Abstract: A compression leg garment is adapted for wear around the leg of a user. The leg garment has a light compression zone located at an open top of the garment, and designed to apply light circumferential compression to an area of the leg adjacent to the upper thigh. A high compression zone is located proximate an open bottom of the garment, and is designed to apply firm circumferential compression to an area above the knee adjacent a base of an iliotibial band of the leg. A moderate compression zone extends axially between the light compression zone and the high compression zone, and is designed to apply circumferential graduated moderate compression to the leg.
COMPRESSION LEG GARMENT, AND
THERAPEUTIC METHOD FOR REDUCING LEG PAIN

Technical Field and Background of the Disclosure

[0001] The present disclosure relates broadly and generally to compression leg supports, such as those used for general medical and athletic purposes. The invention may function to address one or more leg conditions or ailments including iliotibial Band Syndrome (IBS), quad strains, hamstring weakness, leg fatigue, and others. The invention offers a safer alternative to heavy splints which generally restrict movement and hinder effective circulation. Athletes who are suffering from IBS or other leg injuries can wear the invention to obtain relief from painful symptoms, while non-injured athletes can wear it to lessen the likelihood of an injury developing. In exemplary embodiments, the invention provides medical-grade leg compression that relieves the pain of IBS, and effectively supports healthy leg muscles and joints, allowing athletes to perform at peak physical condition.

Summary of Exemplary Embodiments

[0002] Various exemplary embodiments of the present disclosure are described below. Use of the term "exemplary" means illustrative or by way of example only, and any reference herein to "the invention" is not intended to restrict or limit the invention to exact features or steps of any one or more of the exemplary embodiments disclosed in the present specification. References to "exemplary embodiment," "one embodiment," "an embodiment," "various embodiments," and the like, may indicate that the embodiment(s) of the invention
so described may include a particular feature, structure, or characteristic, but not every embodiment necessarily includes the particular feature, structure, or characteristic. Further, repeated use of the phrase "in one embodiment," or "in an exemplary embodiment," do not necessarily refer to the same embodiment, although they may.

It is also noted that terms like "preferably", "commonly", and "typically" are not utilized herein to limit the scope of the claimed invention or to imply that certain features are critical, essential, or even important to the structure or function of the claimed invention. Rather, these terms are merely intended to highlight alternative or additional features that may or may not be utilized in a particular embodiment of the present invention.

According to one exemplary embodiment, the present disclosure comprises a compression leg garment or "sleeve" integrally knit of a body yarn (e.g., in circumferential courses and axial wales), and is adapted for wear around the quad of a user. The leg garment defines an open bottom adapted to reside above a knee of a user and an open top adapted to reside adjacent an upper thigh of the user. The exemplary leg garment comprises a first light compression zone located at the open top of the leg garment, and designed to apply light circumferential compression less than about 15 mmHg to an area of the leg adjacent the upper thigh. A high compression zone is located proximate the open bottom of the leg garment, and comprises elastic yarns integrated with the body yarn. The high compression zone is designed to apply firm circumferential compression greater than about 20 mmHg to an area above the knee adjacent a
base of an iliotibial band of the leg. A moderate compression zone extends axially between the light compression zone and the high compression zone, and comprises elastic yarns integrated with the body yarn. The moderate compression zone is designed to apply circumferential graduated moderate compression to the leg. The moderate compression is greater than the compression applied to the leg in the light compression zone and less than the compression applied to the leg in the high compression zone, and progressively lessening from the high compression zone upwardly towards the light compression zone.

According to another exemplary embodiment, the first light compression zone comprises elastic yarns integrated with the body yarn.

According to another exemplary embodiment, an inside of the first light compression zone comprises an anti-migration gel designed to reduce distal migration of the garment on the leg.

According to another exemplary embodiment, the first light compression zone is designed to apply light circumferential compression between about 5 and 15 mmHg to the leg.

