

United States District Court,  
W.D. Wisconsin.

**MUELLER SPORTS MEDICINE, INC,**  
Plaintiff.

v.

**CORE PRODUCTS INTERNATIONAL, INC,**  
Defendant.

No. 02-C-445-C

**March 3, 2003.**

Allen A. Arntsen, for Plaintiff.

Gayle A. Bush, Kinney & Lange, P.A., Minneapolis, MN, for Defendants.

## **OPINION AND ORDER**

**CRABB, J.**

This is a civil action for patent infringement. Plaintiff Mueller Sports Medicine, Inc. owns United States Patent No. 5,814,002, which discloses an adjustable ankle brace that can be configured to fit feet of differing sizes. Ankle braces are worn to protect the foot and ankle during sports or other activities in an effort to prevent injuries altogether or to compensate for preexisting ones. Plaintiff contends that certain ankle braces manufactured by defendant Core Products International, Inc. infringe the '002 patent.

The case is presently before the court for a ruling on the construction of certain claims in the '002 patent following a hearing on claim construction held on February 7, 2003. Taking into consideration the '002 patent and the arguments made by the parties in their briefs and at the hearing, I construe the disputed claims as follows. Because the ordinary meaning of the word "set" connotes a group containing two or more items, I will adopt defendant's proposed construction of the term "eyelet strip having a set of lace eyelets" in claim 1 of the '002 patent as an eyelet strip having two or more lace eyelets. Similarly, the term "eyelet strip" will be construed consistent with its ordinary meaning and the '002 patent as a part of a flap that is comparatively long and narrow and has two or more eyelets. Finally, I will decline defendant's invitation to import a tightening function into the terms "a lace trained between the eyelets on the first and second eyelet strips" as used in claim I and "a lace trained between the lace eyelets of the carrier strips" as used in claim 10 of the '002 patent. Instead, these terms will be construed to require a lace threaded in a way to connect the eyelets on the first eyelet strip with the eyelets on the second eyelet strip.

### **OPINION**

#### ***A. Background***

Infringement analysis begins with construction of the claims in issue. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed.Cir.1996); *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed.Cir.1995) *aff'd*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). The task of claim construction is to define the boundaries that mark a particular patent's claims, so as to determine where the owner's claim begins and ends. It is a legal determination to be made by the court. *Vitronics*, 90 F.3d at 1582. "It is well-settled that, in interpreting an asserted claim, the court should look first to the intrinsic evidence of record, *i.e.*, the patent itself, including the claims, the specification and, if in evidence, the prosecution history." *Id.* Construction of the disputed terms begins with the language of the claims themselves. Generally, "all terms in a patent claim are to be given their plain, ordinary and accustomed meaning to one of ordinary skill in the relevant art." *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1342 (Fed.Cir.2001).

In many instances, however, a court must proceed beyond the bare language of the claims and examine the patent specification. The specification serves an important role in arriving at the correct claim construction, because it is in the specification that the patentee provides a written description of the invention that allows a person of ordinary skill in the pertinent art to make and use the invention. *Markman*, 52 F.3d at 979. The specification must be consulted "to determine whether the patentee has disclaimed subject matter or has otherwise limited the scope of the claims." *Rexnord*, 274 F.3d at 1343. The "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." *Vitronics*, 90 F.3d at 1582. The general relationship between the claims and the specification is defined by two claim construction canons: "(a) one may not read a limitation into a claim from the written description, but (b) one may look to the written description to define a term already in a claim limitation, for a claim must be read in view of the specification of which it is a part." *Renishaw, PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1248 (Fed.Cir.1998); *see also SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc.*, 242 F.3d 1337, 1344 (Fed.Cir.2001) ("While it is true, of course, that 'the claims define the scope of the right to exclude' and that 'the claim construction inquiry, therefore, begins and ends in all cases with the actual words of the claim,' the written description can provide guidance as to the meaning of the claims, thereby dictating the manner in which the claims are to be construed, even if the guidance is not provided in explicit definitional format.") (internal citation omitted).

