding urea in sufficient quantity to double the size of the finished batch, adding any water required for the formulation, and slowly adding the sulfuric acid while stirring. Leaving a heel of liquid in the vessel permits further manufacture to be conducted in a stirred fluid mass.

This portion of the Stoller specification explicitly teaches that urea and sulfuric acid can be added to recycled fertilizer, i.e., a heel or base of previously-made product. Dr. Young, Union Oil's expert, so testified. Verdegaal presented no evidence to the contrary.

Verdegaal first argues that Stoller does not anticipate because in Stoller's method sulfuric acid is added slowly, whereas the claimed process allows for rapid addition. However, there is no limitation in the subject claims with respect to the rate at which sulfuric acid is added, and, therefore, it is inappropriate for Verdegaal to rely on that distinction. See *SSIH*. It must be assumed that slow addition would not change the claimed process in any respect including the function of the recycled material as a heat sink.

Verdegaal next argues that the testimony of Union Oil's experts with respect to what Stoller teaches could well have been discounted by the jury for bias. Discarding that testimony does not eliminate the reference itself as evidence or its uncontradicted disclosure that a base of recycled fertilizer in a process may be used to make more of the product.

Verdegaal raises several variations of an argument, all of which focus on the failure

of Stoller to explicitly identify the heel in his process as a “heat sink.” In essence, Verdegaal maintains that because Stoller did not recognize the “inventive concept” that the heel functioned as a heat sink, Stoller’s process cannot anticipate. This argument is wrong as a matter of fact and law. Verdegaal’s own expert, Dr. Bahme, admitted that Stoller discussed the problem of high temperature caused by the exothermic reaction, and that the heel could function as a heat sink. In any event, Union Oil’s burden of proof was limited to establishing that Stoller disclosed the same process. It did not have the additional burden of proving that Stoller recognized the heat sink capabilities of using a heel. Even assuming Stoller did not recognize that the heel of his process functioned as a heat sink, that property was inherently possessed by the heel in his disclosed process, and, thus, his process anticipates the claimed invention. The pertinent issues are whether Stoller discloses the process of adding urea and sulfuric acid to a previously-made batch of product, and whether that base would in fact act as a heat sink. On the entirety of the record, these issues could only be resolved in the affirmative. . . .

After considering the record taken as a whole, we are convinced that Union Oil established anticipation of claims 1, 2, and 4 by clear and convincing evidence and that no reasonable juror could find otherwise. Consequently, the jury’s verdict on validity is unsupported by substantial evidence and cannot stand. Thus, the district court’s denial of Union Oil’s motion for JNOV must be reversed.

Conclusion

Because the issues discussed above are dispositive of this case, we do not find it necessary to reach the other issues raised by Union Oil. In accordance with this opinion, we reverse the portion of the judgment entered on the jury verdict upholding claims 1, 2, and 4 of the ’343 patent as valid under section 102(e) and infringed.
REVERSED.

Questions:

1.) This case provides a succinct statement of the “every element” test.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.

What does the court interpret that to mean? For example, must the prior art reference (in this case the patent) match exactly word for word with the proposed innovation? What kinds of differences do not matter?

2.) Returning to a question posed at the end of *Coffin*, why require that every element be present in order to prove anticipation? When we turn to non-obviousness, we will find that multiple references can be combined to make an innovation “obvious” and thus unpatentable.

4.) Novelty: Inherency

In re Cruciferous Sprout Litigation 301 F.3d 1343 (Fed. Cir. 2002)



PROST, Circuit Judge.

Brassica Protection Products LLC and Johns Hopkins University (collectively “Brassica”) appeal from the decision of the United States District Court for the District of Maryland granting summary judgment that U.S. Patent Nos. 5,725,895 (“the ’895 patent”), 5,968,567 (“the ’567 patent”), and 5,968,505 (“the ’505 patent”) are invalid as anticipated by the prior art. We affirm the district court’s ruling.

BACKGROUND

The three patents-in-suit relate to growing and eating sprouts to reduce the level of carcinogens in animals, thereby reducing the risk of developing cancer. Specifically, the patents describe methods of preparing food products that contain high levels of substances that induce Phase 2 enzymes. These enzymes are part of the human body’s mechanism for detoxifying potential carcinogens. Thus, they have a chemoprotective effect against cancer. Foods that are rich in glucosinolates, such as certain cruciferous sprouts, have high Phase 2 enzyme-inducing potential. The inventors of the patents-in-suit recognized that the Phase 2 enzyme-inducing agents (or their glucosinolate precursors) are far more concentrated in certain sprouts (such as broccoli and cauliflower but not cabbage, cress, mustard or radish) that are harvested before the two-leaf stage than in corresponding adult plants. However, glucosinolate levels in cruciferous plants can be highly variable. According to the inventors, it is therefore desirable to select the seeds of those cruciferous plants which, when germinated and harvested before the two-leaf stage, produce sprouts that contain high levels of the desired enzyme-inducing potential.

The ’895 patent was filed on September 15, 1995, and claims, *inter alia*, “A method of preparing a food product rich in glucosinolates, comprising germinated cruciferous seeds, with the exception of cabbage, cress, mustard and radish seeds, and harvesting sprouts prior to the 2-leaf stage, to form a food product comprising a plurality of sprouts.” The ’567 patent is a continuation of the ’895 application and it claims a “method of preparing a human food product” from sprouts. The ’505 patent is a divisional of the ’895 application and it claims a “method of increasing the chemoprotective amount of Phase 2 enzymes in a mammal,” as well as a “method of reducing the level of carcinogens in a mammal,” by creating a “food product” from sprouts and then “administering said food product” to a mammal.

