

United States Court of Appeals for the Federal Circuit

03-1295, -1310

DR. HARRY GAUS,

Plaintiff-Cross Appellant,

v.

CONAIR CORPORATION,

Defendant-Appellant.

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Appealed from: United States District Court for the Southern District of New York

Magistrate Judge Frank Maas

United States Court of Appeals for the Federal Circuit

03-1295,-1310

DR. HARRY GAUS,

Plaintiff-Cross Appellant,

v.

CONAIR CORPORATION,

Defendant Appellant.

DECIDED: April 1, 2004

Before RADER, BRYSON, and DYK, Circuit Judges.

BRYSON, Circuit Judge.

Dr. Harry Gaus filed this patent infringement action in the United States District Court for the Southern District of New York, No. 94 Civ. 5693, alleging that certain of Conair Corporation's hairdryers infringed his patent, U.S. Patent No. 4,589,047 ("the '047 patent"). The district court granted Conair's motion for summary judgment that Conair's devices did not literally infringe the '047 patent, but it denied Conair's request for summary judgment of noninfringement under the doctrine of equivalents. The case was then tried to a jury, which found that Conair infringed Dr. Gaus's patent under the doctrine of equivalents and that the infringement was willful. The jury awarded Dr. Gaus \$28.5 million in compensatory damages, and the district court enhanced that award by \$8,550,000 because of Conair's willfulness. We hold that as a matter of law Dr. Gaus's patent did not cover the Conair device, either literally or under the doctrine of equivalents, and we therefore reverse the judgment against Conair.

I

The '047 patent is directed to a safety mechanism that prevents fatal shocks to users of electrical appliances such as hairdryers. In the case of a hairdryer, the patented mechanism works by disconnecting the hairdryer from its power source when the hairdryer comes into contact with water. In an unprotected device, if water contacts a voltage-carrying element, such as a hairdryer heating coil or blower, a fatal electric shock can be carried through the water to the user of the device.

The patent describes protective circuitry that includes "a pair of spaced-apart electrically exposed

conductive probe networks.” When there is no water between the two probe networks, no current flows through the protective circuitry. When water is present, however, the impedance between the probe networks is lowered, and current passes through the protective circuitry. When that occurs, the current melts a resistance element (essentially a fuse). When the resistance element melts, current stops flowing to the voltage-carrying portions of the device, such as the blower and heater of the hairdryer, and the user receives no shock.

The protective circuitry in the accused Conair hairdryer does not include a pair of probe networks separate from the voltage-carrying operating unit of the appliance (in a hairdryer, the heater and blower). Instead, the Conair device has a single sense wire that branches throughout the housing near the voltage-carrying operating elements of the device. When water is disposed between the sense wire and the electrical operating portion of the device, the impedance between the sense wire and the electrical operating portion is lowered. The low impedance causes current to flow through the protective circuit, which in turn causes the device to be disconnected from the power supply.

In its motion for summary judgment of noninfringement, Conair argued that its accused hairdryer did not contain “a pair of spaced-apart electrically exposed conductive probe networks,” as required by the asserted claim, claim 12 of the ’047 patent. Conair argued that the protective circuit in its hairdryer included only a single sense wire, rather than a pair of probes, and that its protective system was triggered when current passed between the single sense wire and the voltage-carrying components of the hairdryer, rather than when current passed between the two components of the pair of probe networks recited by the claim. Conair also argued that the patent required that all of the protective circuitry be included within the housing of the hairdryer, while some of the protective circuitry of the accused product was located in the wall plug. The district court agreed that the patent required that all of the protective circuitry be located within the housing and granted summary judgment of no literal infringement on that ground.^[1] The court, however, did not agree with Conair on the “pair of . . . probe networks” limitation, and it held that Conair was not entitled to summary judgment of noninfringement under the doctrine of equivalents.

The case proceeded to trial on a theory of infringement under the doctrine of equivalents. At the close of the evidence, Conair moved under Federal Rule of Civil Procedure 50(a) for judgment of noninfringement as a matter of law. In what it characterized as an abbreviated summary of its grounds for relief, Conair argued, *inter alia*, that there was no infringement based on the “all elements rule” and “specification estoppel.” The district court denied Conair’s motion, and the case went to the jury. Following the jury’s verdict, Conair renewed its motion, which was again denied.

II

Conair argues that claim 12 of the ’047 patent requires that the device contain a “pair of . . . probe networks” that is separate from its voltage-carrying operating portions. The Conair hairdryer does not infringe, according to Conair, because the protective system in its hairdryer has only a single probe, which functions in conjunction with the voltage-carrying operating portion of the hairdryer, not in conjunction with a second element of a pair of probes. Conair contends that the ’047 patent disclaims a protective system such as Conair’s and that Conair’s hairdryer therefore does not infringe, either literally or under the doctrine of equivalents.

