

(Cite as: 298 F.3d 1290; 63 U.S.P.Q.2d 1843)

United States Court of Appeals,
Federal Circuit.

NEW RAILHEAD MANUFACTURING, L.L.C.,
Plaintiff-Appellant,

v.

VERMEER MANUFACTURING COMPANY
and Earth Tool Company, L.L.C., Defendants-
Appellees.

No. 02-1028.

July 30, 2002.

Rehearing En Banc Denied Sept. 25, 2002.

Patentee brought action against competitors alleging infringement of patents drawn to a drill bit for horizontal directional drilling of rock formations and a method for horizontal directional drilling. The United States District Court for the Northern District of Texas, Terry Means, J., granted summary judgment for competitors, on ground that patents were invalid, and patentee appealed. The Court of Appeals, Michel, Circuit Judge, held that: (1) **disclosure in provisional application did not adequately support invention claimed in drill bit patent, as would entitle patent application to provisional application's earlier filing date**, and (2) pre-application public use of patented method was not experimental and thus rendered method patent invalid.

Affirmed.

Dyk, Circuit Judge, dissented in part and filed opinion.

***1291 Roy W. Hardin**, Locke, Liddell & Sapp, LLP, of Dallas, Texas, argued for plaintiff-appellant.

Jon R. Trembath, Merchant & Gould PC, of Minneapolis, Minnesota, argued for defendant-appellee Vermeer Manufacturing Company. With him on the brief was Jared S. Goff.

Craig B. Florence, Gardere Wynne Sewell LLP, of Dallas, Texas, argued for defendant-appellee Earth Tool Company, L.L.C. Of counsel was Stacy R. Obenhaus.

Before **MAYER**, Chief Judge, **MICHEL** and **DYK**, Circuit Judges.

***1292 MICHEL**, Circuit Judge.

Plaintiff-Appellant New Railhead Manufacturing, L.L.C. ("New Railhead") owns [United States Patent Nos. 5,899,283](#) ("the '283 patent") and [5,950,743](#) ("the '743 patent"), drawn to a drill bit for horizontal directional drilling of rock formations and a method for horizontal directional drilling, respectively. New Railhead sued Vermeer Manufacturing Company ("Vermeer") and Earth Tool Company, L.L.C. ("Earth Tool"), for infringement in the United States District Court for the Northern District of Texas based upon their manufacture and distribution, respectively, of a competing drill bit. Both patents-in-suit were invalidated under [35 U.S.C. § 102\(b\)](#). *New Railhead Mfg. Co. v. Vermeer Mfg. Co. & Earth Tool Co.*, Civ. Act. No. 4:99-CV- 355-Y (Sept. 28, 2001 Order granting Earth Tool's motion for summary judgment of invalidity of the '283 patent based on the on-sale bar); *New Railhead Mfg. Co. v. Vermeer Mfg. Co. & Earth Tool Co.*, Civ. Act. No. 4:99-CV-355-Y (Sept. 28, 2001 Order granting Vermeer's motion for summary judgment of invalidity of the '743 patent based on prior public use). New Railhead appeals. We affirm.

I

Horizontal (or lateral) directional drilling is necessary, for example, when installing utilities around immovable objects such as roadways, rivers, or lakes. David Cox, co-owner of New Railhead, invented the drill bit and method claimed in the '283 and '743 patents to overcome prior art problems with horizontal drilling through hard rock formations. The boring system disclosed by the Cox patents uses a drill bit with a body that contains fixed and semi-floating cutting points and one or more fluid channels to lubricate and disperse formations that have been cut or fractured, without using jetting fluids that are traditionally used to steer such drilling apparatus. '283 patent, col. 1, ll. 42-46, 59-64. Claim 1 of the '283 patent is representative of the seven product claims (emphasis on pertinent claim limitation):

1. An asymmetric drill bit for horizontal directional drilling in rock, comprising:
a bit body attached to an end of a sonde housing;
the unitary bit body *being angled with respect to the sonde housing* the bit body being nonmovable with respect to the sonde housing in drilling operation; and
the bit body being mounted with a plurality of substantially forward-facing end studs extending from a front face of the bit body.

Likewise, claim 1 of the '743 patent is representative of the four method claims:

1. A method of horizontal directional drilling in rock, comprising the step of causing a drill bit at one end of a drill string to intermittently rotate as it digs in, stops rotation until the rock fractures, and then moves after fracture in a random, orbital intermittent motion.

Notably, New Railhead acknowledges that the method of the '743 patent is performed whenever the drill bit of the '283 patent is used.