The three patents-in-suit are owned by Johns Hopkins University and exclusively licensed to Brassica Protection Products LLC. Johns Hopkins and Brassica sued [multiple “defendants”] in various district courts. Pursuant to 28 U.S.C. § 1407, the Judicial Panel on Multidistrict Litigation consolidated the various cases in the District of Maryland for pretrial proceedings. On June 7, 2001, the defendants filed a joint motion for partial summary judgment of invalidity, arguing that the patents were anticipated by prior art references disclosing growing and eating sprouts. Brassica filed a cross-motion for summary judgment that the patents are not invalid. On July 23, 2001, the district court held a *Markman* hearing to address claim construction issues and the parties’ motions for summary judgment.

On August 10, 2001, the court granted defendants’ motion for summary judgment of invalidity and denied Brassica’s cross-motion for summary judgment. . . . Brassica

appeals the judgment of invalidity, arguing that the district court failed to properly construe the claims and did not apply the properly construed claims to the prior art when determining that the claims are anticipated under 35 U.S.C. § 102(b).

DISCUSSION

I.

Brassica contends that the district court erroneously construed the claims by failing to treat the preamble of claim 1 of the '895 patent as a limitation of the claims. . . .

No litmus test defines when a preamble limits claim scope. Whether to treat a preamble as a limitation is a determination “resolved only on review of the entirety of the patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim.” In general, a preamble limits the claimed invention if it recites essential structure or steps, or if it is “necessary to give life, meaning, and vitality” to the claim. Clear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art may indicate that the preamble is a claim limitation because the preamble is used to define the claimed invention.

In this case, both the specification and prosecution history indicate that the phrase “rich in glucosinolates” helps to define the claimed invention and is, therefore, a limitation of claim 1 of the '895 patent. The specification, for example, states that “this invention relates to the production and consumption of foods which are rich in cancer chemoprotective compounds.” A stated object of the invention is “to provide food products and food additives that are rich in cancer chemoprotective compounds.” The specification therefore indicates that the inventors believed their invention to be making food products that are rich in chemoprotective compounds, or, in other words, food products “rich in glucosinolates.” In addition, during reexamination of the '895 patent the patentee argued as follows:

Claim 1 of the patent, for example, is directed to “[a] method of preparing a food product rich in glucosinolates, . . . and harvesting sprouts prior to the 2-leaf stage, to form a food product comprising a plurality of sprouts.” . . . Although “rich in glucosinolates” is recited in the preamble of the claim, the pertinent case law holds that the preamble is given weight if it breathes life and meaning into the claim. . . . Accordingly, the cited prior art does not anticipate the claims because it does not explicitly teach a method of preparing a food product comprising cruciferous sprouts that are rich in glucosinolates or contain high levels of Phase 2 inducer activity.

This language shows a clear reliance by the patentee on the preamble to persuade the Patent Office that the claimed invention is not anticipated by the prior art. As such, the preamble is a limitation of the claims. . . .

II.

Having construed the claim limitations at issue, we now compare the claims to the prior art to determine if the prior art anticipates those claims. In order to prove that a claim is anticipated under 35 U.S.C. § 102(b), defendants must present clear and convincing evidence that a single prior art reference discloses, either expressly or inherently, each limitation of the claim.

Brassica argues that the prior art does not expressly or inherently disclose the claim limitations of “preparing a food product rich in glucosinolates” (claims 1 and 9 of the '895 patent), or “identifying seeds which produce cruciferous sprouts . . . containing high Phase 2 enzyme-inducing potential” (claims 1 and 16 of the '505 patent, claim 1 of the '567

patent). According to Brassica, the prior art merely discusses growing and eating sprouts without mention of any glucosinolates or Phase 2 enzyme-inducing potential, and without specifying that particular sprouts having these beneficial characteristics should be assembled into a “food product.” Moreover, Brassica argues, the prior art does not inherently disclose these limitations because “at most, one following the prior art would have a possibility or probability of producing a food product high in Phase 2 enzyme-inducing potential” and the “fact that one following the prior art might have selected seeds meeting the limitations of the claims is not sufficient to establish inherent anticipation.”

It is well settled that a prior art reference may anticipate when the claim limitations not expressly found in that reference are nonetheless inherent in it. *See, e.g., Atlas Powder Co. v. Ireco Inc.* (Fed. Cir. 1999); *Titanium Metals Corp. v. Banner* (Fed. Cir. 1985). “Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitations, it anticipates.” *MEHL/Biophile Int’l Corp. v. Milgraum* (Fed. Cir. 1999) (finding anticipation of a method of hair depilation by an article teaching a method of skin treatment but recognizing the disruption of hair follicles). “Inherency is not necessarily coterminous with the knowledge of those of ordinary skill in the art. Artisans of ordinary skill may not recognize the inherent characteristics or functioning of the prior art.” *MEHL/Biophile*.

