SUPREME COURT OF THE UNITED STATES

No. 97–1130

WAYNE K. PFAFF, PETITIONER *v.* WELLS ELECTRONICS, INC.

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

[November 10, 1998]

JUSTICE STEVENS delivered the opinion of the Court.

Section 102(b) of the Patent Act of 1952 provides that no person is entitled to patent an "invention" that has been "on sale" more than one year before filing a patent application.[1] We granted certiorari to determine whether the commercial marketing of a newly invented product may mark the beginning of the 1-year period even though the invention has not yet been reduced to practice.[2]

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[1] "A person shall be entitled to a patent unless–

. . . . .

"(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 . . . ." 35 U. S. C. §102.

[2] "A process is reduced to practice when it is successfully performed. A machine is reduced to practice when it is assembled adjusted and used. A manufacture is reduced to practice when it is completely manufactured. A composition of matter is reduced to practice when it is completely composed." *Corona Cord Tire Co.* v. *Dovan Chemical Corp.*, 276 U. S. 358, 383 (1928).

I

On April 19, 1982, petitioner, Wayne Pfaff, filed an application for a patent on a computer chip socket. Therefore, April 19, 1981, constitutes the critical date for purposes of the on-sale bar of 35 U. S. C. §102(b); if the 1-year period began to run before that date, Pfaff lost his right to patent his invention.

Pfaff commenced work on the socket in November 1980, when representatives of Texas Instruments asked him to develop a new device for mounting and removing semiconductor chip carriers. In response to this request, he prepared detailed engineering drawings that described the design, the dimensions, and the materials to be used in making the socket. Pfaff sent those drawings to a manufacturer in February or March 1981.

Prior to March 17, 1981, Pfaff showed a sketch of his concept to representatives of Texas Instruments. On April 8, 1981, they provided Pfaff with a written confirmation of a previously placed oral purchase order for 30,100 of his new sockets for a total price of $91,155. In accord with his normal practice, Pfaff did not make and test a prototype of the new device before offering to sell it in commercial quantities.[3]

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[3]At his deposition, respondent's counsel engaged in the following colloquy with Pfaff:

"Q. Now, at this time [late 1980 or early 1981] did we *[sic]* have any prototypes developed or anything of that nature, working embodiment?

"A. No.

"Q. It was in a drawing. Is that correct?

"A. Strictly in a drawing. Went from the drawing to the hard tooling. That's the way I do my business.

"Q. 'Boom-boom?

"A. You got it.

"Q. You are satisfied, obviously, when you come up with some drawings that it is going to go– 'it works?

"A. I know what I'm doing, yes, most of the time." App. 96–97.

The manufacturer took several months to develop the customized tooling necessary to produce the device, and Pfaff did not fill the order until July 1981. The evidence therefore indicates that Pfaff first reduced his invention to practice in the summer of 1981. The socket achieved substantial commercial success before Patent No. 4,491,377 (the '377 patent) issued to Pfaff on January 1, 1985.[4]

After the patent issued, petitioner brought an infringement action against respondent, Wells Electronics, Inc., the manufacturer of a competing socket. Wells prevailed on the basis of a finding of no infringement.[5] When respondent began to market a modified device, petitioner brought this suit, alleging that the modifications infringed six of the claims in the '377 patent.

After a full evidentiary hearing before a Special Master,[6] the District Court held that two of those claims (1 and 6) were invalid because they had been anticipated in the prior art. Nevertheless, the court concluded that four other claims (7, 10, 11, and 19) were valid and three (7, 10, and 11) were infringed by various models of respondent's sockets. App. to Pet. for Cert. 21a–22a. Adopting the

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[4] Initial sales of the patented device were:

1981	$350,000
1982	$937,000
1983	$2,800,000
1984	$3,430,000

App. to Pet. for Cert. 223.

[5] *Pfaff* v. *Wells Electronics, Inc.*, 9 USP. Q 2d 1366 (ND Ind. 1988). The court found that the Wells device did not literally infringe on Pfaff's '377 patent based on the physical location of the sockets' conductive pins.

[6] Initially the District Court entered summary judgment in favor of respondent, but the Court of Appeals reversed and remanded for trial because issues of fact were in dispute. See 5 F. 3d 514 (CA Fed. 1993).

Special Master's findings, the District Court rejected respondent's §102(b) defense because Pfaff had filed the application for the '377 patent less than a year after reducing the invention to practice.

