

# United States Court of Appeals for the Federal Circuit

06-1065, -1097

L & W, INC.,

Plaintiff-Appellant,

v.

SHERTECH, INC.  
and STEVEN W. SHERIDAN,

Defendants-Cross Appellants.

R. Terrance Rader, Rader, Fishman & Grauer PLLC, of Bloomfield Hills, Michigan, argued for plaintiff-appellant. With him on the brief was Glenn E. Forbis.

Steven Susser, Young & Susser, of Southfield, Michigan, argued for defendants-cross appellants. With him on the brief was Rodger D. Young.

Appealed from: United States District Court for the Eastern District of Michigan

Judge John Corbett O'Meara

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DECIDED: December 14, 2006

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Before MAYER, Circuit Judge, CLEVENGER, Senior Circuit Judge, and BRYSON, Circuit Judge.

BRYSON, Circuit Judge.

L&W, Inc., a manufacturer of heat shields for automobiles, sued Shertech, Inc., and Steven W. Sheridan (collectively, "Shertech") in the United States District Court for the Eastern District of Michigan. L&W sought a declaratory judgment that it did not infringe Shertech's U.S. Patent No. 5,670,264 ("the '264 patent"), that the '264 patent was invalid, and that the '264 patent was unenforceable because of inequitable conduct. Shertech counterclaimed, alleging that L&W's products infringed the '264 patent.

On cross-motions for summary judgment on the infringement claim, the district court entered summary judgment of infringement. The parties then tried the invalidity claims to a jury. The jury rendered special verdicts, finding all the claims of the '264 patent invalid except for claim 7. A bench trial was then held on L&W's inequitable

conduct claim. The district court rejected that claim, holding that L&W failed to prove that Mr. Sheridan or his counsel acted with intent to deceive the U.S. Patent and Trademark Office. L&W moved for a new trial or judgment as a matter of law on claim 7 based in part on an asserted inconsistency in the jury's special verdicts. Shertech moved for a new trial or judgment as a matter of law on claim 10. The district court denied both motions and entered judgment against L&W on claim 7 of the patent.

L&W appeals from the portion of the judgment holding it liable under claim 7, and Shertech cross-appeals from the portion of the judgment holding claim 10 invalid. We vacate the judgment of infringement on claim 7 and remand for further proceedings as to infringement. We affirm the portions of the judgment holding claim 7 valid and claim 10 invalid. We affirm the portion of the judgment holding that the '264 patent is not unenforceable due to inequitable conduct.

I

The district court entered summary judgment of infringement because it found that Shertech had shown that the accused products contained each disputed limitation of the asserted claims and that L&W had failed to point to a genuine issue of material fact with respect to any of the claim limitations. In particular, the district court concluded that the metal sheets of L&W's heat shields contained "standoffs" within the meaning of the claim 7 limitation requiring the recited heat shield to have "standoffs in local contact with at least one adjacent sheet of the plurality of sheets to generally separate each of the plurality of sheets from the adjacent sheet thereby creating a space between each of the plurality of sheets and the adjacent sheet." The district court construed the term

“standoff” to mean “a projection that either separates or has the potential to separate.” Neither party disputes that definition on appeal.<sup>1</sup>

The district court predicated its summary judgment of infringement in part on its conclusion that L&W “acknowledges that embossments separate the layers of its heat shields” when the component metal sheets are stacked together. Our review of the record, however, convinces us that L&W did not acknowledge that its embossments separate the layers of its heat shields.

In support of the district court’s conclusion that L&W had in effect acknowledged infringement of the “standoffs” limitation, Shertech relies heavily on a patent application filed by L&W. According to Shertech, the application discloses a multi-layer heat shield in which air gaps would form between the embossed metal layers of the heat shield at an elevated temperature. Shertech argues that L&W’s witnesses admitted that the accused L&W products embody the features of the heat shields described in the application. Accordingly, Shertech contends, L&W in effect “admitted that [the undulations in its heat-shield layers] can act to separate one heat shield [layer] from the other” when the layers get hot during use and shift with respect to one another.

