

United States District Court,  
D. Minnesota.

**SPECTRALYTICS, INC,**  
Plaintiff.

v.

**CORDIS CORPORATION and Norman Noble, Inc,**  
Defendants.

No. 05-CV-1464 PJS/RLE

**Sept. 15, 2008.**

**Background:** Assignee of patent covering an apparatus for cutting metal tubing with a laser brought action against manufacturer of accused product and distributor of accused product asserting claims of patent infringement, theft of trade secrets, and unfair competition. All parties moved for summary judgment.

**Holdings:** The District Court, Patrick J. Schiltz, J., held that:

- (1) genuine issue of material fact regarding the closeness of fit between the tubing and bushing in the accused device precluded summary judgment with respect to literal infringement claim;
- (2) genuine issue of material fact precluded summary judgment on issue of whether three other patents qualified as prior art;
- (3) laser cutting machine with a tailstock did not anticipate patent;
- (4) genuine issues of material fact as to whether patent was an obvious combination of Swiss-style cutting machines and prior-art laser-cutting machines precluded summary judgment on invalidity issue; and
- (5) genuine issues of material fact precluded summary judgment on trade secret claims.

Motions granted in part and denied in part.

Court-Filed Expert Resumes

5,852,277. Construed.

Matthew J. Goggin, Alan G. Carlson, R.J. Zayed, Dennis C. Bremer, and Russell J. Rigby, Carlson Caspers Vandenburg & Lindquist, P.A., for plaintiff Spectralytics, Inc.

Gregory L. Diskant, Michael J. Timmons, and Richard O. Jackson, Patterson, Belknap, Webb & Tyler LLP; Joseph W. Anthony and Courtland C. Merrill, Anthony Ostlund & Baer, P.A., for defendant Cordis Corporation.

James B. Niehaus and Christopher C. Koehler, Frantz Ward LLP; John Edward Connelly and Lee M. Pulju, Faegre & Benson LLP, for defendant Norman Noble, Inc.

## ORDER ON CROSS-MOTIONS FOR SUMMARY JUDGMENT

PATRICK J. SCHILTZ, **District Judge.**

### I. BACKGROUND

On October 24, 1996, Gary Gustafson filed a patent application covering an apparatus for cutting metal tubing with a laser. The application issued on December 22, 1998 as United States Patent No. 5,852,277 (the '277 patent). The patented apparatus is specifically designed for cutting stents, which are short, thin-walled, perforated sections of metal tubing that are implanted in fluid-carrying tubes in the body-generally arteries, but also veins, ducts, and ureters, among other things-to keep those tubes open.

Gustafson assigned his rights in the '277 patent to plaintiff Spectralytics, Inc. Spectralytics makes stent-cutting machines, but it has not been very successful in the stent business, either as a supplier of stent-cutting machines or as a manufacturer of stents. Defendant Norman Noble, Inc. ("Noble"), by contrast, has been a very successful manufacturer of stents, which it cuts on machines made by Noble itself. Noble sells stents to defendant Cordis Corporation ("Cordis"). FN1 Cordis is one of the country's leading stent distributors, with annual sales in the hundreds of millions of dollars. FN2

FN1. Cordis Corporation is now affiliated with Johnson & Johnson, after a merger in 1996 between Johnson & Johnson Interventional Services ("JJIS") and the then-independent Cordis Corporation. The Court refers to JJIS as "Cordis," which reflects the current corporate reality.

FN2. In addition to distributing stents made by Noble, Cordis distributes stents that it manufactures in-house.

Spectralytics believes that Noble has not come by its success honestly. Specifically, Spectralytics contends that at least one model of Noble's stent-cutting machine infringes the '277 patent. FN3 Spectralytics is therefore suing both Noble and Cordis for patent infringement. Spectralytics also contends that Noble stole trade secrets related to the design of stent-cutting machines-trade secrets that Noble allegedly became aware of in 1995 or 1996 when it was negotiating a possible acquisition of Spectralytics. Spectralytics is therefore suing Noble for theft of trade secrets and unfair competition.

FN3. The parties call the allegedly infringing Noble machine the "follower assembly." The Court will generally refer to it simply as the accused device, machine, or apparatus.

All of the parties move for summary judgment. Spectralytics asks the Court to rule that the accused Noble machines literally infringe claim 1 of the '277 patent, that certain disputed references are not part of the prior art, and that claim 1 of the '277 patent is not invalid as either anticipated or obvious. FN4 Spectralytics Mot. Partial S.J. [Docket No. 93]; Spectralytics Mem. Supp. Mot. Partial S.J. ("Spectralytics SJ Mem.") [Docket No. 94]. Cordis moves for summary judgment in its favor on some of the same issues-infringement, obviousness, and the status of disputed references-and on the side issue of whether claims based on United

States Patent No. 6,114,653 (the '653 patent), which Spectralytics no longer asserts, should be dismissed with or without prejudice. FN5 Cordis Mot. S.J. [Docket No. 103]; Cordis Mem. Supp. Mot. S.J. ("Cordis SJ Mem.") [Docket No. 107]. Noble moves for summary judgment on one patent-law issue raised by Spectralytics-the status of certain disputed references-and on Spectralytics's trade-secrets and unfair-competition claims. FN6 Noble Mot. S.J. [Docket No. 88]; Noble Mem. Supp. Mot. S.J. ("Noble SJ Mem.") [Docket No. 90].

FN4. Claim 1 of the '277 patent is the only claim seriously at issue in this suit. The Court will therefore sometimes use the phrase "the '277 patent" as shorthand for "claim 1 of the '277 patent."

FN5. Count II of the first amended complaint alleges that Noble infringes United States Patent No. 6,114,653 (the '653 patent), a method patent that is related to the '277 patent. Spectralytics intends to dismiss Count II but has not moved for dismissal because the parties have been unable to agree to a stipulation with respect to the '653 patent. *See* Goggin Decl. Exs. 8-12 [Docket No. 131]. The Court addresses issues related to Count II at the end of this opinion.

FN6. Cordis and Noble have divided the task of briefing patent-law issues, with Cordis focusing on invalidity and infringement, and Noble addressing whether disputed references are in the prior art. But each party expressly relies on the other's arguments. In discussing their arguments, the Court will generally refer only to the party that briefed a particular issue, even though the arguments may nominally be advanced by Cordis and Noble together. The Court expresses its appreciation to all parties for striving to avoid duplication in the briefing.

For the reasons given below, the Court grants summary judgment to Spectralytics that the '277 patent is not invalid as anticipated. The Court denies summary judgment to Cordis that the '277 patent is invalid as obvious-although, as the Court will explain, the Court believes that Cordis will likely prevail on this issue at trial. The Court's holdings with respect to the subsidiary questions about the content of the prior art are described below. The Court denies both Cordis's and Spectralytics's motions for summary judgment with respect to infringement. FN7 The Court denies summary judgment to Noble on Spectralytics's trade-secrets and unfair-competition claims-although, as also explained below, the Court expects that Noble will prevail on these claims at trial. Finally, the Court grants Cordis's motion with respect to dismissal of claims related to the no-longer-asserted ' 653 patent.

FN7. Cordis, in a single paragraph of its summary-judgment brief, contends that Spectralytics is barred from showing infringement under the doctrine of equivalents. Cordis SJ Mem. at 36-37. Cordis's briefing is not adequate to permit the Court to address this issue, and thus the Court declines to address it.

## II. ANALYSIS

### *A. Standard of Review*

Summary judgment is appropriate "if the pleadings, the discovery and disclosure materials on file, and any affidavits show that there is no genuine issue as to any material fact and that the movant is entitled to judgment as a matter of law." Fed.R.Civ.P. 56(c). A dispute over a fact is "material" only if its resolution

might affect the outcome of the suit under the governing substantive law. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986). A dispute over a fact is "genuine" only if the evidence is such that a reasonable jury could return a verdict for either party. *Ohio Cas. Ins. Co. v. Union Pac. R.R.*, 469 F.3d 1158, 1162 (8th Cir.2006). In considering a motion for summary judgment, a court "must view the evidence and the inferences that may be reasonably drawn from the evidence in the light most favorable to the non-moving party." *Winthrop Res. Corp. v. Eaton Hydraulics, Inc.*, 361 F.3d 465, 468 (8th Cir.2004).

## ***B. The '277 Patent***

### **1. Claim Construction**

In November 2006, the parties filed a joint claim-construction statement in which they set forth agreed-upon constructions for two claim terms in the '277 patent (as well as one claim term in the no-longer-asserted '653 patent). Joint Claim Constr. Stmt. [Docket No. 45]. The parties did not identify any claim language that remained in dispute, and they agreed that a claim-construction hearing was unnecessary. *Id.* at 5.

As it turns out, however, two claim terms *are* in dispute. Spectralytics's infringement case turns largely on the meaning of the words "sized to be" in the phrase "the bushing having a central bore which is sized to be slightly greater than an outside diameter of the stock tubing." '277 Pat. col. 6:20-23. And Cordis's invalidity case depends in part on the meaning of the words "rigidly carried on" in the phrase "a workpiece fixture rigidly carried on the cutting tool in a fixed spatial arrangement...." *Id.* col. 6:8-9. The parties argue in their summary-judgment briefs for their favored claim constructions.

[1] [2] [3] Courts, not juries, construe patent claims. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 391, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). Language in a particular claim must be construed in the context of both that claim and the entire patent, including the specification. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed.Cir.2005) (en banc). Indeed, the specification, read in light of the prosecution history, is the primary basis for construing patent claims. *Id.* at 1315. Courts may also rely on "extrinsic evidence"-everything other than the patent and its prosecution history-but that evidence is secondary to the intrinsic evidence. *Id.* at 1317.

[4] In general, claim language means what that language would have meant, ordinarily and customarily, to a person of ordinary skill in the art at the time the patent application was filed. *Id.* at 1312-13. In some cases, the ordinary and customary meaning of claim language to a person of ordinary skill in the art may be identical to the meaning of that language to a lay person who is not skilled in the art. *Id.* at 1314.

It appears likely that, for purposes of this case, the person of ordinary skill in the art is a mechanical engineer. Spectralytics has agreed, for purposes of its affirmative motion, with Cordis's proposed definition that a person of ordinary skill in the art is "a person with an undergraduate degree in mechanical engineering or equivalent technical training and/or an equivalent amount of industry experience and familiarity with tooling and fixturing." Spectralytics SJ Mem. at 33. Meanwhile Cordis has agreed, for purposes of its affirmative motion, with Spectralytics's proposed definition that a person of ordinary skill in the art is someone with "at least a Bachelor of Science degree in mechanical engineering (including materials science or metallurgy), industrial engineering, or physics, or an equivalent amount of industrial experience and training, and at least one of (a) the use of industrial (cutting) lasers and (b) the practice of cutting stents." Cordis SJ Mem. at 12.

Given these counter-concessions, it seems that-for present purposes-a person of ordinary skill in the art is anyone who meets either party's definition of such a person. Cordis's definition may be a little broader than Spectralytics's, but the parties' definitions are very close, and nothing seems to turn on the differences between them. The parties have submitted the testimony of a number of witnesses on the claim-construction issues. With one exception, the Court agrees that witnesses whom the parties have characterized as persons of ordinary skill in the art are such persons, and the Court has considered those witnesses' testimony as evidence of the meaning of the '277 patent's claims. The exception is Spectralytics's expert Larry Nixon, who-whatever else his qualifications-is clearly not a person of ordinary skill in the art of mechanical engineering. *See* Nixon Decl. Ex. 1 at 20-21 [Docket No. 104] (describing Nixon's educational and professional background).

Spectralytics's argument with respect to the phrase "sized to be" is based mainly on its interpretation of Federal Circuit case law. *See* Spectralytics SJ Mem. at 15-17. Spectralytics also supports its argument with the testimony of two mechanical engineers, the testimony of Nixon (a lawyer who, as noted, is not a person of ordinary skill in the art), and an analogy based on "[c]ommon sense and real world experience...." *Id.* at 19-20.

