

United States Court of Appeals for the Federal Circuit

03-1639

ALTICOR INC.,

Plaintiff-Appellant,

v.

ULTRA-SUN TECHNOLOGIES, INC.,

Defendant-Appellee.

DECIDED: July 20, 2004

Before NEWMAN, Circuit Judge, PLAGER, Senior Circuit Judge, and CLEVINGER, Circuit Judge.

CLEVINGER, Circuit Judge.

Alticor Inc. ("Alticor") appeals the decision of the United States District Court for the Western District of Michigan granting summary judgment of noninfringement in favor of Ultra-Sun Technologies, Inc. ("Ultra-Sun"). Alticor Inc. v. Ultra-Sun Technologies, Inc., No. 1:02-CV-73 (W.D. Mich. May 30, 2003). Because a reasonable jury could find that the accused device "monitor[s] the performance of said source of radiant energy," and that the structures present in Ultra-Sun's accused device are "means . . . for establishing plug-like spiral flow," we vacate the decision of the district court and remand for further proceedings consistent with this opinion.

I

In suit are claims 1-4, 6, and 24, from U.S. Patent No. 5,536,395 ("the '395 patent"), and claims 1 and 3-6, from U.S. Patent No. 5,698,091 ("the '091 patent"). The '091 patent issued

from a continuation of a divisional application that claims priority to the application that issued as the '395 patent. Both patents are generally directed to water purification systems. The systems described and claimed use, among other components, a UV light radiant energy source ("UV light" or "radiant energy source") to kill microorganisms in water. In simple terms, a UV light is placed lengthwise in a bottle or tube. The water to be purified flows through the tube, entering at one end, passing along the length of the UV light, and exiting the other end of the tube. Because the radiant energy source is important for killing contaminating microorganisms, the description provides for monitoring the performance of the radiant energy source. In addition, the description provides for moving the flow of water past the radiant energy source in the tube in a particular manner, *i.e.*, with "plug-like spiral flow," which maximizes the killing effect of the radiant energy source.

Ultra-Sun's accused device is also a water purification system. Similar to the system described and claimed in the asserted patents, the Ultra-Sun device purifies water, in part, by passing potentially contaminated water through a tube or bottle containing a UV light. The accused device contains several features of interest to this litigation. First, it contains a "light pipe" or "window" that transmits a light signal from the interior of the tube containing the UV light to the outside of the apparatus. The light signal derives from the blue UV light in the tube. Accordingly, a person viewing the accused device can determine whether the UV light is on by observing whether the accused device displays a blue light. Second, the accused device contains a timer connected to three lights, one green, one yellow, and one red. Because UV lights relevant to this art generally wear out over time, this component of the accused device reflects how long the UV light has been on relative to its predicted lifespan. When operating as planned, the green light is on when the UV light is fresh and predicted to be effective for killing microorganisms. After the timer records that a certain amount of time has passed, an amount of time at least operationally correlated to the time the UV light is also on, the yellow light comes on. This informs the user that the UV light will soon need to be replaced. Then, after the timer records additional time, the red light comes on, informing the

user that the UV light should be changed. Finally, in the accused device, water flows through the bottle or tube containing the UV lamp in a manner that might or might not have "plug-like spiral flow."

In the '395 patent, claims 1, 6, and 24 are independent claims and claims 2-4 depend from claim 1. The limitations relevant to the district court's grant of summary judgment are found in the independent claims. In particular, claims 1 and 6 contain the language:

a radiant energy monitor operable for monitoring the performance of said source of radiant energy and providing an indication when said source has reached end-of-life.

'395 patent, col. 17, ll. 20-23; col. 17, l. 65 to col. 18, l. 2. Claim 24 contains nearly identical language, although adding the term, "means":

a radiant energy monitoring means for monitoring the performance of said source of radiant energy and providing an indication when said source has reached end-of-life.

'395 patent col. 21, ll. 1-4 (emphasis added).

In the '091 patent, claims 3-6 depend from claim 1. The limitations relevant to the summary judgment motion are found in claim 1:

(iii) directional means proximate said source water inlet for establishing plug-like spiral flow within said open chamber with a substantial axial and tangential component about said elongate ultraviolet discharge lamp, said flow extending between said source water inlet and said source water outlet.

