

**United States Court of Appeals
for the Federal Circuit**

TEK GLOBAL, S.R.L., TEK CORPORATION,
Plaintiffs-Appellees

v.

**SEALANT SYSTEMS INTERNATIONAL, INC., ITW
GLOBAL TIRE REPAIR,**
Defendants-Appellants

2017-2507

Appeal from the United States District Court for the
Northern District of California in Nos. 3:11-cv-00774-VC,
5:11-cv-01649-PSG, Judge Vince Chhabria.

Decided: March 29, 2019

DANIEL E. JACKSON, Keker, Van Nest & Peters LLP,
San Francisco, CA, argued for plaintiffs-appellees. Also
represented by ASHOK RAMANI, Davis Polk & Wardwell
LLP, Menlo Park, CA.

STANLEY MARTIN GIBSON, Jeffer Mangels Butler &
Mitchell, Los Angeles, CA, argued for defendants-appel-
lants. Also represented by JESSICA PAULINE GANS
NEWMAN, ANDREW I. SHADOFF; GREGORY S. CORDREY, Ir-
vine, CA.

Before PROST, *Chief Judge*, DYK and WALLACH,
Circuit Judges.

PROST, *Chief Judge*.

Following a jury trial finding Sealant Systems International and ITW Global Tire Repair (collectively, “SSI”) liable to TEK Corporation and TEK Global, S.R.L. (collectively, “TEK”) for infringement of U.S. Patent No. 7,789,110 (“the ’110 patent”), SSI appeals several pre- and post-judgment orders from the United States District Court for the Northern District of California. Specifically, SSI appeals the district court’s claim construction order and its orders denying SSI’s motions for a new trial and judgment as a matter of law (“JMOL”) on invalidity, non-infringement, and damages. SSI also challenges the district court’s permanent injunction.

Because the district court improperly restricted SSI’s efforts to present the jury with relevant evidence of invalidity, we vacate the court’s final judgment as to validity and reverse its denial of SSI’s motion for partial new trial on validity. In the interest of judicial economy, we also reach the remaining issues on appeal. We affirm on those issues in the event the ’110 patent is found not invalid following the new trial.

BACKGROUND

SSI is an original equipment manufacturer (“OEM”): a manufacturer who resells another company’s products under its own name and branding. TEK sells tire repair kits to various OEMs and owns the ’110 patent. The ’110 patent is directed to an emergency kit for repairing vehicle tires deflated by puncture. ’110 patent col. 1 ll. 41–50. When TEK filed the ’110 patent, a common way to handle a flat tire was to simply replace it with a spare tire. Housing spare tires outside or inside vehicles, however, poses several well-known problems, such as reducing available

space in the vehicle, increasing the weight of the vehicle, heightening exposure to tire theft, and compounding the sheer difficulty of changing the tire. *Id.* at col. 1 ll. 21–43. Because the repair kit disclosed in the '110 patent comprises a small compressor and a container of sealing liquid to mend the hole, it is intended to serve as a smaller, lighter, and less complicated alternative to conventional spare tires. *Id.* at col. 1 ll. 36–40.

In November 2010, TEK sued SSI for infringing claims 26, 28, and 31 of the '110 patent. Only claim 26 is independent:

26. A kit for inflating and repairing inflatable articles; the kit comprising a compressor assembly, a container of sealing liquid, and conduits connecting the container to the compressor assembly and to an inflatable article for repair or inflation, said kit further comprising an outer casing housing said compressor assembly and defining a seat for the container of sealing liquid, said container being housed removably in said seat, and additionally comprising a container connecting conduit connecting said container to said compressor assembly, so that the container, when housed in said seat, is maintained functionally connected to said compressor assembly, said kit further comprising an additional hose cooperating with said inflatable article; and a three-way valve input connected to said compressor assembly, and output connected to said container and to said additional hose to direct a stream of compressed air selectively to said container or to said additional hose.

'110 patent, claim 26.

During claim construction proceedings, SSI argued before the magistrate judge that certain terms in claim 26—“conduits connecting the container” and “container connecting conduit”—should be construed as means-plus-

function limitations under 35 U.S.C. § 112, ¶ 6 because the term “conduit” is a nonce word. In August 2012, the magistrate judge rejected that contention and entered an order construing these terms as “hoses and associated fittings connecting the container to the compressor assembly and to an inflatable article for repair or inflation” and “a hose and associated fittings for connecting the container to the compressor assembly,” and respectively. J.A. 57–58.

Following claim construction, SSI moved for summary judgment of invalidity, arguing that claim 26 was obvious over U.S. Patent Application No. 2003/0056851 (“Eriksen”) in view of Japanese Patent No. 2004-338158 (“Bridgestone”). The district court granted SSI’s motion in March 2014. *See SSI Sys. Int’l, Inc. v. TEK Global, S.R.L.*, 929 F. Supp. 2d 971, 974 (N.D. Cal. 2013) (“*SSI I*”). In its order, the district court determined that the term “additional hose cooperating with said inflatable article” did not require a direct connection between the additional hose and the inflatable article. *Id.* at 978. The court further determined that Bridgestone discloses an air tube (54) that works together with a tire, even though it is not directly connected to the tire, and that air tube (54) therefore represents the element of an additional hose (83) cooperating with the tire. *Id.*