According to another exemplary embodiment, a second light compression zone is formed at the open bottom of the leg garment directly adjacent the high compression zone, and is designed to apply light circumferential compression less than 15 mmHg to an area of the leg above the knee.

According to another exemplary embodiment, the second light
compression zone at the open bottom of the leg garment has a relaxed axial length of between about 5% and 10% of a total length of the garment.

[0010] According to another exemplary embodiment, the second light compression zone at the open bottom of the leg garment is designed to apply light circumferential compression between about 5 and 15 mmHg to the leg.

[0011] According to another exemplary embodiment, the moderate compression zone is designed to apply circumferential graduated compression between about 15 mmHg and 20 mmHg to the leg.

[0012] According to another exemplary embodiment, the first light compression zone at the open top of the leg garment has a relaxed axial length of between about 20% and 25% of a total length of the garment.

[0013] According to another exemplary embodiment, the first light compression zone at the open top of the leg garment has a relaxed axial length of between about 1.5 and 2.5 inches.

[0014] According to another exemplary embodiment, the high compression zone has a relaxed axial length of between about 15% and 25% of a total length of the leg garment.

[0015] According to another exemplary embodiment, the high compression zone has a relaxed axial length of between about 1.5 and 2.0 inches.

[0016] According to another exemplary embodiment, the moderate compression zone has a relaxed axial length of between about 40% and 50% of a total length of the leg garment.

[0017] According to another exemplary embodiment, the moderate
compression zone has a relaxed axial length of between about 3.5 and 4.5 inches.

[0018] According to another exemplary embodiment, the leg garment has a total relaxed axial length of between about 6.5 and 9.0 inches.

[0019] According to another exemplary embodiment, the moderate compression zone defines a stabilization area of reduced stretch adapted to reside adjacent a back of the leg.

[0020] According to another exemplary embodiment, the moderate compression zone further defines an area of increased stretch adapted to reside adjacent a front of the leg.

[0021] According to another exemplary embodiment, the first light compression zone at the open top of the leg garment is separately sewn to the garment directly axially adjacent the moderate compression zone.

[0022] In yet another exemplary embodiment, the present disclosure comprises a therapeutic method applied to a leg of a user for conditions, such as Iliotibial Band Syndrome (IBS), quad strains, hamstring weakness, leg fatigue, and the like. The method comprises wearing a compression leg garment between a knee and an upper thigh of the user, such that:

[0023] (i) a light compression zone of the leg garment applies light circumferential compression less than about 15 mmHg to an area of the leg adjacent the upper thigh;

[0024] (ii) a high compression zone of the leg garment applies firm circumferential compression greater than about 20 mmHg to an area above the
knee adjacent a base of an iliotibial band of the leg; and

(iii) a moderate compression zone of the leg garment extending between the light compression zone and the high compression zone applies circumferential graduated moderate compression to the leg, the moderate compression being greater than the compression applied to the leg in the light compression zone and less than the compression applied to the leg in the high compression zone, and progressively lessening from the high compression zone upwardly towards the light compression zone.

The term "directly adjacent" in the context of the present disclosure means a fabric area (or "zone") located or formed beside or surrounded, in whole or in part, by another fabric area (or "zone") without intervening fabric, parts or other structure. The term "leg garment" refers broadly herein to any hosiery or other fabric construction designed to cover at least a portion of the wear's leg. The leg garment may be knit in whole or in part (e.g., using conventional circular knitting machinery), and may be specially designed for comfortable every-day wear. The present leg garment may comprise (or be integrally formed with) a full-length knit leg cover or sleeve, or other fabric garment.

The term "axial" or "axial direction" is used herein to mean extending along a generally linear notional axis passing through circumferential portions (e.g., courses) of the garment. For example, the respective compression zones of the exemplary leg garment may be axially divided—or divided along a generally longitudinal dimension, such as that extending from an open top of the garment downward towards an open bottom of the garment.
The term "relaxed axial length" means the longitudinal dimension of the garment or garment regions (e.g., zones) measured with the garment off the leg in a relaxed condition—spread out and laid flat.