It is true that the application states that undulations will cause the metal layers of certain embossed heat shields to separate at elevated temperatures. But L&W did not

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<sup>1</sup> On appeal, the parties implicitly (and properly) accept the understanding that the “separation or potential for separation” sufficient to satisfy the district court’s definition of “standoff” refers to separation in excess of that ordinarily found between layers of metal sheeting. As Shertech’s expert indicated in his report, some amount of spacing between heat-shield layers is unavoidable due to the surface roughness of the metal layers and other factors; “separation” for purposes of the standoff limitation therefore requires more than the amount of separation that would normally be found between layers of flat metal sheets.

admit that its accused heat shields contain undulations similar to those that allow separation at elevated temperatures, nor did it admit that its accused heat shields operate at the same “elevated temperatures” referred to in the application. To be sure, one L&W employee referred to the design of the application as “our design,” and another stated that various of the L&W accused products are “covered” by the application. The application, however, contains not only a description of a specific heat shield whose layers separate at elevated temperatures, but also a more general discussion of a particular method of manufacturing heat shields. The statements by the L&W employees are not clearly tied to the former rather than the latter, and they therefore fall short of admissions that the accused products are identical to a specific heat shield described in the application.

Following its references to L&W’s purported acknowledgement that the embossments serve to separate the layers of L&W’s heat shields, the district court commented, without elaboration, that the embossments in each of L&W’s accused products “clearly create air gaps or have the potential to create air gaps” and thus satisfy the “standoff” limitation as the court construed it. For the reasons given below, we conclude that the evidence submitted in connection with the motions for summary judgment did not establish that Shertech is entitled to summary judgment on each of the accused products that formed the basis for Shertech’s charge of infringement.<sup>2</sup>

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<sup>2</sup> At various points in its brief, L&W relies on evidence that was offered at the trial on invalidity, including testimony from two of its employees, to support its argument that the court’s earlier grant of summary judgment on infringement was improper. Evidence that was not before the district court at the time of the summary judgment proceeding, however, cannot be invoked to challenge the summary judgment order. See Monarch Knitting Mach. Corp. v. Sulzer Morat GmbH, 139 F.3d 877, 880 (Fed. Cir.

The parties agree as to the general steps that L&W uses in manufacturing its heat shields: it first stacks thin, planar aluminum sheets of equal thickness; it next crimps or hems the edges of the sheets to hold them together; it then presses dimples or embossments into the planar stack; finally, it presses the planar stack into its final shape.

Shertech's evidence of infringement is found in the report of its expert witness, Dr. John W. Holmes. Dr. Holmes's report consists of several general statements about heat-shield structure and performance, and several specific observations about one particular L&W product. In his general statements, Dr. Holmes first remarked that "[d]uring final forming of a multi-layer heat shield (e.g., by drawing), some amount of shifting between the sheets will occur," causing the creation of air gaps between the sheets. Dr. Holmes also reported that he had conducted an experiment in which he rolled nested layers of embossed aluminum around a 3.9-inch-diameter cylinder and observed that the metal sheets shifted with respect to each other. Nothing in the evidence indicates, however, that the 3.9-inch cylindrical shape of Dr. Holmes's experiment is similar to the shape of any accused L&W product. In fact, one of L&W's experts, J. Ralph King, made that point in his declaration, and Shertech did not contradict him. Moreover, Dr. Holmes himself conceded that the sheets in his test were not crimped and were therefore free to slide relative to one another. In the L&W heat shields, he noted, "the edges of the stack are crimped prior to forming [and] this 'free'

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1998); Laitram Corp. v. Cambridge Wire Cloth Co., 919 F.2d 1579, 1581 & n.4 (Fed. Cir. 1990). We therefore do not consider that evidence in our review of the trial court's summary judgment of infringement.

shifting is reduced.” Dr. Holmes’s general observations about the tendency of the layers of a multi-layer heat shield to shift during final formation thus lack the specificity necessary to establish as a matter of law that the embossments in the particular accused heat shields create separations sufficient to satisfy the “standoff” limitation.

