

NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

05-1612

DENTSPLY INTERNATIONAL, INC.
and DENTSPLY RESEARCH & DEVELOPMENT CORP.,

Plaintiffs-Appellants,

v.

HU-FRIEDY MFG. CO., INC.,

Defendant-Appellee.

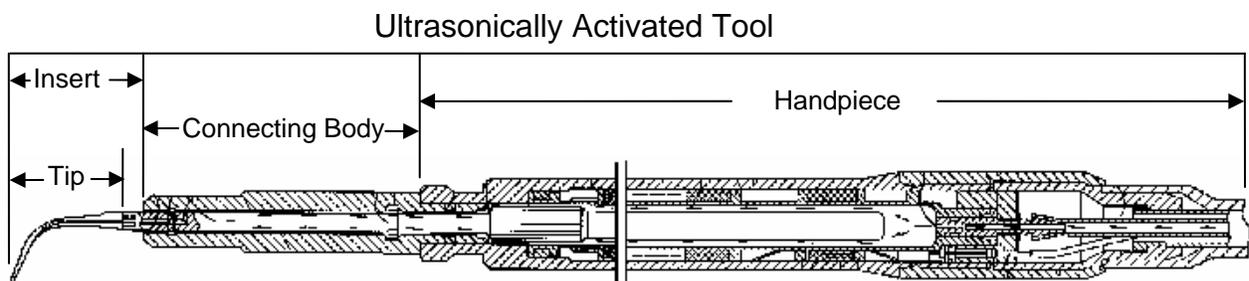
DECIDED: December 8, 2006

Before MICHEL, Chief Judge, NEWMAN, and RADER, Circuit Judges.

RADER, Circuit Judge.

Dentsply International, Inc. (Dentsply) sued Hu-Friedy Mfg. Co., Inc. (Hu-Friedy) in the United States District Court for the Middle District of Pennsylvania for infringement of claims 1, 2, and 7-9 of U.S. Patent No. 6,494,714 (the '714 patent). After receiving the trial court's Markman order, Dentsply Int'l, Inc. v. Hu-Friedy Mfg. Inc., No. 1:04-CV-0348 (M.D. Pa. Nov. 23, 2004) (Markman Order), Dentsply stipulated that the Hu-Friedy method did not literally infringe claims 1, 2, and 7-9 of the '714 patent. In May 2005, the district court held a bench trial and found that Hu-Friedy did not infringe the asserted claims under the doctrine of equivalents. Discerning no reversible error, this court affirms.

The '714 patent claims methods of making inserts and transducer activated tool tips for an ultrasonically activated tooth cleaning tool. '714 patent, col.17, l.46 to col.18, l.63. The general configuration of the tool, illustrated in Figure 1 of the patent below, includes a tool insert, a tool tip, a magnetostrictive element, a connecting body and a handpiece. Id. at col.7, l.57 to col.8, l.2. Coils in the handpiece produce a magnetic field that causes the magnetostrictive element to vibrate at an ultrasonic frequency. Id. at col.9, ll.32-42. The vibrations flow through the connecting body and the tool insert to the tool tip. Id. The vibrating tool tip cleans teeth. Id.



In some embodiments, fluids may flow from the handpiece through an internal passageway in the tip. Id. at col.9, ll.42-51. The fluid leaves the tip, washes away debris, and cools the tooth surface. Id. During these processes, however, the tip experiences substantial stresses.

While investigating customer complaints about tip breakage in inserts with an internal passageway, Dentsply linked the breaking problem to the drilling process to make the internal passageway in the tip. When drilling into a straight tip, the process produced a long exit hole that increased stress on the tip. '714 patent, col.1, ll.20-22.

The '714 method minimized this tip breakage problem by bending the tip before drilling the passageway. '714 patent, col.1, ll.9-11.

Dentsply found the method reduced tip breakage and delivered a focused spray of fluid onto the tooth surface. '714 patent, col.1, ll.13-17; col.7, ll.57-62. Claim 1 of the '714 patent states:

“A method of making an insert for an ultrasonically activated tooth cleaning tool, comprising:

bending a solid metal tip to form a bend at a location for an opening of a passageway, and then

drilling the passageway through said solid metal tip to form a tip having a passageway having a fluid discharge orifice at said bend.”

'714 patent, col.17, ll.46-53 (emphasis added).