Brassica does not claim to have invented a new kind of sprout, or a new way of growing or harvesting sprouts. Rather, Brassica recognized that some sprouts are rich in glucosinolates and high in Phase 2 enzyme-inducing activity while other sprouts are not. *See* ’895 patent, col. 10, ll. 28–42 (“Sprouts suitable as sources of cancer chemoprotectants are generally cruciferous sprouts, with the exception of cabbage (*Brassica oleracea capitata*), cress (*Lepidiumsativum*), mustard (*Sinapis alba* and *S. niger*) and radish (*Raphanus sativus*) sprouts.”). But the glucosinolate content and Phase 2 enzyme-inducing potential of sprouts necessarily have existed as long as sprouts themselves, which is certainly more than one year before the date of application at issue here. *See, e.g.,* Karen Cross Whyte, *The Complete Sprouting Cookbook* 4 (1973) (noting that in “2939 B.C., the Emperor of China recorded the use of health giving sprouts”). Stated differently, a sprout’s glucosinolate content and Phase 2 enzyme-inducing potential are inherent characteristics of the sprout. *Cf. Brian R. Clement, Hippocrates Health Program* 8 (1989) (referring to “[i]nherent enzyme inhibitors, phytates (natural insecticides), oxalates, etc., present in every seed”). It matters not that those of ordinary skill heretofore may not have recognized these inherent characteristics of the sprouts.

Titanium Metals Corp. v. Banner is particularly instructive in this regard. In that case, the claim at issue recited:

A titanium base alloy consisting essentially by weight of about 0.6% to 0.9% nickel, 0.2% to 0.4% molybdenum, up to 0.2% maximum iron, balance titanium, said alloy being characterized by good corrosion resistance in hot brine environments.

Titanium Metals. The prior art disclosed a titanium base alloy having the recited components of the claim, but the prior art did not disclose that such an alloy was “characterized by good corrosion resistance in hot brine environments.” We nevertheless held that the claim was anticipated by the prior art, because “it is immaterial, on the issue of their novelty, what inherent properties the alloys have or whether these applicants discovered certain inherent properties.” *Titanium Metals* explained the rationale behind this common sense conclusion:

The basic provision of Title 35 applicable here is § 101, providing in relevant part: “Whoever invents or discovers any *new* . . . composition

of matter, or any *new* . . . improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.”

. . . [C]ounsel never came to grips with the real issues: (1) what do the claims cover and (2) is what they cover new? Under the laws Congress wrote, they must be considered. Congress has not seen fit to permit the patenting of an old alloy, known to others through a printed publication, by one who has discovered its corrosion resistance or other useful properties, or has found out to what extent one can modify the composition of the alloy without losing such properties.

Brassica has done nothing more than recognize properties inherent in certain prior art sprouts, just like the corrosion resistance properties inherent to the prior art alloy in *Titanium Metals*. While Brassica may have recognized something quite interesting about those sprouts, it simply has not invented anything new.

Brassica nevertheless argues that its claims are not anticipated because the prior art does not disclose selecting the particular seeds that will germinate as sprouts rich in glucosinolates and high in Phase 2 enzyme-inducing potential (as opposed to selecting other kinds of seeds to sprout) in order to form a food product. We disagree. The prior art teaches sprouting and harvesting the very same seeds that the patents recognize as producing sprouts rich in glucosinolates and having high Phase 2 enzyme-inducing potential. According to the patents, examples of suitable sprouts are

typically from the family *Cruciferea*, of the tribe *Brassicaceae*, and of the subtribe *Brassicinae*. Preferably the sprouts are *Brassica oleracea* selected from the group of varieties consisting of *acephala* (kale, collards, wild cabbage, curly kale), *medullosa* (marrowstem kale), *ramosa* (thousand head kale), *alboglabra* (Chinese kale), *botrytis* (cauliflower, sprouting broccoli), *costata* (Portuguese kale), *gemmifera* (Brussels sprouts), *gongylodes* (kohlrabi), *italica* (broccoli), *palmifolia* (Jersey kale), *sabauda* (savoy cabbage), *sabellica* (collards), and *selensia* (borecole), among others.

Numerous prior art references identify these same sprouts as suitable for eating. *See, e.g.*, Stephen Facciola, *Cornucopia: A Source Book of Edible Plants* 47 (1990) (listing “*Brassica oleracea Botrytis* Group Cauliflower . . . Sprouted seeds are eaten”), Esther Munroe, *Sprouts to Grow and Eat* 9–14 (1974) (identifying “Broccoli, Brussels sprouts, Cabbage, Cauliflower, Collards and Kale”). These references therefore meet the claim limitation of identifying seeds to use in order to have sprouts with the inherent properties of glucosinolates and high Phase 2 enzyme-inducing activity. Despite the patents’ admissions about the suitability of particular plant species found in these prior art references, Brassica argues that only specific cultivars of these plant species are rich in glucosinolates and high in Phase 2 enzyme-inducing activity. Thus, according to Brassica, the prior art fails to meet the “identifying” steps of the claims because it does not specify which cultivars should be sprouted. However, all of the appropriate cultivars that are identified in Brassica’s patent are in the public domain. Brassica cannot credibly maintain that no one has heretofore grown and eaten one of the many suitable cultivars identified by its patents. It is unnecessary for purposes of anticipation for the persons sprouting these particular cultivars to have realized that they were sprouting something rich in glucosinolates and high in Phase 2 enzyme-inducing potential. *Atlas Powder* (“The public remains free to make, use, or sell prior art compositions or processes, regardless of whether or not they understand their complete makeup [or] the underlying scientific principles which allow them to operate.”). . . .

