

**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

PEERLESS INDUSTRIES, INC.,)	
)	
)	
Plaintiff,)	
)	No. 11 C 1768
v.)	
)	Hon. Joan H. Lefkow
CRIMSON AV, LLC,)	
)	
Defendant.)	

OPINION AND ORDER

This patent infringement case was tried to a jury in June of 2016, and a stipulation of judgment and damages in the amount of \$40,000 was entered in April of 2018. The parties agreed to a stay of execution of judgment until the court had ruled on all post-trial motions and appeals had been exhausted. Crimson AV, LLC filed a renewed motion for judgment as a matter of law on its affirmative defense that Peerless Industries, Inc.’s patents were unenforceable due to inequitable conduct before the Patent and Trademark Office. (Dkt. 758.) Although Crimson’s motion rests on Federal Rule of Civil Procedure 50(b), judgment was never entered on the inequitable conduct defense. Thus, and for the reasons stated below, the court herein enters findings of fact and conclusions of law under Rule 52(a) and concludes that Crimson did not prove that Peerless committed inequitable conduct.

BACKGROUND

Peerless manufactures and sells audio-visual mounting equipment. Crimson, led by former Peerless executive Vladimir Gleyzer, competes in the same market. Peerless obtained U.S. Patent No. 7,823,850 (the ’850 patent) describing a mounting bracket for flat-screen

televisions. In general terms, the '850 patent claims a bracket with ramps that displace the bracket (and thus the television) away from the wall mount when misaligned. In 2011, Peerless sued Crimson for, among other things, infringing the '850 patent.

On summary judgment, the parties agreed on the construction of most claims of the '850 patent. The court construed the sole disputed phrase—a “longitudinal surface directly joining” either the bracket’s side portions (claim 1) or ramps (claim 9)—to include surfaces made of more than one component. (Dkt. 330 at 13–14.) Under this construction, the court ruled that Crimson’s brackets infringed the '850 patent as a matter of law. (*Id.* at 15–16.)

On Crimson’s cross-motion for summary judgment, the court barred Crimson from raising several arguments that it had not disclosed in its final invalidity contentions under Local Patent Rule 3.1 but concluded that Crimson’s inequitable conduct defense and its remaining invalidity contentions (anticipation, obviousness, and best mode) raised genuine issues of material fact for trial. (Dkt. 483 at 7–23.)

In the parties’ pretrial submissions, they agreed that inequitable conduct was a live issue for trial, but the court, not the jury, had to decide it. (Dkt. 531 at 5, 7.) A jury was empaneled to decide the validity defenses and damages. After Peerless rested, Crimson moved for judgment as a matter of law under Federal Rule of Civil Procedure 50(a), arguing that Peerless’s case in chief proved Crimson’s inequitable conduct defense. (Dkt. 589 at 11–13.) The court denied that motion. (Dkt. 636 at 1185:13–15.)

The jury found for Crimson on all invalidity defenses, finding (1) claims 1–3 and 6–7 of the '850 patent anticipated by a competitor’s prior-art bracket called the TRK50B; (2) all asserted claims obvious over the combination of the TRK50B and another competitor’s prior-art

bracket called the VMPL2; and (3) all asserted claims invalid for failure to disclose the best mode of practicing the invention. (Dkt. 613 at 2–4.)

Crimson moved for attorneys’ fees on several grounds, including its inequitable conduct defense. (Dkt. 651.) In briefing on that motion, Peerless pointed out that the court had not yet decided the inequitable conduct defense. (Dkt. 660 at 3 n.1.) Meanwhile, Peerless moved for judgment as a matter of law under Rule 50(b). (Dkt. 623.) The court sustained the anticipation verdict but concluded that no reasonable jury could have found the ’850 patent obvious or invalid for failing to disclose the best mode. (Dkt. 672.) The court then denied Crimson’s motion for fees without prejudice in light of the upcoming trial on damages. (Dkt. 681.)

The parties chose to proceed to a new damages trial. On the eve of trial, the parties agreed to a \$40,000 stipulated finding of damages and that they could file post-trial motions. (Dkt. 749.) This motion followed. To date, the court has not ruled on the inequitable conduct defense.

ANALYSIS

I. Construction of the Motion

Resting on Rule 50(b), Crimson’s motion argues that the ’850 patent is unenforceable because Peerless committed inequitable conduct before the Patent & Trademark Office (PTO). A Rule 50(b) motion succeeds only if “there is no legally sufficient evidentiary basis for a reasonable jury to find for [a] party on [an] issue.” *Kossmann v. Ne. Ill. Reg’l Commuter R.R. Corp.*, 211 F.3d 1031, 1036 (7th Cir. 2000) (quoting Fed. R. Civ. P. 50) (alterations in original). The parties agree that inequitable conduct is an issue for the court, not the jury, to decide. *Paragon Podiatry Lab., Inc. v. KLM Labs., Inc.*, 984 F.2d 1182, 1190 (Fed. Cir. 1993). But

neither party acknowledges that the jury did not find for either party on the inequitable conduct defense because it was not tried to the jury.

In short, Rule 50 does not apply here. When the jury resolves some trial issues and the court resolves others, Rule 50 governs only the jury's issues; Rule 52 governs those tried to the court. *See Artis v. Hitachi Zosen Clearing, Inc.*, 967 F.2d 1132, 1137–38 (7th Cir. 1992) (applying Rule 52 to bench-trial portion of simultaneous bench and jury trial). And the parties agreed before the 2016 trial “that Defendants’ allegation of inequitable conduct should be decided by the court.” (Dkt. 531 at 7; *see also* dkt. 548 at 8 (“[Q]uestions of inequitable conduct arise out of an equitable remedy and are to be decided by the court and not a jury.”) (citations omitted).) Hence, in their final pretrial order, the parties described the 2016 trial as a “[b]ifurcated jury and bench trial.” (Dkt. 531 at 6.) The bifurcated trials proceeded simultaneously. *See Manning v. United States*, 546 F.3d 430, 432 (7th Cir. 2008) (describing simultaneous, bifurcated jury and bench trials); *Abbott Labs. v. Sandoz, Inc.*, 743 F. Supp. 2d 762, 773–74 (N.D. Ill. 2010) (allowing parties to “intertwine” inequitable conduct with jury issues); (*cf.* dkt. 530 at 2 (Crimson advocating for simultaneous trial of inequitable conduct and validity)). Evidence admissible for both inequitable conduct and validity defenses was presented before the jury, and evidence admissible only for inequitable conduct was admitted outside the presence of the jury. (*See* dkt. 791 at 856:3–859:15).

