

appropriate, and the undersigned has not hesitated to impose lengthy sentences in the past. Indeed, in one child-pornography case, the undersigned imposed a sentence that the Eighth Circuit described as “harsh.” *United States v. Paton*, 535 F.3d 829, 838 (8th Cir.2008).

But those convicted of crimes—even crimes as heinous as possessing child pornography—are human beings, and no two human beings are alike. “It has been uniform and constant in the federal judicial tradition for the sentencing judge to consider every convicted person as an individual and every case as a unique study in the human failings that sometimes mitigate, sometimes magnify, the crime and the punishment to ensue.” *Koon v. United States*, 518 U.S. 81, 113, 116 S.Ct. 2035, 135 L.Ed.2d 392 (1996). Under the unique circumstances of this case—a mentally retarded young man who has himself been the victim of horrific sexual abuse, who has no criminal record (save traffic citations), who viewed relatively few images of child pornography out of curiosity rather than compulsion, who is unlikely to be a danger to any child or even to look at child pornography again, and who will almost surely be physically and sexually victimized if sent to prison—imposing more than a nominal term of imprisonment would actually be contrary to the purposes set forth in § 3553(a). The Court therefore sentenced Meillier to one day in prison, thirty years of supervised release (of which the first year must be served in a residential re-entry center), and 2000 hours of community service.



**SPECTRALYTICS, INC., Plaintiff,**

**v.**

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

**Case No. 05-CV-1464 (PJS/RLE).**

United States District Court,  
D. Minnesota.

Sept. 4, 2009.

**Background:** Patentee filed action against competitor alleging infringement of patent directed toward apparatus for cutting piece of metal tubing with laser to make stent. Parties filed post-trial motions.

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

- (1) clear and convincing evidence did not indicate that patent was obvious;
- (2) royalty damages in excess of cost of alternative were not grossly excessive;
- (3) jury could award damages in amount greater than cost of available alternatives;
- (4) royalty damages award that exceeded value of patentee company during relevant period was not excessive;
- (5) reasonable-royalty award could exceed what was paid to acquire patent portfolio that included patent-in-suit;
- (6) damages in form of running royalty could be awarded;
- (7) reasonable jury could award damages based on royalty rate that was lower than that to which expert had testified; and
- (8) competitor did not preserve issue of willfulness for purposes of post-trial motion for judgment as matter of law.

Ordered accordingly.

**1. Federal Civil Procedure** ⇨2609

On a motion for judgment as a matter of law, when considering whether a legally sufficient evidentiary basis for the jury's verdict exists, a court must review the record as a whole, but must view the facts in a light most favorable to the nonmoving party and must grant the nonmoving party the benefit of all reasonable inferences; specifically, the court must give credence to the evidence favoring the nonmovant and must disregard all evidence favorable to the moving party that the jury is not required to believe. Fed.Rules Civ.Proc. Rule 50(a)(1), 28 U.S.C.A.

**2. Federal Civil Procedure** ⇨2338.1, 2373

When considering a motion for a new trial, a court must consider all of the evidence, including evidence favoring the movant that the jury was not required to believe; the court should grant a motion for a new trial only if, based on its review of all of the evidence, the court is firmly convinced that the jury's verdict will produce a miscarriage of justice.

**3. Patents** ⇨314(5)

Patent infringement is a question of fact.

**4. Patents** ⇨36(3)

Reasonable jury could have found that prior art taught away from attaching workpiece fixture to laser-cutting head as was done in patent directed toward apparatus for cutting piece of metal tubing with laser to make stent, and thus that clear and convincing evidence did not indicate that patent was obvious.

**5. Patents** ⇨312(10)

Evidence did not require reasonable jury to conclude, even if it could have allowed reasonable jury to conclude, that modified machine was available and acceptable noninfringing alternative, and thus royalty damages in excess of cost of alternative were not grossly excessive,

where only testimony that modified machine was acceptable noninfringing alternative came from interested witness, and patentee provided evidence that unmodified machine was unacceptable and competitor chose to use accused device rather than alternative.

**6. Patents** ⇨319(1)

When assessing damages, a fact finder must proceed with caution in assessing proof of the availability of substitutes not actually sold during the period of patent infringement.

**7. Patents** ⇨319(1)

Reasonable-royalty damages can exceed the cost of an alternative that does not infringe the patent.

**8. Patents** ⇨312(10)

Testimony from patentee's damages expert, that competitor would not have agreed to pay "substantially more" than particular amount for license if jury found that noninfringing alternative could have been implemented for that amount, did not prevent jury from awarding damages in amount greater than cost of available alternatives.

**9. Evidence** ⇨543.5

Damages expert was qualified to offer opinion that cost of available alternatives that did not infringe upon patent would have affected license negotiation.

**10. Patents** ⇨319(1)

A fact finder is permitted to consider post-negotiation events, along with all other relevant evidence, when the fact finder tries to figure out the outcome of a hypothetical patent license negotiation, but the parties at that negotiation are not presumed to know exactly what the future holds.

**11. Patents**  $\Leftrightarrow$ 319(1)

Patent infringement royalty damages award that exceeded value of patentee company during relevant period was not excessive, where technology had not been patented at that time.

**12. Patents**  $\Leftrightarrow$ 312(2)

When the actual sale of a patent portfolio including a patent-in-suit postdates a hypothetical license negotiation, and when the value of the patent seemed higher at the time of that sale than it would have at the time of the hypothetical negotiation, evidence about the later sale is particularly relevant to assessing the likely result of an earlier hypothetical negotiation.

**13. Patents**  $\Leftrightarrow$ 319(1)

Reasonable-royalty award could exceed what was paid to acquire patent portfolio that included patent-in-suit.

**14. Patents**  $\Leftrightarrow$ 319(1)

Damages in form of running royalty could be awarded for infringement of patent directed toward apparatus for cutting piece of metal tubing with laser to make stent, where patentee and competitor were competitors in market for stents, rather than competitors in market for stent-cutting machines; although competitor had exclusive-supply arrangement with another entity, competitor and other entity merely made market allocation for particular period of time that did not change fundamental nature of market.

**15. Patents**  $\Leftrightarrow$ 319(1)

The only requirement for recovering a running royalty on a patented machine's output is a showing that the patentee and the infringer competed in the output market and that the infringer could have anticipated that its infringement would have hurt the sales of the patentee, its competitor in that output market.

**16. Patents**  $\Leftrightarrow$ 319(1)

A running-royalty award in a patent infringement case is supportable only if it would have been reasonably foreseeable to the patentee.

**17. Patents**  $\Leftrightarrow$ 314(6)

Reasonable jury could award damages based on royalty rate that was lower than that to which expert had testified.

**18. Patents**  $\Leftrightarrow$ 314(6)

In a patent case, a jury may pick a damages number somewhere between the numbers offered by the parties.

**19. Patents**  $\Leftrightarrow$ 323.3

Motions for judgment as matter of law during trial on patent infringement and invalidity due to obviousness did not adequately challenge willfulness, and therefore competitor did not preserve issue of willfulness for purposes of post-trial motion for judgment as matter of law, since jury had to find that competitor had been subjectively aware of patent to find willful infringement, but such subjective awareness was irrelevant to infringement and invalidity. Fed.Rules Civ.Proc.Rule 50(a)(2), (b), 28 U.S.C.A.

**20. Patents**  $\Leftrightarrow$ 317

Permanent injunction could issue on behalf of patentee after infringement jury verdict in its favor to enjoin any possible future use of patent by competitor, since balance of hardships and public interest tipped decidedly in patentee's favor, injunction would not have imposed any great hardship on competitor based on its assertion that it no longer used patent, and injunction would not have disserved public interest. Fed.Rules Civ.Proc.Rule 65, 28 U.S.C.A.

**21. Patents**  $\Leftrightarrow$ 317

Injunctions in patent cases are subject to the same four-factor test that applies in

other cases. Fed.Rules Civ.Proc.Rule 65, 28 U.S.C.A.

## 22. Injunction ⇨9

To receive a permanent injunction, a plaintiff must show that: (1) it has suffered an irreparable injury; (2) remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) the public interest would not be disserved by a permanent injunction. Fed.Rules Civ.Proc.Rule 65, 28 U.S.C.A.

## 23. Patents ⇨319(3)

Competitor did not act culpably enough to merit award of enhanced damages for willful infringement of patent, where court likely would have found patent invalid for obviousness if it had been sitting as fact finder, evidence of deliberate copying was underwhelming, both sides behaved similarly in their litigation conduct, competitor had not been motivated to harm patentee, competitor had not attempted to conceal its infringement, duration of infringement was not excessive, and ability of competitor to pay substantial enhanced damages could not justify enhanced award alone.

## 24. Patents ⇨319(3)

The degree to which damages should be enhanced for willfulness depends in large part on the reprehensibility of the patent infringement; that is, it depends on how willful the willful infringement was.

## 25. Patents ⇨227

To prove willfulness, a patentee must show that the infringer acted despite an objectively high likelihood that its actions constituted infringement of a valid patent and that this high likelihood of infringe-

ment was either known or so obvious that it should have been known to the accused infringer.