The term "substantially equal" in the context of the present disclosure means within +/- 10 percent. The term "therapeutic" is used broadly herein to mean of or pertaining to the health of the leg, leg support, or treatment of a leg condition.

**Brief Description of the Drawings**

Exemplary embodiments of the present invention will hereinafter be described in conjunction with the following drawing figures, wherein like numerals denote like elements, and wherein:

Figure 1 is a side view of a compression leg garment according to one exemplary embodiment of the present disclosure, and showing the exemplary leg garment applied to the leg of a wearer;

Figure 2 is front view of the exemplary leg garment applied to the leg of the wearer;

Figure 3 is back view of the exemplary leg garment applied to the leg of the wearer;

Figure 4 shows the exemplary leg garment laid flat and spread out in a relaxed condition off the leg of the user;

Figure 5 is view illustrating the anatomy of the leg where the iliobibial band connects to the knee; and

Figure 6 shows a top fabric region of the exemplary leg garment
pulled back to illustrate the small, skin-adhering silicone gel dots located on an inside of the garment.

**Description of Exemplary Embodiments and Best Mode**

[0036] The present invention is described more fully hereinafter with reference to the accompanying drawings, in which one or more exemplary embodiments of the invention are shown. Like numbers used herein refer to like elements throughout. This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided so that this disclosure will be operative, enabling, and complete. Accordingly, the particular arrangements disclosed are meant to be illustrative only and not limiting as to the scope of the invention, which is to be given the full breadth of the appended claims and any and all equivalents thereof. Moreover, many embodiments, such as adaptations, variations, modifications, and equivalent arrangements, will be implicitly disclosed by the embodiments described herein and fall within the scope of the present invention.

[0037] Although specific terms are employed herein, they are used in a generic and descriptive sense only and not for purposes of limitation. Unless otherwise expressly defined herein, such terms are intended to be given their broad ordinary and customary meaning not inconsistent with that applicable in the relevant industry and without restriction to any specific embodiment hereinafter described. As used herein, the article "a" is intended to include one or more items. Where only one item is intended, the term "one", "single", or
similar language is used. When used herein to join a list of items, the term "or" denotes at least one of the items, but does not exclude a plurality of items of the list.

For exemplary methods or processes of the invention, the sequence and/or arrangement of steps described herein are illustrative and not restrictive. Accordingly, it should be understood that, although steps of various processes or methods may be shown and described as being in a sequence or temporal arrangement, the steps of any such processes or methods are not limited to being carried out in any particular sequence or arrangement, absent an indication otherwise. Indeed, the steps in such processes or methods generally may be carried out in various different sequences and arrangements while still falling within the scope of the present invention.

Additionally, any references to advantages, benefits, unexpected results, or operability of the present invention are not intended as an affirmation that the invention has been previously reduced to practice or that any testing has been performed. Likewise, unless stated otherwise, use of verbs in the past tense (present perfect or preterit) is not intended to indicate or imply that the invention has been previously reduced to practice or that any testing has been performed.

Referring now specifically to the drawings, an integrally formed compression leg garment according to one exemplary embodiment of the present disclosure is illustrated in Figures 1, 2 and 3, and shown generally at broad reference numeral 10. The exemplary leg garment 10 has a generally tubular
sleeve-type knit construction with an open bottom 11 and top 12, and may be formed throughout of a closed-loop Jersey-knit body yarn comprising micro-nylon, moisture-wicking fibers, and/or other natural or synthetic fibers or fiber blends. Elastic yarns, such as a spandex or other elastomer, are laid-in the body yarn in predetermined areas of the leg garment 10 to create multiple distinct regions of predetermined graduated compression. One exemplary construction comprises approximately 76% 140-denier micro-nylon and 24% 280-denier LYCRA® spandex. In the exemplary embodiment, the present leg garment 10 may be constructed on a circular hosiery knitting machine integrating a plurality of yarns formed in needle and sinker loops extending in circumferential courses and axial wales.

