

**IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION**

TACTICAL MEDICAL SOLUTIONS,	)	
INC.,	)	
	)	
Plaintiff,	)	
	)	
v.	)	No. 14 C 06035
	)	
DR. RONALD KARL and EMI	)	Judge John J. Tharp, Jr.
EMERGENCY MEDICAL	)	
INTERNATIONAL a/k/a EMERGENCY	)	
MEDICAL INSTRUMENTS,	)	
	)	
Defendants.	)	

**MEMORANDUM OPINION AND ORDER**

Plaintiff Tactical Medical Solutions, Inc. (“TMS”) brings this suit against defendants EMI Emergency Medical International (“EMI”) and Dr. Ronald Karl, accusing them of infringing on TMS’s intellectual property rights by—among other things—marketing a knock-off of TMS’s tourniquet product. TMS is pursuing claims of patent infringement; various violations of Section 43(a) of the Lanham Act, 15 U.S.C. § 1125(a); copyright infringement; and unfair competition under Illinois law. As for the copyright claims that precipitated this Opinion, TMS alleges that the defendants have infringed two utility patents, U.S. Patent No. 7,776,064 B2 (“the ‘064 patent”) and U.S. Patent No. 8,303,620 B2 (“the ‘620 patent”), as well as a design patent, U.S. Patent No. 649,642 S (“the ‘642 patent”). This Court now construes the disputed claims in the two utility patents.<sup>1</sup>

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<sup>1</sup> The parties presented no claim construction arguments as to the design patent, seemingly agreeing that no such construction is necessary at this stage of the litigation. *See* EMI Br. at 2 n.1, ECF No. 68 (“Historically, design patents do not get construed at the *Markman* patent construction phase but typically as part of the infringement analysis.”); TMS Resp. at 2 n.1, ECF No. 69 (asserting that “design patents are not required to be construed at this stage”).

## BACKGROUND

The '064 patent is titled "Tourniquet Article," dated August 17, 2010, and describes an invention aimed at providing "an improved tourniquet article that can be used on a limb using one hand to place and secure the tourniquet article." '064 Patent at col. 1 l. 66–col. 2 l. 2, ECF No. 68-1. By way of background, the '064 patent explains:

Tourniquet cuffs are used primarily to achieve occlusion of arterial bloodflow. . . . Tourniquets frequently found in the prior art consist of tightly tied bands that are applied around a body part such as an arm or a leg to stem the flow of blood. In one example of the application of a tourniquet, a piece of rubber tubing is wrapped around the limb and tied tightly. A stick is wound underneath the tubing and twisted until the tubing is tightened so that the bleeding is stopped. The tubing must not be tightened more than what is required to stop the bleeding. Once an adequate pressure on the limb is achieved, the stick is tied into its position with additional tubing or bandages. Other items that can be used for a tourniquet include a belt, rope, string, wire, twine, and sections of clothing.

*Id.* at col. 1 ll. 26-41. The invention set forth in the '064 patent "makes use of lightweight and rugged materials which allows the article to be carried into the field," and the patent specification includes two drawings that illustrate an embodiment—identified generally by the number "10"—of the tourniquet article:

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EMI's brief anticipated that the Supreme Court's prospective decision in *Samsung Elecs. Co., Ltd. v. Apple Inc.*, 137 S. Ct. 429 (2016), might "change the requirements of design patent construction and analysis," but the opinion does not address the subject. Following the Court's ruling, neither party has suggested that the opinion has any bearing on claim construction in this case.