Cordis's argument about "sized to be" is phrased in terms of the distinction between a "clearance fit" and an "interference fit," but Cordis's witnesses explain that distinction in terms that any educated layperson could understand. *See* Cordis Mem. Resp. Spectralytics Mot. S.J. ("Cordis SJ Opp.") at 13-17 [Docket No. 120]. Speaking very roughly, and using the example of an object placed inside a tube: The fit between the object and the tube is a "clearance fit" if there is space or "clearance" between the outer surface of the object and the inner surface of the tube, such that the object can move around inside the tube. Thus, if a one-inch-square sponge is inserted into a two-inch-square tube, the two objects will have a clearance fit. The fit between the object and the tube is an "interference fit" if the outer surface of the object touches the inner surface of the tube, such that there is friction or "interference" between the object and the tube. Thus, if a three-inch-square sponge is compressed into a two-inch-square tube, the two objects will have an interference fit; the object will not move around inside the tube.

The parties' arguments with respect to the phrase "rigidly carried on" are even less technical. The words "carried on" are ordinary English words, and both Spectralytics and Cordis base their proposed claim constructions primarily on the language of the '277 patent itself. Spectralytics SJ Mem. at 29-30; Cordis SJ Mem. at 15-17.

#### ***a. Disputed Term 1: "sized to be"***

[5] The Court construes the term "the bushing having a central bore which is sized to be slightly greater than an outside diameter of the stock tubing" as follows:

A bushing has "a central bore which is sized to be slightly greater than an outside diameter of the stock tubing" if, after the stock tubing has been inserted into the bushing's central bore, the bore's inner diameter is slightly greater than the stock tubing's outer diameter.

Cordis argues that this term should be construed to refer to a machine designer's *intentions* rather than to the machine's actual operation. Cordis SJ Mem. at 35 ("The claim is addressed to the selection of a bushing that is *intended* to be larger in diameter than the tubing...."). According to Cordis, any other construction reads

the term "sized to be" out of the claim. Id.

The Court disagrees. The word "sized," like the word "painted" (or any other past-participial adjective), can describe an item's current state. Consider: "Last week, the body shop painted my car. My car is now painted." Cordis's proposed construction overlooks this simple fact, and fails to account for the two words after "sized": "to be." Although "sized" is a past-participial adjective, "to be" is an infinitive, and raises the question: sized to be slightly greater *when*? According to Cordis, "sized to be slightly greater" must mean "having been sized to be, *before assembly*, slightly greater." But nothing in the claim language or the prosecution history supports this implausible reading. Given that the patent covers a device which, in operation, requires tubing to be inserted inside a bushing, it makes more sense to read "sized to be slightly greater" to mean "having been sized to be (i.e., having a size that is), *when assembled*, slightly greater."

To support its proposed construction, Cordis asserts that claim 1 "is about a clearance fit, and not an interference fit." Id. at 36. Cordis may be right-but this is a noninfringement argument, not an argument supporting Cordis's strained claim construction. Even as construed by the Court, this term of claim 1 requires that the central bore's inner diameter be "slightly greater than" the stock tubing's outer diameter. According to Cordis, in the accused machine, after the stock tubing has been inserted into the bushing's central bore, the bore's inner diameter is identical in size to-and not slightly greater than-the tubing's outer diameter. Id. at 31-32. If Cordis is correct (and, as explained below, that will be for the jury to determine), then Cordis's accused machine does not literally infringe. But infringement must be measured when the device is assembled; it does not depend on subjective, pre-assembly intentions.

### ***b. Disputed Term 2: "rigidly carried on"***

[6] The Court construes the term "workpiece fixture rigidly carried on the cutting tool" as follows:

The workpiece fixture is "rigidly carried on the cutting tool" if the workpiece fixture is both rigidly attached to and supported by the cutting tool.

Spectralytics contends that the term "rigidly carried on" means "supported by, hanging from, or suspended from." Spectralytics SJ Mem. at 29. The last five words of Spectralytics's proposed construction are superfluous: to "hang from" or be "suspended from" something is just one way to be "supported by" that thing. (It is to be supported from above.) Because "supported by" is broader than, and entirely encompasses, "hanging from" and "suspended from," Spectralytics's proposed construction boils down to this: "rigidly carried on" means "supported by." The Court agrees with this, as far as it goes, but believes that it is too broad given the actual claim language and the intrinsic evidence.

The Court does not, however, adopt Cordis's proposed construction. Cordis argues that "rigidly carried on the cutting tool" means "rigidly mounted or affixed to the laser cutting tool." Cordis SJ Opp. at 24. That, too, is fine as far as it goes. But Cordis is cagey about the meaning of its proposed construction. On the one hand, Cordis says that the disputed claim language covers a workpiece fixture that is "rigidly mounted or affixed *to* the laser cutting tool." Id. (emphasis added). On the other hand, Cordis apparently believes that under this construction, a workpiece fixture would be "carried on" a laser cutting tool even if the fixture were *not* attached to the laser cutting tool, but instead the fixture and the tool were each rigidly attached to a third structure, such as the top of a table. Cordis SJ Mem. at 18 (comparing the patented machine to apparatuses in which a cutting tool and a workpiece fixture are "part of a unified tool frame" and explaining that "[t]he connection between these structures [i.e., the workpiece fixture and the cutting tool] is rigid

because the tool frame joins them together as a single piece").

Cordis's apparent interpretation of its own proposed claim construction is thus inconsistent with that construction. If a workpiece fixture and a cutting tool were attached only indirectly-say, by virtue of each being mounted to the top of a table-then the workpiece fixture would not be "mounted or affixed to," in Cordis's words, "the laser cutting tool." Rather, the workpiece fixture would be mounted to the table, as would the cutting tool, and the table would support both the fixture and the cutting tool. While the effect of such an arrangement (so long as both the workpiece fixture and cutting tool were sufficiently rigidly connected to the table) would be to create a rigid linkage between the cutting tool and the workpiece fixture so that if one moved, both would move, the '277 patent claims only a *particular method* of achieving this result: attaching the workpiece fixture to *the cutting tool* in such a way that *the cutting tool* supports the fixture.

The Court's claim construction is supported by the plain language of the claim and the intrinsic evidence. Construing the disputed claim language "involves little more than the application of the widely accepted meaning of commonly understood words," and therefore "general purpose dictionaries may be helpful." Phillips, 415 F.3d at 1314.

To begin with, the verb "to carry" means "to hold or support while moving; bear." *American Heritage Dictionary of the English Language* 285 (4th ed. 2000) ("AHD Fourth ") (entry 1 for transitive verb "carry"); *see also Webster's Third New International Dictionary* 343 (1981) (defining "carry" to mean "to move while supporting (as in a vehicle or in one's hands or arms)"). "Carry" also means "[t]o support the weight or responsibility of," as in "a beam that carries the floor..." *AHD Fourth* 285 (entry 7b for transitive verb "carry"). Thus, a workpiece fixture is "carried on" a cutting tool only if the cutting tool supports-i.e., bears the weight of-the fixture.

This interpretation is consistent with both uses of the words "carried on" in claim 1 of the '277 patent. Claim 1 covers not just a "workpiece fixture rigidly carried on the cutting tool," but also "a generally horizontal bushing carried on the fixture body...." '277 Pat. col. 6:8, col. 6:19-20. Figures 2 through 4 of the '277 patent all show a fixture body in which the horizontal bushing is embedded; the fixture body thus necessarily supports the bushing that claim 1 describes as "carried on" the fixture body.

Further, the workpiece fixture is "*rigidly* carried on" the cutting tool only if the fixture and the cutting tool are, according to the Court's claim construction, "rigidly attached" to each other. This rigid-attachment requirement is evident from the claim language as well as the various descriptions of the patented invention found throughout the '277 patent specification. For instance, the "Background of the Invention" section of the specification ends with this paragraph:

The apparatus of this invention comprises a workpiece fixture for holding the tubing beneath the laser cutting tool and for supporting the tubing in a cantilever fashion. The workpiece fixture is *rigidly affixed to* the laser cutting tool. Thus, bumping either the cutting tool or the fixture does not disturb the accuracy of the cut part as the two move together, again increasing the accuracy and yield of the manufacturing method of this invention.

'277 Pat. col. 2:19-27 (emphasis added).

Other passages in the specification, though using different language to describe the invention, are consistent

with the quoted paragraph and the Court's claim construction. In describing the drawings, the specification says that Figure 1 shows "the workpiece fixture attached to the cutting tool," while Figure 2 shows "the laser cutting tool and *conjoined* workpiece fixture...." '277 Pat. col. 2:36-41 (emphasis added). The specification also says that the "[f]ixture body 28 is rigidly mounted or fixed to laser cutting tool 2 by a support structure...." Id. col. 3:54-55. The support structure is adjustable, allowing the fixture body to be moved relative to the cutting tool, but once the adjustments are made the "fixture body 28 thereafter is directly carried on laser cutting tool 2 in a fixed, spatial relationship." Id. col. 3:67 to col. 4:1. Further, the patent contrasts the claimed invention with lathe-type machines found in the prior art, in which the cutting tool and the workpiece support "are *not directly coupled* to one another." Id. col. 1:58 (emphasis added).

The prosecution history likewise supports the Court's claim construction. The patent examiner rejected an earlier version of claim 1 as anticipated by Japanese patent 8-187595 to Sato. PTO Office Action (Mar. 4, 1998) at 3. FN8 In explaining this rejection, the examiner said that Sato shows "a workpiece fixture ... rigidly carried on the cutting tool in a fixed spatial arrangement...." *Id.* Sato depicts a downward-facing laser cutting head with a workpiece fixture parallel to the cutting head and attached to the cutting head by a horizontal arm that is attached directly above the cutting head. Rigby Decl. Ex. 8 at SP 51876. The cutting head travels horizontally along a carriage, and when the cutting head moves, the attached workpiece fixture moves with it. The workpiece fixture shown in Sato is therefore, in the words of the Court's claim construction, "both rigidly attached to and supported by the cutting tool."

FN8. The prosecution history of the '277 patent is in Exhibit 11 of the Rigby Declaration [Docket No. 113].

The patent examiner also rejected an earlier version of claim 1 as anticipated by United States Patent No. 5,026,965 to Ohe. In doing so, the examiner said that Ohe showed "a workpiece fixture ... rigidly carried on the cutting tool in a fixed spatial arrangement...." PTO Office Action (Mar. 4, 1998) at 4. Ohe depicts a laser cutting head attached directly to a bracket through which tubing travels as the laser cuts holes in the tubing. Merrill Decl. Ex. 39 [Docket No. 108]. Like Sato, Ohe shows a workpiece fixture (the bracket) that is "both rigidly attached to and supported by the cutting tool."

## 2. Infringement

[7] The parties agree that the accused device meets all of the limitations of claim 1 of the '277 patent save the requirement that the bushing have "a central bore which is sized to be slightly greater than an outside diameter of the stock tubing." '277 Pat. col. 6:21-23; Cordis SJ Mem. at 33-36; Spectralytics SJ Mem. at 13-20. Under the Court's construction of claim 1, to meet this limitation, the bushing in the accused device must, after the stock tubing is inserted, have an inner diameter that is slightly greater than the outer diameter of the tubing.

Spectralytics argues that the inner diameter of the bushing in the accused device is necessarily greater than the outer diameter of the inserted tubing; otherwise, says Spectralytics, the tubing would not fit into the bushing. Spectralytics SJ Mem. at 16 ("In the [accused] stent cutting machine, the Teflon core [i.e., the bushing] and the tube cannot occupy the same space."); *id.* at 19 ("Defendants have simply taken advantage of the elastic properties of Teflon to create a snug fit between the bushing and the stock tubing. They have not eliminated the engineering requirement that there be clearance between the tube and bushing ....") (footnote omitted). Cordis, however, contends that the bushing's inner diameter and the tubing's outer diameter are exactly the same size. Cordis SJ Mem. at 25, 31; Cordis SJ Opp. at 18 ("In practice, because of

the properties of Teflon, the Norman Noble bushing is exactly the same size as the tubing when the tubing is being cut.").

The Court finds that the relative sizes of the bushing's inner diameter and the tubing's outer diameter are disputed questions of fact. On the one hand, the Court has no reason to reject the testimony of Cordis's witnesses on the subject. *See* Merrill Decl. 1 Ex. 27 at 32 ("Miller Dep.") [Docket No. 108] ("As we got into the Teflon we actually brought the clearance down to zero ..."); *id.* at 105-07; Merrill Decl. 2 Ex. 64 at 78 ("Przeracki Dep.") [Docket No. 121] ("You want it [i.e., the bushing] to be the same size as the tubing."). On the other hand, the Court also has no reason to reject the testimony of Spectralytics's expert, Patrick Madsen, who is a person of ordinary skill in the art, and who testified that when the accused device is in use, "the central bore of the bushing *must necessarily be slightly greater* than the diameter of the tubing. Otherwise the tubing could not slide through the bushing." Rigby Decl. Ex. 96 at 8 ("Suppl. Madsen Report") [Docket No. 95]. Madsen bases this conclusion on his belief that "a basic law of physics" would prevent tubing from sliding through a bushing if the tubing's outer diameter equaled the tubing's inner diameter. *Id.* at 9.

