

NOTE: This disposition is nonprecedential.

# United States Court of Appeals for the Federal Circuit

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**ROLAND CORPORATION,**  
*Plaintiff-Cross-Appellant*

v.

**INMUSIC BRANDS, INC.,**  
*Defendant-Appellant*

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2023-1327, 2023-1564, 2023-1565, 2023-1401

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Appeals from the United States District Court for the  
Southern District of Florida in No. 1:17-cv-22405-FAM,  
Chief Judge Frederico A. Moreno.

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Decided: March 27, 2025

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Before LOURIE, REYNA, and CHEN, *Circuit Judges*.

CHEN, *Circuit Judge*.

Roland Corporation (Roland or Roland Japan) sued inMusic Brands, Inc. (inMusic) for infringement of eight patents relating to electronic drums and electronic cymbals: U.S. Patent Nos. 7,385,135 ('135 patent), 6,921,857 ('857 patent), 6,756,535 ('535 patent), 6,271,458 ('458 patent), 6,121,538 ('538 patent), 6,881,885 ('885 patent), 6,632,989 ('989 patent), and 7,459,626 ('626 patent) (collectively, Asserted Patents). After construing disputed claim terms, the district court granted summary judgment of non-infringement of four of the Asserted Patents. The remaining four patents proceeded to a jury trial.<sup>1</sup> After the district court denied inMusic's pre-trial and mid-trial *Daubert* motions to exclude or strike the infringement testimony of Roland's technical expert, the jury found all claims asserted at trial infringed and not invalid. The jury awarded damages to Roland in the form of both lost profits and reasonable royalties. After trial, the district court denied (1) inMusic's motions for judgment as a matter of law (JMOL) or a new trial on liability and damages, and (2) inMusic's motion to bar Roland's claims for infringement of the electronic cymbal patents due to equitable estoppel. inMusic appeals. The district court also denied Roland's motion to amend the judgment to add prejudgment interest. Roland cross-appeals, challenging (1) the denial of prejudgment interest, and (2) the district court's

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<sup>1</sup> One of the patents for which the court granted summary judgment of non-infringement also proceeded to trial but on the issue of invalidity only. That patent is not relevant to this appeal.

claim construction and grant of summary judgment of non-infringement. The latter portion of Roland's cross-appeal is contingent on vacatur or reversal of the judgment of liability.

For the following reasons, we *affirm in part, reverse in part, vacate in part, dismiss in part, and remand*. Regarding inMusic's appeal, we affirm the decision to not exclude or strike the infringement testimony of Roland's technical expert, affirm the denial of JMOL or a new trial on infringement and invalidity, and affirm the denial of inMusic's equitable estoppel defense. However, we reverse the denial of a new trial on damages, vacate the damages award, and remand for a new trial on damages. Regarding Roland's cross-appeal, we vacate the order denying prejudgment interest. And because we do not disturb the judgment of liability, we dismiss the remaining, conditional portion of Roland's cross-appeal.

## BACKGROUND

### I. The Asserted Patents

#### A. The Drum Patents

Five of the Asserted Patents relate to electronic drums and drumheads. These patents—the '135 patent, '857 patent, '535 patent, '458 patent, and '538 patent (collectively, Drum Patents)—share a common specification and are each titled "Electronic Percussion Instrumental System and Percussion Detecting Apparatus Therein." The specification explains that prior art electronic drums containing a "soft high-molecular compound material" covering the percussion surface have a "repulsive feeling" when percussed. '458 patent col. 1 ll. 36–41.<sup>2</sup> Furthermore, such

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<sup>2</sup> We cite to the '458 patent as representative of the Drum Patents' common specification.

electronic drums produce “significant” acoustic percussion noise. *Id.* col. 1 ll. 41–46.

Roland’s Drum Patents aim to solve those problems with “a percussion detecting apparatus provided with a head as the percussion surface which is excellent in percussion feeling and in which the percussion sound is extremely quiet in an electronic percussion instrumental system.” *Id.* col. 1 l. 65 – col. 2 l. 4. Specifically, the patents teach a percussion surface comprised of a “net-like raw material,” which provides “extremely good percussion feeling” and “extremely small” percussion sound “because of the elasticity of the net-like raw material” that allows air to “pass[] through the openings of stitches in” the material. *Id.* col. 2 ll. 31–37. The patents teach using two net layers. *Id.* col. 5 ll. 49–65; FIGS. 4–6. The patents also disclose using two types of sensors: a “head sensor,” for “detecting percussion applied to a head” of the electronic drum, and a “rim-shot sensor,” for “detecting percussion applied to a rim” of the electronic drum. *Id.* col. 4 ll. 47–56.

The Drum Patents contain various categories of claims. Some of the claims asserted at trial recite no electronic components at all. Claim 1 of the ’458 patent is representative of this category:

1. A head for an electronic percussion instrument, the head comprising a frame and a net-like material comprising first and second net members, each supported by said frame, said net-like material having openings through which air may pass.

Other Drum Patent claims asserted at trial recite a “sensor” limitation. Independent claim 23 of the ’535 patent is representative of this second category:

23. A percussion instrument, comprising:  
a generally hollow body having an opening into a body interior;

a generally flexible, net-like material tensioned state across the opening of the generally hollow body, the net-like material defining a percussion surface for receiving a percussion impact, the net-like material also having openings of a size sufficient to allow air to pass therethrough, upon receiving a percussion impact on the percussion surface; and

a sensor supported by said generally hollow body, for providing an electronic signal in response to a percussion impact on the percussion surface of the generally flexible, net-like material.

Yet a third category of claims—not asserted at trial, but relevant on appeal—recite a “transducer” limitation. Some of these claims further recite a “head sensor.” For example, independent claim 13 of the ’535 patent recites “a head sensor comprising a cushioning member and a transducer.”

#### B. The Cymbal Patents

The remaining three Asserted Patents relate to electronic cymbals. Two of these patents—the ’885 patent and ’989 patent (collectively, Cymbal Patents)—share a common specification and are each titled “Electronic Pad With Vibration Isolation Features.”<sup>3</sup> The patents explain that electronic cymbals “imitating” acoustic cymbals have been widely used. ’885 patent col. 1 ll. 44–45.<sup>4</sup> An electronic cymbal “detects the striking position and the striking force of a stick or the like by means of a striking sensor, controls a sound source based on the detected striking position and

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<sup>3</sup> The third patent relating to electronic cymbals, the ’626 patent, is not at issue on appeal.

<sup>4</sup> We cite to the ’885 patent as representative of the Cymbal Patents’ common specification.

striking force[,] and thereby produces a cymbal sound (electronic percussion sound).” *Id.* col. 1 ll. 45–50. However, the prior art “electronic cymbal formed out of hard resin disadvantageously has a problem in that the striking sensation is different from that of an acoustic cymbal.” *Id.* col. 2 ll. 5–8. Further, it was “difficult to detect a striking position (region)” and “difficult to detect a striking force with high accuracy” in the prior art cymbals. *Id.* col. 2 ll. 10–22.

The Cymbal Patents aim to solve those problems. *Id.* col. 2 ll. 32–34. The disclosed cymbals permit vibration to attenuate “relatively promptly, so that even if th[e] electronic pad . . . is continuously struck, it is possible to accurately detect the striking position and the striking force for each strike.” *Id.* col. 6 ll. 35–38. Additionally, “the appearance of the upper surface is similar to that of the acoustic cymbal, ensuring a good striking sensation.” *Id.* col. 6 ll. 39–41. The patents also disclose a “piezoelectric sensor [that] can accurately detect vibration generated . . . after the surface and the peripheral edge of the surface of the electronic pad . . . are struck.” *Id.* col. 7 ll. 59–62.

Independent claim 28 of the ’885 patent is representative of the Cymbal Patent claims asserted at trial:

28. An electronic pad receiving a strike, detecting the strike and outputting a signal representative of the strike comprising:

a frame having a striking surface with a peripheral edge portion;

a cover covering the striking surface of the frame;

a striking sensor provided on a part of, but not the entire peripheral edge portion of the frame, the striking sensor for detecting the strike transmitted to the frame through the cover; and

a jack affixed to the frame and electrically coupled to the striking sensor for outputting signals from the striking sensor, the jack having an opening of a receiving space for receiving an electrical plug, the opening of the receiving space facing in a direction away from the part of the peripheral edge portion of the frame having the striking sensor.

## II. Factual and Procedural Background

### A. Roland's Lawsuit

Roland is a Japanese corporation and electronic instrument manufacturer. Roland first made noise about its competitor inMusic's alleged infringement in 2011, years before Roland brought this lawsuit.