In summary, the prior art inherently contains the claim limitations that Brassica

relies upon to distinguish its claims from the prior art. While Brassica may have recognized something about sprouts that was not known before, Brassica's claims do not describe a new method.

CONCLUSION

For the foregoing reasons, we affirm the district court's summary judgment that the claims at issue are anticipated by the prior art. The prior art indisputably includes growing, harvesting and eating particular sprouts which Brassica has recognized as being rich in glucosinolates and high in Phase 2 enzyme-inducing potential. But the glucosinolate content and Phase 2 enzyme-inducing potential of these sprouts are inherent properties of the sprouts put there by nature, not by Brassica. Brassica simply has not claimed anything that is new and its claims are therefore invalid.

AFFIRMED.

Questions:

- 1.) We admit to putting this case in the book partly because we love its name but it also raises some fascinating questions about novelty. The crux with novelty is whether the public had access to the benefit provided by the innovation. Did they here? Yes, they had sprouts. And yes, if they ate sprouts, at the right moment in their development, then they got the benefit of the anti-carcinogens. But they did not *know* that eating sprouts at that stage provided those benefits. So why claim that the claims were anticipated, that is, that they were not novel?
- 2.) Does this passage, approvingly quoted from another case, suggest some of the court's concerns?

“The public remains free to make, use, or sell prior art compositions or processes, regardless of whether or not they understand their complete makeup or the underlying scientific principles which allow them to operate.”
- 3.) What is the concept of “inherency” and how is it used here?

5.) Statutory Bar: Public Use

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



This case was brought before the Court, on a writ of error to the circuit court for the eastern district of Pennsylvania.

In that court, the plaintiffs in error had instituted their suit against the defendants, for an infringement of a patent right, for ‘an improvement in the art of making tubes or hose for conveying air, water, and other fluids.’ The invention claimed by the patentees, was in the mode of making the hose so that the parts so joined together would be tight, and as capable of resisting the pressure as any other part of the machine.

The bill of exceptions, which came up with the record, contained the whole evidence given in the trial of the cause in the circuit court. The invention, for which the

patent right was claimed, was completed in 1811; and the letters patent were obtained in 1818. In this interval, upwards of *thirteen thousand feet of hose*, constructed according to the invention of the patentees, had been made and sold in the city of Philadelphia. One Samuel Jenkins, by the permission of, and under an agreement between the plaintiffs as to the price; had made and sold the hose invented by the plaintiffs, and supplied several hose companies in the city of Philadelphia with the same. Jenkins, during much of the time, was in the service of the plaintiffs, and had been instructed by them in the art of making the hose. There was no positive evidence, that the agreement between Jenkins and the plaintiffs in error was known to, or concealed from the public. The plaintiffs, on the trial, did not allege or offer evidence to prove that they had delayed making application for a patent, for the purpose of improving their invention; or that from 1811 to 1818, any important modifications or alterations had been made in their riveted hose. The plaintiffs claimed before the jury, that all the hose which had been made and sold to the public, prior to their patent, had been constructed and vended by Jenkins under their permission.

Upon the whole evidence in the case, the circuit court charged the jury:

‘We are clearly of opinion that if an inventor makes his discovery public, looks on and permits others freely to use it, without objection or assertion of claim to the invention, of which the public might take notice; he abandons the inchoate right to the exclusive use of the invention, to which a patent would have entitled him, had it been applied for before such use. And we think it makes no difference in the principle, that the article so publicly used, and afterwards patented, was made by a particular individual, who did so by the private permission of the inventor. As long as an inventor keeps to himself the subject of his discovery, the public cannot be injured: and even if it be made public, but accompanied by an assertion of the inventor’s claim to the discovery, those who should make or use the subject of the invention would at least be put upon their guard. But if the public, with the knowledge and the tacit consent of the inventor, is permitted to use the invention without opposition, it is a fraud upon the public afterwards to take out a patent. It is possible that the inventor may not have intended to give the benefit of his discovery to the public; and may have supposed that by giving permission to a particular individual to construct for others the thing patented, he could not be presumed to have done so. But it is not a question of intention, which is involved in the principle which we have laid down; but of legal inference, resulting from the conduct of the inventor, and affecting the interests of the public. It is for the jury to say, whether the evidence brings this case within the principle which has been stated. If it does, the court is of opinion that the plaintiffs are not entitled to a verdict.’

To this charge the plaintiffs excepted, and the jury gave a verdict for the defendant.

Mr. Justice STORY delivered the opinion of the Court.

. . . The single question then is, whether the charge of the court was correct in point of law. It has not been, and indeed cannot be denied, that an inventor may abandon his invention, and surrender or dedicate it to the public. This inchoate right, thus once gone, cannot afterwards be resumed at his pleasure; for, where gifts are once made to the public in this way, they become absolute. Thus, if a man dedicates a way, or other easement to the public, it is supposed to carry with it a permanent right of user. The question which generally arises at trials, is a question of fact, rather than of law; whether the acts or

acquiescence of the party furnish in the given case, satisfactory proof of an abandonment or dedication of the invention to the public. But when all the facts are given, there does not seem any reason why the court may not state the legal conclusion deducible from them. In this view of the matter, the only question would be, whether, upon general principles, the facts stated by the court would justify the conclusion.