After considering the claim language and the specification, a court may consider the final piece of intrinsic evidence, the patent's prosecution history. *Vitronics*, 90 F.3d at 1582. "[S]tatements made during the prosecution of a patent may affect the scope of the invention." *Rexnord*, 274 F.3d at 1343. Typically, analysis of the intrinsic evidence will eliminate any ambiguity in the claim terms, rendering unnecessary any reference to extrinsic evidence, such as expert testimony, inventor testimony, technical treatises and articles. *Vitronics*, 90 F.3d at 1583. However, a court may find it helpful to consult extrinsic evidence to be sure that its claim construction "is not inconsistent with clearly expressed, plainly apposite, and widely held understandings in the pertinent technical field." *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1309 (Fed.Cir.1999). On the other hand, courts are "not to *rely* on extrinsic evidence in claim construction to contradict the meaning of claims discernible from thoughtful examination of the claims, the written description, and the prosecution history." *Id.* at 1308.

### ***B. Claim Construction***

At issue are certain terms in claims 1 and 10 of the '002 patent. Claim 1 provides in relevant part:

1. An adjustable size ankle brace, comprising:

a base of flexible material shaped to wrap around the rear and sides of a foot and ankle;

a first removable flap for releasable connection to a first side of the base, and a second removable flap for releasable connection to a second side of the base;

...

said first flap carrying a first eyelet strip having a set of lace eyelets, and second flap carrying a second eyelet strip having a set of lace eyelets;

a lace trained between the eyelets on the first and second eyelet strips;

whereby the positioning of the side flaps on the base is adjustable by removing the flaps from the base and repositioning them on the base according to the size of the foot of the intended wearer of the brace.

The disputed language appears in bold. The disputed language in claim 10 is materially similar in all respects to the disputed language in claim 1.

### **1. Set of lace eyelets**

The essential question is whether a person skilled in the field of the invention would understand the term "set of lace eyelets" to include a single eyelet, as plaintiff contends, or whether such a person would read "set" as requiring two or more eyelets. Plaintiff relies primarily on a dictionary definition to establish that the term "set" is ordinarily understood to mean "one or more ."

Although technical treatises and dictionaries fall within the category of extrinsic evidence, as they do not form a part of an integrated patent document, they are worthy of special note. Judges are free to consult such resources at any time in order to better understand the underlying technology and may also rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents.

Vitronics, 90 F.3d at 1584 n. 6. Plaintiff notes that a "set" is defined as "a collection of articles designed for use together: a set of china; a chess set." *Random House Unabridged Dictionary* 1752 (2d ed.1993). Plaintiff contends that because "a chess set" is "a single object," a set does not require "any specific number of objects within the 'collection" ' and therefore may contain only one item. Plt.'s Markman Br., dkt. # 13, at 8-9. The dictionary definition does not help plaintiff's cause. It makes clear that a set is a "collection of articles." A "collection" by definition involves more than one item. A collection is "[a] group of objects or works to be seen, studied or kept together," *The American Heritage Dictionary of the English Language* 362 (4th ed.2000), or "a group of things or people." *The New Oxford American Dictionary* 335 (2001). Collection traces its origin to the Latin verb *colligere*, to "gather together." *Id.* One does not gather together a single item. Although in the field of mathematics it is possible to have a set of one or even zero (a "null set"), there is no indication that a person skilled in the field of designing ankle braces is a mathematician or would understand the ordinary meaning of the word "set" to be mathematical in nature. Moreover, although a chess set can be described as a single item, it is composed of multiple chess pieces and a board designed for use together. Just as a single pawn does not make a chess set, a single eyelet does not make a set of lace eyelets.

This common-sense definition is not "contradict[ed by] any definition found in or ascertained by a reading of the patent documents." Vitronics, 90 F.3d at 1584 n. 6. Indeed, the patent specification bolsters the conclusion that the term "set of lace eyelets" should be understood to require more than one eyelet. The specification refers uniformly to "eyelets," plural, and all of the drawings show a brace with six eyelets on each eyelet carrier strip. *See, e.g.*, '002 Pat. figs. 1, 3, 6 and 7; col. 2, lines 4-5 (summary of invention notes that "[t]he flap has a carrier strip that carries lace eyelets"). There is no indication in the specification, drawings or prosecution history that the patent applicant opted to act as a lexicographer by providing a definition of "set" that differs from its plain and ordinary meaning.

