United States District Court,
E.D. Texas, Lufkin Division.

HEARING COMPONENTS, INC,
Plaintiff.
v.
SHURE, INC,
Defendant.

Civil Action No. 9:07-CV-104

Dec. 1, 2008.

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ORDER CONSTRUING CLAIM TERMS OF UNITED STATES PATENT NOS. 4,880,076***;*** 5,002,151***; and*** 5,401,920

RON CLARK**, District Judge.**

Plaintiff Hearing Components, Inc. filed suit against Defendant Shure, Inc. claiming infringement of United States Patent Nos. 4,880,076; 5,002,151; and 5,401,920. The court conducted a *Markman* hearing to assist it in interpreting the meaning of the claim terms in dispute. Having carefully considered the patents, the parties' contentions as presented in their briefs, and the arguments of counsel, the court now makes the following findings and construes the disputed claim terms. FN1

I. CLAIM CONSTRUCTION STANDARD OF REVIEW

Claim construction is a matter of law. Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996) *("Markman II")*. "The duty of the trial judge is to determine the meaning of the claims at issue, and to instruct the jury accordingly." Exxon Chem. Patents, Inc. v. Lubrizoil Corp., 64 F.3d 1553, 1555 (Fed.Cir.1995) (citations omitted), *cert. denied,* 518 U.S. 1020, 116 S.Ct. 2554, 135 L.Ed.2d 1073 (1996).

" '[T]he claims of the patent define the invention to which the patentee is entitled the right to exclude.' " Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed.Cir.2005) *(en banc*) (citation omitted), *cert. denied,* 546 U.S. 1170, 126 S.Ct. 1332, 164 L.Ed.2d 49 (2006). "Because the patentee is required to 'define precisely

what his invention is,' it is 'unjust to the public, as well as an evasion of the law, to construe it in a manner different from the plain import of its terms.' " Id. at 1312 (quoting White v. Dunbar, 119 U.S. 47, 52, 7 S.Ct. 72, 30 L.Ed. 303 (1886)).

The words of a claim are generally given their ordinary and customary meaning. Phillips, 415 F.3d 1303, 1312. The "ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." Id. at 1313. Analyzing "how a person of ordinary skill in the art understands a claim term" is the starting point of a proper claim construction. *Id*.

A "person of ordinary skill in the art is deemed to read the claim term not only in context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id*. Where a claim term has a particular meaning in the field of art, the court must examine those sources available to the public to show what a person skilled in the art would have understood the disputed claim language to mean. *Id*. at 1414. Those sources "include 'words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.' " *Id*. (citation omitted).

"[T]he ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Id*. In these instances, a general purpose dictionary may be helpful. *Id*.

However, the court emphasized the importance of the specification. "[T]he specification 'is always highly relevant to the claim construction analysis. Usually it is dispositive; it is the single best guide to the meaning of a disputed term.' " *Id*. at 1315 (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996)). A court is authorized to review extrinsic evidence, such as dictionaries, inventor testimony, and learned treaties. Phillips, 415 F.3d 1303, 1317. However, their use should be limited to edification purposes. Id. at 1319.

The intrinsic evidence, that is, the patent specification, and, if in evidence, the prosecution history, may clarify whether the patentee clearly intended a meaning different from the ordinary meaning, or clearly disavowed the ordinary meaning in favor of some special meaning. *See* Markman v. Westview Instruments, Inc., 52 F.3d 967, 979-80 (Fed.Cir.1995); *aff'd,* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). Claim terms take on their ordinary and accustomed meanings unless the patentee demonstrated "clear intent" to deviate from the ordinary and accustomed meaning of a claim term by redefining the term in the patent specification. Johnson Worldwide Assoc., Inc. v. Zebco Corp., 175 F.3d 985, 990 (Fed.Cir.1999).

The " 'ordinary meaning' of a claim term is its meaning to the ordinary artisan after reading the entire patent." Phillips, 415 F.3d 1303, 1321. However, the patentee may deviate from the plain and ordinary meaning by characterizing the invention in the prosecution history using words or expressions of manifest exclusion or restriction, representing a "clear disavowal" of claim scope. Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1327 (Fed.Cir.2002). If the patentee clearly intended to provide his own definitions, the "inventor's lexicography governs." Phillips, 415 F.3d 1303, 1316.

