

NOTE: This disposition is nonprecedential.

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

**WCM INDUSTRIES, INC., A COLORADO
CORPORATION,**
Plaintiff-Cross-Appellant

v.

**IPS CORPORATION, A DELAWARE
CORPORATION,**
Defendant-Appellant

**AMERICAN BRASS & ALUMINUM FOUNDRY
COMPANY, A CALIFORNIA CORPORATION, JOHN
DOE, AN INDIVIDUAL,**
Defendants

2016-2211, 2016-2268

Appeals from the United States District Court for the
Western District of Tennessee in No. 2:13-cv-02019-JPM-
tmp, Chief Judge Jon P. McCalla.

Decided: February 5, 2018

J. MICHAEL JAKES, Finnegan, Henderson, Farabow,
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DALEY, JASON LEE ROMRELL; IAN WALSWORTH, Lewis
Brisbois Bisgaard & Smith, Denver, CO.

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New York, NY; BRUCE JOSEPH ROSE, Alston & Bird LLP,
Charlotte, NC.

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

PROST, *Chief Judge*.

WCM Industries, Inc., filed this patent infringement action in the United States District Court for the Western District of Tennessee, No. 2:13-cv-02019, alleging that certain IPS Corporation bathtub waste and overflow drain assemblies infringed its patents, U.S. Patent Nos. 8,302,220 (“220 patent”); 8,321,970 (“970 patent”); and 8,584,272 (“272 patent”). The case was tried to a jury, which found that IPS willfully infringed WCM’s patents. The jury awarded WCM over \$1 million in damages, and the district court awarded WCM maximum enhanced damages because of IPS’s willfulness. After trial, the district court granted IPS’s motion for judgment as a matter of law as to no infringement under the doctrine of equivalents as to one of its product lines, but it let stand the jury’s verdict of indirect infringement and willfulness.

IPS appeals the district court’s denial of its motions for judgment as a matter of law as to no indirect infringement and as to no willfulness. IPS also appeals the district court’s award of maximum enhanced damages. WCM cross-appeals the district court’s grant of IPS’s motion for judgment as a matter of law as to no infringement under the doctrine of equivalents.

Reviewing the record in the light most favorable to WCM, we conclude that WCM provided sufficient evidence for a reasonable jury to have found infringement under the doctrine of equivalents and to have found that IPS's infringement was willful. We therefore reverse the district court's grant of IPS's motion for judgment as a matter of law as to no infringement under the doctrine of equivalents and affirm the district court's denial of IPS's motion for judgment as a matter of law as to no willfulness. We also affirm the district court's denial of IPS's motion for judgment as a matter of law as to no indirect infringement. Finally, we vacate the district court's award of maximum enhanced damages and remand for the district court to reconsider the amount by which the damages should be enhanced, if at all.

BACKGROUND

WCM's patents generally describe improvements in bathtub overflow assemblies. The assemblies include an overflow portion that prevents an accidental overflow of water from a bathtub and a drain portion that allows the drainage of water from the bathtub. Traditional bathtub overflows were difficult to install. Tightening screws during installation often left sharp burrs that could cut through skin. Traditional overflows were also prone to leaks, which could result in significant, yet hidden, damage to both property and health (i.e., exposure to mold and mildew). Disassembling traditional overflows for testing was also difficult.

One of WCM's employees, William Ball, developed a solution to these problems. WCM's new technology (referred to as the "Innovator Product") eliminated leaks, and it could be installed more easily without the need for screws. Mr. Ball filed his original patent application on June 13, 2000, which—by way of WCM filing numerous continuing applications off of the original patent—later

resulted in the three patents-at-issue in this case. WCM began selling its Innovator Product in August 2001.

On appeal, the parties focus on Claim 12 of the '220 patent, which is representative of the other claims-at-issue and reads as follows:

12. An overflow assembly adapted for interconnection to a bathtub, which has a bottom, side walls, end walls, and an overflow port in one end wall, comprising:

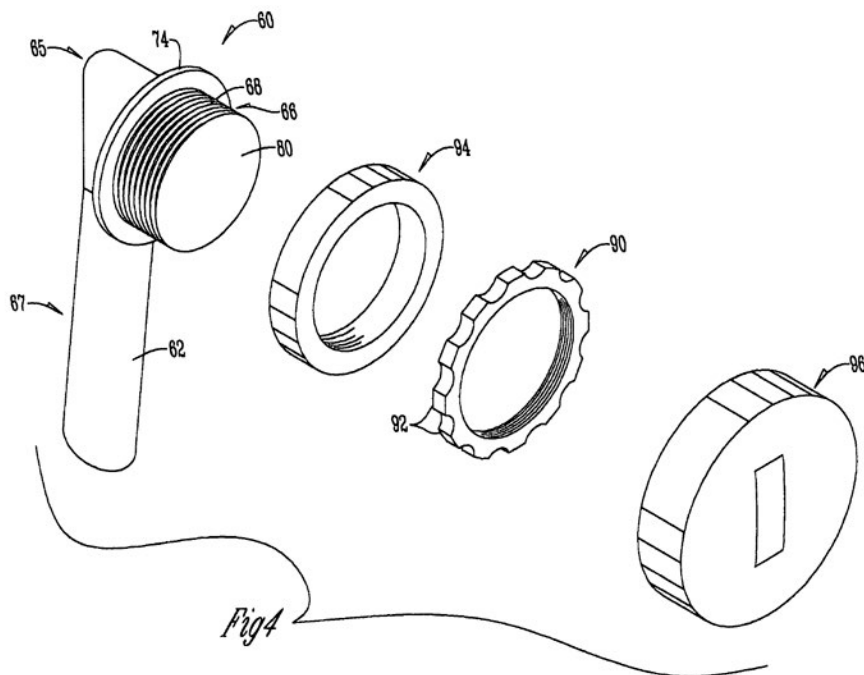
an overflow pipe with an elbow portion defining an upper end portion and a lower end portion, said upper end portion having an outer end defining an inlet, said upper end having threads on an outer surface thereof;