## Patents ⇨328(2)

5,852,277. Valid and Infringed.

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

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

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

## ORDER ON POST-TRIAL MOTIONS

PATRICK J. SCHILTZ, District Judge.

This matter was tried to a jury, which found that defendants Cordis Corporation (“Cordis”) and Norman Noble, Inc. (“Noble”)<sup>1</sup> willfully infringed United States Patent No. 5,852,277 (the ‘277 patent). The ‘277 patent is owned by plaintiff Spectralytics, Inc. and covers an apparatus for cutting a piece of metal tubing with a laser to make a stent. The jury further found that the ‘277 patent was not invalid for obviousness. The jury awarded Spectralytics \$22.35 million in compensatory damages for Cordis’s infringement, an award that the jury arrived at by assessing a five-

1. The Court will generally refer to defendants collectively as “Cordis,” unless there is some reason to refer to Noble separately. Cordis

agreed to indemnify Noble for any liability established in this action.

percent royalty on sales by Noble to Cordis of stents cut with infringing devices. Verdict Form at 2 [Docket No. 368]. The Court entered judgment on the jury's verdict on February 3, 2009. Judgment [Docket No. 370].

This matter is before the Court on the post-trial motions of Cordis and Spectralytics. Cordis seeks judgment as a matter of law or, in the alternative, a new trial with respect to four issues: infringement, invalidity, willfulness, and damages.<sup>2</sup> Def. Mem. Supp. Post-trial Mot.—Corrected (“Cordis PT Mem.”) at 2 [Docket No. 395]. Spectralytics seeks the following: pre- and post-judgment interest, costs, and an accounting of, and damages for, additional infringing sales; a permanent injunction; enhanced damages for willfulness; and attorney's fees. Pl. Mem. Supp. Post-trial Mot. (“Spect. PT Mem.”) at 1 [Docket No. 388]. For the reasons that follow, the Court denies Cordis's motion and grants Spectralytics's motion in part.

#### I. STANDARD OF REVIEW

Cordis moves for judgment as a matter of law or, in the alternative, for a new trial. Motions for judgment as a matter of law must meet standards that are more stringent than the standards applied to motions for a new trial.

[1] Judgment as a matter of law is appropriate when a party has been fully heard on an issue and “the court finds that a reasonable jury would not have a legally sufficient evidentiary basis to find for the party on that issue. . . .” Fed.R.Civ.P. 50(a)(1). In considering whether a legally sufficient evidentiary basis for the jury's verdict exists, the Court must review the record as a whole, but must view the facts in a light most favorable to the nonmoving party and must grant the nonmoving party

the benefit of all reasonable inferences. *Reeves v. Sanderson Plumbing Prods., Inc.*, 530 U.S. 133, 150–51, 120 S.Ct. 2097, 147 L.Ed.2d 105 (2000); *Salitros v. Chrysler Corp.*, 306 F.3d 562, 568–69 (8th Cir. 2002) (citing *Reeves*). Specifically, the Court must “give credence to the evidence favoring the nonmovant” and must “disregard all evidence favorable to the moving party that the jury is not required to believe.” *Reeves*, 530 U.S. at 151, 120 S.Ct. 2097.

Put another way, in this case, the Court must accept all of the evidence favoring Spectralytics, but the Court must accept evidence favoring Cordis only if the evidence is uncontradicted and unimpeached and comes from disinterested witnesses. *See id.*; *Salitros*, 306 F.3d at 569. The Court should grant judgment as a matter of law to Cordis only if the evidence, viewed according to these standards, is susceptible of no reasonable inference sustaining the jury's verdict. *See Children's Broad. Corp. v. Walt Disney Co.*, 357 F.3d 860, 863 (8th Cir.2004); *Kinserlow v. CMI Corp.*, 217 F.3d 1021, 1025 (8th Cir.2000).

[2] In considering a motion for a new trial, however, the Court must consider *all* of the evidence, including evidence favoring the movant that the jury was not required to believe (such as the testimony of interested witnesses). *See, e.g., Dace v. ACF Indus., Inc.*, 722 F.2d 374, 377 n. 5 (8th Cir.1983), *supplemented and adhered to*, 728 F.2d 976 (8th Cir.1984). The Court should grant a motion for a new trial only if, based on its review of all of the evidence, the Court is “firmly convinced that the jury's verdict will produce a miscarriage of justice.” *Dace*, 722 F.2d at 377 n. 5; *see also Belk v. City of Eldon*, 228 F.3d 872, 878 (8th Cir.2000).

2. With respect to damages, Cordis also asks, in the alternative, for remittitur—that is, for an order directing plaintiffs to choose be-

tween either accepting a reduced amount of damages, as set by the Court, or retrying the case (or at least retrying damages).

## II. CORDIS'S MOTION

A. *Infringement*

Cordis asks the Court to set aside the jury's finding that the accused device infringed the '277 patent. Cordis argues chiefly that, based on the Machinery Handbook's definition of a running-and-sliding fit, the jury should have found non-infringement. Cordis PT Mem. at 31–36. But Cordis made this very argument to the jury, and the jury rejected it. This Court cannot substitute its judgment for that of the jury.

Spectralytics presented ample evidence for a reasonable jury to find that the accused device infringed the '277 patent. Only one claim limitation was in dispute. That limitation, as construed by the Court, was met if, after a piece of stock tubing was inserted through the bushing in the accused device, the inner diameter of the bushing was greater than the outer diameter of the tubing at a scale that would matter to a person of ordinary skill in the art. See Final Jury Instrs. at 5–6 [Docket No. 361]; Tr. at 3033–36.<sup>3</sup>

Patrick Madsen, Spectralytics's technical expert and a person of ordinary skill in the art, testified that the accused device met this limitation. Specifically, he testified that “the bore of the Teflon bushing will be larger than the stock tubing that's passing through it.” Tr. at 930. Further, Madsen testified—based on documentation from Noble—that on many occasions, the inner diameter of the bushing in the accused device was measured to be up to 3/10,000 of an inch larger than the nominal outer diameter of the stock tubing even *before* that tubing was inserted in the bushing. Tr. at 956–59. And Madsen testified that 1/10,000 of an inch was a dimension that would have mattered to a person of ordinary skill in the art. Tr. at 948–49. Other witnesses testified similarly. Tr. at 651–52

(testimony of the inventor, Gary Gustafson); Tr. at 543 (testimony of Spectralytics's founder, Gary Oberg, that “[w]hen it comes to making stents, . . . even a 10th of a thousandth makes a difference.”).

Cordis disparages Madsen's testimony by saying that it was contrary to the Court's claim construction. Cordis PT Mem. at 38–41. It is true that some of Madsen's testimony, viewed in isolation, could be read as reflecting a different claim construction—e.g., a construction under which the bushing's inner diameter would exceed the tubing's outer diameter whenever the tubing could slide through the bushing. See Tr. at 1111. But other portions of Madsen's testimony were consistent with the Court's claim construction, and, in that testimony, Madsen testified that the disputed limitation was met. The jury was entitled to credit that testimony.

[3] Infringement is a question of fact. *ACCO Brands, Inc. v. ABA Locks Mfr. Co.*, 501 F.3d 1307, 1311 (Fed.Cir.2007). The jury in this case was properly instructed on the law with respect to infringement and on the Court's claim construction, and it acted reasonably in finding infringement based on the evidence favoring Spectralytics. Further, the jury's infringement verdict does not reflect a miscarriage of justice in light of all of the evidence.

B. *Obviousness*

[4] The jury found that Cordis failed to prove by clear and convincing evidence that the '277 patent was invalid for obviousness. As the Court has said in the past, if this case had been tried to the Court, the Court likely would have found the '277 patent invalid. But the Court cannot, on a post-trial motion, substitute its view of the evidence for the jury's

3. The trial transcript, cited as “Tr.” in this

order, is found at Docket Nos. 408 to 420.

And although the Court must review the conclusion of obviousness *de novo*, that conclusion depends on underlying factual findings that were the jury's to make. See *LNP Eng'g Plastics, Inc. v. Miller Waste Mills, Inc.*, 275 F.3d 1347, 1353 (Fed.Cir. 2001) ("This court reviews a jury's conclusions on obviousness, a question of law, without deference, and the underlying findings of fact, whether explicit or implicit within the verdict, for substantial evidence.").

At trial, Cordis's obviousness argument focused mainly on one feature of the patented invention: the mounting of the "workpiece fixture," which supports tubing as it is cut, on the laser-cutting head. Cordis likewise emphasizes this feature in support of its post-trial motion, arguing that "the *only* difference between the patented invention and the prior art that was alleged was that the patent teaches carrying the workpiece fixture on the cutting tool rather than attaching it to another nearby fixed object, such as the work table or the shelf on which the laser sits." Cordis PT Mem. at 3 (emphasis in original). Cordis then contends that Madsen "*conceded* that connecting the fixture to the laser was an obvious way to achieve the fixed spatial relationship taught by the Swiss art," and that therefore Cordis is entitled to judgment as a matter of law that the '277 patent was obvious. *Id.* (emphasis in original).