The patents-in-suit were filed as continuation-in-part applications that claimed the priority date of a provisional application filed by New Railhead on February 5, 1997. That provisional discloses a "directional earth boring tool" wherein "the heel-down method of attachment [of the bit] to the drill body helps to create the random elliptical orbital motion that causes the high impact fracturing technique." Under headings labeled "Operational assumptions" and "Theory of Operation," the provisional application further alludes to the "high included angle offsets for directional steering," and the enhanced *1293 performance that results from "multiplying the fracturing effect through leverage on the main drilling points." The provisional concludes with two drawings that show the bit and the sonde housing that holds the bit during operation; however, both drawings show the drill bit in an "exploded" view, *i.e.*, the bit is not shown attached to the drill bit housing. **Moreover, nowhere in the provisional application is the bit body expressly described as being "angled with respect to the sonde housing" as recited in claim 1 of the ' 283 patent.** (As noted by the district court, Cox testified that the claim language "angled with respect to the sonde housing" meant that the drill bit had a toe (front portion) and a heel (rear portion), and that the toe-to-heel ratio was "the amount above and the amount below [the] outer circumference of the sonde housing.")

The '283 patent issued on May 4, 1999, and New Railhead filed this lawsuit the following day. It amended its complaint in January 2000 to include the '783 patent, which had issued on September 14, 1999.

At the close of discovery, Earth Tool moved for partial summary judgment of invalidity of the '283 patent based on the on-sale bar of 35 U.S.C. § 102(b). The parties did not dispute that commercial embodiments of the patented drill bit were sold during the spring and summer of 1996--more than one year before the November 1997 filing date of the non-provisional application, but not more than one year before the filing date of the February 1997 provisional application to which it claimed priority. Earth Tool argued, however, that the utility

application was not entitled to the priority date of the provisional because the disclosure in the provisional specification failed to adequately describe the invention claimed in the '283 patent as required by 35 U.S.C. § 119(e)(1). The district court agreed, concluding **"nothing in this [provisional specification] language states that the drill bit is 'angled with respect to the sonde housing' or otherwise describes the toe, the heel, or the toe-to-heel ratio."** The court further found that Cox had admitted as much in his deposition, and that his later contrary declaration submitted in opposition to partial summary judgment could not, as a matter of law, create a genuine issue of material fact on this point. **Thus, because the '283 patent was not entitled to claim the priority date of the provisional, New Railhead's mid-1996 commercial sales constituted a § 102(b) bar.**

Vermeer also moved for summary judgment of invalidity, arguing that the ' 743 patent was invalid because the method claimed therein had been in public use for more than one year before the February 1997 filing date of the provisional application. Specifically, Cox testified in his deposition that on a number of occasions beginning in January 1996 he had allowed Earl Freeman, an acquaintance who was the foreman of a drilling team working for a third party, to test the drill bits at a public job site to determine if they functioned properly. The district court agreed with Vermeer that Freeman's repeated use of the *method* disclosed in the '743 patent to test, among other things, the *durability* of the *drill bits* that were the physical embodiment of the '283 patent constituted a public rather than experimental use. (J.A. 19 20).

New Railhead appeals. [\[FN1\]](#) We have jurisdiction under [28 U.S.C. § 1295\(a\)\(1\)](#).

[FN1.](#) In addition to appealing the summary judgment motions, New Railhead asserts that the district court abused its discretion by failing to allow New Railhead to file a second amended complaint to add causes of action arising after the lawsuit was filed, based upon actions taken by Vermeer allegedly "to punish Railhead for enforcing its patents." We summarily reject this argument.

*1294 II

[\[1\]](#) Summary judgment is appropriate "if the pleadings, depositions, answers to interrogatories,

and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." [Fed.R.Civ.P. 56\(c\)](#). We review a district court's grant of summary judgment of invalidity without deference, drawing all reasonable factual inferences in favor of the non-movant. [Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 255, 106 S.Ct. 2505, 91 L.Ed.2d 202 \(1986\)](#); [Conroy v. Reebok Int'l, Ltd., 14 F.3d 1570, 1575, 29 USPQ2d 1373, 1377 \(Fed.Cir.1994\)](#).

III

[2] Because the parties do not dispute that the patented drill bit was the subject of a commercial offer for sale more than one year before the utility application was filed, the ['283 patent](#) is invalid if it is not afforded the priority date of the provisional application. [35 U.S.C. § 102\(b\)](#) ("A person shall be entitled to a patent unless ... the invention was ... on sale in this country, more than one year prior to the date of the application for patent in the United States.").