a lip extending radially outwardly from said outer surface of the overflow pipe between said elbow portion and said upper end portion and being spaced from said inlet;

a nut element with a threaded portion that is compatible with said threads of said overflow pipe, *said nut element having an outer periphery with a series of radially extending lugs that detachably engage an inner surface of a cap that fits over said nut.*

'220 patent col. 7 l. 8–col. 8 l. 3 (emphasis added); J.A. 226.

Figure 4 of the '220 patent depicts an exemplary overflow assembly embodiment of the asserted claims.



J.A. 218.

The overflow assembly has an overflow pipe 62 that has an elbow portion 65, a washer 94, a nut element 90, and a cap 96. The nut element 90 has threads compatible with the threads 68 on the overflow pipe 62. The nut element 90 secures the overflow pipe 62 to the bathtub by compressing the bathtub wall between the nut element 90 and the lip 74 of the overflow pipe 62.

The nut element 90 has a series of radially extending lugs 92 along its outer periphery. These lugs 92 detachably engage the inner surface of a cap 96. The cap 96 serves to cover the overflow assembly 60 hardware once installed.

Between 2002 and 2003, American Brass and Aluminum Foundry Company (“AB&A”) began offering for sale a bathtub draining product that the parties to this lawsuit call the “Classic Product.” The Classic Product Full Kit provided all of the necessary components of a complete bath waste and overflow assembly and includes the overflow portion (as shown in the image below, including the overflow elbow, overflow washer, a locknut, and an overflow plate); the drain portion; and the pipes and tee that connect the two portions together and to the sewer or septic system.



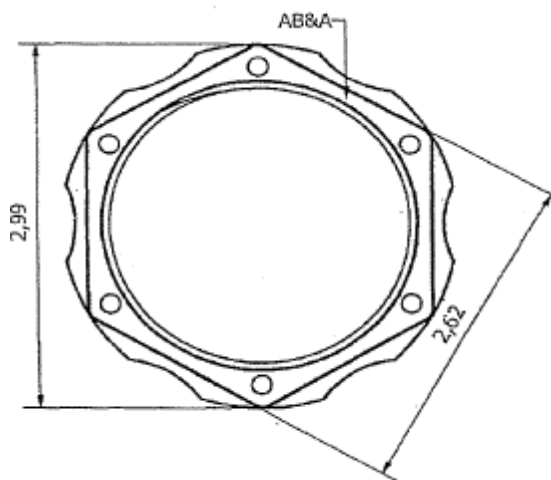
J.A. 6800.

In 2010, IPS bought the assets of AB&A. Following the asset acquisition, AB&A ceased operations and IPS continued to source and sell the Classic Product under the AB&A brand name.

On December 11, 2012, WCM filed suit against IPS in the United States District Court for the District of Colorado for patent infringement of two of its patents. Those patents had only recently been granted: the '220 patent issued November 6, 2012, and the '970 patent issued December 4, 2012. The next month, WCM voluntarily dismissed the Colorado suit and refiled the same complaint in the Western District of Tennessee, initiating this action. WCM's '272 patent issued on November 19, 2013, and was later added to the suit.

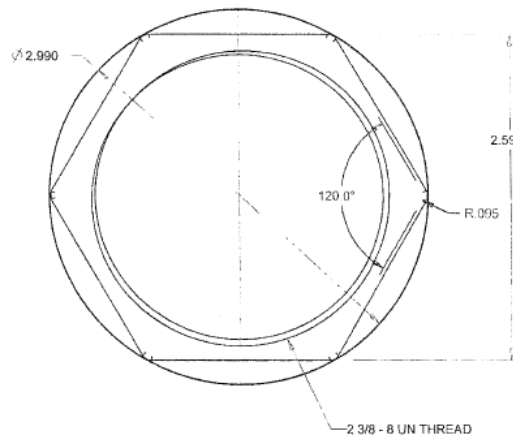
In 2014, after the filing of the Tennessee suit, IPS revised its Classic Product and ceased manufacturing and importing that product line. The parties refer to the redesigned product as the “Revised Classic Product” (“Revised Product”). Like its predecessor, the Revised Product Full Kit represented the entire assembly.