In the case at bar; it is unnecessary to consider whether the facts stated in the charge of the court would, upon general principles, warrant the conclusion drawn by the court, independently of any statutory provisions; because, we are of opinion, that the proper answer depends upon the true exposition of the act of congress, under which the present patent was obtained. The constitution of the United States has declared, that congress shall have power “to promote the progress of science and useful arts, by securing for limited times, to authors and inventors, the exclusive right to their respective writings and discoveries.” It contemplates, therefore, that this exclusive right shall exist but for a limited period, and that the period shall be subject to the discretion of congress. The patent act, of the 21st of February, 1793, ch. 11, prescribes the terms and conditions and manner of obtaining patents for inventions; and proof of a strict compliance with them lies at the foundation of the title acquired by the patentee. The first section provides, “that when any person or persons, being a citizen or citizens of the United States, shall allege that he or they have invented any new or useful art, machine, manufacture, or composition of matter, or any new or useful improvement on any art, machine, or composition of matter, not known or used before the application; and shall present a petition to the secretary of state, signifying a desire of obtaining an exclusive property in the same, and praying that a patent may be granted therefor; it shall and may be lawful for the said secretary of state, to cause letters patent to be made out in the name of the United States, bearing *teste* [the ablative of *testis*, ‘to bear witness’] by the President of the United States, reciting the allegations and suggestions of the said petition, and giving a short description of the said invention or discovery, and thereupon, granting to the said petitioner, &c. for a term not exceeding fourteen years, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used, the said invention or discovery, &c.” The third section provides, “that every inventor, before he can receive a patent, shall swear, or affirm, that he does verily believe that he is the true inventor or discoverer of the art, machine, or improvement for which he solicits a patent.” The sixth section provides that the defendant shall be permitted to give in defence, to any action brought against him for an infringement of the patent, among other things, “that the thing thus secured by patent was not originally discovered by the patentee, but had been in use, or had been described in some public work, anterior to the supposed discovery of the patentee.”

These are the only material clauses bearing upon the question now before the court; and upon the construction of them, there has been no inconsiderable diversity of opinion entertained among the profession, in cases heretofore litigated.

It is obvious to the careful inquirer, that many of the provisions of our patent act are derived from the principles and practice which have prevailed in the construction of that of England. It is doubtless true, as has been suggested at the bar, that where English statutes, such for instance, as the statute of frauds, and the statute of limitations; have been adopted into our own legislation; the known and settled construction of those statutes by courts of law, has been considered as silently incorporated into the acts, or has been received with all the weight of authority. Strictly speaking, that is not the case in respect to the English statute of monopolies; which contains an exception on which the grants of patents for inventions have issued in that country. The language of that clause of the statute is not, as we shall presently see, identical with ours; but the construction of it adopted by

the English courts, and the principles and practice which have long regulated the grants of their patents, as they must have been known and are tacitly referred to in some of the provisions of our own statute, afford materials to illustrate it.

By the very terms of the first section of our statute, the secretary of state is authorised to grant a patent to any citizen applying for the same, who shall allege that he has invented a new and useful art, machine, &c. “not known or used before the application?” The authority is a limited one, and the party must bring himself within the terms, before he can derive any title to demand, or to hold a patent. What then is the true meaning of the words “not known or used before the application?” They cannot mean that the thing invented was not known or used before the application by the inventor himself, for that would be to prohibit him from the only means of obtaining a patent. The use, as well as the knowledge of his invention, must be indispensable to enable him to ascertain its competency to the end proposed, as well as to perfect its component parts. The words then, to have any rational interpretation, must mean, not known or used by others, before the application. But how known or used? If it were necessary, as it well might be, to employ others to assist in the original structure or use by the inventor himself; or if before his application for a patent his invention should be pirated by another, or used without his consent; it can scarcely be supposed, that the legislature had within its contemplation such knowledge or use.

We think, then, the true meaning must be, not known or used by the public, before the application. And, thus construed, there is much reason for the limitation thus imposed by the act. While one great object was, by holding out a reasonable reward to inventors, and giving them an exclusive right to their inventions for a limited period, to stimulate the efforts of genius; the main object was “to promote the progress of science and useful arts;” and this could be done best, by giving the public at large a right to make, construct, use, and vend the thing invented, at as early a period as possible; having a due regard to the rights of the inventor. If an inventor should be permitted to hold back from the knowledge of the public the secrets of his invention; if he should for a long period of years retain the monopoly, and make, and sell his invention publicly, and thus gather the whole profits of it, relying upon his superior skill and knowledge of the structure; and then, and then only, when the danger of competition should force him to secure the exclusive right, he should be allowed to take out a patent, and thus exclude the public from any farther use than what should be derived under it during his fourteen years; it would materially retard the progress of science and the useful arts, and give a premium to those who should be least prompt to communicate their discoveries.

A provision, therefore, that should withhold from an inventor the privilege of an exclusive right, unless he should, as early as he should allow the public use, put the public in possession of his secret, and commence the running of the period, that should limit that right; would not be deemed unreasonable. It might be expected to find a place in a wise prospective legislation on such a subject. If it was already found in the jurisprudence of the mother country, and had not been considered inconvenient there; it would not be unnatural that it should find a place in our own.