In pertinent part, claim 12 recites the following:

A hazard prevention device for an electrical externally powered apparatus comprising:

a housing, said housing having at least one opening and said housing comprising an electrical operating unit and a pair of spaced-apart electrically exposed conductive probe networks, said pair being responsive to the entry of a conductive fluid electrically reducing the impedance between said probe networks of said pair

A

Preliminarily, Dr. Gaus argues that Conair waived any challenge to the jury’s verdict of infringement under the doctrine of equivalents by failing to challenge the sufficiency of the evidence with the requisite specificity in its preverdict Rule 50(a) motion. Citing *Duro-Last, Inc. v. Custom Seal*,

Inc., 321 F.3d 1098, 1105 (Fed. Cir. 2003), Dr. Gaus asserts that simply listing the grounds on which Conair based its Rule 50(a) motion was insufficient to put Dr. Gaus on notice as to what Conair alleged to be deficient in Dr. Gaus's evidence.

The district court, which was in the best position to judge the sufficiency of the Rule 50(a) motion in the context of the trial, held that the motion was sufficient, particularly in light of the fact that “liability under the doctrine of equivalents has been the central issue in this case since [the district court] determined . . . that Gaus' patent was not literally infringed.” We decline to upset that determination. While the references to the “all elements” rule and “specification estoppel” constituted a terse—even cryptic—statement of the grounds for Conair's motion for a judgment of noninfringement as a matter of law, we are not persuaded that those references were inadequate to apprise Dr. Gaus of the grounds on which Conair was basing its motion.

In its post-trial motion for judgment as a matter of law, Conair argued, inter alia, that the Conair device lacked one of the limitations set forth in the asserted claim—the pair of conductive probe networks—and that the specification made clear that the invention did not encompass structure such as that found in Conair's device. Those are the same arguments that Conair raised in its Rule 50(a) motion, albeit in abbreviated form. Under these circumstances, we are not disposed to override the district court's determination that Conair did not waive its noninfringement claim by failing to make an adequate Rule 50(a) motion at the close of the evidence.

Dr. Gaus also argues that Conair urged a new claim construction for the first time after trial and on appeal. Dr. Gaus contends that Conair did not make the argument earlier and therefore has waived it. We disagree with the premise of Dr. Gaus's argument, however. Before trial, Conair argued that the “pair of probe networks” limitation should be construed to require

two corresponding things designed for use together the functioning of which are independent of the other voltage carrying portions of the hairdryer to be protected and which are configured such that the trigger switch current will respond before the penetrating water reaches any other voltage carrying portions of the hairdryer, such as the heating coil.

After trial and on appeal, Conair has argued that the pair of probe networks must be construed to mean “a pair of probe networks that is separate and operates independently from any voltage carrying part of the apparatus and which will effect a current shut off (upon entry of water) before water touches any voltage carrying part of the apparatus.” While the two formulations employ somewhat different language, they embody the same concept—that the probe network must contain two conductive elements that are separate or independent from the voltage-carrying portions of the hairdryer. We find no change of position on Conair’s part, and thus no waiver.

B

Turning to the merits, we focus on the critical claim language, which provides that the housing of the claimed apparatus comprises “an electrical operating unit and a pair of spaced-apart electrically exposed conductive probe networks.” The claim lists the “electrical operating unit” separately from the “pair of spaced-apart electrically exposed conductive probe networks,” and does not suggest that the “pair of . . . probe networks” consists in part of a portion of the “electrical operating unit.” Rather, the clear implication of the claim language is that the pair of probe networks is a distinct component, separate from the electrical operating unit of the claimed invention.

The specification confirms that interpretation.^[2] The specification refers to the “electrical operating unit” variously as the “voltage-carrying exposed parts” of the device, ’047 patent, col. 3, l. 41, the “interior part of the apparatus carrying a voltage,” *id.*, col. 5, ll. 61-62, the “other parts of the electrical apparatus which have a voltage on them, e.g., the heating coil in the case of a hairdryer,” *id.*, col. 7, ll. 1-2, or the “voltage-carrying parts of the apparatus,” *id.*, col. 7, ll. 10-11. The “pair of spaced-apart electrically exposed conductive probe networks” is described in the specification as an “exposed electrical double conductor,” *id.*, col. 3, ll. 5-6, and a “probe in the form of a double conductor,” *id.*, col. 3, l. 20; col. 5, l. 40; col. 6, l. 66; col. 7, ll. 9-10. Nothing in the descriptions of those two components suggests that their structures or functions overlap. To the contrary, the specification plainly describes the two components as separate.

