

United States District Court,
D. Massachusetts.

CABOT SAFETY INTERMEDIATE CORPORATION,
Plaintiff.

v.

HOWARD S. LEIGHT AND ASSOCIATES, INC,
Defendant.

No. CIV. A. 96-40145-NMG

Feb. 6, 1998.

Patentee brought action against competitor alleging infringement of its earplug patent. Competitor moved for summary judgment. The District Court, Gorton, J., held that: (1) competitor's earplugs did not literally infringe patentee's design, and (2) claim under doctrine of equivalents was barred by prosecution history estoppel.

Motion granted.

4,867,149. Not infringed.

Arthur F. Dionne, Philmore, Dionne & Cantor, Windsor, CT, for Plaintiff.

Charles Hieken, Gregory A. Madera, Lawrence K. Kolodney, Fish & Richardson, Boston, MA, for Defendant.

MEMORANDUM AND ORDER

GORTON, District Judge.

On July 8, 1996, Cabot Safety Intermediate Corporation ("Cabot") filed an action against Howard S. Leight and Associates, Inc. ("Leight") alleging infringement of claim 1 of Cabot's Patent No. 4,867,149 ("the '149 patent") under 35 U.S.C. s. 271. FN1 Pending before this Court is Leight's Motion Summary Judgment (Docket No. 29).

FN1. Claim 1 is the only independent claim in the '149 patent. Consequently, if the Leight earplug does not infringe claim 1 of the '149 patent, it does not infringe any of the claims of that patent.

I. Background

The issue in the pending case is whether Leight's marketed earplugs infringe Cabot's patent for earplugs. Cabot's patented earplug has an elongated stalk with a nose end and three hollow, rearwardly-extending, spaced-apart flanges. The flanges have substantially circular cross-sections of serially decreasing diameters, with the smallest diameter flange located at the nose of the stalk. Each of the flanges has a generally hemispherical shape, comprises a skirt of relatively uniform thickness (0.008-0.050 inches) and is composed of a resilient, polymeric material having a hardness value within certain limits. The diameter of the stalk provides an annular free space between the inner surface of the flange and the stalk.

Leight manufactures and sells the Eliminator D-Tek earplug ("the Leight earplug"). The Leight earplug has an elongated stalk with a nose end and three hollow, rearwardly-extending, spaced-apart flanges. The flanges have substantially circular cross-sections of serially decreasing diameters, with the smallest diameter flange located at the nose of the stalk. Each of the flanges has a conical design, comprises a skirt of relatively uniform thickness (0.008-0.050 inches) and is composed of a resilient, polymeric material having a hardness within the limits described in the '149 patent. The diameter of the stalk provides an annular free space between the inner surface of the flange and the stalk.

II. Analysis

A. Summary Judgment

Summary judgment is proper "in a patent case where no genuine issue of material fact exists and the movant is entitled to judgment as a matter of law." *Johnston v. IVAC Corp.*, 885 F.2d 1574, 1577 (Fed.Cir.1989); *see also Celotex Corp. v. Catrett*, 477 U.S. 317, 323, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986). The Court must view the entire record in the light most hospitable to the non-moving party and indulge all reasonable inferences in that party's favor. *O'Connor v. Steeves*, 994 F.2d 905, 907 (1st Cir.1993). Once the moving party has satisfied its burden of proof by credible affidavits or other supporting materials that there is no genuine issue of material fact, the burden shifts to the opposing party to set forth specific facts showing that there is a genuine, triable issue. *See Celotex*, 477 U.S. at 324.

B. Literal Infringement

[1] [2] [3] [4] Literal infringement may be found only when and if the accused device embodies every element of the patent claim. *Strattec Security Corp. v. General Automotive Specialty Co., Inc.*, 126 F.3d 1411, 44 U.S.P .Q.2d 1030, 1035 (Fed.Cir.1997). The analysis of a patent infringement claim involves two steps: determining the scope of the claims and determining whether the accused device infringes those claims. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed.Cir.1995), *aff'd* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). Interpretation of the claims is a legal question to be decided by the court. *Markman*, 116 S.Ct. at 1394. The question of infringement is ordinarily a factual one for the jury, but when the relevant material facts are not genuinely in dispute, the question of literal infringement "collapses to one of claim construction and is thus amenable to summary judgment." *Athletic Alternatives, Inc. v. Prince Mfg.*, 73 F.3d 1573, 1578 (Fed.Cir.1996).

