

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND**

180S, INC., et al.

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v.

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Civil No. JFM-13-3239

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COSTCO WHOLESALE CORP., et al.

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MEMORANDUM

Plaintiffs 180s, Inc. and 180s, LLC brought this action against defendants Costco Wholesale Corporation and SM Global, LLC asserting infringement of two patents. The parties have identified four areas of disagreement for claim construction from U.S. Patent No. 5,835,609 (“the ‘609 Patent”) and U.S. Patent No. 6,880,174 (“the ‘174 Patent”). After the parties briefed the issues, the court held a claim construction hearing on May 30, 2014. This opinion outlines my decisions on the meaning of the disputed terms.

BACKGROUND

In its suit against Costco and SM Global, 180s is asserting several claims from the ‘609 and ‘174 Patents. Both patents relate to “around the head” ear warmers. The first claim at issue for the purposes of claim construction is independent claim 13 from the ‘609 Patent, which states in relevant part:

13. A covering device to be worn over the ears of an individual and extending around the back of the individual’s head or neck, comprising:

a band having a first curved portion and a second curved portion, one end of each of the first and second curved portions overlapping and slidably attached to opposing curved portion, such that the relative overall length of the band may be adjusted,

two ear cups, one ear cup attached to the free end of the first curved portion and the second ear cup attached to the free end of the second curved portion, the ear cups defining a cavity formed from two support flanges, formed in a V-shape, and a semi-circular frame portion which extends between opposite projections of the V-shape of the flanges, the semi-circular portion and the support flanges defining a central opening, an attachment flange projecting from the vertex of the support flanges in a direction opposite the semi-circular portion, the attachment flange including means thereon for rotatably attaching the ear cups to the free ends of the first and second curved portions, and

fabric means covering the band and the ear cups on both sides thereof and forming a pocket within the cavity of the ear cups.

See '609 Patent at col. 13 ll. 30–54, ECF No. 54-3. The other claim at issue, independent claim

11 of the '174 Patent, states in relevant part:

11. An ear protection device, comprising:

a band, the band including a first end, a second end, a first locking protrusion located proximate to the first end of the band, a second locking protrusion located proximate to the second end of the band, the first locking protrusion and the second locking protrusion extending from the band in substantially the same direction;

a first ear cup portion, the first ear cup portion being configured to receive the first locking protrusion to fixedly couple the first ear cup portion to the band, the first locking protrusion including a barbed shape; and

a second ear cup portion, the second ear cup portion being configured to receive the second locking protrusion.

See '174 Patent at col. 12 ll. 24–35, ECF No. 54-4.

180s moved for a temporary restraining order against Costco to stop it from selling the allegedly infringing product, but the court denied the TRO at a hearing on November 20, 2013.

STANDARD

Claim construction is a question of law for the court to decide. *See O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360 (Fed. Cir. 2008) (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc) *aff'd* 517 U.S. 370

(1996)). “It is a bedrock principle of patent law that the claims of a 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) (internal quotation marks and citations omitted). Accordingly, “[t]he purpose of claim construction is to ‘determin[e] the meaning and scope of the patent claims asserted to be infringed.’” *O2 Micro*, 521 F.3d at 1360 (citing *Markman*, 52 F.3d at 976).

A claim’s words “are generally given their ordinary and customary meaning.” *Phillips*, 415 F.3d at 1312 (internal quotation marks and citations omitted). In the claim construction setting, “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. Sometimes the meaning of claim language to a person of ordinary skill in the art is obvious and aligns with a widely accepted meaning; other times, the meaning of terms is not immediately apparent and a more searching inquiry is necessary. *Id.* at 1314.

In conducting the claim construction analysis, courts may utilize two categories of evidence: intrinsic sources and extrinsic sources. *See Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582–83 (Fed. Cir. 1996). Intrinsic sources include the words of the claims themselves, the specification, and the prosecution history, and because these sources are the most relevant evidence of the meaning of disputed terms, courts should consider them first. *Id.* The context of terms in claims may be instructive, as may be the usage of terms in other independent or dependent claims. *See Phillips*, 415 F.3d at 1314. Additionally, the claims, while of primary importance, must be construed in light of the specification. *Id.* at 1315. “[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.* (quoting *Vitronics*, 90 F.3d at 1582); *see also Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998)

(“Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.” (internal citation omitted)). At the same time, courts should be mindful of the fine line between “using the specification to interpret the meaning of a claim and importing limitations from the specification into the claim.” *See Phillips*, 415 F.3d at 1323.