On March 11, 2011, Roland wrote to inMusic accusing certain electronic cymbals of infringing Roland's Cymbal Patents.<sup>5</sup> After some back-and-forth between the parties, inMusic responded on September 19, 2011, disputing infringement of the identified cymbals but also stating that it was "currently discontinuing" the cymbals. J.A. 15272–75. On October 5, 2011, Roland wrote back that it did "not intend to pursue this matter" if inMusic discontinued the cymbals as represented and "does not engage in other infringing activities." J.A. 15334–35.

On February 3, 2015, Roland wrote to inMusic, again accusing it of infringement and expressing Roland's "surprise[]" to find certain inMusic products on display at a trade show. J.A. 15337–39. inMusic responded on

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<sup>5</sup> Roland's pre-suit communications were actually with Alesis, a brand purchased by inMusic in 2011 and under which inMusic sells electronic instruments. For simplicity, we refer to only inMusic.

February 12, 2015, stating that the identified cymbal product line was “radically redesigned after 2011” and that inMusic believed it had “Roland’s implied consent” to sell these cymbals. J.A. 15266–67.

Roland then sued inMusic in August 2016 for infringement of the Asserted Patents in the United States District Court for the Central District of California, which transferred the case to the United States District Court for the Southern District of Florida. Roland’s amended complaint accused multiple products sold under the Alesis brand, including electronic drums, the redesigned electronic cymbals, and kits including both.

#### B. Claim Construction and Summary Judgment

Several of the district court’s claim constructions are pertinent to this appeal.

As relevant to the Cymbal Patents, the magistrate judge recommended construing the claim term “striking sensor” as “a device that detects vibration resulting from a strike to the strike surface of the frame.” *Roland Corp. v. inMusic Brands, Inc.*, No. 17-CV-22405, 2019 WL 5291175, at \*18–19 (S.D. Fla. Aug. 1, 2019) (*Markman R. & R.*). Roland had initially proposed construing the term, in part, as “[a] device that detects *pressure*,” but Roland “agree[d] with [inMusic’s] construction to the extent it would be limited to ‘a device that detects vibration resulting from a strike.’” *Id.* at \*18 (emphasis added).

As relevant to the Drum Patents, the magistrate judge recommended construing the terms “net-like material” and “net member” as “[a]n element that is similar in appearance to an open meshed fabric with openings through which air passes sufficient to reduce sound when the element is percussed.” *Id.* at \*12–13. The magistrate judge recommended construing the term “sensor” as “head sensor,” rejecting that it should “be construed so broadly as to include the rim-shot sensor.” *Id.* at \*16–17. Finally, the



magistrate judge recommended construing the claim terms “transducer” and “cushioning material”/“cushioning member,” in relevant part, as limited to a single transducer and a single cushioning material/member, respectively. *Id.* at \*3–9.

The district judge affirmed and adopted the claim construction report and recommendation and overruled both parties’ objections thereto. *Roland Corp. v. inMusic Brands, Inc.*, No. 17-CV-22405, 2022 WL 278967, at \*1 (S.D. Fla. Jan. 31, 2022). Based on the district court’s constructions, the magistrate judge recommended granting partial summary judgment of non-infringement, including as to all asserted claims of three Drum Patents (the ’538 patent, ’857 patent, and ’135 patent) and all asserted claims of the ’626 patent. *Roland Corp. v. inMusic Brands, Inc.*, No. 17-CV-22405, 2022 WL 1018349, at \*4–5, \*19 (S.D. Fla. Feb. 11, 2022) (*Summary Judgment R. & R.*). The district judge affirmed and adopted the summary judgment report and recommendation and overruled both parties’ objections thereto. *Roland Corp. v. inMusic Brands, Inc.*, No. 17-CV-22405, 2022 WL 1015588, at \*1 (S.D. Fla. Apr. 5, 2022). Final judgment of non-infringement of those claims was entered accordingly. J.A. 136.

### C. *Daubert* Motions

The parties filed several pre-trial *Daubert* motions to exclude expert witness testimony. In relevant part, inMusic sought to exclude the opinions of Roland’s damages expert, Suzanne Heinemann, and Roland’s technical expert, Dr. Paul Lehrman. The magistrate judge denied both motions, *see Roland Corp. v. inMusic Brands, Inc.*, No. 17-CV-22405, 2022 WL 22907270, at \*1 (S.D. Fla. Aug. 22, 2022); *Roland Corp. v. inMusic Brands, Inc.*, No. 17-CV-22405, 2022 WL 22907271, at \*1 (S.D. Fla. Aug. 22, 2022), and the district judge overruled inMusic’s objections with respect to the latter, *Roland Corp. v. inMusic Brands, Inc.*, No. 17-CV-22405, 2022 WL 22907230, at \*1 (S.D. Fla. Sept. 27,

2022). inMusic did not object to and does not appeal the failure to exclude the opinions of Ms. Heinemann.

Dr. Lehrman testified at trial regarding his infringement opinions. During cross-examination, Dr. Lehrman testified several times to an incorrect understanding of the all-elements rule.<sup>6</sup> See J.A. 20041–43; see, e.g., *id.* at 20042 (“Q. So if you have fewer than all of those elements, or what your counsel described as limitations, that are found in the accused product, your opinion is that the accused product is infringing. Is that your testimony here today? A. Yes.”). inMusic then moved to strike Dr. Lehrman’s testimony and for reconsideration of the district judge’s order overruling inMusic’s objections to the magistrate judge’s order declining to exclude the opinions of Dr. Lehrman. While that motion was pending, Roland called Dr. Lehrman for re-direct examination. Dr. Lehrman at first repeated his incorrect understanding of the all-elements rule, but after re-reading a portion of his supplemental expert report he ultimately testified that “[a]ll limitations must be present to establish infringement.” J.A. 20176–77. The district court then denied inMusic’s motion. *Roland Corp. v. inMusic Brands, Inc.*, No. 17-CV-22405, 2022 WL 22907231, at \*1 (S.D. Fla. Nov. 18, 2022); J.A. 20496–97.

#### D. Trial

The district court held a ten-day jury trial in October and November 2022. Roland asserted claims 1–2, 4, 6–7, 9, and 17 of the ’458 patent, claims 19–21 and 23 of the ’535

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<sup>6</sup> A tenet of patent law, “[t]he all-elements rule is that an accused device must contain every claimed element of the invention or the equivalent of every claimed element.” *Kustom Signals, Inc. v. Applied Concepts, Inc.*, 264 F.3d 1326, 1333 (Fed. Cir. 2001) (citing *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 29 (1997)).

ROLAND CORPORATION v. INMUSIC BRANDS, INC.

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patent, claims 1–3 of the '989 patent, and claims 28–34 of the '885 patent.

The district court required each party to prepare a claim chart to show the jury their respective infringement and invalidity positions. *See* J.A. 11780–81 (inMusic's chart); J.A. 11784–98 (Roland's Chart). The court contemplated providing a jury instruction relating to the charts but decided not to do so after inMusic objected. However, the court still offered to provide the parties' charts to the jury. Roland agreed and its chart went to the jury. inMusic, again, objected and declined the court's offer, so its chart did not go to the jury.

At the close of evidence in the liability phase of the trial, inMusic moved under Federal Rule of Civil Procedure 50(a) for JMOL of non-infringement and invalidity. The district court denied both motions. J.A. 20491, 20494. Subsequently, the jury returned a verdict that found all asserted claims infringed and not invalid. J.A. 124–28.<sup>7</sup>

The district court then commenced the damages phase of the trial on Thursday, November 17, 2022—the week before Thanksgiving. The court faced two scheduling hurdles with the upcoming holiday. Roland's damages expert, Ms. Heinemann, was scheduled to fly out of the country for a pre-planned vacation beginning Friday, November 18, and the jury foreperson was also scheduled to leave for vacation the week of Thanksgiving. *See* J.A. 20129; J.A. 20774. In order to accommodate Ms. Heinemann and complete the damages trial with the same jury as for liability, the court sharply limited the parties' time with their damages experts: twenty minutes for direct examination,

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<sup>7</sup> The jury additionally found not invalid claims 3–6, 10–11, and 17–21 of the '626 patent. J.A. 124–28.

fifteen minutes for cross-examination, and five minutes for re-direct examination. *See* J.A. 20129; J.A. 20774, 20862.<sup>8</sup>

During her brief direct examination, Ms. Heinemann testified that Roland was entitled to \$2.7 million in lost profits for a portion of inMusic's infringing drum kit sales. Ms. Heinemann's calculation included the lost profits of both Roland and its wholly owned subsidiary, Roland Corporation U.S. (Roland U.S.). For the remaining infringing drum and cymbal sales, Ms. Heinemann testified that Roland was entitled to \$1.9 million in reasonable royalties.

inMusic moved under Rule 50(a) for JMOL on damages at the close of Roland's damages case. The district court denied the motion with leave to renew after inMusic's rebuttal case. J.A. 20946, 20953. At the close of its rebuttal case, inMusic filed the renewed motion, which the court denied as moot when the jury reached a damages verdict while oral argument on the motion was ongoing. *See* J.A. 133; J.A. 21158, 21162–63. The jury awarded damages to Roland in accordance with Ms. Heinemann's opinion: \$2.7 million in lost profits and \$1.9 million in reasonable royalties, for a total damages award of \$4.6 million. J.A. 131–32.