[5] [6] [7] To interpret a claim, courts may refer to the specification, the prosecution history and the other claims in the patent. *Markman*, 52 F.3d at 979-80. Courts should construe the words of the claim according to their ordinary meaning "unless it appears the inventor used them otherwise." *Bell Communications Research, Inc. v. Vitalink Communications Corp.*, 55 F.3d 615, 620 (Fed.Cir.1995).

Claim 1 includes the limitation, "each said flange element being of generally hemispherical shape." FN2 The

'149 patent, col. 8, ll. 30-31. The specification defines "generally hemispherical" as follows:

FN2. Claim 1 of the '149 patent reads, in its entirety:

An earplug composed of a resilient polymeric material and comprising:

an elongated stalk member having a nose end;

a flange array comprising at least three hollow, rearwardly extending flange elements of substantially circular crosssections and of serially increasing diameters integrally affixed to said stalk member at spaced intervals along at least a portion of the length thereof, the flange element of the smallest diameter being located at said nose end;

each said flange element being of generally hemispherical shape, comprising a thin skirt having a substantially uniform thickness of between about 0.008 inch (0.20 mm) and about 0.050 inch (1.27 mm) and being composed of a resilient polymeric material of construction having a Shore A Durometer hardness value between about 10 and about 90;

the diameter of each portion of said stalk member underlying each skirt being such as to define an annular free space between the interior surface of said skirt and said stalk member.

The '149 patent, col 8, ll. 21-42. Leight does not appear to dispute the fact that its earplug embodies all but one of those elements.

the flange element defines no less than about 45% and no more than 55% of a chordally sectioned hollow spherical body whose external surface is, at essentially all points thereon, substantially equidistant from the single geometric center thereof.

The '149 patent, col. 3, ll. 22-27. In other words, the flanges must "define" approximately half of a "hollow spherical body". Used in this context, "define" means "to delineate the outline or form of." The American Heritage College Dictionary (3d ed.1997). Thus, an infringing earplug must have flanges whose boundaries form approximately half of a sphere.

Cabot does not explicitly explain its understanding of the term "generally hemispherical", but its definition is made clear from the calculations employed by its expert, Kevin L. Michael, Ph.D., to support his claim that the Leight earplug infringes the '149 patent. According to Michael, a flange defines half of a hollow spherical body if the volume of the space enclosed by that flange is between about 45% and 55% of the volume of a sphere with a radius apparently determined by the shape of that flange.

Cabot's definition of "generally hemispherical" is inconsistent with the use of the phrase in the '149 patent claims. Each claim requires flanges "being of generally hemispherical shape." Cabot's volumetric definition of "generally hemispherical" renders meaningless the word "shape" because any shape, given appropriate

dimensions, can enclose approximately half the volume of any sphere.

Furthermore, Cabot's contention that "generally hemispherical" refers to the volume of the space enclosed by the flange is inconsistent with statements made by Cabot during prosecution of the '149 patent. In order to distinguish the '149 earplugs from the prior art Canadian Patent No. 578,485 to Henderson ("the Henderson patent"), Cabot stated:

However, reference to Col. 2, lines 40-43 of Henderson reveals that the rearmost portion of Henderson's flange 24 is intended to define a generally cylindrical skirt 25. Accordingly, even the flange 24 of Henderson does not meet the generally hemispherical criterion of applicant's claimed invention.

Amendment A at 6. As that statement makes clear, the inventor of the '149 patent did not consider it necessary to compare the volume of a sphere with the volume enclosed by the flange in order to determine whether the flange was "generally hemispherical". Cabot distinguished the '149 patent from Henderson based upon the shape, not the volume, of Henderson's flange.

[8] Finally, Cabot is judicially estopped from asserting a volumetric definition of "generally hemispherical". See *Patriot Cinemas, Inc. v. General Cinema Corp.*, 834 F.2d 208, 212 (1st Cir.1987) ("where a party assumes a certain position in a legal proceeding, and succeeds in maintaining that position, he may not thereafter, simply because his interests have changed, assume a contrary position."). In *Cabot Safety Intermediate Corporation v. Arkon Safety Equipment, Inc.*, Civil Action No. 95-40190-NMG ("Arkon"), Cabot submitted the Declaration of Richard E. Knauer in support of its motion for summary judgment on the issue of validity. Knauer interpreted the claims of the '149 patent narrowly in order to avoid Arkon's charge of invalidity. He distinguished much of the prior art from the '149 patent claims by comparing the shape of the flanges described in the prior art to a hypothetical "generally hemispherical shape".