TEK appealed the district court’s order to this court. On appeal, we reversed the district court’s construction of the “cooperating with” limitation and its subsequent invalidity determination. *Sealant Sys. Int’l, Inc. v. TEK Global, S.R.L.*, 616 F. App’x 987, 993 (Fed. Cir. 2015) (“*SSI II*”). We determined that “cooperating with,” in the context of the ’110 patent, required a direct connection between the additional hose and the inflatable article. *Id.* Accordingly, we explained that “[u]nder the proper construction of ‘cooperating with,’ . . . Bridgestone does not disclose an ‘additional hose cooperating with’ the tire because air tube 54 is not directly connected to the tire.” *Id.* at 995. Thereafter, we reached the following conclusions: (1) “[N]either

Bridgestone nor Eriksen teach[es] the use of ‘an additional hose . . . cooperating with’ the tire,” *id.* at 996; (2) “Based on its erroneous interpretation of claim scope, the district court erred in determining that [SSI] . . . demonstrated by clear and convincing evidence that a [POSITA] would have had reason to combine the teachings of Eriksen and Bridgestone to achieve the claimed invention,” *id.* at 995–96 (internal quotation marks, brackets, and emphasis omitted); and (3) “In light of these differences, the district court clearly erred in finding Bridgestone disclosed the element of an ‘additional hose . . . cooperating with’ the tire,” *id.* at 995.

This court then remanded the case back to the district court, explaining that because SSI “has not had an opportunity to make a case for invalidity in light of this court’s claim construction,” a “remand is therefore required.” *Id.* at 996. On remand, SSI again moved for summary judgment of invalidity, J.A. 84, contending that “it would have been obvious . . . to modify Bridgestone to eliminate the second three-way valve (60) and joint hose (66), resulting in a conventional tire repair kit meeting the limitations of the claims of the 110 Patent,” Appellants’ Br. 10–11. At the summary judgment hearing, the magistrate judge struggled to interpret this court’s holding in *SSI II*:

So this is a challenge I have, or trouble I have reading the Federal Circuit’s opinion. On the one hand they say there’s only a single issue here, which is, do either of these references teach an additional hose cooperating with the tire. They held, under their construction, which by definition is the proper construction, that neither reference teaches that particular limitation. They then go on in the next paragraph to say, but you can try again, defendants, on remand. So what space or gap is left between those, if anything?

J.A. 4047–48. The magistrate judge also grappled with this court’s remand directive:

[O]n remand . . . the Federal Circuit was giving defendants another shot with other references, but as to Bridgestone and Eriksen, there’s no gap there, right? They’ve essentially foreclosed this. Whether they intended to or not, I have to apply what they wrote, don’t I?

J.A. 4048.

In May 2016, following the hearing, the magistrate judge denied SSI’s motion, noting that “the Federal Circuit has already considered and rejected obviousness in light of the combination of Eriksen and Bridgestone,” J.A. 159, and that “[i]t said, without qualification and after specifically considering the same sections that Defendants point to now, that ‘neither Bridgestone nor Eriksen teach[es] the use of an additional hose . . . cooperating with the tire,’” J.A. 160.

The district court held a four-day trial in March 2017. The jury ultimately found claims 26, 28, and 31 of the ’110 patent infringed and not invalid. J.A. 2040–42. TEK presented both lost profits and reasonable royalty damages theories. The jury awarded \$2,525,482 in lost profits and \$255,388 in the form of a reasonable royalty for infringing sales for which TEK did not prove its entitlement to lost profits. J.A. 2045.

Following trial, SSI moved for a new trial on damages (or remittitur) and for JMOL on damages, invalidity, and noninfringement. The district court denied SSI’s motions for a new trial and for JMOL on invalidity and noninfringement. J.A. 4–5. As to SSI’s motion for JMOL on damages, the district court denied the motion with respect to lost profits and granted it with respect to reasonable royalty. J.A. 5–6. The district court also granted TEK’s motion for a permanent injunction. J.A. 8–9.

SSI timely appealed to this court. J.A. 3775. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

DISCUSSION

I. Standards of Review

Denial of post-trial motions for JMOL and new trial are not unique to patent law; thus, we review them under regional circuit law—here, the Ninth Circuit. *See Wordtech Sys., Inc. v. Integrated Networks Sols., Inc.*, 609 F.3d 1308, 1312 (Fed. Cir. 2010). The Ninth Circuit reviews an order denying JMOL de novo. *Wechsler v. Macke Int’l Trade, Inc.*, 486 F.3d 1286, 1290 (Fed. Cir. 2007) (applying Ninth Circuit law). The district court’s JMOL determination therefore must be affirmed if substantial evidence supports the jury’s verdict. *See Revolution Eyewear, Inc. v. Aspex Eyewear, Inc.*, 563 F.3d 1358, 1370 (Fed. Cir. 2009) (applying Ninth Circuit law). “Substantial evidence is relevant evidence reasonable minds might accept as adequate to support the jury’s conclusion, even if it is also possible to draw a contrary conclusion.” *Id.*

The Ninth Circuit reviews an order denying a new trial for abuse of discretion. The denial is irreversible unless the record contains no evidence in support of the verdict or the district court committed legal error. *Molski v. M.J. Cable, Inc.*, 481 F.3d 724, 729 (9th Cir. 2007). Likewise, we review the district court’s ultimate decision to grant an injunction and its conclusion on each *eBay* factor for abuse of discretion. *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 391 (2006) (describing equitable requirements for injunctive relief); *i4i Ltd. P’ship v. Microsoft Corp.*, 598 F.3d 831, 861 (Fed. Cir. 2010). But factual findings made in support of the injunction are reviewed for clear error. *Acumed LLC v. Stryker Corp.*, 551 F.3d 1323, 1327 (Fed. Cir. 2008).