#### E. Post-Trial Motions

Following trial, inMusic filed Rule 50(b) renewed motions for JMOL or, in the alternative, for a new trial, on liability and damages. The court denied both motions without an opinion and entered final judgment accordingly. *See Roland Corp. v. inMusic Brands, Inc.*, No. 17-CV-22405, 2022 WL 22907232, at \*1 (S.D. Fla. Dec. 28, 2022); J.A. 135.

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<sup>8</sup> Each party ran slightly over the court's time limitations in their examinations of Ms. Heinemann. *See* J.A. 20840, 20862.

The district court then denied Roland's motion to amend the judgment to add prejudgment interest. *Roland Corp. v. inMusic Brands, Inc.*, No. 17-CV-22405, 2023 WL 2441356, at \*1 (S.D. Fla. Jan. 20, 2023) (*Prejudgment Interest Order*). Finally, the district court denied inMusic's motion to bar Roland's claims of infringement of the Cymbal Patents due to equitable estoppel. *Roland Corp. v. inMusic Brands, Inc.*, No. 17-CV-22405, 2023 WL 2424146, at \*1–3 (S.D. Fla. Feb. 28, 2023) (*Equitable Estoppel Order*).

#### STANDARD OF REVIEW

We review a denial of a motion for JMOL, for a new trial, or for reconsideration under the law of the appropriate regional circuit. *Wis. Alumni Rsch. Found. v. Apple Inc.*, 905 F.3d 1341, 1346 (Fed. Cir. 2018); *Del. Valley Floral Grp., Inc. v. Shaw Rose Nets, LLC*, 597 F.3d 1374, 1379 (Fed. Cir. 2010). We also apply the law of the regional circuit to “evidentiary rulings [that] raise procedural issues not unique to patent law.” *Odetics, Inc. v. Storage Tech. Corp.*, 185 F.3d 1259, 1276 (Fed. Cir. 1999). Here, the regional circuit is the Eleventh Circuit.

The Eleventh Circuit reviews denial of JMOL de novo, “viewing the evidence in the light most favorable to the non-moving party.” *Howard v. Walgreen Co.*, 605 F.3d 1239, 1242 (11th Cir. 2010). “The motion should be granted only ‘when the plaintiff presents no legally sufficient evidentiary basis for a reasonable jury to find for him on a material element of his cause of action.’” *Id.* (citation omitted); *see also* Fed. R. Civ. P. 50(a)(1). “While ‘the non-movant must put forth more than a mere scintilla of evidence suggesting that reasonable minds could reach differing verdicts,’ a jury’s verdict ‘will not be overturned unless no rational trier of fact could have reached the same conclusion based upon the evidence in the record.’” *Mamani v. Sánchez Bustamante*, 968 F.3d 1216, 1230 (11th Cir. 2020) (citations omitted).

The Eleventh Circuit reviews a district court's decision on a motion for a new trial under the abuse of discretion standard. *Torres v. First Transit, Inc.*, 979 F.3d 876, 881 (11th Cir. 2020). "A district court abuses its discretion if it applies an incorrect legal standard, applies the law in an unreasonable or incorrect manner, follows improper procedures in making a determination, or makes findings of fact that are clearly erroneous." *Id.* (citation omitted). A court may grant a motion for a new trial under Federal Rule of Civil Procedure 59 if it determines that "the verdict is against the weight of the evidence, that the damages are excessive, or that, for other reasons, the trial was not fair." *McGinnis v. Am. Home Mortg. Servicing, Inc.*, 817 F.3d 1241, 1254 (11th Cir. 2016) (citation omitted). "Although a trial judge cannot weigh the evidence when confronted with a motion [for JMOL], in a motion for a new trial the judge is free to weigh the evidence." *Id.* (citation omitted).

"Under Eleventh Circuit law, we review evidentiary rulings for abuse of discretion." *Omega Pats., LLC v. CalAmp Corp.*, 13 F.4th 1361, 1368 (Fed. Cir. 2021). The Eleventh Circuit also reviews a district court's denial of a motion for reconsideration for an abuse of discretion. *Corwin v. Walt Disney Co.*, 475 F.3d 1239, 1254 (11th Cir. 2007).

## DISCUSSION

### I. Failure to Exclude or Strike Dr. Lehrman's Testimony

We begin with inMusic's challenge to the district court's decision to admit Dr. Lehrman's infringement opinions. A trial court's decision to admit or exclude expert testimony under *Daubert* is reviewed for abuse of discretion. *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 139 (1997).

"*Daubert* requires that trial courts act as 'gatekeepers' to ensure that speculative, unreliable expert testimony does not reach the jury." *McCorvey v. Baxter Healthcare Corp.*, 298 F.3d 1253, 1256 (11th Cir. 2002); *see* Fed. R.

Evid. 702. inMusic alleges that Dr. Lehrman's infringement testimony was unreliable for several reasons.

First, inMusic takes issue with Dr. Lehrman's testimony that expressed an incorrect understanding of the all-elements rule. It is axiomatic that "[t]o show infringement, the plaintiff must establish that the accused device includes every limitation of the claim or an equivalent of each limitation." *Dolly, Inc. v. Spalding & Evenflo Cos.*, 16 F.3d 394, 397 (Fed. Cir. 1994). But Dr. Lehrman's testimony to the contrary was irrelevant to his infringement opinions. Over many pages of testimony, Dr. Lehrman testified that each limitation of every claim asserted at trial was satisfied by the accused products. *See* J.A. 19918–40, 19947–94, 19999–20040. Dr. Lehrman was asked during his limitation-by-limitation analysis, "if all the limitations of a claim had been satisfied or found in [the] accused products, what does that mean?" *Id.* at 19939. He answered, "[t]hat means that the products are an infringement of these claims." *Id.*; *see also, e.g., id.* at 20027 ("This shows that Claims 31 and 32 are both satisfied, all limitations, and thereby the products are infringing these two claims."). Dr. Lehrman clearly expressed to the jury that his "conclusion was that all the accused products infringed on the patents" *because* he demonstrated that "all the limitations of all the claims were met by infringing products." *Id.* at 20173–74. And Dr. Lehrman ultimately corrected his understanding of the all-elements rule. *See id.* at 20177. The district court did not abuse its discretion by failing to strike the testimony of Dr. Lehrman on this basis.

Second, regarding the Drum Patents, inMusic makes several arguments relating to Dr. Lehrman's testimony vis-à-vis the "head sensor" limitation. This claim limitation, which recites "a head sensor comprising a cushioning member and a transducer," *see, e.g.,* '535 patent claim 13, is not contained in any claim asserted at trial. It is distinct from the "sensor" limitation of the asserted claims. Although the district court construed "sensor" as "head

sensor”—as opposed to a rim-shot sensor—the magistrate judge expressly noted that the court did not construe “sensor” as requiring “a cushioning member/material and a single transducer.”<sup>9</sup> *Summary Judgment R. & R.*, 2022 WL 1018349, at \*12. We reject inMusic’s attempt to conflate different limitations of different claims.

