

NOTE: This disposition is nonprecedential

## United States Court of Appeals for the Federal Circuit

06-1168

DESA IP, LLC,

Plaintiff-Appellant,

v.

EML TECHNOLOGIES, LLC  
and COSTCO WHOLESALE CORPORATION,

Defendants-Appellees.

James R. Higgins, Jr., Middleton Reutlinger, of Louisville, Kentucky, argued for plaintiff-appellant. With him on the brief were Augustus S. Herbert and Robert J. Theuerkauf.

Roger L. Cook, Townsend and Townsend and Crew LLP, of San Francisco, California, argued for defendants-appellees. With him on the brief was Iris Sockel Mitrakos.

Appealed from: United States District Court for the Middle District of Tennessee

Judge Aleta A. Trauger

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DECIDED: January 4, 2007

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Before MICHEL, Chief Judge, PLAGER, Senior Circuit Judge, and RADER, Circuit Judge.

MICHEL, Chief Judge.

In this patent case, DESA IP, LLC ("DESA") appeals from a stipulated judgment of non-infringement, entered by the United States District Court for the Middle District of Tennessee following a claim construction hearing. Desa IP, LLC v. EML Techs., LLC, No. 3-04-0160 (Nov. 21, 2005). Because the district court erred in construing "sensor means" and other disputed terms, we vacate and remand.

## I. BACKGROUND

DESA is the owner of United States Patent No. 5,598,066 ("the '066 patent"), directed to motion-activated security lights. The '066 patent discloses a light that

illuminates at two levels: (1) a dim "accent" level when dusk is detected by a photocell within the apparatus and (2) a brighter "security" level which is rapidly activated when motion is detected by a passive infrared motion sensor. The lamp remains illuminated at the "security" level as long as the motion sensor continues to detect motion (which resets an internal timer), but eventually returns to "accent" mode. When the photocell senses daylight, however, the lamp is turned off.

The '066 patent further discloses that, in the preferred embodiment, there is a "manual override" feature, which keeps the light continuously on at the brighter "security level" until daylight. The preferred embodiment also has a "pulse counting" feature, which avoids false triggering by activating the "security" mode only when motion is twice detected by the sensor within a specified time period. These additional features, (neither of which are present in the accused device), are explicitly recited in some, but not all, of the claims.

On February 27, 2004, DESA filed suit against EML Technologies LLC ("EML") and Costco Wholesale Corporation ("Costco"),<sup>1</sup> alleging infringement of claims 6, 9, 10 and 11 of the '066 patent. Claim 6 recites:

An apparatus comprising:

first sensor means for detecting a first predetermined condition external to said apparatus, said first predetermined condition being motion relative to said first sensor means of a person or object separate from said apparatus;

second sensor means for detecting a second predetermined condition, said second predetermined condition being a predetermined level of light external to said apparatus;

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<sup>1</sup> Costco imports and sells the allegedly infringing motion-activated security lights manufactured by EML.

a lamp which can emit a first level of illumination and which can emit a second level of illumination substantially greater than said first level of illumination, said lamp being capable of switching rapidly from said first level of illumination to said second level of illumination; and

control circuit means coupled to said lamp and responsive to said first and second sensor means for causing said lamp to emit light at said first level of illumination in the absence of said first predetermined condition in response to said second predetermined condition, and for causing said lamp to emit light at said second level of illumination in response to detection of said first predetermined condition;

wherein said control circuit means includes means responsive to detection of said first predetermined condition for initiating measurement of a predetermined time interval, and responsive to expiration of said time interval for causing said lamp to thereafter emit light at said first level of illumination in response to said second predetermined condition in the absence of a recurrence of said first predetermined condition.

