

Note: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

2006-1645

NMT MEDICAL, INC.
and CHILDREN'S MEDICAL CENTER CORPORATION,

Plaintiffs-Appellants,

v.

CARDIA, INC.,

Defendant-Appellee.

Douglas J. Kline, Goodwin Procter LLP, of Boston, Massachusetts, argued for plaintiffs-appellants. With him on the brief were William A. Meunier, Kenneth E. Radcliffe, and Michael G. Strapp.

David A. Allgeyer, Lindquist & Vennum P.L.L.P., of Minneapolis, Minnesota, argued for defendant-appellee. With him on the brief was Christopher R. Sullivan.

Appealed from: United States District Court for the District of Minnesota

Judge Joan N. Ericksen

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DECIDED: June 6, 2007

Before MICHEL, Chief Judge, MAYER and GAJARSA, Circuit Judges.

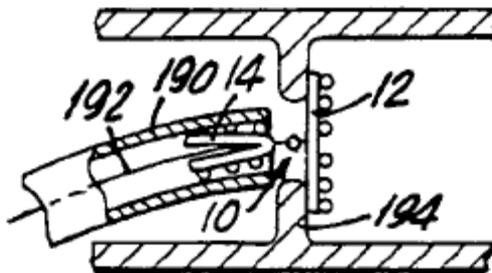
GAJARSA, Circuit Judge.

This is a patent infringement case. Plaintiffs NMT Medical, Inc. and Children's Medical Center Corporation (collectively "NMT") are the assignees of U.S. Patent No. 5,451,235 ("the '235 patent"). The United States District Court for the District of Minnesota granted summary judgment to defendant Cardia, Inc. ("Cardia") that its accused heart defect repair device did not infringe any of the asserted claims of the '235 patent. NMT appeals the judgment to this court. Because the district court erred by finding no triable issues of fact as to asserted claims 1-5 and by erroneously construing asserted claim 12, we vacate the summary judgment order and remand for further proceedings.

I. BACKGROUND

A. Technology and patent

This case involves implanted medical devices used to repair heart defects which take the form of holes in the cardiac tissue. One such defect, known as “patent foramen ovale,” is a congenital flaw in which a small hole between the left and right atria of the heart fails to close following birth. Surgeons apply the devices at issue to correct this flaw using a catheter, thus avoiding open-heart surgery. The patented device consists of two connected “occluders,” flanges that are collapsed inside the catheter but which spring open like an umbrella to a size larger than the defect once the surgeon removes the catheter. To correct the defect, the catheter is inserted into the body via an artery or vein and moved so that it protrudes through the hole to be patched. One occluder is then allowed to open on each side of the defective heart wall, blocking the undesired passage of blood and fixing the device in place. Figure 8c of the '235 patent illustrates the insertion process:



In the figure, the device has been delivered by catheter 190 into a hole in the cardiac tissue. Occluder 12 is open and blocking blood flow on the right side of the hole, and when the catheter is removed, occluder 14 will spring open on the left side.

NMT asserts infringement of six claims of the '235 patent: Claims 1-5 and Claim 12. Claims 1 and 12 are independent claims, while claims 2 to 5 are dependent on Claim 1. Claim 1 reads as follows:

A device for percutaneous transluminal repair of septal defects comprising:

- a) a first occluder having an initial cross sectional configuration smaller than that of the defect to be repaired and a second expanded configuration larger than that of the defect;
- b) a second occluder having an initial cross sectional configuration smaller than that of the defect to be repaired and a second expanded configuration larger than that of the defect; and
- c) said first occluder and said second occluder being connected by a connector means for fastening the first occluder to the second occluder said connector means comprising a pivot means for allowing rotation of the first occluder relative to the second occluder when said occluders are in the expanded configuration.

'235 patent col.10 ll.43-59 (emphasis added). Claims 2-5 depend from Claim 1, adding limitations not at issue here. Claim 12 differs from Claim 1 only in its part (c), which reads:

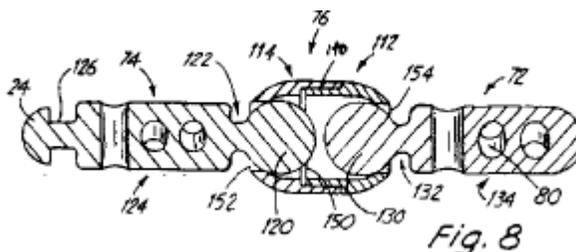
- c) said first occluder and said second occluder being connected by a connector means for fastening the first occluder to the second occluder said connector means comprising a ball and collar assembly for allowing relative movement between the first occluder and the second occluder when said occluders are in the expanded configuration, said assembly comprising a collar connected to one of the first and second occluders with an aperture and a pin with a ball fitting connected to the other of the first and second occluders on at least one end thereof wherein a diameter of said ball fitting is larger than a diameter of the aperture in the collar.