Now, in point of fact, the statute of 21 Jac., ch. 3, commonly called the statute of monopolies, does contain exactly such a provision. That act, after prohibiting monopolies generally, contains, in the sixth section, an exception in favour of “letters patent and grants of privileges for fourteen years or under, of the sole working or making of any manner of new manufactures within this realm, to the true and first inventor and inventors of such manufactures, which others, at the time of making such letters patent and grants, shall not use.” Lord Coke, in his commentary upon this clause or proviso, (3 Inst. 184.) says that the letters patent “must be of such manufactures, which any other at the time of

making such letters patent did not use; for albeit it were newly invented, yet if any other did use it at the making of the letters patent, or grant of the privilege, it is declared and enacted to be void by this act.” The use here referred to has always been understood to be a public use, and not a private or surreptitious use in fraud of the inventor.

In the case of *Wood vs. Zimmer*, this doctrine was fully recognised by lord chief justice Gibbs. There the inventor had suffered the thing invented to be sold, and go into public use for four months before the grant of his patent; and it was held by the court, that on this account the patent was utterly void. Lord chief justice Gibbs said, “To entitle a man to a patent, the invention must be new to the world. The public sale of that which is afterwards made the subject of a patent, though sold by the inventor only, makes the patent void.” By “invention,” the learned judge undoubtedly meant, as the context abundantly shows, not the abstract discovery, but the thing invented; not the new secret principle, but the manufacture resulting from it.

The words of our statute are not identical with those of the statute of James, but it can scarcely admit of doubt, that they must have been within the contemplation of those by whom it was framed, as well as the construction which had been put upon them by Lord Coke. But if there were no such illustrative comment, it is difficult to conceive how any other interpretation could fairly be put upon these words. We are not at liberty to reject words which are sensible in the place where they occur, merely because they may be thought, in some cases, to import a hardship, or tie up beneficial rights within very close limits. . . .

It is admitted that the subject is not wholly free from difficulties; but upon most deliberate consideration we are all of opinion, that the true construction of the act is, that the first inventor cannot acquire a good title to a patent; if he suffers the thing invented to go into public use, or to be publicly sold for use, before he makes application for a patent. His voluntary act or acquiescence in the public sale and use is an abandonment of his right; or rather creates a disability to comply with the terms and conditions on which alone the secretary of state is authorized to grant him a patent.

The opinion of the circuit court was therefore perfectly correct; and the judgment is affirmed with costs. . . .

Questions:

- 1.) List all of the reasons Justice Story gives for applying a bar of public use.
 - 2.) What relevance has the availability of secrecy as an alternative method of protecting an innovation? The possible combinations of secrecy and patent law?
 - 3.) Would it have mattered if the inventor had told Jenkins to keep their agreement secret? Would it have mattered if the nature of the invention could not be gleaned from its use? For example, what if I invent a fryer with a secret feature that produces perfect doughnuts, but only the doughnuts and not the fryer are made available to the public. May I use the fryer for years, keeping its details secret, and *then* patent it?
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6.) Statutory Bar: The Experimental Use Exception

City of Elizabeth v. Pavement Co.

97 U.S. 126 (1877)



Mr. Justice BRADLEY delivered the opinion of the court.

This suit was brought by the American Nicholson Pavement Company against the city of Elizabeth, N.J., George W. Tubbs, and the New Jersey Wood-Paving Company, a corporation of New Jersey, upon a patent issued to Samuel Nicholson, dated Aug. 20, 1867, for a new and improved wooden pavement, being a second reissue of a patent issued to said Nicholson Aug. 8, 1854. The reissued patent was extended in 1868 for a further term of seven years. A copy of it is appended to the bill; and, in the specification, it is declared that the nature and object of the invention consists in providing a process or mode of constructing wooden block pavements upon a foundation along a street or roadway with facility, cheapness, and accuracy, and also in the creation and construction of such a wooden pavement as shall be comparatively permanent and durable, by so uniting and combining all its parts, both superstructure and foundation, as to provide against the slipping of the horses' feet, against noise, against unequal wear, and against rot and consequent sinking away from below. Two plans of making this pavement are specified. Both require a proper foundation on which to lay the blocks, consisting of tarred-paper or hydraulic cement covering the surface of the road-bed to the depth of about two inches, or of a flooring of boards or plank, also covered with tar, or other preventive of moisture. On this foundation, one plan is to set square blocks on end arranged like a checker-board, the alternate rows being shorter than the others, so as to leave narrow grooves or channel-ways to be filled with small broken stone or gravel, and then pouring over the whole melted tar or pitch, whereby the cavities are all filled and cemented together. The other plan is, to arrange the blocks in rows transversely across the street, separated a small space (of about an inch) by strips of board at the bottom, which serve to keep the blocks at a uniform distance apart, and then filling these spaces with the same material as before. The blocks forming the pavement are about eight inches high. The alternate rows of short blocks in the first plan and the strips of board in the second plan should not be higher than four inches. . . .

The bill charges that the defendants infringed this patent by laying down wooden pavements in the city of Elizabeth, N.J., constructed in substantial conformity with the process patented, and prays an account of profits, and an injunction. . . .

[The defendants] averred that the alleged invention of Nicholson was in public use, with his consent and allowance, for six years before he applied for a patent, on a certain avenue in Boston called the Mill-dam; and contended that said public use worked an abandonment of the pretended invention. . . .

The next question to be considered is, whether Nicholson's invention was in public use or on sale, with his consent and allowance, for more than two years prior to his application for a patent, within the meaning of the sixth, seventh, and fifteenth sections of the act of 1836, as qualified by the seventh section of the act of 1839, which were the acts in force in 1854, when he obtained his patent. It is contended by the appellants that the pavement which Nicholson put down by way of experiment, on Mill-dam Avenue in Boston, in 1848, was publicly used for the space of six years before his application for a patent, and that this was a public use within the meaning of the law.