In the second of Dr. Holmes’s general statements, he stated that a temperature differential across the thickness of a heat shield “will cause the various layers to displace relative to one another.” Like his first general statement, Dr. Holmes’s observation about the tendency of metal heat shield layers to displace relative to one another under a temperature gradient lacks the specificity necessary to establish that L&W’s heat shields will have separations sufficient to satisfy the “standoff” limitation in the course of their intended use. Attempting to quantify his theory, Dr. Holmes stated that in the case of “an assumed temperature difference of 500 F,” the maximum thermally induced displacement is approximately 0.078 inches for a 12-inch-long section of heat shield material. That evidence is of only marginal value, however, because it is not accompanied by any evidence as to the temperature differential encountered by L&W’s heat shields in actual use.

In addition to his general statements about the construction and functioning of heat shields, Dr. Holmes conducted a specific analysis of L&W’s heat shield #P30432B, one of the 16 allegedly infringing products. Dr. Holmes asserted in his report that L&W’s heat shield #P30432B was “typical” of all the accused heat shields, and Shertech treated his analysis as applicable to all of the accused products. There is, however, no evidence to support that conclusion. Dr. Holmes’s report contains no indication of which features of heat shield #P30432B he regarded as “typical.” In a footnote to his report

Dr. Holmes stated that “I personally examined approximately all L&W heat shields provided to Shertech in this matter.” Setting aside the problematic word “approximately,” that statement does not reveal what form his examination of the other products took, nor does it state what the results of that examination were. It is therefore of marginal value at best.

Dr. Holmes analyzed heat shield #P30432B by cutting a cross-section of that heat shield and measuring the thicknesses of its planar and curved portions. He found that the curved portions were up to 0.020 inches thicker than the thickest planar sections. Upon inspection, he concluded that the extra thickness was the result of the nested embossments riding up on one another and creating air gaps between the metal layers of the L&W heat shield.

L&W did not offer specific evidence to rebut Dr. Holmes’s measurements of heat shield #P30432B, but instead relied on evidence pertaining to its heat shields generally in an effort to show that there is a genuine dispute of material fact as to the formation of air pockets in the L&W heat shields. First, L&W pointed to the declaration of its president, Scott Jones, who stated that L&W manufactures its heat shields by stacking layers of aluminum on top of one another and embossing the stacked layers simultaneously. Mr. Jones stated that L&W embosses its heat shields to improve their rigidity and that the embossments do not introduce air gaps when the sheets are stacked. With respect to the curved portions, to which Dr. Holmes had referred, Mr. Jones stated that “[d]uring the stamping process, embossments in the curved portions of non-planar heat shields are ‘ironed out’ due to the forces of the stamping press” and



that the embossments in the L&W products therefore do not cause the metal layers to separate.

Second, L&W pointed to the declaration of its expert, Dr. Kirby S. Chapman. In his declaration, Dr. Chapman stated that he had examined several L&W heat shields and had cut through portions of the heat shields to inspect their construction and “the mechanism by which any gap between one or more layers might exist.” Like Mr. Jones, Dr. Chapman stated that the stacked sheets of the L&W heat shields are embossed simultaneously and that the embossments are “not intended to create air gaps but instead to increase the rigidity of the heat shield.” As a result of the simultaneous embossing of the entire stack of metal sheets, he explained, “the embossments of the sheets nest together.” Consequently, “the sheets of the accused products lie as proximate or close to each other as possible” before final forming. With respect to the curved sections of the heat shields, Dr. Chapman stated that “my examination of the L&W heat shield samples shows that in many of the curved sections of the heat shields, any embossments have been ‘ironed out’ or flattened as a result of the production process.”

The principal weakness of L&W’s evidence is that it does not directly confront Dr. Holmes’s measurements of L&W part #P30432B. Dr. Holmes’s analysis of that part was specific, and L&W’s response was general. If the parties and the district court had focused on the case of infringement with respect to part #P30432B, the district court might have found Dr. Holmes’s specific evidence as to that part inadequately rebutted, in which case the court would have been justified in concluding that L&W had failed to demonstrate the existence of a genuine issue of material fact as to that particular

product. But Shertech did not move for summary judgment of infringement on a part-by-part basis. Instead, both parties approached the issue of infringement as an “all-or-nothing” matter, and the district court accordingly addressed the summary judgment motions in the same manner. On appeal, we decline to recast the motions and to grant relief that no party has sought, to wit, to affirm with respect to one product and reverse as to the others.