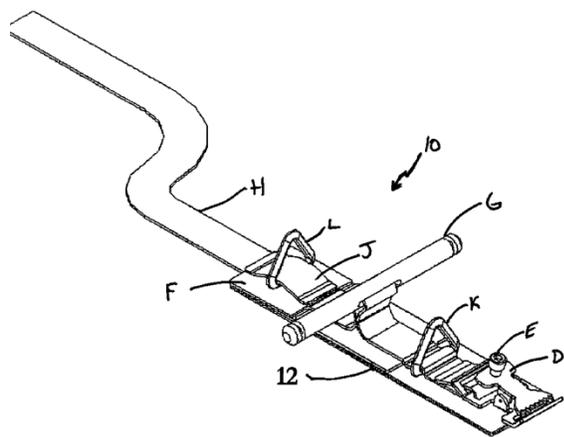


FIG. 1

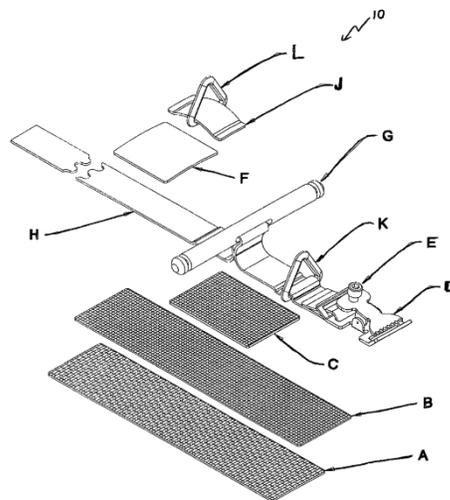


FIG. 2

*Id.* at EMI 100002-03. As illustrated in Figure 1, this embodiment uses a cap (F) that is attached to the top of the tourniquet article's base (12). *Id.* at col. 3 ll. 7-8. The cap (F) acts to keep the strap (H) "in flat orientation in relation to base (12)," and two rings (K and L) are used to secure the strap (H) to the base (12), though only one ring needs to be used. *Id.* at col. 3 ll. 8-10, col. 4 ll. 21-23. Webbing (J) secures one of the rings (L) to the cap (F). *Id.* at col. 4 ll. 36-39. The strap (H) acts together with a handle (G) and a quick-release buckle (D) to form a tightening system. *Id.* at col. 3 ll. 32-33. The embodiment also includes an optional cap screw (E) which is placed on top of the buckle (D), so that the user can tighten the screw to further secure the strap (H) and prevent unintended loosening. *Id.* at col. 3 ll. 59-62.

Figure 2 provides another illustration of this same embodiment, breaking out the different components of the base. The specification states that in this embodiment, the base (12) is made of a section of webbing (B), a section of looped end Velcro (A) affixed to the underside of the webbing (B), and a piece of webbing (C) that is affixed to the upper side of the other webbing section (B). *Id.* at col. 2 ll. 33-37. Each of these three components can be made of several different types of suitable material, according to the patent specification. *Id.* at col. 2 ll. 37-42.

The present embodiment, as described in the patent, uses scuba nylon webbing for component (C) “to increase the rigidity of the base 12 and to prevent binding or crushing of base 12 when handle G is twisted or turned.” *Id.* at col. 2 ll. 59-62. But a different embodiment could instead use “several section of scuba webbing . . . together” as component (C) “instead on [sic] one section,” which “can further facilitate the needs of rigidity while still being flexible enough for use with a limb in addition to making article 10 easier to store and carry.” *Id.* at col. 2 ll. 62-67.

The ‘064 patent also includes the following written descriptions of various embodiments that the covered invention might take:

One embodiment of the claimed subject matter includes a tourniquet article comprising a base, a cap disposed on said base, a strap having one free end and one end attached to said base, a buckle attached to said base, a handle with an aperture to accommodate a portion of said strap, a ring attached to said base positioned adjacent to said base, wherein said tourniquet article is positioned around a limb, wherein said free end of said strap is pulled through both said ring and said handle aperture whereby said article is initially tightened around the limb, wherein said handle is turned until adequate pressure is applied to the limb, and wherein once adequate pressure is applied to the limb, one end of said handle is inserted into said ring to secure the tightened tourniquet in place. Another embodiment includes a safety screw disposed in said buckle, wherein said screw is tightened to prevent said strap from slipping. Another embodiment has a ring that is movable along the base. Another embodiment of the tourniquet article further includes a second ring disposed on said base positioned adjacent to said buckle.

*Id.* at col. 1. ll. 46-65. The ‘064 patent sets forth 20 claims, and lists TMS as the assignee. *See* ‘064 Patent at col. 5-6; *id.* at EMI 100001.