Cordis distorts Madsen's testimony. Cordis's counsel asked Madsen a series of questions about whether it would have been obvious to attach a workpiece fixture to a laser cutting tool if the *only* goal was to maintain a fixed spatial relationship between the fixture and the cutting tool. See, e.g., Tr. at 2731 ("Q: ... [If] the problem you are trying to solve is simply how to find a place to keep the bushing in a fixed spatial relationship with the laser, it's just as obvious to attach it to the laser

as it is to the shelf; isn't that right?"). Madsen eventually agreed that "if you are just wanting to attach [the workpiece fixture], if that's your only concern, your only thought, you can attach it anywhere you want." *Id.*

But Madsen never *agreed* that the only purpose of the '277 patent was to keep a fixed spatial relationship between a workpiece fixture and a laser-cutting tool. Moreover, the Court rejected this specious characterization of the '277 patent's purpose in ruling on Cordis's motion for summary judgment:

Th[e] purpose [of the '277 patent] 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." If that was the invention's purpose, the device would have been reduced to practice even if it never cut a single stent.

*Spectralytics, Inc. v. Cordis Corp.*, 576 F.Supp.2d 1030, 1051 (D.Minn.2008) (citations omitted).

Further, Cordis's own expert on Swiss-style machines, Peter Huber, agreed at his deposition that the invention of the '277 patent was "contrary to the accepted teachings of Swiss automatic screw machines," and the jury saw a videotape of that deposition testimony. Tr. at 2105. When asked at trial whether the '277 patent was contrary to the teachings of Swiss-style machines, Huber replied:

Basically, I think, I just say this: The tool on a Swiss automatic is rigidly attached to the bushing via the cast iron base or frame. It's the tool which slides to make the contours of the parts. That's the only reason why the tool slides, but it's rigidly attached to the tool frame.

*Id.* In light of Huber's testimony, a reasonable jury could have found that the Swiss

art taught away from attaching the work-piece fixture to the laser-cutting head as is done in the '277 patent.

Considering the evidence in the light most favorable to Spectralytics, as the Court must, the Court agrees with the jury that Cordis failed to carry its burden of showing by clear and convincing evidence that the '277 patent was obvious. And considering all of the evidence on both sides, the Court further finds that allowing the jury's verdict to stand would not work a miscarriage of justice.

### C. Damages

[5] The Court was initially troubled by the jury's verdict on damages and thus was inclined to grant Cordis's post-trial motion with respect to damages. After much reflection, however—and after having read and re-read much of the trial transcript—the Court is persuaded that the jury's verdict should stand. The reasonable-royalty damages awarded by the jury are certainly generous, but they have a sufficient basis in the evidence at trial and do not reflect a miscarriage of justice.

In attacking the jury's damages verdict, Cordis contends that the verdict is grossly excessive in light of two kinds of evidence: evidence about noninfringing alternatives, and evidence about the value of Spectralytics as a company. Cordis also contends that there was insufficient evidence to support the jury's award of a running royalty. The Court addresses Cordis's contentions in turn.

#### 1. Noninfringing Alternatives

[6] Cordis contends that “on the facts of this case,” the jury's damages award should not have exceeded the cost of one or both of two noninfringing alternatives: a modified version of the accused device completed in October 2008, and a modified

version of a Comtal machine that was available in 1997 or 1998. Cordis PT Mem. at 53–55. But the jury was not required to believe the testimony of Cordis's witnesses about these alternatives, particularly in light of the Federal Circuit's admonition that a fact finder “must proceed with caution in assessing proof of the availability of substitutes not actually sold during the period of infringement.” *Grain Processing Corp. v. Am. Maize-Prods. Co.*, 185 F.3d 1341, 1353 (Fed.Cir.1999); see also *Micro Chem., Inc. v. Lextron, Inc.*, 318 F.3d 1119, 1123 (Fed.Cir.2003) (“[T]he finding that an infringer had to design or invent around the patented technology to develop an alleged substitute weighs against a finding of availability.”).

With respect to the October 2008 redesign of the accused device, Cordis says that it was “undisputed” at trial that Noble could have made this redesign in 1998, and that the redesign “worked just as well” as the original design. Cordis PT Mem. at 54. Cordis overstates its case.

It is true that Madsen, Spectralytics's technical expert, testified about the redesign: “You probably could have done that in 1998.” Tr. at 1024. But when Cordis's counsel asked Madsen whether he “would disagree with me that Norman Noble gets the same high yields with this design as it got with the others,” Madsen expressed no opinion, because he had seen no evidence about the assertion implicit in the question. *Id.* And it is not surprising that Madsen had little to say about this particular alternative design given that it was not fabricated until October 2008.

The only evidence of the redesign's effectiveness came from Jeff Miller of Noble, an interested witness whose testimony the jury was not required to believe.<sup>4</sup> Miller

4. See *Kinsler v. CMI Corp.*, 217 F.3d 1021, 1027 (8th Cir.2000) (identifying one of defendant's employees as an “interested witness”);

*Glover v. McDonnell Douglas Corp.*, 981 F.2d 388, 391–92 (8th Cir.1992) (“[A]ll of McDonnell Douglas' testimony came from its em-



testified that he made the redesign in about a week in October 2008, that it cost \$3,800, and that he could have built the same design in 1998. Tr. at 1804–07. Miller testified that there was no advantage to mounting the bushing holder on the lens of the laser (as in the infringing design) as opposed to on a shelf (as in the redesign). Tr. at 1807. Miller testified that he had cut stents with this redesigned device, that those stents were just as good as the stents cut with the infringing device, and that the redesigned device would have been an acceptable alternative for Cordis in 1998. Tr. at 1886–87.

But Miller also testified that only “prototype stents” were cut with the redesigned device. Tr. at 1877. And he testified that machines with the redesign were not actually being used to cut stents. Tr. at 1879. Miller testified that for “production purposes,” the redesigned machines cut “tubular products.” Tr. at 1876–77. When asked to describe these “tubular products,” Miller said: “I wouldn’t say they were stentlike, but they were just tubular products that had general patterns throughout the piece. . . . These are considerably larger [than stents] in most cases.” Tr. at 1878–79.<sup>5</sup>

A reasonable jury, based on this evidence, could have disregarded this proposed noninfringing alternative. Even if the jury found that the device could have been fabricated in 1998, the jury was not required to believe that the device would have been an acceptable alternative to the accused device. By Miller’s own admis-

employees, all of whom have an interest (even if not pecuniary) in this case. Therefore, we cannot fairly characterize their testimony as ‘completely disinterested.’”), *vacated on other grounds*, 510 U.S. 802, 114 S.Ct. 42, 126 L.Ed.2d 13 (1993), *readopted on remand*, 12 F.3d 845 (8th Cir.1994).

5. Miller’s testimony about what Noble was producing with the redesigned assembly was

the alternative device had been used to cut only prototype stents, not production stents. The fact that some unspecified number of prototype stents were cut accurately does not mean that a jury would have been required to conclude that the redesigned device would have been satisfactory for production purposes.

A reasonable jury likewise could have disbelieved that a modified Comtal machine would have been an acceptable and available noninfringing alternative in 1998. According to Cordis, it could have used ten modified Comtal machines in 1998 at a cost of \$1.688 million, and “the adequacy of the modified Comtal design was likewise undisputed as a non-infringing alternative.” Cordis PT Mem. at 64. Again, Cordis overstates its case.

Bill Dobbins, a Cordis employee who worked at NDC before Cordis acquired it in 1997, testified about the modified Comtal machines. Tr. at 2223, 2235. Some time after the 1997 acquisition, NDC took delivery of some Comtal laser-cutting machines. Tr. at 2236. As delivered, the machines could cut stents, but some vibration became apparent when Dobbins ran the machines at high speeds. Tr. at 2243. Dobbins needed to modify the Comtal machines “to make acceptable quality stents fast. . . .” Tr. at 2269.

To reduce the vibration at high speeds, Dobbins designed a bracket that he attached to the laser nozzle and the bushing-support structure. Tr. at 2244. When asked how long he used such a bracket, he did not respond directly, saying: “Well, it

somewhat unclear. But it is clear that when Miller was asked whether that redesigned assembly was being used to produce stents, he answered “prototype stents.” Tr. at 1877 (“Q: Are they stents? A: There is some prototype stents.”); *id.* at 1878 (“Q: So these are ones where the follower is attached to the shelf? A: Correct.”).

worked. It was simple, but it worked. It worked well enough. I used it to validate this system and four more systems after that.” Tr. at 2247. At some point, Dobbins replaced the bracket he had designed with a combination of “precision positioning stages” that he bought and brackets that he made in-house. Tr. at 2248, 2250–51 (describing later design), 2254.

Dobbins made salable nitinol stents for Cordis with this design. Tr. at 2254–55, 2284. He validated the first machine for Cordis in the middle of 1998 and had validated four more by the end of 1998. Tr. at 2255. Dobbins testified that with this machine, NDC “cut to specification and the yields were always in the 90 percent range.” Tr. at 2258. Dobbins designed and validated a different machine in 2001. Tr. at 2257. He finally phased out the modified Comtal machines in 2004. Tr. at 2257–58.