Shertech seeks to make up for the fact that Dr. Holmes’s declaration assumes, without support, that all of L&W’s accused products are structurally similar to part #P30432B by arguing that “if L&W genuinely believed that there were relevant distinctions between the ‘accused products’ that would have affected the district court’s infringement analysis, L&W was obligated to make those arguments at the summary judgment stage in order to refute Shertech’s assumption that the design of the sixteen heat shields was substantially similar.” Among the flaws in that argument is that it ignores the burden of proof on infringement, which falls on Shertech, the patentee. Shertech cannot simply “assume” that all of L&W’s products are like the one Dr. Holmes tested and thereby shift to L&W the burden to show that is not the case. When a patentee with the burden of proof seeks summary judgment of infringement, it must make a prima facie showing of infringement as to each accused device before the burden shifts to the accused infringer to offer contrary evidence. See Saab Cars USA, Inc. v. United States, 434 F.3d 1359, 1369 (Fed. Cir. 2006) (party with the burden of proof on an issue must “provide evidence sufficient, if unopposed, to prevail as a matter of law”); see also Exigent Tech., Inc. v. Atrana Solutions, Inc., 442 F.3d 1301, 1307 n.6 (Fed. Cir. 2006) (same); Massey v. Del Labs., Inc., 118 F.3d 1568, 1573 (Fed. Cir.

1997); 11 James Wm. Moore, Moore's Federal Practice § 56.13[1], at 56-135 (2006) (“[I]f the movant has the burden of persuasion on an issue, the movant must make a stronger claim to summary judgment by introducing supporting evidence that would conclusively establish movant’s right to a judgment after trial should nonmovant fail to rebut the evidence.”). On the record made before the district court, we hold that Shertech failed to satisfy its burden of showing that there is no genuine issue of material fact on the issue of infringement.

## II

In its special verdicts, the jury found four of the five asserted claims of the '264 patent (claims 1, 4, 6, and 10) invalid, but found the remaining claim (claim 7) not invalid. On appeal, L&W attacks the verdict as to claim 7 on three grounds: (1) inconsistency in the verdicts as to claim 7, an independent claim, and claim 10, which depends from claim 7; (2) inconsistency in the verdicts as to claim 7 and closely related independent claim 1; and (3) insufficiency of the evidence to support the jury’s verdict of “not invalid” as to claim 7. In its cross-appeal, Shertech agrees with L&W that the verdicts as to claims 7 and 10 are inconsistent but argues that the inconsistency should be resolved by holding both claims valid.

## A

The district court held that both parties waived their objections to the inconsistency between the jury’s verdict on claim 7 and its verdict on claim 10 by failing to object before the jury was discharged. After the verdict was read, the district court conducted a jury poll, instructed the jurors as to their rights to talk about the case, and discharged the jury. Neither party objected before the jury was discharged that the

special verdicts were inconsistent. Immediately after the jury was discharged, the district court asked counsel for any final additions to the record. Again, no objection was made to the verdict for inconsistency.

We apply the law of the pertinent regional circuit to the procedural rules regarding inconsistent jury verdicts and the waiver of objections to such verdicts. Minn. Mining & Mfg. Co. v. Chemque, Inc., 303 F.3d 1294, 1302 & n.1 (Fed. Cir. 2002). Under Sixth Circuit law, a party waives its objection to inconsistency in a jury's verdict if the party had an adequate opportunity to object but failed to do so. In Tennessee Consolidated Coal Co. v. United Mine Workers of America, 416 F.2d 1192, 1200 (6th Cir. 1969), the Sixth Circuit set forth that rule in the context of a jury's general verdict and separate factual findings returned pursuant to Federal Rule of Civil Procedure 49(b). The appellant in that case argued that the jury's general verdict was inconsistent with one of its special findings. The appellant, however, failed to raise that objection before the jury was discharged. Id. at 1199–1200. For that reason, the Sixth Circuit held that the appellant had waived its objection, reasoning that “had objections been made, the court could have resubmitted [the special findings] to the jury for further consideration.” Id. at 1200.

