(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
10 October 2013 (10.10.2013)

WIPO | PCT

(10) International Publication Number
WO 2013/152211 A2

(51) International Patent Classification:
A43B 7/14 (2006.01) *A43B 17/00* (2006.01)

(21) International Application Number:
PCT/US2013/035303

(22) International Filing Date:
4 April 2013 (04.04.2013)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/620,077 4 April 2012 (04.04.2012) US

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

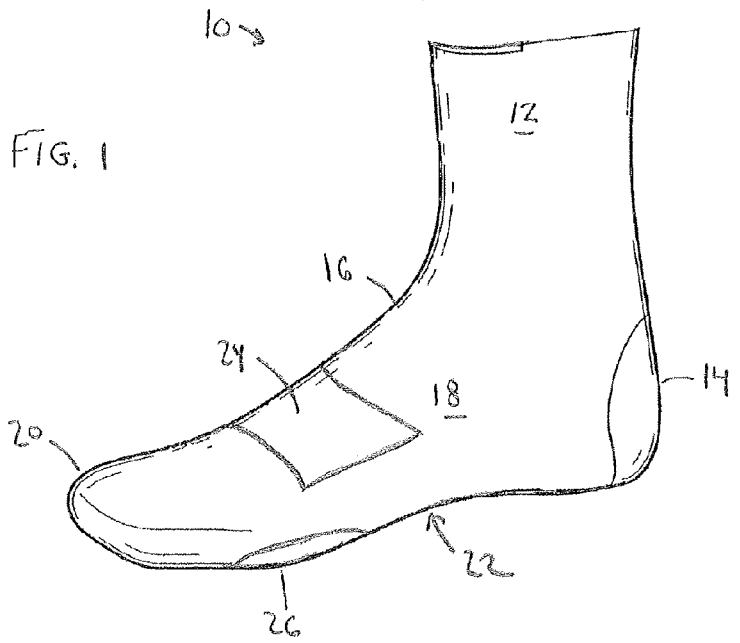
(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*

(54) **Title**: SOCKS AND OTHER FOOTWEAR WITH SELECTIVE FRICTION REDUCING FEATURES

FIG. 1



(57) **Abstract**: A sock and/or outer footwear having one or more portions with reduced frictional characteristics. One or more of the heel portion, the arch portion and the ball portion of the sock and/or interior of the outer footwear is fabricated with the reduced frictional characteristics. The reduced frictional characteristics may be established by applying a low-friction material to such portions, incorporating one or more low-friction fibers into the material of the sock and/or interior of the outer footwear in such portions or reducing the thickness of the material in such portions. The provision of reduced frictional characteristics in one or more of the heel, arch and ball facilitates insertion of a foot into footwear.

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SOCKS AND OTHER FOOTWEAR WITH SELECTIVE FRICTION REDUCING FEATURES

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to footwear. More particularly, the present invention relates to inner footwear, such as socks and stockings, as well as outer footwear, such as, for example, dress shoes, casual shoes, athletic boots, protective boots, sneakers, orthopedic shoes and the like. Still more particularly, the present invention relates to footwear with selective friction reducing features to reduce the difficulty of inserting a foot into outer footwear such as a boot.

2. Description of the Prior Art

[0002] People wear outer footwear of different types for a wide range of reasons. Outer footwear includes shoes and boots generally, as well as recreational and athletic footwear. Outer footwear may also include medical products such as protective boots worn by individuals tending to a particular physical condition. Some outer footwear covers the foot, while other forms extend above the ankle and can also cover a substantial part of the leg, including at or above the knee. Some forms of outer footwear are easier to place on the foot than others. For example, it can be difficult to get a boot onto the foot because of resistance or friction that exists at certain locations of the foot-footwear interface.

[0003] There are three primary locations of the foot that cause frictional resistance to placement of outer footwear onto the foot. They are: 1) the heel; 2) the padded portion of the sole of the foot covering the metatarsals, commonly referred to as the ball of the foot; and 3) the bony curves of the top of the instep comprising the longitudinal and transverse arches, commonly referred to as the arch of the foot. Everyone has these foot features. Some are more pronounced than others and so placement of the foot into outer footwear may be more or less difficult for particular individuals. Nevertheless, dependent upon the characteristics of the outer footwear, most

every person has some difficulty in getting his or her foot into certain types of outer footwear. It is particularly noticeable when the person wishes to wear a boot.

[0004] People wear outer footwear with and without a covering or interface between the foot and the outer footwear. The covering is a form of inner footwear commonly referred to as a sock or stocking. These coverings come in a wide array of forms from very thick to very thin and very high (on the leg) to very low (on the foot). The coverings may or may not reduce the frictional resistance between the interior of the outer footwear and the skin of the foot. In general, however, they tend to facilitate passage of the foot into the outer footwear. While they may be suitable for that purpose, coverings are usually used for other primary purposes, such as keeping the foot warm or as a moisture absorbent. Foot coverings or inner footwear used as an interface between the foot and outer footwear will be referred to herein as socks or stockings, which is intended to identify all forms of such inner footwear coverings.