Using the modified Comtal machines, NDC made production quantities of nitinol stents only. Tr. at 2284. As for stainless-steel stents—the kind cut by Noble with the infringing device—NDC made only prototype stents; NDC never validated any machines for producing stainless-steel stents. Tr. at 2284. Dobbins did testify at one point that “[o]f course” the modified Comtal machines could have been modified to cut stainless-steel stents. Tr. at 2295. Dobbins said that for \$15,000 to \$20,000, it would have been “a simple matter” to fit a modified Comtal machine with the water-delivery system necessary for cutting stainless-steel stents. Tr. at 2295–96. Dobbins answered “[n]ot necessarily” when Spectralytics’s counsel asked, “So because something might work with stainless steel, it might not work for the nickel titanium stents?” Tr. at 2288.

Dobbins’s testimony thus provided some, but not overwhelming, support for the proposition that a modified Comtal machine could have been used to cut stain-

less-steel stents in 1998 in place of the infringing device. Madsen’s testimony, however, pointed the other way.

Madsen testified that he used an *un* modified Comtal machine at SciMed for producing roughly 1,000 Radius model stents a week. Tr. at 1011. But Madsen also testified that he “wasn’t happy with the Comtal performance in general.” Tr. at 1011. Madsen conceded that a Comtal machine was used by RMS to cut thousands of stents for Cordis. Tr. at 1013. And Madsen agreed that sample stents provided to SciMed by Noble and Spectralytics in 1997 were comparable to the stents SciMed made in-house with the Comtal machine (though Madsen did not know Noble’s or Spectralytics’s scrap rates). Tr. at 971–72.

Despite SciMed’s commercial use of the unmodified Comtal machine, Madsen denied that it was an acceptable alternative to the patented machine. He said that the Comtal machine “had unacceptable yields and had unacceptable machine downtime. . . . You would have issues in dealing with the defects that it creates, and you have issues with doing your verification and validation for FDA approval.” Tr. at 1013; Tr. at 1114 (“In my opinion in working with the Comtal machines that I am familiar with, they were not an acceptable alternative.”). In fact, Madsen testified that based on his review of the evidence, Cordis was “unhappy with the performance” of the unmodified Comtal machines at RMS. Tr. at 1115.

Madsen was also asked about the Comtal machine as modified by Dobbins. He agreed that the design was noninfringing but had no opinion on whether it would have been an acceptable alternative to the accused device. Tr. at 1017–18. Madsen testified that he had seen no evidence that the modified Comtal could acceptably cut stents. Tr. at 1115. Madsen also confirmed that, as far as he could tell, if

Cordis had wanted to in 1998, Cordis could have used modified Comtal machines, which were being used by its subsidiary, NDC. *Id.*

Julie Davis, Spectralytics's damages expert, also testified, based on her review of the documents, that neither Cordis nor Noble considered the unmodified Comtal machine to be an acceptable alternative in 1998. Tr. at 1242. Davis is an economist, and thus she was not qualified to express her own opinion about whether the Comtal machines were an acceptable noninfringing alternative. But, as an expert witness, she was allowed to testify about the evidence that she relied upon in forming her opinion about damages. Fed.R.Evid. 703. Davis testified that she did not see any evidence that the Comtal machines were acceptable to Noble or Cordis. To the contrary, she testified that Cordis sent five existing Comtal machines to Noble and Noble "didn't want to use those machines because they didn't think they were adequate." Tr. at 1288. According to Davis, "Cordis had already, in essence, fired RMS for using Comtal machines because those machines weren't making acceptable stents." Tr. at 1288.

In sum, to support its argument that the modified Comtal machine was an acceptable noninfringing alternative, Cordis has only the testimony of Dobbins—a Cordis employee and thus an interested witness whose testimony the jury was not required to believe. Dobbins admittedly never cut a single stainless-steel stent with such a machine. For its part, Spectralytics has evidence that the *un* modified Comtal machine was unacceptable to Cordis and Noble. And it is undisputed that in 1998,

6. Indeed, the Federal Circuit has held that a reasonable-royalty award can exceed the infringer's anticipated *profits* from the infringing activity. *Monsanto Co. v. Ralph*, 382 F.3d 1374, 1384 (Fed.Cir.2004) ("[A]lthough an infringer's anticipated profit from use of the

instead of choosing to use the modified Comtal machine that NDC (a Cordis subsidiary) was then using to cut nitinol stents for Cordis, Noble instead chose to use the accused device to cut stainless-steel stents for Cordis. On this record, a reasonable jury *could* have concluded that the modified Comtal machine was an available and acceptable noninfringing alternative in December 1998, but a reasonable jury was not *required* to do so.

[7] Finally, even if the jury believed that a modified Comtal machine, or a modified follower assembly, was an available noninfringing alternative in December 1998, the jury was not required to treat the cost of either such alternative as a cap on the damages in this case. The Federal Circuit squarely held in *Mars, Inc. v. Coin Acceptors, Inc.* that "an infringer may be liable for damages, including reasonable royalty damages, that exceed the amount that the infringer could have paid to avoid infringement." 527 F.3d 1359, 1373 (Fed. Cir.2008). *Mars* emphatically rejected the argument that reasonable-royalty damages cannot exceed the cost of a noninfringing alternative, holding that

even if Coinco [the infringer] had shown that it had an acceptable noninfringing alternative at the time of the hypothetical negotiation, Coinco is wrong as a matter of law to claim that reasonable royalty damages are capped at the cost of implementing the cheapest available, acceptable, noninfringing alternative. We have previously considered and rejected such an argument.

*Id.*<sup>6</sup>

[8] Cordis tries to sidestep *Mars* by arguing that the cost of noninfringing al-

patented invention is 'among the factors to be considered in determining' a reasonable royalty, the law does not require that an infringer be permitted to make a profit.") (citation omitted).

ternatives should cap damages in this case because “Spectralytics’ expert agreed their cost should serve as a cap.” Cordis PT Mem. at 54. It is true that Spectralytics’s damages expert, Julie Davis, agreed that the cost of a noninfringing alternative would place some limit on damages. Specifically, Davis agreed that if the jury found that Noble could have implemented a noninfringing alternative in 1998 for \$1.5 million, Noble would not have agreed to pay “substantially more” than that amount for a license. Tr. at 1377.

[9] But for two reasons, the jury was not precluded by Davis’s testimony from awarding damages in an amount greater than the cost of the noninfringing alternatives available in 1998. First, Davis was not the judge (or even a lawyer). She was a fact witness. Although she testified that the cost of available noninfringing alternatives would have affected a license negotiation in 1998—a banal factual proposition on which she was qualified to offer an opinion—Davis’s testimony did not, and could not, establish the *legal* proposition that Cordis now advances—namely, that Spectralytics’s damages should, as a matter of law, be capped at the cost of an available noninfringing alternative.<sup>7</sup> The

7. Further, a party who can easily and at low cost switch to a noninfringing alternative could rationally agree to pay almost any royalty rate to license, on a percentage-royalty basis, a patent that it is accused of infringing. Because the accused infringer could simply switch to the noninfringing alternative and thereby avoid paying any royalties—even 100 percent of \$0 in infringing sales is \$0—the accused infringer might decide to save on negotiation costs by agreeing to whatever royalty rate the patentee demands, safe in the knowledge that it would not have to pay anything because it was not infringing or would stop infringing.

Of course, an accused infringer who agreed to such a license would face steep costs if it used an infringing process or machine that it

testimony of a fact witness cannot somehow overrule Federal Circuit precedent.

Second, when Cordis’s counsel elicited Davis’s testimony about how the cost of a noninfringing alternative would have affected license negotiations in 1998, Cordis’s counsel was asking Davis about a *lump-sum* royalty, Tr. at 1376,<sup>8</sup> whereas Davis testified that the parties would have agreed to a *percentage* royalty. Because the lifetime cost of a percentage royalty cannot be known with certainty at the time of the license negotiation, there is no logical reason why the amount of royalties that are in fact paid out in the years following the negotiation could not exceed the cost of a noninfringing alternative available at time of the negotiation. To the extent that Cordis argued at trial that under the “book of wisdom” doctrine, the parties would in fact have known, *with certainty*, the lifetime cost of a percentage royalty, Cordis mischaracterized the law.

The lifetime cost of a percentage royalty on sales depends on two things: the royalty rate and the total number of sales to which that rate will be applied. Cordis’s counsel asked misleading questions, and Davis gave confusing answers, about how to apply the “book of wisdom” doctrine

wrongly believed was a noninfringing alternative. But businesses take risks all the time, and there is nothing inherently unfair in forcing a business to bear the costs of guessing wrong about whether it is infringing. In this case, Cordis bet that it would not be found liable for infringing Spectralytics’s patent if Noble continued to use the follower assembly. According to the jury in this case, Cordis bet wrong.

8. Cordis’s counsel asked: “[I]f the jury concludes that Nobles [*sic*] could have replaced all of their infringing machines with modified Comtal machines which are noninfringing and that could be done for a million and a half dollars, that also would cap the amount of the license at a million and a half dollars, correct?” Tr. at 1376.

when considering future sales in the context of the December 1998 hypothetical license negotiation. Davis and Cordis's counsel had the following exchange on the subject:

Q: In any event, your opinion is that in December of 1998, Norman Noble would have agreed to pay royalties that over time would have amounted to 89 million dollars, right?