The Court is skeptical (but does not decide) that Cordis's description of the relationship between the tubing and the bushing in the accused device in fact runs contrary to "a basic law of physics." Spectralytics seems to think that because the tubing and the bushing in the accused device are made of separate materials, there must be space between them. This is necessarily true at some molecular level-but at the molecular level, *all* matter is mostly empty space. *See* Harald Fritzsche, *Elementary Particles: Building Blocks of Matter* 16 (2005) ("When we touch the surface of a diamond, we gain the impression that it is a very dense bit of matter. And so it actually is-but its very hard appearance is due to a combination of electrical forces acting between the nuclei and the electrons. A diamond ultimately consists of mostly empty space...."). Put another way, at a molecular level, *nothing* touches; space separates *everything*. But this does not prevent things from being solid, or from touching each other, at the level that matters to mechanical engineers. Accordingly, if the outer surface of the tubing is compressed against the inner surface of the bushing to such an extent that they are touching each other along their entire lengths at the scale that matters to mechanical engineers, then the inner diameter of the bushing could very well equal (as opposed to slightly exceed) the outer diameter of the tubing. FN9

FN9. Consider a ball bearing that falls to the bottom of a barrel filled with oil. One would not explain the ball bearing's ability to "slide through" the oil by saying there was "clearance" between the ball bearing and the oil. To the contrary: One would describe the oil as "touching" the ball bearing's surface. Cordis's argument is basically that metal tubing passing through a Teflon bushing is like a metal ball bearing falling through a column of oil. *See* Miller Dep. at 32 ("Teflon is soft.... It has a very slippery surface to it, with the lubricious properties....").

In any event, Cordis has admissible evidence that the inner diameter of the bushing is not greater than the outer diameter of the tubing in the accused device. Spectralytics has admissible evidence to the contrary. Because the closeness of the fit between tubing and bushing in the accused device is a disputed issue of fact, the Court denies both sides' motions for summary judgment with respect to literal infringement.

### 3. Validity

Cordis argues that the '277 patent is obvious under the undisputed facts, and that Cordis is therefore entitled

to summary judgment that the patent is invalid under s. 103 of the Patent Act. 35 U.S.C. s. 103. Spectralytics argues that the '277 patent is *not* obvious under the undisputed facts, and that Spectralytics is therefore entitled to summary judgment that the patent is *not* invalid under s. 103. Spectralytics also moves for summary judgment that the '277 patent is not invalid as anticipated under s. 102 of the Patent Act. (Cordis has not moved for summary judgment on the question of anticipation.)

Whether the '277 patent is invalid as anticipated or invalid as obvious depends on the content of the prior art. Thus, in support of their arguments about validity, the parties ask the Court to determine whether particular references are part of the prior art. The Court first addresses the parties' arguments about the content of the prior art, and then turns to their arguments about anticipation and obviousness.

### *a. Prior Art*

#### **(1) Applicable Principles of Law**

Sections 102(a), (b), (e), and (g) of the Patent Act describe various types of prior art that can render a patent invalid as anticipated under s. 102 and that are relevant to whether a patent is obvious under s. 103. 35 U.S.C. s.s. 102, 103; *Riverwood Int'l Corp. v. R.A. Jones & Co.*, 324 F.3d 1346, 1354 (Fed.Cir.2003) ("The term 'prior art' as used in section 103 refers at least to the statutory material named in 35 U.S.C. s. 102."). FN10 Although these four subsections of s. 102 overlap in many respects, what counts as prior art under one subsection does not necessarily count as prior art under another subsection. Specifically, the temporal and geographic scope of the universe of prior art varies under the different subsections of s. 102.

FN10. Not all prior art under s. 102 qualifies as prior art for obviousness purposes under s. 103. Specifically, certain prior art under subsections (e), (f), and (g) of s. 102 is expressly excluded under s. 103(c) from the prior art for obviousness purposes, provided that the prior art and the invention being challenged were once commonly owned. 35 U.S.C. s. 103(c). Further, it is not entirely clear whether prior art under subsections (c) and (d) of s. 102 counts as prior art under s. 103. *See* 3 R. Carl Moy, *Moy's Walker on Patents* s. 9:20 at 9-54 (4th ed.2007). But these distinctions are irrelevant in this case: Whatever qualifies as prior art in this case under subsections (a), (b), (e), or (g) of s. 102 also qualifies as prior art under s. 103.

Under s. 102(b), a reference can count as prior art only if the reference existed before the "critical date" of one year before the filing date of the patent application. FN11 Any issued patent or printed publication, from anywhere in the world, that existed before the critical date counts as prior art under s. 102(b). Also, any item (or method) that was in public use or on sale in the United States, whether by the patentee or anyone else, before the critical date counts as prior art under s. 102(b). Because the date of a patent application is a matter of public record-and because the critical date can be mechanically derived by counting back one year from the date of the patent application-temporal disputes about prior art under s. 102(b) are invariably about whether an ostensible prior-art reference existed before the (undisputed) critical date.

FN11. Under s. 102(b), an invention is not patentable if "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...." 35 U.S.C. s. 102(b).

[8] [9] Under s.s. 102(a), (e), and (g), however, the temporal scope of the prior-art universe depends on the

date on which the patentee made his *invention*. FN12 And that date often cannot be mechanically derived from the public record. The default rule is mechanical: Under the default rule, the date on which the patentee made his invention is deemed to be the same as the date on which the patentee filed his patent application. 1 Donald S. Chisum, *Chisum on Patents* s. 3.08 (2008) ("A general rule in patent law is that the date of invention of the applicant or patentee for purposes of novelty and anticipation is presumed to be the date he files a complete patent application in the Patent and Trademark Office disclosing the invention."). But a patentee can attempt to avoid the default rule and establish an earlier invention date in two ways. First, if the patentee can establish that he in fact reduced his invention to practice as of a particular date, then that date (and not the patent-application date) will be treated as the invention date. Second, if the patentee can establish that he *conceived* his invention as of a particular date, then that date (and not the patent-application date) will be treated as the invention date, but only if the patentee can also establish that, after conceiving his invention, he worked diligently to reduce it to practice. *See* *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1169 (Fed.Cir.2006) ("We have held that priority of invention goes to the first party to reduce an invention to practice unless the other party can show that it was the first to conceive of the invention and that it exercised reasonable diligence in later reducing that invention to practice.") (quotation omitted); *Loral Fairchild Corp. v. Matsushita Elec. Indus. Co.*, 266 F.3d 1358, 1361 (Fed.Cir.2001) (in infringement suit, discussing same two ways to prove an invention date).

FN12. Under s. 102(a), an invention is not patentable if "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...." 35 U.S.C. s. 102(a) (emphasis added).

Under s. 102(e), an invention is not patentable if "the invention was described in (1) an application for patent, published under [35 U.S.C. s. 122(b)], by another filed in the United States *before the invention* by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States *before the invention* by the applicant for patent...." 35 U.S.C. s. 102(e) (emphasis added).

Under s. 102(g)(2), an invention is not patentable if " *before such person's* [i.e., the applicant's] *invention* thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it." 35 U.S.C. s. 102(g)(2) (emphasis added).

Because patents are presumed to be valid, challengers bear the burden of proving a patent's invalidity by clear and convincing evidence. 35 U.S.C. s. 282 ("A patent shall be presumed valid."); *TypeRight Keyboard Corp. v. Microsoft Corp.*, 374 F.3d 1151, 1157 (Fed.Cir.2004) ("The party seeking to invalidate the patent must do so by clear and convincing evidence."). This allocation of the burden of proof makes sense when an alleged infringer attempts to prove invalidity under s. 102(b) by establishing that a particular reference is prior art-i.e., that it existed before the critical date-and that the reference anticipates the claimed invention. But this allocation of the burden of proof makes less sense when an alleged infringer attempts to prove anticipation under s.s. 102(a), (e), or (g) and invalidity turns on whether an ostensible prior-art reference whose date is undisputed predates the patentee's invention date.

[10] [11] When a patentee's invention date is in dispute, common sense dictates that the patentee-the person who knows when he conceived the invention and what he did to reduce it to practice-should bear the burden of proving an invention date that predates the patent-application date. In addition, because the PTO does not generally make any findings about a patentee's invention date in the course of examining a patent application, the mere fact that the PTO has granted a patent provides no reason for a court or a jury to defer to the patentee's contentions about his invention date. Such contentions should be treated like any other

argument about a disputed issue of fact and evaluated in light of the relevant evidence.

Typically, the PTO does not look at evidence about a patentee's invention date. It has no reason to do so in many cases. But sometimes during the prosecution of a patent, the PTO will assert that a particular reference invalidates the claimed invention. If that reference is not s. 102(b) art-that is, if it is dated in the year between the critical date and the patent-application date-the patent applicant may antedate the reference ("swear behind" it, in patent-lawyer jargon) by filing an affidavit under PTO Rule 131 asserting an earlier invention date. FN13 37 C.F.R. s. 1.131; Manual of Patent Examining Procedure ("MPEP") s. 715. Rule 131(b) prescribes what the applicant must show to establish the earlier invention date:

FN13. This statement is something of an oversimplification, but it suffices for purposes of this opinion.

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

37 C.F.R. s. 1.131(b). The PTO examines an applicant's affidavit for compliance with this rule, but the PTO does not otherwise investigate the applicant's assertions about his invention date. *See* MPEP s. 715; *Loral Fairchild*, 266 F.3d at 1366 (Newman, J., concurring) ("Inventors' affidavits have always been admissible to antedate a reference. The regulations are explicit that evidence to antedate a reference may be provided by the inventor...."). Given the limited nature of the PTO's scrutiny of an inventor's Rule 131 affidavit, there is little reason for courts to defer to findings about invention dates made by the PTO during patent prosecution. Requiring a patentee to bear the burden, when litigating his patent's validity, of establishing an invention date preceding his patent-application date would also be consistent with the Federal Circuit's recent decision in *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299 (Fed.Cir.2008). In *PowerOasis*, the accused infringer (T-Mobile) argued that the patents in suit were anticipated by a reference (the MobileStar Network) that was prior art under s. 102(b) because it existed more than one year before June 15, 2000-the date on which the patentee (*PowerOasis*) had filed the continuation-in-part (CIP) application that resulted in the patents in suit. *Id.* at 1302-03.

But the patents in suit were part of a family of patents and patent applications that grew out of an application filed in February 1997, well before the MobileStar Network existed. *Id.* at 1301. *PowerOasis* contended that the patents in suit, though resulting from the CIP application filed in June 2000, should be treated as if they had been applied for in February 1997. *Id.* at 1303. (In patent-law jargon, *PowerOasis* argued that "its asserted claims should have the benefit of priority going all the way back to the filing date" of the first application in the patent family. *Id.*) If *PowerOasis* had prevailed on its argument, the MobileStar Network would not have been prior art and thus could not have anticipated the patents in suit.

The district court rejected *PowerOasis*'s argument, holding that the priority date-that is, the effective patent-application date-of the patents in suit was June 15, 2000 (the date of the CIP application). *Id.* On appeal, *PowerOasis* argued that the district court should have required T-Mobile (as the party asserting invalidity) to prove that *PowerOasis* was *not* entitled to the February 1997 priority date, instead of placing on *PowerOasis* the burden of proving that the patents in suit *were* entitled to the February 1997 priority date. *Id.* at 1304. In affirming the district court's judgment and rejecting *PowerOasis*'s argument, the Federal Circuit said:

[I]n this case, the PTO did not, at any point, make any determination with regard to the priority date of the various claims of the asserted patents.... The Mobile Star Network prior art was never considered by the examiner. In fact, in this case the PTO did not make a determination regarding the priority date for the asserted claims with respect to *any* reference....

When neither the PTO nor the Board has previously considered priority, there is simply no reason to presume that claims in a CIP application are entitled to the effective filing date of an earlier filed application. Since the PTO did not make a determination regarding priority, there is no finding for the district court to defer to.

Id. at 1304-05.