The last type of intrinsic evidence is the prosecution history. The prosecution history includes “the complete record of the proceedings before the PTO and includes the prior art cited during the examination of the patent.” *Id.* at 1317. One valuable purpose of consulting the prosecution history is to see if the inventor limited the scope of the claimed invention, thereby providing reason for a court to narrowly interpret the claim terms at issue. *See id.*

Extrinsic evidence also may inform the court’s analysis of disputed claim terms. Extrinsic evidence includes “all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Id.* (quoting *Markman*, 52 F.3d at 980). Extrinsic evidence is, however, less reliable than intrinsic evidence unless it is analyzed in light of the intrinsic evidence. *See id.* at 1318–19. Thus, if a disputed term’s meaning is unambiguous in view of the intrinsic evidence, extrinsic evidence cannot contradict that meaning. *See id.* at 1324 (citing *Vitronics*, 90 F.3d at 1583).

ANALYSIS

The parties have submitted four phrases for claim construction. The parties dispute the meaning or scope of three phrases from the ‘609 Patent, all from independent claim 13:

- (1) “an attachment flange”;

- (2) “the attachment flange including means thereon for rotatably attaching the ear cups to the free ends of the first and second curved portions [of the band]”; and
- (3) “fabric means covering the band and the ear cups on both sides thereof and forming a pocket within the cavity of the ear cups.”

And with respect to the ‘174 patent, the parties disagree about the meaning of only one phrase from independent claim 11: “the first locking protrusion including a barbed shape,” with the disagreement focused on the meaning of the term “barbed shape.”

I. “An attachment flange”

180s construes an attachment flange simply as “a structure for attachment.” Costco and SM Global construe an attachment flange more narrowly as “a structure integrally formed with the ear cup that attaches the ear cup to the curved portions of the band.” Thus, the parties agree that an attachment flange is a structure for attachment, and the only question is whether I incorporate the additional limitations included in Costco and SM Global’s construction. For the following reasons, I decline to do so.

The construction proposed by 180s comports with the phrase’s plain and ordinary meaning. The specification demonstrates that, although an attachment flange may take multiple shapes and designs, it is always described or pictured as a structure for attaching the ear cups to the band. Thus, this construction captures the meaning of the phrase without improperly limiting its scope. Support for this construction is also found in outside dictionaries, which define “flange” essentially as a structure that may serve the purpose of attaching an object to another object. *See, e.g., Webster’s Universal College Dictionary*, at 305(1997), ECF No. 53-1 (defining flange as “a rim, collar, ring, or pair of ridges projecting [usually] at right angles from a shaft, pipe, machine housing, etc., as to strengthen it, provide support, or enable attachment of object”).

I decline to impose the additional limitation found in Costco and SM Global’s proposed construction—that the structure must be integrally formed with the ear cup—for several reasons. First, although “[d]ifferent terms or phrases in separate claims may be construed to cover the same subject matter” when the intrinsic evidence supports such a reading, it is also true that “[w]hen different words or phrases are used in separate claims, a difference in meaning is presumed.” *Nystrom v. TREX Co., Inc.*, 424 F.3d 1136, 1143 (Fed. Cir. 2005) (comparing different terms used in two independent claims). Here, independent claim 5, which is unasserted in this case, describes the attachment flange as “integrally formed” with the ear cup, but independent claim 13 contains no such requirement. A difference in meaning is therefore presumed, and evidence from the specification or prosecution history must be cited to overcome the presumption. *See id.*¹ Second, 180s has identified several preferred embodiments of attachment flanges that are not integrally formed with the ear cup in the sense that they are not directly connected to the ear cup or made from the same piece of material. *See, e.g.*, ‘609 Patent FIGS. 13–15. A construction that excludes these preferred embodiments is rarely correct. *See Vitronics*, 90 F.3d at 1583 (explaining that a construction that removes a preferred embodiment from the scope of a patent claim “is rarely, if ever, correct and would require highly persuasive evidentiary support”). Moreover, as demonstrated by the parties’ disagreement in the briefings, the meaning of “integrally formed” is far from obvious. Including this limitation as part of the construction would unnecessarily confuse the jury down the line.

¹ Relatedly, I am not persuaded by Costco and SM Global’s reliance on the prosecution history of unasserted independent claim 5. Independent claim 13 differs from independent claim 5 in several ways, so the fact that the inventor relied on the integrally formed attachment flange to distinguish independent claim 5 from the prior art does not necessarily mean that he would need to do the same to distinguish independent claim 13 from the prior art.