The court has not yet ruled on the inequitable conduct trial.¹ Because the parties agreed in their damages stipulation that Crimson “fully preserved” “all other rights . . . on all other issues

¹ The court did not decide the inequitable conduct defense when it denied Crimson’s Rule 50(a) motion. Because Crimson filed that motion at the close of plaintiff’s case (dkt. 589; dkt. 795 at 687:20–688:4), the court held only that Peerless’s case-in-chief did not contain enough evidence to prove Crimson’s defense.

of the Litigation, including post-trial motions” (dkt. 749 at 2), the court concludes that Crimson may properly seek a ruling on the unresolved inequitable conduct trial. Therefore, the court proceeds under Rule 52(a). *See Fed. Ins. Co. v. HPSC, Inc.*, 480 F.3d 26, 32 (1st Cir. 2007) (construing Rule 50 motion in a bench trial as a Rule 52 motion).²

“In any action tried on the facts without a jury or with an advisory jury, the court must find the facts specially and state its conclusions of law separately.” Fed. R. Civ. P. 52(a). The only outstanding issue is whether the ’850 patent is unenforceable because Peerless committed inequitable conduct before the PTO. The court sets forth its findings of fact and conclusions of law below. If a finding of fact is better considered a conclusion of law, it should be construed as one, and vice versa.

II. Findings of Fact³

A. The Parties

1. Peerless manufactures and sells audio-visual mounting equipment.
2. Crimson competes with Peerless. Its president, Vladimir Gleyzer, was a Peerless executive until 2008.

B. The Invention

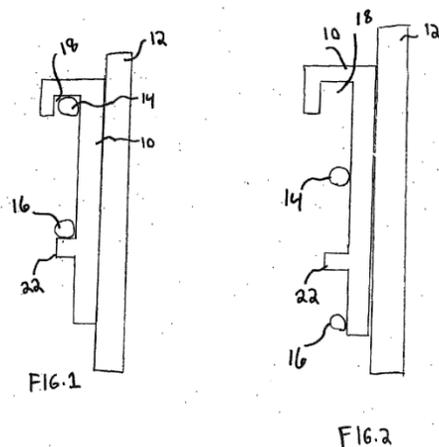
3. Sometime around January 2005 while working at Peerless, (dkt. 793 at 499:3, 510:9–10), William Lam,⁴ a Peerless engineer, along with Dugan O’Keene and Gary Monaco, invented a new mounting bracket for flat-screen televisions. (*Id.* at 493:20–494:8.)

² This construction disposes of Peerless’s procedural objections based on Rule 50(b).

³ The findings of fact are drawn from the evidence at trial. Because trial exhibits are in the record but not the court’s docket, the court cites instead to the copies of trial exhibits attached to Crimson’s motion. Where necessary, the court provides context from earlier phases of the litigation.

⁴ William Lam’s brother Derrik Lam also worked at Peerless. “Lam” refers to William Lam.

4. The crux of Lam's invention (but not the whole invention (*see* dkt. 635 at 1011:6–9)) was the use of ramps on the bracket to provide tactile feedback to someone trying to attach a television to a wall mount. (Dkt. 793 at 494:7–8; dkt. 635 at 1011:5.) Because installers cannot see through the television, they must feel to determine if they have securely attached the bracket to the wall mount. (Dkt. 793 at 495:13–15.) Some earlier brackets could give a false indication that the bracket was securely attached to the mount when it was misaligned and snagged. (*Id.* at 494:23–495:21.) Lam's invention included ramps that would push the bracket, and thus the television, away from the mount if the bracket was misaligned. (*Id.* at 497:21–498:24.)
5. Lam testified that his invention improved on a similar bracket that his supervisor, Dr. Gennady Plavnik, had developed. (*Id.* at 495:2–4.) Plavnik's brackets, which Lam illustrated as prior art in the patent application, lacked ramps. (*Id.* at 495:2–21, 502:9–18, 503:3–4.) Although Lam testified that his drawings did not depict a specific physical product, they represented the features of Plavnik's brackets that Lam improved. (Dkt. 635 at 990:24–991:7.).



Lam's rampless prior-art illustrations. (Dkt. 758-2 at 196.)

6. When Lam showed the ramp idea to Plavnik, Plavnik was irate to see his designs modified, and the two argued. (Dkt. 793 at 499:14–18.) But when Lam showed his invention to Gleyzer, Gleyzer was excited. (*Id.* at 500:2–12; dkt. 616 at 1228:19–23.)
7. At trial, Plavnik denied that the illustrations accurately represented his work. (Dkt. 635 at 901:8–13.) According to him, the invention described in the '850 patent had already been developed when Lam started working at Peerless. (*Id.* at 906:14–16.) And though Plavnik acknowledged that he and Lam fought over Lam's modifications, Plavnik stated that Lam had made last-minute changes to a design about to go into production. (*Id.* at 907:6–16.)
8. Having observed both witnesses, the court finds Lam's testimony more credible. When Dr. Plavnik was asked whether he *recognized* the brackets in Lam's drawings, he immediately offered that he did not *design* them. (*Id.* at 901:8–9 (“Q. Okay. Do you recognize these figures? A. I never design like this.”).) But after similar questions about other brackets, Dr. Plavnik did not editorialize and simply answered “yes” or “no.” (*Id.* at 899:4–7 (“Q. You don't recognize that? A. No. Q. What about Defendant's Exhibit 252, do you recognize this? A. Yes.”); *id.* at 915:5–7 (“Do you recognize the bracket depicted in Defendant's Exhibit 58? A. No.”).) This followed a pattern of Plavnik's offering testimony favorable to Crimson in response to unrelated questions. Asked whether Lam reported to him, Plavnik responded first that an embodiment of the '850 patent was shown at a trade show before Lam claimed he invented it (but that statement was stricken), then that the invention already existed in 2002. (*Id.* at 906:1–16.)
9. And Gleyzer corroborated Lam's account when he testified that he was excited about Lam's use of ramps on brackets, even though Gleyzer was a named defendant and president of Crimson. (Dkt. 616 at 1228:19–23.)

10. The court credits Lam’s testimony over Plavnik’s on this topic due to Plavnik’s apparent bias against Lam and evasion of answers that would support Lam’s testimony

C. The ’850 Patent

11. On August 23, 2005, Lam, Dugan, and O’Keene prepared an invention disclosure form describing the invention. (Dkt. 793 at 501:5–9.) Peerless then filed a provisional patent application on October 14, 2005 and a non-provisional application on September 29, 2006. (*Id.* at 510:16–511:12.)