The court noted that T-Mobile (the accused infringer) bore the burden of proving invalidity by clear and convincing evidence. But the court applied the clear-and-convincing-evidence requirement to what it called T-Mobile's "prima facie case":

T-Mobile, the party asserting invalidity, must still show by clear and convincing evidence that the asserted patent is invalid. Once it has established a prima facie case of invalidity and its burden is met, the party relying on validity is then obligated to come forward with evidence to the contrary.

Id. at 1305 (quotation marks omitted). The court found that T-Mobile "established its prima facie case of invalidity" based on undisputed evidence that the MobileStar Network existed more than a year before the filing date of the CIP application. Id. With respect to the parties' burdens of proof, the court held:

Once T-Mobile established by clear and convincing evidence that the MobileStar Network was s. 102(b) prior art to the asserted claims of the '658 and '400 patents, the burden was on PowerOasis to come forward with evidence to the contrary. The district court therefore correctly placed the burden on PowerOasis to come forward with evidence to prove entitlement to claim priority to an earlier filing date.

Id. at 1305-06.

Just as the burden was properly on PowerOasis to establish a priority date earlier than the default priority date (in that case, the date of the CIP application), so too in this case would it make sense to place the burden on Spectralytics to establish an invention date earlier than the default invention date (the date of the '277 patent application). FN14 The PTO made no findings about when Gustafson invented the apparatus claimed in the ' 277 patent, just as the PTO made no findings about the priority date of the patents at issue in PowerOasis.

FN14. Cases involving invalidity under s. 102(b), like PowerOasis, and cases involving invalidity under s.s. 102(a), (e), and (g), like this one, differ at the level of the so-called prima facie case. Because invalidating prior art under s.s. 102(a), (e), and (g) must predate the patentee's *invention date*, one could argue that making a "prima facie case" of invalidity under these sections entails proving that the prior art predates the invention date. By contrast, a "prima facie case" under s. 102(b) can be made without any evidence about the invention date.

To the extent that it makes any sense to talk about a "prima facie case" of patent infringement, however, it would make more sense to treat the patentee's default invention date-the patent-application date-as the

invention date for purposes of a "prima facie case" of invalidity under s.s. 102(a), (e), or (g). That is, once a challenger establishes that a piece of invalidating prior art predates the patent-application date and otherwise qualifies as prior art under s.s. 102(a), (e), or (g), that should suffice for the patentee's "prima facie case." The burden should then shift to the patentee to establish an earlier invention date, just as in *PowerOasis* the burden was on the patentee to establish its entitlement to an earlier priority date. But Federal Circuit case law about proof of invention dates, and dates of prior art, is not so simple or logical. When a patentee seeks to avoid a reference offered by a defendant as prior art under s.s. 102(a), (e), or (g) by establishing an invention date earlier than the date of the reference, the patentee bears only a burden of *production*, not of persuasion. *Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1577 (Fed.Cir.1996) ("Dr. Mahurkar offered evidence at trial to show that he invented the subject matter of the patent before publication of the Cook reference. He met his burden of production."); *see also* *Loral Fairchild*, 266 F.3d at 1361 (applying *Mahurkar*). As long as the patentee produces evidence supporting his claim of an invention date earlier than the ostensible prior-art reference, the patentee need not persuade the factfinder of that invention date. Instead, the *defendant* must establish, by clear and convincing evidence, that the patentee's invention date does *not* precede the date of the ostensible prior-art reference. *Mahurkar*, 79 F.3d at 1578. FN15

FN15. The Federal Circuit put it this way in *Mahurkar*:

With all of the evidence from both sides before the jury, *Bard* [the accused infringer] must persuade the jury by clear and convincing evidence that its version of the facts is true. In other words, *Bard* must persuade the jury that Dr. Mahurkar did not invent prior to publication of the catalog. This is because (1) he did not conceive and reduce his invention to practice before the publication date and (2) he did not conceive and thereafter proceed with reasonable diligence as required to his filing date. If *Bard* fails to meet this burden, the catalog is not prior art under section 102(a).

79 F.3d at 1578.

This would be confusing enough: How can the defendant affirmatively prove a negative proposition (the invention was *not* made by a certain date)-and do so by clear and convincing evidence-when all of the proof of the affirmative proposition (when the invention was made) is likely to be in the opposing party's hands? But it gets even more confusing, because the patentee, when attempting to avoid a defendant's ostensible prior-art reference that predates the patent-application date but arguably postdates the patentee's invention date, bears not an ordinary burden of production, but a *heightened* one. The patentee must do more than offer *some* evidence (such as an affidavit) supporting his pre-patent-application invention date; the patentee must offer *corroboration* of that invention date. *See* *Loral Fairchild*, 266 F.3d at 1363 ("[B]ecause the *Amelio* [i.e., the inventor's] affidavit asserts reduction to practice prior to publication of the *Erb* reference [i.e., an allegedly invalidating reference], the issue then becomes whether *Loral* [the patentee] submitted independent evidence sufficient to corroborate this assertion."). If the patentee fails to offer corroboration-or offers legally insufficient corroboration-as part of its burden of production, then the patentee's invention date remains the default date (the date of the patent application).

To apply this set of rules in determining whether a potentially invalidating reference offered by a defendant as prior art under s.s. 102(a), (e), or (g) is in fact prior art, a court or a factfinder would have to ask a series of questions. (The Court defers for the moment consideration of which of these questions are for the judge and which are for the jury.) For simplicity's sake, assume that the date of the reference is undisputed and predates the patent-application date. The first question would then be: Did the patentee produce *some* evidence of an invention date earlier than the date of the reference? The next question might be: Was the

patentee's evidence corroborated *at all*? The third question might be: *How well* was the patentee's evidence corroborated-was it "sufficiently" corroborated? If the patentee's evidence was "sufficiently" corroborated, the next question would be: Did the defendant prove by clear and convincing evidence that the patentee's invention date did *not* precede the date of the purported prior-art reference? If so, the reference would be prior art. Only then would the factfinder turn to the substantive question whether the reference invalidated the patent.

The analysis becomes even more rococo when the date or the existence of the purported prior-art reference is in dispute. To establish that a purported prior-art reference existed on a certain date, a defendant must provide evidence that corroborates the reference's existence at the relevant time. *Adenta GmbH v. OrthoArm, Inc.*, 501 F.3d 1364, 1371 (Fed.Cir.2007) ("[A] patent cannot be invalidated based on one person's testimony alone without corroborating evidence, particularly documentary evidence."); *Checkpoint Sys., Inc. v. All-Tag Sec. S.A.*, 412 F.3d 1331, 1337 (Fed.Cir.2005) ("[T]he corroboration rule ... is available in appropriate cases to protect patentees from invalidation of their patent based solely upon uncorroborated, testimonial evidence.") Without such corroboration, the ostensible prior-art reference cannot be used to invalidate a patent.

Thus, if *both* the patentee's invention date *and* the date and existence of an ostensibly invalidating prior-art reference are in dispute, the necessary inquiry goes something like this: Did the patentee provide sufficiently corroborated evidence of an invention date earlier than his patent-application date, *and* did the defendant provide sufficiently corroborated evidence that the proffered prior-art reference existed (and met the relevant criteria, such as being public, being in the right country, etc.) before the (sufficiently corroborated) invention date? If the answer is yes on both counts, does the reference invalidate the patent?

A further crucial issue is whether (and to what extent) questions about corroboration are legal questions for the judge or factual questions for the jury. Federal Circuit case law on the subject is not clear. In *TypeRight Keyboard Corp. v. Microsoft Corp.*, the Federal Circuit seemed to say that the district court must independently determine whether the existence of a prior-artreference was corroborated. 374 F.3d 1151, 1159 (Fed.Cir.2004). But the meaning of *TypeRight* is uncertain in light of a more recent case, *Adenta GmbH v. OrthoArm, Inc.*, 501 F.3d 1364 (Fed.Cir.2007).

In *TypeRight*, the district court granted summary judgment that a patent was invalid as obvious in light of a prior-art reference (the "Marquardt document") whose status as prior art was disputed by *TypeRight* (the patentee). 374 F.3d at 1155. The Federal Circuit reversed, holding that *TypeRight* was entitled to a jury determination of whether the Marquardt document was prior art, because a finding that the document was prior art depended on an assessment of the credibility of witnesses who testified on behalf of the defendant (Microsoft Corporation) about the document's publication date. *Id.* at 1158 ("[S]ummary judgment was improper because genuine issues remain as to the credibility of Microsoft['s] witnesses ['] testimony that the Marquardt document was publicly distributed in 1986."). The Federal Circuit also held, however, that even if at trial the jury found Microsoft's witnesses credible and concluded that the Marquardt document was indeed prior art, "the *district court* will still have to address whether the *legal requirement* of corroboration has been met." *Id.* at 1159 (emphasis added).

More recently, however, the Federal Circuit held in *Adenta* that "[a]ssessing the sufficiency of evidence which corroborates a witness's testimony concerning invalidating activities has been analyzed under the 'rule of reason' test, and *it is a jury question.*" 501 F.3d at 1372 (emphasis added).

As best this Court can tell, the Federal Circuit means to establish two seemingly separate, but logically sequential, corroboration requirements. The first requirement is to be considered by the judge alone, and the second is to be considered by the jury, subject to the normal constraints on jury factfinding embodied in rules on judgment as a matter of law.

The question for the judge is: Is there any corroborating evidence *at all*-setting aside the quality and quantity of that evidence-on the issue in question (the status of a prior-art reference; a patentee's invention date)? If not, then the jury has no business considering the issue.

If there is *some* corroborating evidence on the issue in question, then-at least when the question is the status of a prior-art reference-the issue must be submitted to a jury. FN16 In most areas of the law, one simply lets the jury decide whether a fact has been proven to the requisite standard of proof. If patent law were like other areas of the law, this would mean that the jury would have to decide whether a defendant proved by clear and convincing evidence that an ostensible prior-art reference existed at a certain time and met other applicable statutory requirements (e.g., it was sufficiently public in the relevant geographic area).

FN16. The Court sets aside for the moment what a jury must decide when an inventor argues for an earlier invention date. As noted above, the Federal Circuit requires the inventor to meet only a burden of production, while the defendant must to prove a negative proposition (that the invention date does not precede the date of a prior-art reference) by clear and convincing evidence.

The Federal Circuit, however, said in *Adenta* that "assessing the sufficiency" of corroborating evidence "is a jury question" that "has been analyzed under the 'rule of reason' test...." 501 F.3d at 1372. It is difficult to know what the Federal Circuit meant, for two reasons. First, if the jury must decide whether *clear and convincing evidence* shows that a particular reference qualifies as prior art, why separate out the subsidiary issue of whether the corroborating evidence was "sufficient" under some "rule of reason"? FN17 Second, the "rule of reason" test for corroboration was originally a tool for the PTO and reviewing courts-not juries-and it has been applied more in patent-interference proceedings (in which the PTO is the factfinder) than in infringement cases.FN18

FN17. Indeed, this Court doubts whether a jury could be instructed, in a comprehensible way, to assess whether a prior-art reference was sufficiently corroborated under a rule of reason. The model patent jury instructions from the Federal Circuit Bar Association, the American Intellectual Property Lawyers Association ("AIPLA"), and the Northern District of California do not include a model instruction on corroboration. *See Fed. Cir. Bar Ass'n Model Patent Jury Instrs.* (Jan.2008); *AIPLA Model Patent Jury Instrs.* (March 2008), available at [http:// www. aipla. org](http://www.aipla.org) (search for "patent jury instructions"); *Model Patent Jury Instrs. for the N.D. Cal.* (Sept. 20, 2004), available at [http:// www. innsocourt. org/ Content/ Inn Content. asp? Id= 893](http://www.innsocourt.org/Content/InnContent.aspx?Id=893).

FN18. Interference cases featuring the "rule of reason" include: *Medichem*, 437 F.3d at 1170-71; *Cooper v. Goldfarb*, 154 F.3d 1321, 1330 (Fed.Cir.1998); *Holmwood v. Sugavanam*, 948 F.2d 1236, 1238-39 (Fed.Cir.1991); *Coleman v. Dines*, 754 F.2d 353, 360 (Fed.Cir.1985); *Reese v. Hurst*, 661 F.2d 1222, 1225 (C.C.P.A.1981); *Berges v. Gottstein*, 618 F.2d 771, 774 & n. 5 (C.C.P.A.1980); *Mikus v. Wachtel*, 542 F.2d 1157, 1159 (C.C.P.A.1976); *Linkow v. Linkow*, 517 F.2d 1370, 1373 (C.C.P.A.1975); *Anderson v. Pieper*, 58 C.C.P.A. 1221, 442 F.2d 982, 985 (1971); *Berry v. Webb*, 56 C.C.P.A. 1272, 412 F.2d 261, 266-67

(1969).