The ‘620 patent is dated November 6, 2012, and is based on a continuation of the application<sup>2</sup> underlying the ‘064 patent. *See* ‘620 Patent at EMI 100008, ECF No. 68-1

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<sup>2</sup> The U.S. Patent and Trademark Office (“PTO”) explains: “A continuation application is an application for the invention(s) disclosed in a prior-filed copending nonprovisional

(“Continuation of application No. 10/830,144, filed on Apr. 21, 2004, now Pat. No. 7,776,064”). The ‘620 patent sets out 13 claims, and is subject to a terminal disclaimer under which TMS agreed that the ‘620 patent would only be enforceable “for and during such period that it and the [‘064 patent] are commonly owned.” See ‘620 Patent at col. 5-6; *id.* at EMI 100008; EMI Br. Ex. 1 at EMI 100370. TMS is the assignee for the ‘620 patent as well. *Id.* at EMI 100008.

Pursuant to the Northern District of Illinois’ Local Patent Rules and the Scheduling Order entered in this case, the parties exchanged proposed claim terms for construction and conferred, ultimately narrowing their dispute to a single term. The focus of the parties’ claim construction dispute is the claim term “substantially rigid base,” which appears either verbatim or by reference<sup>3</sup> in all claims of both the ‘064 patent and the ‘620 patent. TMS seeks to have this claim construed as, “A base that provides sufficient rigidity to avoid binding or crushing while being flexible enough for use on a limb and facilitating carriage and storage.” Joint Claim Construction Chart at 2. EMI’s proposed construction is, “A base that is not flexible.” *Id.* The parties also dispute whether the subsidiary term “substantially rigid” requires its own separate construction; TMS’s position is that it does not, while EMI would like that subsidiary term to be construed as, “Not flexible.” *Id.*

Examples of claims in the ‘064 patent using the phrases “substantially rigid base” and “substantially rigid” include:

1. A tourniquet article comprising:  
*A substantially rigid base;*

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application . . . . The disclosure presented in the continuation must not include any subject matter which would constitute new matter if submitted as an amendment to the parent application.” MANUAL OF PATENT EXAMINING PROCEDURE § 201.07 (9th ed. November 2015).

<sup>3</sup> See 35 U.S. Code § 112(d) (“[A] claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.”).

a handle; and  
a strap in communication with said handle, the strap being engaged with said base at a first point upstream from said handle and fixedly attached to said base at a second point downstream from said handle such that said handle is maintained in a position relative to said *substantially rigid base* to reduce binding of said base when said handle is twisted,  
wherein said handle is a rod including notches disposed at first and second end portions.

4. The tourniquet article of claim 1 wherein said base is *substantially rigid* and comprises a layered composite including a lower layer comprised of one of a non-skid fabric, a non-slip fabric and a hook and loop fastener.

5. The tourniquet article of claim 4 wherein the layered composite includes an intermediate layer affixed to said lower layer and an upper layer affixed to said intermediate layer, said upper layer comprising a *substantially rigid* material.

‘064 Patent at col. 5 ll. 15-26, 33-40. (emphasis added). Examples of claims in the ‘620 patent using the phrases “substantially rigid base” and “substantially rigid” include:

1. A tourniquet article comprising:  
a *substantially rigid base*;  
a substantially cylindrical handle having first and second ends and having a slot disposed between the first and second ends;  
a strap disposed adjacent to said *substantially rigid base* and passing through the slot of said handle, said substantially cylindrical handle being rotatably coupled with said *substantially rigid base*;  
a structural member having first and second sides, and structural member being fixedly attached to said *substantially rigid base* at least at first and second points along each of the first and second sides, said strap being sandwiched between at least a portion of said structural member and said base; and  
means for blocking rotation of said substantially cylindrical handle.

7. The tourniquet article of claim 1 wherein said *substantially rigid base* includes means for preventing binding of said *substantially rigid base* when said handle is turned.

‘620 Patent at col. 5 ll. 28-44, col. 6 ll. 13-16 (emphasis added).

## ANALYSIS

“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) (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). Constructing those claims “is simply a way of elaborating the normally terse claim language in order to understand and explain, but not to change, the scope of the claims.” *Terlep v. Brinkmann Corp.*, 418 F.3d 1379, 1382 (Fed. Cir. 2005) (internal quotation marks omitted). It is a process that “falls ‘exclusively within the province of the court,’ not that of the jury.” *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 837 (2015) (quoting *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372 (1996)).