To create the Revised Product, IPS’s modified the design of the locknut used in the overflow assembly. The drawing below shows the original locknut of the Classic Product having “high points” (the six angular points around the circumference of the locknut) and “finger indentations” (the curved indentations around the circumference of the locknut). See J.A. 2026–28.



J.A. 6531.

The only difference between the original locknut (above) and the modified locknut (below) is that there are no finger indentations on the modified locknut. J.A. 2026–28.



J.A. 6533.

Granting a pre-trial motion, the district court excluded the report and testimony of WCM's technical expert who was to opine on various issues, including infringement under the doctrine of equivalents.

At the end of the trial, the jury found that as to the Classic Product, IPS infringed literally, contributorily infringed, and induced infringement. As to the Revised Product, while the jury found that IPS had not literally infringed, it did find that IPS infringed under the doctrine of equivalents, contributorily infringed, and induced infringement. The jury also found that IPS's infringement was willful, that the reasonable royalty rate per infringing unit was \$1.00, and that IPS sold 1,241,524 infringing units. The jury was not asked to decide willfulness or damages on a product-by-product basis. Based on sales of additional infringing units, the total number of infringing units was 1,383,978, and the total damages amount was \$1,383,978. The district court awarded WCM maximum enhanced damages pursuant to 35 U.S.C. § 284 because of IPS's willfulness and ultimately awarded WCM a total of \$4,151,934 in damages.

After trial, the district court ruled on various motions for judgment as a matter of law. In particular, it granted

IPS's motion that IPS's Revised Product did not infringe under the doctrine of equivalents. The court upheld IPS's liability for indirect infringement with respect to the Revised Product. Because the '272 patent had not issued until after the complaint was filed, the court granted IPS's motion of no willful infringement with respect to that patent. The district court denied, however, IPS's motion for judgment as a matter of law of no willfulness in all other respects.

IPS appeals the district court's denial of its motions for judgment as a matter of law as to no indirect infringement with respect to the Revised Product and as to no willfulness. IPS also appeals the district court's award of maximum enhanced damages. WCM cross-appeals the district court's grant of IPS's motion for judgment as a matter of law that IPS's Revised Product did not infringe under the doctrine of equivalents.

We have jurisdiction under 28 U.S.C. § 1295(a)(1).

DISCUSSION

I

We begin with WCM's cross appeal because the issue raised is a predicate for the matters raised in IPS's appeal. On cross-appeal, WCM asks this court to reverse the district court's judgment as a matter of law of no infringement under the doctrine of equivalents and to reinstate the jury's verdict.¹ We review, under Sixth

¹ A properly filed cross-appeal requires that, upon acceptance of appellee's argument, our determination would result in a reversal or modification of the judgment rather than an affirmance. *Symantec Corp. v. Computer Assocs. Int'l, Inc.*, 522 F.3d 1279, 1294 (Fed. Cir. 2008). Because WCM's cross-appeal does not seek to enlarge the district court's judgment of infringement in its favor, we

Circuit law, the grant or denial of judgment as a matter of law de novo. *Barnes v. City of Cincinnati*, 401 F.3d 729, 736 (6th Cir. 2005); see *ClearValue, Inc. v. Pearl River Polymers, Inc.*, 668 F.3d 1340, 1343 (Fed. Cir. 2012) (“We review the grant or denial of a motion for judgment as a matter of law under the law of the regional circuit.”). For IPS’s motions for judgment as a matter of law, we view the evidence in the light most favorable to WCM, and WCM receives the benefit of all reasonable inferences. *Barnes*, 401 F.3d at 736. The Sixth Circuit instructs that we must “indulge all presumptions in favor of the validity of the jury’s verdict, and should refrain from interfering with a jury’s verdict unless it is clear that the jury reached a seriously erroneous result.” *Williams v. Nashville Network*, 132 F.3d 1123, 1131 (6th Cir. 1997) (internal quotation marks omitted). Thus, the jury’s verdict must stand, and IPS’s motion for judgment as a matter of law of no infringement under the doctrine of equivalents must be denied unless reasonable minds could come to but one conclusion in favor of IPS. *Barnes*, 401 F.3d at 736.

Under the doctrine of equivalents, “a product or process that does not literally infringe upon the express terms of a patent claim may nonetheless be found to infringe if there is ‘equivalence’ between the elements of the accused product or process and the claimed elements of the patented invention.” *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 21 (1997). The “essential inquiry” is whether “the accused product or

dismiss its cross-appeal as improper. See *Howmedica Osteonics Corp. v. Wright Med. Tech., Inc.*, 540 F.3d 1337, 1343 n.2 (Fed. Cir. 2008). We may nonetheless consider the arguments raised, as we do here, as alternative grounds for sustaining the judgment. *Symantec*, 522 F.3d at 1294.

process contain[s] elements identical or equivalent to each claimed element of the patented invention.” *Id.* at 40. Thus, “[i]n order to arrive at its verdict of infringement under the doctrine of equivalents, the jury must have found that one or more claim elements were met by equivalents, and could have found the remainder of the claim elements were met literally.” *Comark Commc’ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1188 (Fed. Cir. 1998).