II. PATENT BACKGROUND AND TECHNOLOGY

HCI asserts claims 1, 17, and 36 of U.S. Patent No. 4,880,076; claims 1, 13 FN2, and 19 of U.S. Patent No. 5,002,151; and claims 1 and 2 of U.S. Patent No. 5,401,920. The ' 076 patent application was filed on December 5, 1986 and issued on November 14, 1989. The ' 151 patent is a continuation-in-part of the application which issued as the ' 076 patent, and issued on March 26, 1991. The specification of these two patents is the same. The ' 920 patent has a different specification, and issued on March 28, 1995.

The '076 patent is directed toward a hearing aid ear piece connected to a disposable compressible foam sleeve. The sleeve is inserted into the ear canal of the individual wearing the hearing aid, and the connections between the sleeve and the hearing aid permit the sleeve to be fastened and unfastened by the user. The patent claims a number of connections, including an adhesive, a ball-and-socket, and screw threads. The '151 patent also claims connections between a sleeve and hearing aid or other sound transmission device.

The '920 patent describes and claims a fibrous guard that is placed over the opening of a sound transmitting tube inserted into a person's ear canal (like that of a hearing aid worn in the ear). The guard is sound-porous and used to prevent cerumen (ear wax) from entering the tube.

III. PERSON OF ORDINARY SKILL IN THE ART

The parties' briefs indicated their agreement that a person of ordinary skill in the art with respect to the '076 and '151 patents has at least an M.A. or an Au.D in audiology, or a B.S. in mechanical engineering, industrial engineering, materials engineering, physical acoustics, ergonomics, human factors engineering, or industrial design, together with relevant experience designing insert-type ear pieces for communications earphones, hearing aids, hearing protectors, or similar in-ear devices. While Shure initially argued that a person with such qualifications might not be familiar with ear wax, the parties agreed to the following description of one of ordinary skill in the art:

A person of ordinary skill in the art with respect to the '076, '151, and ' 920 patents has at least the equivalent of what is known in this country as an M.A. or an Au.D in audiology, or a B.S. in mechanical engineering, industrial engineering, materials engineering, physical acoustics, ergonomics, human factors engineering, or industrial design, together with relevant experience designing insert-type ear pieces for communications earphones, hearing aids, hearing protectors, or similar in-ear devices. This relevant design experience may be acquired through at least completion of a one-semester intensive practicum study, master's level thesis, or at least one year work experience designing ear pieces that fit within the ear canal. Advanced education with practical laboratory or clinical study might substitute for some experience, while extensive experience designing and constructing ear pieces might substitute for some of the educational requirements.

Tr. at p. 6, l. 9-p. 7, l. 2; p. 7, ll. 23-24; p. 13, l. 25-p. 14, l.1.

IV. CLAIM CONSTRUCTION

1. "Ear piece." '076 patent**, claims 1, 17, and 36.**

An exemplar use of this term is seen in claim 1 of the '076 patent, stating in part, with the disputed term in bold: "Hearing aid, comprising an **ear piece** including a sound tube, a user disposable sleeve which is formed with distal and proximal ends...."

As used in the patents, "proximal" and "distal" refer to the hearing aid or sound transmission device, rather than the human body. Therefore, when the patents refer to the "distal end" of an ear piece, they are referring to the end that goes into the ear and is closest to the eardrum. This is the reverse of the way these terms are applied in relation to the human body, where "proximal" indicates toward the center of the body and "distal" refers to a part farther away from the center. *See* Tr. at p. 18, l. 6-p. 20, l. 18.

Given this understanding, with which the parties concurred, the specification provides clear guidance for the construction of this term. "The invention relates to the ear piece of a hearing aid, namely the portion which is inserted into the external ear canal." '076 patent, col. 1, ll. 8-10. Experts for both parties agreed that the line of demarcation between the ear canal and the bowl of the ear (or "concha") is not always distinct. Tr. at p. 15, l. 19-p. 17, l. 17; Court's Ex. 2. Therefore, an ear piece placed in the ear canal might extend into the bowl of the ear. Accordingly, with the agreement of the parties, *see* Tr. at p. 19, ll. 19-24, the court defines this term as follows:

"**Ear piece" means "the portion that is inserted into the external ear canal, a part of which may extend outwardly into the bowl of the ear.**"

2. "Said foam fitting over and being firmly secured to the duct." '076 patent**, claim 17.**

This term is seen in claim 17 of the '076 patent, stating in part, with the disputed term in bold: "soft polymeric foam having proximal and distal ends, **said foam fitting over and being firmly secured to the duct....**" HCI suggests "the entire duct is surrounded by the foam so that it is not moved easily" and Shure proposes "the foam must fit at least partly over the duct along its outer, axial dimension and be fastened to the sleeve at least along part of the duct's outer, axial dimension."