Words in a claim “are generally given their ordinary and customary meaning,” which 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, i.e., as of the effective filing date of the patent application.” *Phillips*, 415 F.3d at 1312-13 (internal quotation marks and citations omitted). Significantly, “a person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.* at 1313. Indeed, patent claims “do not stand alone,” but rather are “part of a fully integrated written instrument, consisting principally of a specification that concludes with the claims.” *Id.* at 1315 (internal quotation marks and citations omitted).

That specification “is the single best guide to the meaning of a disputed term,” and falls within the category of “intrinsic evidence” that the Federal Circuit has stressed is especially important for claim construction purposes. *Id.* at 1315, 1317 (internal quotations omitted). This category of intrinsic evidence also includes the patent claims themselves, as well as the

prosecution history. *Id.* at 1314-15, 1317. The patent’s prosecution history “consists of the complete record of the proceedings before the PTO and includes the prior art cited during the examination of the patent.” *Id.* at 1317. This history does shed light on “how the PTO and the inventor understood the patent,” but because it also represents an “ongoing negotiation” between those players, “it often lacks the clarity of the specification and thus is less useful for claim construction purposes.” *Id.*

District courts construing patent claim terms may also look to “extrinsic evidence,” which “consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Id.* at 1317 (internal quotation marks and citation omitted). Still, the Federal Circuit has made clear that extrinsic evidence is “less significant than the intrinsic record in determining the legally operative meaning of claim language.” *Id.* (internal quotation marks omitted).

#### **I. “Substantially Rigid Base” & “Substantially Rigid”**

EMI argues that the term “substantially rigid base” should be construed as “a base that is not flexible” because that construction is consistent with arguments TMS made during the patents’ prosecution history. EMI Br. at 9-10. That history began with the original patent application TMS filed on April 21, 2004. *See* ‘064 Patent at EMI 100001. The term “substantially rigid base” did not appear in the original application’s proposed claims, and EMI correctly notes that the claim term “substantially rigid base” does not appear in the ‘064 patent’s specification today. *See* EMI Br. Ex. 1 at EMI 100287. TMS’s use of the term “substantially rigid base” began in an amendment to the application dated September 19, 2007. *Id.* at EMI 100187. EMI argues that this amendment was an attempt to narrow the claim and “disavow[] claim scope” following the PTO’s rejection of the prior application’s claim numbers 5-8 and 14-

17 under 35 U.S.C. § 102(e) for being anticipated by an existing patent (the “McMillan” patent, 6,899,720, which was “silent regarding [whether] the base is substantially rigid”). *See id.* at 100214-15; EMI Br. at 3. Indeed, a PTO summary of an interview—dated August 28, 2007—reflects that PTO personnel advised the patent applicants that “more structure to differentiate the prior art products from the Applicant’s product should be added to the claims.” EMI Br. Ex. 1 at EMI 100203.

But the ‘064 patent did not issue immediately after the September 2007 amendment. In a communication dated August 31, 2009, the PTO rejected the application’s claims 5, 21, and 23-25 under 35 U.S.C. § 102(b) as being anticipated by yet another existing patent referred to as the “Brothers” patent. *Id.* at EMI 100094. In an amendment dated March 1, 2010, the applicants argued that the PTO had erred in issuing its prior rejection and that the Brothers patent did not anticipate the application’s claim 5, saying in part:

With respect to claim 5, the Office Action erred in finding that Brothers discloses a substantially rigid base. The Office Action labeled element 10 as the substantially rigid base . . . and labeled element 18 as a strap. This analysis is faulty for several reasons.

First, element 10 is not a base at all; it is a leather strap. More importantly, strap 10 is flexible such that its ends slide freely relative to one another, i.e., bind.

The Office Action provides no interpretation of the term “substantially rigid.” However, it is unreasonable to find that the **flexible** leather strap 10 reads on the “substantially rigid base” claim limitation. Specifically, it is not a reasonable claim interpretation to equate “flexible” with “substantially rigid.” Rigid and flexible are antonyms.

Brothers teaches that strap 10 provides a constricting element. However, if strap 10 were a substantially rigid element as asserted by the Office Action, it would be rendered an ineffective constricting element and thus destroy the function and purpose of Brothers.

Second, element 18 of Brothers is a cord, not a strap. Brother itself identifies element 18 as a cord and, in contrast, identifies element 10 as a strap. Brothers makes a definite distinction between cord 18 and strap 10. Cord 18 is used to constrict strap 10 about the limb. Strap 10 is only used to protect the limb from damage which would occur from using the cord alone.