The Court of Appeals reversed, finding all six claims invalid. 124 F. 3d 1429 (CA Fed. 1997). Four of the claims (1, 6, 7, and 10) described the socket that Pfaff had sold to Texas Instruments prior to April 8, 1981. Because that device had been offered for sale on a commercial basis more than one year before the patent application was filed on April 19, 1982, the court concluded that those claims were invalid under §102(b). That conclusion rested on the court's view that as long as the invention was "substantially complete at the time of sale," the 1-year period began to run, even though the invention had not yet been reduced to practice. *Id.*, at 1434. The other two claims (11 and 19) described a feature that had not been included in Pfaff's initial design, but the Court of Appeals concluded as a matter of law that the additional feature was not itself patentable because it was an obvious addition to the prior art.[7] Given the court's §102(b) holding, the prior art included Pfaff's first four claims.

Because other courts have held or assumed that an invention cannot be "on sale" within the meaning of §102(b) unless and until it has been reduced to practice, see, *e. g.*, *Timely Products Corp.* v. *Arron*, 523 F. 2d 288, 299–302 (CA2 1975); *Dart Industries, Inc.* v. *E. I. Du Pont de Nemours & Co.*, 489 F.2d 1359, 1365, n. 11 (CA7 1973), cert. denied, 417 U. S. 933 (1974), and because the text of

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[7] Title 35 U. S. C. §103 provides: "A patent may not be obtained though the invention is not identically disclosed or described . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains."

§102(b) makes no reference to "substantial completion" of an invention, we granted certiorari. 523 U. S. ___ (1998).

II

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 statute does not contain any express requirement that an invention must be reduced to practice before it can be patented. Neither the statutory definition of the term in §100[8] nor the basic conditions for obtaining a patent set forth in §101[9] make any mention of "reduction to practice." The statute's only specific reference to that term is found in §102(g), which sets forth the standard for resolving priority contests between two competing claimants to a patent. That subsection provides:

> "In determining priority of invention 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."

Thus, assuming diligence on the part of the applicant, it is normally the first inventor to conceive, rather than the

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[8] Title 35 §100, "Definitions," states,

"When used in this title unless the context otherwise indicates–

"(a) The term 'invention' means invention or discovery. . . ."

[9] Section 101, "Inventions patentable," provides, "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."

first to reduce to practice, who establishes the right to the patent.

It is well settled that an invention may be patented before it is reduced to practice. In 1888, this Court upheld a patent issued to Alexander Graham Bell even though he had filed his application before constructing a working telephone. Chief Justice Waite's reasoning in that case merits quoting at length:

> "It is quite true that when Bell applied for his patent he had never actually transmitted telegraphically spoken words so that they could be distinctly heard and understood at the receiving end of his line, but in his specification he did describe accurately and with admirable clearness his process, that is to say, the exact electrical condition that must be created to accomplish his purpose, and he also described, with sufficient precision to enable one of ordinary skill in such matters to make it, a form of apparatus which, if used in the way pointed out, would produce the required effect, receive the words, and carry them to and deliver them at the appointed place. The particular instrument which he had, and which he used in his experiments, did not, under the circumstances in which it was tried, reproduce the words spoken, so that they could be clearly understood, but the proof is abundant and of the most convincing character, that other instruments, carefully constructed and made exactly in accordance with the specification, without any additions whatever, have operated and will operate successfully. A good mechanic of proper skill in matters of the kind can take the patent and, by following the specification strictly, can, without more, construct an apparatus which, when used in the way pointed out, will do all that it is claimed the method or process will do . . . .

> "The law does not require that a discoverer or inventor, in order to get a patent for a process, must have succeeded in bringing his art to the highest degree of perfection. It is enough if he describes his method with sufficient clearness and precision to enable those skilled in the matter to understand what the process is, and if he points out some practicable way of putting it into operation." *The Telephone Cases*, 126 U. S. 1, 535–536 (1888).[10]

When we apply the reasoning of *The Telephone Cases* to the facts of the case before us today, it is evident that Pfaff could have obtained a patent on his novel socket when he accepted the purchase order from Texas Instruments for 30,100 units. At that time he provided the manufacturer with a description and drawings that had "sufficient clearness and precision to enable those skilled in the matter" to produce the device. The parties agree that the sockets manufactured to fill that order embody Pfaff's conception as set forth in claims 1, 6, 7, and 10 of the '377 patent. We can find no basis in the text of §102(b) or in the facts of this case for concluding that Pfaff's invention was not "on sale" within the meaning of the statute until after it had been reduced to practice.

III

Pfaff nevertheless argues that longstanding precedent, buttressed by the strong interest in providing inventors with a clear standard identifying the onset of the 1-year

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[10] This Court has also held a patent invalid because the invention had previously been disclosed in a prior patent application, although that application did not claim the invention and the first invention apparently had not been reduced to practice. *Alexander Milburn Co.* v. *Davis-Bournonville Co.*, 270 U. S. 390, 401–402 (1926).

period, justifies a special interpretation of the word "invention" as used in §102(b). We are persuaded that this nontextual argument should be rejected.