The Summary of the Invention describes the exposed electrical double conductor and the

protective circuit that is wired to it as triggering the disconnection of the power to the appliance as soon as “a conductive fluid such as water penetrates into the apparatus housing.” ’047 patent, col. 3, ll. 34-39. The device “accomplishes this disconnection,” according to the Summary, “before the user can be connected to voltage-carrying exposed parts via the fluid which has entered the housing.” *Id.*, col. 3, ll. 39-42. That description plainly contemplates that the double conductor is separate from the voltage-carrying electrical operating unit, a structural separation that is essential to the operation of the device in the prescribed manner.

The specification explains that the “electrical double conductor of the probe” may be configured in the form of strips placed near the areas of the housing to which water might have access, so that “water which penetrates through the opening or through the gap in the housing cannot produce an electrical contact forming a current path from any interior part of the apparatus carrying a voltage to any point lying outward of such interior part, without said water wetting the strips.” ’047 patent, col. 5, ll. 58-63. Elsewhere, the specification makes the same point, directing that the “electrical double conductor of the probe should be configured in such a way that the trigger switch circuit will respond before the penetrating water reaches any other parts of the electrical apparatus which have a voltage on them (e.g., the heating coil, in the case of a hairdryer).” *Id.*, col. 6, l. 66, through col. 7, l. 3.

The specification further describes how far the probes must be separated from the electrical operating system to avoid any water contacting the electrical operating system before the power has been disconnected. For example, in the case of a protective switch with a tripping speed of 1.3 milliseconds, the specification explains that the minimum distance between the electrical double conductor of the probe and the voltage-carrying parts of the apparatus must be 10 millimeters. ’047 patent, col. 7, ll. 7-11. By separating the pair of probe networks from the voltage-carrying components of the device by that amount, the invention ensures that the protective circuit will have time to cut the power to the apparatus before the water reaches the voltage-carrying components.

Moreover, the specification explains that “[t]he object of the invention is to devise a protective device . . . which device will respond in an extremely short time . . . independently of the operating state

of the apparatus, so as to protect the user from electric shock.” 47 patent, col. 2, ll. 55-61 (emphasis added). The invention therefore cannot encompass a hairdryer with a protective device that relies on current passing between a probe and the electrical operating system, since such a device would be triggered only when the hair dryer was operating and voltage was being applied to the electrical operating system. The specification thus plainly requires that the pair of probe networks be separate from the voltage-carrying electrical operating unit of the device, such as (in the case of a hairdryer) the heating coil and the blower.

Significantly, the specification describes one of the principal advantages of the claimed invention in a way that excludes the electrical operating unit from serving as part of the pair of probe networks. The specification explains that prior art devices would trigger the protective circuit only when there was a direct connection between the water and the power supply circuit, which would result in a shock of at least brief (and thus, ideally, nonlethal) duration to the user of the device. '047 patent, col. 2, ll. 13-20. The specification adds, however, that the invention of the '047 patent protects the user from such a shock, see id., col. 2, ll. 55-61, and the specification explains that the invention does so by arranging for the protective circuit to be separate from the voltage-carrying components of the appliance. The invention achieves that objective because it ensures that water will encounter the two probe networks before it encounters the voltage-carrying electrical operating unit. The lowering of impedance between the two probe conductors caused by the entry of water into the housing triggers the flow of electricity through a circuit that cuts power to the entire apparatus within milliseconds. Because of the presence of large resistors in the protective circuit, the leakage of current from the protective circuit, when it is triggered, is very low and completely safe—approximately 1.8 milliamperes, according to the specification. Id., col. 5, ll. 32-34. For that reason if, for example, a bather drops a hairdryer into the bath water, the claimed invention will interrupt the power to the hairdryer before the bather feels any shock.

Dr. Gaus argues that the specification's discussion of a protective device that prevents the user from being connected to the electrical operating unit via the fluid is merely a description of a preferred embodiment. The specification, however, states that “according to the invention” the protective circuit

“accomplishes this disconnection before the user can be connected to voltage-carrying exposed parts via the fluid which has entered the housing.” ’047 patent, col. 3, ll. 34-42. The specification thus demonstrates that the invention itself requires that the user be completely protected from shock, in contrast to prior art devices that exposed the user to a brief, non-lethal shock.

The Conair device operates in an entirely different way. The undisputed evidence showed that in the Conair device the protective circuit is not triggered until water reaches a voltage-carrying component and creates an electrical connection between that component and the sense wire, at which point current runs between the voltage-carrying component and the sense wire, triggering the protective circuit that shuts off the power to the device. During the short period before the power shuts off, the user of the device will experience a shock, although because the period of the current flow is very short, the shock is not fatal.

In sum, Conair’s hairdryer does not have a pair of probe networks that is separate from the electrical operating unit, as is required by claim 12 of the ’047 patent. Rather, the Conair device employs a single probe acting in concert with the electrical operating system. Conair’s hairdryer therefore does not literally infringe claim 12 of the ’047 patent.