Infringement cases featuring the "rule of reason" include: *Adenta*, 501 F.3d at 1372; *Checkpoint Sys.*, 412 F.3d at 1337; *Sandt Tech., Ltd. v. Resco Metal & Plastics Corp.*, 264 F.3d 1344, 1350-51 (Fed.Cir.2001); *Loral Fairchild*, 266 F.3d at 1363; *Finnigan Corp. v. Int'l Trade Comm'n*, 180 F.3d 1354, 1369 n. 11 (Fed.Cir.1999); *Woodland Trust v. Flowertree Nursery, Inc.*, 148 F.3d 1368, 1371 (Fed.Cir.1998); *Ethicon, Inc. v. U.S. Surgical Corp.*, 135 F.3d 1456, 1461 (Fed.Cir.1998); *Mahurkar*, 79 F.3d at 1577.

Judge Newman, concurring in *Loral Fairchild*, criticized the court's importation of the corroboration requirement from interference cases to an infringement case in which the question was whether an invention was made before the date of a prior-art reference. 266 F.3d at 1366 (Newman, J., concurring). Moreover, *Adenta* seems internally inconsistent. The Federal Circuit described the question of the sufficiency of corroboration as one for the judge, and then described the question as one for the jury. *Adenta* held, "[w]e cannot say that the [district] court erred in concluding that there was sufficient evidence corroborating [the witnesses'] testimony to enable the jury to find" that the purported prior-art reference was, in fact, prior art. 501 F.3d at 1372. How can the sufficiency of corroborating evidence be *both* a question for the judge *and* a question for the jury? FN19

FN19. The court's contradictory statements are packed closely together. The relevant passage reads in full: [T]his case does not present the question of the necessity of corroboration-there was both testimonial and documentary corroborating evidence here. Rather, this case questions the sufficiency of the corroborating evidence. Assessing the sufficiency of evidence which corroborates a witness's testimony concerning invalidating activities has been analyzed under the "rule of reason" test, and it is a jury question. A "rule of reason" analysis involves an assessment of the totality of the circumstances including an evaluation of all pertinent evidence. *OrthoArm* [the patentee] attempts to discredit each piece of evidence, one by one, to show that clear and convincing evidence invalidating the patent was lacking. However, the jury considered all the evidence. We cannot say that the court erred in concluding that there was sufficient evidence corroborating Heiser's and Schendel's testimony to enable the jury to find that the Time bracket [i.e., the invalidating prior art] was publicly used and/or on sale at the 1994 Florida trade show.

501 F.3d at 1371-72 (citations omitted).

[12] The answer, in this Court's view, is that district judges do not, in fact, need to police jury findings about what counts as prior art by assessing the sufficiency of corroborating evidence; nor do district judges need to instruct juries to assess the sufficiency of corroborating evidence. Rather, provided that *some* corroborating evidence exists, if a party moves for summary judgment or judgment as a matter of law on the status of a prior-art reference, the district judge must determine whether a reasonable jury could find by clear and convincing evidence that the reference is in fact prior art.

Courts routinely assess whether evidence is sufficient for a reasonable jury to find that a party has borne its burden of proof. If a court holds, despite the existence of some corroborating evidence, that a reasonable jury could not find that an ostensible prior-art reference was in fact prior art, one could describe the court's action as "finding the corroboration insufficient"-but this description only muddles the analysis. In *all* cases, if the evidence (including corroborating evidence) is insufficient for a reasonable jury to find in favor of a party on an issue, a court will grant summary judgment or judgment as a matter of law against the party on that issue. There is no reason to put this in terms of whether "corroboration" is "sufficient."

The Federal Circuit's corroboration requirement thus has independent significance in only one situation: when *uncorroborated* witness testimony on an issue (the status of a prior-art reference; an invention date) *would* be sufficient, in the absence of the corroboration requirement, for a reasonable jury to find that the testimony proves the issue to the requisite standard of proof. In such a situation, if a judge finds that there is no evidence that independently corroborates the testimony, then the judge must find as a matter of law that the issue is not established, even though a reasonable jury could find the issue established by the requisite standard of proof.

To summarize, then, with reference to this case: If there is no evidence to corroborate the testimony of Spectralytics's witnesses that, before the '277 patent-application date, Gustafson either (1) reduced the claimed invention to practice or (2) conceived of it and worked diligently to reduce it to practice, then the Court must find as a matter of law that Spectralytics has not met its burden of production with respect to establishing an invention date that predates the application date. But if there is such corroborating evidence, then Gustafson's invention date is a question of fact for the jury, unless no reasonable jury could find, by clear and convincing evidence, that his invention date came after the date of the particular disputed reference.

With respect to prior-art references offered by Cordis, if there is no evidence to corroborate the testimony of Cordis's witnesses about the existence or status of the ostensible prior art, then the Court must find as a matter of law that Cordis has not met its burden of production with respect to that prior art. But if there is corroborating evidence, then the existence or status of the ostensible prior art is a question of fact for the jury-again, unless no reasonable jury could find that Gustafson's invention date came after the date of the particular disputed reference.

The Court applies these principles below. Before doing so, however, the Court takes this occasion to respectfully urge the Federal Circuit to revisit the extraordinarily complex set of rules that this Court has spent the past fifteen-plus pages trying (perhaps unsuccessfully) to decipher. Rules assigning burdens of production and proof-and dividing responsibilities between judges and jurors-have to be understood and applied by the ordinary mortals who sit on district-court benches and in jury boxes. Moreover, at some point distinctions become so fine that they become lost on typical jurors (or even typical judges) and thus have little practical impact. Simplification and clarification of these rules would be most welcome.

## **(2) Published Patents that Predate the '277 Application Date**

[13] The parties dispute whether the prior art includes two United States patents (to Kash and Muhl nickel) and one Japanese patent (to Sato).FN20 The patents do not qualify as prior art under s. 102(b) because their effective dates fall in the year preceding Gustafson's application for the ' 277 patent-that is, after s. 102(b)'s critical date. To qualify as prior art under s. 102(a), (e), or (g), these patents must have predated Gustafson's invention date. Of these three patents, the one with the earliest effective date is Kash, which was applied for on April 2, 1996. The basic issue, then, is whether Gustafson's invention date precedes April 2, 1996.

FN20. The three disputed patents are: (1) U.S. Patent No. 5,744,778 to Kash, applied for on April 2, 1996, Rigby Decl. Ex. 9; U.S. Patent No. 5,765,455 to Muhl nickel, applied for on May 1, 1996, Merrill Decl. Ex. 12; and Japanese patent No. 8-197595 to Sato, issued July 23, 1996, Rigby Decl. Ex. 8. The Court, like the parties, refers to them as "Kash," "Muhl nickel," and "Sato," respectively. The effective dates of Kash and Muhl nickel are the patent-application dates. The effective date of Sato, because it is a foreign patent, is the

date it issued.

Spectralytics moved for summary judgment that Kash and Sato are *not* prior art; Cordis moved for summary judgment that Kash and Muhl nickel *are* prior art. As noted in the text, however, Cordis has since conceded that genuine issues of fact exist that preclude summary judgment in its favor. Therefore, only Kash and Sato (and not Muhl nickel) are still at issue. As a practical matter, though, a decision about Kash may implicitly resolve the dispute over Muhl nickel, as Muhl nickel's effective date is later than Kash's.

The first question for the Court is whether Spectralytics has met its burden of production with respect to Gustafson's invention date. Specifically, has Spectralytics produced some corroborated evidence that, before April 2, 1996, Gustafson either (1) actually reduced his invention to practice, or (2) conceived his invention and worked diligently until his application date to reduce it to practice? Although it is a close question, the Court finds that Spectralytics has met its burden of production. There is corroborating evidence, in the form of a drawing, that Gustafson conceived of the invention no later than January 16, 1996. Rigby Decl. Ex. 45. But the evidence of his actual reduction of the invention to practice, or his diligence in attempting to reduce it to practice, is more equivocal.

Cordis, in its summary-judgment reply brief, has abandoned its argument for summary judgment with respect to Gustafson's invention date. Cordis Reply Mem. at 14 [Docket No. 139]. Instead, Cordis concedes that evidence presented by Spectralytics creates a fact question as to Gustafson's invention date. *Id.*

Spectralytics, however, continues to press its argument for summary judgment that Kash and Sato are *not* prior art. Given that Spectralytics has met its burden of production with respect to an invention date earlier than April 2, 1996, the question for the Court is this: Could a reasonable jury find, by clear and convincing evidence, that Gustafson's invention date did *not* come before April 2, 1996? Only if a reasonable jury could not possibly find, by clear and convincing evidence, that Gustafson's invention date came after April 2, 1996 would Spectralytics be entitled to summary judgment that Kash and Sato are not prior art.

The Court finds that Spectralytics is not entitled to summary judgment. The evidence with respect to Gustafson's invention date is exceedingly unclear, making it impossible for the Court to hold that a reasonable jury must find that Gustafson's invention date precedes April 2, 1996.

Spectralytics cites testimony of two of its employees (but not Gustafson) that the invention was working before the end of January 1996. Spectralytics Mem. Opp. Noble Mot. S.J. ("Spectralytics Opp. Noble SJ Mot.") at 38/20 [Docket No. 124].FN21 Spectralytics also cites testimony of a third employee, Bruce Allen, that he saw the invention working in late March 1996. *Id.*; Allen Decl. para.3-4 [Docket No. 126].FN22 Spectralytics also argues that by March 1996, Gustafson was working diligently to reduce the invention to practice. Spectralytics Opp. Noble SJ Mot. at 34/16 to 35/17.

FN21. The page numbering in Spectralytics's memorandum opposing Noble's summary-judgment motion runs from 1 through 18 and then (on actual page 19) starts over at 1 again. The Court's citation in the text to page 38/20 is a citation to actual page 38, which bears the number 20.

FN22. Spectralytics characterizes Allen as an "independent witness." Spectralytics Opp. Noble SJ Mot. at 40/22. This characterization is debatable given that Allen was a Spectralytics employee in early 1996, when he claimed to have seen the invention working. He now works elsewhere. *See* Allen Decl. para. 2.

To the extent that Spectralytics argues that Gustafson actually reduced his invention to practice, there is a fact question as to whether the invention *ever* worked for its intended purpose. That purpose is not, as Spectralytics puts it, "to have the workpiece fixture (and bushing) carried on the laser head so that they were maintained in 'a fixed spatial relationship' and movement of one would also move the other." *Id.* at 36/18; *id.* at 40/22 (characterizing the invention's intended purpose as "keeping the workpiece fixture (and bushing) and laser head in 'a fixed spatial relationship' so that movement of one would also move the other"). If that was the invention's purpose, the device would have been reduced to practice even if it never cut a single stent.

The '277 patent itself, however, tells us that the invention "is *useful* in manufacturing small, thin-walled, tubular devices known as stents...." '277 Pat. col. 1:7-8 (emphasis added). Further, the patent tells us that "[t]his invention relates to a method of and apparatus for cutting a pattern along the length of a thin walled, hollow workpiece, such as a stent, which is much more reliable and has much less scrap than known methods." *Id.* col. 1:66-67 to col. 2:1-2. An invention's "purpose" is the thing for which it is useful; it is not the means by which it accomplishes that useful thing.

Directly attaching the workpiece fixture to the cutting tool and maintaining them in "a fixed spatial relationship" is therefore not the purpose of Gustafson's invention. Rather, it is a means by which the invention achieves its purpose of cutting metal tubing more reliably, and with less scrap, than existing methods and devices. And because Spectralytics focuses in its briefs on establishing that the invention worked for the wrong intended purpose, Spectralytics has not established that Gustafson's invention worked for its true intended purpose before he filed his patent application.

To the extent that Spectralytics argues for an invention date based on conception and diligence in reducing the invention to practice (as opposed to actual reduction to practice), there is a fact question as to Gustafson's diligence. It is unclear from the record what Gustafson did to reduce his invention to practice after conceiving of the invention in January 2006.