“[T]o ensure that a jury is provided with the proper evidentiary foundation from which it may permissibly conclude that a claim limitation has been met by an equivalent,” *id.*, a patentee must establish equivalency by “particularized testimony and linking argument as to the ‘insubstantiality of the differences’ between the claimed invention and the accused device . . . ,” *Tex. Instruments Inc. v. Cypress Semiconductor Corp.*, 90 F.3d 1558, 1567 (Fed. Cir. 1996).² Generalized testimony as to the overall similarity between the claims and the accused infringer’s product or process will not suffice. *Id.* “These evidentiary requirements assure that the fact-finder does not, under the guise of applying the doctrine of equivalents, erase a plethora of meaningful structural and functional limitations of the claim on which the public is entitled to rely in avoiding infringement.” *Id.* (internal quotation marks omitted).

WCM first contends that the district court’s decision to disregard the jury’s verdict of infringement under the doctrine of equivalents rested on a misapprehension of the

² Such evidence must also be presented on a limitation-by-limitation basis. *Tex. Instruments*, 90 F.3d at 1567. Here, the infringement dispute at trial involved only a single claim limitation. Accordingly, this “limitation-by-limitation” requirement is not at issue here because the only evidence at issue on appeal was presented at trial for the single disputed limitation.

law. Specifically, WCM points to the district court's holding that because it had excluded WCM's expert opinion on the doctrine of equivalents and "WCM did not present *opinion* testimony on infringement, *none* of the evidence introduced at trial is sufficient to prove infringement under the doctrine of equivalents." J.A. 5653–54 (emphases added) (footnote omitted). WCM further highlights that in setting aside the jury's verdict, the court simply rejected the evidence introduced at trial for not being opinion testimony and never reviewed the record for substantial evidence. Thus, WCM maintains, the court adopted an improper per se rule that opinion testimony—and in particular, expert testimony—is required to establish equivalency.

We agree with WCM that our precedent does not require opinion testimony, and certainly does not require expert opinion testimony, for a finding of equivalence. Rather, "[p]roof can be made in any form: through testimony of experts or others versed in the technology; by documents, including texts and treatises; and, of course, by the disclosures of the prior art." *Graver Tank & Mfg. Co. v. Linde Air Prod. Co.*, 339 U.S. 605, 609 (1950). Such evidence, however, given "the difficulties and complexities of the doctrine," must "be presented to the jury or other fact-finder through the particularized testimony of a person of ordinary skill in the art." *AquaTex Indus., Inc. v. Techniche Sols.*, 479 F.3d 1320, 1329 (Fed. Cir. 2007). While this person is "*typically* a qualified expert," he need not be in every case. *Id.* (emphasis added). As is the case here, where the technology is "easily understandable without the need for expert explanatory testimony," expert testimony is not required. *See Union Carbide Corp. v. Am. Can Co.*, 724 F.2d 1567, 1573 (Fed. Cir. 1984).

Although the grounds for the district court's judgment were erroneous, we review a grant or denial of judgment as a matter of law, as noted above, de novo. IPS argues,

as it did before the district court, that the evidence of record is legally insufficient proof of infringement under the doctrine of equivalents to support the jury's finding. In response, and in support of the jury verdict, WCM relies on the testimony of a number of witnesses, including: Mr. Humber (IPS's Director of Engineering), Mr. Fink (a WCM employee), and Mr. Ball (the inventor of the infringed WCM patents).

The infringement dispute at trial focused on only a single claim limitation: the "lugs" on the nut element that "detachably frictionally engage[]" a cap.³ IPS does not dispute that all of the claim elements were met literally by the Classic Product. Nor does IPS dispute that the only difference between the Classic Product and the Revised Product is the modified locknut design. Accordingly, our inquiry on appeal is whether there is sufficient evidence such that a reasonable jury could have found that the claimed "lugs" limitation was met by equivalents. *See Comark*, 156 F.3d at 1188. In particular, we must determine whether there is sufficient particularized testimony as to the insubstantiality of the differences between the "lugs" limitation of the claimed nut element and the "high points" of the accused modified locknut of IPS's Revised Product such that a reasonable jury could have made an equivalency finding. If so, then we must reinstate the jury verdict. *See id.*

First, with respect to the "lugs" limitation of the claimed nut element, WCM points to Mr. Ball's testimony regarding the purpose of the lugs in his invention and how the lugs engage the inner surface of a cap. J.A. 1483, 1522–23. As Mr. Ball explained, frictional engagement holds the cap in place once the lugs contact the inner surface of the cap. J.A. 1522. The term "frictional en-

³ The district court construed the term "detachably engage" as "detachably frictionally engaged." J.A. 4457.

gagement” refers to “the resistance” felt “when . . . passing one object over another object” and, more particularly, “the resistance between the cap and the nut.” *Id.*

Next, with respect to the “high points” of the accused modified locknut of the Revised Product, WCM identifies the testimony of Mr. Fink and Mr. Humber.