[3] As a part of the Uruguay Round Agreements Act, the Patent Statute was amended to allow applicants for United States patents to file provisional applications that could provide the priority date for a non-provisional utility application filed within one year of the provisional. See [35 U.S.C. § 111\(b\)](#). Such a provisional application need only include a specification conforming to the requirements of [35 U.S.C. § 112 ¶ 1](#) and at least one drawing filed under § 113; no claims are required. [35 U.S.C. § 111\(b\)\(1\), \(2\)](#). However, for the non-provisional utility application to be afforded the priority date of the provisional application, the two applications must share at least one common inventor and the written description of the provisional must adequately support the claims of the non-provisional application:

An application for patent filed under [section 111\(a\)](#) or [section 363](#) of this title for an invention disclosed in the manner provided by the first paragraph of [section 112](#) of this title in a provisional application filed under [section 111\(b\)](#) of this title, by an inventor or inventors named in the provisional application, shall have the same effect, as to such invention, as though filed on the date of the provisional application filed under [section 111\(b\)](#) of this title, if the application for patent filed under [section 111\(a\)](#) or [section 363](#) of this title is filed not later than 12 months after the date on which the provisional application was filed and if it contains or is amended to contain a specific reference to the provisional application.

[35 U.S.C. § 119\(e\)\(1\)](#) (emphasis added). In other words, the specification of the *provisional* must "contain a written description of the invention and the manner and process of making and using it, in such full, clear, concise, and exact terms," [35 U.S.C. § 112 ¶ 1](#), to enable an ordinarily skilled artisan to practice the invention *claimed* in the *non-provisional* application.

New Railhead argues that the district court erred by concluding that the specification of the provisional did not support the claims of the ['283 patent](#). In particular, New Railhead asserts that Cox was always in possession of the asymmetrical heel-toe structure and that the district court went astray by focusing on whether the provisional application disclosed the "importance" of the angled structure rather than whether it disclosed the angled structure at all. In its view, one of ordinary skill would readily understand from the "totality of the disclosure," *i.e.* the ***1295** drawings together with the provisional written description, that the drill bit was angled with respect to the sonde housing.

We discern no error in the district court's conclusion that this claim limitation was not adequately supported by the provisional, as the factual bases girding its conclusion are so solid that no reasonable jury could find otherwise. The district court relied in particular on the admissions in the deposition testimony of Cox himself, in which he explained that he knew the drawings contained the heel-toe angle because he understood the configuration of the device, not necessarily because the drawings showed such a configuration. In addition to Cox's testimony, the district court had before it the testimony of Joseph Steele, the New Railhead employee responsible for the company's research and development (and the person aside from Cox most familiar with the patented drill bit), who averred that he could not tell from the drawings in the provisional whether the heel and toe of the drill bit extended beyond the sonde housing. Randy Runquist, a designer and engineer for Vermeer testified that he, too, was unaware of the angled features of the drill bit from the provisional drawings.

[4][5][6] Cox's later declaration, submitted in opposition to the motion for partial summary judgment, was at best an equivocal attempt to refine his deposition testimony. But even when viewed in a light most favorable to New Railhead, one is left with no clear indication that the provisional application adequately describes to one of ordinary skill in the art the "heel- toe" angle between the bit and the housing:

To my eye the drawings which were submitted with

the provisional application clearly show a heel portion and a toe portion, each of the portions extending respectively above and below the outer circumference of the sonde housing. Although the drawings show the two pieces in exploded configuration, I believe that because they are accurately scaled drawings of the actual tool, one of ordinary skill could actually construct the tool itself from these drawings *and if that were done, the heel and toe portions would be present.*

(emphases added). This averment not only fails to create a genuine issue of material fact regarding whether the written description has been satisfied, but it also conflates the concepts of written description and enablement in the process. "The purpose of the written description requirement is broader than to merely explain how to 'make and use'; the applicant must also convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention." Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 1563-64, 19 USPQ2d 1111, 1117 (Fed.Cir.1991). That is, the disclosure must show he had invented each feature that is included as a claim limitation. The adequacy of the written description (*i.e.*, the disclosure) is measured from the face of the application; the requirement is not satisfied if one of ordinary skill in the art must first make the patented invention before he can ascertain the claimed features of that invention. *Cf. Martin v. Mayer*, 823 F.2d 500, 505, 3 USPQ2d 1333, 1337 (Fed.Cir.1987) ("It is not a question of whether one skilled in the art might be able to construct the patentee's device from the teachings of the disclosure [but] whether the application necessarily discloses that particular device." (quoting Jepson v. Coleman, 50 C.C.P.A. 1051, 314 F.2d 533, 536, 136 USPQ 647, 649-50 (CCPA 1963))).