12. After three rounds of rejections and amendments not relevant here,⁵ Peerless’s pertinent claims disclosed:

1. A mounting bracket, comprising:

a **mounting contact portion**; and

at least one side portion . . . defining a **receiving region**, . . . configured to accept one or more retaining portions of a mount, the **at least one side portion including a first ramped surface** at least partially outside of the receiving region, . . . configured to contact one of the one or more retaining portions when the one or more retaining portions is misaligned with the receiving region,

...

2. . . . The mounting bracket of claim 1, wherein the at least one side portion comprises **two side portions**.

3. . . . The mounting bracket of claim 2, further comprising **at least one hook** region operatively connected to the at least one side portion for accepting one of the one or more retaining portions.

...

5. . . . The mounting bracket of claim 3, wherein **each of the at least one side portion includes a guiding surface** for guiding the positioning of the one or more retaining portions.

...

⁵ Rejections and amendments are routine during patent prosecution. (Dkt. 635 at 984:24–25.)

8. . . . The mounting bracket of claim 5, wherein the **guiding surface includes a longitudinal surface directly joining each of the side portions to each other.**

(Dkt. 758-2 at (emphasis added).)

13. The PTO rejected the application as anticipated by an earlier patent application (the Bremmon reference). (Dkt. 635 at 954:17–955:5.) The PTO reasoned that the Bremmon reference disclosed all the limitations of Peerless’s independent claim. (*Id.* at 955:25–957:9.) But the PTO also indicated that it would allow dependent claim 8 if rewritten in independent form. (*Id.* at 958:15–959:11.)
14. Peerless thus amended claim 1 to incorporate the limitations of claim 8 and rewrote several claims to be dependent on it. The PTO then issued the ’850 patent on November 2, 2010, with the following independent claims⁶:

1. A mounting bracket, comprising:

a **mounting contact portion**;

two side portions operatively connected to the mounting contact portion and **defining a receiving region** . . . configured to accept one or more retaining portions of a mount, the side portions each including a **first ramped surface** at least partially outside of the receiving region . . . **configured to contact one of the one or more retaining portions when the one or more retaining portions is misaligned** with the receiving region; and

a **guiding surface** for guiding the positioning of one of the one or more retaining portions, the guiding surface including a **longitudinal surface directly joining the side portions** to each other.

. . .

9. A mounting bracket, comprising:

a **mounting contact portion**;

a **receiving portion** . . . configured to receive one or more retaining portions;

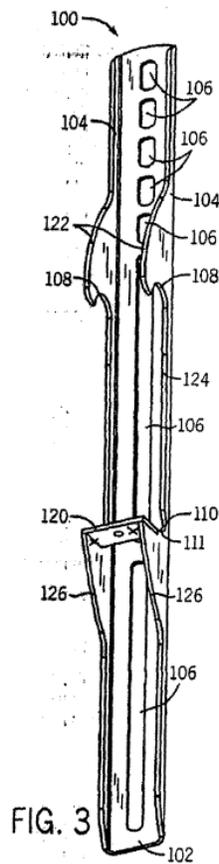
⁶ Independent claim 13 is not at issue in this case and the court does not recite it here.

a **pair of first ramped surfaces** . . . configured to contact one of the one or more retaining portions, **displacing the one or more retaining portions away from the receiving portion when** the one or more retaining portions is **misaligned** with the receiving portion; and

a **guiding surface** . . . including a **longitudinal surface directly joining each of the pair of first ramped surfaces** to each other.

(Dkt. 758-1 at 13–14) (emphasis added).

15. Figure 3 of the patent helpfully depicts one possible embodiment of the invention.



(Dkt. 758-1 at 4.)

D. The Longitudinal Surface

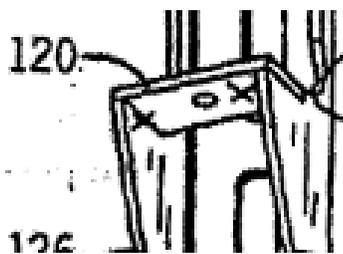
16. Because the PTO determined that the invention was patentable over the Bremmon reference only with the limitation of a longitudinal surface included within the guiding surface, the parties devoted substantial attention to the function and construction of the longitudinal surface (120 in figure 3 above).

1. Function of the Longitudinal Surface

17. In most embodiments of the '850 patent, the longitudinal surface would hold a security screw. (Dkt. 793 at 509:11–13, 519:13–17; dkt. 635 at 908:21.) In general terms, a security screw can be tightened to lock the bracket in place and prevent it from pulling away from the mount after the bracket is properly aligned. (Dkt. 793 at 519:20–25).
18. The specification of the '850 patent does not reference a security screw, (*id.* at 509:19–510:1; dkt. 635 at 924:6–15; Dkt. 758-1 at 12–13), though one illustration shows a hole in the longitudinal surface where a screw would presumably be placed. (Dkt. 758-1 at 4 (figure 3).) In describing the '850 patent as prior art in a later provisional patent application, however, Peerless stated that the longitudinal surface could hold a security fastener. (Dkt. 635 at 978:15–979:19.)
19. The longitudinal surface also performs a guiding function. When an installer holds the television lower than the mount, he or she needs to push upward. (Dkt. 793 at 520:7–17.) The longitudinal surface stops upward movement when the installer has pushed upward to the correct level. (*Id.* at 519:10–12, 520:22–522:16.)
20. The longitudinal surface is not strictly necessary to perform this guiding function. If there were no longitudinal surface, the retaining portion of the mount would instead hit the rest of the guiding surface, which would similarly stop the installer from pushing further upward. (Dkt. 635 at 1011:10–1012:14.)
21. When properly aligned, the mount's retaining portion would not contact the bracket's longitudinal surface. (*Id.* at 909:9–13.) Dr. Plavnik explained that for a security screw to work, there needs to be a gap between the retaining portion and the longitudinal surface into which the installer could tighten the screw. (*Id.* at 909:20–910:20.)

2. Construction of the Longitudinal Surface

22. On summary judgment, the court concluded that the broadest reasonable construction of “longitudinal surface” included surfaces made of more than one piece. (Dkt. 330 at 14.) Hence, the longitudinal surface could be not only a single bridge plate as in the embodiment drawn in figure 3 of the ’850 patent, but also a box-fold construction.
23. In broad strokes, the bridge plate (left) would be a single piece of material welded to and spanning across the side portions or ramps. In the box-fold construction (right), tabs would extend out from the side portions or ramps and be folded over one another in the middle, such that the tabs together span across the side portions or ramps.