[0041] One commercial example of a circular knitting machine capable of producing the present leg garment 10 may be the "CC4-MED" machine manufactured by Merz Maschinenfabrik GmbH of Hechingen, Germany. The CC4-MED comprises a 4-feed, high-efficiency, single-cylinder circular knitting machine for the production of various compression garments in compression classes I to III. The Merz positive feeders enable the feeding-in of inlay yarns to produce the desired compression with controlled feed-in yarn tension in each mesh course. Alternatively, the exemplary leg garment 10 may be fabricated according to other known techniques, such as by cut-and-sew of elasticized fabric from pre-designed patterns, with flat lock stitching.

[0042] In one embodiment, the exemplary leg garment 10 is divided into axially adjacent circumferential fabric regions 21, 22, 23, and 24—referred to as
“Zones 1-4”—designed to extend generally from above the knee to the upper thigh of the leg. The different regions 21-24 of leg garment 10 define respective therapeutic areas of designated graduated compression adapted to closely and comfortably fit the garment 10 to the leg of the user, while strategically stabilizing and supporting tendons and muscles, promoting circulation, relieving pressure and pain, and reducing swelling. Targeted compression in the various regions 21-24 may be graduated by laying-in (or integrating) elastic yarns of strategic lengths with the body yarn. In one embodiment, the leg garment 10 has a total relaxed axial length dimension of between about 6.5 and 9.0 inches—as measured in a relaxed condition (i.e., off the leg), as shown in Figure 4, and axially from the open bottom 11 to the open top 12 of the garment 10.

Zone 1 defined by fabric region 21 of the exemplary leg garment 10 is located at the open bottom 11, and comprises a smooth non-binding flex band or welt. The knit construction in this region 21 includes elastic yarns laid-in body yarns, and increasing in length in a course-to-course axial or wale-wise direction towards the open top 12 of the leg garment 10. Compression in Zone 1 is relatively light, and graduated to progressively lessen in a direction towards the adjacent fabric region 22. In the exemplary leg garment 10, Zone 1 may comprise between 17-20 courses of body yarn, and may be constructed to apply substantially graduated circumferential compression just above the knee in the range of 10-15 mmHg, or less. The relaxed axial length of Zone 1 at fabric region 21 (See Figure 4) may be in the range of 0.5 to 1.0 inches, and may comprise approximately 5%-10% of the entire relaxed length of the exemplary
In a specific embodiment, the relaxed length of Zone 1 is about 0.75 inches in a leg garment 10 having a total relaxed length dimension of about 8.5 inches.

Zone 2 defined by fabric region 22 of the exemplary leg garment 10 defines a high compression, seamlessly integrated "ITB stabilizer band" located directly adjacent Zone 1 (fabric region 21) proximate the open bottom 11 of the leg garment 10. Zone 2 comprises between 47-50 courses of body yarn, and elastic yarns laid-in the body yarn and increasing in length in a course-to-course axial or wale-wise direction such that the compression progressively lessens towards the adjacent fabric region 23. Zone 2 may be constructed to apply substantially graduated circumferential compression ranging from about 20 mmHg to about 30 mmHg to an area of the leg above the knee and adjacent a base of the iliotibial band. The relaxed axial length of Zone 2 at fabric region 22 (See Figure 4) may be in the range of 1.5 to 2.0 inches, and may comprise approximately 15% to 25% of the entire relaxed length of the exemplary leg garment 10. In a specific embodiment, the relaxed length of Zone 2 is about 1.75 inches in a leg garment 10 having a total relaxed length dimension of about 8.5 inches.