Given the state of the record, the Court cannot decide on summary judgment whether Kash, Sato, and Muhl nickel are prior art to the '277 patent. To establish that these patents are prior art, Cordis will have to convince the jury to find, by clear and convincing evidence, that the patents predate Gustafson's invention date. Because the status of these patents as prior art is in dispute, the Court will not consider them in connection with Cordis's invalidity arguments.

### **(3) The Accused Device**

Spectralytics moves for summary judgment that the accused device is not prior art under s. 102 because it was not public. Noble concedes the point. Noble Mem. Opp. Spectralytics Mot. S.J. ("Noble SJ Opp.") at 3 [Docket No. 117] ("[D]efendants agree that the Follower Assembly [i.e., the accused device] is not prior art under Section 102 because Noble maintained it as a trade secret."). The Court therefore grants summary judgment to Spectralytics on this issue.

Noble further contends, however, that the accused device, although not prior art, is nevertheless relevant to the validity of the '277 patent. *Id.* at 36. Specifically, Noble argues that its development of the accused device "is relevant to the level of ordinary skill in the art, relevant to the motivation to combine, and [relevant] as a secondary consideration of obviousness." *Id.* at 37.

Spectrallytics apparently does not dispute the legal proposition that the accused device, even if not prior art under s. 102, may nevertheless be relevant to obviousness under s. 103. Instead, Spectrallytics contends that there is insufficient corroborative evidence to prove that the accused device existed before Gustafson made his invention. Spectrallytics Reply Mem. at 6-7 [Docket No. 142].

The Court will not consider the accused device in connection with obviousness, for two reasons. First, as the Court explains below, the Court finds that there is a dispute of fact over whether Noble stole trade secrets from Spectrallytics. If Noble stole trade secrets related to the '277 patent and used those secrets to develop the accused device, then Noble's development of the accused device is extremely weak evidence that the '277 patent was obvious.

Second, the evidence is unclear as to exactly when the accused device was developed. Noble's witnesses consistently testified that the accused device existed by late 1995, and their testimony is corroborated by evidence that in December 1995 Noble shipped stents cut with a complex geometry to a customer (SciMed). *See* Koehler Decl. Ex. J ("C. Noble Dep.") at 43-49 [Docket No. 118]; *id.* at NNI-00018-37 (C. Noble.Dep.Ex.17); Koehler Decl. Ex. K ("Miller Dep.") at 27-29; Koehler Decl. Ex. N ("Przeracki Dep.") at 18-19. But the testimony of one witness, George Mackaronis, casts doubt on when the accused device existed. Mackaronis, Cordis's Rule 30(b)(6) witness, testified that Cordis first approved a Noble stent-cutting machine in late 1996 or 1997. Rigby Decl. Ex. 123 ("Mackaronis Dep.") at 48. He also said that in the Noble machine, as originally designed, the workpiece fixture was attached to a frame and not directly to the laser cutting head. *Id.* at 54-56. Later in the deposition, Mackaronis said that he had been describing a ComTal-made machine, not a Noble machine. *Id.* at 57-72. The Court cannot make sense of Mackaronis's testimony, but his confusion is sufficient to create a dispute of fact about when the accused device existed.

#### **(4) The 1994 LPL/RMS Machine**

[14] In 1993, a company known as RMS was cutting stents for Cordis using an older technique called electrical dischargemachining or "EDM." Rigby Decl. Ex. 70 ("Dunbar Dep.") at 9. Sometime in 1993 or 1994, Cordis and RMS began discussions about cutting stents with lasers. Dunbar Dep. at 13-14. RMS contracted with a company called LPL to supply laser-cutting machines that RMS would use to cut stents for Cordis. *Id.* at 14; Mackaronis Dep. at 33.

Spectrallytics moves for summary judgment that the prior art does not include a laser-cutting apparatus made sometime in 1994 by LPL for RMS. The Court grants the motion, for two reasons.

First, the Court agrees that Cordis has not provided any corroborating evidence of the existence of a 1994 LPL/RMS machine without a tailstock. Cordis's witnesses testified that the machine did not include a tailstock. Dunbar Dep. at 36, 93-95. But the only documentary evidence corroborating the machine's existence shows a tailstock. Rigby Decl. Ex. 71 ("Dunbar Dep. Ex. 7"). Thus there is no corroborating evidence that in 1994, RMS used or LPL made a machine without a tailstock.FN23

FN23. If this were a normal case, on the record before the Court, the existence of a tailstock-less 1994 LPL/RMS machine would be a question for the jury.

The existence of a 1994 LPL/RMS machine *with* a tailstock is, as noted, corroborated by documentary

evidence. Dunbar Dep. Ex. 7. But no reasonable jury could find that the tailstock-bearing machine was sufficiently public to qualify as prior art under s. 102. The machine was made by LPL for RMS, which was under contract with Cordis. There is no evidence that any of these entities intended to (or did) share the machine outside of their group.

Noble contends that because the security at RMS surrounding the machine was not airtight, the machine was in public use. Noble SJ Opp. at 21-22. The evidence cited by Noble shows, at most, that tradespersons and other non-Cordis personnel *may* have seen the machine when working in or walking through Cordis's factory. *Id.* But this is mere speculation. The Court finds that RMS's private use of the machine did not become public by virtue of some slight possibility that an outsider saw the machine in passing.FN24

FN24. Noble also asserts that "by 1996 LPL, RMS and ComTal were *selling Swiss-style machines to competitors* of JJIS." Noble SJ Opp. at 22. Sales made in 1996 are obviously not relevant to whether the LPL/RMS machine was kept secret in 1994.

Similarly irrelevant is Noble's assertion that "RMS commercialized its stent cutting machine and used it to make stents for the benefit of the public by 1994...." *Id.* at 24. Publicly selling the *output* of a secret machine does not make the machine itself public.

Accordingly, the Court finds that the prior art does not include a tailstock-less machine made by LPL for RMS in 1994. Further, because the existence of such a machine is uncorroborated, the Court holds that the existence of a tailstock-less 1994 LPL/RMS machine cannot be considered among the secondary considerations related to obviousness. But evidence that LPL/RMS designed a machine *with* a tailstock in 1994—a fact corroborated by documentary evidence—is both undisputed and relevant to secondary considerations of obviousness.

### ***b. Anticipation***

Spectrallytics moves for summary judgment that claim 1 of the '277 patent is not anticipated. Spectrallytics SJ Mem. at 30-31. Specifically, Spectrallytics argues that neither the accused device nor the 1994 LPL/RMS device anticipates the claim. The Court agrees with Spectrallytics.

As explained above, the accused device is not prior art because Noble—by its own admission—kept it secret. Noble SJ Opp. at 3. It therefore cannot anticipate claim 1.

It is unclear whether Noble and Cordis deny Spectrallytics's contention that the 1994 LPL/RMS device does not anticipate claim 1. To support its argument against anticipation, Spectrallytics asserts not only that, for reasons discussed above, the 1994 LPL/RMS device is not prior art, but also that the device, even if it is prior art, does not anticipate because it does not meet every limitation of claim 1 of the '277 patent. Spectrallytics SJ Mem. at 30-31.

Cordis, in its brief opposing Spectrallytics's summary-judgment motion, asserts that both obviousness and anticipation should be decided by a jury. Cordis SJ Opp. at 42. But neither Noble nor Cordis explains how the 1994 LPL/RMS device anticipates claim 1 of the '277 patent. Instead, they argue that the 1994 LPL/RMS device is prior art (or, at least, that the device's status as prior art must be decided by a jury). Noble SJ Opp. at 11 ("Spectrallytics' contention that the 1994 LPL/RMS machine does not qualify as prior art because it is uncorroborated and an undisclosed trade secret is similarly faulty."); Cordis SJ Opp. at 42 ("The jury will likewise have to resolve whether the laser cutting machines designed by LPL and RMS

constitute prior art."). Because a finding that the 1994 LPL/RMS device is prior art would be necessary to, but not sufficient for, a finding that the device anticipates claim 1 of the '277 patent, Cordis and Noble have opposed only one aspect of Spectralytics's anticipation argument.

[15] The Court has already found that there is no evidence to corroborate the existence of a tailstock-less 1994 LPL/RMS machine. The Court agrees with Spectralytics (and Cordis and Noble do not appear to deny) that an LPL/RMS machine *with* a tailstock does not anticipate claim 1 of the '277 patent. In particular, claim 1 requires a "cantilever support being located on *just one side* of the laser beam with ... the tubing being *unsupported* on the other side of the laser beam." '277 Pat. col. 6:10-16. The LPL/RMS machine with a tailstock, as depicted in Exhibit 7 to the Dunbar deposition, does not meet this limitation and therefore does not anticipate claim 1 of the '277 patent. The 1994 LPL/RMS machine also does not anticipate claim 1 of the '277 patent because, as noted above, it was not sufficiently public to be prior art under s. 102.

### *c. Obviousness*

Cordis contends that the undisputed evidence establishes that the '277 patent is obvious and therefore invalid under 35 U.S.C. s. 103. Cordis SJ Mem. at 1-23. Spectralytics contends that the undisputed evidence establishes that the '277 patent is *not* obvious. Spectralytics SJ Mem. at 31-37. Both Cordis and Spectralytics move for summary judgment on the issue of obviousness. Although Cordis's motion is far stronger than Spectralytics's, the Court ultimately agrees with neither party and finds that the patent's obviousness must be determined at trial.

In the Federal Circuit's familiar formulation, whether a claimed invention is obvious is a legal conclusion that depends on underlying factual findings. *See, e.g., Alza Corp. v. Mylan Labs., Inc.*, 464 F.3d 1286, 1289 (Fed.Cir.2006). The Supreme Court, in *Graham v. John Deere Co. of Kansas City*, set out the factual issues that underlie the question of obviousness:

Under s. 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.

383 U.S. 1, 17-18, 86 S.Ct. 684, 15 L.Ed.2d 545 (1966). In the recent landmark case of *KSR International Co. v. Teleflex, Inc.*, the Court quoted this passage from *Graham* and affirmed that "[w]hile the sequence of these questions might be reordered in any particular case, the factors continue to define the inquiry that controls." 550 U.S. 398, 127 S.Ct. 1727, 1734, 167 L.Ed.2d 705 (2007).

The Court discusses below the parties' evidence with respect to the relevant factual issues. The Court then turns to the legal question of the obviousness of the '277 patent.

### **(1) Factual Issues**

#### *(a) Level of ordinary skill in the art*

As discussed above in connection with claim construction, Spectralytics and Cordis have each agreed, for purposes of their summary-judgment motions on obviousness, to adopt the other's proposed definition of the

person of ordinary skill in the art. Roughly speaking, the person of ordinary skill is a mechanical engineer by education or by trade who has experience in working with the general type of tooling involved in this case. The parties seem to agree that most of the witnesses on both sides count as persons of ordinary skill in the art. Accordingly, the Court has considered all of the testimony proffered by the parties on the question of obviousness, save the testimony of Larry Nixon.

***(b) Scope and content of the prior art***

As discussed above, the Court cannot decide on summary judgment whether the Kash, Muhl nickel, and Sato references are prior art. The Court has determined, however, that the accused device and the 1994 LPL/RMS device (with or without a tailstock) are not part of the prior art.

The prior art therefore includes laser-cutting machines-including such machines that were before the PTO during prosecution of the '277 patent-and Swiss-style cutting machines. The specific examples of Swiss-style cutting machines considered by the Court as part of the prior art include: (1) the Gorton pamphlet from 1945, Rigby Decl. Ex. 50 at 5; and (2) United States Patent No. 4,258,598 to Hoffman, issued in 1981 and applied for in 1979. Merrill Decl. Ex. 13.

The laser-cutting machines in the prior art include United States Patent No. 5,026,965 to Ohe. Merrill Decl. Ex. 39. As noted above in connection with claim construction, the patent examiner relied on Ohe to reject an earlier version of claim 1 of the '277 patent as anticipated. PTO Office Action (Mar. 4, 1998) at 4. The examiner also relied on Ohe in combination with United States Patent No. 2,339,986, issued in 1943 to Engert, to find other asserted claims invalid as obvious. *Id.*

***(c) Differences between prior art and the patented invention***

The Swiss-style cutting machines, as exemplified in the Gorton reference, differ from the patented invention primarily in two respects: (1) the nature of the cutting tool, and (2) the nature of the attachment between the cutting tool and the workpiece support. Swiss-style machines use metal cutting tools rather than lasers. And in Swiss-style machines, the workpiece fixture is attached only indirectly to the cutting tool-though the indirect attachment is rigid, since both the cutting tool and the workpiece fixture are rigidly attached to a frame.