'091 patent, col. 17, ll. 23-28 (emphasis added).

A

The district court construed the claim language, "radiant energy monitor operable for monitoring the performance of said source of radiant energy," to mean that the radiant energy

monitor is a device that detects or checks the capability of the radiant energy source to kill microorganisms. Applying this construction to the facts, the district court, referring to the light pipe as a "window," concluded that no reasonable jury could conclude that a "window is . . . a device." Reciting nearly identical reasoning, the district court further held that no reasonable jury could find the light pipe equivalent because it "does not check or monitor the ultraviolet lamp It simply allows the user to look inside the ultraviolet sterilization chamber."

Next, construing the claimed "radiant energy monitoring means" recited in disputed claim 24, the district court accepted that the relevant structures described in the specification are a "voltage detection circuit, [a] microprocessor[, and] equivalents." Reasoning that "[n] either a voltage detection circuit nor a microprocessor is similar to a window" because the former are "electrical in nature, and a window is not," the district court concluded that no reasonable jury could find infringement.

Finally, the district court addressed the, "means . . . for establishing plug-like spiral flow," limitation from claim 1 of the '091 patent. According to the district court, the parties agreed that, as a matter of construction, the relevant structures described in the written description and clearly linked to the function of "establishing plug-like spiral flow" are a "diverter plate, elongate, bottle-shaped vessel and a radial baffle." Focusing on the C-shaped clips of the accused device, the district court concluded that the clips were so different from the radial baffle that no reasonable jury could find infringement.

Alticor appeals. According to Alticor, the district court erred in construing the claims, and where it did not err in that regard, erred in its application of the properly construed claims to the accused device. We have jurisdiction to hear this appeal pursuant to the authority provided in 28 U.S.C. § 1295(a)(1). Because this is an appeal from a grant of summary judgment, both questions receive plenary review. Conroy v. Reebok Int'l, Ltd., 14 F.3d 1570, 1575 (Fed. Cir. 1994).

II

Summary judgment is proper "if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." Fed. R. Civ. P. 56(c); see Anderson v. Liberty Lobby, Inc., 477 U.S. 242 (1985). Summary judgment is improper where "the evidence is such that a reasonable jury could return a verdict for the non-moving party." 477 U.S. at 248.

To find infringement, the meaning of the relevant claims must first be ascertained, after which, a finder of fact compares the properly construed claims to the accused device. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370 (1996). Claim construction, or interpretation, is a question of law. Cybor Corp. v. Fas Techs., Inc., 138 F.3d 1448, 1454-56 (Fed. Cir. 1998) (en banc). When exercising the power to review claim construction, this court determines the meaning and scope of the relevant claim language pursuant to announced principles of claim construction. On summary judgment, after determining the proper meaning and scope of the relevant claim language, we decide, without deference, if the district court was correct in its judgment that no reasonable jury could find, either literally or by application of the doctrine of equivalents, each and every limitation recited in the properly construed claims in the accused device. Middleton, Inc. v. 3M, 311 F.3d 1384, 1387 (Fed. Cir. 2002); Bai v. L&L Wings, Inc., 160 F.3d 1350, 1353 (Fed. Cir. 1998).

III

In this case, the parties divide on (1) whether a reasonable jury could conclude that the light pipe or timer in the accused device meet, either literally or by application of the doctrine of equivalents, the limitation of a "radiant energy monitor" that monitors the performance of the UV light and provides an indication that the UV light has reached end-of-life; and (2) whether a reasonable jury could conclude that the structures present in the accused device are identical

to or the statutory equivalent of the structures encompassed by the limitation, "means . . . for establishing plug-like spiral flow."

A

We begin with claims 1 and 6 of the '395 patent. In our view, the district court was generally correct in its understanding of the claim language: "radiant energy monitor operable for monitoring the performance of said source of radiant energy." Both parties assert, and we agree, that the claimed monitor is a device, e.g., an instrument, piece of equipment, or mechanism. We are also of the view that the "monitor" be fit for or capable of two discrete tasks: (1) "monitoring the performance of said source of radiant energy" and (2) "providing an indication when said source has reached end-of-life." We also agree with the district court that the claims recite that the "source of radiant energy . . . [is] . . . for killing microorganisms." '395 patent, col. 17, ll. 15-16. Accordingly, we agree that "monitoring the performance" includes observing, detecting, or checking the capability of the radiant energy source to kill microorganisms. It is here, however, that we part company with the district court.