We apply Federal Circuit case law when reviewing issues of patent law. *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1214 (Fed. Cir. 2014). Claim construction is an

issue of law reviewed de novo. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1346 (Fed. Cir. 2015) (“Regarding questions of claim construction, including whether claim language invokes 35 U.S.C. § 112, para. 6, the district court’s determinations based on evidence intrinsic to the patent as well as its ultimate interpretations of the patent claims are legal questions that we review de novo.”). Infringement is an issue of fact reviewed for substantial evidence. *Braun Inc. v. Dynamics Corp. of Am.*, 975 F.2d 815, 819 (Fed. Cir. 1992) (explaining that “the jury’s finding of infringement must be upheld if it is supported by substantial evidence”).

II. Invalidity

SSI argues that TEK is not entitled to relief because the claims are invalid. *Medtronic, Inc. v. Cardiac Pacing, Inc.*, 721 F.2d 1563, 1583 (Fed. Cir. 1983) (“[A]n invalid claim cannot give rise to liability for infringement . . .”). Specifically, SSI avers that had the district court allowed it to present to the jury its obviousness theory based on Eriksen in view of Bridgestone, the jury would have found the asserted claims invalid.

As previously mentioned, the district court determined that, based on our decision in *SSI II*, Bridgestone and Eriksen do not disclose an additional hose cooperating with the inflatable article. Consequently, the district court instructed the jury that it was “not permitted to conclude that Bridgestone or Eriksen, alone or in combination with one another, discloses this requirement of [c]laim 26.” J.A. 2014–15.

The district court apparently interpreted *SSI II* to foreclose all obviousness theories based on Eriksen in view of Bridgestone. But taken in context, *SSI II* does not go so far. In *SSI II*, SSI raised only one obviousness theory. That theory was based on the contention that the air tube 54 in the Bridgestone reference met the “additional hose” limitation in claim 26 of the ’110 patent. *SSI II*, 616

F. App'x at 995. It was the only obviousness theory that *SSI II* foreclosed, and the district court should not have barred SSI from presenting to the jury other preserved obviousness theories based on the combination of Eriksen and Bridgestone that were not before this court in *SSI II*. To that end, we agree with SSI that a partial new trial on validity is appropriate here.

While we decline to reverse the district court's denial of JMOL of invalidity, we reverse the district court's denial of SSI's motion for a partial new trial on validity. The district court is therefore directed to grant SSI a new trial limited to determining the issue of validity on an appropriate evidentiary record. In view of this decision, we do not reach SSI's remaining arguments related to invalidity.¹

III. Infringement

SSI next argues that this court should reverse the district court's denial of JMOL of noninfringement. Specifically, SSI avers that claim 26 requires certain elements—i.e., a fast-fit coupling and an outer casing that connects the container to the compressor—that the accused product

¹ We do note, however, that caution is advisable for purposes of retrial. The district court appears to have allowed TEK to present evidence to the jury concerning a non-institution decision by the PTAB solely because SSI informed the jury that the examiner did not have access to a particular prior art reference when he allowed the asserted patent. J.A. 7. The jury here was certainly allowed to consider “evidence that the PTO had no opportunity to evaluate before granting the patent.” *Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91, 111 (2011). Such evidence—properly limited to the context of pre-issuance examination—does not by itself necessarily suggest, warrant, or invite introduction of evidence concerning a related, non-institution decision.

allegedly lacks. Appellants’ Br. 1–2; Reply Br. 17–23. SSI argues in the alternative that this court should reverse the district court’s denial of SSI’s motion for a new trial on infringement. SSI claims that it was prejudiced by the district court’s decision to allow TEK to compare the accused product to the patented product. Appellants’ Br. 17.

A. Claim Construction

An accused product infringes a claim if it embodies each claim element or its equivalent. *Jeneric/Pentron, Inc. v. Dillon Co.*, 205 F.3d 1377, 1380 (Fed. Cir. 2000). Before we address SSI’s argument that the accused products do not embody certain claim limitations, we first consider whether the district court properly construed those limitations. As noted above, we review the district court’s claim construction de novo, and any underlying factual findings based on extrinsic evidence for clear error. *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015).

1. Fast-fit coupling

SSI argues that “conduits connecting the container” and “container connecting conduit” should be construed as means-plus-function limitations under 35 U.S.C. § 112, ¶ 6 because the term “conduit” is a nonce word. Appellants’ Br. 21–22. According to SSI, when properly construed as a means-plus-function claim, claim 26 requires a fast-fit coupling, which the accused product lacks. Reply Br. 19.