Third, regarding the Cymbal Patents, inMusic asserts that Dr. Lehrman’s methodology of testing for the “striking sensor” limitation was unreliable. The court construed that term as requiring “a device that detects vibration resulting from a strike to the strike surface of the frame.” *Markman R. & R.*, 2019 WL 5291175, at \*19. During trial, jurors were shown a video of an experiment that Dr. Lehrman testified was performed to determine whether the striking sensor limitation, as construed by the court, was present in the accused cymbals. *See* J.A. 20015–19. Dr. Lehrman testified that when the relevant part of the accused cymbals was hit, “the bottom line on the oscilloscope turn[ed] into a squiggly line, which indicates that a signal is output from that sensor, from the cymbal to the oscilloscope,” and that demonstrates that the striking sensor satisfies the court’s definition as “a device that detects vibration.” *Id.* at 20017–19; *see also id.* at 19988.<sup>10</sup> Dr. Lehrman further testified that the striking sensor is a

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<sup>9</sup> Notably, inMusic did not object to the magistrate judge’s proposed construction of “sensor” and does not appeal the court’s construction of that limitation.

<sup>10</sup> We note that we must rely on what the trial transcript reveals regarding the video shown to the jury, for the video has not been made available to us. “When parties rely on demonstratives to present evidence . . . to the jury, it is their burden to assure that the record captures the substance of the data so presented. We can not guess at what the jury saw.” *Whitserve, LLC v. Comput. Packages, Inc.*, 694 F.3d 10, 32 n.16 (Fed. Cir. 2012).



“piezo,” which “generates an electric current when it is subject to pressure or vibration or force,” *id.* at 19989, and explained that “vibration can be a single cycle in a change in pressure,” J.A. 20185. inMusic has offered no persuasive reason why Dr. Lehrman was unable to reliably conclude that the testing detected vibration.

In short, none of inMusic’s arguments persuade us that the district court abused its discretion in declining to exclude or strike the infringement testimony of Dr. Lehrman.<sup>11</sup>

## II. JMOL of Non-Infringement

inMusic contends that it was entitled to JMOL of non-infringement. We disagree. “Determination of infringement is a question of fact, which, in the context of a jury trial, we review for substantial evidence.” *Union Carbide Chems. & Plastics Tech. Corp. v. Shell Oil Co.*, 308 F.3d 1167, 1177 (Fed. Cir. 2002).

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<sup>11</sup> inMusic also cites as an indication that the district court relinquished its gatekeeping role to the jury the court’s statement that “maybe they want to do their own Daubert analysis, see? It will be interesting to see and be the gatekeeper.” J.A. 20790. Under *Daubert*, the court, not the jury, must assess the reliability of expert testimony. *See Chapman v. Procter & Gamble Distrib., LLC*, 766 F.3d 1296, 1306 (11th Cir. 2014). It would appear the court merely intended to make an offhand joke. Regardless, we are not convinced that the district court handed off its gatekeeping role to the jury. The magistrate judge and district judge considered inMusic’s pre-trial *Daubert* motion to exclude Dr. Lehrman, and the district court judge reconsidered that motion during trial. And as explained above, we conclude that the court did not abuse its discretion in denying that motion.

inMusic begins by harking back to its arguments regarding Dr. Lehrman’s testimony that misunderstood the all-elements rule. True, “when an expert witness[s] statement of the law is incorrect, that view of the law cannot be relied upon to support the verdict.” *Integra Lifesciences I, Ltd. v. Merck KGaA*, 496 F.3d 1334, 1342 (Fed. Cir. 2007). But Roland does not attempt to support the verdict of infringement with Dr. Lehrman’s misstatement of the all-elements rule. Roland’s case-in-chief and Dr. Lehrman’s ultimate infringement opinion relied on a *correct* understanding of the all-elements rule, i.e., that every limitation of the asserted claims was practiced by all the accused products. *See supra* Discussion Section I; *see, e.g.*, J.A. 20173–74. Moreover, the district court correctly instructed the jury on the all-elements rule. *See* J.A. 20665–66.

inMusic also challenges the sufficiency of the evidence supporting the jury’s finding that the accused products satisfy two particular limitations of the asserted claims: the “head sensor” limitation and the “striking sensor” limitation.

We reject inMusic’s challenge to the “head sensor” limitation. As explained above with respect to inMusic’s *Daubert* challenge, inMusic confuses the “head sensor” limitation, pertaining to Drum Patent claims not asserted at trial, with the “sensor” limitation, pertaining to Drum Patent claims that were asserted at trial. To the extent inMusic’s argument can be taken as challenging the “sensor” limitation, a reasonable jury could have concluded, based on Dr. Lehrman’s testimony, that the accused drums satisfy that limitation. Dr. Lehrman identified a particular component of the accused drums as the sensor and explained that “it generates a signal when it reads vibration or force.” J.A. 19960; *see also id.* at 19962, 19974–75, 19977.

Regarding the striking sensor limitation of the Cymbal Patent claims asserted at trial, Dr. Lehrman walked the

jury through a video of testing performed on accused cymbals, which Dr. Lehrman testified demonstrated a striking sensor that detects vibration. *See* J.A. 19988–89, 20015–19; *supra* Discussion Section I. Opposing counsel cross-examined Dr. Lehrman as to whether the experiment actually tested for vibration, attempting to impeach him with his deposition testimony. J.A. 20165–67. inMusic points to no opposing testimony of its own expert witness. This dispute was a factual issue to be decided by the jury, which reasonably found infringement of the striking sensor limitation.

Accordingly, we affirm the district court’s denial of JMOL of non-infringement.

### III. New Trial on Infringement

inMusic next argues that even if it was not entitled to JMOL of non-infringement, it was at least entitled to a new trial. The basis for this argument is the district court’s decision to provide Roland’s infringement claim chart to the jury for use during deliberations.

The parties’ claim charts are what courts commonly refer to as “demonstrative exhibits,” “pedagogical devices,” or “illustrative aids.” *See, e.g., Baugh ex rel. Baugh v. Cuprum S.A. de C.V.*, 730 F.3d 701, 707 (7th Cir. 2013); Fed. R. Evid. 107 Advisory Comm. Notes.<sup>12</sup> Illustrative aids, not typically themselves admitted into evidence, are “used to aid the jury in its understanding of the evidence that has already been admitted.” *Baugh*, 730 F.3d at 707. Roland’s claim chart was not admitted as substantive evidence. Rather, the issue before us is whether the district court

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<sup>12</sup> Because of recognized confusion over the term “demonstrative,” we instead employ the term “illustrative aid,” now used by Federal Rule of Evidence 107. *See Baugh*, 730 F.3d at 706–07; Fed. R. Evid. 107 Advisory Comm. Notes.

abused its discretion in permitting the jury to use the non-admitted claim chart during deliberations. *See United States v. Robinson*, 872 F.3d 760, 780 n.5 (6th Cir. 2017) (recognizing the distinction between the “issue of whether demonstrative aids may be admitted into evidence” and the issue of “whether non-admitted demonstrative exhibits may be provided to the jury during deliberations”).

This court faces a peculiar situation. During the pendency of this appeal, Federal Rule of Evidence 107 governing the use of illustrative aids went into effect. *See* U.S. Supreme Court Order, Order Amending Federal Rules of Evidence (Apr. 2, 2024), [https://www.supremecourt.gov/orders/courtorders/frev24\\_9o6b.pdf](https://www.supremecourt.gov/orders/courtorders/frev24_9o6b.pdf) (“The foregoing amendments to the Federal Rules of Evidence shall take effect on December 1, 2024, and shall govern in all proceedings thereafter commenced and, insofar as just and practicable, all proceedings then pending.”). If we were to determine that it is “just and practicable” for Rule 107 to govern, the rule provides that an illustrative aid “must not be provided to the jury during deliberations unless: (1) all parties consent; or (2) the court, for good cause, orders otherwise.” Fed. R. Evid. 107(b). If we were to determine otherwise, we would apply pre-Rule 107 case law on the issue. However, we are aware of no Eleventh Circuit case addressing this precise question. If the relevant regional circuit has not spoken on a legal issue, “we must predict how that court would decide the issue in light of such criteria as the decisions of that circuit’s district courts, other circuits’ decisions, and public policy.” *Badalamenti v. Dunham’s, Inc.*, 896 F.2d 1359, 1362 (Fed. Cir. 1990). Accordingly, we would be required to predict how the Eleventh Circuit would decide an obsolete issue that in the future would be governed by Rule 107. Yet we need not resolve these issues because any error in providing Roland’s claim chart to the jury was harmless. *See Robinson*, 872 F.3d at 780 (declining to decide whether a district court may provide a non-

admitted illustrative aid to the jury under pre-Rule 107 law because any error was harmless).