A reasonable jury could conclude that Ultra-Sun's accused device infringes this claim either literally or by application of the doctrine of equivalents. We think several reasons command this conclusion. First and foremost, we are of the view that a jury could conclude that the light pipe is a device that observes, detects, or checks whether the radiant energy source is capable of killing microorganisms. Ultra-Sun urges that the light pipe, or window, cannot be a monitor because it is "passive," and accordingly, the user, rather than the structure, is the "monitor." According to Ultra-Sun, a monitor must be "active"—must have some type of processing function. We disagree. As presented to this court, the light pipe, like a window, transmits a light signal to the exterior of the apparatus. Because the detected light signal is the light from the UV light, the information transmitted by the light pipe shows whether the UV light is on or off. When the UV light is off, it is incapable of killing microorganisms. A reasonable jury could conclude that the presence of the light pipe in the accused device

permits the accused device to monitor the performance of the radiant energy source.

Second, it seems the district court overlooked the idea that a reasonable jury could conclude that a device capable of timing the lifespan of a radiant energy source that degrades to noneffectiveness over time may be "monitoring the performance" of the radiant energy source. Although Ultra-Sun concedes that "timing is a parameter of performance," it urges that a reasonable jury could not find the timing arrangement in the accused device capable of monitoring the performance of the radiant energy source because it is "divorced from" or has "no connection" to the light. In particular, Ultra-Sun presents that the timer in the accused device is not electronically linked to the UV light, and thus, in some cases, may continue to time thereby indicating that the UV lamp is still performing when it is not performing. We disagree with the underlying reasoning. The timer and associated green, yellow, and red lights are operationally linked to the function of the UV bulb. When the apparatus is functioning normally, these lights predict when the bulb will no longer be effective for killing microorganisms and needs to be replaced. We think a reasonable jury could find that this function constitutes monitoring the performance of the UV light. It is not dispositive for Ultra-Sun that there are circumstances in which the timer may not provide correct information as to the status of the UV light. In fact, implicit in any such argument is that there may be instances when the timer does work properly.

Third, a reasonable jury could conclude that the light pipe and timing mechanisms are together the "radiant energy monitor operable for monitoring the performance of said source of radiant energy." For instance, in the situation where the UV light is burned out, but the timer reflects that the UV light has time remaining during which it is effective for killing microorganisms, the light pipe will show that the UV light is no longer actually capable of killing microorganisms. In the opposite situation, where the light pipe detects that the UV light is on, but it has been on so long that it may no longer be effective, the timer and red light transmit the information that there is a significant concern that the UV light, although still blue, is no longer capable of killing microorganisms.

In sum, a reasonable jury might conclude that either singly or together, the light pipe and timer with associated lights are structures capable of meeting the limitation, "radiant energy monitor operable for monitoring the performance of said source of radiant energy."

Finally, we note that the district court has not yet construed the claim language, "providing an indication when said source has reached end-of-life." Should this term need to be construed, we suggest, as further guidance, that the district court may need to consider whether the same structure or structures capable of providing the "monitoring" function may also be capable of "providing an indication . . . [of] . . . end-of-life."

B

Taking up claim 24 of the '395 patent, we conclude that the district court erred in granting summary judgment. The district court properly recognized that the use of the term "means" in this claim invoked the principles of 35 U.S.C. § 112 ¶ 6. In addition, the district court correctly identified some of the structures described in the specification that were clearly linked to the claimed "radiant energy monitoring means." In particular, the district court identified a "voltage detection circuit, [a] microprocessor[, and] equivalents." The structures identified by the district court, however, are an incomplete list of the structures described in the written description that are clearly linked to "means for monitoring the performance of said source of radiant energy."