Referring to Figures 1 and 5, when the garment 10 is properly positioned on the leg, the ITB stabilizer band of Zone 2 is intended to target an area of pain designated at "P" where the iliotibial band "B" attaches to the tibia "T". The iliotibial band "B" is a thick band of fascia on the lateral aspect of the knee, extending from the outside of the pelvis, over the hip and knee, and
inserting just below the knee. The band "B" is essential to stabilizing the knee during running, as it moves from behind the femur to the front of the femur during activity. The continual rubbing of the band "B" over the lateral femoral epicondyle, combined with the repeated flexion and extension of the knee during running may cause the area designated at "P" to become inflamed.

[0046] Fabric Zone 3 defined by region 23 of the leg garment 10 is located directly adjacent Zone 2 (fabric region 22), and is designed to promote enhanced circulation for pain relief and reduced swelling, and to further stabilize and support tendons and muscles along the upper leg. The knit construction in this region 23 includes elastic yarns laid-in body yarns, and increasing in length in a course-to-course axial or wale-wise direction towards the open top 12 of the leg garment 10. Compression in Zone 3 is characterized as "moderate" and substantially graduated within this region 23—progressively lessening towards fabric region 24. The fabric region 23 of Zone 3 may further define a hamstring stabilization area 23A (diamond shaded) of reduced stretch adapted to reside adjacent a back of the leg, and a generally opposite area 23B (spiral shaded) of increased stretch adapted to reside adjacent a front of the leg. The terms "reduced" and "increased" are relative terms, meaning that area 23A has less stretch than area 23B.

[0047] In the exemplary leg garment 10, the fabric region 23 of Zone 3 may comprise between 175-180 courses of body yarn, and may be constructed to apply substantially graduated circumferential compression to the leg in the range of 15-20 mmHg. The relaxed axial length of Zone 3 at fabric region 23
(See Figure 4) may be in the range of 3.5 to 4.5 inches, and may comprise approximately 40% to 50% of the entire relaxed length of the exemplary leg garment 10. In a specific embodiment, the relaxed length of Zone 3 is about 4.0 inches in a leg garment 10 having a total relaxed length dimension of about 8.5 inches.

Zone 4 defined by fabric region 24 of the exemplary leg garment 10 comprises a relatively wide light-compression band separately sewn to the garment 10 directly adjacent Zone 3 (fabric region 23), and forming a smooth and comfortable non-binding welt at the open top 12. The knit construction in this region 24 includes elastic yarns laid-in body yarns, and strategically formed in increasing lengths in a course-to-course axial or wale-wise direction towards the open top 12 such that circumferential compression within this region 24 progressively lessens moving upwardly on the leg. Compression in Zone 4 is characterized as "light"—ranging from 10-15 mmHg, or less. The relaxed axial length of Zone 4 at fabric region 24 (See Figure 4) may be in the range of 1.5 to 2.5 inches, and may comprise approximately 20% to 25% of the entire relaxed length of the exemplary leg garment 10. In a specific embodiment, the relaxed length of Zone 4 is about 2.0 inches in a garment 10 having a total relaxed length of about 8.5 inches.

Referring to Figure 6, unlike the other fabric regions 21-23, the top band at region 24 (Zone 4) may further comprise a multiplicity of small, skin-adhering silicone gel dots 38 located on an inside of the garment 10, and designed to help limit distal migration of the garment 10 on the leg during wear.

[0048]
[0049]
For the purposes of describing and defining the present invention it is noted that the use of relative terms, such as "substantially", "generally", "approximately", and the like, are utilized herein to represent an inherent degree of uncertainty that may be attributed to any quantitative comparison, value, measurement, or other representation. These terms are also utilized herein to represent the degree by which a quantitative representation may vary from a stated reference without resulting in a change in the basic function of the subject matter at issue.

Exemplary embodiments of the present invention are described above. No element, act, or instruction used in this description should be construed as important, necessary, critical, or essential to the invention unless explicitly described as such. Although only a few of the exemplary embodiments have been described in detail herein, those skilled in the art will readily appreciate that many modifications are possible in these exemplary embodiments without materially departing from the novel teachings and advantages of this invention. Accordingly, all such modifications are intended to be included within the scope of this invention as defined in the appended claims.