'235 patent col.11 ll.39-61 (emphasis added).

B. The accused device

Cardia's accused product works generally as described in the '235 patent. It also consists of two connected occluders which open to repair holes in cardiac tissue after

delivery by catheter. To show noninfringement, Cardia argues that its connector—the part of the accused device that links the two occluders and allows them to flex and move relative to each other—does not embody the relevant limitations of any asserted claim. The following diagram, Figure 8 of Cardia’s U.S. Patent No. 7,087,072, illustrates the basic design of the accused device’s connector, though the figure does not necessarily represent the accused device in all particulars:



In Cardia’s product, each occluder is fixed to a pin 74 and 72. On the opposite sides of those pins are ball joints 120 and 130, nestled in sockets 114 and 112 in a central sleeve or collar. The ball joints are larger than the openings 152 and 154, so the pins cannot pull out of the socket, but they can both move within the joint to some extent.

Some of the debate on the issue of infringement relates to the different ways in which the connector will allow the pins to move. The parties identify three different modes of movement, designated by the terms “rotate,” “pivot,” and “translate.” In the sense that the parties use these terms, the two pins of the accused device can independently “rotate” (spin within the socket in a pinwheeling motion) and “pivot” (move up-and-down or side-to-side in a hinge-like motion, like that of a human shoulder joint.) The accused device’s connector allows “translation” (the ball moves deeper into the collar or the reverse) only to a minimal extent, due to manufacturing tolerances.

C. Procedural history

In an order dated August 29, 2006, the district court construed the asserted claims and resolved the parties' cross-motions for summary judgment in favor of Cardia, concluding that there was no infringement.

Claim 1 recites a "connector means . . . comprising a pivot means." The district court used and construed the two phrases "connector means" and "pivot means" interchangeably, determining them to be a means-plus-function limitation pursuant to 35 U.S.C. § 112, ¶ 6. Construction of a means-plus-function claim limitation requires the court to identify the claimed function and then to locate structure in the specification which has been clearly linked to that function. See Golight, Inc. v. Wal-Mart Stores, Inc., 355 F.3d 1327, 1333-34 (Fed. Cir. 2004). Accordingly, the district court determined that the claimed function was to allow the pins to rotate and pivot (again, in the sense that those terms are used by the parties.) Cardia had argued that another claimed function was to prevent the pins from translating, but the district court refused to impose that function upon the claim. The district court then identified as corresponding structure the embodiments illustrated by Figs. 5a, 5b, 5e, 5f, 5j, and 5k of the '235 patent. It found the claims as construed not to be infringed, either literally or by equivalents.

The district court concluded that the claim limitation of "a collar connected to one of the first and second occluders" in claim 12 was not in means-plus-function form. It construed that limitation to require "that the pin with a ball fitting be directly connected to one occluder and the collar be directly connected to the other occluder." Because in the accused device the collar is connected only indirectly to the occluders—a ball joint and

pin intervene—the district court concluded that Claim 12 was not literally infringed. It also concluded that prosecution history estoppel barred assertion of the doctrine of equivalents.

II. DISCUSSION

A. Standard of review

A determination of patent infringement requires a two-step analysis: first, the meaning of the claim language is construed, then the claim as construed is compared to the accused device in order to ascertain whether the device falls within its scope. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc). We review the district court’s claim construction de novo. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc). Summary judgment is also reviewed de novo, Johns Hopkins Univ. v. Cellpro, Inc., 152 F.3d 1342, 1353 (Fed. Cir. 1998), and 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).

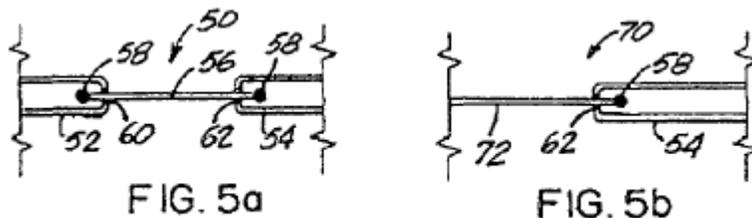
B. Claims 1-5

The disputed limitations of Claims 1-5 are in means-plus-function form; that is, they are “expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof.” 35 U.S.C. § 112 ¶ 6. As mentioned above, the district court found that the function of the pivot means was to “allow for both pivoting—that is, a hinge-like motion—and rotation—that is spinning—of the first and second occluders with respect to each other.” It also explicitly found that

“translation is not a claimed function.” Neither party challenges the district court’s identification of those claimed functions.