Roland's claim chart was substantively duplicative of and consistent with admitted evidence. *See id.* (harmless error where illustrative "aids were based on evidence that the jury was otherwise allowed to see or hear"); *cf. United States v. Malol*, 476 F.3d 1283, 1292 (11th Cir. 2007) (harmless error in admitting a summary chart under Rule 1006 because "[t]he summary chart merely repeated the same type of evidence as already presented"). The illustrative aid, like Dr. Lehrman's testimony, largely maps each element of the asserted claims to a numbered part of the accused products, in both tabular and pictorial formats. And certain portions of the aid are quite similar to other claim charts that *were* admitted as trial exhibits. *Compare, e.g., J.A. 11789–90, with J.A. 16249–51.* inMusic complains about a discrepancy: the admitted exhibits annotate part 350 as a "percussion detector/head sensor," whereas the illustrative aid removes that annotation and identifies a different component, part 330, as a "sensor." *Compare J.A. 11786, with J.A. 16264, 16271.* But inMusic again confuses the "sensor" and "head sensor" limitations and ignores that part 330 was identified as the claimed sensor by Dr. Lehrman's testimony and the admitted exhibits. *See, e.g., J.A. 16271; J.A. 19960.* Accordingly, inMusic cannot show that it was prejudiced.

Because Roland's claim chart did not substantively and materially differ from admitted testimonial and documentary evidence, any error by the district court in providing Roland's chart to the jury was harmless and does not entitle inMusic to a new trial.

#### IV. Invalidity

inMusic argues that it was entitled to JMOL of invalidity, or in the alternative a new trial on invalidity, of certain claims of the two Drum Patents asserted at trial: claims 1–2, 4, and 17 of the '458 patent and claims 19–21 of the

'535 patent (collectively, mesh head claims). These claims are directed to drumheads that lack any limitations reciting electronic components. inMusic contends that each of two prior art references anticipate the mesh head claims: Ishida<sup>13</sup> and Hayashi<sup>14</sup>. Anticipation requires the patent challenger to show by clear and convincing evidence that “each element of the claim at issue, properly construed, is found in a single prior art reference.” *Zenith Elecs. Corp. v. PDI Commc’n Sys., Inc.*, 522 F.3d 1348, 1363 (Fed. Cir. 2008). Anticipation is a question of fact that we review for substantial evidence. *ATEN Int’l Co. v. Uniclass Tech. Co.*, 932 F.3d 1364, 1367 (Fed. Cir. 2019).

inMusic argues that its technical expert, Dr. Harri Kytomaa, testified that Ishida and Hayashsi both teach a drumhead that meets every limitation of claims 19–21 of the '535 patent.<sup>15</sup> Claim 19, from which claims 20–21 depend, requires “a net-like material comprising multiple net members, . . . said net-like material having openings through which air may pass.” '535 patent claim 19. As construed by the district court, the “net-like material” and “net member” terms require “[a]n element that is similar in appearance to an open meshed fabric with openings through which air passes sufficient to reduce sound when the element is percussed.” *Markman R. & R.*, 2019 WL 5291175, at \*13.

Regarding Ishida, Roland counters by pointing to the testimony of one of its fact witnesses and a co-inventor of the Drum Patents, Masato Katsuda. While he worked for Roland, and before prosecution of the Drum Patents, Mr. Katsuda wrote an internal memorandum concerning

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<sup>13</sup> Japan Pat. No. H2-117569 (J.A. 13925–39).

<sup>14</sup> U.S. Pat. No. 4,828,907 (J.A. 15419–25).

<sup>15</sup> inMusic contends that the analysis does not differ for the remaining mesh head claims from the '458 patent. See Appellant’s Response & Reply Br. 37–38.

Ishida and other references. *See* J.A. 17220–28; J.A. 19560–61. At trial, Mr. Katsuda affirmed his deposition testimony that Ishida “does not reveal that air can pass through,” and he testified that Ishida does not teach two layers of mesh. J.A. 19593–94. As for Hayashi, Roland relies on cross-examination testimony of Dr. Kytomaa. On cross-examination, Dr. Kytomaa admitted that “the emphasis of Hayashi is not sound *reduction*” but rather “the selection of different fibrous materials to *influence* the sound of the diaphragm.” J.A. 20346 (emphases added). Dr. Kytomaa could not “remember whether Hayashi says anything about sound reduction.” *Id.*

Thus, the jury heard evidence that Ishida and Hayashi do not disclose certain limitations of the mesh head claims. Namely, the limitation requiring multiple net members, for Ishida, and the limitations requiring air to pass through the drumhead sufficient to reduce sound, for both Ishida and Hayashi. Viewing the evidence in the light most favorable to Roland, as we must, a rational jury could have found that inMusic failed to prove anticipation by those two references. *See Mamani*, 968 F.3d at 1230; *see, e.g., E.I. du Pont De Nemours & Co. v. Unifrax I LLC*, 921 F.3d 1060, 1075 (Fed. Cir. 2019) (“Although [the patentee] did not call an expert to testify as to the differences between [the prior art reference] and the asserted claims, there was substantial documentary evidence and cross-examination testimony from [the patent challenger’s] expert for the jury to conclude that . . . [the reference] does not anticipate the asserted claims . . .”). We also conclude the jury verdict was not against the weight of the evidence such that the district court abused its discretion in declining to grant inMusic a new trial on invalidity.

## V. Damages

We turn next to damages. Damages for patent infringement are governed by 35 U.S.C. § 284, which provides, in relevant part, that “the court shall award the

claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer.” Accordingly, “[o]ur case law recognizes two measures of damages: lost profits and reasonable royalties.” *Warsaw Orthopedic, Inc. v. NuVasive, Inc.*, 778 F.3d 1365, 1374 (Fed. Cir. 2015), *vacated sub nom.*, *Medtronic Sofamor Danek USA, Inc. v. NuVasive, Inc.*, 577 U.S. 1099 (2016), *opinion reinstated in relevant part*, 824 F.3d 1344, 1346 (Fed. Cir. 2016). “We review the jury’s determination of the amount of damages, an issue of fact, for substantial evidence.” *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1369 (Fed. Cir. 2017) (citation omitted).

inMusic argues that it is entitled to JMOL, or in the alternative a new trial, on damages for both lost profits and reasonable royalties. As explained below, we agree that inMusic is entitled to a new trial on both categories of damages.

#### A. Lost Profits

inMusic first takes issue with the jury’s award of \$2.7 million in lost profits. Based on the testimony of Roland’s damages expert, Ms. Heinemann, the jury awarded Roland not only its own lost profits but also those of its wholly owned subsidiary, Roland U.S. During the damages period for which Roland claimed lost profits, Roland sold electronic drums to Roland U.S., which in turn sold the drums to retailers in the United States. Ms. Heinemann’s testimony calculated a single, consolidated lost profits figure for the two entities in the first instance, and offered an “alternate calculation” in the event Roland is not entitled to the lost profits of Roland U.S. J.A. 20834.

“To recover lost profits, the patentee bears the burden of proof to show a ‘reasonable probability that, “but for” infringement, it would have made the sales that were made by the infringer.’” *Presidio Components, Inc. v. Am. Tech. Ceramics Corp.*, 875 F.3d 1369, 1380 (Fed. Cir. 2017)



(citation omitted). “Whether lost profits are legally compensable in a particular situation is a question of law that we review *de novo*,” and we review the jury’s lost profits award for substantial evidence. *Siemens Med. Sols. USA, Inc. v. Saint-Gobain Ceramics & Plastics, Inc.*, 637 F.3d 1269, 1287–88 (Fed. Cir. 2011).

The general rule is that “a patentee may not claim, as its own damages, the lost profits of a related company.” *Warsaw*, 778 F.3d at 1375. Roland attempts to claim as its own the lost profits of Roland U.S. under an exception known as “inexorable flow.” Under that theory, which has been previously argued to this court, the subsidiary’s profits flow inexorably or inherently to the plaintiff parent company. See *Mars, Inc. v. Coin Acceptors, Inc.*, 527 F.3d 1359, 1367 (Fed. Cir. 2008), *mandate recalled and amended on other grounds*, 557 F.3d 1377 (Fed. Cir. 2009). In *Mars*, we affirmed a grant of summary judgment to the defendant on the plaintiff’s claim of lost profits because the record could not support a finding that the wholly owned subsidiary’s profits flowed inexorably to the plaintiff. *Id.* at 1364, 1367. Because we concluded that the subsidiary’s profits did not in fact flow inexorably to the plaintiff, we expressly declined to “decide whether a parent company can recover on a lost profits theory when profits of a subsidiary actually *do* flow inexorably up to the parent.” *Id.* at 1367. This court has not since addressed whether inexorable flow is a legally cognizable theory of lost profits. Nor must we do so now, for like the *Mars* court, we conclude that Roland did not offer sufficient evidence to support a factual finding of inexorable flow of profits.