Bridge plate. (Dkt. 758-1 at 4.)



Box fold. (Dkt. 758-11 at 6.)

24. The bridge plate and box-fold construction would perform similarly in practice. (Dkt. 635 at 1006:14–18.)
25. They are, however, manufactured differently. A human could not reasonably bend the metal tabs into a box fold; a “massive” machine is required. (*Id.* at 1007:20–1008:1, 1010:9–10.) But a human could weld a bridge plate between the side portions, and Lam testified that a prototype was made this way. (*Id.* at 1007:17–19, 1009:24–1010:8.) At a low volume, therefore, the welded plate is easier and cheaper to manufacture; at scale, the box fold is cheaper. (*Id.* at 1006:22–1007:3.)
26. Peerless began primarily using the box-fold construction shortly after the invention was developed. (Dkt. 616 at 1258:25–1259:3.) In a later patent application, Peerless displayed

the box-fold method as a preferred embodiment of a feature like the longitudinal surface of the '850 patent. (*See* dkt. 758-11 at 6.)

E. Other Brackets

27. Crimson introduced or attempted to introduce several other mounting brackets that it alleged to affect the enforceability of the '850 patent.

1. The AL-101⁷

28. Peerless produced standard and custom television mounts. Standard mounts were designed for general use without any specific audio-visual brand in mind. Custom mounts were designed specifically for a client's audio-visual equipment. Custom mounts were typically modified standard mounts. (Dkt. 791 at 823:17–824:9.)

29. Peerless developed a custom mount for Activelight called the AL-101. (*Id.* at 824:10–16.) An AL-101 installation guide dated May 24, 2004 suggested that the bracket was designed sometime before that date. (*Id.* at 863:7–11, 864:19–865:7.) The AL-101 thus predated Lam's invention and was described in a printed publication and was on sale more than a year before Peerless filed the provisional application for the '850 patent.

30. The AL-101 had a mounting contact portion, side portions, ramps, and a security screw near the bottom. (*Id.* at 825:1–9, 861:11–862:24.) The security screw, however, was held in an out-turned tab—that is, not between the side portions. (*See* Dkt. 758-7.)

⁷ After Crimson witness Jim Walters had substantially described the properties of the AL-101 and its sale date, Peerless objected to the AL-101 as undisclosed prior art. (Dkt. 791 at 824:16–825:9 (describing AL-101); *id.* at 825:10–827:14 (objecting); *id.* at 857:23–24 (permitting Peerless to move to strike later).) Because the AL-101 was already described in sufficient detail to evaluate its materiality before Peerless objected, the court denies Peerless's request to strike this testimony.

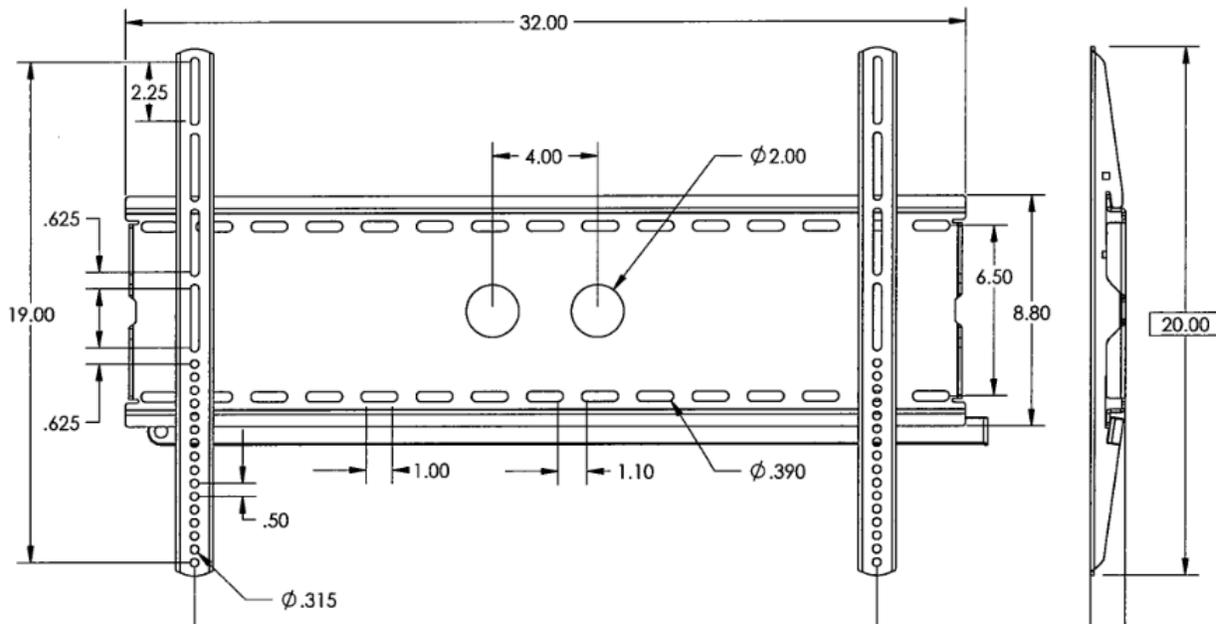


The AL-101. (Dkt. 758-7 at 6.) AL-101 security screw and out-turned tab. (*Id.* at 7.)

2. The VMPL2

31. Sanus, a competitor of Peerless, developed a bracket called the VMPL2. (Dkt. 635 at 998:24–999:5.) Sanus created a “cut sheet” (essentially a blueprint for the bracket) for the VMPL2 in July 2004, before Lam’s invention and more than a year before the provisional application for the ’850 patent. (*Id.* at 999:9–21; dkt. 758-5.)
32. Lam testified that he did not know whether the VMPL2 predated his invention. (Dkt. 635 at 996:10–11.) Other testimony credibly established that Peerless engineers frequently reviewed competitors’ mounts to evaluate and “reverse engineer” them, and that the VMPL2 was among them. (Dkt. 616 at 1235:7–1236:14.)
33. A physical VMPL2 was received as evidence. That bracket has a mounting contact portion, two side portions, and top and bottom ramped surfaces. It does not have a longitudinal surface.
34. In addition to the bracket, the VMPL2 consists of a separate, solid, metal bar, longer than the bracket itself, with a hole through one end and a perpendicular tab on the other. No testimony explained the significance of the bar.