Once a means-plus-function claim is construed, literal infringement is analyzed by determining whether “the accused device employs structure identical or equivalent to the structure disclosed in the patent and . . . the accused device performs the identical function specified in the claim.” WMS Gaming Inc. v. Int’l Game Tech., 184 F.3d 1339, 1351 (Fed. Cir. 1999). That question is one of fact. IMS Tech., Inc. v. Haas Automation, Inc., 206 F.3d 1422, 1430 (Fed. Cir. 2000). Therefore, summary judgment of noninfringement requires a conclusion “that no reasonable jury could have found otherwise.” Id.

The district court determined that no reasonable factfinder could find that Cardia’s accused device was equivalent, as required by § 112 ¶ 6, to any of the structures identified during the claim construction step. It therefore granted summary judgment to Cardia. NMT challenges this finding on appeal. While the district court identified several of the ’235 patent’s figures as corresponding structure to the “pivot means” limitation, it noted that only Figures 5a and 5b allow rotation. On appeal, NMT focuses on those two figures. It argues that a reasonable jury could find the connectors depicted by those two figures to be only insubstantially different from the connector in Cardia’s device.



The specification states that:

Fig. 5a depicts an interconnection 50 in which individual collar elements 52, 54 are connected by a pin 56 having ball fittings 58 attached to the ends thereof. The ball fitting[s] 58 are designed to be larger in diameter than apertures 60, 62 contained within the collar members 52, 54 thereby allowing the collars to move toward or away from each other while preventing the pin 56 from being released therefrom.

'235 patent col.6 ll.32-39. The ball-and-collar joints depicted allow “[t]he collar members . . . to rotate relative to each other.” Id. ll.42-43. Figure 5b depicts a simpler arrangement where the pin 72 is fixed to the occluder on one side, and has only one ball 48 on the other side which sits inside a single collar 54. Id. ll.57-62.

In its brief, Cardia argues that the embodiments depicted by these two figures do not allow for pivoting. This is fundamentally a claim construction argument: if the embodiments of Fig. 5a and 5b do not pivot, then they cannot supply structure which performs the claimed pivoting function, and the district court would have erred by identifying them as corresponding structure. We agree with NMT that these embodiments do pivot at least to some extent. The apertures through which the pin passes are shown as having wider diameters than the pin itself, which means that the collars will be free to pivot until the pin’s contact with the sides of the aperture prevents further movement. Indeed, Cardia’s own three-dimensional demonstrative of Fig. 5a used at oral argument exhibited some pivoting motion.

In order to show that a means-plus-function claim is literally infringed, “the patentee must establish that the accused device employs structure identical or equivalent to the structure disclosed in the patent and that the accused device performs the identical function specified in the claim.” WMS Gaming, 184 F.3d at 1350. There is no dispute that the connector of Cardia’s accused device allows rotation and pivoting and therefore performs the claimed functions, nor that Cardia’s device is not identical to

any embodiment disclosed in the patent. The infringement issue therefore turns on “whether the differences between the structure in the accused device and [the structure] disclosed in the specification are insubstantial.” Id. at 1351.

Cardia argues that no reasonable jury could find the accused product equivalent to the embodiments of Figs. 5a and 5b. It points out that the translation allowed by those embodiments as the pin slides into and out of the collars will prevent the occluders from sealing the defect tightly, resulting in undesirable blood leakage. Its accused product, by contrast, allows only minimal translation attributable to manufacturing tolerances and provides a better seal. Cardia also points out that the fulcrum around which pivoting occurs in its device is located at the center of the ball in its product, whereas in Figs. 5a and 5b the fulcrum is found somewhere on the pin. Furthermore, Cardia’s device uses two balls in a central collar, an arrangement not explicitly set forth anywhere in the ’235 patent. Cardia has therefore submitted evidence tending to show that its accused device is different from the embodiments disclosed in the ’235 patent. This evidence may well persuade a jury to find that the differences between Cardia’s product and the identified structures are substantial.

It was error, however, to resolve the disputed factual question of substantiality in the posture of summary judgment. A jury could also consider the similarities demonstrated here: both the identified structure and the accused device use a ball connected to a pin, and both place the ball within a socket which prevents the ball from being pulled out. Both allow for rotation and pivoting. Whether the differences that Cardia has highlighted are insubstantial in light of those similarities is a factual

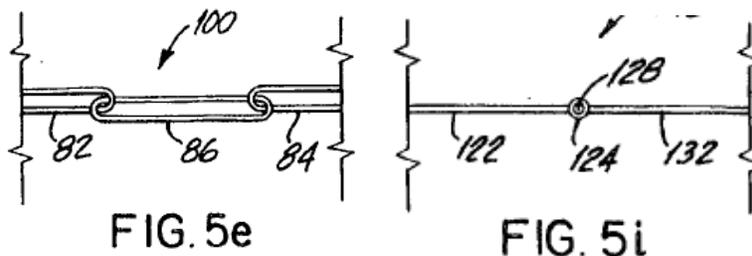
determination that cannot be resolved as a matter of law. There remains a triable issue of fact on the question of substantial difference.