Roland argues that it established inexorable flow based on a single sentence of testimony from Roland’s Senior

Executive Officer and Roland U.S.'s Executive Vice President, Naoyuki Tamura<sup>16</sup>:

Q. What happens to the profits of Roland U.S. on those sales of mesh drums?

[A.] *Because* Roland U.S. is a 100 percent owned subsidiary of Roland Japan, the profit it made will be returned to Roland Japan in the form of dividends.

J.A. 20887 (objection omitted) (emphasis added). Mr. Tamura's conclusory testimony provided no basis for the jury to find that Roland U.S.'s profits inherently flowed to Roland during the relevant period other than the fact that Roland U.S. is a wholly owned subsidiary. In *Mars*, we rejected the notion that such a corporate relationship, without more, was sufficient to recover the subsidiary's lost profits. *Mars*, 527 F.3d at 1367. Mr. Tamura did not, for example, explain who controlled Roland U.S.'s distribution of profits or what corporate controls were in place to ensure that Roland U.S.'s profits became those of Roland Japan. Nor did Roland present documentary evidence of Roland's and Roland U.S.'s historical financial information showing an unwavering flow of profits. We need not delineate what types of evidence would be sufficient to establish inexorable flow. Suffice it to say, under *Mars*, the testimony presented at trial falls short of substantial evidence to support the jury's lost profits award.

Roland argues that even if it is not entitled to the lost profits of Roland U.S., it is still entitled to that portion of the award comprising its own lost profits. However, the jury rendered a single lost profits award that did not separate Roland's profits from Roland U.S.'s. *See* J.A. 131–32. And we cannot say that the jury necessarily accepted or

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<sup>16</sup> Ms. Heinemann did not herself offer an opinion on inexorable flow. *See* J.A. 20852.

would have accepted Ms. Heinemann’s alternative calculation accounting for only Roland’s own lost profits. Ms. Heinemann presented the jury with a single lost profits figure of \$2.7 million—as opposed to presenting each company’s respective profits as separate inputs that summed to \$2.7 million—and *then* Ms. Heinemann offered the jury a calculation that “removed the profit related to Roland U.S.” J.A. 20834. On the resulting figure, Ms. Heinemann equivocated between “1.3 million, a little higher,” “like 1.35 million,” and “1.3 million.” J.A. 20834, 20840. Although the lost profits figure “need not be proven with unerring precision,” the amount of Roland’s own lost profits is a question of fact that was not decided by the jury and cannot be decided by us. *Standard Havens Prods., Inc. v. Gencor Indus., Inc.*, 953 F.2d 1360, 1374 (Fed. Cir. 1991) (citation omitted). Accordingly, we must vacate the jury’s entire lost profits award.

### B. Reasonable Royalties

The jury also awarded Roland \$1.9 million in reasonable royalties. At trial, Ms. Heinemann used a hypothetical negotiation approach to arrive at that figure. She relied on exclusively several of Roland’s prior licenses to the Drum Patents and Cymbal Patents to opine that Roland would have been entitled to a reasonable royalty of \$20 per drum-head and \$2 per cymbal. We conclude that Ms. Heinemann’s testimony does not provide sufficient evidence to support the jury’s reasonable royalty award for either category of the Asserted Patents.

#### 1. The Drum Patents

A patentee may rely on its prior licenses to prove a reasonable royalty, so long as the patentee properly accounts for apportionment so that it “seek[s] only those damages attributable to the infringing features.” *Omega Pats., LLC v. CalAmp Corp.*, 13 F.4th 1361, 1376–77 (Fed. Cir. 2021); *see also ResQNet.com, Inc. v. Lansa, Inc.*, 594 F.3d 860, 869 (Fed. Cir. 2010) (citing *Georgia-Pacific Corp. v. U.S.*

*Plywood Corp.*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970)). “[W]hen a sufficiently comparable license is used as the basis for determining the appropriate royalty, further apportionment may not necessarily be required.” *Omega*, 13 F.4th at 1376–77 (citation omitted). But the patentee bears the burden of proving damages, including the burden to prove that the licenses it relies on are “sufficiently comparable.” *Id.* at 1377 (citation omitted). We have “stressed that comparisons of past patent licenses to the infringement must account for ‘the technological and economic differences’ between them.” *Wordtech Sys., Inc v. Integrated Networks Sols., Inc.*, 609 F.3d 1308, 1320 (Fed. Cir. 2010) (citation omitted).

Ms. Heinemann relied on three licenses to support her \$20-per-drumhead reasonable royalty for the ’458 patent and the ’535 patent. These licenses were: (1) a license to Hart Dynamics Incorporated (Hart), which includes a license for certain claims of the ’458 patent and the ’538 patent as part of a settlement agreement, *see* J.A. 15703–20; (2) a license to Pintech USA, Inc. (Pintech) for certain claims of the ’458 patent and the ’538 patent, *see* J.A. 15721–35; and (3) a license to Guitar Center, Inc. (Guitar Center) for the ’535 patent, the ’538 patent, the ’857 patent, and the ’135 patent, *see* J.A. 16918–26. Each of the agreements licensed only single-layer mesh drumheads, in contrast to the double-layer mesh technology at issue in the parties’ hypothetical negotiation. We agree with inMusic that Ms. Heinemann failed in various ways to appropriately connect these licenses to the parties’ hypothetical negotiation.

First, in addition to the ’458 patent and ’535 patent, the licenses include the three Drum Patents that were not asserted at trial. “[A]llegedly comparable licenses may cover more patents than are at issue in the action,” however, “[t]estimony relying on licenses must account for such distinguishing facts when invoking [the licenses] to value the patented invention.” *Ericsson, Inc. v. D-Link Sys., Inc.*, 773

F.3d 1201, 1227 (Fed. Cir. 2014). Ms. Heinemann failed to even mention this difference on direct examination, and on cross-examination she testified that the Guitar Center license “covers at least one of the patents from the mesh family.” J.A. 20853. It is not enough that Ms. Heinemann “merely *identified*” a difference in the patents covered by one of the three licenses, if her testimony could even be described as having accomplished that. *Omega*, 13 F.4th at 1381. As this court has previously reasoned, “[w]hat’s utterly lacking is evidence that [Roland] met its obligation to ‘*account* for such distinguishing facts’ in invoking the licenses to value” the two infringed patents. *Id.* (emphasis added) (citation omitted); *see also id.* at 1380–81 (concluding that the patentee failed to adequately account for additional patents in licenses relied on to value a single patent).

Second, Roland granted the Hart license in the context of settling litigation with Hart. “We have previously explained that prior settlements can be relevant to determining damages.” *Elbit Sys. Land & C4I Ltd. v. Hughes Network Sys., LLC*, 927 F.3d 1292, 1299 (Fed. Cir. 2019). But “whether in using a settlement agreement at all or in drawing the appropriate lessons from the particular settlement for the case in which it is being used, relevant circumstances—such as similarities and differences in technologies and market conditions and the state of the earlier litigation when settled—must be carefully considered” and “any differences in circumstances must be soundly accounted for.” *Id.* at 1299–30. Ms. Heinemann acknowledged on cross-examination that the Hart license was part of a settlement agreement reached shortly before trial and testified that “the context of that just needs to be considered.” J.A. 20855–56. But Ms. Heinemann stopped short, failing to explain whether and how she accounted for the context of the litigation between Roland and Hart and the respective positions of the parties leading up to trial. *Cf. LaserDynamics, Inc. v. Quanta Comput., Inc.*, 694 F.3d 51, 77–78 (Fed. Cir. 2012) (district court abused its

discretion in admitting plaintiff's prior settlement agreement that "was executed shortly before a trial" in which the licensee "would have been at a severe legal and procedural disadvantage given the numerous harsh sanctions imposed on it by the district court."); *Elbit*, 927 F.3d at 1300 (expert's testimony relying on a prior settlement supported a damages verdict because the expert "accounted for the fact that the [agreement] was a settlement prompted by litigation").