The laser-cutting machine shown in Ohe differs from the patented invention primarily in the nature of the workpiece support. *See* Merrill Decl. Ex. 39. The support in Ohe is basically an upside-down U-shaped bracket with open circles oriented face-to-face at either end of the U. The laser-cutting head in Ohe is attached to the middle of the U, and the tube being cut passes through the two circles; the laser cuts holes in the portion of the tube between the circles and under the middle of the U.

Unlike the workpiece fixture in Ohe, which supports the tubing being cut on both sides, the device claimed in the '277 patent supports the tubing being cut on only *one* side. Such one-sided or "cantilevered" support is precisely the type of support used in Swiss-style machines such as the machine shown in the Gorton pamphlet and in United States Patent No. 4,258,598 to Hoffman.

***(d) "Teaching Away"***

Spectralytics contends that the Swiss-style prior art "teaches away" from the patented invention. Spectralytics SJ Mem. at 34. In particular, Spectralytics stresses that in Swiss-style machines, the workpiece

fixture and the cutting tool are not directly connected, as in the patented invention, but rather are separately attached to the same frame or mounted to the same platform. Id. at 33-34.

Spectralytics has identified no item of Swiss-style prior art that expressly teaches away from directly connecting a workpiece fixture to a cutting tool, and the Court would be tempted to dismiss Spectralytics's teaching-away argument as implausible save for one thing: The argument is supported by the testimony of Paul Huber, one of *Cordis's* expert witnesses on Swiss-style machines. Id. at 34. Huber testified that, in his opinion, the device claimed in the '277 patent would be less effective in minimizing vibration-related problems than a Swiss-style device. Rigby Decl. Ex. 120 at 147-48. Huber also agreed that the attachment depicted in the '277 patent between the workpiece fixture and the cutting tool seemed less rigid than the attachment in a normal Swiss-style machine. Id. at 150. And when asked whether, in that respect (i.e., with respect to the rigidity of the attachment between the workpiece fixture and the cutting tool), the '277 patent was "contrary to the accepted teachings of Swiss automatic screw machines," Huber agreed that it was. Id.

### *(e) Secondary considerations*

[16] Secondary considerations relevant to obviousness include the commercial success of the patented invention; whether it met long-felt but unsolved needs and, relatedly, whether others tried but failed to solve the problem; whether the patented invention gave unexpected results; and whether the patented invention received industry acclaim. *See* *Eli Lilly & Co. v. Zenith Goldline Pharms., Inc.*, 471 F.3d 1369, 1380 (Fed.Cir.2006); *see also* *Graham*, 383 U.S. at 17, 86 S.Ct. 684.

With respect to commercial success, Spectralytics argues that Noble's successful use of the accused device establishes the commercial success of the patented invention. Spectralytics SJ Mem. at 37. But the Court has held that whether Noble's device infringes the '277 patent is a disputed question of fact. Moreover, there is a question of fact as to whether Noble's success resulted from use of the accused device or from other factors, such as bringing all stent-related procedures in-house. *See* *Mackaronis Dep.* at 42 ("[O]ne of ... the most favorable things about Norman Noble was that they were providing a complete process. They were going to process the complete stent.").

With respect to other secondary considerations, the Court finds that the record is unclear. There is evidence that Cordis spent a substantial amount of money and effort working with RMS and with Noble to develop a better stent-cutting machine. Those efforts, however, seem to have taken place over the course of a few years (in the vicinity of 1993 to 1996). It is hard to say, in the abstract, whether this is a long period of time for developing a laser-based stent-cutting machine.

### **(2) Legal Conclusion on Obviousness**

[17] Although this is a close question, the Court finds that sufficient disputes of fact exist with respect to the underlying factual issues that the Court cannot decide, on summary judgment, whether the '277 patent is an obvious combination of Swiss-style cutting machines and prior-art laser-cutting machines.

On the one hand, the differences between Swiss-style machines and the patented invention are relatively minor. Substituting one type of cutting tool (a laser) for another (a metal blade) is the type of substitution that even a layperson would find obvious.

Further, in both the Swiss-style machines and the patented invention, the workpiece fixture and the cutting

tool are, in the words of the patent, in a "fixed spatial relationship." The main difference between Swiss-style machines and the patented invention is how that fixed relationship is achieved. In Swiss-style machines, it is achieved by rigidly connecting the cutting tool and the workpiece fixture to the same frame. In the patented invention, a fixed relationship is achieved by rigidly attaching the workpiece fixture directly to the cutting tool.

Whether this modification would have been obvious to one of skill in the art is a close question. Spectralytics's best evidence that it would *not* have been obvious is the testimony of Huber, Cordis's Swiss-machine expert. Spectralytics contends that Huber's testimony shows that the Swiss art teaches away from attaching a workpiece fixture directly to a cutting tool as in the '277 patent. Spectralytics SJ Mem. at 34. Cordis points out in response that Huber's testimony is not prior art. Cordis Reply Mem. at 8. Cordis also points to other testimony by Huber to the effect that he thought that combining Swiss-style machines and lasers was obvious. *Id.* But Huber's testimony is, at best, ambiguous as to whether familiarity with Swiss-style art would have led a person of ordinary skill in the art to design a device like that claimed in the '277 patent.

Cordis has strong evidence that it would have been obvious to modify a Swiss-style machine by using a laser cutting tool and attaching the workpiece fixture directly to the cutting tool as in the '277 patent. The engineers at RMS, in the course of developing a laser-based stent-cutting machine, expressly considered modifying their existing machine to make it resemble a Swiss-style machine. Rigby Dep. Ex. 72 at CSP 0036368. This strongly suggests that someone trying to solve the problem of cutting intricate stents with lasers would have looked to Swiss-style machines for ideas.

This conflict in the evidence makes it difficult to determine, on motion for summary judgment, whether the approach of the '277 patent-attaching a workpiece fixture directly to a laser-cutting head and supporting the tubing being cut in a cantilever fashion-would have been obvious to a person of skill in the art. The question of obviousness is also made more difficult because there is a dispute of fact over whether Sato and Kash are part of the prior art. Sato, in particular, looks very much like the device claimed in the '277 patent (and indeed, the examiner initially rejected Gustafson's claims over Sato). If Sato is part of the prior art, then the case for obviousness becomes very strong indeed.

On the state of the record, however-and especially in light of the Huber testimony-the Court cannot say that, based on the undisputed facts, Cordis has established that the '277 patent is obvious. And the Court most certainly cannot say that Spectralytics has established that the '277 patent is *not* obvious. Both motions for summary judgment on the issue of obviousness are denied.

### ***C. Trade-Secrets Theft and Unfair Competition***

Spectralytics brings claims against Noble for theft of trade secrets and unfair competition. It is clear from the complaint that the two claims are based on the same alleged facts. First Am. Compl. para. 34 ("NNI [i.e., Noble] has unfairly competed with Spectralytics by obtaining trade secret and other confidential information from NNI [*sic*; should be Spectralytics] and using that information for NNI's commercial benefit and exploitation."). Noble asserts that because the unfair-competition claim derives from the trade-secrets claim, the two claims stand or fall together. Noble SJ Mem. at 18 n. 20 [Docket No. 90]. Spectralytics agrees, at least for purposes of Noble's summary-judgment motion. Spectralytics Opp. Noble SJ Mot. at 19/1 n. 15. Accordingly, the Court focuses on the trade-secrets claim.

Noble moves for summary judgment on Spectralytics's trade-secrets claim on two grounds. First, Noble contends that the claim is barred by the statute of limitations. Noble SJ Mem. at 18-26. Second, Noble contends that there is no evidence that it had access to the trade secrets that it is accused of stealing, and thus no reasonable jury could find Noble liable. *Id.* at 26-30. The Court addresses each argument in turn.

### 1. Statute of Limitations

[18] The Court assumes for purposes of Noble's motion that Ohio's four-year statute of limitations governs. Ohio Rev.Code. Ann. s. 1333.66 ("An action for misappropriation shall be commenced within four years after the misappropriation is discovered or by the exercise of reasonable diligence should have been discovered."). If the four-year Ohio statute of limitations has run-as Noble contends-then so has the shorter, three-year limitations period under Minnesota law. Minn.Stat. s. 325C.06. The statute of limitations in each state embodies, in identical language, the discovery rule. Under that rule, the limitations period begins to run when a wrong is actually discovered or when the wrong "by the exercise of reasonable diligence should have been discovered." Ohio Rev.Code. Ann. s. 1333.66; Minn.Stat. s. 325C.06.

The original complaint in this action was filed in July 2005, but Spectralytics did not bring a claim for trade-secrets theft against Noble until it filed an amended complaint on August 3, 2006. Accordingly, if Spectralytics knew or should have known of the alleged theft of trade secrets before August 3, 2002, its trade-secrets claim is untimely.

Noble contends that Spectralytics was put on notice of its claim against Noble by a segment of the "News Hour with Jim Lehrer" that aired on PBS in March 2001.FN25 Noble SJ Mem. at 21-22. In the context of discussing Vice President Dick Cheney's heart problems, the segment included information about stent technology in general, interviews with employees of Johnson & Johnson and Cordis, and images of a stent being cut with a machine that resembled the device claimed in the ' 277 patent.

FN25. Noble also seems to argue that because the allegedly stolen trade secrets became public when the '277 patent was published in 1998, the statute of limitations must have run because any theft ended in 1998. Noble SJ Mem. at 20-21. This argument, if indeed Noble is making it (the Court cannot be sure), hardly merits comment. If Noble stole trade secrets in 1996, the fact that those secrets became public in 1998 does not mean that Noble is immune from liability for its theft in 1996-and, as noted, the statute of limitations on claims arising out of that 1996 theft began to run when Spectralytics discovered or should have discovered it. The fact that the trade secrets became public in 1998 is irrelevant to that inquiry.

Spectralytics's cofounder Gary Oberg saw this broadcast and "had a suspicion" that Noble (which was then making stents for Cordis) might be infringing the ' 277 patent. Rigby Decl. Ex. 44 ("Oberg Dep.") at 170. It is less clear whether Oberg also suspected that Noble had stolen Spectralytics's trade secrets. Because the broadcast aired in 2001, and because the '277 patent had issued roughly two and one-half years earlier, even if the machine shown in the broadcast infringed the '277 patent, that machine could have been developed from the patent alone rather than from stolen trade secrets. And when asked what his suspicion was after seeing the 2001 broadcast, Oberg said, "That they [Noble] were using this patent to their advantage." Oberg Dep. at 186. Oberg did, however, also say that his suspicion of Noble was based in part on the "[p]roximity of [the Nobles'] visits to Spectralytics to when they were actually making stents" and on the fact that Jack Lundeen, a sales representative for Noble, had access to the Spectralytics facility. *Id.* at 187.

Suspicion is not the same as knowledge, though. *See Sokol Crystal Prods., Inc. v. DSC Commc'ns Corp.*, 15 F.3d 1427, 1430 (7th Cir.1994) (holding, under Wisconsin trade-secrets act, that "concerns and suspicions rather than *knowledge* " of trade-secrets misuse "do not start the clock of the statute of limitations"). Noble nonetheless argues that Oberg's suspicions are equivalent to knowledge of trade-secrets theft because Spectralytics filed suit for patent infringement based on those suspicions. Noble SJ Mem. at 22.

This argument is too clever by half. For one thing, it is based on Noble's assertion that if the March 2001 broadcast supported patent-infringement allegations, it "was also sufficient to support allegations of trade secret misappropriation." *Id.* at 22. As already explained, this assertion is incorrect in light of the patent's issuance in 1998; in theory, Spectralytics could have had strong reason to believe that the machine infringed its patent without having had any reason to believe that its trade secrets had been stolen. Further, Noble's argument rests on the dubious proposition that the "knowledge" that permits a party to bring a trade-secrets claim without being sanctioned under Rule 11 of the Federal Rules of Civil Procedure is the same as the "knowledge" that triggers the running of the statute of limitations on that claim. Noble cites no authority supporting this proposition, and it would be surprising if this proposition were true, given that many claims that pass muster under Rule 11 are dismissed after discovery reveals them to be factually unsupported.