Moreover, other courts have indicated that the term "set" requires two or more objects. In *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1379-80 (Fed.Cir.2001), the Court of Appeals for the Federal Circuit affirmed the district court's holding that a "correlated set" of golf clubs " 'comprises two or more clubs which contain the same design characteristics [and] are sold together as a set.' " In an effort to distinguish *Karsten*, plaintiff argued at the *Markman* hearing that the "two or more clubs" limitation in that case hinged on the word "correlated," rather than the word "set." Not so. The term "correlated" was read by the court to impose the limitation that each club in the set contain the same design structure. *See id.* (noting that "term 'correlated set' ... preclude[d] infringement if the set of iron-type clubs is not completely correlated, that is, if any club does not have the claimed structure."). The "two or more clubs" limitation resulted from the claim term "set." Similarly, in *Paymaster Technologies, Inc. v. United States*, 54 Fed. Cl. 579 (2002), the Court of Federal Claims construed the claim term "form set" in the context of money order forms. The court concluded that the "definition of 'set' ... connotes 'more than one thing of the same kind.' " *Id.* at 585. In that case, the court ultimately held that the term "form set" could include sets containing only one form, but only because the intrinsic evidence displaced the ordinary meaning of the term set. The patent applicant had acted as a lexicographer, both in the claim itself and in the specification, by defining a "form set" to include "*at least one* negotiable instrument sheet." *Id.* at 583 (emphasis added). Because the intrinsic evidence "clearly redefine[d] the claim term," the ordinary meaning of "set" did not determine the term's meaning. *Id.* at 584-85. By contrast, plaintiff in this case does not argue that the patent applicant endowed the term "set" with any special meaning. Therefore, the ordinary meaning of the term controls, that is, that set connotes a group containing more than one item.

Plaintiff's best argument relies on the doctrine of claim differentiation. "Under the doctrine of claim differentiation, 'each claim in a patent is presumptively different in scope.' " *Ecolab, Inc. v. Paraclipse, Inc.*, 285 F.3d 1362, 1375 (Fed.Cir.2002) (citation omitted). Plaintiff points out that claim 1 recites an eyelet strip "having a set of lace eyelets" and that claim 10 recites an eyelet strip "having a plurality of lace eyelets." The parties agree that "plurality" means "two or more." Thus, plaintiff argues, "the patentee's use of 'set' in claim 1, and 'plurality' in claim 10, was intended to convey different meanings: 'set' referred to 'one or more' lace eyelets, while 'plurality' referred to 'more than one' (or 'two or more') lace eyelets." *Plt.'s Markman Br.*, dkt. # 13, at 9. However, the doctrine of "claim differentiation only creates a presumption that each claim in a patent has a different scope; it is 'not a hard and fast rule of construction.' " *Kraft Foods, Inc. v. International Trading Co.*, 203 F.3d 1362, 1368 (Fed.Cir.2000) (citation omitted). This is because " 'claim differentiation can not broaden claims beyond their correct scope.' " *Id.* (citing *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1480 (Fed.Cir.1998)). Although this formulation borders on the tautological (what could expand a claim beyond its *correct* scope?), the idea underlying this formulation makes sense. When the intrinsic evidence provides no support for construing two very similar words as having very different meanings, the doctrine of claim differentiation drops out of the equation, as it does in this case. The written description and the drawings indicate uniformly that the invention's eyelet carrier strips each carry multiple eyelets. The summary of the invention ( *not* the description of the preferred embodiment)

describes "a carrier strip that carries lace eyelets." There is no support in the intrinsic evidence for construing the phrase "set of lace eyelets" as including a single eyelet. Moreover, the idea that "claims are presumed to differ in scope does not mean that every limitation must be distinguished from its counterpart in another claim, but only that at least one limitation must differ." *Id.* Claims 1 and 10 differ in a number of respects in addition to the use of the word "set" in the former and "plurality" in the latter. Plaintiff does not argue that the only difference between the two claims lies in the supposed distinction between "set" and "plurality." Accordingly, I am not persuaded by plaintiff's claim differentiation argument. I conclude that the phrase "eyelet strip having a set of lace eyelets" means an "eyelet strip" having two or more lace eyelets.

## **2. Eyelet strip**

Claim 1 recites a "first flap carrying a first *eyelet strip* having a set of lace eyelets, and second flap carrying a second *eyelet strip* having a set of lace eyelets." (Emphasis added). Similarly, claim 10 recites "an eyelet carrier strip." (The parties do not contend that there is any difference between the terms "eyelet strip" and "eyelet carrier strip.") Plaintiff contends that "eyelet strip" means "a strip that is part of the removable flap, which has or contains one or more eyelets." Defendant argues that an "eyelet strip" is "a part of each flap that is comparatively long and has multiple eyelets." To the extent that the parties' definitions refer to the number of eyelets on the eyelet strips, their dispute is derivative of their arguments regarding construction of the word "set" and need not be revisited. However, defendant maintains that in accordance with the ordinary meaning of the word "strip," the court should define an eyelet strip as being a "comparatively long" part of the removable flaps. As noted above, claim construction analysis begins "with the ordinary meaning of the disputed claim term." It "is well settled that dictionary definitions provide evidence of a claim term's 'ordinary meaning.'" *Inverness Medical Switzerland v. Warner Lambert Co.*, 309 F.3d 1373, 1378 (Fed.Cir.2002); *see also Vanguard Products Corp. v. Parker Hannifin Corp.*, 234 F.3d 1370, 1372 (Fed.Cir.2000) ("A dictionary is not prohibited extrinsic evidence, and is an available resource of claim construction."). Because the parties do not suggest that the term "strip" has any specialized or technical meaning for practitioners of the relevant art, "standard dictionaries of the English language are the proper source of [the] ordinary meaning of the phrase." *Id.*