The parties agreed that the foam is attached to the duct by adhesive or by being molded onto the duct. Tr. at p. 102, l. 14-p. 103, l. 5; p. 114, ll. 18-22. Thus, there was little dispute that "being firmly secured to the duct" has the ordinary meaning that the duct would not move easily inside the foam. In other words, the duct and the foam are not easily separated. *See* Tr. at p. 101, ll. 17-21.

The parties' dispute focuses on the extent to which the duct is surrounded by the foam. HCI argued at the hearing that the longitudinal surface of the duct had to be surrounded by the foam, but also agreed that it did not intend "to cover the entire duct with foam." Tr. at p. 106, ll. 23-24; p. 109, ll. 1-14. Shure pointed out an embodiment in which the duct's screw threads extend beyond the proximal end of the foam. '076 patent, col. 3, ll. 55-58; *see also* col. 6, ll. 13-15 (an example in which a tensile tester is clamped onto a "protruding duct" of the sleeve). HCI termed this a "misstatement" and calls it "ambiguous" in light of Figure 7, in which the adapter **79,** rather than the duct, contains the protruding screw threads. Tr. at p. 111, l. 8-p. 113, l. 7.

However, claim construction involves interpreting claim terms in light of the disclosures actually found in the specification, not speculation about what the patentees might have wanted to write had they been paying closer attention when drafting the patent. Figure 1 of the '076 patent clearly shows that there are several portions of the duct that are not surrounded by foam: the flanged opening **22** and flange **21.** This refutes HCI's construction. The court will therefore construe this term as follows:

"**Said foam fitting over and being firmly secured to the duct" means "The foam must surround at least some of the duct and must be attached to the duct by adhesive or by being molded onto the duct**

such that the foam and duct are not separated easily."

HCI suggested replacing "at least some of" with "substantially all of the longitudinal surface." As discussed above, this construction is not supported by the specification.

3. "Duct firmly secured in said longitudinal passage." '076 patent**, claim 36.**

This term is seen in claim 36 of the '076 patent, stating in part, with the disputed term in bold: "soft polymeric foam having proximal and distal ends, and [sic] longitudinal passage there between, a hollow, flexible, elongated **duct firmly secured in said longitudinal passage....**" HCI proposes "the entire duct is surrounded by the foam so that it is not moved easily" and Shure suggests "the duct must be fastened within the longitudinal passage of the foam sleeve at least along part of the duct's outer, axial dimension."

The parties agreed at the hearing that the arguments regarding this term are the same as for term 2 above, "said foam fitting over and being firm1y secured to the duct." Tr. at p. 116, ll. 18-p. 117, 1. 6. For the reasons previously discussed, the court construes this term as follows:

"**Duct firmly secured in said longitudinal passage" means "The duct must be attached to the foam by adhesive or by the foam being molded onto the duct such that the foam and duct are not easily separated. The foam must surround at least some of the duct.**"

4. "Flange portion." '151 patent**, claim 1.**

This term is found in claim 1 of the '151 patent, which states in part, with the disputed term in bold: "An ear piece component ... comprising: a connecting portion having ... (i) distal and proximal ends ... and a **flange portion** secured to said proximal end." HCI suggests "a projecting rim or collar" and Shure proposes "a rim or collar (on a component of an ear piece) with opposed surfaces attachable to other structures on both surfaces of the rim or collar."

The parties agree that the flange portion is a "rim or collar." HCI argues that claim 1 requires only that the flange be connected to the proximal end of the ear piecenot that it be attached to two different surfaces. Figure 1, according to HCI, shows such a one-sided flange. HCI's rendering of Figure 1 at page 10 of its opening brief omits the actual item number designating a flange **21.** Instead, HCI added a label ("FLANGE") to its version of Figure 1 on page 11 of its opening brief, and drew an arrow to what the specification indicates is actually part of item 10, the casing of the device. '076 patent, col. 4, ll. 51-53. HCI's suggestion that this should be a flange even though it is not so labeled in the specification is not well taken. The inventors were able to label a flange when they wanted to elsewhere in Figure 1 ("flange **21").** '076 patent, col. 4, ll. 49-51.