To determine this question, it is necessary to examine the circumstances under which

this pavement was put down, and the object and purpose that Nicholson had in view. It is perfectly clear from the evidence that he did not intend to abandon his right to a patent. He had filed a caveat in August, 1847, and he constructed the pavement in question by way of experiment, for the purpose of testing its qualities. The road in which it was put down, though a public road, belonged to the Boston and Roxbury Mill Corporation, which received toll for its use; and Nicholson was a stockholder and treasurer of the corporation. The pavement in question was about seventy-five feet in length, and was laid adjoining to the toll-gate and in front of the toll-house. It was constructed by Nicholson at his own expense, and was placed by him where it was, in order to see the effect upon it of heavily loaded wagons, and of varied and constant use; and also to ascertain its durability, and liability to decay. Joseph L. Lang, who was toll-collector for many years, commencing in 1849, familiar with the road before that time, and with this pavement from the time of its origin, testified as follows: "Mr. Nicholson was there almost daily, and when he came he would examine the pavement, would often walk over it, cane in hand, striking it with his cane, and making particular examination of its condition. He asked me very often how people liked it, and asked me a great many questions about it. I have heard him say a number of times that this was his first experiment with this pavement, and he thought that it was wearing very well. The circumstances that made this locality desirable for the purpose of obtaining a satisfactory test of the durability and value of the pavement were: that there would be a better chance to lay it there; he would have more room and a better chance than in the city; and, besides, it was a place where most everybody went over it, rich and poor. It was a great thoroughfare out of Boston. It was frequently travelled by teams having a load of five or six tons, and some larger. As these teams usually stopped at the toll-house, and started again, the stopping and starting would make as severe a trial to the pavement as it could be put to."

This evidence is corroborated by that of several other witnesses in the cause; the result of the whole being that Nicholson merely intended this piece of pavement as an experiment, to test its usefulness and durability. Was this a public use, within the meaning of the law?

An abandonment of an invention to the public may be evinced by the conduct of the inventor at any time, even within the two years named in the law. The effect of the law is, that no such consequence will necessarily follow from the invention being in public use or on sale, with the inventor's consent and allowance, at any time within two years before his application; but that, if the invention is in public use or on sale prior to that time, it will be conclusive evidence of abandonment, and the patent will be void.

But, in this case, it becomes important to inquire what is such a public use as will have the effect referred to. That the use of the pavement in question was public in one sense cannot be disputed. But can it be said that the invention was in public use? The use of an invention by the inventor himself, or of any other person under his direction, by way of experiment, and in order to bring the invention to perfection, has never been regarded as such a use. Curtis, Patents, sect. 381; *Shaw v. Cooper*.

Now, the nature of a street pavement is such that it cannot be experimented upon satisfactorily except on a highway, which is always public.

When the subject of invention is a machine, it may be tested and tried in a building, either with or without closed doors. In either case, such use is not a public use, within the meaning of the statute, so long as the inventor is engaged, in good faith, in testing its operation. He may see cause to alter it and improve it, or not. His experiments will reveal the fact whether any and what alterations may be necessary. If durability is one of the qualities to be attained, a long period, perhaps years, may be necessary to enable the

inventor to discover whether his purpose is accomplished. And though, during all that period, he may not find that any changes are necessary, yet he may be justly said to be using his machine only by way of experiment; and no one would say that such a use, pursued with a bona fide intent of testing the qualities of the machine, would be a public use, within the meaning of the statute. So long as he does not voluntarily allow others to make it and use it, and so long as it is not on sale for general use, he keeps the invention under his own control, and does not lose his title to a patent.

It would not be necessary, in such a case, that the machine should be put up and used only in the inventor's own shop or premises. He may have it put up and used in the premises of another, and the use may inure to the benefit of the owner of the establishment. Still, if used under the surveillance of the inventor, and for the purpose of enabling him to test the machine, and ascertain whether it will answer the purpose intended, and make such alterations and improvements as experience demonstrates to be necessary, it will still be a mere experimental use, and not a public use, within the meaning of the statute.

Whilst the supposed machine is in such experimental use, the public may be incidentally deriving a benefit from it. If it be a grist-mill, or a carding-machine, customers from the surrounding country may enjoy the use of it by having their grain made into flour, or their wool into rolls, and still it will not be in public use, within the meaning of the law.

But if the inventor allows his machine to be used by other persons generally, either with or without compensation, or if it is, with his consent, put on sale for such use, then it will be in public use and on public sale, within the meaning of the law.

If, now, we apply the same principles to this case, the analogy will be seen at once. Nicholson wished to experiment on his pavement. He believed it to be a good thing, but he was not sure; and the only mode in which he could test it was to place a specimen of it in a public roadway. He did this at his own expense, and with the consent of the owners of the road. Durability was one of the qualities to be attained. He wanted to know whether his pavement would stand, and whether it would resist decay. Its character for durability could not be ascertained without its being subjected to use for a considerable time. He subjected it to such use, in good faith, for the simple purpose of ascertaining whether it was what he claimed it to be. Did he do any thing more than the inventor of the supposed machine might do, in testing his invention? The public had the incidental use of the pavement, it is true; but was the invention in public use, within the meaning of the statute? We think not. The proprietors of the road alone used the invention, and used it at Nicholson's request, by way of experiment. The only way in which they could use it was by allowing the public to pass over the pavement.