Third, Ms. Heinemann failed to coherently explain how she derived a \$20 per drumhead royalty rate from the rates of the three single-layer mesh licenses. Ms. Heinemann testified that the three licenses fell within a range of a "12 to \$14" royalty rate. J.A. 20837. The Pintech license provided for a royalty of 10% of net sales, which Ms. Heinemann converted to a \$9.24 per-unit rate. J.A. 15723; J.A. 20836–37. Ms. Heinemann then testified that "[t]here was a dispute between Pintech and Roland," and "Roland actually expected them to pay a little bit higher, something around \$12.66." J.A. 20837. But Ms. Heinemann failed to explain the basis for the \$12.66 figure, the circumstances underlying Roland's uncorroborated expectation of receiving a \$12.66 royalty instead of \$9.24, and why that expected rate was more probative than the \$9.24 rate that Ms. Heinemann testified Roland was "actually paid" under the agreement. *Id.*

Ms. Heinemann's testimony regarding the Hart license fares no better. That agreement set a royalty of 6% of gross sales, from which Ms. Heinemann calculated a per-unit rate of \$16.93. J.A. 15704–05; J.A. 20837. But without explanation, Ms. Heinemann concluded that this license, along with the others, fell within a range of \$12–14.<sup>17</sup>

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<sup>17</sup> Ms. Heinemann additionally testified that the Hart license provided for royalties on "replacement parts"

Moreover, the license to Guitar Center provided on its face for a \$12 per-unit royalty rate—at the bottom end of the \$12–14 range—leaving no explanation for how Ms. Heinemann arrived at the upper end of that range for the single-layer mesh licenses. J.A. 16919. Royalty rates that “appear[] to have been plucked from thin air . . . cannot be the basis for a reasonable royalty calculation.” *Finjan, Inc. v. Blue Coat Sys., Inc.*, 879 F.3d 1299, 1312 (Fed. Cir. 2018).

In addition to inadequately supporting the \$12–14 range for single-layer mesh drumheads, Ms. Heinemann failed to support her ultimate \$20 rate for the double-layer mesh at issue. Ms. Heinemann testified that Roland had never before licensed double-layer mesh, so she relied on Roland’s rejected offer to Guitar Center of a 50% premium to license double-layer mesh. J.A. 20837–38. In *Whitserve, LLC v. Computer Packages, Inc.*, we “acknowledge[d] proposed licenses may have some value for determining a reasonable royalty in certain situations.” 694 F.3d 10, 29–30 (Fed. Cir. 2012). Yet we also observed that the value of a proposed license may be limited “by, *inter alia*, the fact that patentees could artificially inflate the royalty rate by making outrageous offers.” *Id.* at 30. Here, even if we were to agree that this rejected license offer is probative evidence (which we need not decide), Ms. Heinemann never explained how, upon applying the 50% premium to her proposed \$12–14 range for single-layer mesh, she arrived at a reasonable royalty of \$20.

For each of these reasons, Roland “did not present to the jury a basis in fact to associate the royalty rates used in prior licenses to the particular hypothetical negotiation at issue in this case.” *Omega*, 13 F.4th at 1381 (cleaned

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for the licensed drumheads. J.A. 20837. We see no basis for this in the Hart license. But even if the Hart license did encompass replacement parts, Ms. Heinemann failed to explain how she accounted for that.

up). Because Ms. Heinemann offered a consolidated reasonable royalty opinion for infringement of both the asserted Drum Patents and Cymbal Patents, and the jury accordingly rendered a single reasonable royalty award, we must vacate the jury's entire award. Nevertheless, we also address a fatal flaw in Ms. Heinemann's reasonable royalty analysis for the Cymbal Patents because this legal issue is likely to arise again on remand. *See Trans-World Mfg. Corp. v. Al Nyman & Sons, Inc.*, 750 F.2d 1552, 1566 (Fed. Cir. 1984) (addressing an issue likely to recur in a damages retrial).

## 2. The Cymbal Patents

For a reasonable royalty to the Cymbal Patents, Ms. Heinemann similarly relied on several of Roland's prior licenses to arrive at a rate of \$2 per cymbal. Ms. Heinemann testified that she applied that rate to inMusic's cymbal sales from August 2010 through June 2021 to calculate her reasonable royalty figure. *See* J.A. 20873–74. On cross-examination, Ms. Heinemann admitted she was unaware that the accused cymbals considered and found to be infringing by the jury were the cymbals that inMusic redesigned in 2011. *See id.* inMusic argues that, accordingly, Ms. Heinemann “overstated her lump sum royalty opinion because it included cymbal units dating back to 2010.” Appellant's Br. 58. We agree, and for this reason as well vacate the award of reasonable royalties.

“As we have held, a reasonable royalty ‘cannot include activities that do not constitute patent infringement, as patent damages are limited to those “adequate to compensate for the infringement.”’” *Enplas Display Device Corp. v. Seoul Semiconductor Co., Ltd.*, 909 F.3d 398, 411 (Fed. Cir. 2018) (citation omitted). In *Enplas*, we vacated the jury's reasonable royalty award under similar circumstances. There, the patentee's expert “appl[ied] a royalty to lenses that were neither accused of infringement nor shown to



infringe.” *Id.* at 412. We explained that the expert’s damages calculation, based in part on non-infringing sales of non-accused products, “cannot support the jury’s damages award, for § 284 and our precedent proscribe awarding damages for non-infringing activity.” *Id.* at 411–12.

Roland does not dispute that Ms. Heinemann included in her calculation pre-redesign cymbal sales that were not found by the jury to infringe. Rather, it argues that “Ms. Heinemann addressed [those sales] during her cross-examination and even provided the jury the difference between her 2010 and 2011 calculations based on her review of inMusic’s monthly sales data.” Cross-Appellant’s Br. 58. Ms. Heinemann testified that “there were about 20,000 cymbals that were sold from August 2010 through March 2011,” which amounts to “about \$40,000 of royalties.” J.A. 20873. But the jury did not award damages less \$40,000. Further, Ms. Heinemann did not account for the precise timing of the redesign in 2011. Ms. Heinemann attempted to dismiss that issue on cross-examination by asserting that “you would just need to look at [inMusic’s monthly sales] data,” J.A. 20874, but the jury was not provided with that data. The only basis for the jury’s award was Ms. Heinemann’s original opinion calculating \$1.9 million of reasonable royalties, including non-infringing cymbal sales dating back to August 2010. As in *Enplas*, Roland cannot ensnare non-infringing sales into its damages award.<sup>18</sup>

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<sup>18</sup> Further, Ms. Heinemann testified that she used a hypothetical negotiation date of January 2010, rather than the time in 2011 when inMusic’s infringement of the Cymbal Patents began. *See* J.A. 20874–76; *LaserDynamics*, 694 F.3d at 75 (“In general, the date of the hypothetical negotiation is the date that the infringement began.”). On remand, Roland must account for the correct hypothetical

### C. Remedy

The parties dispute the appropriate remedy for damages. inMusic argues for JMOL of no damages, while Roland argues for a new trial. We believe the fairer option is to afford Roland a new trial on both lost profits and reasonable royalties. The district court imposed its time constraints on examination of the parties' damages experts shortly before Roland began its examination of Ms. Heine-mann. Roland's damages case may have suffered as a result of the unusually brief time it was afforded for expert examination. We therefore remand for a new trial on damages. Given that the district court will not face the same scheduling conflicts that led to the strict time limitations in the first trial, we expect that the court will afford the parties suitable time for examination of their experts in the retrial.<sup>19</sup>

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negotiation date “to discern the value of the patented technology to the parties in the marketplace when infringement began.” *Id.* at 76 (remanding for a new trial on damages pursuant to the correct hypothetical negotiation date). This includes consideration of whether, in light of the correct hypothetical negotiation date, there was a “changing technological and financial landscape in the market” that needs to be accounted for in relying on Roland's prior licenses to value the patented technology. *Id.* at 78.

<sup>19</sup> The district judge believed that the time it afforded was “a long time,” comparing it to the “very popular” 12-minute-long TED Talks. J.A. 20774. The length of a TED Talk, however, is not an appropriate benchmark for the presentation of expert testimony in a trial, let alone a patent trial with millions of dollars in damages at stake.