Mr. Fink demonstrated the installation of the Revised Product’s modified locknut and cap while referring to the instructions accompanying that product. J.A. 1255–57. The instructions read: “Place the Overflow plate onto the locknut Turn the Overflow plate clockwise until it reaches a *high point* on the locknut. The Overflow plate will then stay in position.” J.A. 6687 (emphasis added). Mr. Fink testified while turning the Overflow plate to a high point that “[y]ou can feel that there’s greater resistance at certain points than there are at other points, and then it clicks a little bit.” J.A. 1257. Mr. Fink also testified that IPS’s modified locknut and cap were interchangeable with WCM’s Innovator locknut and cap. J.A. 1257. Mr. Humber, an IPS employee, also testified that the modified locknut has six features, “one on every corner point along the locknut,” that “are all along the outer periphery of the modified locknut,” “on the outer circumference of the nut,” “in places where the cap fits over the nut.” J.A. 2054, 2082.

Immediately preceding this testimony, Mr. Fink first demonstrated the installation of the Classic Product’s original locknut and cap while referring to the instructions accompanying that product. J.A. 1251–52. The instructions for the installation of the original locknut are identical to those for the modified locknut. J.A. 6686. Mr. Fink testified while performing this step that “[a]s you turn it, you can feel points where the cap hits high points; and you can hear those as you turn it.” J.A. 1252. As with the modified locknut, Mr. Fink also demonstrated and testified that IPS’s original locknut and cap were

compatible with WCM's overflow elbow and thus interchangeable with WCM's Innovator locknut and cap. J.A. 1252–53.

This testimony demonstrating that the modified locknut functioned in the same way as IPS's original locknut, and that both locknuts were interchangeable with WCM's Innovator products, was also corroborated by Mr. Humber's testimony. Mr. Humber testified that the only change between the original locknut of the Classic Product and the modified locknut of the Revised Product was the removal of the finger indentations. J.A. 2028. He also testified that this removal of the finger indentations did not change the way IPS's cap snapped onto the modified locknut and that it still covered the modified locknut once it was installed. J.A. 2058–59.

IPS maintains that this evidence is legally insufficient. According to IPS, Mr. Humber did not discuss the patent claims and only compared IPS's modified locknut to IPS's original locknut. IPS submits that Mr. Fink's testimony also only involves irrelevant product-to-product comparisons. Citing to a footnote in *Read Corp. v. Portec, Inc.*, IPS submits “the comparison must be between the accused product and the patent claims, and not between the accused product and the patentee's commercial embodiment.” IPS Reply Br. 6 (citing 970 F.2d 816, 822 n.2 (Fed. Cir. 1992), *superseded on other grounds as recognized by Markman v. Westview Instruments, Inc.*, 52 F.3d 967 (Fed. Cir. 1995) (“Equivalency to limitations of the claim must be the focus of the inquiry, particularly in jury trials. . . . Otherwise, laymen may be led to comparison of devices, rather than between the accused device and the claim, and to rely on generalities in the overall purpose of the devices”)).

But this court's “case law does not contain a blanket prohibition against comparing the accused product to a commercial embodiment” in an infringement analysis.

Adams Respiratory Therapeutics, Inc. v. Perrigo Co., 616 F.3d 1283, 1288 (Fed. Cir. 2010). “[W]hen a commercial product meets all of the claim limitations, then a comparison to that product may support a finding of infringement.” *Id.* at 1289 (emphasis added). Here, not only does WCM’s Innovator Product meet all of the claim limitations, but IPS does not dispute that its Classic Product also literally meets all of the claim limitations. This, of course, includes meeting the single claim limitation at issue on appeal: the lugs on the nut element that detachably frictionally engage a cap. In addition to there being just one claim limitation in dispute, the understandable claim language and the straightforward mechanical technology of the invention also help mitigate any risks that might typically arise when devices are compared. Here, for example, the jury did not “rely on generalities in the overall purpose of the devices,” *Read Corp.*, 970 F.2d at 822 n.2, nor did the jury “erase a plethora of meaningful structural and functional limitations of the claim,” *Tex. Instruments*, 90 F.3d at 1567. Accordingly, in the specific circumstances presented here, the comparisons between WCM’s Innovator Product and IPS’s Classic and Revised Products and the comparisons between IPS’s Classic and Revised Products are sufficient to establish infringement under the doctrine of equivalents.

Reviewing the record in the light most favorable to WCM, we conclude that WCM provided sufficient evidence for a reasonable jury to have found that the lugs limitation of the claimed nut element was met by equivalents. Accordingly, it is not clear that the jury reached a “seriously erroneous result” and, therefore, the district court erred in granting IPS’s motion for judgment as a matter of law. *Williams*, 132 F.3d at 1131.

II

A

IPS appeals the district court's denial of judgment as a matter of law that IPS does not indirectly infringe as to its Revised Product. IPS's sole argument on appeal is that it cannot indirectly infringe as to this product line because the district court granted judgment as a matter of law of no infringement under the doctrine of equivalents and WCM failed to prove any other underlying direct infringement. Because we reverse the district court's grant of judgment as a matter of law of no infringement under the doctrine of equivalents, we affirm the district court's denial of judgment as a matter of law of no indirect infringement with respect to the Revised Product.