35. The VMPL2 cut sheet seems to depict the bar lying longitudinally between two brackets, about one-third of the way up each bracket, spanning almost the entire length of the wall mount. (See dkt. 758-5.)
36. A document purporting to be a Sanus brochure showing the VMPL2 among other brackets is attached to Crimson’s motion but was not introduced at trial. (See dkt. 635 at 996:13–998:16; *id.* at 1001:2–3 (only cut sheet, not brochure, admitted into evidence).)



Rear (left) and profile (right) perspective views of VMPL2 brackets from cut sheet. (Dkt. 758-5.)

3. The ECN6102

37. In this motion, Crimson discusses a bracket called the ECN6102. The ECN6102 is not part of the trial record. The court barred it at trial because it was not properly disclosed. (Dkt. 635 at 879:2–4, 888:7–17, 890:18–25.)

4. The D-FPF-220/320

38. Like the ECN6102, the D-FPF-220 and D-FPF-320 are not in evidence.

39. Crimson attaches to its motion an exhibit purportedly depicting the D-FPF-320 and identifies it as Trial Exhibit D-94/327. Crimson does not cite a point in the 1500-page trial transcript where that exhibit was supposedly introduced, nor does the document display a trial-exhibit sticker. (Dkt. 758-9.)
40. The court has found only a single reference to that exhibit in the trial record: Crimson attempted to introduce it while cross-examining William Lam, but the court sustained Peerless's objection. (Dkt. 793 at 515:8–517:6.)
41. The court finds that what Crimson styles in its motion as Trial Exhibit D-94/327 is not in evidence, nor is there any other trial evidence of brackets called the D-FPF-220 or D-FPF-320.

III. Conclusions of Law

A. Legal Standard

Crimson alleges that Peerless's inequitable conduct before the PTO renders the '850 patent unenforceable. "Inequitable conduct is an equitable defense to patent infringement that, if proved, bars enforcement of a patent." *Therasense, Inc. v. Beckton, Dickinson & Co.*, 649 F.3d 1276, 1285 (Fed. Cir. 2011) (en banc). "To prevail on the defense of inequitable conduct, the accused infringer must prove that the applicant misrepresented or omitted material information with the specific intent to deceive the PTO . . . by clear and convincing evidence." *Id.* at 1287 (citing *Star Scientific Inc. v. R.J. Reynolds Tobacco Co.*, 537 F.3d 1357, 1365 (Fed. Cir. 2008)).

Describing the inequitable conduct defense as an "atomic bomb," an "absolute plague," and "a hangman's noose," *id.* at 1288, 1289, the en banc Federal Circuit restricted its application. *Id.* at 1290. The court increased the infringer's burden to prove inequitable conduct in three

ways: heightening the materiality standard, heightening the intent standard, and eliminating use of a “sliding scale” between the two. *Id.* at 1290, 1291.

Materiality now means “but-for” materiality: the infringer must prove that “the PTO would not have allowed a claim had it been aware of the undisclosed prior art.” *Id.* at 1291. The court thus stands in the shoes of the patent examiner, applying “the preponderance of the evidence standard and giv[ing] claims their broadest reasonable construction.” *Id.* at 1291-92. References that invalidate a claim in the district court are necessarily material, but “even if a district court does not invalidate a claim based on a deliberately withheld reference, the reference may be material if it would have blocked patent issuance under the PTO’s different evidentiary standards.” *Id.* at 1292 (citing Manual of Pat. Examining Proc. §§ 706, 2111).

To show intent, infringers must now prove by clear and convincing evidence “that the patentee acted with the specific intent to deceive the PTO. A finding that the misrepresentation or omission amounts to gross negligence or negligence under a ‘should have known’ standard does not satisfy this intent requirement.” *Id.* at 1290 (internal citations omitted). “In a case involving nondisclosure of information, clear and convincing evidence must show that the applicant *made a deliberate decision* to withhold a *known* material reference.” *Id.* (citing *Molins PLC v. Textron, Inc.*, 48 F.3d 1172, 1181 (Fed. Cir. 1995) (emphasis in original). “Proving that the applicant knew of a reference, should have known of its materiality, and decided not to submit it to the PTO does not prove specific intent to deceive.” *Id.*

Finally, materiality and intent must be proven and evaluated separately. “A district court should not use a ‘sliding scale,’ where a weak showing of intent may be found sufficient based on a strong showing of materiality, and vice versa. Moreover, a district court may not infer intent solely from materiality.” *Id.*

B. Materiality

Crimson argues that Peerless committed inequitable conduct by (1) withholding four prior art references—the VMPL2, the AL-101, the ECN 6102, and the DFPF-220/320; (2) misrepresenting the state of the prior art in the figures submitted with the patent application; (3) misrepresenting the function and purpose of the longitudinal surface; and (4) failing to disclose the best mode. Crimson alternatively submits that it need not prove materiality because Peerless committed affirmative egregious misconduct by filing a false inventor declaration.

Crimson has not shown that any of these items was material, nor has it shown affirmative egregious misconduct.

1. Unsubmitted References

a. AL-101

Crimson asserts that the AL-101 is material because it contains lower ramps, side walls, and a security-screw system. Under 35 U.S.C. § 102(a), an invention is not patentable if it was “known or used by others in this country, or patented or described in a printed publication in this . . . country, before the invention thereof by the applicant for patent” 35 U.S.C. § 102(a).⁸ A prior-art reference “anticipates” the invention under § 102 if it discloses every claim limitation of the patent, in the same arrangement. *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1334 (Fed. Cir. 2008). The AL-101 is prior art because it predates Lam’s invention. But it is not anticipatory prior art because its “security screw system” is not a “longitudinal surface directly joining” either the side or ramped portions, instead using an out-turned tab. To get around this, Crimson now puzzlingly suggests that the broadest reasonable construction of “longitudinal

⁸ The Leahy-Smith America Invents Act (AIA) amended sections of the statutes at issue in this case, but the previous versions of §§ 102, 103, and 112 apply here because the relevant claims were filed before the AIA’s effective date.

surface directly joining” includes a surface that does not connect anything. Not only does Crimson propose this claim construction a half-decade too late, but the court has already rejected it. (Dkt. 330 at 14 (construing “longitudinal surface directly joining” to mean “a straight surface *connecting* the two sides or ramps together”) (emphasis added).)