A: *They wouldn't have known that over time it would amount to 89 million, but they would have known that they had just agreed to pay royalties on a per sale basis, per stent.*

Q: Wait a minute. You're making your determination on the number of sales that have taken place for the past decade, right?

A. Right.

Q. And the parties in 1998 wouldn't know what those sales are, right?

A. *They would not know the amount.* That's correct.

Q. But through something called the doctrine of the book of wisdom, you have heard of that, the book of wisdom?

A. I have.

Q. The book of wisdom is a doctrine, legal doctrine that permits you to . . . look ahead in time so that the parties to a reasonable negotiation can take in the facts that have happened after the negotiation, is that right?

A: That's right.

Q: Okay. So you're taking into account all of the sales that Norman Noble has made to Cordis for the last ten years, right?

A: Right.

Q: And you're telling us that we can't know that is going to amount to 89 million dollars back in 1998?

A: Well, if you want to assume that at the hypothetical negotiation they do know the 447 million dollar number of sales, of course they can do the math and get to the 89 million dollar number.

Q: Okay. That's what I thought. Your opinion is that in December of 1998, Norman Noble would have agreed to pay 20 percent of every stent sale with the right to attach its bushing holder to the head of the laser, is that right?

A: They would pay 20 percent of the sales associated with product that was manufactured using the '277 patented technology.

Tr. at 1269–70 (emphasis added).

In the sentences italicized above, Davis said that the parties at the December 1998 hypothetical negotiation would have known only that they were agreeing to a royalty *rate*, not that they were agreeing to a lifetime royalty of \$89 million. Davis later seemed to concede that the parties could figure out the lump-sum cost of the rate—but only “if you want to assume that at the hypothetical negotiation they do know the 447 million dollar number of sales . . .” Tr. at 1270 (emphasis added). It is not at all clear that Davis was agreeing with the description given by Cordis's counsel of the book-of-wisdom doctrine—a description that is not, in fact, correct.

The book-of-wisdom doctrine takes its name from this passage in Justice Cardozo's opinion for the Supreme Court in *Sinclair Refining Co. v. Jenkins Petroleum Process Co.*:

A patent is a thing unique. There can be no contemporaneous sales to express the market value of an invention that derives from its novelty its patentable quality. But the absence of market value does not mean that the offender shall go quit of liability altogether. The law

will make the best appraisal that it can, summoning to its service whatever aids it can command. At times the only evidence available may be that supplied by testimony of experts as to the state of the art, the character of the improvement, and the probable increase of efficiency or saving of expense. This will generally be the case if the trial follows quickly after the issue of the patent. But a different situation is presented if years have gone by before the evidence is offered. Experience is then available to correct uncertain prophecy. Here is a book of wisdom that courts may not neglect. We find no rule of law that sets a clasp upon its pages, and forbids us to look within. . . .

To correct uncertain prophecies in such circumstances is not to charge the offender with elements of value nonexistent at the time of his offense. It is to bring out and expose to light the elements of value that were there from the beginning. . . .

An imaginary bid by an imaginary buyer, acting upon the information available at the moment of the breach, is not the limit of recovery where the subject of the bargain is an undeveloped patent. Information at such a time might be so scanty and imperfect that the offer would be nominal. The promisee of the patent has less than fair compensation if the criterion of value is the price that he would have received if he had disposed of it at once, irrespective of the value that would have been uncovered if he had kept it as his own.

289 U.S. 689, 697–99, 53 S.Ct. 736, 77 L.Ed. 1449 (1933) (citations omitted).

Two aspects of this passage are noteworthy. First, in it Justice Cardozo advocates looking to future events to avoid undercompensating patentees, not to limit their compensation (as Cordis advocates here). Second, Justice Cardozo does not

suggest that all future events are known with certainty at a hypothetical negotiation; to the contrary, he says that the purpose of looking at future events is “to bring out and expose to light the elements of value that were there from the beginning.” *Id.* at 698, 53 S.Ct. 736.

[10] Cordis’s rigid interpretation of the book-of-wisdom doctrine is thus inaccurate. A fact finder is permitted to consider post-negotiation events—along with all other relevant evidence—when the fact finder tries to figure out the outcome of a hypothetical license negotiation, but the parties at that negotiation are not presumed to know exactly what the future holds. See *Harris Corp. v. Ericsson, Inc.*, 417 F.3d 1241, 1257 (Fed.Cir.2005) (holding that a district court “correctly understood *Wang Laboratories, Inc. v. Toshiba Corp.*, 993 F.2d 858 (Fed.Cir.1993) ] as mandating consideration of a hypothetical negotiation on the date of first infringement but *not automatically excluding* evidence of subsequent events.”) (emphasis added); *W.L. Gore & Assocs., Inc. v. Tetratec Corp.*, 15 U.S.P.Q.2d 1048, 1052 (E.D.Pa.1989) (“Evidence of the infringer’s actual profits generally is *admissible as probative* of the alleged infringer’s anticipated profits.”) (emphasis added).

Indeed, if the book-of-wisdom doctrine operated as Cordis proposes, every hypothetical negotiation in a patent case over a percentage royalty—without exception—would in fact be a negotiation over a lump-sum royalty, since the lifetime cost of the percentage royalty would (on Cordis’s reading of the book-of-wisdom doctrine) be known to the parties at the time of the hypothetical negotiation. This would be a radical shift in how royalty damages are assessed in patent cases.

## 2. Value of Spectralytics

[11] Cordis argues that the jury’s damages award should be set aside or reduced

because it “amount[ed] to more than the entire value of Spectralytics, which ranged from \$2.81 million in 1996 to \$4 million in 2003.” Cordis PT Mem. at 55. To support this argument, Cordis cites only one case: *Integra Lifesciences I, Ltd. v. Merck KGaA*, 331 F.3d 860 (Fed.Cir.2003), *vacated and remanded on other grounds*, 545 U.S. 193, 125 S.Ct. 2372, 162 L.Ed.2d 160 (2005), *on remand*, 496 F.3d 1334 (Fed.Cir. 2007). And the passage on which Cordis relies on is pure dictum.

In *Integra Lifesciences I*, the Federal Circuit vacated a reasonable-royalty damages award for various reasons. One reason—seemingly the most important one—was that the court could not tell from the evidence when the hypothetical negotiation was supposed to have taken place. 331 F.3d at 870 (“[T]he record does not clearly indicate whether 1994 or 1995 is the proper date for the first infringement. . . . On remand, the trial court will have the opportunity to clarify the proper timing of the reasonable royalty calculus.”). An additional reason was that:

The \$15,000,000 royalty [i.e., the vacated award] also does not appear to take into account numerous factors that would considerably reduce the value of a hypothetical license. For example, Integra [the plaintiff] purchased Telios (together with all of its products, patents and know-how) for \$20,000,000 in 1996. A \$15,000,000 award figure to compensate for infringement of only some of Telios’ patents before Integra’s acquisition

*seems unbalanced* in view of the overall acquisition price.

*Id.* at 871 (emphasis added).

[12] The hypothetical negotiation in *Integra Lifesciences I* would have taken place in 1994 or 1995. The Federal Circuit thus said, in effect, that an actual sale in 1996 of the patent rights at issue in the hypothetical negotiation was relevant to calculating a reasonable royalty in that hypothetical negotiation.<sup>9</sup> But the Federal Circuit has never held that, as a matter of law, a reasonable-royalty award cannot exceed what someone paid to acquire a patent portfolio that includes the patent-in-suit. And, for reasons that will be described in a moment, such a rule would make no sense.

It follows from *Integra Lifesciences I* that, in this case, the Court did not err in allowing the jury to hear evidence related to the proposed sale of Spectralytics in 1996 and the actual sale of the company in 2003. That evidence was unquestionably relevant. But it does not follow that the jury acted unreasonably in awarding more in damages than the proposed sale price of Spectralytics in 1996 or the actual sale price of Spectralytics in 2003.

The proposed sale in 1996 provides weak evidence of how the parties would have valued the ‘277 patent in December 1998 in the course of a hypothetical negotiation. In early 1996, Gary Oberg, Spectralytics’s founder, offered to sell a 65-percent inter-

9. Further, in *Integra Lifesciences I*, it appears that the Federal Circuit believed that the patent-in-suit became more valuable over time, which would mean that the price of acquiring the patent in 1996 (the date of Integra’s acquisition of the patent-in-suit as part of acquiring a company) would be expected to exceed the price of a license to the patent-in-suit in 1994 or 1995 (when the hypothetical negotiation would have taken place). *Id.* at 870 (“The value of a hypothetical license negotiated in 1994 could be drastically different

from one undertaken in 1995 due to the more nascent state of the RGD peptide research in 1994.”). Under such circumstances—that is, when the actual sale of a patent portfolio including a patent-in-suit postdates a hypothetical license negotiation, and when the value of the patent seemed higher at the time of that sale than it would have at the time of the hypothetical negotiation—evidence about the later sale is particularly relevant to assessing the likely result of an earlier hypothetical negotiation.

est in Spectralytics to Noble for about \$1.8 million. Tr. at 581–82. This reflects an overall value of about \$2.8 million for the entire company. Tr. at 583–84. At the time, Spectralytics was using the tooling that would eventually be covered by the '277 patent, but Spectralytics had not even filed a patent application on the tooling, much less received a patent. Tr. at 584. Gustafson did not apply for what became the '277 patent until October 1996, and the patent did not issue until over two years later, in December 1998.