Shure's argument is equally disingenuous. Shure asserts that the flange must be attachable to other structures on both surfaces. Shure points to Figure 8, as described in col. 7, ll. 5-29, asserting that Figure 8 shows an ear piece plate **80** connected to an ear piece where plate flange **81** is secured on one side to connecting portion **82** and on the other side to the hearing aid housing. However, the specification does not describe plate flange **81** as connected on one side to connecting portion **82.** Connecting portion **82** is seen in Figure 8 as cylindrical, and the specification states that "[t]he component in an ear piece plate **80** having a plate flange **81** *about* a connecting portion **82,** preferably cylindrical ...." '151 patent, col. 7, ll. 6-8 (emphasis added). The attachment is not to a "side" as Shure suggests, but rather is about the circumference of connecting portion **82.**FN3 Shure also points to pre-litigation conduct by HCI in the European Patent Office

FN4 and in cease-and-desist letters to competitors FN5 to support its assertion that "casing" and "flange" are not intended to be synonymous: that, in effect, part of the "novelty" of the ' 151 patent was the fact that the flange plate portion and the hearing aid casing are two different structures.

In essence, Shure makes the bald assertion that the "flange portion" referred to in claim 1 of the '151 patent is distinct from flange **21** in Figure 1. Based on this unsupported premise, Shure argues that "flange portion" must be the same thing as plate flange **81** in Figure 8 and the flange plate portion, since all three terms are used interchangeably in the specification and prosecution history. The specification repeatedly refers to element **81** as both the "plate flange" and the "flange." *See, e.g.,* '151 patent, col. 7, 1. 7 ("plate flange **81");** ll. 29, 34, 36, 39 ("flange 81"). Flange **81** is also stated to be the same or similar to flange **91** (Fig.9). '151 patent, col. 7, 1. 67-col. 8, 1.2. However, in the end, claim 1, as read in light of in Figure 8 and col. 7, ll. 6-8, describes flange **81** secured *about* the proximal end of connecting portion **82.** The specification does not indicate that a side of a flange is attached to the connecting portion.

At the same time, Shure is able to point to no place in the specification that describes attachment of the other side of the flange portion **81** to the ear piece or hearing aid. Shure points to col. 7, ll. 26-39 to support its argument; however, this passage merely describes attaching component plate **80,** *not* flange **81,** to the ear piece by some sort of adhesive bonding or other securing method, and discusses how the portions of flange **81** which extend beyond the parameters of the sound opening passageway in the ear piece will be trimmed off. Nowhere does this portion of the specification state that the flange portion itself is adhered or otherwise attached to the ear piece. It may just be in contact with, or butt up against, the ear piece where the sound tube is without actually being attached.

The court will therefore construe this term as follows:

"Flange portion" means "a projecting rim or collar."

5. "Said wax guard being readily installed and replaced by a user." '920 patent**, claim 1.**

This term is found in claim 1 of the '920 patent, which states in part, with the disputed term in bold: "a disposable wax guard for mounting over the sound outlet port to prevent cerumen from fouling said outlet port, **said wax guard being readily installed and replaced by a user....**" HCI suggests "the wax guard may be easily placed on and taken off the tube." Shure argues that this term is indefinite.

Determining that a patent claim is invalid for failure to meet the definiteness requirement in Section 112 is a "legal conclusion that is drawn from the court's performance of its duty as the construer of patent claims." *Biomedino,* 490 F.3d at 949. "The purpose of the definiteness requirement is to ensure that the claims delineate the scope of the invention using language that adequately notifies the public of the patentee's right to exclude." Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1347 (Fed.Cir.2005). However, this requirement "does not compel absolute clarity. Only claims not amenable to construction or insolubly ambiguous are indefinite ... Thus, the definiteness of claim terms depends on whether those terms can be given any reasonable meaning." *Id.* (internal quotations omitted).

Claim 1 states that the wax guard is readily installed and replaced. Where a "word of degree" like "readily" is used, the court must "determine whether the patent's specification provides some standard for measuring that degree." Datamize, 417 F.3d 1342, 1351 (internal quotation omitted). "When faced with a purely subjective phrase ... a court must determine whether the patent's specification supplies some standard for

measuring the scope of the phrase." *Id*.

In discussing the disadvantages of prior art, the specification notes that some prior products needed a tool or solvent to remove wax buildup. '920 patent, col. 1, ll. 50-60. If this was the only statement, one might say that objectively "readily installed and replaced by a user" simply means without tools. However, the specification also disparages the prior art by discussing other products with filters where "removal and replacement has been difficult, especially since persons using hearing aids are often advanced in years and unable to see clearly enough or to perform fine physical actions well enough to replace the filters." Col. 1, ll. 63-68.