Finally and notably, I am only construing the meaning of “an attachment flange,” and my construction must still be understood in the context of the other parts of independent claim 13. Reading my construction in the context of the undisputed parts of independent claim 13 plainly shows how the attachment flange relates to the other parts of the invention. *See* ‘609 Patent col. 13 ll. 45–50 (“[a structure for attachment] projecting from the vertex of the support flanges in a direction opposite the semi-circular portion, the [structure for attachment] including means thereon for rotatably attaching the ear cups to the free ends of the first and second curved portions”). I therefore decline to narrow the construction of attachment flange without justification when simply reading it in the context of independent claim 13 provides a clear picture of the claim’s scope.

Accordingly, I construe an attachment flange as “a structure for attachment.”

II. “The attachment flange including means thereon for rotatably attaching ear cups to the free ends of the first and second curved portions of the band”

The next disputed phrase, also from independent claim 13, is “the attachment flange including means thereon for rotatably attaching ear cups to the free ends of the first and second curved portions of the band.” The parties agree that this phrase should be construed as a means-plus-function phrase under 35 U.S.C. § 112, ¶ 6. Because of the use of the word “means” and the lack of a definite corresponding structure for performing the function in the claim, I agree with the parties and construe the phrase as a means-plus-function phrase. *See Wenger Mfg., Inc. v. Coating Mach. Sys., Inc.*, 239 F.3d 1225, 1232 (Fed. Cir. 2001) (holding that a claim limitation that uses the word “means” and recites a function without a corresponding definite structure should be construed under § 112 ¶ 6).

Under § 112, the court must first identify the function of the disputed claim language. *See Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1321 (Fed. Cir. 2003). Here, the parties

agree upon a construction of the claimed function: “[the attachment flange including] a structure for attaching the ear cups to the free ends of the first and second curved portions of the band and for allowing rotation of the ear cups relative to the band.” Finding that this construction is well-supported by the claim language and specification, I adopt the parties’ construction.

The second step in the means-plus-function analysis is to ascertain the corresponding structures in the description for performing those functions. *See id.* “A disclosed structure is corresponding ‘only if the specification or the prosecution history clearly links or associates that structure to the function recited in the claim.’” *Id.* at 1322 (quoting *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997)). The parties agree on most of the corresponding structures, but they disagree on whether Figures 16–24 in the ‘609 patent are corresponding structures. For the following reasons, I conclude that Figures 16–24 are corresponding structures.

Figures 16–24 show various embodiments of “living hinges.” *See* ‘609 Patent at col. 2 ll. 63–65. In fact, Figures 16–24 generally depict different angles of living hinges depicted in Figures 9–15, which the parties agree are corresponding structures. The specification unambiguously associates these structures with the function of attaching the ear cups to the band and allowing for some rotation. *See* ‘609 Patent at col. 5 ll. 48–53 (explaining that several of the embodiments in Figures 9–23 depict living hinges that allow for flexing between the flanges connecting the ear cups to the band); col. 6 ll. 10–16, col. 7 ll. 20–21 (explaining that the living hinge in Figure 10 “limits the amount of outward rotation” and “permits the inward rotation” of the ear cup, and explaining that the living hinge depicted in Figure 18 is similar to that depicted in Figure 10); col. 6 ll. 24–25, col. 7 ll. 1–11 (explaining that the living hinge in Figure 11 permits “a limited amount of inward rotation” of the ear cup, and explaining that the living hinge

depicted in Figure 16 is similar to that depicted in Figure 11). Costco and SM Global argue that only the rivet holes and attachment head perform the function at issue, but the specification teaches that the living hinges work in concert with the rivet holes to allow for rotation of the ear cups. *See* ‘609 Patent col. 6 ll. 1–4 (explaining that in addition to the flexing permitted by the living hinges, “rotation of the ear cup frame member about the rivet *further permits* collapsing the ear covering portions into the band”).

Accordingly, because the specification clearly links Figures 16–24 to the recited function, I conclude they are corresponding structures.

III. “Fabric means covering the band and the ear cups . . . forming a pocket within the cavity of the ear cups”

The third disputed phrase from independent claim 13 is “fabric means covering the band and the ear cups on both sides thereof and forming a pocket within the cavity of the ear cups.” *See* ‘609 Patent at col. 13 ll. 51–53. 180s urges the court to construe the phrase as “fabric that covers both sides of the band and the ear cups and forms a pocket included within the interior of the ear cups; the pocket need not have a slot or other opening for insertion of an earphone.” Costco and SM Global counter with the following construction: “A piece of fabric covering the band and ear cups, sewn with a single seam, and forming a pocket within the ear cups having a slot for insertion of an earphone.” For the following reasons, I adopt 180s’ construction.