In the device defined by claim 5, there is a specific relationship between the strap and the handle which reduces binding of the base when the handle is twisted. Conversely, **Brothers increases constriction of strap 10 as its handle is twisted**. It is believed that if cord 18 were a strap then strap 10 would be more likely to pinch and crimp the skin of the limb when cord 18 were tightened.

*Id.* at EMI 100073-74 (emphasis in original) (internal citations omitted). The patent applicants repeatedly referenced these arguments regarding the “substantially rigid base” claim term when discussing other claims in that filing. Ultimately, those arguments proved successful: on April 2, 2010, the PTO issued a Notice of Allowability and the ‘064 patent issued on August 17, 2010. *Id.* at EMI 100037-38. The PTO renumbered the application’s claims 5, 23, and 25 to be issued as claims 1, 14, and 19. *Id.* at EMI 100052. As previously noted, the ‘620 patent issued on November 6, 2012, and is based on a continuation of the application underlying the ‘064 patent.

Contrary to EMI’s arguments, this patent prosecution history does not support construction of the term “substantially rigid base” as “a base that is not flexible.” Instead, as TMS argues, the above-quoted section of the March 1, 2010 amendment suggests that TMS was arguing “rigidity as a matter of degree”—distinguishing the level of rigidity set forth in its own patent application from that set forth in the Brothers patent—rather than as an absolute extreme. *See* TMS Resp. at 9. And TMS is not now attempting, with its proposed construction of this claim term, to “*equate* ‘flexible’ and ‘substantially rigid,’” a stance it previously argued was “not a reasonable claim construction.” *See* EMI Br. Ex. 1 at EMI 100073-74 (emphasis added). Rather, TMS is seeking a claim construction indicating that the base has some degree of

flexibility, and which places the term between either ends of a continuum beginning with “flexible” on one extreme end of the spectrum and “rigid” on the other. *See* TMS Resp. at 5-6. The arguments made during the patent’s prosecution do not contradict that construction. It is true that “when the patentee unequivocally and unambiguously disavows a certain meaning to obtain a patent, the doctrine of prosecution history disclaimer narrows the meaning of the claim consistent with the scope of the claim surrendered.” *Biogen Idec, Inc. v. GlaxoSmithKline LLC*, 713 F.3d 1090, 1095 (Fed. Cir. 2013). Such a “clear and unmistakable disavowal during prosecution overcomes the heavy presumption that claim terms carry their full ordinary and customary meaning.” *Id.* (internal quotation marks omitted). But as the party seeking to invoke this doctrine, EMI has the burden of proving such a disclaimer “that would have been evident to one skilled in the art.” *Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1063 (Fed. Cir. 2016) (internal quotation marks omitted). EMI has not shown such a “clear and unmistakable disclaimer” to support its proposed construction here.

Moreover, consideration of the claim term in light of the other claims and the patent as a whole supports TMS’s proposed construction. These sources of intrinsic evidence—the patent specification and the patent claims—indicate that TMS’s proposed construction is appropriate. The ‘064 patent specification’s discussion of the structural elements of the tourniquet’s base refers to nylon webbing in the illustrated embodiment that is used to “increase the rigidity of the base 12 and to **prevent binding or crushing of base 12** when handle G is twisted or turned.” ‘064 Patent at col. 2 ll. 59-62 (emphasis added). The specification goes on to refer to another embodiment’s use of a webbing material that can “facilitate the **needs of rigidity** while still being **flexible enough** for use with a limb in addition to making [the tourniquet article] easier to store and carry.” *Id.* at col. 2 ll. 62-66 (emphasis added). This specification language does not use the

claim term “substantially rigid base,” but makes clear that the base, as set forth in the patent, must retain some amount of flexibility in order to function as described in the patent. In particular, this specification language contemplates striking a balance between *rigidity* so as to avoid binding or crushing, and *flexibility* to allow for use on a limb and easier carrying and storing of the tourniquet. TMS’s proposed construction, which this Court adopts, articulates this balance.<sup>4</sup>

EMI also seeks to have the subsidiary term “substantially rigid” construed to mean “not flexible,” while TMS takes the position that no separate construction of this term is required. *See* EMI Br. at 11; TMS Resp. at 11. The only place in either of the patents discussed here that the subsidiary term appears, but does not modify the word “base,” is in claim 5 of the ‘064 claim, as follows:

5. The tourniquet article of claim 4 wherein the layered composite includes an intermediate layer affixed to said lower layer and an upper layer affixed to said intermediate layer, said upper layer comprising a *substantially rigid material*.