The price of acquiring a company with unpatented technology bears little relationship to what royalty should be paid for licensing a patent that later issues on that technology. The value of technology before a patent has been applied for (let alone granted) is likely to be significantly different from the value of that technology when (as in the hypothetical negotiation) the patent covering it is known to be valid and infringed, and the infringer is seeking a license. The jury heard the evidence about the proposed 1996 sale and obviously discounted it. In doing so, the jury acted reasonably.

[13] The jury also heard evidence about Preco's acquisition of Spectralytics in 2003. Preco began negotiating with Oberg to acquire Spectralytics in early 2003. See D-554. At the time, Spectralytics suspected that Cordis might be infringing the '277 patent. Tr. at 607; D-554 at PRECO00461; D-598 at SP00730. But Spectralytics did not file this suit until July 2005, about two years later.

Preco paid \$4 million to buy Spectralytics, and the sale was completed in October 2003. Tr. at 1311; D-558. Of that \$4 million, roughly \$1.7 million was allocated to goodwill, which included Spectralytics's patents. Tr. at 1313–14. But as part of the acquisition, Preco agreed to pay to Oberg 25 percent of any "net proceeds realized from any patent litigation involv-

ing" Cordis. D-598 at SP00730. Thus, in acquiring Spectralytics, Preco received the rights to all of Spectralytics's patents, less one-fourth of any recovery against Cordis in a patent-infringement suit.

Cordis contends that Preco gave no value to the patent in the acquisition. Cordis PT Mem. at 56. This is an exaggeration. When Cordis's counsel asserted that Preco's owner gave "no monetary value" to the '277 patent, Davis responded, "They didn't know how to value it at the time. They didn't know if anybody was infringing." Tr. at 1315. Davis said that Preco "didn't know how to value the patent so they handled that differently"—that is, they gave Oberg 25 percent of any recovery from Cordis in a patent-infringement suit. Tr. at 1319. To say, as Davis did, that the '277 patent's value was *unknown* and not individually specified in 2003 is not to say, as Cordis would have it, that the patent was *worthless*. If someone buys a box that might (or might not) contain cash, and if the box in fact contains cash, then that cash has a value—even if the box was sold as part of a package deal for various possessions rather than as an individually priced item, and even if the buyer and seller could not put a specific value on the box because they did not know how much cash, if any, it contained.

In this case, the significance of the price paid by Preco to acquire Spectralytics in 2003 depends on what that price suggests about the outcome of the hypothetical license negotiation in 1998. The jury could reasonably have concluded that the former had little to do with the latter. At the time of the 2003 sale, Spectralytics knew that the value of the '277 patent ranged from nothing to possibly tens of millions of dollars, depending on (among other things) whether Noble and Cordis were infringing and whether, if sued for infringement, Noble and Cordis could successfully challenge



the patent's validity. Spectralytics suspected that Noble and Cordis might be infringing the '277 patent and hoped that the patent would survive any challenge to its validity, but Spectralytics did not really know for certain, and it could not really know for certain without paying millions of dollars in legal fees to launch lengthy and risky litigation. Thus, the value assigned to the '277 patent in 2003 would have reflected a very deep discount.

To illustrate: Suppose that Spectralytics reasonably calculated in 2003 that the '277 patent would have no value unless Spectralytics could prove that Noble and Cordis had infringed and could turn back any challenge to the patent's validity. Suppose further that Spectralytics also reasonably calculated that it would take six years of litigation and \$3 million in legal fees to win a lawsuit against Noble and Cordis. Finally, suppose that Spectralytics reasonably calculated that its best-case-scenario recovery—a recovery that would depend on Spectralytics being able to use discovery to uncover strong evidence in its favor, a judge ruling Spectralytics's way on many uncertain legal issues, and a jury being persuaded to return a verdict for Spectralytics—was about \$50 million, but that its chances of receiving a best-case-scenario recovery were only about one in ten. In such circumstances, the fact that Preco paid only \$4 million to buy Spectralytics in 2003—and nothing specifically for the '277 patent—would not in any way undermine a jury's finding that a hypothetical license negotiation in 1998 would have resulted in Spectralytics receiving over \$22 million in royalties.

This is true because, at the hypothetical negotiation in 1998, Noble would have agreed both that the '277 patent was valid and that Noble infringed it, and Noble and Spectralytics would have wanted to strike a deal to license the patent. In other words, the hypothetical negotiation in 1998

would not have been influenced by the contingencies that dramatically reduced the value of the '277 patent at the time of the Preco sale in 2003. The bottom line is that weighing the evidence about Preco's 2003 acquisition of Spectralytics was a task for the jury, and a reasonable jury could have chosen to give very little weight to this evidence.

### 3. Running Royalty

[14] Cordis argues that, for two reasons, the Court should set aside the jury's award of a running royalty—that is, a royalty based on the value of stents produced with infringing machines. First, Cordis argues that the *form* of the royalty was improper because Spectralytics presented no evidence of similar running royalties in the industry. Second, Cordis argues that the *rate* of the running royalty was not supported by the evidence. The Court disagrees on both points.

According to Cordis, as a matter of law, a jury cannot award patent-infringement damages in the form of a running royalty in the absence of evidence of similar running royalties in the relevant industry. Cordis PT Mem. at 45. Although Federal Circuit case law in this area is not entirely clear, the Court disagrees with Cordis's reading of that case law.

The two most-relevant Federal Circuit cases are *Stickle v. Heublein, Inc.*, 716 F.2d 1550 (Fed.Cir.1983), a case about taco fryers, and *Minco, Inc. v. Combustion Engineering, Inc.*, 95 F.3d 1109 (Fed.Cir. 1996), a case about ovens for fused silica. *Stickle* supports Cordis's argument against a running royalty, but *Minco* undermines that argument and instead supports the running-royalty award in this case. Because this case is more like *Minco* than like *Stickle*, the jury was not foreclosed, as a matter of law, from awarding damages in the form of a running royalty.

In *Minco*, a district judge found Combustion Engineering (“CE”) liable after a bench trial for infringing Minco’s patent on an oven for making fused silica. 95 F.3d at 1112. The judge awarded lost profits of \$3.5 million plus \$7.4 million in royalties. *Id.* The Federal Circuit expressly upheld the district court’s use of fused-silica sales as the basis for the award of royalties, despite the fact that the patent-in-suit covered only a machine for *making* fused silica, not fused silica itself. The court held:

In awarding both lost profits and a reasonable royalty, the trial court used the sale of fused silica as the baseline for measuring damages. *The assessment of adequate damages under section 284 does not limit the patent holder to the amount of diverted sales of a commercial embodiment of the patented product.* Rather, the patent holder may recover for an injury caused by the infringement if it was or should have been reasonably foreseeable by an infringing competitor in the relevant market, broadly defined. In this case, the invention produced marketable fused minerals. Both CE and Minco used the invention to compete in that market. Therefore, CE should have reasonably foreseen that infringement of the ’462 patent would harm Minco’s sales in the fused silica market. This court accordingly upholds the trial court’s determination to use that measure of damages.

*Id.* at 1118 (internal quotation marks and citation omitted; emphasis added).

In *Minco*, neither the Federal Circuit nor the district court discussed any evidence about industry practices with respect to running royalties. *See id.* at 1118–20; *Minco, Inc. v. Combustion Eng’g, Inc.*, 903 F.Supp. 1204, 1222–24 (E.D.Tenn.1995). Rather, the district court’s award—which the Federal Circuit approved—was based on the fact that Min-

co and CE were competitors in the market for fused silica. *See Minco*, 95 F.3d at 1118. Because Minco was entitled to lost profits on a certain portion of its sales in that market, it is not surprising that Minco was also awarded royalties on fused-silica sales by CE that Minco lacked the capacity to make. Patentees routinely get such mixed awards of lost profits and reasonable royalties. *See generally* 7 Donald S. Chisum, *Chisum on Patents* § 20.03[1][e] (1999 & Supp.2005).

In this case, Spectralytics and Noble were not competitors in the market for stent-cutting machines. Rather, at the time of the hypothetical negotiation, they were competitors in the market for stents. Cordis seeks to avoid this uncomfortable fact, and thus distinguish *Minco*, by arguing that Spectralytics and Noble were not actually competitors because Noble had an exclusive arrangement with Cordis. Cordis PT Mem. at 46. But exclusive-supply arrangements do not change the fundamental nature of a market; they merely allocate certain portions of the market to certain competitors for certain periods of time.