As we have often explained, most recently in *Bonito Boats, Inc.* v. *Thunder Craft Boats, Inc.*, 489 U. S. 141, 151 (1989), the patent system represents a carefully crafted bargain that encourages both the creation and the public disclosure of new and useful advances in technology, in return for an exclusive monopoly for a limited period of time. The balance between the interest in motivating innovation and enlightenment by rewarding invention with patent protection on the one hand, and the interest in avoiding monopolies that unnecessarily stifle competition on the other, has been a feature of the federal patent laws since their inception. As this Court explained in 1871:

> "Letters patent are not to be regarded as monopolies . . . but as public franchises granted to the inventors of new and useful improvements for the purpose of securing to them, as such inventors, for the limited term therein mentioned, the exclusive right and liberty to make and use and vend to others to be used their own inventions, as tending to promote the progress of science and the useful arts, and as matter of compensation to the inventors for their labor, toil, and expense in making the inventions, and reducing the same to practice for the public benefit, as contemplated by the Constitution and sanctioned by the laws of Congress." *Seymour* v. *Osborne*, 11 Wall. 516, 533–534.

Consistent with these ends, §102 of the Patent Act serves as a limiting provision, both excluding ideas that are in the public domain from patent protection and confining the duration of the monopoly to the statutory term. See, *e.g.*, *Frantz Mfg. Co.* v. *Phenix Mfg. Co.*, 457 F. 2d 314, 320 (CA7 1972).

We originally held that an inventor loses his right to a patent if he puts his invention into public use before filing a patent application. "His voluntary act or acquiescence in the public sale and use is an abandonment of his right" *Pennock* v. *Dialogue*, 2 Pet. 1, 24 (1829) (Story, J.). A similar reluctance to allow an inventor to remove existing knowledge from public use undergirds the on-sale bar.

Nevertheless, an inventor who seeks to perfect his discovery may conduct extensive testing without losing his right to obtain a patent for his invention– even if such testing occurs in the public eye. The law has long recognized the distinction between inventions put to experimental use and products sold commercially. In 1878, we explained why patentability may turn on an inventor's use of his product.

> "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.*" *Elizabeth* v. *Pavement Co.*, 97 U. S. 126, 137 (emphasis added).

The patent laws therefore seek both to protect the public's right to retain knowledge already in the public domain and the inventor's right to control whether and when

he may patent his invention. The Patent Act of 1836, 5 Stat. 117, was the first statute that expressly included an on-sale bar to the issuance of a patent. Like the earlier holding in *Pennock*, that provision precluded patentability if the invention had been placed on sale at any time before the patent application was filed. In 1839, Congress ameliorated that requirement by enacting a 2-year grace period in which the inventor could file an application. 5 Stat. 353.

In *Andrews* v. *Hovey*, 123 U. S. 267, 274 (1887), we noted that the purpose of that amendment was "to fix a period of limitation which should be certain"; it required the inventor to make sure that a patent application was filed "within two years from the completion of his invention," *ibid.* In 1939, Congress reduced the grace period from two years to one year. 53 Stat. 1212.

Petitioner correctly argues that these provisions identify an interest in providing inventors with a definite standard for determining when a patent application must be filed. A rule that makes the timeliness of an application depend on the date when an invention is "substantially complete" seriously undermines the interest in certainty.[11] Moreover, such a rule finds no support in the text of the stat-

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[11]The Federal Circuit has developed a multifactor, "totality of the circumstances" test to determine the trigger for the on-sale bar. See, *e. g.*, *Micro Chemical, Inc.* v. *Great Plains Chemical Co.*, 103 F. 3d 1538, 1544 (1997) (stating that, in determining whether an invention is on sale for purposes of 102(b), " 'all of the circumstances surrounding the sale or offer to sell, including the stage of development of the invention and the nature of the invention, must be considered and weighed against the policies underlying section 102(b)' "); see also *UMC Electronics Co.* v. *United States*, 816 F. 2d 647, 656 (1987) (stating the on-sale bar "does not lend itself to formulation into a set of precise requirements"). As the Federal Circuit itself has noted, this test "has been criticized as unnecessarily vague." *Seal-Flex, Inc.* v. *Athletic Track & Court Construction*, 98 F. 3d 1318, 1323, n. 2 (1996).

ute. Thus, petitioner's argument calls into question the standard applied by the Court of Appeals, but it does not persuade us that it is necessary to engraft a reduction to practice element into the meaning of the term "invention" as used in §102(b).