Crimson also argues that it would have been obvious to a practitioner having ordinary skill in the art (POSITA) to flip the AL-101’s out-turned tab inward. Under § 103, an invention is not patentable “if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art” 35 U.S.C. § 103(a). “Obviousness is a question of law based on underlying factual findings: (1) the scope and content of the prior art; (2) the differences between the claims and the prior art; (3) the level of ordinary skill in the art; and (4) objective considerations of nonobviousness.” *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1068 (Fed. Cir. 2012) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17–18, 86 S. Ct. 684 (1966)). Crimson does not recite or analyze these factors in its motion and did not introduce trial evidence to address them. Indeed, the trial testimony did not discuss the AL-101’s out-turned tab; the court knows its structure only from a picture. Crimson thus adduced no evidence that could prove obviousness. Because no one explained why the AL-101 used an out-turned tab or if the tab served any purpose other than retaining a screw, the court lacks scope-and-content evidence. Because no one compared the out-turned tab construction to a connective longitudinal surface, the court lacks evidence on the second factor. What limited evidence Crimson introduced about objective considerations concerned the existence, not the placement, of security screws, meaning

there is no useful evidence on the fourth factor. Crimson cannot sustain its evidentiary burden without evidence.

What’s more, this court has already held that Crimson did not introduce enough evidence to prove that it would be obvious to a POSITA to *add* a longitudinal surface to a ramped bracket because Crimson’s evidence concerned only the purpose of security screws. (Dkt. 672 at 6–11.) There is even less evidence that a POSITA would find it obvious to *relocate* the surface retaining a screw on a ramped bracket. At bottom, Crimson argues that anyone looking at an “outie” tab would know to flip it into an “innie” longitudinal surface, which is insufficient to prove the complex legal issue of obviousness. *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1362 (Fed. Cir. 2016) (“[C]ommon sense . . . cannot be used as a wholesale substitute for reasoned analysis and evidentiary support, especially when dealing with a limitation missing from the prior art references specified.”).

b. VMPL2

Like the AL-101, the VMPL2 predates Lam’s invention and contains a mounting contact portion, two side portions, and ramped surfaces. Unlike the AL-101, the VMPL2 contains no longitudinal surface, either connective or out-turned. Thus, in addition to the reasons why the AL-101 was not material, the VMPL2 was cumulative of the Bremmon reference. “A reference is not but-for material . . . if it is merely cumulative. A reference is cumulative when it ‘teaches no more than what a reasonable examiner would consider to be taught by the prior art already before the PTO.’” *Regeneron Pharms., Inc. v. Merus N.V.*, 864 F.3d 1343, 1350 (Fed. Cir. 2017) (quoting *Regents of the Univ. of Calif. v. Eli Lilly & Co.*, 119 F.3d 1559, 1575 (Fed. Cir. 1997)) (internal citation omitted). Peerless disclosed the Bremmon reference, which the PTO determined to contain every limitation of what became the ’850 patent’s first claim except the

longitudinal surface. Because the VMPL2 would not teach anything different from the Bremmon reference, Crimson did not prove that it was material.

Crimson now argues that the VMPL2 anticipates the '850 patent because it in fact has a longitudinal surface—the detached metal bar whose purpose was never explained. (Dkt. 758 at 6.) But Crimson insisted during trial that it did not need to prove that the VMPL2 had a longitudinal surface, (dkt. 616 at 1239:23–1240:25), and on that basis the court sustained Peerless's objection to any argument that the VMPL2 anticipated the '850 patent. (*Id.* at 1247:1–2.) Hence, Crimson cites no trial testimony in its motion purporting to explain the bar's purpose, because there is none.

Although the VMPL2 cut sheet suggests that the bar can be placed longitudinally between two brackets, that is not enough evidence to prove anticipation for two reasons. First, “[t]o anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently.” *MEHL/Biophile Intern. Corp. v. Milgraum*, 192 F.3d 1362, 1365 (Fed. Cir. 1999) (quoting *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997)). “Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient.” *Id.* (quoting *In re Oelrich*, 666 F.2d 578, 581 (C.C.P.A. 1981)). Because the bar is detached from the bracket and no one explained its purpose, the cut sheet shows at most that the bar *may* be oriented longitudinally but not that it must be, which is insufficient to prove anticipation. *Id.*

Second, Crimson did not prove that the bar reads on “longitudinal surface,” even when lying longitudinally. The '850 patent claims a bracket with “the guiding surface including a longitudinal surface directly joining” the side portions or ramps. (Dkt. 758-1 at 14, 15.) The longitudinal surface thus must be part of a guiding surface and must “connect[.]” the side portions

or ramps. (Dkt. 330 at 13–14.) Crimson has not introduced evidence about which portion of the VMPL2 is supposed to be its guiding surface or how the bar forms a part of it. In fact, on the physical bracket, there is a divot in each of the side portions on the lower end of the bracket, presumably where the bar rests. Because of the divot, that region of the bracket does not appear to be configured to guide a retaining portion into proper alignment with the bracket. The court’s guesswork on this point only underscores that Crimson—who bears the burden of proof—did not provide enough evidence to prove that the VMPL2’s bar reads on the longitudinal-surface limitation.

Nor has Crimson shown that the bar “join[s]”—meaning “connect[s]”—the side portions or ramps. (*Id.* at 13–14.) The court construed the longitudinal-surface limitation to require the surface to “connect” the side portions or ramps in part because the specification taught that the surface could be “welded or fastened” to the side portions or “coupled . . . using conventional processes.” (*Id.*) The bar is detached, not fastened, and if it simply rests between the divots in the side portions, it does not “connect” them. Thus, even if the bar can lie longitudinally, Crimson has not proved that it is a “longitudinal surface directly joining” the side portions or the ramps.

Finally, Crimson argues that the VMPL2 was material because the jury found the ’850 patent obvious over the combination of the VMPL2 and the TRK50B. That finding does not help Crimson because this court overrode it as a matter of law. (Dkt. 672 at 9–11.) Because of the different standards of proof to prevent issuance at the PTO and to invalidate in the district court, information can be material for inequitable conduct but insufficient to sustain an invalidity defense. *Therasense*, 649 F.3d at 1292. But Crimson’s evidence does not fall in the gap between preponderance and clear-and-convincing. As the court explained in its earlier ruling, Crimson failed to prove any motivation to combine a longitudinal surface and a bracket with ramps. (Dkt.