[15] Cordis has offered no support, other than its say-so, for the proposition that Noble’s exclusive arrangement with Cordis meant that Spectralytics and Noble were not competitors for purposes of patent damages. Given that under *Minco* the market must be “broadly defined,” 95 F.3d at 1118, Cordis’s position is not supportable. Based on *Minco*, the only requirement for recovering a running royalty on a patented machine’s output is a showing that the patentee and the infringer competed in the output market and that the infringer could have anticipated that its infringement would have hurt the sales of the patentee (its competitor in that output market). The jury could have found that Spectralytics made such a showing.

*Stickle* is not to the contrary. In that case, *Stickle* (the patentee) was in the business of selling taco fryers, not tacos. Heublein (the accused infringer) was in the business of selling tacos, not taco fryers. Heublein commissioned the manufacture of infringing taco fryers by an outside company. 716 F.2d at 1553–56. Thus, by using an infringing taco fryer, Heublein deprived *Stickle* of the sale of a fryer; he did not deprive *Stickle* of the sale of any tacos. Further, there was evidence that *Stickle* had offered to license his patents to Heublein for a lump-sum royalty rather than a per-taco running royalty, and there was no evidence that users of taco fryers paid per-taco running royalties. *Id.* at 1561–63. The Federal Circuit therefore held:

Since there is no evidence that users in the food industry upon purchase of food processing equipment also expect to pay a use royalty (whether based on a separate method patent or on the right to control use of patented machines), a willing licensor *could not have reasonably expected* to secure a use royalty from either the maker or user. We find this conclusion confirmed, *indeed inescapable*, from the actual negotiations between the parties. Martinez at no time suggested a use royalty, despite knowledge of Heublein’s intended use, even after Heublein had the infringing fryers in operation. Accordingly, we conclude that the trial court was clearly in error in basing a royalty on Heublein’s production rather than on a lump-sum for each machine.

*Id.* at 1562–63 (emphasis added).

[16] Both *Stickle* and *Minco* proceed from a shared premise: A running-royalty award is supportable only if it would have been reasonably foreseeable to the patentee. In *Minco*, a running royalty was deemed to be foreseeable when the patentee and the infringer competed in the market for the patented machine’s output. In

*Stickle*, a running royalty was deemed to be unforeseeable when, consistent with industry practice, the patentee had previously offered paid-up licenses rather than running-royalty licenses and when the patentee was in the business of selling machines of a type that the infringer was in the habit of buying.

Given that Spectralytics and Noble were direct competitors in the market for stents, Noble could reasonably have anticipated being charged a stent-based royalty for use of the ’277 patent. And Noble could also have reasonably anticipated that by using the infringing device, Noble would have injured Spectralytics in the market for stents, broadly defined. Further, Davis testified that Spectralytics and Noble would have agreed to a running royalty as a way of sharing risk. Noble’s royalty costs would have been low if it did not sell many stents and would have been high only if it made a lot of money selling stents made with the patented machine. Tr. at 1251–53.

Cordis attacks Davis’s testimony on three grounds: lack of evidence of comparable running royalties, evidence that Spectralytics sold some stent-cutting machines for a fixed price, and an absence of any actual risk to be shared. Cordis PT Mem. at 47–48. But given that the stent industry was in its relative infancy in 1998, it is not surprising that Spectralytics was unable to provide evidence that competitors in the stent-cutting business demanded use-based royalties for stent-cutting machines. In every new industry, someone has to be the first to demand a use-based royalty. Further, although Spectralytics did sell a few stent-cutting machines, Davis testified that Spectralytics was not in the business of selling such machines but rather did so on only a handful of occasions and under somewhat unusual circumstances. Tr. at 1325 (“Spectralytics

wasn't in the business of selling machines."); *id.* at 1329–32. The fact that a grocery store occasionally sells off its used shelves or freezers does not mean that the grocery store is in the business of selling shelves or freezers.

Finally, Cordis's argument that the parties would not have agreed to a running royalty in December 1998 as a means of sharing risk because no such risk existed is based on Cordis's erroneous interpretation of the book-of-wisdom doctrine. Cordis contends that the parties would not have faced any risk during a hypothetical negotiation because they would have known the exact number of Cordis's future sales. Cordis PT Mem. at 48. Although Cordis's counsel got Davis to concede that the parties "would be presumed to have knowledge of the future," Tr. at 1373, this concession is contradicted by other testimony from Davis, Tr. at 1269, and it is simply not an accurate description of the law (as discussed above). If it were correct, then (as also discussed above) the distinction between running royalties and lump-sum royalties would evaporate in patent cases: Every running royalty would be a lump-sum royalty, because the parties would be presumed to know, during their hypothetical negotiations, both the royalty rate and the exact number of future sales to which the royalty rate would be applied.

In short, Davis's testimony provided evidence that Spectralytics and Noble would have agreed to a running royalty. And there was no evidence—as there was in *Stickle*—that Spectralytics and Noble would have agreed to a lump-sum royalty. Under the circumstances, and in light of *Minco*, the jury was entitled to credit Davis's testimony that Spectralytics and Noble would have negotiated a license in the form of a running royalty.

[17] Apart from challenging the form of the jury's royalty award, Cordis also challenges the royalty rate of five percent.

Cordis makes only one argument: that the royalty rate equals the amount of a commission offered to salesman Jack Lundeen and thus was "improperly based on" that commission. Cordis PT Mem. at 50–52.

One problem with Cordis's argument is that Cordis does not really know if the jury based its award on Lundeen's commission. The fact that Lundeen's commission was five percent did not somehow put the number five off limits to the jury. It is possible that the jury based its award on Lundeen's commission, but it is also possible that it did not. We will never know.

Moreover, the rate used by the jury is substantially less than the 20-percent rate that Davis testified to. *See* Tr. at 1229. In advocating a 20-percent royalty rate, Davis used a method that is common in patent cases: the rule of thumb "that a quarter to a third of the profits attributable to the invention should be set aside as a royalty for that invention." Tr. at 1246. The authors of the treatise *Calculating Intellectual Property Damages* criticize this rule of thumb but "note that regardless of [the] theoretical quality of its intellectual underpinnings . . . the approach has found its way into common usage among licensing professionals and experts." William O. Kerr and Richard B. Troxel, *Calculating Intellectual Property Damages* § 5:24 (2009).

Perhaps because expert testimony about the rule-of-thumb approach is common in patent cases, Cordis does not contend that Davis's testimony does not support the jury's royalty award. Instead, Cordis says that a five-percent royalty is unsupported because it equals Lundeen's sales commission. Cordis PT Mem. at 52 ("[T]here is no support for running-royalty damages premised on the 5% sales commission paid to Jack Lundeen."). But on this theory, a *higher* royalty rate—say, 7 percent, or the 20 percent that Spectralyt-

ics asked for—would *not* be open to challenge. A rule that would cause the Court to uphold a higher damages award but require that a lower damages award be vacated would be an odd rule indeed.

[18] Given that Davis testified in support of a 20-percent royalty rate, a reasonable jury could have decided to award damages based on a lower royalty rate. The fact that the jury decided on a royalty rate that happens to equal Lundeen's commission does not make the jury's award improper. Under Federal Circuit case law, a jury may pick a damages number somewhere between the numbers offered by the parties. *Fuji Photo Film Co. v. Jazz Photo Corp.*, 394 F.3d 1368, 1378 (Fed.Cir.2005) (“[T]he jury is not bound to accept a rate proffered by one party's expert but rather may choose an intermediate royalty rate.”); *Unisplay, S.A. v. Am. Elec. Sign Co.*, 69 F.3d 512, 519 (Fed. Cir.1995) (“[A] jury's [royalty] choice simply must be within the range encompassed by the record as a whole.”). The jury in this case picked a royalty rate below the rate Spectralytics asked for, and awarded damages greater than what Cordis proposed. The jury did not act unreasonably.

#### D. Willfulness

[19] Cordis asks the Court to set aside the jury's verdict that Cordis willfully infringed the '277 patent. The Court finds that Cordis did not move for judgment as a matter of law under Rule 50(a) on this issue before it was submitted to the jury, as required by Rule 50(a)(2). Accordingly, Cordis's post-trial motion for judgment as a matter of law on willfulness is not a “renewed motion” under Rule 50(b). See *Hinz v. Neuroscience, Inc.*, No. 04-CV-0142, 2007 WL 1576116, at \*2, 2007 U.S. Dist. LEXIS 39888, at \*5 (“A Rule 50(b) motion is, by definition, a renewal of a Rule 50(a) motion.”) (D.Minn. May 31, 2007).

The Court rejects Cordis's argument that by moving for judgment as a matter of law on infringement and obviousness, Cordis effectively raised the issue of willfulness. Def. Reply Supp. Def. Post-trial Mot. at 7 [Docket No. 405]. To find willful infringement, the jury had to find that Cordis and Noble were subjectively aware of the '277 patent. See Final Jury Instrs. at 15; Tr. at 3054. But such subjective awareness is irrelevant to infringement and invalidity. Accordingly, Cordis's Rule 50(a) motions during trial on infringement and invalidity did not adequately challenge willfulness, and Cordis therefore did not preserve the issue for purposes of Rule 50(b).