B

IPS also appeals the district court's denial of judgment as a matter of law of no willfulness. As discussed above, we review, under Sixth Circuit law, the grant or denial of judgment as a matter of law *de novo*. *Barnes*, 401 F.3d at 736. Again, we view the evidence in the light most favorable to WCM, and WCM must be given the benefit of all reasonable inferences. *Id.*

The jury here was instructed on the old *Seagate* standard for subjective willfulness, and found that WCM proved, by clear and convincing evidence, that IPS's infringement was willful. Before the Supreme Court's decision in *Halo*, this court's two-part *Seagate* test required a patentee to prove both an objective and a subjective prong to establish willfulness. *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923, 1930 (2016). The subjective prong required a showing "that the risk of infringement 'was either known or so obvious that it should have been known to the accused infringer.'" *Id.* (quoting *In re Seagate Tech., LLC*, 497 F.3d 1360, 1371 (Fed. Cir. 2007) (en banc)).

While the Court rejected *Seagate*'s requirement that a patentee prove objective recklessness in every case, *Halo* did not disturb the substantive standard for the second prong of *Seagate*, subjective willfulness. *WesternGeco L.L.C. v. ION Geophysical Corp.*, 837 F.3d 1358, 1362 (Fed. Cir. 2016), *cert. granted on other grounds* No. 16-1011, 2018 WL 386561 (Jan. 12, 2018). "Rather, *Halo* emphasized that subjective willfulness alone . . . can support an award of enhanced damages." *Id.*; *see also Halo*, 136 S. Ct. at 1933 ("The subjective willfulness of a patent infringer, intentional or knowing, may warrant enhanced damages, without regard to whether his infringement was objectively reckless."). *Halo* also rejected the *Seagate* test's clear-and-convincing standard of proof and held that this inquiry should be governed by the less demanding preponderance of the evidence standard. 136 S. Ct. at 1934.

The district court, in denying IPS's motion for judgment as a matter of law of no willfulness, concluded that sufficient evidence supported the jury's verdict that WCM proved the subjective *Seagate* prong by clear-and-convincing evidence. On appeal under the new *Halo* standard, we must determine whether the evidence, when viewed in the light most favorable to WCM, was sufficient to prove by a preponderance of the evidence that IPS acted despite a risk of infringement that was either known or so obvious that it should have been known to IPS. *See Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1371 (Fed. Cir. 2017).

IPS's principal argument on appeal is that the district court erred in refusing to grant judgment as a matter of law of no willfulness because there is no evidence that IPS had knowledge of the patents before the lawsuit began. In support, IPS largely relies on *State Industries, Inc. v. A.O. Smith Corp.*, 751 F.2d 1226 (Fed. Cir. 1985), and *Gustafson, Inc. v. Intersystems Industrial Products, Inc.*, 897 F.2d 508 (Fed. Cir. 1990). In *State Industries*, the

court concluded that “[t]o willfully infringe a patent, the patent must exist and one must have knowledge of it.” 751 F.2d at 1236. Accordingly, the court held that the defendant’s infringement in that case was not willful because, among other reasons, its first notice of the existence of the issued patent came with the filing of the infringement suit against it. *Id.* Similarly, *Gustafson* held that “a party cannot be found to have ‘willfully’ infringed a patent of which the party had no knowledge.” 897 F.2d at 511.

We find IPS’s arguments unpersuasive. First, this court has already held that *State Industries* does not establish a per se rule, as IPS contends, but rather, “is in harmony with our prior and subsequent case law, which looks to the ‘totality of the circumstances presented in the case.’” *Shiley, Inc. v. Bentley Labs., Inc.*, 794 F.2d 1561, 1568 (Fed. Cir. 1986) (quoting *Cent. Soya Co. v. Geo. A. Hormel & Co.*, 723 F.2d 1573, 1577 (Fed. Cir. 1983)). The *Gustafson* opinion itself also recognizes that “[w]hether an act is ‘willful’ is by definition a question of the actor’s intent, the answer to which must be inferred *from all the circumstances.*” 897 F.2d at 510–11 (emphasis added). Second, unlike in *State Industries* and *Gustafson*, here WCM provided sufficient evidence for a reasonable jury to conclude that IPS *did* know of WCM’s patents as they issued, if not earlier.⁴ Not to mention, it is undisputed

⁴ IPS argues that knowledge of a pending patent application cannot support a finding of willfulness. The cases that IPS points to, however, were all decided prior to the enactment of 35 U.S.C. § 122(b)(1)(A) in 1999, which provides for the publication of patent applications filed on or after November 29, 2000, eighteen months after the effective filing date of the application. *See Hyatt v. U.S. Patent & Trademark Office*, 797 F.3d 1374, 1378 n.2 (Fed. Cir. 2015). For example, *State Industries*

that IPS had knowledge of the '220 patent and the '970 patent at least as of the date the first Colorado suit was filed, about a month before this action was initiated.