New Railhead's repeated assertions that Cox was at all times in possession of the claimed invention are somewhat misdirected. Although we have recently noted the particular usefulness of the "possession" inquiry when a patentee claims an earlier *1296 filing date under 35 U.S.C. § 119, we have at the same time cautioned that the written description requirement "is not subsumed by the 'possession' inquiry." Enzo Biochem, Inc. v. Gen-Probe Inc., No. 01-1230, slip op. *granting reh'g* at 19 (Fed.Cir. July 15, 2002). Identity of description is not necessary. *See, e.g., Crown Operations Int'l, Ltd. v. Solutia Inc.*, 289 F.3d 1367, 1376, 62 USPQ2d 1917, 1922 (Fed.Cir.2002) ("[T]he disclosure as originally filed does not have to provide *in haec verba* support for the claimed subject matter at issue."). Identity of that which is described, however, is necessary: "What is

claimed by the patent application must be the same as what is disclosed in the specification...." Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. ---, 122 S.Ct. 1831, 1840, 152 L.Ed.2d 944 (2002); accord Lockwood v. American Airlines, Inc., 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed.Cir.1997). The description in the provisional fails to meet this standard.

Undeterred, New Railhead argues that the testimony credited by the district court demonstrates at most that the provisional drawings alone do not satisfy the written description requirement, but that--read in conjunction with the rest of the specification--the adequate support requirement of § 112 ¶ 1 has been met. In particular, it assails the district court for having allegedly focused only on the abstract of the specification, and urges that the following excerpt from the provisional, with particular emphasis placed by New Railhead, discloses to one of ordinary skill the angled structure:

Theory of operation--

* * *

3. The new Asymmetrical Directional Drilling point for Rock and Hard Earth Formations combines the techniques of point contact fracturing for rock with a *high angle of attack* for hard earth as well as soft formations. Fracturing is accomplished with the application of hard carbide points on random elliptical torque vectors created as the asymmetrical geometry of the bit forms eccentric rotational paths by the combination of rotation and thrust moments. Drilling of rock like shales that are typically considered to be compressed and extremely dense and dry clays are also enhanced by the aggressively pointed geometry of the drill bit.

4. *The asymmetrical geometry enhances the performance of the drill rack by multiplying the fracturing effect through leverage on the main drilling points.* As the bit rotates *the offset drill points* randomly fracture and engage as center points of rotation and multiply transverse moments 3 to 8 times the actual transverse moments that can be produced at the same diameter in a symmetrically formed fixed diameter drill bit.

5. Bore hole size is defined and controlled by stabilizing the forward cutting points on a *trailing shoe* that contains replaceable, semi-permanent carbide buttons that will fracture off irregular surfaces and help smooth the borehole as well as reduce the abrasive wear on the body of the bit.

We are not moved. Nothing in this disclosure even intimates to one of ordinary skill in the art the specific angled relationship between the bit and its

housing. *Contra* ['283 patent](#), col. 2, ll. 49-57 ("[T]he specially- configured asymmetric drill bit for horizontal directional drilling in rock includes a bit body attached to an end of a sonde housing. The bit body is angled with respect to the sonde housing, as best shown in Fig. 4, with the angle displacement from collinear alignment being relatively slight, that is, on the order of about 15 degrees."). Notably, while the ***1297** patent discloses verbatim the language from the provisional "theory of operation" quoted by New Railhead, *see id.* col. 3, l. 49--col. 4, l. 5, the provisional never states that the drill bit is angled with respect to the sonde housing, does not mention or describe the toe or the heel, and does not mention or define the heel-toe ratio. The passing references to a "high angle of attack" and "high included angle offsets" in the provisional, divorced from any discussion whatsoever of the bit-housing combination, do not convey to one of ordinary skill that Cox was in possession of the bit-housing angle that is a limitation of the invention claimed in the ['283 patent](#).

New Railhead has failed to demonstrate any error in the district court's holding that the disclosure of the provisional application does not adequately support the invention claimed in the ['283 patent](#) as to the angle limitation. As a result, the ['283 patent](#) is not entitled to the filing date of the provisional application. [35 U.S.C. § 119\(e\)\(1\)](#). Accordingly, because the utility application that issued as the ['283 patent](#) was filed on November 12, 1997, more than one year after the admitted mid-1996 commercial offers for sale, the district court properly granted Vermeer's motion for partial summary judgment of invalidity under [35 U.S.C. § 102\(b\)](#).