672 at 9–11.) At most, Crimson explained how a security screw functions but did “not identif[y] a need or problem in the field of brackets” that would motivate a POSITA to add a security screw—let alone one retained in a longitudinal surface directly joining the side portions or ramps—to a ramped bracket. (*Id.* at 10.) The PTO would not have found the ’850 patent obvious over the VMPL2.

c. ECN6102 and D-FPF-220/320

Because the ECN6102 and D-FPF-220/320 brackets are not part of the trial record, Crimson has not proven that they are material. Starting in its cross-motion for summary judgment, Crimson argued that Dr. Plavnik was the true inventor of the ’850 patent, that Peerless had already sold or displayed embodiments of it by September 2004, and that the prior-art drawings in the ’850 patent concealed the true nature of those brackets. (Dkt. 191 at 3, 9). But Crimson did not disclose this constellation of theories or the evidence supporting them—including the ECN6102 and the D-FPF-220/320—as required under the local patent rules. (Dkt. 331 at 2–3.) The court thus repeatedly barred Crimson from asserting the theories or relying on the undisclosed brackets, (*see id.*; dkt. 376; dkt. 483 at 8), ultimately excluding evidence of them at trial. (Dkt. 635 at 878:21–879:4, 888:7–17, 890:22–25.)⁹

Despite this, Crimson attempts to introduce these brackets through an offer of proof of what Dr. Plavnik would have said were he not barred from testifying about undisclosed theories and evidence. (Dkt. 602.) Citing *Mantek Div. of NCH Corp. v. Share Corp.*, 780 F.2d 702, 708 (7th Cir. 1986), Crimson argues that a party may rely on an offer of proof as testimony. Not so. An offer of proof creates a record of what excluded evidence might have shown were it not

⁹ The court ruled in limine that Crimson could add the ECN6102 to its exhibit list, (dkt. 572 at 2), but noted that its decision was “subject to change,” (*id.* at 1), and later excluded the ECN6102. (Dkt. 635 at 888:7–17.)

excluded. Hence, the Seventh Circuit in *Mantek* held that an offer of proof contained allegations that, if proven, could have affected the outcome of a preliminary injunction hearing. *Id.* It did not hold that the offer of proof itself proved anything. *Id.*

Not only is the offer of proof not evidence as a technical matter, but there is also good reason not to consider undisclosed theories and evidence. The local patent rules are not mere traps for the unwary. Peerless organized its defense of its patent around Crimson's final invalidity contentions. Had Crimson timely disclosed these theories and the evidence supporting them, Peerless might have marshalled a different or stronger response. To consider the offer of proof is to accept Crimson's idealized version of its own argument, unimpeached and uncontradicted. The court will not do so.

Because there is no trial evidence about the ECN6102 or the D-FPF-220/320, Crimson has not proven that they were material.

2. Prior Art Drawings

Crimson next argues that Peerless misled the PTO about the state of the prior art in its drawings of what the parties have called the "Gennady Brackets." Crimson asserts that the Gennady Brackets, depicted without ramps in figures 1 and 2 of the '850 patent, in fact had ramps. This restates Crimson's theory that the ECN6102 is the real Gennady Bracket, which the court has barred. (*See* dkt. 483 at 8 ("[T]he court stated . . . that Crimson may 'rely on the 'Gennady brackets' listed as prior art in figures 1 and 2 of the '850 patent.' Thus, the court's reference to the 'Gennady brackets' is limited to those two figures. Because Crimson has not offered any evidence that the ECN6102 is one of those two figures, the court will not consider it." (citation omitted).) Moreover, the court has credited Lam's testimony that the Gennady Brackets lacked ramps. Even Gleyzer acknowledged that he was excited about *Lam's* addition of

ramps to brackets. Because Crimson has not adduced credible evidence that Peerless misrepresented the state of the prior art, it has not proven any material misrepresentations.

3. Function and Purpose of the Longitudinal Surface

Crimson next argues that Peerless pretended that the longitudinal surface performed a guiding function when in fact it only retained a security screw. At the outset, this argument ignores the court’s ruling that the broadest reasonable construction of the longitudinal-surface limitation requires it only to be part of the guiding surface, not to perform a guiding function itself. (Dkt. 330 at 13.) Crimson’s argument is also wrong on its own terms—the trial evidence showed that the longitudinal surface performs a guiding function. Lam testified that when the bracket is held lower than the retaining portion and the installer must push upward, the longitudinal surface will stop upward movement when the installer has reached the right height. Even though this guidance could occur without the longitudinal surface, the longitudinal surface still participates in the guiding process. And Dr. Plavnik’s testimony did not disprove the guiding function. He explained that the longitudinal surface does not touch the retaining portion when the bracket is properly aligned. But a properly aligned bracket does not need to be guided anywhere; the guiding function takes place beforehand. Crimson has not shown a material misrepresentation.

4. Best Mode

A patent application must “set forth the best mode contemplated by the inventor . . . of carrying out the invention.” 35 U.S.C. § 112(a). Crimson claims that Peerless failed to disclose that the best mode of practicing the invention was (1) to use a box-fold construction for the longitudinal surface instead of a single, welded bridge plate, and (2) to retain a safety screw in the longitudinal surface.

The court ruled on Peerless’s Rule 50(b) motion that no reasonable jury could have invalidated the ’850 patent for failure to disclose the best mode based on Crimson’s trial presentation. (Dkt. 672 at 14-16.) But as discussed above, the PTO uses a lower standard of proof to deny a patent than a jury uses to invalidate one. *Therasense*, 649 F.3d at 1292. Crimson has not satisfied even this lower standard of proof. At most, Crimson presented evidence that the box fold was Peerless’s preferred embodiment of the ’850 patent, not Lam’s. *Ateliers De La Haute-Garonne v. Broetje Automation USA Inc.*, 717 F.3d 1351, 1357 (Fed. Cir. 2013) (best mode concerns the inventor’s preferred embodiment). Indeed, Lam testified that a prototype using the single, welded bridge plate. (Dkt. 635 at 1009:24–1010:2.) And the difference between the bridge plate and the box fold was not one of function but of manufacturing cost, (*id.* at 1006:22–1007:3), which is not the court’s concern in a best mode analysis. *Eli Lilly & Co. v. Barr Labs., Inc.*, 251 F.3d 955, 963 (Fed. Cir. 2001) (citing *Young Dental Mfg. Co., Inc. v. Q3 Special Prods., Inc.*, 112 F.3d 1137, 1143 (Fed.Cir.1997)) (“[T]he best mode requirement does not extend to production details . . .”). Crimson also argues that failure to disclose a safety screw was material because a safety screw “interferes with sliding/guiding” but cites no evidence to support this claim, and the court has found none. (Dkt. 758 at 12.)