### III. SPECTRALYTICS'S MOTION

#### A. Interest, Costs, and an Accounting

Spectralytics seeks pre- and post-judgment interest, costs, and “an accounting of, and damages for, all sales of stents made with the infringing follower assembly that defendants did not identify prior to trial. . . .” Spect. PT Mem. at 1. Apart from disputing Spectralytics's entitlement to damages as discussed above, Cordis does not oppose these requests. Def. Opp. Pl. Post-trial Mot. at 1 [Docket No. 397]. The Court therefore grants Spectralytics's motion with respect to pre- and post-judgment interest, costs, and an accounting for infringing sales by Noble to Cordis that were not disclosed before trial. The Court also awards damages on those infringing sales at the rate of five percent, in accordance with the jury's verdict. Once the accounting is complete, the parties should submit a stipulation identifying the additional damages to be awarded and specifying the total amount of prejudgment interest to be awarded. Spectralytics should then move to amend the judgment on the basis of that stipulation.

*B. Injunction*

[20] Spectralytics seeks an injunction forbidding Cordis and Noble from infringing the '277 patent in the future. Cordis and Noble contend that they “have ceased all infringing activities” and therefore should not be subject to an injunction. Def. Opp. Pl. Post-trial Mot. at 1.

[21, 22] Under *eBay, Inc. v. MercExchange, L.L.C.*, injunctions in patent cases are subject to the same four-factor test that applies in other cases. 547 U.S. 388, 391, 126 S.Ct. 1837, 164 L.Ed.2d 641 (2006). To receive an injunction, a plaintiff must show:

- (1) that it has suffered an irreparable injury;
- (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury;
- (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted;
- and (4) that the public interest would not be disserved by a permanent injunction.

*Id.* The Court finds that Spectralytics has satisfied this test with respect to any possible future use by Cordis and Noble of the '277 patent. In particular, the balance of hardships and the public interest tip decidedly in Spectralytics's favor. From Cordis and Noble's assertion that they no longer use the '277 patent, it follows that an injunction will impose no great hardship on them and will not disserve the public interest. The Court therefore grants Spectralytics's request for injunctive relief.

10. *Modine Mfg. Co. v. Allen Group, Inc.*, 917 F.2d 538, 543 (Fed.Cir.1990) (“[A] finding of willful infringement merely *authorizes*, but does not *mandate*, an award of increased damages.”); *Avia Group Int'l, Inc. v. L.A. Gear Cal., Inc.*, 853 F.2d 1557, 1567 (Fed.Cir. 1988) (“Although an award of attorney fees, because discretionary, does not automatically

*C. Enhanced Damages and Attorney's Fees for Willfulness*

[23] The jury found that Cordis willfully infringed the '277 patent. Although this finding *authorizes* the Court to enhance damages and award attorney's fees, it does not *require* the Court to do so.<sup>10</sup> Under the circumstances, the Court declines to award enhanced damages or attorney's fees.

First, to the extent that Spectralytics argues that Cordis should pay enhanced damages or attorney's fees because of Cordis's litigation conduct, the Court disagrees. This was a very hard-fought case with much at stake, and counsel on both sides behaved, at times, less than admirably. The Court will not reward the pot for the kettle's misbehavior.

[24] Second, to the extent that Spectralytics argues that the damages award should be enhanced to penalize Cordis for its willful infringement, the Court disagrees. The degree to which damages should be enhanced for willfulness depends in large part on the reprehensibleness of the infringement—that is, it depends on *how* willful the willful infringement was.

[25] The fact of willfulness is, under *In re Seagate Technology, LLC*, essentially an objective question: “[P]roof of willful infringement permitting enhanced damages requires at least a showing of *objective* recklessness.” 497 F.3d 1360, 1371 (Fed. Cir.2007) (emphasis added). In particular, to prove willfulness, a plaintiff must show that “the infringer acted despite an objectively high likelihood that its actions con-

follow from the willfulness of an infringement, our cases uniformly indicate that the willfulness of the infringement by the accused infringer may be a sufficient basis in a particular case for finding the case ‘exceptional’ for purposes of awarding attorney fees to the prevailing patent owner.” (citations omitted).

stituted infringement of a valid patent” and that this high likelihood of infringement “was either known or so obvious that it should have been known to the accused infringer.” *Id.*

The Court believes that, after *Seagate*, greater emphasis must be placed on objective factors in assessing the *degree* of a defendant’s willfulness. *Seagate* expressly “abandon[ed] the affirmative duty of due care” that had existed under the Federal Circuit’s earlier case law. *Id.* If a defendant who failed to exercise “due care” to avoid infringement can altogether avoid a finding of willfulness because the objective likelihood of infringement was low (or the objective likelihood of invalidity was high), then logically a defendant’s exposure for enhanced damages should likewise be related to the objective likelihood of invalidity or infringement.

Indeed, even under the pre-*Seagate* guidelines for enhancing damages, courts must consider the closeness of the case in deciding how much (if at all) to enhance damages for willfulness. In *Read Corp. v. Portec, Inc.*, the Federal Circuit identified the following nine factors for courts to consider in connection with enhancing damages for willfulness:

- (1) whether the infringer deliberately copied the ideas or design of another;
- (2) whether the infringer, when he knew of the other’s patent protection, investigated the scope of the patent and formed a good-faith belief that it was invalid or that it was not infringed . . .
- (3) the infringer’s behavior as a party to the litigation[;] . . .
- (4) [the d]efendant’s size and financial condition[;] . . .
- (5) [the c]loseness of the case[;] . . .

11. It is conceivable that the jury believed that Noble copied the patented design. But the jury was not asked an interrogatory on this question, and a finding of copying was not

(6) [the d]uration of defendant’s misconduct[;] . . .

(7) [r]emedial action by the defendant[;] . . .

(8) [the d]efendant’s motivation for harm[; and] . . .

(9) [w]hether defendant attempted to conceal its misconduct.

970 F.2d 816, 827 (Fed.Cir.1992).

Most of these factors weigh against, or are neutral toward, a finding of enhanced damages in this case. Significantly, this was a close case, as evidenced in part by the fact that, had the Court been sitting as the fact finder, it likely would have found the ’277 patent invalid for obviousness. With respect to copying, the Court found the evidence of deliberate copying overwhelming.<sup>11</sup> With respect to defendants’ investigation, the Court finds that Cordis did not carefully investigate the ’277 patent until trial, but the Court discounts this factor in light of *Seagate*’s abrogation of the duty of due care. With respect to litigation conduct, the Court finds (as noted above) that both sides behaved similarly. The Court does not find that Cordis was motivated to harm Spectralytics, or that Cordis attempted to conceal its infringement, or that the duration of the infringement was excessive. It is true that Cordis could afford to pay substantial enhanced damages (the fourth *Read* factor), but this fact alone cannot justify an enhanced award. In short, although the jury found that Cordis’s infringement was willful—and Cordis’s procedural error precludes the Court from reviewing that finding—the Court does not find Cordis to have acted culpably enough to merit an award of enhanced damages.

essential to any of its decisions. The Court is therefore free to assess the evidence of copying on its own.

## ORDER

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

1. The post-trial motion of defendants Cordis Corporation and Norman Noble, Inc. for judgment as a matter of law or for a new trial [Docket No. 376] is DENIED.
2. The post-trial motion of plaintiff Spectralytics, Inc. [Docket No. 379] is GRANTED in part and DENIED in part as follows:
  - a. To the extent that Spectralytics seeks a permanent injunction, the motion is GRANTED. Defendants Cordis Corporation and Norman Noble, Inc. are PERMANENTLY ENJOINED from making, using, selling, or offering for sale any device that infringes United States Patent No. 5,852,277, including (for example) the system in which the so-called follower assembly is carried on the laser-cutting tool—i.e., the system that the jury found to infringe in this case—and any laser-cutting system not colorably different from that system. This injunction binds Cordis Corporation and Norman Noble, Inc., as well as the parties specified in Fed.R.Civ.P. 65(d)(2).
  - b. To the extent that Spectralytics seeks an accounting of, and damages for, certain sales of stents made with an infringing laser-cutting system, the motion is GRANTED. Defendants Cordis Corporation and Norman Noble Inc. must, no later than 28 days from the date of this order, provide Spectralytics an accounting of all stent sales that (1) were not reported to Spectralytics before trial, and (2) were of stents made with an infringing laser-cutting system. The Court will award damages on the gross sales shown in the accounting at a rate of five percent.
  - c. To the extent that Spectralytics seeks an award of pre- and post-judgment interest, the motion is GRANTED. After Cordis and Norman Noble provide the accounting called for above, the parties must submit a stipulation within 14 days identifying the additional damages to be awarded and specifying the total amount of prejudgment interest to be awarded. Prejudgment interest must be calculated as set forth in paragraph 4 of the Declaration of Julie Davis [Docket No. 386]. Spectralytics may then move to amend the judgment on the basis of the parties' stipulation. The Court will award post-judgment interest from February 3, 2009 forward in accordance with 28 U.S.C. § 1961.
  - d. To the extent that Spectralytics seeks an award of costs other than attorney's fees, the motion is GRANTED. Spectralytics should follow the ordinary procedures in this District for recovering its taxable costs.
  - e. The motion is DENIED in all other respects.