Nothing in the claim language requires a single piece of fabric, a sewn single seam, or a slot for insertion of ear phones. Furthermore, the specification refutes each of these proposed limitations. First, Costco and SM Global argue that the fabric means must be comprised of a single piece of fabric. For support, they rely on the specification’s discussion of Figures 6 and 7A, which states that the ear warmers are “covered by a fabric material.” *See* ‘609 Patent at col. 4 ll. 49–50. A close reading of the specification, however, reveals that the fabric in Figures 6

and 7A is contemplated to include multiple layers of fabric. The specification identifies the fabric material in Figures 6 and 7A with the numeral 40, and in the next paragraph discussing Figures 8A–8F, the specification states that the fabric 40 “includes multiple layers.” See ‘609 Patent at col. 4 ll. 59–60. Thus, a construction that requires single-layered fabric is contrary to the preferred embodiment in the patent, and is therefore most likely incorrect. See *Vitronics*, 90 F.3d at 1583.

Costco and SM Global also argue that the doctrine of claim differentiation supports limiting the claim scope to a single piece of fabric, but their argument is unpersuasive. The doctrine of claim differentiation “create[s] a presumption that each claim in a patent has a different scope.” See *SunRace Roots Enter. Co., Ltd. v. SRAM Corp.*, 336 F.3d 1298, 1302–03 (Fed. Cir. 2003). The presumption is “especially strong when the limitation in dispute is the only meaningful difference between an independent and dependent claim, and one party is urging that the limitation in the dependent claim should be read into the independent claim.” *Id.* at 1303. The presumption, however, is rebuttable when the intrinsic evidence supports a contrary construction. See *Retractable Techs., Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296, 1305 (Fed. Cir. 2011) (“[A]ny presumption created by the doctrine of claim differentiation will be overcome by a contrary construction dictated by the written description or prosecution history.” (internal citations and quotation marks omitted)).

My reading that independent claim 13 and dependent claim 18 both cover multiple-layered fabric embodiments does not contravene this doctrine. Here, there are two apparent differences between independent claim 13 and dependent claim 18—dependent claim 18 expressly covers a device comprised of a plurality of fabric pieces and sewn with a single seam. See ‘609 Patent at col. 14 ll. 11–13. Under my reading, dependent claim 18 is not rendered

superfluous because it has the additional requirement of being sewn with a single seam.

Additionally, as explained above, the specification supports reading both independent claim 13 and dependent claim 18 as covering multiple-layered fabric embodiments. Thus, 180s has rebutted the presumption created by the doctrine of claim differentiation.

Likewise, the specification does not support imposing a limitation that the fabric must be sewn with a single seam. The specification only states that “[t]he various layers of the fabric material are combined by sewing or the like.” *See* ‘609 Patent at col. 5 ll. 23–24. Thus, the specification does not even require sewing, much less sewing with a single seam. And even though the preferred embodiments picture a sewn single seam, a court should not read limitations from these embodiments into otherwise broad claim language. *See Phillips*, 415 F.3d at 1323. Furthermore, as previously stated, the doctrine of claim differentiation undermines Costco and SM Global’s argument that independent claim 13 should have a single-seam requirement. Because dependent claim 18 is based on independent claim 13 and the only meaningful difference between the two is dependent claim 18’s single-seam requirement,² there is a strong presumption that independent claim 13 does not contain the same single-seam requirement. *See SunRace*, 336 F.3d at 1302–03. Neither the specification nor the prosecution history dictates a contrary construction capable of rebutting this strong presumption. *See Retractable Techs.*, 653 F.3d at 1305. Finally, independent claim 1 expressly requires sewing with a single seam, so if the patentee had intended to limit independent claim 13 to single-seam embodiments, he knew how to do so. *See Nystrom*, 424 F.3d at 1143.

Nor does the specification support a construction of independent claim 13 that requires a slot for insertion of an earphone. The field of the invention, the summary of the invention, and

² This analysis is based on my earlier conclusion that both independent claim 13 and dependent claim 18 cover multiple-layered fabric.

the specification use the permissive term “may” when discussing the incorporation of earphones into the ear warming device. *See* ‘609 Patent at col. 1 ll. 13–15 (“The present invention also relates to an ear protection device that may incorporate audio earphones or similar type elements.”); col. 2 ll. 2–6 (“The fabric may include an opening within the portion covering the ear cups so that a earphone [sic] or the like may be inserted into the pocket formed by the frusto conical frame portion and the fabric covering.”); col. 11 ll. 61–63 (“In addition, speakers, such as those shown in FIGS. 6, 7b and 27, may be included within the interior of the ear covering device.”). The use of the word “may” in the specification demonstrates that the slot for earphones is merely an optional element that should not narrow the claim’s scope. *See In re Johnston*, 435 F.3d 1381, 1384 (Fed. Cir. 2006) (“As a matter of linguistic precision, optional elements do not narrow the claim because they can always be omitted.”).