So what standard is set by the claim? What are "fine physical actions"? The ability to pick up a sewing needle? A dime? A teaspoon? Would the standard change for a person with limited or no vision? In short, the "direction" in the specification is itself so subjective that the court cannot determine what this claim term means in the context of the patent.

This claim term is little more than an advertisement of the wax guard's purported benefits inserted in the middle of claim 1. A claim term that merely states a result might be permissible in a "whereby" clause.FN6 Here, the patentee chose to put a subjective term in the middle of claim 1 as a limitation without providing an objective standard for the term in the specification. The resulting difficulty in claim construction was illustrated at the *Markman* hearing when Shure took the unusual position that it could avoid infringement of the ' 920 patent by demonstrating that its own devices are "difficult to use."

Of course, the court does not construe this claim to aid Shure's marketing strategy for its "difficult to use" product. The point is that the specification provides no boundaries as to what "readily installed and replaced by the user" can be. It would be extremely difficult, if not impossible, for someone attempting to design around claim 1 to determine what test group of users would be used to measure ease of replacement and which degree of difficulty would be sufficient to avoid infringement. The court therefore finds this claim term indefinite.

6. "A thin, flexible membrane that permits a user to position said guard over said outlet port." '920 patent**, claim 1.**

The court finds this issue of construction moot, as it has already found the term "readily installed and replaced by a user," also found in claim 1 of the ' 920 patent, indefinite. Although the term "a thin, flexible membrane that permits a user to position said guard over said outlet port" is also found in claim 3 of the '920 patent, HCI stated in its Motion for Summary Judgment of No Anticipation that it is asserting only claims 1 and 2 of the '920 patent in this litigation. *See* Doc. # 96 at p. 2. Because claim 2 depends from claim 1, it is also indefinite.

V. MEANS-PLUS-FUNCTION CLAUSES

The remaining terms the parties ask the court to construe involve means-plus-function clauses under 35 U.S.C. s. 112(6). Where a claim includes the word "means," a presumption is invoked that s. 112(6) applies. *See* Harris Corp. v. Ericsson Inc., 417 F.3d 1241, 1248 (Fed.Cir.2005). This presumption may be rebutted if the claim recites "sufficient structure for performing the claimed function...." *Id*.

Determining the claimed function and the corresponding structure of means-plus-function clauses are matters of claim construction, so it is appropriate to deal with these issues at the *Markman* stage. WMS

Gaming Inc., v. Int'l Game Tech., 184 F.3d 1339 (Fed.Cir.1999). Claim construction of a means-plus-function limitation involves two steps. *See* Medical Instrumentation and Diagnostics v. Elekta AB, 344 F.3d 1205, 1210 (Fed.Cir.2003). The court must first identify the particular claimed function, and then look to the specification and identify the corresponding structure for that function. *Id*. "Under this second step, 'structure disclosed in the specification is corresponding structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim.' " *Id*. (citations omitted). "While corresponding structure need not include all things necessary to enable the claimed invention to work, it must include all structure that actually performs the recited function." Default Proof Credit Card System, Inc. v. Home Depot U.S.A., Inc., 412 F.3d 1291, 1298 (Fed.Cir.2005).

In whatever format, the structure must be sufficiently disclosed so that one of ordinary skill in the art can determine the limitations on what is claimed. *See* Aristocrat Techs. Australia Ppty. Ltd. v. Int'l Game Tech., 521 F.3d 1328, 1337 (Fed.Cir.2008); *see also,* Budde v. Harley-Davidson, Inc., 250 F.3d 1369, 1381-82 (Fed.Cir.2001); In re Dossel, 115 F.3d 942, 946-47 (Fed.Cir.1997).

7. "Fastening means for disposably attaching the proximal end of the sleeve to said ear piece." '076 patent**, claim 1.**

This term is seen in claim 1 of the '076 patent, stating in part, with the disputed term in bold: "Hearing aid, comprising ... **fastening means for disposably attaching the proximal end of the sleeve to said ear piece** with said passage connecting the sound tube to the ear canal of the user...."

The parties agree, and the court finds, that this term is governed by 35 U.S.C. s. 112, para. 6. The parties do not disagree very much on the function: HCI proposed "disposably attaching the proximal end of the sleeve to the ear piece" and Shure suggested "replaceably attaching the proximal end of the sleeve to the ear piece."

HCI's proposal would be somewhat circular, in that the function of "disposably attaching" would be described as disposably attaching. Given that the parties seem to disagree as to the meaning of "disposably," Shure's use of replaceably is not much clearer. The specification describes the invention as a "novel sleeve" that is easy to use and easy to change. '076 patent, col. 2, ll. 31-34. As noted above, the parties agreed that "proximal" refers to the end of the ear piece that does not go into the ear and is farthest away from the ear drum.