A "strip" is "a long, narrow piece of cloth, paper, plastic or some other material: a strip of linen." *The New Oxford American Dictionary* at 1687; *see also The American Heritage Dictionary of the English Language* at 1716 ("strip" defined as "a long narrow piece, usually of uniform width: a strip of paper, strips of beef"). This definition is consistent with the drawings in the patent specification, which show a comparatively long, narrow strip "correspond [ing] in length from top to bottom" with the main body of the brace. *See '002 Pat.* figs. 1, 3, 6 and 7; col. 3, lines 43-45. Plaintiff suggests no reason why the term "strip" should not be defined in a manner consistent with its ordinary meaning. Accordingly, I conclude that the term "eyelet strip" means a part of each flap that is comparatively long and narrow and has two or more eyelets.

## **3. Lace trained**

Claim 1 recites "a lace trained between the eyelets on the first and second eyelet strips." Similarly, claim 10 recites "a lace trained between the lace eyelets of the carrier strips." Plaintiff argues that this language means "a lace threaded in a way to connect the eyelet or eyelets on the first eyelet strip with the eyelet or eyelets on the second eyelet strip." However, because I have determined that the claim term "set of lace eyelets" requires each eyelet strip to carry two or more lace eyelets, I read plaintiff's proposed construction as requiring "a lace threaded in a way to connect the eyelets on the first eyelet strip with the eyelets on the second eyelet strip." Defendant contends that the claim language in question requires a construction "that tightening of the brace is achieved with a lace that goes back and forth through the eyelets on the first

removable flap and the eyelets on the second removable flap to draw together the flaps." I conclude that plaintiff's proposed definition is the appropriate one. Courts should avoid the temptation to read functional limitations into claims that do not recite any. *See, e.g., Rodime PLC v. Seagate Technology, Inc.*, 174 F.3d 1294, 1303 (Fed.Cir.1999). This is precisely what defendant asks the court to do by proposing a construction that ascribes to the lace a specific function ("tightening" the brace) and the method for achieving that function ("go[ing] back and forth through the eyelets ... to draw together the flaps"). Moreover, defendant's proposed construction reads the term "lace trained" as if "lace" were a verb, rather than a noun. But the verb here is "trained," not "laced." The verb "to train" has several definition, many of which are irrelevant (for example, to "coach in or accustom to a mode of behavior or performance," or "to prepare physically, as with a regimen"). The only pertinent definitions of "trained" are "to cause ... to take a designed course or shape, as by manipulating" and "to focus on or aim at ...; direct." *The American Heritage Dictionary of the English Language* at 1830. These definitions comport with plaintiff's proposed construction of the relevant phrases in claims 1 and 10 as "a lace threaded in a way to connect the eyelets on the first eyelet strip with the eyelets on the second eyelet strip." Accordingly, I will adopt plaintiff's proposed construction of this phrase.

### **ORDER**

IT IS ORDERED that the disputed patent terms are construed as follows:

1. The term "eyelet strip having a set of lace eyelets" as used in claim 1 of U.S. Patent No. 5,814,002 means an "eyelet strip" having two or more lace eyelets.
2. The terms "eyelet strip" as used in claim 1 and "eyelet carrier strip" as used in Claim 10 of U.S. Patent No. 5,814,002 mean a part of a flap that is comparatively long and narrow and has two or more eyelets.
3. The terms "a lace trained between the eyelets on the first and second eyelet strips" as used in claim 1 and "a lace trained between the lace eyelets of the carrier strips" as used in claim 10 of U.S. Patent No. 5,814,002 mean a lace threaded in a way to connect the eyelets on the first eyelet strip with the eyelets on the second eyelet strip.

W.D.Wis.,2003.

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