## VI. Equitable Estoppel

The last issue raised by inMusic is the district court's denial of inMusic's motion to bar the Cymbal Patent infringement claims due to equitable estoppel. In order to succeed on the defense, inMusic bore the burden of proving by a preponderance of the evidence, among other elements not relevant here, that "the patentee, through misleading conduct (or silence), le[d] the alleged infringer to reasonably infer that the patentee does not intend to enforce its patent[s] against the alleged infringer." *Radio Sys. Corp. v. Lalor*, 709 F.3d 1124, 1130 (Fed. Cir. 2013); *see A.C. Aukerman Co. v. R.L. Chaides Constr. Co.*, 960 F.2d 1020, 1041–43, 1046 (Fed. Cir. 1992) (en banc), *abrogated on other grounds by SCA Hygiene Prods. Aktiebolag v. First Quality Baby Prods., LLC*, 580 U.S. 328 (2017). We review the court's decision whether to apply equitable estoppel for abuse of discretion. *Radio Sys.*, 709 F.3d at 1130.

inMusic's theory of estoppel is that Roland knew about inMusic's redesigned cymbals in 2011 but did not complain to inMusic about that design until 2015. *See Equitable Estoppel Order*, 2023 WL 2424146, at \*2. Before the court was competing trial testimony of David Gill, an inMusic employee, and Ted Rittmaster, outside counsel for Roland. Mr. Gill testified that in 2011 he and other inMusic personnel had a call with Mr. Rittmaster, in which inMusic described its redesign and which left inMusic with "the opinion that [it] was going to be left alone." *Id.* (citation omitted); *see* J.A. 19830–31. Mr. Rittmaster, on the other hand, testified that in 2011 inMusic "represented to Roland that the . . . inMusic cymbals were being discontinued" and that Mr. Rittmaster never expressed to inMusic in writing or orally that Roland was not going to enforce the Cymbal Patents. J.A. 19635, 19667; *see Equitable Estoppel Order*, 2023 WL 2424146, at \*3. Without "additional evidence to corroborate either side's description of events," the competing testimony "essentially boil[ed] down to a 'he said, [he] said' situation." *Equitable Estoppel Order*, 2023 WL

2424146, at \*3 (second alteration in original). Thus, the court found that inMusic failed to prove by a preponderance that “Roland knew, in 2011, that inMusic’s redesigned cymbal products infringed Roland’s Cymbal Patents” and that “Roland misled inMusic into believing that inMusic’s infringement was permissible.” *Id.*

inMusic argues that the district court’s ruling conflicts with its separate order denying prejudgment interest to Roland. There, the court found that “Roland knew of inMusic’s accused cymbals as early as 2011” and “had approved the redesigned cymbals during a call with Mr. Gill in 2011.” *Prejudgment Interest Order*, 2023 WL 2441356, at \*1. But the court’s order did not cite any evidence for that finding nor even mention the testimony of Mr. Rittmaster. By contrast, when the court considered and weighed the relevant evidence in its equitable estoppel decision, it was unconvinced that Roland had misled inMusic. *See Equitable Estoppel Order*, 2023 WL 2424146, at \*2–3. We cannot say that the district court abused its discretion in denying inMusic’s equitable estoppel defense.<sup>20</sup>

## VII. Prejudgment Interest

Finally, we turn to Roland’s cross-appeal. Roland appeals the district court’s denial of Roland’s motion to amend the judgment to add prejudgment interest. “We

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<sup>20</sup> In its equitable estoppel order, the district court also cited to a declaration by Mr. Rittmaster. *Equitable Estoppel Order*, 2023 WL 2424146, at \*3. That same day, and in the very next docket entry, the court struck Mr. Rittmaster’s declaration as outside the trial record. *See* J.A. 224; J.A. 13233. The court erred by considering the stricken declaration. However, the error was harmless, for the court’s reliance on the parties’ competing trial testimony alone demonstrates that the court did not abuse its discretion in denying inMusic’s equitable estoppel defense.

review a district court's denial of prejudgment interest in patent cases for an abuse of discretion." *Kaufman v. Microsoft Corp.*, 34 F.4th 1360, 1373 (Fed. Cir. 2022).

We have previously explained that an "award of prejudgment interest is 'the rule, not the exception.'" *Energy Transp. Grp., Inc. v. William Demant Holding A/S*, 697 F.3d 1342, 1358 (Fed. Cir. 2012) (citation omitted); *see also Gen. Motors Corp. v. Devex Corp.*, 461 U.S. 648, 655–57 (1983); 35 U.S.C. § 284. Still, "it may be appropriate to limit prejudgment interest, or perhaps even deny it altogether, where the patent owner has been responsible for undue delay in prosecuting the lawsuit." *Gen. Motors*, 461 U.S. at 657. In order to "show that delay was undue, a defendant must, at least generally, show that it was prejudiced." *Kaufman*, 34 F.4th at 1375.

The district court denied prejudgment interest after finding that "Roland knew of inMusic's accused cymbals as early as 2011, yet Roland waited until 2015 to raise complaints about inMusic's cymbals' configuration, and waited until August 2016 to sue." *Prejudgment Interest Order*, 2023 WL 2441356, at \*1. The court concluded that Roland's delay was undue and "economically prejudiced inMusic because inMusic expanded its cymbals by incorporating them into newly launched kits while under the understanding that Roland had approved the redesigned cymbals during a call with Mr. Gill in 2011." *Id.* The court reasoned that "had Roland not sat on its hands during this years-long delay, inMusic could have taken remedial steps and could have dedicated resources to other non-infringing designs." *Id.* For two separate reasons, however, the district court abused its discretion in denying prejudgment

interest, requiring us to vacate its prejudgment interest order.<sup>21</sup>

First, the finding of undue delay based on the alleged call with Mr. Gill cannot be squared with the district court's findings and analysis of the evidence in its order denying inMusic's equitable estoppel defense. There, as explained above, the court found that the competing trial testimony of Mr. Gill and Mr. Rittmaster was insufficient for inMusic to prove Roland's knowledge of the infringing cymbals in 2011. *Equitable Estoppel Order*, 2023 WL 2424146, at \*3; *see supra* Discussion Section VI. Though the district court might permissibly rely on other evidence to find that Roland independently learned of the redesign prior to prosecuting its suit against inMusic (and hence, there could be undue delay to justify denying prejudgment interest, but no *misleading* conduct for purposes of equitable estoppel), the court cited no such evidence (or any evidence) in denying prejudgment interest. On remand, the court may not again limit or deny prejudgment interest to Roland absent analysis of how other evidence in the trial record supports a finding of undue delay.

Second, even if Roland knew of the redesign, the district court relied on an incorrect standard for prejudice. The court reasoned that inMusic was prejudiced because it expanded its cymbal line before Roland brought suit, whereas inMusic "could have" instead explored non-

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<sup>21</sup> We have already concluded we must vacate the damages award. Unless and until the district court makes another award of damages to Roland, there are currently no damages on which to base prejudgment interest. Nevertheless, we address the issues relating to the court's denial of prejudgment interest because they are likely to arise again upon another award of damages on remand. *See Trans-World Mfg. Corp. v. Al Nyman & Sons, Inc.*, 750 F.2d 1552, 1566 (Fed. Cir. 1984).

infringing cymbal designs. *Prejudgment Interest Order*, 2023 WL 2441356, at \*1. But speculation about what inMusic “*could* have [done] to not infringe” the Cymbal Patents, without “evidence that it *would* have” done so, is insufficient to demonstrate prejudice. *Kaufman*, 34 F.4th at 1375. The key question is whether, in the absence of Roland’s delay (if any), inMusic *would* have abandoned or further altered its cymbal line to avoid infringement. Each party argues undisputed facts that support an inference in their respective favor of what inMusic would have done. inMusic points to the fact that, when first accused of infringement by Roland in 2011, inMusic discontinued its initial cymbal design and redesigned the cymbals. See Appellant’s Response & Reply Br. 48–49. Roland points to the fact that inMusic simply continued to sell the accused cymbals even after Roland brought the instant action. See Cross-Appellant’s Reply Br. 7. We remand for the district court to resolve this factual dispute—specifically, what inMusic would have done absent any delay by Roland—and to determine whether inMusic demonstrated prejudice sufficient to limit or deny prejudgment interest to Roland.<sup>22</sup>

#### CONCLUSION

We have considered the parties’ remaining arguments but find them unpersuasive. Because we affirm the judgment of liability, we dismiss the portion of Roland’s cross-appeal conditioned on our vacating or reversing on liability. Thus, we *affirm in part, reverse in part, vacate in part*,

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<sup>22</sup> The district court’s denial of prejudgment interest was also based solely on Roland’s purported knowledge of the accused *cymbals* and delay in prosecuting its suit with respect to infringement of the Cymbal Patents. On remand, to the extent that Roland seeks, and the jury awards, separate damages for infringement of the Drum Patents, the district court should not limit or deny prejudgment interest with respect to that category of damages.

*dismiss in part*, and *remand* for a new trial on damages consistent with this opinion.

**AFFIRMED-IN-PART, REVERSED-IN-PART,  
VACATED-IN-PART, DISMISSED-IN-PART, AND  
REMANDED**

COSTS

No costs.