IV

[\[7\]](#) The district court assumed, in considering the remaining summary judgment motion, that the ['743 patent](#) was entitled to the priority date of the provisional application discussed above. Even so, it held the ['743 patent](#) invalid because the claimed method had been in public use as early as January 1996. New Railhead challenges that holding on the basis that all public use before the critical date was experimental.

[\[8\]](#) A person is not entitled to a patent if the invention disclosed therein was in public use in this country more than one year before the application date for the patent. [35 U.S.C. § 102\(b\)](#). The statutory phrase "public use" does not necessarily mean open and visible in the ordinary sense; it includes any use of the claimed invention by a person

other than the inventor who is under no limitation, restriction, or obligation of secrecy to the inventor. [Lough v. Brunswick Corp.](#), 86 F.3d 1113, 1119, 39 USPQ2d 1100, 1104 (Fed.Cir.1996); [Egbert v. Lippmann](#), 104 U.S. 333, 336, 26 L.Ed. 755 (1881); *see also Elec. Storage Battery Co. v. Shimadzu*, 307 U.S. 5, 20, 59 S.Ct. 675, 83 L.Ed. 1071 (1939) ("The ordinary use of a machine or the practice of a process in a factory in the usual course of producing articles for commercial purposes is a public use.").

[\[9\]\[10\]](#) What would otherwise appear to be public use is negated if the inventor was testing claimed features of his invention. [EZ Dock, Inc. v. Schafer Sys., Inc.](#), 276 F.3d 1347, 1353, 61 USPQ2d 1289, 1292 (Fed.Cir.2002). "When an evaluation period is reasonably needed to determine if the invention will serve its intended purpose, the [§ 102\(b\)](#) bar does not start to accrue while such determination is being made." [Seal-Flex, Inc. v. Athletic Track & Court Constr.](#), 98 F.3d 1318, 1324, 40 USPQ2d 1450, 1454 (Fed.Cir.1996). An invention can exist for the purposes of the statutory bar, however, even though it may later be refined or improved. [Baxter Int'l, Inc. v. COBE Labs., Inc.](#), 88 F.3d 1054, 1060, 39 USPQ2d 1437, 1442 (Fed.Cir.1996); [Baker Oil Tools, Inc. v. Geo Vann, Inc.](#), 828 F.2d 1558, 1563, 4 USPQ2d 1210, 1214 (Fed.Cir.1987). Once an inventor realizes that the invention as later claimed indeed works for its intended purpose, further "experimentation" may constitute a barring public use. [RCA Corp. v. Data Gen. Corp.](#), 887 F.2d 1056, 1061, 12 USPQ2d 1449, 1453 (Fed.Cir.1989) ("[E]xperimental use, which means perfecting or ***1298** completing an invention to the point of determining that it will work for its intended purpose, ends with an actual reduction to practice.").

It is beyond debate in this case that Earl Freeman's use of the patented method was public. The method was first performed at a commercial jobsite on public land on the side of an interstate highway, and the inventor admitted he had no control over the practice of the patented *method*. Declaration of Dave Cox, J.A. at 1138-39 ("While I did not and indeed could not control the actual drilling activities Freeman performed (because he was using the bit at commercial job sites), I always felt that I retained control of the bit."). Thus, there was a barring use of the method unless that use was experimental or otherwise meant and needed to test the method.

It is of crowning importance, as the district court recognized, that all of the testimony adduced by New Railhead indicates--without equivocation--that it was only the drill bit claimed in the ['283 patent](#), and not

the method of the ['743 patent](#), that was being tested by Freeman. The method was successfully performed numerous times in January with the first prototype of the drill bit, as evidenced by Cox's own testimony:

Q: Let me make sure that I understand what you said. Are you saying that Earl was happy with the way the bit was working and there wasn't a need to really mess with it much more after the first few bores?

A: We couldn't find anything other than to try to discover its ability to drill. We had no descriptive method other than what it was teaching us it would do and there was no adjustments that we could perceive to make at this moment. We first trying [sic] to organize and to understand the bit.

Q: Okay. That's after the first bore, after the first 200-foot bore we talked about. Were you pretty well happy with the performance of the bit?

* * * *

A: It probably did more than we expected it.