In support of the jury's verdict, WCM points to the evidence of record. First, although Mr. Casella, President of IPS's Plumbing Division, knew that AB&A did not employ engineers or full-time product developers to create the Classic Product, he did not conduct an investigation into how AB&A developed the Classic Product during the due-diligence period of the acquisition. Additionally, IPS was aware of a 2010 patent lawsuit between WCM and AB&A at the time of the acquisition. Mr. Humber, IPS's employee, testified that he had monitored WCM's products for decades and possessed catalogs and other literature indicating that WCM's products were marked with "patent pending."⁵

WCM also introduced evidence of what it refers to as "a culture of copying at IPS," including testimony from

stressed that the defendant was in "the dark about State's patent application prosecution activity" and that "[w]hat the scope of claims in patents that do issue will be is something totally unforeseeable." 751 F.2d at 1236. Of course, these concerns are no longer valid when patent applications and real-time prosecution activity are published. It is no longer the case that all "[p]atent applications are secret." *Gustafson*, 897 F.2d at 511. Because we conclude that WCM provided sufficient evidence for a reasonable jury to conclude that IPS did know of WCM's patents at least when they issued, which was before the lawsuit was initiated as to the '220 patent and the '970 patent, we need not decide whether the cases cited by IPS still support its argument.

⁵ WCM also refers to other evidence of record that has been deemed confidential information by a protective order.

Mr. Kirk, former IPS Product Manager, regarding an email copying Gary Clarke, IPS's Vice-President of Marketing and Engineering, in which Mr. Kirk asked Mr. Humber about one of WCM's Watco drains. WCM provided evidence at trial that Mr. Ball had meticulously devised WCM's Innovator Product and that a rational explanation for the Classic Products' identical measurements and compatibility with WCM's Innovator Product was that AB&A had copied the Innovator.

In sum, WCM argues that the jury had more than enough evidence to conclude that IPS knew of WCM's patents as they issued (if not earlier) and that the risk of infringement was known to IPS or so obvious that it should have been known. IPS continues to dispute several of these facts and what inferences might be drawn from them. For example, IPS points to Mr. Casella's testimony that IPS did not have any notice of WCM's asserted bath waste and overflow patents. The jury was free to decide, however, whose evidence it found more compelling on the question of willfulness and it found in WCM's favor. *Georgetown Rail Equip. Co. v. Holland L.P.*, 867 F.3d 1229, 1245 (Fed. Cir. 2017). "We will not disturb that finding here, where substantial evidence supports the jury's conclusions." *Id.*

Reviewing the record in the light most favorable to WCM, we conclude that WCM provided sufficient evidence for a reasonable jury to have found that IPS's infringement was willful. Accordingly, it is not clear that the jury reached a "seriously erroneous result" and, therefore, we affirm the district court's denial of IPS's motion for judgment as a matter of law. *Williams*, 132 F.3d at 1131.

C

Finally, IPS appeals the district court's grant of WCM's motion for enhanced damages and the district court's decision to treble damages pursuant to § 284. We

review a district court's decision to enhance damages on appeal for abuse of discretion. *Halo*, 136 S. Ct. at 1934. Such a decision cannot stand if “the determination was based on an erroneous conclusion of law, clearly erroneous factual findings, or a clear error of judgment amounting to an abuse of discretion.” *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 1543 (Fed. Cir. 1995) (en banc).

Although district courts enjoy discretion in deciding whether to award enhanced damages, and in what amount, “the channel of discretion [is] narrow[]” and damages are generally reserved for egregious cases of culpable behavior. *Halo*, 136 S. Ct. at 1932.

Awards of enhanced damages . . . are not to be meted out in a typical infringement case, but are instead designed as a “punitive” or “vindictive” sanction for egregious infringement behavior. The sort of conduct warranting enhanced damages has been variously described in our cases as willful, wanton, malicious, bad-faith, deliberate, consciously wrongful, flagrant, or—indeed—characteristic of a pirate.

Id.

Moreover, there is no requirement that enhanced damages *must* follow a finding of egregious misconduct. *Id.* at 1933. “As with any exercise of discretion, courts should continue to take into account the particular circumstances of each case in deciding whether to award damages, and in what amount.” *Id.* at 1933–34.

Because a finding of willful infringement does not command the enhancement of damages, the *Read* factors, although not mandatory, do assist the trial court in evaluating the degree of the infringer's culpability and in determining whether to exercise its discretion to award enhanced damages at all, and if so, by how much the damages should be increased. *Read Corp.*, 970 F.2d at

828; see *Presidio Components, Inc. v. Am. Tech. Ceramics Corp.*, 875 F.3d 1369, 1382–83 (Fed. Cir. 2017) (explaining that an explicit discussion of the *Read* factors is not mandatory).

The district court here analyzed the *Read* factors, but for many of the factors, the court’s analysis was either non-existent or incorrect. We address each factor in turn.