The claim construction urged by Knauer and Cabot in *Arkon* thus entailed a comparison of shapes, not volumes. Having successfully asserted that position in *Arkon*, Cabot is estopped from now asserting a contrary position. This Court concludes, therefore, that a "generally hemispherical" flange means one whose boundaries form approximately half of a sphere.

The second step in determining infringement is to compare the claims of the '149 patent with the allegedly infringing product manufactured and sold by Leight. Cabot presented un rebutted evidence that Leight's allegedly infringing earplug embodies every element of claim 1 of the '149 patent except for flanges "being of generally hemispherical shape".

Leight contends that its earplug does not embody that element because its flanges are conically shaped. Given this Court's interpretation of "generally hemispherical" and Cabot's admission that the Leight earplug has conically shaped flanges (Decl. of Kevin L. Michael, Ph.D. at p. 11, para. 15), the Leight earplug does not literally infringe claim 1 of the '149 patent.

C. The Doctrine of Equivalents

[9] [10] A device that does not literally infringe upon the express terms of a patent claim may nonetheless be found to infringe if there is equivalence between the elements of the accused device and the claims of the subject patent. *Warner-Jenkinson Company v. Hilton Davis Chemical Company*, 520 U.S. 17, ----, 117 S.Ct. 1040, 1045, 137 L.Ed.2d 146 (1997). An accused device infringes upon a patent claim under the

doctrine of equivalents if the element substituted in the accused device is not a substantial change from the element set forth in the claim. *Perkin-Elmer Corp. v. Westinghouse Elec. Corp.*, 822 F.2d 1528, 1533 (Fed.Cir.1987).

[11] [12] The doctrine of equivalents is limited by the doctrine of prosecution history estoppel. *Mark I Mktg. Corp. v. R.R. Donnelley & Sons Co.*, 66 F.3d 285, 291 (Fed.Cir.1995). That doctrine bars a patentee from construing its claims in a way that would resurrect subject matter previously excluded by claim limitations added in order to avoid prior art. *Id.*

When the application which matured into the '149 patent was first submitted to the United States Patent and Trademark Office, claim 1 did not include the "generally hemispherical" limitation. The Patent Examiner rejected that claim as being anticipated by the Henderson patent. In response, Cabot amended claim 1 to limit each flange to a "generally spherical shape". A later amendment altered "spherical" to "hemispherical".

Cabot made it clear that those amendments were intended to distinguish claim 1 from the Henderson patent. Cabot stressed that the generally hemispherical flanges element was a critical feature of the claimed invention and further stated, "That the Henderson flange elements may be circular segments does not make them 'generally hemispherical' within the meaning of applicant's claims." *See Application After Final Rejection at 5.*

Cabot's statement in support of its amendment makes it clear that the limitation requiring the flanges to be generally hemispherical in shape was added "for a substantial reason related to patentability, such as to avoid prior art rejection". *Regents of University of California v. Eli Lilly and Co.*, 119 F.3d 1559, 1573-74 (Fed.Cir.1997). Having expressly stated that claim 1 was patentable because it excluded flanges that had circular cross-sections but were not hemispherical, Cabot cannot now assert that such flanges are equivalent to those claimed in claim 1.

Cabot contends that claim 1 is distinguishable from the Henderson patent in that the latter does not describe annular free space. That limitation, however, was present in the first submission of claim 1 which the Patent Examiner rejected. Therefore, the "generally hemispherical" limitation, not the annular free space limitation, must have been necessary to overcome the Henderson patent. Accordingly, Cabot is estopped from claiming that non-hemispherical flanges are equivalent to generally hemispherical flanges. *See Haynes Int'l, Inc. v. Jessop Steel Co.*, 8 F.3d 1573, 1577 (Fed.Cir.1993). The accused device is not, therefore, equivalent to Cabot's patent claim.

ORDER

For the foregoing reasons, the defendant's motion for summary judgment (Docket No. 29) is **ALLOWED**.

So ordered.

D.Mass.,1998.

Cabot Safety Intermediate Corp. v. Howard S. Leight and Associates, Inc.

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