Cox made a second prototype bit because he did not like the appearance of the first one. Freeman then used this bit in various rock formations for a "variety of days," in which he drilled an average of 300 to 500 feet per day over the course of a three-week stretch. Further modifications were made to the bit over the ensuing months, but nothing in the record indicates that there ever was a question about the efficacy of the patented method. Indeed, the parties agreed that the January use of the drill bit later claimed in the ['283 patent](#) met each limitation of the claims in the method of the ['743 patent](#). Cf. [Juicy Whip, Inc. v. Orange Bang, Inc.](#), 292 F.3d 728 (Fed.Cir.2002) (reversing jury's invalidation based upon prior use because no reasonable juror could have found that the products at issue contained every limitation of the claimed invention).

The undisputed and indisputable facts before us resemble those before the court in [D.L. Auld Co. v. Chroma Graphics Corp.](#), 714 F.2d 1144, 219 USPQ 13 (Fed.Cir.1983). The patent at issue in that case claimed a method of forming foil-backed inserts in the form of case decorative emblems. The district court determined that the method had been in public use based upon the inventor's testimony that before the critical date Auld had produced sample emblems made by hand in accordance with the claimed method. [Id. at 1148, 714 F.2d 1144, 219 USPQ at 16](#). On appeal, Auld argued that the earlier use of the method had been experimental because the emblems then produced were made by the "laboratory method," as opposed to the *1299 method intended to be used to mass-produce commercial quantities of the

emblems. [Id. at 1149, 714 F.2d 1144, 219 USPQ at 17](#). We rejected this argument because the so-called "laboratory method" still met all of the limitations of the claim:

[The inventor's] testimony establishes unequivocally that the "laboratory method" itself involved each step of the claimed method and that each such step was performed in producing some early samples.... When carefully read, the "clarifying affidavits" do not contradict those facts.... That Auld might have to tool up for mass production if a customer gave a large order bears no relation to whether the experimentation was required on the claimed method.

[Id. at 1149-50, 714 F.2d 1144, 219 USPQ at 17](#).

And so it is here. Whatever the circumstance with respect to New Railhead's continued modifications to the drill bit claimed in the ['283 patent](#), there is no suggestion whatsoever that Freeman's January 1996 use of the patented method did not meet each and every claim limitation in the ['743 patent](#). New Railhead understood after the first 200-foot bore that the patented *method* had been reduced to practice, as it worked for its intended purpose. Accordingly, as a matter of law none of the subsequent uses of the method could be experimental. Cf. [Baxter Int'l, Inc.](#), 88 F.3d at 1060, 39 USPQ2d at 1441-42 (noting that public use is not negated by experiments directed to tangential or unclaimed aspects of the invention).

The dissent would reverse the district court with respect to the method patent because the use took place under (as opposed to "on") public land and because "there has been no showing whatsoever that the use was anything but confidential." But this court has made clear that secrecy alone is an ineffective gauge of experimentation:

The fact that the device was not hidden from view may make the use not secret but non-secret use is not *ipso facto* "public use" activity. Nor, it must be added, is all secret use *ipso facto* not 'public use' within the meaning of the statute, if the inventor is making commercial use of the invention under circumstances [that] preserve its secrecy.

[TP Labs., Inc. v. Professional Positioners, Inc.](#), 724 F.2d 965, 972, 220 USPQ 577, 583 (Fed.Cir.1984) (citing [City of Elizabeth v. Am. Nicholson Pavement Co.](#), 97 U.S. 126, 136, 24 L.Ed. 1000 (1877)). Thus, the dissent's suggestion that the patented method was not in public use because one could not view the drill bit or see it in operation rings hollow because "[i]t is not public knowledge of his invention that precludes the inventor from obtaining a patent for it, but a public use or sale of it." [Id. at 970, 724 F.2d 965, 220 USPQ at 581](#) (citing [City of Elizabeth](#), 97 U.S. at

[136](#)); see also [Egbert v. Lippmann](#), 104 U.S. 333, 336, 26 L.Ed. 755 (1881) ("[W]hether the use of an invention is public or private does not necessarily depend upon the number of persons to whom its use is known.").

The district court did not err in granting Earth Tool's motion for summary judgment of invalidity under [§ 102\(b\)](#). Therefore, the judgment of the trial court is in all respects

AFFIRMED.

Dissenting opinion filed by Circuit Judge [DYK](#).

[DYK](#), Circuit Judge, dissenting-in-part.

I agree with the portion of the majority opinion holding the claims of the '[283 patent](#) invalid on the ground that the disclosure of the provisional application did not support the claims. However, I respectfully dissent from the holding of invalidity of the claims of the '[743 patent](#). Affirming a ***1300** grant of summary judgment, the majority holds that the '[743 patent](#) claims are invalid on grounds of public use under [35 U.S.C. § 102\(b\)](#) because the use was public and the use did not qualify for the experimental use exception. I suggest that the majority is incorrect on both grounds.