Claim 2 states:

“A method of making a transducer activated tool tip, comprising,

providing a substantially linear tip body having a fluid inlet end and a fluid outlet end,

bending said tip body in a first direction so that a centerline through said fluid outlet end intersects a centerline through said fluid inlet end at an angle greater than 5 degrees, and

forming in said tip body a fluid passageway internal to said tip, having an inlet end and a outlet end, said outlet end of said tip having a longest cross-sectional dimension of less than 0.03 inch;

bending said tip body in a second direction so that a centerline through said fluid outlet end intersects a centerline through said fluid inlet end at an angle of substantially 0 degrees,

continuing to bend said tip body in said second direction so that said centerline through said fluid outlet end intersects said centerline through said fluid inlet end at an angle greater than 5 degrees.”

'714 patent, col.17, l.54 to col.18, l.6 (emphasis added).

Hu-Friedy's accused method involves a one-piece integrated connecting body that is an elongated metal shaft with a tapered end. The connecting body has an internal passageway for fluid made by two steps. First, the accused method cuts a slot into the connecting body. Then it bends the tip region and bores a hole through the tip until it intersects with the pre-cut slot.

II

“On appeal from a bench trial, we review a district court’s decision for errors of law and clearly erroneous findings of fact.” Brown & Williamson Tobacco Corp. v. Philip Morris, Inc., 229 F.3d 1120, 1123 (Fed. Cir. 2000). The infringement analysis proceeds as a two-step process. “Step one, claim construction, is a question of law, that [this court] reviews de novo. Step two, comparison of the claims to the accused device, is a question of fact, and requires a determination that every claim limitation or its equivalent be found in the accused device.” N. Am. Container, Inc. v. Plastipak Packaging, Inc., 415 F.3d 1335, 1344 (Fed. Cir. 2005) (internal citations omitted). Thus, while claim construction is a question of law, see Cybor Corporation v. FAS Technologies, Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc), the question of infringement, either literal or under the doctrine of equivalents, receives review as a question of fact. See Playtex Prods., Inc. v. Procter & Gamble Co., 400 F.3d 901, 906 (Fed. Cir. 2005); Biovail Corp. Int’l v. Andrx Pharms., Inc., 239 F.3d 1297, 1300 (Fed. Cir. 2001).

A. Claim Construction

“Claim language generally carries the ordinary meaning of the words in their normal usage in the field of invention” at the time of invention. Invitrogen Corp. v. Biocrest Mfg., L.P., F.3d 1364, 1367 (Fed. Cir. 2003). The specification generally

provides the context for claim interpretation. Phillips v. AWH Corp., 415 F.3d 1303, 1315 (Fed. Cir. 2005). “It is important to keep in mind that the purposes of the specification are to teach and enable those of skill in the art to make and use the invention and to provide a best mode for doing so.” Id. at 1323. Courts, however, must be careful to avoid reading limitations from the specification into the claims. Comark Commc’ns, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed.Cir.1998). The line between construing claim terms and importing limitations from the preferred embodiments into the claims “can be discerned with reasonable certainty and predictability if the court’s focus remains on understanding how a person of ordinary skill in the art would understand the claim terms.” Phillips, 415 F.3d at 1323.

The district court determined that the claim term “tip” requires “a separate elongated attachment to be fitted to the connecting body.” The claims recite “a solid metal tip.” Claims 1 and 2, for example, require “bending a solid metal tip.” ’714 patent, col. 17, ll. 49 to col. 18, ll. 59, 61. Claims 1 and 2 also require drilling or forming a passageway in the tip. Id. Claim 2, further recites “[a] method of making a transducer activated tool tip.” Id. Additionally, claim 2 requires the tip to have inlet and outlet ends, further suggesting an independent attachment.

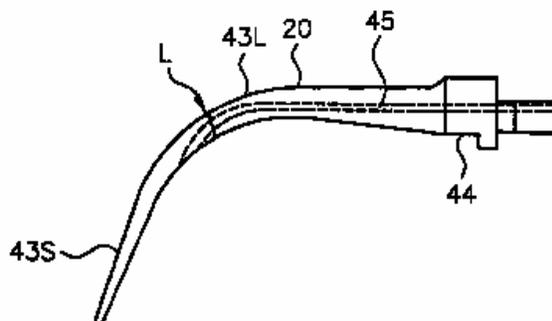
The specification also consistently describes the invention in a manner that suggests the tip is a separate attachment. For instance, the “Abstract” describes the “invention” as “provid[ing] a method of making a transducer activated tool tip.” ’714, Abstract (emphasis added). The tip consists of: (1) a substantially linear tip body, (2) a fluid inlet end, and (3) a subgingival fluid outlet end. Id. Under the heading “Method of Making a Tool Tip and Tool Tip,” the specification states: “[t]he tip is typically attached