At the *Markman* hearing, the court proposed "attaching the end of the sleeve further from the inner ear to the ear piece in such a way that it can easily be removed and discarded by the user so that another sleeve can be attached" for the function. Tr. at p. 22, ll. 18-22. Shure suggested replacing "inner ear" with "eardrum," and HCI agreed. Tr. at p. 26, l. 6-p. 27, l.7. As mentioned at the *Markman* hearing, the court will also replace "further" with "farther." The function of this term is therefore: **attaching the end of the sleeve farther from the eardrum to the ear piece in such a way that it can easily be removed and discarded by the user so that another sleeve can be attached.**

Regarding the structure, HCI's proposed description is overly broad and general, while Shure's is excessively particularized and limited. For example, HCI proposed for one structure a "duct (within the sleeve)," while Shure's corresponding suggestion was "a male spiral-shaped screw thread **12** located on a projection on ear piece **11,** mated to a female spiral-shaped screw thread **20,** having substantially the same corresponding shape and size as the male spiral-shaped screw thread, in an elongated plastic duct **16,** and flange **21** (to seat

against ear piece), as shown in FIG. 1 and described at col. 4, ll. 39-62."

The court determines whether structure is clearly associated to the function and is adequately disclosed from the viewpoint of one skilled in the art. Budde, 250 F.3d 1369, 1376. The specification must be read as a whole. Id. at 1379. Structure that is clearly associated with the function is sufficiently disclosed if a person of ordinary skill in the art can make and practice the claimed invention with only a reasonable degree of routine experimentation. Id. at 1376.

Based on its reading of the '076 patent specification and the parties' representations both in their briefs and at the *Markman* hearing, the court finds the following structures:

(1) a duct to which a foam sleeve is firmly secured by (a) being molded onto the duct or (b) a layer of adhesive cement ('076 patent**, col. 3, ll. 29-32, 45-48) where:**

(i) the duct and ear piece are connected using mating screw threads ('076 patent**, col. 3, ll. 49-53);**

(ii) the duct and ear piece connected using a bayonet or ball-and-socket attachment ('076 patent**, col. 3, ll. 59-61);**

(iii) the duct and ear piece are connected using a layer of adhesive cement between the proximal end of the sleeve and the distal end of the ear piece ('076 patent**, col. 5, ll. 44-57, Fig. 6);**

(2) an ear piece and foam sleeve where the sleeve is threaded onto the ear piece using the male screw threads of the ear piece ('076 patent**, col. 5, ll. 28-43, Fig. 5); and**

(3) equivalents thereof.

The court excludes from its structures HCI's proposal that the Holding Value must be at least 1 1/2 times the Pullout Value. It is true that the '076 patent specification states at col. 2, ll. 61-63, that "[t]he attaching means should provide a Holding Value of at least 1 1/2 times the Pullout Value." Of the five claims in the '076 and '151 patents which include a means-plus-function "fastening" term, only claim 1 of the '076 patent includes the Holding Value/Pullout Value ratio stated above. If, as HCI suggests, the ratio is a claim limitation applicable to all the claims, it would not have been explicitly included in one claim (claim 1 of the '076 patent) and deliberately omitted from four others (claims 17 and 36 of the '076 patent and claims 1 and 13 of the '151 patent). It would also be redundant on the court's part to incorporate the ratio into the structure when it is explicitly stated elsewhere in claim 1.

8. "Fastening means at one end thereof for disposably attaching the duct to said ear piece" and "means fastened to the proximal end of said foam for disposably attaching said sleeve to a sound transmission device." '076 patent**, claims 17 and 36.**

An exemplar use of these terms is seen in claim 17 of the '076 patent, stating in part, with the disputed term in bold: "a flexible, elongated duct which is formed with a longitudinal passage and **fastening means at one end thereof for disposably attaching the duct to said ear piece** with said passage connecting the sound tube of the hearing aid to the ear of the user."