The district court, however, determined that § 112, ¶ 6 did not apply because the term “conduit” recites “a structure that would be understood by one skilled in the art and in light of the claim language.” J.A. 59 (citing *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed. Cir. 1996) (providing examples of nouns derived from their functions that still designate structure such as “clamp,” “container,” and “lock”)). The court further found that the prosecution history suggested that the disputed limitation was not means-plus-function language because it

“establishes that the language in the original claims was rewritten to avoid means-for language.” *Id.*

Paragraph 6 does not apply when “the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.” *See Diebold Nixdorf, Inc. v. ITC*, 899 F.3d 1291, 1297 (Fed. Cir. 2018). As a procedural matter, to determine whether § 112, ¶ 6 applies to a claim limitation, we first look to whether the limitation uses the word “means.” *Id.* at 1297–98. If not, which is the case here, “there is a rebuttable presumption that [§ 112, ¶ 6] does not apply.” *Id.* at 1298. The presumption, however, can be overcome “if the challenger demonstrates that the claim term fails to ‘recite sufficiently definite structure.’” *Id.* (quoting *Williamson*, 792 F.3d at 1349). For example, in *Williamson*, we said that “[g]eneric terms such as ‘mechanism,’ ‘element,’ ‘device,’ and other nonce words that reflect nothing more than verbal constructs may be used in a claim in a manner that is tantamount to using the word ‘means’ because they ‘typically do not connote sufficiently definite structure’ and therefore may invoke § 112, para. 6.” 792 F.3d at 1350 (quoting *Mass. Inst. of Tech. v. Abacus Software*, 462 F.3d 1344, 1354 (Fed. Cir. 2006)).

To determine whether the claim limitation at issue connotes sufficiently definite structure to a person of ordinary skill in the art, we look first to intrinsic evidence, and then, if necessary, to the extrinsic evidence. *See Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

The intrinsic record comprises the claims, the specification, and the prosecution history. *See TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc.*, 529 F.3d 1364, 1369 (Fed. Cir. 2008). Starting with the claims, claim 26 recites the “conduits connecting the container to the compressor assembly and to an inflatable article.” ’110 patent, claim 26. SSI does not dispute that the elements connected via the conduits—i.e., the container, the compressor assembly,

and the inflatable article (e.g., a tire)—each comprise definite structure. And the district court determined that the term “conduit” recites “a structure” in light of the claim language. J.A. 59. Although connoting precise physical structure is not a necessary condition to avoid § 112, ¶ 6 application, *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1370 (Fed. Cir. 2002), it is generally sufficient, *Enviroco Corp. v. Clestra Cleanroom, Inc.*, 209 F.3d 1360, 1365 (Fed. Cir. 2000). We conclude that the language of claim 26, in and of itself, does not indicate that § 112, ¶ 6 should apply.

Even more, the dependent claims suggest that § 112, ¶ 6 does not govern. Indeed, they “add limitations that either describe particular structural features or flesh out whether the term has a particular structural meaning.” *Diebold*, 899 F.3d at 1298. For example, dependent claim 27 recites “at least one of said conduits . . . comprises a hose.” ’110 patent col. 8 ll. 12–14. And SSI does not dispute that the “hose” disclosed in the ’110 patent is structural.

Considering the specification next, we conclude that the ’110 patent clearly contemplates a conduit having physical structure. Indeed, the disclosed conduits serve to physically connect a container of sealing liquid to a compressor and to connect the compressor to tires such that “[t]he liquid is fed into the [tire] for repair by means of compressed air, e.g., by means of a compressor.” ’110 patent col. 1 ll. 13–14. According to the specification:

[T]he container of sealing liquid is connected to the compressor and to the valve of the tyre for repair and the compressor is started to feed the liquid into the tyre. For this purpose, the container normally has a dispenser unit comprising an inlet *conduit* and an outlet *conduit* connected respectively, by respective *conduits*, to the compressor and the valve of the tyre for repair.

’110 patent col. 1 ll. 44–50 (emphasis added).

Now reaching the prosecution history, we note that generally, “[t]he subjective intent of the inventor when he used a particular term is of little or no probative weight in determining the scope of a claim,” but that is not necessarily true when the intent is “*documented in the prosecution history.*” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 985 (Fed. Cir. 1995) (en banc) (emphasis added). The district court determined that the prosecution history establishes that the applicant intended for the term “conduit” to avoid the application of § 112, ¶ 6. J.A. 59. We agree. When adding new claim 26 to its patent application, the applicant explained that “[n]ew claim 26 is similar to claim 10 but defines the connections in structural terms rather than ‘means for’ language.” J.A. 58 & n.91, 5505. And even SSI does not dispute that the applicant’s intent is evidenced by the prosecution history. *See* Appellants’ Br. 22 (“[D]uring prosecution the applicant attempted to evade the application of § 112, ¶ 6 . . .”).

Extrinsic evidence also supports our conclusion. For example, dictionary definitions at or around the time of the invention confirm that the noun “conduit” denoted structure with “a generally understood meaning in the mechanical arts.” *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed. Cir. 1996) (explaining that the dictionary definition of “detent” shows that a person skilled in the art would understand the term to connote structure); Webster’s Third New International Dictionary 474 (1993) (defining “conduit” as “a natural or artificial channel through which water or other fluid passes or is conveyed: aqueduct, pipe”); The New Oxford American Dictionary 358 (2001) (defining “conduit” as “a channel for conveying water or other fluid”).

We thus conclude that the intrinsic and extrinsic evidence in this case establishes that the term “conduit” recites sufficiently definite structure to avoid classification as a nonce term and agree with the district court that SSI did

not meet its burden to overcome the presumption against applying § 112, ¶ 6.

2. Outer casing connected to compressor

SSI argues that because claim 26 requires that the “seat is part of the outer casing[,] . . . the outer casing connects the container to the compressor.” Reply Br. 21; *see* Appellants’ Br. 23. TEK characterizes this argument as a waived claim construction challenge. Appellees’ Br. 22. SSI denies, however, that this argument challenges the district court’s claim construction at all. Reply Br. 19 (“TEK mischaracterizes SSI’s outer casing argument as one of claim construction. It is not.” (citation omitted)). In fact, SSI claims to accept the district court’s determination that “an outer casing . . . defining a seat for the container of the sealing liquid,” as recited in claim 26, should be given its plain and ordinary meaning. *Id.* (discussing claim construction order). But SSI toes a fine line. It argues that “the *plain language* of claim 26 states that the outer casing defines a seat for the sealant container and that the seat functionally connects the container to [the] compressor.” Reply Br. 19–20 (emphasis added).