In the claims, any means-plus-function clauses are intended to cover the structures described herein as performing the recited function and not only structural equivalents, but also equivalent structures. Thus, although a nail and a screw may not be structural equivalents in that a nail employs a cylindrical surface to secure wooden parts together, whereas a screw employs a helical surface, in the environment of fastening wooden parts, a nail and a screw may be
equivalent structures. Unless the exact language "means for" (performing a particular function or step) is recited in the claims, a construction under 35 U.S.C. § 112(f) [or 6th paragraph/pre-AIA] is not intended. Additionally, it is not intended that the scope of patent protection afforded the present invention be defined by reading into any claim a limitation found herein that does not explicitly appear in the claim itself.
What is Claimed:

1. A compression leg garment integrally knit of a body yarn, and defining an open bottom adapted to reside above a knee of a user and an open top adapted to reside adjacent an upper thigh of the user, said compression leg garment comprising:

   a light compression zone located at the open top of said leg garment, and designed to apply light circumferential compression less than about 15 mmHg to an area of the leg adjacent the upper thigh;

   a high compression zone proximate the open bottom of said leg garment, and comprising elastic yarns integrated with said body yarn, and designed to apply firm circumferential compression greater than about 20 mmHg to an area above the knee adjacent a base of an iliotibial band of the leg; and

   a moderate compression zone extending axially between said light compression zone and said high compression zone, and comprising elastic yarns integrated with said body yarn, said moderate compression zone designed to apply circumferential graduated moderate compression to the leg, the moderate compression being greater than the compression applied to the leg in said light compression zone and less than the compression applied to the leg in said high compression zone, and progressively lessening from said high compression zone upwardly towards said light compression zone.
2. The compression leg garment according to claim 1, wherein said light compression zone comprises elastic yarns integrated with said body yarn.

3. The compression leg garment according to claim 1, wherein an inside of said light compression zone comprises an anti-migration gel designed to reduce distal migration of said garment on the leg.

4. The compression leg garment according to claim 1, wherein said light compression zone is designed to apply light circumferential compression between about 5 and 15 mmHg to the leg.

5. The compression leg garment according to claim 1, and comprising a second light compression zone formed at the open bottom of said leg garment directly adjacent said high compression zone, and designed to apply light circumferential compression less than 15 mmHg to an area of the leg above the knee.
6. The compression leg garment according to claim 5, wherein said second light compression zone is designed to apply light circumferential compression between about 5 and 15 mmHg to the leg.

7. The compression leg garment according to claim 1, wherein said moderate compression zone is designed to apply circumferential graduated compression between about 15 mmHg and 20 mmHg to the leg.

8. The compression leg garment according to claim 1, wherein said light compression zone has a relaxed axial length of between about 20% and 25% of a total length of said leg garment.

9. The compression leg garment according to claim 1, wherein said light compression zone has a relaxed axial length of between about 1.5 and 2.5 inches.

10. The compression leg garment according to claim 1, wherein said high compression zone has a relaxed axial length of between about 15% and 25% of a total length of said leg garment.
11. The compression leg garment according to claim 1, wherein said high compression zone has a relaxed axial length of between about 1.5 and 2.0 inches.

12. The compression leg garment according to claim 1, wherein said moderate compression zone has a relaxed axial length of between about 40% and 50% of a total length of said leg garment.

13. The compression leg garment according to claim 1, wherein said moderate compression zone has a relaxed axial length of between about 3.5 and 4.5 inches.

14. The compression leg garment according to claim 1, wherein said leg garment has a total relaxed axial length of between about 6.5 and 9.0 inches.

15. The compression leg garment according to claim 1, wherein said moderate compression zone defines a stabilization area of reduced stretch adapted to reside adjacent a back of the leg.
16. The compression leg garment according to claim 15, wherein said moderate compression zone further defines an area of increased stretch adapted to reside adjacent a front of the leg.