to an electro-mechanical part or section that can be induced to vibrate.” Id. at col. 1, ll. 50-52 (emphasis added). Under this section, the specification further states “[g]enerally, the tip must be small in cross-section, ideally having a pointed tip More preferably the tapered cross-section extends about 10 mm from the distal tip end.” Id. at col.2, ll.3-9 (emphasis added). Thus, the specification distinguishes “the tip” from the “pointed tip” and the “distal tip end,” suggesting “the tip” is a discrete component and the “pointed tip”/“distal tip end” is a region of the tip.

Under the heading “Objects of the Invention,” the patent describes “the object of the invention:” “to provide an insert” for an ultrasonic tool. The ultrasonic tool, in turn, is “a handpiece . . . a connecting body . . . and a tip, axially attached to the connecting body.” Id. at col.3, ll.41-49 (emphasis added). Under the heading “Summary of the Invention,” the specification *again* describes “the object of the invention:” “to provide an insert” for an ultrasonic tool. The tool then receives the same three-part description. Id. at col.5, ll.65-68 to col.6, ll.1-6 (emphasis added). Thus, the term “tip” refers to an attachment.

Similarly, the preferred embodiment in Figure 3 below receives the following description:

The tip 20, the operative portion of the ultrasonically activated tool, comprises a smaller diameter distal tip portion 43S for contacting tooth surfaces, larger diameter portion 43L and a shank portion 44 that is secured to the connecting body 15. Smaller diameter portion 43S intersects larger diameter portion 43L at a tip surface angle transition line L. The connecting body includes a counter bore for receiving the tip shank 44 which may be secured by brazing, mating threads or the like. A fluid passageway 45, described in detail below, formed interior to the tip element or body, exits through an internal or side wall in the tip to provide a fluid discharge orifice 46.



Id. at col.9, ll.20-23. This embodiment clearly illustrates the tip 20, as a separate attachment having a distal tip portion 43S and a tip shank portion 44. Indeed, the specification describes every preferred embodiment in a similar manner. Accordingly, both the claim language and the specification amply support the trial court's interpretation.

B. Infringement

As noted, Dentsply stipulated that Hu-Friedy's method did not literally infringe under the trial court's claim construction. Because this court affirms that construction, it also affirms the absence of literal infringement.

"Whether an element of the accused device is equivalent to a claim limitation depends on 'whether the substitute element matches the function, way, and result of the claimed element, or whether the substitute element plays a role substantially different from the claimed element.'" Tronzo v. Biomet, Inc., 156 F.3d, 1154, 1160 (Fed. Cir 1998)(citing Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 117 S. Ct. 1040, 1054 (1997)). "If a theory of equivalence would vitiate a claim limitation, however,

then there can be no infringement under the doctrine of equivalents as a matter of law.”

Id.

Having construed the claims, the district court found that the requirement of a separate elongated attachment was a meaningful structural limitation for the claimed invention. The district court therefore held that “a finding of equivalence between the Dentsply and Hu-Friedy designs would eliminate an essential limitation of the Dentsply patent.”

In analyzing the differences between the Hu-Friedy method and the ‘714 method, the district court noted several distinct advantages in each process not found in the other process. In particular, the district court found the claimed invention recited a method with manufacturing expediency. The claimed method has the further advantage of losing only a tip in the event of an error during manufacture.

The district court found the Hu-Friedy method, in contrast, does not require the production and attachment of two separate pieces. The Hu-Friedy method therefore provides greater manufacturing efficiency. Additionally, the district court found the integrated connecting body/tip of Hu-Friedy produces greater functional regularity. The district court found the Hu-Friedy design and the claimed Dentsply “tip” differ significantly in manufacturing method and function. The district court also found these differences substantial. On review, this court agrees that the record supports the district court’s conclusion that the Hu-Friedy method and the claimed method differ significantly in function. Therefore, this court affirms the district courts decision that Hu-Friedy did not infringe claims 1, 2, and 7-9 of the ‘714 patent under the doctrine of equivalents.