First, the majority holds that the use was necessarily public because it took place "at a commercial jobsite on public land on the side of an interstate highway." [Ante at 1298](#). The use actually took place *under* public land, hidden from view, and there has been no showing whatsoever that the use was anything but confidential. In order to understand the method of using the drill bit a person at the job site would have to view the drill bit or see it in operation, and this was impossible to do while the drill bit was underground.

Cox recognized that to obtain data about the use of the prototype drill bits he needed Earl Freeman to test the bits in the field. The only person with access to the prototype drill bits and who actually used the bits before the bar date was Freeman. Cox could not control when and where Freeman tested the bits because Freeman could only operate his drilling rig with the approval of an inspector. Thus, as the majority points out, Cox was correct to admit that he "did not and indeed could not control the actual drilling activities Freeman performed (because he was using the bit at commercial job sites)...." That

Cox could not control the time and place the bits were used does not mean their use was public. Freeman's use of the prototype drill bits was conditioned on keeping information about the bits and their method of use secret, and Freeman was under a duty not to disclose any information about the bits or how they were used underground. Indeed, Cox testified in the very next sentence after the one quoted by the majority that he "[felt] certain Earl Freeman understood from our conversations that his activities were part of an experimental program and were not to be considered either commercial or public in nature." Further, there was evidence presented that among those with knowledge of the drill, "[t]here was no one of us that did not understand that this was supposed to be secret." There has been no showing by Vermeer or Earth Tool that the method claimed in the '[743 patent](#) was used by anyone not under a duty of confidentiality before the bar date.

The decision here is contradicted by our decision in [Moleculon Research Corp. v. CBS, Inc.](#), 793 F.2d 1261, 229 USPQ 805 (Fed.Cir.1986). There, we held that the open, non-secret use of a claimed method was not a barring public use because the inventor expected knowledge of the method to remain confidential. [Id. at 1265-66, 793 F.2d 1261, 229 USPQ at 807-08](#). In [Moleculon](#), the patentee invented a three-dimensional puzzle capable of rotational movement (similar to the familiar Rubik's cube, the accused product in the case) and obtained a patent containing both method and apparatus claims directed to the puzzle. The apparatus claims were directed to the puzzle itself while the method claims were directed to methods of manipulating the pieces of the puzzle. The district court found that although more than one year before filing his application the inventor "explained his puzzle to a few close colleagues," he "at all times retained control over its use as well as over the distribution of information concerning it. He never used the puzzle or permitted it used [sic] in a place or at a time when he did not have a legitimate expectation of privacy and of confidentiality." [Id. at 1265, 793 F.2d 1261, 229 USPQ at 808](#). Under such circumstances, we held neither the apparatus nor the method claims were invalid under [§ 102\(b\)](#). [Id. at 1266, 793 F.2d 1261, 229 USPQ at 808](#). Here also, because Cox never used or permitted the drill bits to be used in a place or time in ***1301** which he did not have a legitimate expectation of confidentiality, the drill bits and the method of using them were not in "public use" before the bar date.

The majority suggests that a use of an invention is an

invalidating public use, even though secret, "if the inventor is making commercial use of the invention." *Ante* at 1299 (citations omitted). The asserted commercial use here results from the payment to Eagle Pipeline by a third party for performing drilling that, incidentally, involved use of the claimed method. If the use of an invention is "commercial" that use may be deemed public even if secret. However, in order to be commercial the use must provide a profit or commercial advantage *to the inventor*. See *Kinzenbaw v. Deere & Co.*, 741 F.2d 383, 391, 222 USPQ 929, 934 (Fed.Cir.1984) ("In using the machines to test them for Deere, the farmers served Deere's commercial purposes.... [T]he testing of the machines was a commercial use by Deere of its patented invention."); *D.L. Auld Co. v. Chroma Graphics Corp.*, 714 F.2d 1144, 1147, 219 USPQ 13, 15 (Fed.Cir.1983) ("[T]he intent of [invalidating claims based on commercial use] is to preclude attempts by the inventor or his assignee to profit from commercial use of an invention for more than a year before an application for patent is filed."); *Metallizing Eng'g Co. v. Kenyon Bearing & Auto Parts Co.*, 153 F.2d 516, 520, 68 USPQ 54, 58 (2d Cir.1946) ("It is indeed true that an inventor may continue for more than a year to practice his invention for his private purposes or his own enjoyment and later patent it. But that is, properly considered, not an exception to the doctrine, for he is not then making use of his secret to gain a competitive advantage over others."). Here there is no evidence on summary judgment that the inventor profited from the alleged use or gained a commercial advantage. The mere fact that Eagle Pipeline gained a profit is irrelevant.