Had the city of Boston, or other parties, used the invention, by laying down the pavement in other streets and places, with Nicholson's consent and allowance, then, indeed, the invention itself would have been in public use, within the meaning of the law; but this was not the case. Nicholson did not sell it, nor allow others to use it or sell it. He did not let it go beyond his control. He did nothing that indicated any intent to do so. He kept it under his own eyes, and never for a moment abandoned the intent to obtain a patent for it. . . .

It is sometimes said that an inventor acquires an undue advantage over the public by delaying to take out a patent, inasmuch as he thereby preserves the monopoly to himself for a longer period than is allowed by the policy of the law; but this cannot be said with justice when the delay is occasioned by a *bona fide* effort to bring his invention to perfection, or to ascertain whether it will answer the purpose intended. His monopoly only continues for the allotted period, in any event; and it is the interest of the public, as well as himself, that the invention should be perfect and properly tested, before a patent

is granted for it. Any attempt to use it for a profit, and not by way of experiment, for a longer period than two years before the application, would deprive the inventor of his right to a patent. . . .

We think there is no error in the decree of the Circuit Court, except in making the city of Elizabeth and George W. Tubbs accountable for the profits. As to them a decree for injunction only to prevent them from constructing the pavement during the term of the patent, should have been rendered; which, of course, cannot now be made. As to the New Jersey Wood-Paving Company, the decree was in all respects correct. . . .

Questions:

- 1.) The court here discussed the two-year grace period an inventor is allowed after a disclosure before filing a patent. How long is that period now? (In other words, how long does an inventor have after his first disclosure to file a patent?)
 - 2.) How can a road that is being used by the public for six years be said not to be disclosed to the public? Distinguish the “use” here from that in *Pennock*.
 - 3.) “So long as he does not voluntarily allow others to make it and use it, and so long as it is not on sale for general use, he keeps the invention under his own control, and does not lose his title to a patent.” Explain why the court here rules that the public had no more than incidental use of the road.
 - 4.) “Any attempt to use it for a profit, and not by way of experiment, for a longer period than two years before the application, would deprive the inventor of his right to a patent.” Why does it matter that the inventor not use the invention for a profit?
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Note:

Today’s courts still apply the standards in *City of Elizabeth*, but they also put considerable stress on such things as the nature of control exercised by the inventor and the extent of any confidentiality agreement covering the use. The Federal Circuit has listed thirteen factors potentially relevant in assessing experimental use: (1) the necessity for public testing, (2) the amount of control over the experiment retained by the inventor, (3) the nature of the invention, (4) the length of the test period, (5) whether payment was made, (6) whether there was a secrecy obligation, (7) whether records of the experiment were kept, (8) who conducted the experiment, (9) the degree of commercial exploitation during testing, (10) whether the invention reasonably requires evaluation under actual conditions of use, (11) whether testing was systematically performed, (12) whether the inventor continually monitored the invention during testing, and (13) the nature of contacts made with potential customers.

PROBLEM 20-1

a.) In June of 2013, Google released an experimental, “beta” version of their Ngram viewer. Ngrams are an offshoot of the Google Books project that you read about in the copyright section of this book. Google has scanned the words in a representative sample of books in English from 1800 to the present day. The original Ngram viewer allowed you to search for the frequency with which words appeared over that time. Thus, for example, you could look at the frequency with which the word “feminism” or the phrase “public domain” appeared. You could track the rise and fall of words such as “awesome,” “gnarly” or “swive.” The new viewer is called “Zeitgeist.” Zeitgeist allows you to do much more contextual searches. For example you can do “most likely to be found with” searches, which indicate which words are most likely to be found with other words at any moment in history. (For example, “nattering” was once likely to be accompanied by “nabobs of negativism.”) Zeitgeist has an emotion-coding device, which assigns emotional “heat” to contexts and can as a result give you a sense of whether a word tends to be associated with strong emotions.

It is common in the software industry to release so called “beta-test” versions of software in order to test them. Zeitgeist is prominently marked “Experimental beta test version.” The user does not install any software, simply queries a typical Google search form on the Zeitgeist web page. The interface is clean: there are no terms of use or advertisements to be seen. **In August 2014, Google asks you if they can patent the Zeitgeist software. Assume that Zeitgeist is patentable subject matter and that it is otherwise novel and non-obvious. Your answer?**

b.) Aspirin has long been in the public domain. Bayer, aspirin’s original inventor, has just discovered that taking a baby aspirin every other day reduces the risk of heart attack or stroke. Aspirin has side effects however, often causing gastric upset. Bayer does further experimentation and finds that taking aspirin with milk or food helps to avoid those side effects. It wishes to patent “a method for lowering risk of heart attack and strokes by the use of acetylsalicylic acid [aspirin’s ingredient] in certain doses combined with various gastric protective measures.” For purposes of this hypothetical assume that no-one has ever detected the correlation between aspirin and heart-health before. **Is Bayer’s method novel? Does it pass the patentable subject matter test?**

c.) **What are the differences between the requirement of novelty (and, later, non-obviousness) described here in the context of patents and the requirement of originality explained in the copyright context in *Feist*? Are there constitutional differences?**