Claim 9 recites:

sensor means for detecting a predetermined condition external to said apparatus;

a lamp which can emit a first level of illumination and which can emit a second level of illumination substantially greater than said first level of illumination, said lamp being capable of switching rapidly from said first level of illumination to said second level of illumination; and

control circuit means coupled to said lamp and responsive to said sensor means for causing said lamp to emit light at said first level of illumination in the absence of said predetermined condition, and for causing said lamp to emit light at said second level of illumination in response to detection of said predetermined condition, wherein said control circuit means is powered by an AC voltage, and wherein said control circuit means include switching means for selectively permitting and preventing the application of said AC voltage to said lamp and means for causing said switching means to be actuated for a selected portion of each half wave cycle of said AC voltage, said portion of said half waves being greater for said second level of illumination than for said first level of illumination.

Claims 10 and 11, although likewise drafted as independent claims, merely add additional limitations to those recited by claim 9.

The district court appointed as technical advisor Dr. Charles Carnal, a professor of electrical engineering at Tennessee Technological University. It held a three-day Markman hearing, during which multiple experts for both sides testified as to (1) the applicability of 35 U.S.C. § 112, ¶ 6 and (2) the meaning of the disputed claim terms.<sup>2</sup> At the end of the hearing, the court orally rendered its claim construction ruling. Hr'g Tr. 656-78, Oct. 27, 2005.

Most relevant to this appeal, the district court construed the disputed terms "sensor means," "control circuit means," and "switching means." As a preliminary matter, the court concluded that 35 U.S.C. § 112, ¶ 6 applied to all three of these phrases because the asserted claims did not recite sufficient structure, materials, or acts to perform the recited functions. Id. at 659:8-11.

The court found the corresponding structure for "first sensor means for detecting a first predetermined condition external to said apparatus" in claim 6—where "first predetermined condition" was internally defined within claim 6 to be "motion relative to said first sensor means of a person or object separate from said apparatus"—described at col.3 l.24-col.4 l.5 of the specification. Id. at 664:6-14. This definition includes not only the passive infrared sensors Q1 and Q2, but also what Professor Massengill dubbed "selection circuitry," i.e., circuits 43, 46, 47, 48 and 51 of Figures 2A and 2B. See id. at 481:5-11. The same meaning was ascribed to "sensor means for detecting a predetermined condition external to said apparatus" in claims 9, 10 and 11. Id. at 665:16-25.

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<sup>2</sup> Mark Patterson, William Raper, Thomas J. Paulus, and Steven Carlson testified for DESA. J. Michael Thesz, Scott Evans, and Professor Lloyd Massengill testified on behalf of EML and Costco.

As for "control circuit means," the court found that this described, in plain language, "the means for causing the lamp to go on at accent level when there is no motion but it's dark or dusk, and then going up to the higher level of illumination, which I believe is 95%, in response to detection of the motion of a person or object." Id. at 667:15-22. It found the corresponding structure for this function described at col.5 l.63-col.6 l.14. Id. at 667:24-668:4.

Finally, "switching means for selectively permitting and preventing the application of said AC voltage to said lamp" was described by the court in plain language as "basically a switch that allows the lamp to either be on or off." Id. at 670:5-6. The court found the corresponding structure described at col.5 ll.13-25, which was, as EML and Costco had argued, "more than just the triac."<sup>3</sup> Id. at 670:22.

The court then stressed that all of the means-plus-function terms were being construed to include structural equivalents, too. Id. at 672:17. On October 31, 2005, the court issued a written order adopting these oral rulings without further explanation.

DESA subsequently conceded that none of the asserted claims were infringed, and a stipulated judgment was entered on November 21, 2005. This judgment is expressly conditioned upon the district court's interpretation of "sensor means" being upheld on appeal. A timely notice of appeal was filed on December 16, 2005. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

## II. DISCUSSION

Claim construction is a question of law reviewed de novo. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1454-56 (Fed. Cir. 1998) (en banc). When construing

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<sup>3</sup> A triac is a type of electronic switch.

claim terms, the court determines the customary meaning of claim terms as understood by a person of ordinary skill in the art according to the methodology set forth in Vitronics Corp. v. Conceptorics, Inc., 90 F.3d 1576, 1582-83 (Fed. Cir. 1996) and reaffirmed in Phillips v. AWH Corp., 415 F.3d 1303, 1312-19 (Fed. Cir. 2005) (en banc).