The parties agree that these terms are governed by 35 U.S.C. s. 112, para. 6 and that the means and function

are the same for both terms, but dispute what both are. The parties do not disagree very much on the function: HCI suggests "disposably attaching the duct to the ear piece" and Shure proposes "replaceably attaching the duct to said ear piece." The court will phrase the function as follows, consistent with the parties' agreement on the function of "fastening means for disposably attaching the proximal end of the sleeve to said ear piece" described above: **attaching the end of the duct to the ear piece in such a way that it can easily be removed and discarded by the user so that another sleeve can be attached.**

Regarding the function, the parties' dispute and proposed constructions are much the same as they were for the "fastening means" term in claim 1 of the ' 076 patent discussed above. The one difference is that the structure set out in Figure 5, where the sleeve is attached directly to the ear piece and no duct is present, is excluded for these terms.

Consistent with the structures found for the "fastening means" term in claim 1, the court finds the following structures:

(1) A duct to which a foam sleeve is firmly secured by (a) being molded onto the duct or (b) a layer of adhesive cement ('076 patent**, col. 3, ll. 29-32, 45-48) where:**

(i) the duct and ear piece are connected using mating screw threads ('076 patent**, col. 3, ll. 49-53);**

(ii) the duct and ear piece connected using a bayonet or ball-and-socket attachment ('076 patent**, col. 3, ll. 59-61);**

(iii) the duct and ear piece are connected using a layer of adhesive cement between the proximal end of the sleeve and the distal end of the ear piece ('076 patent**, col. 5, ll. 44-57, Fig. 6); and**

(2) equivalents thereof.

9. "Means on said exterior surface for disposably attaching the duct of the sleeve to said connecting portion" and "means on said exterior surface for disposably attaching said duct of said sleeve to said connecting portion in said central longitudinal passage." '151 patent**, claims 1 and 13.**

An exemplar use of these terms is seen in claim 1 of the '151 patent, stating in part, with the disputed term in bold: "An ear piece component ... comprising: a connecting portion having ... (iii) **means on said exterior surface for disposably attaching the duct of the sleeve to said connecting portion,** and a flange portion secured to said proximal end."

The parties agree that these terms are governed by 35 U.S.C. s. 112, para. 6 and that said means and function are the same for both terms, but dispute both. Again, the parties do not disagree very much on the function: HCI suggests "disposably attaching the duct of the sleeve to the connecting portion" and Shure proposes "replaceably attaching the duct of the sleeve to said connecting portion." The parties agreed at the *Markman* hearing that the function for these terms is as follows: **attaching the duct of the sleeve to the connecting portion in such a way that it can easily be removed and discarded by the user so that another sleeve can be attached.** Tr. at p. 126, ll. 7-21; p. 128, ll. 10-12.

Regarding the function, the parties' dispute and proposed constructions are much the same as they were for the "fastening means" term in claim 1 of the '076 patent discussed above. As with claims 17 and 36 of the

'076 patent, one difference is that the structure set out in Figure 5, where the sleeve is attached directly to the ear piece and no duct is present, is excluded for these terms. Another is the structure in Figure 7, where the duct **76** is attached to the adapter **79,** with the adapter **79** in turn attached to the connecting portion. The parties agreed at the *Markman* hearing that this particular configuration was excluded under the claim language, but that this exclusion did not need to be present in the court's construction so long as it was not specifically included on the list of structures. Tr. at p. 129, l.24-p. 130, l.22.

Consistent with the parties' representations and the discussion above, the court finds the following structures:

(1) A duct to which a foam sleeve is firmly secured by (a) being molded onto the duct or (b) a layer of adhesive cement ('151 patent**, col. 3, ll. 56-59; col. 4, ll. 20-22) where:**

(i) the duct and ear piece are connected using mating screw threads ('151 patent**, col. 4, ll. 23-24);**

(ii) the duct and ear piece connected using a bayonet or ball-and-socket attachment ('151 patent**, col. 4, ll. 37-39);**

(iii) the duct and ear piece are connected using a layer of adhesive cement between the proximal end of the sleeve and the distal end of the ear piece ('151 patent**, col. 6, ll. 46-59, Fig. 6); and**

(2) equivalents thereof.

10. "Means for disposably attaching comprises a projection on said exterior surface of said connecting portion for mating with the user-disposable sleeve." '151 patent**, claim 19.**

This term is seen in claim 19 of the '151 patent, stating, with the disputed term in bold: "An assembly according to claim 12, wherein said **means for disposably attaching comprises a projection on said exterior surface of said connecting portion for mating with the user-disposable sleeve.**"

The parties dispute whether this term is governed by 35 U.S.C. s. 112, para. 6. HCI argues that it is not, because this is a dependent claim reciting a specific structure (i.e., "a projection") for performing the claimed function in the means-plus-function clause of the independent claim. Shure suggests that the function is "mating with the user-disposable sleeve" and that the corresponding structures are the same as those it suggested for claim 1 of the '151 patent, but limited exclusively to those fastening means that show a projection on the connection portion (i.e., thread, ball, or bayonet point.).