C

Dr. Gaus argues that even assuming the district court was correct in ruling that there was no literal infringement in this case, the jury had before it ample evidence from which to conclude that the structure of the protective system in Conair’s hairdryer had structure that was equivalent to the “pair of . . . probe networks” and that the court was correct to enter judgment on the jury verdict of infringement under the doctrine of equivalents.^[3] We hold that because the patent made clear that structure such as that in the Conair device was excluded from the scope of the claimed invention, the district court should have granted judgment of noninfringement as a matter of law.

Dr. Gaus characterizes the issue as being whether Conair’s hairdryer can infringe under the doctrine of equivalents, even though its electrical operating system performs the functions of two claim

elements. That, however, is not the issue as we see it. It is true, as Dr. Gaus argues, that “[e]quivalency can . . . exist when separate claim limitations are combined into a single component of the accused device.” Dolly, Inc. v. Spalding & Evenflo Cos., 16 F.3d 394, 399 (Fed. Cir. 1994). However, the problem for Dr. Gaus in this case is that the ’047 patent excluded structure of the sort found in Conair’s hairdryers as being outside the scope of Dr. Gaus’s invention.

As this court has explained, “[a] particular structure can be deemed outside the reach of the doctrine of equivalents because that structure is clearly excluded from the claims whether the exclusion is express or implied.” SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1345 (Fed. Cir. 2001); accord Dolly, 16 F.3d at 400 (“In short, the concept of equivalency cannot embrace a structure that is specifically excluded from the scope of the claims.”); Moore U.S.A., Inc. v. Standard Register Co., 229 F.3d 1091, 1106 (Fed. Cir. 2000) (claim limitation requiring a “majority” cannot be equivalent to a “minority,” its antithesis); Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1582 (Fed. Cir. 1996). In SciMed, the patentee “specifically identified, criticized, and disclaimed” a dual lumen catheter in the patent specification, and accordingly was barred from invoking the doctrine of equivalents to recapture the dual lumen catheter. 242 F.3d at 1345. Similarly, in Dolly, because the claim itself specifically required a portable adjustable child’s chair with a stable rigid frame formed of components other than the seat and back panels, the court held that the patentee could not rely on the doctrine of equivalents to cover a chair with a stable rigid frame formed of the seat and side and back panels. 16 F.3d at 399.

In the specification of the ’047 patent, Dr. Gaus criticized prior art in which the protective device relied on the fluid coming in contact with the voltage-carrying portions of the system, ’047 patent, col. 2, ll. 13-20, and indicated that his invention avoids the resulting problem, an electric shock to the user, id., col. 3, ll. 34-42. Likewise, Dr. Gaus described the invention as requiring the protective circuitry to function regardless of the operating state of the apparatus, id., col. 2, ll. 55-61, something that the Conair device could not do, because of its reliance on the voltage-carrying operating unit of the hairdryer to serve as one of the two conductors in the protective circuit. Dr. Gaus thus made clear that it is essential to his invention that the pair of probe networks be separate from the voltage-carrying components of the

appliance, i.e., the “electrical operating system.”

Having disavowed coverage of devices in which the two components are not separate and in which the protective cut-off mechanism is not triggered until the water reaches the electrical operating system, the patentee cannot reclaim that surrendered claim coverage by invoking the doctrine of equivalents. See Dawn Equip. Co. v. Ky. Farms Inc., 140 F.3d 1009, 1016-17 (Fed. Cir. 1998) (criticism in patent of prior art structure, which is similar to structure of accused device, supports conclusion of non-equivalence). We therefore hold that the evidence does not support Dr. Gaus’s contention that Conair infringes the ’047 patent under the doctrine of equivalents. Accordingly, the district court should have granted Conair’s motion for judgment of noninfringement as a matter of law.

REVERSED.

[1] Because we hold that Conair’s accused device did not infringe based on the absence of a “pair of spaced-apart electrically exposed conductive probe networks,” we do not decide whether the patent requires that all of the protective circuitry be located within the hairdryer housing.

[2] Indeed, as we discuss below, even if the claim language itself did not support the interpretation we adopt, there is in the specification “a clear case of disclaimer of subject matter that, absent the disclaimer, could have been considered to fall within the scope of the claim language.” SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1344 (Fed. Cir. 2001); accord Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906-09 (Fed. Cir. 2004).

[3] In addition to his own testimony and that of his expert that a sense wire paired with the electrical operating system is insubstantially different from the claimed structure, Dr. Gaus points to alleged admissions on the part of Conair’s expert and a Conair senior project engineer that Conair’s device must have a pair of probe networks in order to work. Those “admissions,” however, amounted to nothing more than acknowledgements that a wire attached to the electrical operating system would be at the same potential as the operating system, and that the sense wire cannot function without current

flowing to it from another point, such as the electrical operating system.