5. Affirmative Egregious Misconduct

Finally, Crimson claims that Peerless committed affirmative egregious misconduct when Lam filed an inventor declaration that failed to disclose the points above. “Although but-for materiality must be proved to satisfy the materiality prong of inequitable conduct, th[e] court recognize[d] an exception in cases of affirmative egregious misconduct.” *Therasense*, 649 F.3d at 1292. This exception tracks the Supreme Court’s unclean hands cases, where the patentee’s conduct before the PTO was so shocking that a court could find that the patentee had unclean

hands without considering materiality. In *Keystone*, the patentee bribed a prior user of the invention to falsely claim to the PTO that his use was an abandoned experiment. *Id.* at 1285 (citing *Keystone Driller Co. v. General Excavator Co.*, 290 U.S. 240, 54 S. Ct. 146 (1933)). In *Hazel-Atlas*, after the patent office opposed the patent, the patentee's attorneys wrote an article in a trade journal extolling the invention and had a well-known expert in the field pretend he was the author. *Id.* at 1286 (citing *Hazel-Atlas Glass Co. v. Hartford Empire Co.*, 322 U.S. 238, 64 S. Ct. 997 (1944)). In *Precision*, Automotive discovered that a competing patent application relied on perjured conception dates. Automotive bought the rights to that application and kept silent about the perjury. *Id.* (citing *Precision Instrument Manufacturing Co. v. Automotive Maintenance Machinery Co.*, 324 U.S. 806, 65 S. Ct. 993 (1945)). *Therasense* observed that all these cases concerned meticulous schemes to defraud the PTO through manufacture and suppression of evidence. *Id.* at 1287.

Crimson has not shown affirmative egregious misconduct. Crimson has alleged nothing along the lines of the bribery, hush money, or manufactured evidence contemplated in the exception. Instead, Crimson argues that Lam filed a false affidavit when he said he had disclosed everything material. But “[n]either mere nondisclosure of prior art references . . . nor failure to mention prior art references in an affidavit constitutes affirmative egregious misconduct . . .” *Therasense*, 649 F.3d at 1292–93. Moreover, Crimson's argument here simply recycles its arguments above, all of which this court either rejected or precluded. Crimson thus did not prove that Peerless committed affirmative egregious misconduct.

C. Intent

Crimson has not proven by clear and convincing evidence that Peerless specifically intended to deceive the PTO. “[A] district court may not infer intent solely from materiality. . . . Proving that the applicant knew of a reference, should have known of its materiality, and decided not to submit it to the PTO *does not prove* specific intent to deceive.” *Therasense*, 649 F.3d at 1290 (emphasis added). Yet Crimson alleges exactly that. (*E.g.*, dkt. 758 at 16 (“Peerless had knowledge of the VMPL2 . . . the only inference . . . is deceptive intent.”); *id.* at 16–17 (“The AL-101 was manufactured by Peerless and shows Peerless had knowledge of the ramps more than 1 year prior to its application [T]he only inference . . . is intent to deceive the PTO.”); *id.* at 19 (“They knew the box fold design was superior”).) Crimson produced no evidence of intent distinct from evidence of materiality. For instance, Crimson called an attorney who worked on the ’850 prosecution but did not ask him about any of the references it now says Peerless intentionally withheld, let alone establish that he intended to defraud the PTO. Crimson’s rehearsal of the materiality evidence cannot and does not prove intent.

Lacking trial evidence, Crimson primarily asks the court to infer deceptive intent from Peerless’s litigation conduct under *Regeneron Pharmaceuticals, Inc. v. Merus N.V.*, 864 F.3d 1343 (Fed. Cir. 2017). But *Regeneron* does not compel a finding of intent to deceive here.¹⁰ To begin, Crimson argues that under *Regeneron*, this court may consider misconduct during patent litigation as evidence of intent to deceive the PTO. That misstates the holding of *Regeneron*. The district court there imposed an adverse inference of intent to deceive as a discovery sanction. *Id.* at 1356 (“[W]e determine that the district court did not abuse its discretion by sanctioning

¹⁰ The court declines Peerless’s invitation to follow the *Regeneron* dissent instead of the opinion.

Regeneron in this manner.”). *Regeneron* did not consider litigation misconduct as trial evidence of prosecution misconduct.

Crimson is left to ask the court to impose an adverse inference of intent to deceive as a discovery sanction, which the court denies. First, this discovery request is untimely—many years after the close of discovery. The appropriate time to seek such a sanction was during discovery, or at the absolute latest, in a motion in limine before the 2016 trial. Crimson did not shy away from motions for discovery sanctions but never requested this one. Second, this case does not resemble *Regeneron*, where the only way to hold the intent phase of trial was to “wholly reopen discovery” to evaluate Regeneron’s “Pandora’s box” of wrongfully withheld documents. *Regeneron*, 864 F.3d at 1361, 1362–63. Crimson has already tried the issues here.

Third, the court finds that Peerless’s discovery conduct does not merit any sanction. Crimson argues that Peerless concealed evidence that Dr. Plavnik invented the ’850 patent and that Peerless sold a bracket embodying it in 2004 until it was too late for Crimson to incorporate that information into its invalidity contentions. The court has already rejected this theory. (Dkt. 376.) Before Crimson moved for summary judgment, it had enough information to amend its invalidity contentions to allege the on-sale bar or that Dr. Plavnik was an inventor but chose not to. (*Id.* at 8–9.) Indeed, weeks before the December 2012 deadline to disclose final invalidity contentions, (*see* dkt. 69), Crimson deposed Lam and O’Keene and learned that Dr. Plavnik designed the prior art figures in the ’850 patent. (Dkt. 376 at 8.) Crimson did not depose Dr. Plavnik before the deadline, ask to extend the deadline, or move to amend its contentions before filing a summary judgment motion.

Nor does any of Peerless’s other discovery conduct warrant sanction. The court observed that the parties chose rancor as a discovery strategy when it called the litigation “long-running

and acrimonious” and the discovery disputes “interminable”—four years ago. (Dkt. 457 at 3.) Because of that rancor, Crimson has already asked this court to sanction Peerless for almost all the conduct described in this motion. (*See* dkts. 188, 212, 215, 230, 370, 381.) The court has reviewed the docket and stands by its decisions: sanctions were sufficient where awarded and unnecessary where denied.

Crimson did not prove that Peerless intended to deceive the PTO and is not entitled to an adverse inference of intent to deceive as a discovery sanction.

IV. Conclusion

Crimson has not met its burden to prove inequitable conduct, even applying the original factfinding standard of Rule 52 instead of the deferential standard of Rule 50 that Crimson requested. The court holds that Crimson did not prove that the '850 patent is unenforceable. The Clerk is directed to enter judgment in favor of Peerless and against Crimson. This case is terminated.

Date: November 27, 2018



U.S. District Judge Joan H. Lefkow