We need not reach the waiver issue, though, because the district court explicitly rejected SSI’s interpretation of the plain and ordinary meaning of the challenged term. Specifically, the court found that SSI’s position—that is, “when the container is housed in the seat, it is maintained ‘functionally connected’ to the compressor assembly”—is “based on an incomplete reading of the claim language.” J.A. 48. The court concluded that it would be “improper to import this function into the definition of what in the patent is a structure only.” J.A. 49.

Because the district court expressly rejected SSI’s interpretation when it determined that the term should have its plain and ordinary meaning, J.A. 48–49, and SSI does not appeal the district court’s claim construction order rejecting its interpretation of the plain and ordinary

meaning, our inquiry is limited to whether substantial evidence supports the jury's infringement verdict under the issued claim construction. *See Finjan, Inc. v. Blue Coat Sys., Inc.*, 879 F.3d 1299, 1306 (Fed. Cir. 2018). It does. The jury properly applied the district court's construction, requiring only that the seat be contained in the outer casing. *See* J.A. 48.

As the district court did not misconstrue any claim terms challenged here on appeal, we do not reach whether the accused product infringes the asserted claims under SSI's posited constructions. Furthermore, in the event that the '110 patent is found not invalid, we decline to disturb the district court's denial of JMOL of noninfringement.

B. Product-to-Product Comparison

SSI argues that the district court legally erred by allowing TEK, over SSI's objections, to compare the accused product to TEK's commercial embodiment during its closing argument. For support, SSI points us to *Zenith Laboratories, Inc. v. Bristol-Myers Squibb Co.*, where this court admonished against deciding the issue of infringement by comparing the accused device to the commercial embodiment. 19 F.3d 1418, 1423 (Fed. Cir. 1994) ("As we have repeatedly said, it is error for a court to compare in its infringement analysis the accused product or process with the patentee's commercial embodiment or other version of the product or process; the only proper comparison is with the claims of the patent.").

We certainly agree with SSI's assertion that to infringe, the accused product must meet all the limitations of the claim. But "when a commercial product meets all the claim limitations, then a comparison [of the accused product] to that [commercial] product may support a finding of infringement." *Adams Respiratory Therapeutics, Inc. v. Perrigo Co.*, 616 F.3d 1283, 1289 (Fed. Cir. 2010). Here, SSI's own expert, Dr. King, acknowledged that he understood the TEK device to be an "embodying device" and to

“practice[] the ’110 Patent.” J.A. 4880:15–17 (King cross-examination trial testimony). Certain statements made by SSI’s former executive, TEK’s counsel, and the inventor also suggest that TEK’s device is the commercial embodiment of the ’110 patent.

Thus, we cannot say that the district court abused its discretion by allowing the jury to hear the indirect product-to-product comparison. To be sure, district courts in the Ninth Circuit retain broad discretion in controlling closing argument. “Generally, a district court’s decision to overrule an objection raised during closing argument, and its denial of a motion for a mistrial, are reviewed for an abuse of discretion.” *United States v. Navarro*, 608 F.3d 529, 532 (9th Cir. 2010) (footnotes omitted). Here, the district court overruled SSI’s objections to certain alleged product-to-product comparisons in TEK’s closing argument because it determined that “SSI and its expert invited a product-to-product comparison by identifying TEK’s product as an embodiment of the invention, then drawing a contrast (albeit an unconvincing one) with SSI’s product.” J.A. 6 (Order re post-trial motions). In the district court’s view, TEK merely responded to SSI’s product-to-product comparison “by demonstrating that TEK’s product didn’t perform the way SSI’s expert described.” J.A. 7.

Although SSI insists that it did not compare SSI’s kit with TEK’s kit, we disagree. On direct examination, SSI’s counsel asked SSI’s former executive, Mr. Mueller, to testify about how the sealant container connects to the compressor in *TEK’s* kit. J.A. 4751:11–17 (Q: “Using Tek’s tire repair kit that you have in front of you there, can you explain to the jury how the compressor is connected to the sealant container?” A: “Yes. So the sealant bottle is here (indicating), and it -- it connects to the compressor. There’s a recess in the outer casing here (indicating) that this bottle sets into, and then given a half twist, and it engages.”).

Additionally, SSI's expert, Dr. King, explained to the jury during his cross examination that figure 2 of the '110 patent illustrates the sealant container's connection to the compressor via the seat in the outer casing. J.A. 4834:11–4835:1. SSI claims that it “compared its kits to the figures in the '110 Patent to illustrate that SSI did not infringe the patent.” Reply Br. 17. “But infringement is to be determined by comparing the asserted claim to the accused device, *not by comparing the accused device to the figures of the asserted patent.*” *Catalina Lighting, Inc. v. Lamps Plus, Inc.*, 295 F.3d 1277, 1286 (Fed. Cir. 2002) (emphasis added). Because figure 2 depicts an embodiment of the patented invention, we conclude that SSI itself compared the accused product to a disclosed embodiment.