17. The compression leg garment according to claim 1, wherein said light compression zone is separately sewn to said leg garment directly axially adjacent said moderate compression zone.

18. A compression leg garment integrally knit of a body yarn, and defining an open bottom adapted to reside above a knee of a user and an open top adapted to reside adjacent an upper thigh of the user, said compression leg garment comprising:

   a light compression zone located at the open top of said leg garment, and designed to apply light circumferential compression less than about 15 mmHg to an area of the leg adjacent the upper thigh, said light compression zone having a relaxed axial length of between about 20% and 25% of a total length of said leg garment;
a high compression zone proximate the open bottom of said leg garment, and comprising elastic yarns integrated with said body yarn, and designed to apply firm circumferential compression greater than about 20 mmHg to an area above the knee adjacent a base of an iliotibial band of the leg, said high compression zone having a relaxed axial length of between about 15% and 25% of a total length of said leg garment; and

a moderate compression zone extending axially between said light compression zone and said high compression zone, and comprising elastic yarns integrated with said body yarn, said moderate compression zone designed to apply circumferential graduated moderate compression to the leg, the moderate compression being greater than the compression applied to the leg in said light compression zone and less than the compression applied to the leg in said high compression zone, and progressively lessening from said high compression zone upwardly towards said light compression zone, and said moderate compression zone having a relaxed axial length of between about 40% and 50% of a total length of said leg garment.

19. The compression leg garment according to claim 18, wherein said leg garment has a total relaxed axial length of between about 6.5 and 9.0 inches.
20. A therapeutic method applied to a leg of a user, said method comprising:

wearing a compression leg garment between a knee and an upper thigh of the user, such that:

(i) a light compression zone of the leg garment applies light circumferential compression less than about 15 mmHg to an area of the leg adjacent the upper thigh;

(ii) a high compression zone of the leg garment applies firm circumferential compression greater than about 20 mmHg to an area above the knee adjacent a base of an iliotibial band of the leg; and

(iii) a moderate compression zone of the leg garment extending between the light compression zone and the high compression zone applies circumferential graduated moderate compression to the leg, the moderate compression being greater than the compression applied to the leg in the light compression zone and less than the compression applied to the leg in the high compression zone, and progressively lessening from the high compression zone upwardly towards the light compression zone.
### INTERNATIONAL SEARCH REPORT

**International application No.**

PCT/US16/68509

#### A. CLASSIFICATION OF SUBJECT MATTER

**IPC** - A61 F5/01, A61 F13/00, A61 F13/08, A41 D1/08, A41 D 13/00, D04B1/18, D04B21/18 (2017.01)

**CPC** - A61 F5/01, A61 F13/00, A61 F13/08, A61 H1/008, A41 D1/08, A41 D13/00, A41 D13/05, A41 D13/0543, D04B1/18, D04B21/18

According to International Patent Classification (IPC) or to both national classification and IPC

#### B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

See Search History document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

See Search History document

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

See Search History document

#### C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<tbody>
<tr>
<td>Y</td>
<td>US 5,487,513 A1 (ARABEYRE et al.) 12 March 1996 (12.03.1996); figure 2; abstract; column 4, lines 1-5 and 36-46; column 6, line 37;</td>
<td>1-4, 7, 14, 17, 20</td>
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<td>Y</td>
<td>US 2009/0235938 A1 (ROACH) 24 September 2009 (24.1.2009); figure 1; paragraph [0020]</td>
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<td>Y</td>
<td>US 201 0218473 A1 (FARROW et al.) 08 September 200 1 (08.09.200 1); paragraphs [0014], [0015], [0018], [0090], [0198]</td>
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- Box C: Further documents are listed in the continuation of Box C. See patent family annex.
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Date of the actual completion of the international search

20 February 2017 (20.02.2017)

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