The written description clearly links a microprocessor with a clock to the means for monitoring. The written description explains that UV lamp degradation over time affects performance:

The effectiveness of radiation in the killing of microorganisms is dependent on a number of factors. One important factor is the status of the source of radiant energy. For example, the performance of most known ultraviolet discharge bulb designs degrades with time. It is therefore desirable to monitor the radiant energy source and alert the user if there is a malfunction.

'395 patent col. 1, l. 63 to col. 2, l. 2. Next, the specification clearly links a "microprocessor

220" with a "clock" to track the filter lifespan. See '395 patent, col. 13, ll. 44-54 ("a register in microprocessor 220 connected to a clock provides a measure of total accumulated flow based on the total accumulated time"). We recognize that the filter is not the radiant energy source. However, col. 14, ll. 17-19, describes a color LED array with a lamp for indicating the status of the UV light. It also describes that the "microprocessor 220" "drive[s]" the LED display "according to the logic hereinafter described." Id., ll. 29-31. At one part of the description, the logic is described thus:

The microprocessor 220 . . . is programmed to provide output signals 223 to the . . . LED drivers contained on enunciator board 240, according to the following table, to indicate the condition of the water treatment system unit and the type of maintenance required. Generally, when the green lamp is on, the user is free to use the water treatment system unit. When treated water has passed through the unit and the green lamp is blinking alternately with another lamp, maintenance is necessary but the user can still continue to use the water treatment system.

'395 patent col. 16, ll. 11-21. Finally, as Alticor notes, the logic table in the written description includes a condition: "Usable but ultraviolet lamp needs to be changed soon." '395 patent, Logic Table. Read together, we are convinced that a person of ordinary skill in the art would understand the microprocessor and clock to be linked to the function of timing the predicted lifespan of the UV light and reporting the same.

As we noted earlier, a reasonable jury could conclude that this timing function alone monitors the performance of the radiant energy source. Thus, plaintiff is entitled to have a jury consider whether the structures present in the accused device are identical to or the statutory equivalent of the timing structures claimed as means for monitoring performance.

C

Addressing claim 1 of the '091 patent, we conclude that the district court erred in granting summary judgment of noninfringement. Like claim 24 of the '395 patent, this claim also invokes 35 U.S.C. § 112 ¶ 6. Before this court, the parties did not dispute the structures described in the written description necessary for performing the claimed function.

Accordingly, for this case, those structures include a "diverter plate, elongate, bottle-shaped vessel and a radial baffle." The parties do not dispute the corresponding structures in the accused device. As Ultra-Sun notes, "the . . . components that surround the lamp in the accused [device] are an elongate chamber with tangential inlet and outlet, and a pair of C-clips." Ultra-Sun explains in a footnote that "[t]he tangential inlet of the [accused device] directs the incoming water against the side of the cylindrical vessel, as does the diverter plate of the '091 patent."

When considering infringement of a claim under the auspices of § 112 ¶ 6, a finder of fact must view the claimed and accused structures as a whole, comprised of all relevant components. Odetics, Inc. v. Storage Tech. Corp., 185 F.3d 1259, 1267-68 (Fed. Cir. 1999). Contrary to Ultra-Sun's urging, this is the required inquiry, although, it is certainly possible that the contribution of one component to the structure as a whole is sufficient to preclude finding an accused structure either identical or a statutory equivalent.

In our view, a reasonable jury could conclude that the accused structure is identical to or the statutory equivalent of the claimed structure. In particular, we note that even according to Ultra-Sun, two of the components of the accused structure appear similar to components of the claimed structure. Further, we observe that Alticor provided experimental data and expert testimony from which a reasonable jury could conclude that the structure in the accused device causes a plug-like spiral flow that improves in the presence of the C-clips, which may therefore share the baffle-type function of the radial baffle component of the claimed structure.

IV

In conclusion, the district court erred in its judgment that no reasonable jury could conclude that the accused device: (1) "monitor[s] the performance of said source of radiant energy"; (2) contains "means for monitoring" identical to or the statutory equivalent of the claimed means; and (3) contains "means . . . for establishing plug-like spiral flow" identical to or the statutory equivalent of the claimed means. Accordingly, we vacate the grant of

summary judgment in favor of Ultra-Sun and remand for further proceedings consistent with this opinion.