To rebut SSI's characterization of the disclosed embodiment and of TEK's kit, TEK's counsel cross-examined Dr. King about his testimony. *See generally* J.A. 4880. In pertinent part, TEK's counsel assembled a physical, broken-down version of the TEK kits while Dr. King held the kit's outer casing in his hand. J.A. 4881:3–25. TEK's counsel ostensibly tried to show the jury that, contrary to Dr. King's testimony, the compressor and sealant container were directly and functionally connected without the presence of the outer casing, which Dr. King held in his hand. J.A. 4882:2–25. SSI did not object to this line of questioning at that time.

Yet when TEK's counsel attempted to remind the jury about this demonstration in his rebuttal closing argument, SSI objected to the argumentation as improper product-to-product comparison:

TEK's counsel: Now, you recall you saw a demonstration of this, when I asked Dr. King on cross-examination to come down here and stand before you.

SSI's counsel: This is going to be comparing product to product, which is against the Jury Instructions and the law, Your Honor.

Court: Overruled.

J.A. 5082:4–10 (TEK’s Rebuttal Argument). To clarify the purpose of his questions, TEK’s counsel explained to the jury that “this is not an attempt to compare the products[,] [b]ut because this product practices the patent, you saw, yourselves, that the outer casing has nothing to do with connecting the sealant and the compressor. The same is true of the Accused Products.”). J.A. 5082:24–5083:3.

The district court, in its discretion, determined that the indirect comparison between TEK’s product and SSI’s product, in the context that it occurred, was not cause for a new trial. J.A. 6. We agree—especially in view of the district court’s instruction directing the jury not to perform a product-to-product comparison to decide the issue of infringement. J.A. 5006:24–5007:4 (Jury Instructions) (“You’ve heard evidence about both TEK’s product and SSI’s product. However, in deciding the issue of infringement, you may not compare SSI’s Accused Product to TEK’s product. Rather, you must compare SSI’s Accused Product to the claims of the ’110 Patent when making your decision regarding patent infringement.”).

We consider the district court’s cautionary instructions sufficient to mitigate any potential jury confusion or substantial prejudice to SSI due to the apparent product-to-product comparison. *Medtronic Navigation, Inc. v. BrainLAB Medizinische Computersysteme GmbH*, 603 F.3d 943, 962 (Fed. Cir. 2010) (holding that the jury instruction sufficiently addressed concerns about jury confusion resulting from a product-to-product comparison). Because the district court did not abuse its discretion, we decline to reverse its denial of SSI’s motion for a new trial on infringement.

IV. Remedy

Lastly, SSI argues that even if the ’110 patent is valid and infringed, substantial evidence does not support the jury’s lost profits award and that the district court abused

its discretion by permanently enjoining SSI. SSI's arguments are unpersuasive.

A. Damages

SSI solicits reversal of the district court's denial of SSI's motion for JMOL denying lost profits because TEK allegedly failed to prove all four *Panduit* factors. The *Panduit* test, first articulated by the Sixth Circuit, is "[o]ne 'useful, but non-exclusive' method to establish the patentee's entitlement to lost profits." *Mentor Graphics Corp. v. EVE-USA, Inc.*, 851 F.3d 1275, 1284 (Fed. Cir. 2017) (quoting *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 1545 (Fed. Cir. 1995) (en banc)). Under *Panduit Corp. v. Stahlin Bros. Fibre Works, Inc.*, a patentee is entitled to lost profits if it can establish four things: (1) demand for the patented product, (2) absence of acceptable, non-infringing alternatives to the patented product, (3) manufacturing and marketing capability to exploit the demand for the patented product, and (4) that the patentee would have made a profit if it had made the infringer's sales. 575 F.2d 1152, 1156 (6th Cir. 1978).

SSI contends that TEK failed to establish the third and fourth *Panduit* factors. The district court disagreed, reasoning that substantial evidence supports the jury's award of lost profits to TEK based on infringing sales to General Motors ("GM") because "[t]he jury could reasonably infer manufacturing capacity from TEK's prior activities, . . . it could reasonably infer marketing capability from TEK's known presence in the market," and it could "reasonably rely on [TEK's damages expert's] profits calculations." J.A. 4–5.

We review de novo the district court's denial of JMOL on lost profits. *Presidio Components, Inc. v. Am. Tech. Ceramics Corp.*, 702 F.3d 1351, 1358–59 (Fed. Cir. 2012) (applying Ninth Circuit law to review the district court's denial of JMOL on lost profit damages). To prevail, SSI must therefore show that substantial evidence does not

support the jury's fact findings or that the court erred in applying the law on SSI's motion for JMOL. *See DSU Med. Corp. v. JMS Co.*, 471 F.3d 1293, 1309 (Fed. Cir. 2006) (applying Ninth Circuit law).

Like the district court, we conclude that substantial evidence supports the jury's lost profits award. As an initial matter, we note that the market appears to have been limited to two suppliers at the time SSI made its infringing sales. *State Indus., Inc. v. Mor-Flo Indus., Inc.*, 883 F.2d 1573, 1578 (Fed. Cir. 1989) ("In the two-supplier market, it is reasonable to assume, provided the patent owner has the manufacturing and marketing capabilities, that it would have made the infringer's sales."). Several witnesses testified that SSI and TEK were head-to-head competitors and that TEK lost sales of its tire-repair kits to SSI. For example, Mr. Smith, an SSI research and development employee, testified that SSI competed against TEK for GM's business. J.A. 4690:11–13. He also testified that securing the tire repair kit contract with GM, despite competition from TEK, was a success for SSI. J.A. 4689:10–24.