Accordingly, the summary judgment that Claim 1 was not infringed must be vacated. Cardia makes no argument that its accused product lacks any of the limitations added by dependent Claims 2-5, so we vacate the summary judgment as to those claims as well.

C. Claim 12

NMT challenges the district court's construction of Claim 12, arguing that the requirement that the collar be connected "directly" to the occluder improperly narrowed the claim. We agree with NMT that the district court erred by requiring this restriction.

As an initial matter, the '235 patent's specification demonstrates that the patentees actually used the word "directly" when they meant to describe a direct connection. For example, the specification describes Fig. 5e, below, as follows:



"In FIG. 5e, loops 82, 84 connected to individual occluder elements 12, 14 or 42, 44 are connected by means of an interconnecting link 86 to form, generally, a three link chain for interconnecting the individual occluder elements." '235 patent col.7 ll.33-37 (emphasis added). Contrast the specification's description of Fig. 5i: "Unlike the interconnection of FIG. 5h, the interconnection of FIG. 5i has replaced the pin with a second connecting rod 132 that connects directly to an occluder element." Id. col.8

ll.15-18 (emphasis added). The description of Fig. 5k uses basically identical language to describe a similar embodiment.

The specification therefore demonstrates that the patentees used the word “directly” when they meant to specifically point out that a connection was direct. Reading these claims in the context of the specification’s usage of language, see Phillips v. AWH Corp., 415 F.3d 1303, 1315-17 (Fed. Cir. 2005) (en banc), there is no reason on the face of the patent to limit Claim 12 to embodiments that connect “directly.”

Cardia argues that the claims should nevertheless be limited because the patentees disclaimed indirectly-connected embodiments during prosecution. See Phillips, 415 F.3d at 1317 (“[T]he prosecution history can often inform the meaning of the claim language by demonstrating . . . whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.”) However, we have “declined to apply the doctrine of prosecution disclaimer where the alleged disavowal of claim scope is ambiguous.” Omega Eng’g, Inc. v. Raytek Corp., 334 F.3d 1314, 1324 (Fed. Cir. 2003).

Here, Cardia points out that what ultimately became Claim 12 of the '235 patent began prosecution reading simply “The device of claim 1 wherein the connector comprises a ball and collar assembly.” The Examiner objected to this claim on indefiniteness grounds, because “it [was] unclear how the ball is interrelated with the collar, and how this assembly as a whole is connected to the occluders.” After two amendments, the patentees were able to surmount the indefiniteness rejection by

adding more detail about how the ball, collar, and occluders were interrelated. The Examiner did not object on definiteness grounds to a claim reading:

The device of claim 1, wherein the connector means comprises a ball and collar [*sic*] assembly, said assembly comprises a collar connected to one of the first and second occluders with an aperture and a pin with a ball fitting connected to the other of the first and second occluders on at least one end thereof wherein a diameter of said ball fitting is larger than [*sic*] a diameter of the aperture in the collar.

(emphasis added). Ultimately, this claim was rewritten into independent form and further amended to issue as Claim 12.

The issue here is whether these amendments amount to an unambiguous surrender of indirect connection. They do not. While the patentees added considerably more detail about the relationship between the ball, collar, and occluders, the amendments here do not refer at all to whether those relationships are direct in nature or if the connections are made through intermediate parts. As noted above, the term “connected” as used in the specification—the same specification which was before the Examiner at the time of these amendments—does not necessarily imply direct connection. When the patentees added limitations to their claim more specifically describing the organization of their invention’s connected parts, they did not somehow implicitly add other limitations about the specific nature of those connections.

Accordingly, the prosecution history provides no unambiguous basis to vary from the meaning of the claims as read in light of the specification. The correct construction of Claim 12 does not require “direct” connection between the enumerated parts. Since the district court relied on an incorrect claim construction, its summary judgment of noninfringement as to Claim 12 must be vacated.

D. NMT's request for summary judgment

NMT argues that we should award it summary judgment of infringement. This court defers to the district court's denial of summary judgment. See Suntiger, Inc. v. Sci. Research Funding Group, 189 F.3d 1327, 1333 (Fed. Cir. 1999) ("When a district court grants summary judgment, we review without deference to the trial court By contrast, when a district court denies summary judgment, we review that decision with considerable deference to the court."). Accordingly, we decline NMT's request to end the case in its favor now, but on remand the district court may reconsider the question of summary judgment for NMT based upon this court's discussion of claim construction.

III. CONCLUSION

The summary judgment of noninfringement of claims 1-5 and 12 is vacated, and the case is remanded to the district court for further proceedings consistent with this opinion.