It is presumed that a claim limitation which includes the word "means" is intended to invoke means-plus-function treatment. Biomedino, LLC v. Waters Techs. Corp., 490 F.3d 946, 950 (Fed.Cir.2007); Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1302 (Fed.Cir.1999). That presumption may be rebutted where (1) the claim recites no function that corresponds to the means or (2) the claim itself recites sufficient structure to perform the recited function. Rodime, 174 F.3d 1294,1302; *see also* York Products, Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1576 (Fed.Cir.1996).

HCI argues that the latter applies here-namely, that claim 19 provides sufficient structure because it is merely a dependent claim reciting one of the specific structures that performs the function in independent claim 12. Claim 19 clearly recites the assembly in claim 12, "wherein said means for disposably attaching

comprises a projection on said exterior surface of said connecting portion for mating with the user-disposable sleeve." Shure's argument is that this structure is not sufficient to perform the function in claim 12, which the parties agreed at the *Markman* hearing was "attaching the duct of the sleeve to the connecting portion in such a way that it can easily be removed and discarded by the user so that another sleeve can be attached."

Having defined the structure in claim 12 as including a "duct to which a foam sleeve is firmly secured ... where.. the duct and ear piece are connected using a bayonet or ball-and-socket attachment," the court finds that sufficient structure is recited in claim 19 to perform the stated function. The parties do not request the term be construed any further.

VI. CONCLUSION

The jury will be instructed in accordance with the court's interpretation of the disputed claim terms in the '076 and '151 patents. Claims 1 and 2 of the '920 patent are indefinite.

So **ORDERED** and **SIGNED** this 2 day of **December, 2008.**

FN1. The transcript of the hearing contains a number of representations and agreements of the parties and the answers of their experts to technical questions from the court, all of which will not be repeated here, but which may assist in understanding the issues presented. This Order governs in the event of any conflict between the Order and the court's preliminary analysis at the hearing. The transcript will be cited as Tr. at p. ----, l. ---.

FN2. The court refers in this Order to certain claim terms-"means on said exterior surface for disposably attaching said duct of said sleeve to said connecting portion in said central longitudinal passage"-as being present in claim 13 of the '151 patent. To clarify, this term is actually found in claim 12, from which claim 13 depends. Claim 12 is not itself asserted.

FN3. This analysis holds true whether the longitudinal surface of connecting portion **82** is irregular, smoothly circular, fluted like a Greek column, or has three or more flat sides such that the connecting portion is a shape like a triangle, rectangle, pentagon, or the like.

FN4. EP Pat. No. 0494991 claims priority to the U.S. application that eventually issued as the '151 patent. The '991 patent states that, in one embodiment, the ear piece comprises a connecting portion with a "flange plate portion, secured to the proximal end of the connecting portion, for removable attachment of the component plate to the hearing aid casing." Def. Cl. Const. Br., Ex. 17, at p. 3. Statements made by the applicants when prosecuting foreign counterparts to the patent or patents at issue may be considered when they "comprise relevant evidence." Tanabe Seiyaku Co., Ltd. v. United States Int'l Trade Comm'n, 109 F.3d 726, 733 (Fed.Cir.1997) (internal quotation omitted).

FN5. For example, in a February 2007 letter stating that a competitor's Westone UMI device literally infringed claim 1 of the '151 patent, HCI provided a claim chart in which the support in the specification for

the "flange portion" claim term was stated to be flanges **81, 91,** and **111** of Figs. 8, 9, and ll. Def. Cl. Const. Br., Ex. 10, at p. 3.

FN6. For example, "a 'whereby' clause that merely states the result of the limitations in the claim adds nothing to the patentability or substance of the claim," and does not contain any additional limitations. Texas Instr. Inc. v. United States Int'l Trade Comm'n, 988 F.2d 1165, 1172 (Fed.Cir.1993). However, "readily installed and replaced by a user" in claim 1 is not part of a "whereby" clause. It is also well-settled that language in a preamble only limits a claim when it "states a necessary and defining aspect of the invention," not when it is "simply an introduction to the general field of the claim." Computer Docking Station Corp. v. Dell, Inc., 519 F.3d 1366, 1375 (Fed.Cir.2008) (internal quotation omitted). This exception is likewise inapplicable, as "readily installed" term is found in the body of claim 1, not in the preamble.

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