This case is similar to Tennessee Consolidated. Although the jury here returned a special verdict containing written factual findings pursuant to Federal Rule of Civil Procedure 49(a), as opposed to a general verdict together with responses to factual interrogatories pursuant to Rule 49(b), that distinction does not make a difference. In both cases, the waiver rule promotes judicial efficiency by requiring that the trial court be given a chance to let the original jury resolve any inconsistency in its responses. We

also find that, as in Tennessee Consolidated, each party had an adequate opportunity to object to the alleged inconsistency. Trial counsel could have objected either before the court discharged the jury or immediately thereafter, when the court directed the jurors to return to the jury room and asked counsel, “Anything anybody would like the record to reflect at this time?” If counsel had raised the issue of verdict inconsistency at that point, it would have been a simple matter for the court to recall the jury and direct it to resume its deliberations until the inconsistency in the verdict was resolved.

L&W argues that the return of the verdict, the poll of the jury, and the discharge of the jury all occurred within six minutes, and that counsel therefore “did not have adequate time to evaluate the verdicts for the first time.” However, the verdict was a simple one and the issue of inconsistency between the verdicts as to independent claim 7 and dependent claim 10 should have been obvious. Indeed, the use of the Rule 49 procedure to elicit specific factual findings from the jury should alert lawyers to the possibility that the jury’s responses might be inconsistent. See Skillin v. Kimball, 643 F.2d 19 (1st Cir. 1981). We are not persuaded that the period of time given to counsel to evaluate the relatively simple verdict in this case was insufficient to alert them to the possible inconsistency between the special verdicts on claims 7 and 10.

Finally, L&W argues that we should apply a “plain error” exception to the waiver rule. No published Sixth Circuit opinion has recognized such an exception with respect to inconsistent verdicts, and we think that the pragmatic justification behind the waiver doctrine—preventing misuse of procedural rules to obtain a new trial when inconsistencies are most efficiently resolved by the original jury—would lead the Sixth Circuit to reject such an exception if it were asked to create one. E.g., Skillin, 643 F.2d

at 20. Thus, we hold that the parties waived their objections to inconsistency in the jury's findings on claims 7 and 10 by failing to object at trial.

## B

L&W next argues that the jury's verdict is fatally inconsistent because the jury found claim 1 invalid and claim 7 valid, even though those two claims are indistinguishable. The district court considered and rejected that argument on the merits, so we too address the merits of that contention.

Claims 1 and 7 need not rise and fall together because they do not have the same scope. Claim 1 requires each metal sheet of the heat shield to be "biased toward the adjacent sheets," whereas claim 7 requires each metal sheet to be "deformed subsequent to being joined . . . to develop an in-plane stress in each sheet thereby increasing the rigidity of the heat shield." L&W argues that the two claims necessarily cover identical subject matter because (1) deforming the heat shield in a manner that produces in-plane stresses in the metal sheets necessarily results in each sheet of the heat shield being biased toward the adjacent sheets; and (2) Shertech disclaimed planar heat shields during prosecution of the '264 patent, so claim 1, like claim 7, covers only bent heat shields.

We disagree. Even assuming, as L&W asserts, that claim 1 does not cover planar shields, the jury still could have found the two claims distinguishable on at least one other ground. Claim 7 requires that the metal sheets of the heat shield be "fixedly joined along the edges so the edges of the plurality of sheets are substantially immovable" at the time the sheets are subjected to in-plane stress, which in turn occurs while the heat shield is being deformed to a final shape. Claim 1 does not

require that sequence of steps, but merely requires that the sheets be both joined at the edges and biased toward the adjacent sheets. The jury could have concluded that claim 1 is broader than claim 7 on that ground, and thus there is no necessary inconsistency in the jury's verdicts as to the validity of those claims.