Further, even if the majority were correct in finding that the claimed method was in public use prior to the critical date, the majority is incorrect in finding that the use of the method was not experimental. The majority's theory appears to be that the inventor was satisfied with the method after tests in early January, and that further testing was designed only to test the particular bits and not the method. The majority states that "all of the testimony adduced by New Railhead indicates without equivocation that it was only the drill bit claimed in the '283 patent, and not the method of the '743 patent, that was being tested by Freeman." *Ante* at 1298. The testimony does not in fact separately address the method and the bit. Nor could the two be separated. The method and the bit were inextricably intertwined. The claims of the '743 patent were specifically directed to "method[s] of horizontal directional drilling in rock." '743 patent, col. 5, l. 18. Claim 1, the only independent claim, recites "[a] method of horizontal directional drilling

in rock, comprising the step of causing a drill bit at one end of a drill string to intermittently rotate as it digs in, stops rotation until the rock fractures, and then moves after fracture in a random, orbital intermittent motion." *Id.* at col. 5, l. 18 col. 6, l. 2. Drilling with the experimental bits was plainly a test of the claimed method. The method would not work if the drill bit did not work. During the experimental period both the drill bit and the method of using it were being tested.

After being generally satisfied in January with both the method and the bit, the testing continued to determine the durability of the bit. (Cox Dep. at 79-80) (stating that "[w]e would run [the bits] until they went down to figure out what footage we could get, the type of penetration and sometimes put them in some awful conditions *1302 to see if they could survive."). The question is whether such further testing was experimental. We have held in earlier cases that testing durability is an appropriate part of testing inventions where durability is an implicit feature of the invention, even if not claimed specifically. See *EZ Dock, Inc. v. Schafer Sys., Inc.*, 276 F.3d 1347, 1353, 61 USPQ2d 1289, 1293 (Fed.Cir.2002); *Manville Sales Corp. v. Paramount Sys., Inc.*, 917 F.2d 544, 550, 16 USPQ2d 1587, 1592 (Fed.Cir.1990). As we discussed in *EZ Dock*:

In *Manville Sales Corp. v. Paramount Sys. Inc.*, 917 F.2d 544, 550, 16 USPQ2d 1587, 1592 (Fed.Cir.1990), this court permitted the inventor to test the invention for durability during winter although claims did not expressly mention durability or severe weather conditions. Instead this court reasoned that the nature of the invention (luminaires) required durability so that the claims' reference to the subject matter placed that topic within the proper frame of experimentation. In this case, the '055 patent claims a floating dock. These floating docks, by their nature, must endure all kinds of water conditions, including choppy water created by weather and boating. The waters at Bass Camp, the location of Mr. Greden's dock, were much rougher than the waters in Mr. Neitzke's marina where he was testing other dock sections. Mr. Neitzke testified that he sold the dock to Mr. Greden to test how it would hold up under these more turbulent water conditions. In other words, Mr. Neitzke testified that he sold the dock to Mr. Greden to determine whether it was "capable of performing its intended purpose in its intended environment." *Gould*, 579 F.2d at 583 [*Gould Inc. v. United States*, 217 Ct.Cl. 167, 579 F.2d 571, 198 USPQ 156 (Ct.Cl.1978)].

Id. at 1353, 276 F.3d 1347, 61 USPQ2d at 1293. Here durability of the bit is an implied feature of the

method claimed, as a method would not be found to serve its intended purpose if the practice of the method prematurely destroyed the tools used to practice the method. "When an evaluation period is reasonably needed to determine if the invention will serve its intended purpose, the [§ 102\(b\)](#) bar does not start to accrue while such determination is being made." [Seal-Flex, Inc. v. Athletic Track & Court Constr.](#), 98 F.3d 1318, 1324, 40 USPQ2d 1450, 1454 (Fed.Cir.1996).

Under the majority's holding, Cox should have filed his application for the method patent within one year of beginning testing of the drill bit even if he had not completed testing of the drill bit used in the method for durability. We should not adopt so stringent a test for experimental use that we force prospective patent applicants to prematurely file with the Patent Office. Rather we should be faithful to our earlier cases, which apply a more sensible and realistic test.

For the foregoing reasons, I respectfully dissent.

298 F.3d 1290, 63 U.S.P.Q.2d 1843