The first factor is “whether the infringer deliberately copied the ideas of another.” *Read Corp.*, 970 F.2d at 827. The district court concluded that this factor weighed in favor of enhancing damages because there was evidence of copying on IPS’s part. In particular, the district court cited to testimony from Mr. Kirk, former IPS Product Manager, regarding an email copying Gary Clarke, IPS’s Vice-President of Marketing and Engineering, in which Mr. Kirk asked Mr. Humber about one of WCM’s Watco drains. That product, however, was not WCM’s Innovator product in this suit. Therefore, while there is evidence of a possible “culture of copying” at IPS that weighs in favor of enhancement, given that the email does not refer to a product involved in the litigation, this factor should not be weighed very strongly in favor of enhancing damages.

The second factor is “whether the infringer, when he knew of the other’s patent protection, investigated the scope of the patent and formed a good-faith belief that it was invalid or that it was not infringed.” *Id.* The district court found that this factor was “perhaps most important[]” and that IPS’s failure to investigate the asserted patents weighed strongly in favor of enhancing damages. J.A. 38. The evidence that the court cited in support of its conclusion, however, involves patents or products not at issue in this case. For example, the court cited to evidence that IPS knew that WCM’s products in general were patent protected and that IPS did not investigate certain patents involved in a different lawsuit. Thus, based on the record before the district court, this

factor only slightly favors enhancing damages. The evidence certainly cannot support the district court's conclusion that this factor was the most important and that it weighed strongly in favor of enhancing damages.

The third factor is "the infringer's behavior as a party to the litigation." *Read Corp.*, 970 F.2d at 827. The court found that IPS did not engage in litigation misconduct and properly determined that this factor counseled against enhancement. The fourth and fifth factors are the "[d]efendant's size and financial condition" and the "[c]loseness of the case." *Id.* Despite IPS's arguments to the contrary on appeal, the district court's analysis of these factors is also reasonable. The district court determined that IPS's size and financial condition weigh in favor of enhanced damages and that the closeness of the case was also in WCM's favor because the jury verdict was not a close call and the evidence strongly supported WCM's case.

The court did not analyze the sixth factor, which is the "[d]uration of the defendant's misconduct." *Id.* This factor would likely weigh against enhancement. For example, the patents issued only a short time before the filing of the lawsuit. Nor did the court analyze the seventh factor, "[r]emedial action by the defendant," which may also weigh slightly against enhancement because IPS attempted to take remedial action (albeit ineffectively) when it modified its Classic Product and began selling its Revised Product during the pendency of this litigation. *See id.* (citing *Intra Corp. v. Hamar Laser Instruments, Inc.*, 662 F. Supp. 1420, 1439 (E.D. Mich. 1987), *aff'd*, 862 F.2d 320 (Fed. Cir. 1988) (damages only doubled because defendant "voluntarily ceased manufacture and sale of infringing systems during the pendency of this litigation"))).

In sum, the district court clearly erred when it concluded that the second factor weighed strongly in favor of

enhancement. Compounding this error, the district court did not appropriately weigh the third factor and other potentially mitigating factors, such as the sixth and the seventh factors, against the enhancement of damages. As WCM itself stated to the district court, when only a subset of factors weigh in favor of enhanced damages a court should award less than treble damages. Accordingly, we conclude that the district court made a clear error of judgment amounting to an abuse of discretion in deciding to award the maximum amount of damages.

Although the district court “*may* increase the damages *up to* three times the amount found or assessed,” 35 U.S.C. § 284 (emphases added), where the maximum amount is imposed, “the court’s assessment of the level of culpability must be high,” *Read Corp.*, 970 F.2d at 828. The district court is also particularly obligated to explain the basis for the award where it awards treble damages. *Id.* Here, the district court provided only a single conclusory sentence as to why it was awarding the maximum amount. J.A. 41 (“The Court further finds, based on the egregious nature of IPS’s conduct, that treble damages are appropriate.”). We therefore vacate the district court’s decision to award treble damages and remand for the district court to reconsider, consistent with this opinion, the amount by which the damages should be enhanced, if at all.⁶

⁶ Although the jury was not asked to decide the total number of infringing units sold by IPS on a product-by-product basis, on remand, in determining how much the damages should be increased, if at all, the district court may also consider whether the degree of the IPS’s culpability might be different for sales of the Classic Product as compared to sales of the Revised Product.

CONCLUSION

Reviewing the record in the light most favorable to WCM, we conclude that WCM provided sufficient evidence for a reasonable jury to have found infringement under the doctrine of equivalents as to IPS's Revised Product and to have found that IPS's infringement was willful. We therefore reverse the district court's grant of IPS's motion for judgment as a matter of law as to no infringement under the doctrine of equivalents and affirm the district court's denial of IPS's motion for judgment as a matter of law as to no willfulness. Because we reverse the district court's grant of judgment as a matter of law of no infringement under the doctrine of equivalents, we affirm the district court's denial of judgment as a matter of law of no indirect infringement with respect to the Revised Product. Finally, we vacate the district court's award of maximum enhanced damages and remand.

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

COSTS

The parties shall bear their own costs.