The word "invention" must refer to a concept that is complete, rather than merely one that is "substantially complete." It is true that reduction to practice ordinarily provides the best evidence that an invention is complete. But just because reduction to practice is sufficient evidence of completion, it does not follow that proof of reduction to practice is necessary in every case. Indeed, both the facts of the *Telephone Cases* and the facts of this case demonstrate that one can prove that an invention is complete and ready for patenting before it has actually been reduced to practice.[12]

We conclude, therefore, that the on-sale bar applies when two conditions are satisfied before the critical date.

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[12] Several of this Court's early decisions stating that an invention is not complete until it has been reduced to practice are best understood as indicating that the invention's reduction to practice demonstrated that the concept was no longer in an experimental phase. See, *e.g.*, *Seymour* v. *Os-borne*, 11 Wall. 516, 552 (1871) ("Crude and imperfect experiments are not sufficient to confer a right to a patent; but in order to constitute an invention, the party must have proceeded so far as to have reduced his idea to practice, and embodied it in some distinct form"); *Clark Thread Co.* v. *Willimantic Linen Co.*, 140 U. S. 481, 489 (1891) (describing how inventor continued to alter his thread winding machine until July 1858, when "he put it in visible form in the shape of a machine. . . . It is evident that the invention was not completed until the construction of the machine"); *Corona Cord Tire Co.* v. *Dovan Chemical Corp.*, 276 U. S., at 382–383 (stating that an invention did not need to be subsequently commercialized to constitute prior art after the inventor had finished his experimentation. "It was the fact that it would work with great activity as an accelerator that was the discovery, and that was all, and the necessary reduction to use is shown by in-stances making clear that it did so work, and was a completed discovery").

First, the product must be the subject of a commercial offer for sale. An inventor can both understand and control the timing of the first commercial marketing of his invention. The experimental use doctrine, for example, has not generated concerns about indefiniteness,[13] and we perceive no reason why unmanageable uncertainty should attend a rule that measures the application of the on-sale bar of §102(b) against the date when an invention that is ready for patenting is first marketed commercially. In this case the acceptance of the purchase order prior to April 8, 1981, makes it clear that such an offer had been made, and there is no question that the sale was commercial rather than experimental in character.

Second, the invention must be ready for patenting. That condition may be satisfied in at least two ways: by proof of reduction to practice before the critical date; or by proof that prior to the critical date the inventor had prepared drawings or other descriptions of the invention that were sufficiently specific to enable a person skilled in the art to practice the invention.[14] In this case the second condition

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[13] See, *e.g.*, Rooklidge & Jensen, Common Sense, Simplicity and Experimental Use Negation of the Public Use and On Sale Bars to Patentability, 29 John Marshall L. Rev. 1, 29 (1995) (stating that "whether a particular activity is experimental is often clear").

[14] The Solicitor General has argued that the rule governing on-sale bar should be phrased somewhat differently. In his opinion, "if the sale or offer in question embodies the invention for which a patent is later sought, a sale or offer to sell that is primarily for commercial purposes and that occurs more than one year before the application renders the invention unpatentable. *Seal-Flex, Inc.* v. *Athletic Track and Court Constr.*, 98 F. 3d 1318, 1325 (Fed. Cir. 1996) (Bryson, J., concurring in part and concurring in the result)." It is true that evidence satisfying this test might be sufficient to prove that the invention was ready for patenting at the time of the sale if it is clear that no aspect of the invention was developed after the critical date. However, the possibility of additional development after the offer for sale in these circumstances counsels against adoption of the rule proposed by the Solicitor General.

of the on-sale bar is satisfied because the drawings Pfaff sent to the manufacturer before the critical date fully disclosed the invention.

The evidence in this case thus fulfills the two essential conditions of the on-sale bar. As succinctly stated by Learned Hand:

> "[I]t is a condition upon an inventor's right to a patent that he shall not exploit his discovery competitively after it is ready for patenting; he must content himself with either secrecy, or legal monopoly." *Metallizing Engineering Co.* v. *Kenyon Bearing & Auto Parts Co.*, 153 F. 2d 516, 520 (CA2 1946).

The judgment of the Court of Appeals finds support not only in the text of the statute but also in the basic policies underlying the statutory scheme, including §102(b). When Pfaff accepted the purchase order for his new sockets prior to April 8, 1981, his invention was ready for patenting. The fact that the manufacturer was able to produce the socket using his detailed drawings and specifications demonstrates this fact. Furthermore, those sockets contained all the elements of the invention claimed in the '377 patent. Therefore, Pfaff's '377 patent is invalid because the invention had been on sale for more than one year in this country before he filed his patent application. Accordingly, the judgment of the Court of Appeals is affirmed.

It is so ordered.