Further, TEK's Chief Operating Financial Officer, Mr. Petrelli, testified that SSI was TEK's only competitor until 2014. J.A. 4983:6–15. And TEK's managing director, Mr. Matuszynski, testified that TEK would have been able to sell its product if SSI had not sold the accused product because "TEK Corporation has been providing General Motors with a hundred percent of the product in North America" until GM awarded business to SSI." J.A. 1704.

As to manufacturing capability, the district court concluded that the jury could reasonably infer manufacturing capacity from TEK's prior activities. *See Yarway Corp. v. Eur-Control USA, Inc.*, 775 F.2d 268, 276–77 (Fed. Cir. 1985) (confirming that past business practices and relationships are probative of the ability to meet demand). We agree. In our view, substantial evidence supports that TEK's losses are not speculative. *State Indus.*, 883 F.2d at

1579 (upholding district court’s finding of manufacturing capacity in view of head-to-head competition, national recognition, and real sales losses). For example, the inventor of the ’110 patent, Mr. Marini, testified that TEK “lost a lot of business” to SSI, J.A. 4431:11–24, and that TEK has “300 people working every day: Engineering, manufacturing, logistics,” 4431:20–23. And TEK’s damages expert, Dr. Mody, testified that based on the deposition transcripts, reports, financial documents, and conversations with TEK’s CFO, J.A. 4585:21–4586:5, TEK had the capacity to make the sales that SSI made, J.A. 4591:14–21. Moreover, as mentioned above, Mr. Matuszynski testified that TEK had been providing GM with one hundred percent of its North American product before SSI entered the marketplace. J.A. 1704.²

As to the factor of the *Panduit* test directed to profit generation, substantial evidence supports the jury’s finding that TEK would have made a profit if it had made SSI’s sales. Dr. Mody, TEK’s damages expert, testified that she calculated TEK’s lost profits by multiplying SSI’s sales base to TEK’s “incremental profit margin.” J.A. 4592:9–15. She further testified that TEK lost \$2,525,483.00 of profit from SSI’s infringing sales. J.A. 4594:18–4695:2. SSI

² Although SSI argued in its opening brief that there is “no evidence that TEK Corporation had the capacity to either market or sell any or all of those [additional] tire repair kits,” Appellants’ Br. 36 (emphasis omitted), it appears that SSI now concedes this argument. In response to TEK’s argument that the inventor, Mr. Marini, “testified about TEK’s marketing efforts, and even played one of TEK’s marketing videos for the jury,” Appellees’ Br. 42, SSI acknowledged that Mr. Marini’s testimony was directed to TEK’s marketing capability, Reply Br. 5. And SSI has not presented any further challenges to TEK’s marketing capabilities.

cross-examined Dr. Mody at trial about her damages methodology. J.A. 4612:15–4620:14. Yet the jury rejected SSI’s criticisms at the end of the day and awarded TEK lost profits consistent with Dr. Mody’s opinion. J.A. 2040 (verdict form). We agree with the district court that the jury could reasonably rely on Dr. Mody’s profits calculations.

Because substantial evidence supports the elements required for a lost-profits award, and there was substantial evidence to support the jury’s verdict, the district court did not legally err by permitting the jury to consider lost profits damages. *See Siemens Med. Sols. USA, Inc. v. Saint-Gobain Ceramics & Plastics, Inc.*, 637 F.3d 1269, 1289 (Fed. Cir. 2011). Consequently, we uphold the district court’s denial of SSI’s motion for JMOL on this issue.

B. Permanent Injunction

SSI argues that the district court abused its discretion by granting TEK permanent injunctive relief. The injunction permanently enjoins SSI from “infringing, or inducing or contributing to, the infringement of claims 26, 28, and 31 of [the ’110 patent], until the expiration of the patent” by making, using, selling, offering to sell, or importing into the United States certain infringing tire-repair kit models or by assisting others in doing so. J.A. 10–11. The injunction does not, however, prohibit SSI from designing around the ’110 patent. J.A. 12.

To obtain a permanent injunction, “[a] plaintiff must demonstrate: (1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction.” *eBay*, 547 U.S. at 391. Our review is guided by statute and well-established principles of equity. *See* 35 U.S.C. § 283. As discussed below, we discern no

reversible error in the district court’s decision to permanently enjoin SSI’s infringement of certain ’110 patent claims.

1. Irreparable Harm

SSI argues that the district court abused its discretion in determining that TEK had shown irreparable harm due to SSI’s infringement. Specifically, SSI argues that “TEK fail[ed] to establish a causal nexus between the alleged infringement and any lost sales.” Appellants’ Br. 60 (citing *Apple Inc. v. Samsung Elecs. Co.*, 735 F.3d 1352, 1363 (Fed. Cir. 2013) (explaining that to satisfy the irreparable harm factor in a patent infringement suit, a patentee must establish that “a sufficiently strong causal nexus relates the alleged harm to the alleged infringement”). To establish causal nexus, the patentee must show that “the infringing feature drives consumer demand for the accused product”—in other words, that consumers bought the accused product because it was equipped with an apparatus claimed in the ’110 patent. *Apple Inc. v. Samsung Elecs. Co.*, 695 F.3d 1370, 1375–76 (Fed. Cir. 2012).

Driving demand, however, does not require a patented feature to be the only basis of consumer demand. *See Apple Inc.*, 735 F.3d at 1364. It was enough for TEK to show that a significant reason consumers bought its device was the presence of the patented features.