Costco and SM Global correctly observe that the preferred embodiments depict a slot in the fabric for insertion of ear phones. *See* ‘609 Patent at col. 4 ll. 46–58. Given the broad claim language, however, “the mere fact that the patent drawings depict a particular embodiment of the patent does not operate to limit the claims to that specific configuration.” *See 180s, Inc. v. Gordini U.S.A., Inc.*, 699 F. Supp. 2d 714, 721 (D. Md. 2010). Nor am I persuaded by Costco’s argument that the pocket must have a slot because the pocket’s purpose is to hold earphones. The pocket must exist as a result of the ear cup structure and the way the fabric covers the structure, but the specification clearly teaches that the slot may, but need not, exist.

Accordingly, I adopt 180s’ proposed construction that the disputed phrase means “fabric that covers both sides of the band and the ear cups and forms a pocket included within the interior of the ear cups; the pocket need not have a slot or other opening for insertion of an earphone.”

IV. “A first locking protrusion including a barbed shape”

Finally, the parties dispute the meaning of “a first locking protrusion including a barbed shape” as used in independent claim 11 of the ‘174 Patent. 180s argues that the phrase should be construed as “the first locking protrusion having a shape of a projection angling away from the band surface so as to make extraction difficult.” Costco and SM Global argue that the phrase should be construed as “the first locking protrusion having a sharp, pointed shape, like a fish hook, arrowhead, or arrow.”

I construe the phrase as “the first locking protrusion having a pointed shape angling away from a main point so as to make extraction difficult.” This construction draws elements from both parties’ proposed constructions, but it more closely aligns with the substance of Costco and SM Global’s proposed construction.

I find that the meaning of the term “barbed shape” is readily apparent and that its usage in the ‘174 Patent aligns with its widely accepted meaning. *See Phillips*, 415 F.3d at 1314 (recognizing that, in such cases, “general purpose dictionaries may be helpful”). The specification and embodiments teach that a barbed shape is a point angling away from a main point, the purpose of which is to make extraction of the band from the ear cup difficult. *See* ‘174 Patent FIG. 19, col. 9 ll. 6–18. Likewise, various dictionaries consistently define barb as a point angled away from a main point so as to make extraction difficult. *See The New Oxford American Dictionary*, at 128 (2d ed. 2005), ECF No. 54-7 (defining barb as “a sharp projection near the end of an arrow, fishhook, or similar item, angled away from the main point so as to make extraction difficult”); *Random House Webster’s Dictionary*, at 56 (4th ed. 2001), ECF. No. 53-5 (defining barb as “a point projecting backward from a main point, as of a fishhook or arrowhead”); *Merriam-Webster’s Collegiate Dictionary*, at 91 (10th ed. 1997), ECF No. 53-6

(defining barb as “a sharp projection extending backward (as from the point of an arrow or fishhook) and preventing easy extraction; also: a sharp projection with its point oblique to something else”); *Webster’s Third New International Dictionary*, at 174 (1986), ECF No. 53-7 (defining barb as “a sharp projection extending backwards (as from the point of an arrow, spear, or fishhook) preventing easy extraction from a wound; also: any sharp projection with its point similarly oblique or crosswise to something else”).

My construction parallels Costco and SM Global’s construction with several exceptions. My construction does not include the requirement that the shape must be sharp. The preferred embodiment pictured in Figure 19 shows multiple flat surfaces, and it is clear that while the barbed shape must be pointed in order to lock the band in place, it does not need to be sharp for piercing. Nor does my construction include the examples of barbed shapes advocated by Costco and SM Global and found in various dictionaries. As 180s points out in its briefs, arrowheads and fishhooks come in various shapes and sizes, so including these terms in the construction may lead to unnecessary confusion when the jury considers the infringement issue. Lastly, my construction explains the purpose of the barbed shape—to prevent easy extraction—because I find it will provide guidance to the jury and is supported by the widely understood meaning of barbed shape.

CONCLUSION

For the foregoing reasons, the court construes the disputed terms as described above.

July 24, 2014
Date

/s/
J. Frederick Motz
United States District Judge