## A

Where an element in a claim is expressed as a means or step for performing a specified function without reciting structure, it "shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112, ¶ 6. This two-step inquiry involves determining (1) whether § 112, ¶ 6 applies and, if it does, (2) identifying the claimed function and corresponding structures in the written description. Kemco Sales, Inc. v. Control Papers Co., 208 F.3d 1352, 1360 (Fed. Cir. 2000).

The use of the word "means" in the claim language invokes a rebuttable presumption that § 112, ¶ 6 applies; conversely, the failure to use "means" invokes a presumption that § 112, ¶ 6 does not apply. Apex Inc. v. Raritan Computer, Inc., 325 F.3d 1365, (Fed. Cir. 2003). Here, the key disputed phrases are "sensor means," "control circuit means," and "switching means." Nonetheless, the presumption that § 112, ¶ 6 applies may be rebutted if the claim recites no function or recites sufficient structure for performing that function. Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1427 28 (Fed. Cir. 1997).

The trial court recognized that the use of the word "means" invoked the presumption that § 112, ¶ 6 applied, but resorted to expert testimony to resolve whether that presumption was rebutted. DESA presented evidence from Mr. Patterson that the

use of "means" language was ambiguous because it was commonly used in electronics patents without necessarily intending to invoke § 112, ¶ 6. Mr. Carlson and Mr. Raper further testified that the modifiers "sensor," "control circuit," and "switch" were commonly understood by those skilled in the art to describe structure. Defendants' experts testified to the contrary. The district court ultimately rejected DESA's argument that the asserted claims contained sufficient structural language to escape the application of § 112, ¶ 6. Hr'g Tr. at 659:12-15.

Although the district court seemed to rely upon expert testimony,<sup>4</sup> we note that its conclusion could have been reached without the aid of extrinsic evidence. First, the claims use both means-plus-function language (i.e., "sensor means," "control circuit means," etc.) and structural language (i.e., lamp, zero crossing detect circuit, etc.), which suggests that the patentee intentionally used "means" language to invoke § 112, ¶ 6. Second, the claims recite a function for each of these "means" limitations without specifying what structure(s) would be required to perform that function. Third, we reject DESA's argument that the use of "sensor," "control circuit," and "switching" before the word "means" was sufficient to denote structure. Rather, those modifiers were simply used to distinguish between subsequent references to different "means" limitations within the same claim, i.e., "said first and second sensor means" as opposed to "said control circuit means." Finally, DESA argues that this court has previously stated that "it is clear that the term 'circuit' by itself connotes some structure." Apex, 325 F.3d at 1373. In Apex, however, the word "means" was not used, so the reverse

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<sup>4</sup> While the court did not explain in detail the reasons behind its oral decision, we infer that the court found the expert testimony of Mr. Thesz and Professor Massengill to be more persuasive.



presumption—i.e., that § 112, ¶ 6 does not apply—was invoked. Here, we agree with the district court that DESA failed to overcome the presumption that § 112, ¶ 6 does apply to "sensor means," "control circuit means," and "switching means."

## B

We now consider whether the district court correctly identified the claimed functions and corresponding structures of the disputed phrases. We conclude that it erred in relying upon Professor Massengill's expert testimony. In doing so, the district court construed each disputed claim term by simply referring to various passages in the specification that corresponded to portions of Figures 2A and 2B, which depict the preferred embodiment. Expert testimony in conflict with the intrinsic evidence, however, should have been accorded no weight. Phillips, 415 F.3d at 1318; see also Markman v. Westview Instruments, 517 U.S. 370, 390 (1996) (holding that expert testimony must be evaluated in a manner that "fully comports with specification and the claims" and "preserve[s] the patent's internal coherence").