Noble also contends that even if the March 2001 broadcast did not give Spectralytics actual knowledge of the theft of its trade secrets, it nonetheless put Spectralytics on notice of the *possible* theft of its trade secrets. At that point, according to Noble, Spectralytics had the duty to investigate the possible theft. *Id.* at 23-25. Had it done so, and had it exercised reasonable diligence, it would have quickly discovered the alleged theft of its trade secrets. Thus, Noble argues, the statute of limitations began to run in March 2001.

The problem with Noble's argument is that there is no evidence of what Spectralytics would have learned if it had exercised reasonable diligence in investigating its possible trade-secrets claim in March 2001. Noble has certainly not demonstrated that Spectralytics would have acquired knowledge of Noble's alleged theft of trade secrets. Indeed, the evidence-what little there is of it-is to the contrary. It is undisputed that the stent-cutting machine shown in the March 2001 video was not a Noble machine at all, but rather a Cordis machine in use at a Cordis facility (or the facility of a Cordis affiliate). Noble SJ Mem. at 25; Spectralytics Opp. Noble SJ Mot. at 24/6. Further, Spectralytics filed trade-secrets claims against Noble only *after* Spectralytics filed suit for patent infringement and received, during discovery with respect to the patent-infringement claims, materials that Spectralytics considered to be evidence of trade-secrets theft by Noble. Spectralytics Opp. Noble Mot. SJ at 26/8. There is no reason to believe that Spectralytics could have gained access to those same materials in the course of a private investigation started in March 2001.

Without evidence that Spectralytics would have discovered facts on which to base its trade-secrets claim if Spectralytics had followed up on the suspicions aroused in Oberg by the March 2001 PBS broadcast, the Court cannot find that the statute of limitations on Spectralytics's trade-secrets claims began to run in March 2001. Noble's motion for summary judgment with respect to the statute of limitations is therefore denied.

## 2. Access

[19] Noble contends that it is entitled to summary judgment on Spectralytic's trade-secrets claim for a second reason: because no reasonable jury could find that Noble had access to the trade secrets that it is alleged to have stolen. Noble SJ Mem. at 26-30. The evidence supporting Spectralytics's trade-secrets claim is indeed extremely weak, but the Court concludes that Spectralytics has barely enough evidence to escape summary judgment.

Spectralytics argues that Noble had access to its trade secrets in one of two ways: through observations made by Larry, Chris, and Scott Noble (the principals of Noble) during visits to Spectralytics's facilities in 1996, or through observations made by a Noble sales representative, Jack Lundeen, who for a time was also a sales representative for Spectralytics. Spectralytics Opp. Noble SJ Mot. at 30/12 to 33/15.

The Court agrees with Noble that no reasonable jury could find that Noble had access to Spectralytics's trade secrets through Lundeen. There is no dispute that Lundeen was an independent contractor hired by Noble, not a Noble employee. *See* Bremer Decl. Ex. 12 at NNI 139171 [Docket No. 125] ("Sales Representative [i.e., a corporation that employed Lundeen] represents and warrants that it is an independent contractor and is not the agent, servant, or employee of Manufacturer [i.e., Noble]."). And although independent contractors may, under some circumstances, be deemed agents of their contracting partners, Spectralytics has not even attempted to argue that Lundeen was an agent of Noble. *See* Restatement (Third) of Agency s. 1.01 cmt. c (2006) ("[T]he common term 'independent contractor' is equivocal in meaning and confusing in usage because some termed independent contractors are agents while others are nonagent service providers."); Restatement (Second) of Agency s. 14N (1958) ("One who contracts to act on behalf of another and subject to the other's control except with respect to his physical conduct is an agent and also an independent contractor."). Thus the knowledge of Lundeen as a non-agent independent contractor cannot be imputed to Noble. *See* *Constructores Tecnicos, S. de R.L. v. Sea-Land Service, Inc.*, 945 F.2d 841, 847 (5th Cir.1991) (holding that a court must find that an agency relationship exists before the agent's knowledge can be imputed to the principal).

Accordingly, to show that Noble had access to Spectralytics's trade secrets through Lundeen, Spectralytics must show not just that Lundeen learned of the trade secrets, but that he actually communicated them to Noble. Lundeen denied passing any of Spectralytics's trade secrets to Noble. Niehaus Decl. Ex. HH ("Lundeen Dep.") at 212 [Docket No. 91]. Spectralytics responds to that testimony not by offering evidence that Lundeen *did* pass trade secrets to Noble, but instead by offering evidence that Lundeen is untrustworthy. Spectralytics Opp. Noble SJ Mot. at 9-13, 32/14 to 33/15. But even if Lundeen's testimony is completely ignored, the record still contains no evidence that Lundeen communicated Spectralytics's trade secrets to Noble-an issue on which Spectralytics has the burden of proof. As a result, a reasonable jury could not find that Noble gained access to Spectralytics's trade secrets through Lundeen.

A reasonable jury could, however, find that Noble had access to Spectralytics's trade secrets through its principals, Larry, Chris, and Scott Noble. The key question is this: Did the Nobles ever visit Spectralytics after the development by Spectralytics of the stent-cutting machine whose design Noble allegedly stole? The parties do not dispute that the machine was designed no earlier than December 1995. Spectralytics Opp. Noble SJ Mot. at 31/13 n. 23, 34/16; Noble SJ Mem. at 27. Therefore, if the Nobles' last visit to Spectralytics took place before December 1995, Noble necessarily lacked access to the allegedly stolen trade secrets.

There is only one piece of direct evidence that the Nobles visited Spectralytics after December 1995: Oberg testified that Larry and Scott Noble visited Spectralytics twice, once in 1995 and once in 1996. Oberg Dep. at 80 ("There was two dates they visited. One was like in '95 and one in '96."). There is also documentary evidence that the Nobles visited Minneapolis-but not necessarily Spectralytics-in December 1995. Bremer Decl. Ex. 18 at NNI-138534-39. And there is documentary evidence that unidentified Noble employees visited Minneapolis-though again, not necessarily Spectralytics-in February 1996. *Id.* at NNI-138540-44.

Noble asks the Court to disregard Oberg's testimony about a 1996 visit by the Nobles to Spectralytics because, according to Noble, Oberg recanted the testimony. Noble says that Oberg testified from memory, without consulting documents, and "when confronted with his calendar, Oberg confirmed there were only two visits, and confirmed that his calendar entries [for] those visits were in June and August 1995." Noble Reply Mem. at 4 [Docket No. 136].

That is not quite what Oberg said. Oberg did confirm in his deposition, based on a review of his calendar, that one of the Nobles' visits took place on August 24, 1995. Oberg Dep. at 712-13. But Oberg did not confirm that the August 24 visit was the *second* of the Nobles' two visits. After Noble's lawyer showed Oberg a page from his calendar dated June 30, 1995, the lawyer and Oberg had this exchange:

Q: Does this refresh your recollection now that Jack Lundeen and Larry Noble stopped by Spectralytics on June 30 around noon?

A: That's what the document indicates. I don't recall the nature of that visit.

Q: But that could be the first visit by Larry Noble, and then the August 1995 visit being the second visit, accounting for the two visits that you recall the Nobles making to Spectralytics, correct?

A: That's possible.

Q: You don't recall a third visit, do you?

A: No.

Oberg Dep. at 714. Oberg admitted that it was *possible* that both of the Nobles' visits to Spectralytics took place in 1995. But he did not quite recant his earlier testimony that the Nobles visited Spectralytics in 1996. Had he done so, the Court would grant summary judgment to Noble on the trade-secrets claim. But, as the record stands, the claim must be tried.

In sum, based on Oberg's deposition testimony and the documentary evidence of visits by Noble employees to the Minneapolis area in 1996, there is a dispute of fact over the date of the Nobles' visits to Spectralytics. Because Noble's argument that it lacked access to Spectralytics's trade secrets rests on the factual premise that the Nobles did not visit Spectralytics after December 1995, the Court denies summary judgment to Noble on Spectralytics's trade-secrets claim.

#### ***D. The '653 patent***

In Count II of the First Amended Complaint, Spectralytics alleges that Noble and Cordis infringed United States Patent 6,114,653 (the '653 patent). Cordis has counterclaimed for a declaratory judgment that the '653 patent is invalid, unenforceable, and not infringed. Ans. & Counterclaim para. C-E [Docket No. 31].

Spectralytics proposed a stipulation under which its claims and Cordis's counterclaims with respect to the '653 patent as it relates to Cordis and Noble's *disclosed* stent-cutting methods (past and current) would be dismissed *with* prejudice, while claims and counterclaims relating to *undisclosed* stent-cutting methods (past, current, and future) would be dismissed *without* prejudice. Goggin Decl. Ex. 8 [Docket No. 131]. Cordis objected to the stipulation to the extent that it proposed dismissing any of Cordis's invalidity and

unenforceability counterclaims with prejudice, since those counterclaims were directed at the '653 patent generally and were not specific to the accused device at issue in this case. Goggin Decl. Ex. 9.

Cordis now moves to dismiss Count II with prejudice (or for summary judgment of noninfringement, which is basically the same thing). Cordis SJ Mem. at 37. Cordis asserts that its corresponding declaratory-judgment claims should be dismissed without prejudice because there is no longer a case or controversy with respect to the '653 patent. *Id.* at 38. Spectralytics does not exactly oppose the motion-it acknowledges that it no longer asserts Count II for infringement of the '653 patent-but asks the Court to dismiss both sides' existing claims with prejudice and to expressly reserve both sides' future claims and defenses with respect to the '653 patent. Spectralytics Mem. Opp. Cordis Mot. S.J. at 37 [Docket No. 123]; Goggin Decl. Ex. 13.

The Court agrees with Cordis that the Court lacks subject-matter jurisdiction over Cordis's counterclaims with respect to the '653 patent in light of Spectralytics's agreement to dismiss Count II. *See Benitec Australia, Ltd. v. Nucleonics, Inc.*, 495 F.3d 1340, 1349 (Fed.Cir.2007) (finding no case or controversy, and thus no subject-matter jurisdiction, with respect to declaratory-judgment counterclaims after plaintiff dropped infringement claims). The Court therefore dismisses Count II with prejudice and dismisses Cordis's counterclaims related to the '653 patent without prejudice.

## **ORDER**

Based on the foregoing and on all of the files, records, and proceedings herein, IT IS HEREBY ORDERED THAT:

1. The disputed terms in United States Patent No. 5,852,277 are construed as set forth in the body of this opinion.
2. Plaintiff Spectralytics, Inc.'s Motion for Partial Summary Judgment [Docket No. 93] is GRANTED IN PART as follows:
  - a. No machine made in 1994 by LPL for RMS is prior art under 35 U.S.C. s.s. 102 or 103.
  - b. The existence of a tailstock-less machine allegedly made in 1994 by LPL for RMS cannot be considered among the secondary considerations related to obviousness.
  - c. United States Patent No. 5,852,277 is NOT INVALID AS ANTICIPATED by any machine made in 1994 by LPL for RMS.
  - d. The accused device is not prior art under 35 U.S.C. s.s. 102 or 103.
  - e. United States Patent No. 5,852,277 is NOT INVALID AS ANTICIPATED by the accused device.
3. Plaintiff Spectralytics, Inc.'s Motion for Partial Summary Judgment [Docket No. 93] is DENIED in all other respects.
4. Defendant Norman Noble, Inc.'s Motion for Summary Judgment [Docket No. 88] is GRANTED IN PART as follows:

a. Defendant Norman Noble, Inc. did not have access to Spectralytics's trade secrets through Jack Lundeen. In attempting to prove Counts III and IV of the First Amended Complaint at trial, Spectralytics will not be permitted to argue that defendant Norman Noble, Inc. misappropriated Spectralytics's trade secrets through the actions of Jack Lundeen.

5. Defendant Norman Noble, Inc.'s Motion for Summary Judgment [Docket No. 88] is DENIED in all other respects.

6. Defendant Cordis Corporation's Motion for Summary Judgment [Docket No. 103] is GRANTED IN PART as follows:

a. Count II of the First Amended Complaint [Docket No. 30] is DISMISSED WITH PREJUDICE AND ON THE MERITS.

b. Paragraphs C, D, and E of Cordis's counterclaim [Docket No. 31] are DISMISSED WITHOUT PREJUDICE for lack of subject-matter jurisdiction.

7. Defendant Cordis Corporation's Motion for Summary Judgment [Docket No. 103] is DENIED IN ALL OTHER RESPECTS.

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