### C

L&W contends that, in light of the evidence of anticipation introduced at trial, no reasonable jury could have found claim 7 not anticipated. In reviewing the sufficiency of the evidence to support the jury's verdict, we may inquire only whether the findings necessary to the jury's verdict are supported by the evidence, and we must conduct that inquiry in light of Shertech's burden to overcome the presumption of validity. "Where, as here, there is a verdict of validity, the question is . . . whether the challenger's evidence so met the burden [of establishing invalidity by clear and convincing evidence] that reasonable jurors could not have concluded that the challenger failed to overcome that burden." Perkin-Elmer Corp. v. Computervision Corp., 732 F.2d 888, 893 (Fed. Cir. 1984).

At trial, L&W's expert, Dr. Chapman, reviewed a number of prior art references, including several U.S. patents. He testified that each of the prior art heat shields contained metal layers and that several of the patents suggested that the heat shields could be bent. But claim 7 requires more than that a heat shield consist of metal layers and be bent; it requires that the bending take place after the sheets are joined along the edges and that the metal layers experience in-plane stress. L&W argues that in-plane stress develops in the metal sheets of a heat shield whenever the heat shield is bent,

and it argues that one of the prior art references, the Jeep Grand Cherokee heat shield, “was bent from a planar to a non-planar configuration after the sheets were hemmed.”

The problem with L&W’s reliance on prior art patents is that the patents it cites do not disclose hemming the edges before bending the metal layers. And the problem with L&W’s reliance on the Jeep Cherokee heat shield is that there was evidence, which the jury could have credited, that the Jeep Cherokee heat shield did not come under stress upon bending. Dr. Holmes testified about that heat shield as follows:

Q: The Jeep Cherokee insulation pad, sir, if you could look at it, does it have what you would refer to as score lines?

A. Yes, many score lines, yes.

. . . .

Q. And what relationship is there between score lines on the one hand and biasing or in-plane stress on the other?

A. [T]he score lines are there so that you can relieve stress and bend the particular part. . . . [I]f you’ve got a slit [i.e., score line], you would have relieved any potential in-plane stress that would have been in an object.

Trial Tr. 171:17–172:17, May 12, 2005.

L&W argues that the jury’s reliance on such testimony to conclude that a non-planar prior art device does not exhibit in-plane stress would be legally erroneous because, under the district court’s claim construction, the “in-plane stress” limitation is necessarily satisfied “if a metal sheet is bent from a planar to a non-planar configuration.” That argument, however, misconstrues the district court’s definition of “in-plane stress.” The court defined the term “in-plane stress” as “the stress introduced into the [fixed] metal sheets [of a heat shield] when they are bent from a planar to a non-planar configuration.” That definition requires that some stress be created upon



deformation. The jury could properly have concluded from Dr. Holmes's testimony that although the Jeep Cherokee heat shield was deformed from a planar to a non-planar shape, that deformation did not introduce any stress into the heat shield because of its score lines. Accordingly, the jury could have found that the Jeep Cherokee heat shield did not anticipate claim 7.

### III

L&W's final argument is that Shertech's patent is unenforceable for inequitable conduct. The district court addressed that claim at trial and rejected it. In particular, the court found no clear and convincing evidence that Mr. Sheridan or his attorney acted with intent to deceive or mislead the U.S. Patent and Trademark Office by not disclosing the Jeep Cherokee heat shield to the patent examiner. L&W quarrels with the district court's ruling, but it presents no persuasive reason to conclude that the district court's finding as to the absence of intent to deceive was clearly erroneous. Accordingly, we affirm the district court's order holding that the '264 patent is not unenforceable because of inequitable conduct. Heidelberger Druckmaschinen AG v. Hantscho Comm'l Prods., Inc., 21 F.3d 1068, 1072 (Fed. Cir. 1994) (intent to deceive is a necessary element of inequitable conduct).

Each party shall bear its own costs for this appeal.

AFFIRMED IN PART, REVERSED IN PART, and REMANDED.