‘064 Patent at col. 5 ll. 37-40. The “layered composite” is that of the base, as referred to in claim 4 of the ‘064 patent. *See id.* at col. 5 ll. 33-36. In addition, there are other claims in the ‘064 patent—though not the ‘620 patent—which use the phrase “substantially rigid” to modify the word “base,” but which do not place the word “base” immediately after that modifying phrase. *See, e.g., id.* at col. 5 ll. 33-36 (“4. The tourniquet article of claim 1 wherein said *base* is *substantially rigid* and comprises a layered composite including a lower layer comprised of one of a non-skid fabric, a non-slip fabric and a hook and loop fastener.” (emphasis added)). Neither

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<sup>4</sup> The Federal Circuit has also recognized, in the context of another patent, that the word “substantially” did not refer to an absolute extreme. *See Aventis Pharmaceuticals Inc. v. Amino Chemicals Ltd.*, 715 F.3d 1363, 1377 (Fed. Cir. 2013) (construing the term “*substantially* pure regioisomer of the following formula” to mean “*largely but not wholly* the para regioisomer of the intermediate of the structure shown, as compared to the meta isomer” (emphasis added)).

party presented particularly well-developed arguments as to whether or how the term “substantially rigid,” on its own, should be construed. But given this Court’s construction of the term “substantially rigid base,” EMI’s proposed construction of “not flexible” is rejected. This Court also finds unconvincing EMI’s argument that construction is required to avoid juror confusion. *See* EMI Reply at 10, ECF No. 72. The only claim in which the phrase “substantially rigid” is not used to modify the word “base” is in claim 5 of the ‘064 patent, which refers to “material” that comprises one of the three layers of that base. In this context, separate construction is unnecessary.

## **II. Additional Agreed Terms**

The parties included three additional terms in their claim construction chart on which they now agree. *See* Joint Claim Construction Chart at 2; TMS Resp. at 12. EMI has categorized these as “means-plus-function” claims, which are governed by 35 U.S.C. § 112(f), providing:

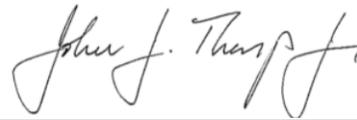
An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

*Id.*; *see also Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1347 (Fed. Cir. 2015). While the statute “provides that one may use means-plus-function language in a claim, one is still subject to the requirement that a claim ‘particularly point out and distinctly claim’ the invention.” *Ergo Licensing, LLC v. CareFusion 303, Inc.*, 673 F.3d 1361, 1363 (Fed. Cir. 2012) (quoting *In re Donaldson Co.*, 16 F.3d 1189, 1195 (Fed. Cir. 1994) (en banc)). “If an applicant does not disclose structure for a means-plus-function term, the claim is indefinite.” *Id.* Because the parties agree on the functions and corresponding structures of the following three terms, the Court adopts them as reflected in the following chart:

<b>Claim Term</b>	<b>Agreed Function</b>	<b>Agreed Corresponding Structure</b>
“means for blocking rotation of said substantially cylindrical handle”  (‘620 patent, claim 1)	Blocking rotation of the substantially cylindrical handle	Either of rings K and L
“means for preventing binding of said substantially rigid base when said handle is turned”  (‘620 patent, claims 7 and 11)	Preventing binding of the substantially rigid base when the handle is turned	Scuba nylon webbing C
“means for locking said handle in place”  (‘620 patent, claim 8)	Locking the handle in place	Either of rings K and L

\* \* \*

The claim term “substantially rigid base” in the ‘064 and ‘620 patents is construed as “a base that provides sufficient rigidity to avoid binding or crushing while being flexible enough for use on a limb and facilitating carriage and storage.” The subsidiary term “substantially rigid” does not require its own construction. The Court adopts the parties’ agreed constructions for the three means-plus-function terms set forth above.



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John J. Tharp, Jr.  
United States District Judge

Date: September 26, 2017