Sufficient record evidence supports the finding that the claimed three-way valve and additional hose drove consumer demand. For example, at least before 2014, GM required the claimed three-way valve and additional hose to be present in its tire repair kits. *See* J.A. 4685:5–25; Appellants’ Br. 55–58. And Mr. Smith, the SSI employee responsible for testing SSI’s tire repair kit, testified at trial that GM’s purchase of tire repair kits from SSI was contingent on SSI meeting those requirements. J.A. 4685:19–22. Thus, the district court did not clearly err in finding that TEK had shown that the patented feature drove demand.

2. Lack of Remedies Available at Law

SSI also argues that injunctive relief is unnecessary because damages adequately compensate TEK for SSI's past infringement. The district court determined that injunctive relief was indeed necessary because "TEK's lack of diversification exposes it to a particular risk of lowered market share, and money damages cannot adequately compensate for the related injury to its reputation." J.A. 8.

We see neither abuse of discretion in the district court's determination nor clear error in its fact-finding. Indeed, Mr. Marini's testimony evidences that the tire repair kit was TEK's central product at the time of SSI's infringing sales. *See, e.g.*, J.A. 4415:15–4426:9. Also indicative of the company's focus is its name, "TEK," which stands for "tire emergency kit." J.A. 4402:8–10. Moreover, the evidence supports that TEK lost market share to SSI. J.A. 4431:11–4432:3 (Mr. Marini explaining that SSI took business from TEK upon entering the market); *see* J.A. 4689:10–22. The inherent difficulty of quantifying "loss of market share, brand recognition, and customer goodwill" and of estimating monetary damages indicates that "remedies at law are inadequate." *Id.*, 598 F.3d at 862.

3. Balance of Hardships

SSI next argues that TEK cannot demonstrate any hardship because it cannot prove that it will suffer any harm. The district court determined that, without the injunction, TEK would be forced to compete with its own patented invention. J.A. 9. SSI challenges the district court's position, asserting that GM was TEK's only customer that "ever required a three-way valve or additional hose," as claimed and "GM stopped requiring those components and stopped buying tire repair kits that included them" in 2014. J.A. 61. According to SSI, "TEK [would] not be forced to compete against its patented technology because no OEM has required that technology in tire repair kits since at least 2014." J.A. 61–62. In short, SSI argues that TEK

cannot show any harm because there is no evidence of future harm.

We disagree. In *i4i*, we said that “[p]ast harm to a patentee’s market share, revenues, and brand recognition is relevant for determining whether the patentee ‘has suffered an irreparable injury.’” 598 F.3d at 861–62 (emphasis omitted) (quoting *eBay*, 547 U.S. at 391). “Although injunctions are tools for prospective relief designed to alleviate future harm, by [their] terms the . . . *eBay* factor[s] look[], in part, at what has already occurred.” *Id.* at 862.

The district court found, and the record supports, that SSI and TEK were competing for the same customers in the same market, that SSI won business over TEK, and that TEK was susceptible to lowered market share due to this loss of business. J.A. 4–5, 8. Head-to-head competition and lost market share tend to evidence irreparable harm. *See Broadcom Corp. v. Emulex Corp.*, 732 F.3d 1325, 1338 (Fed. Cir. 2013) (competition and lost market share established irreparable harm); *Robert Bosch LLC v. Pylon Mfg. Corp.*, 659 F.3d 1142, 1151 (Fed. Cir. 2011) (concluding that the district court erred in not finding irreparable harm when the parties were direct competitors and patentee showed lost market share and access to potential customers). Moreover, and more importantly, SSI has not argued that it would suffer any harm from the injunction itself. On balance, therefore, this factor favors TEK.

4. Public Interest

The “touchstone of the public interest factor is whether an injunction, both in scope and effect, strikes a workable balance between protecting the patentee’s rights and protecting the public from the injunction’s adverse effects.” *i4i*, 598 F.3d at 863. SSI argues that the injunction negatively impacts its OEM customers and their end users. The district court concluded, however, that the public interest is not disserved by the injunction. J.A. 9. We agree.

The injunction’s well-crafted sunset provision mitigates any negative effects on end users and SSI’s customers due to the injunction. *See id.*; *Broadcom Corp.*, 732 F.3d at 1338–39. The sunset provision permits nine months of “[s]unset [s]ales” to existing SSI customers who had “qualified or validated an [e]njoined [p]roduct for use in a particular customer platform” and “placed a firm order for production activities of that [e]njoined [p]roduct for use in that particular customer platform” before the jury submitted its verdict. J.A. 11.

Moreover, as previously noted, SSI is free to design around the ’110 patent. J.A. 12. Nine months is sufficient time for SSI to begin design-around efforts and to remove the infringing product from the market without causing significant inconvenience to OEMs and consumers. *See Broadcom Corp.*, 732 F.3d at 1338–39. Furthermore, the injunction cannot take effect unless and until the validity of the ’110 patent is resolved in TEK’s favor at retrial.

In sum, the district court did not abuse its discretion by permanently enjoining SSI.

CONCLUSION

We have considered the parties’ remaining arguments and find them unpersuasive. For the foregoing reasons, the district court’s judgment is affirmed-in-part, reversed-in-part, and vacated-in-part. The district court is directed to grant SSI a new trial limited to the issue of validity.

AFFIRMED-IN-PART, REVERSED-IN-PART, VACATED-IN-PART

COSTS

The parties shall bear their own costs.