## 1

With respect to "first sensor means" (of claim 6) or "sensor means" (of claims 9, 10, and 11) for detecting motion, the central dispute is whether this includes "selection circuitry" such as the pulse-counting function, as Professor Massengill testified. On appeal, DESA reiterates its argument that only Q1 and Q2—i.e., the passive infrared sensors depicted in Figure 2A—perform the motion-detecting function. We agree that "sensor means" is properly construed as "Q1 and Q2 or equivalents." All the other parts of Figures 2A and 2B, including the pulse-count function at 51, are part of the control circuit in the preferred embodiment.

Not only does the specification of the '066 patent repeatedly refer to the passive infrared sensors Q1 and Q2 as the "sensors," it even explicitly states that "[t]he sensors Q1 and Q2 are each coupled to a detector portion 43 of the circuit," (emphasis added) and then goes on to describe the additional functions of the circuit—i.e., selecting and amplifying the "signals most likely to correspond to infrared signals from a human body." Col.3 ll.34-35, 38-39. Because the intrinsic evidence clearly sets forth the corresponding structure for "sensor means," it was improper to rely upon contrary extrinsic evidence to construe this term.<sup>5</sup>

## 2

Although the stipulated judgment was only conditioned upon the claim construction of "sensor means," we now address the proper construction of "control circuit means." EML and Costco argue that the patentee distinguished certain prior art on the basis that the invention had a pulse-counting feature as "generally disclosed." Thus, they argue, the pulse-counting feature is a limitation of every claim, and if "sensor means" does not limit the invention to those devices with a pulse-counting function, then "control circuit means" does. We disagree.

The structure corresponding to "control circuit means" (i.e., everything except the lamp, the passive infrared sensors, and the photocell) necessarily varies from claim to claim, depending on the functions disclosed. For example, claim 6 contains a limitation wherein the lamp will revert to the first level of illumination after a predetermined time

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<sup>5</sup> In any event, we reject with Professor Massengill's testimony that the "selection circuitry" is part of the "sensor means." Rather, the passive infrared sensors Q1 and Q2 detect motion, while the pulse-counting feature and other parts of the circuit are used to decide whether the lamp switches to the brighter level of illumination in response or whether the detected motion is ignored.

interval if additional motion is not detected, see col.8 ll.12-19, so a control circuit would have to include portion 52 of Figure 2B or its equivalent to be within the scope of claim 6. Claims 9-11, however, lack this particular limitation and would not require portion 52 to be part of an infringing control circuit. The same holds true for the pulse-counting function, which is expressly recited as a limitation only in claim 12.

Moreover, the Jensen/McCavit declaration in the prosecution history states that the prior art also lacked "other features as recited in the claims," not just the pulse-counting function. Specifically, the Nippon reference was distinguished on several grounds. Some claims recite the manual-override function, others recite the pulse-counting function, and "[i]n addition, [application] claims 2, 10, 11 and 12<sup>6</sup> are directed to features clearly not disclosed or suggested in the instruction manual." Although the validity of these claims remains to be decided, nothing in the prosecution history suggests that either the manual-override function or the pulse-counting function was intended to be a limitation of every claim. Unlike application claim 16 (which ultimately issued as claim 12), the claims asserted by DESA were not distinguished over prior art on the basis of the pulse-counting function.

### 3

Finally, as to "switching means" in claims 9, 10 and 11, we agree with DESA that this claim term is properly construed to mean "triac Q3 or equivalents." The other structures described in the portion of the specification referenced by the district court correspond to the "means for causing said switching means to be actuated for a

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<sup>6</sup> These claims were renumbered and issued as claims 6, 9, 10, and 11.

selected portion of each half wave cycle of said AC voltage." Again, the court erred in relying upon expert testimony that was inconsistent with the intrinsic evidence.

### **III. CONCLUSION**

For the aforementioned reasons, we vacate the stipulated judgment of non-infringement and remand for further proceedings consistent with this opinion. We expressly encourage the district court to revisit its claim construction for any other terms it deems necessary.