[0005] Apart from the almost limitless shapes, sizes and decorative forms of socks that exist for primarily aesthetic purposes, there are functional features that have been developed to address particular concerns. For example, particular materials and supplemental components are incorporated into socks to enhance warmth retention or facilitate moisture absorbance or wicking. Other features have been adopted to improve the feel or comfort of the sock. Another practical modification has been to add materials and surface features to the exterior sole of the sock to enhance frictional engagement of an underlying surface when the sock is not contained in outer footwear. That modification reduces the likelihood of a slip but such a sock is not useful in reducing the difficulty of getting a socked foot into the outer footwear. In fact, the frictional material on the ball of the foot makes that effort even more difficult.

[0006] Therefore, what is needed is a foot covering; that is, a sock, that is configured to facilitate rather than hinder placement of the foot into outer footwear. What is also needed is such a sock that has other features consistent with other desired features of a sock including, but not limited to, satisfactory comfort and appearance as well as such other functional features that may be of interest. Further, what is needed is such a sock that may be fabricated in a sufficiently cost efficient manner. Yet further, what is needed is outer footwear having one or more interior features that facilitate

passage of the foot into the outer footwear. Such one or more interior features should be provided for use with, or in place of, a sock having similar characteristics.

SUMMARY OF THE INVENTION

[0007] It is an object of the present invention to provide a foot covering; that is, a sock, that is configured to facilitate rather than hinder placement of the foot into outer footwear. It is also an object to provide such a sock that has other features consistent with other desired features of a sock including, but not limited to, satisfactory comfort and appearance as well as such other functional features that may be of interest. Further, it is an object of the invention to provide such a sock that may be fabricated in a sufficiently cost efficient manner. Yet further, it is an object of the invention to provide outer footwear having one or more interior features that facilitate passage of the foot into the outer footwear. Such one or more interior features can be used with, or in place of, a sock having similar characteristics.

[0008] These and other objects are achieved with the present invention, which includes a sock having one or more friction reducing features at one or more of the three primary locations where the foot experiences resistance when being placed into outer footwear. The friction reducing features are established in the sock through one or more of: a) a low-friction material applied to all or a portion of the exterior of a sock, e.g., a coating of low-friction material to the exterior surface of the sock; b) a low-friction material applied to fibers that are woven or knitted together to form all or a portion of a sock, e.g., a coating of low-friction material applied to the fibers that make up the sock rather than being applied on the surface of the sock itself; c) one or more low-friction fibers integrated with one or more materials used to make a conventional sock; d) forming a sock with a reduced thickness of material in one or more of the primary resistance locations; and e) placing a supplemental fixed or removable sling or bra of low-friction material onto the exterior of a sock, wherein the sling is configured for positioning on the sock at one or more of the three primary locations described above. Each of these options may be selected to enable a reduction in the extent to which the interior of the outer footwear and the exterior of the sock engage one another at one or more of the primary resistance locations of the foot.

[0009] The low-friction material may be a viscoelastic material or a nonviscoelastic material having a low coefficient of friction. For example, the material may be silicone. Alternatively, the low-friction material may be a spray-on material adhered to the surface of the sock, such as a Teflon® spray material. The low-friction material applied to the sock may also be a metallic or a nonmetallic material selected for a coefficient of friction that is less than the remainder of the material used to make the sock. The low-friction material may be applied to the surface of the sock after the sock has been fabricated. Alternatively, the low-friction material may be applied to the fibers or yarn used to form a sock. The sock is then fabricated in a conventional manner using the treated fibers or yarn. These fibers may be used to make a complete sock or they may be integrated, that is, interspersed, with other fibers or weaves of the sock's standard material in one or more of the primary areas, such as cotton, or they may be used as replacements for the materials in those areas. In that embodiment, the low-friction fibers are joined with adjacent conventional fibers, such as by weaving, rather than by interspersing the different materials together

[0010] The one or more low-friction fibers may be any manmade or natural fibers having a coefficient of friction less than the coefficient of friction of the remainder of the material used to make the sock. The low-friction fibers may be selected from, but are not limited to, nylon, polyethylene and polypropylene fibers. Other viscoelastic and non-viscoelastic materials may be selected for that purpose. The fibers may be integrated, that is, interspersed, with the other fibers or weaves of the sock's standard material in one or more of the primary area, such as cotton, or they may be used as replacements for the materials in those areas. In that embodiment, the low-friction fibers are joined with adjacent conventional fibers, such as by weaving, rather than by interspersing the different materials together.

[0011] The option of reducing the thickness of the material of the sock in one or more of the primary resistance locations as the friction reducing solution includes establishing a transition of conventional material at a given thickness to one or more regions of material of lesser thickness, wherein the material for the region of lesser thickness may be formed of the same or a different material as that of the conventional material. The one or more regions correspond to the primary locations of greater

resistance previously noted. For example, but not limited thereto, the thickness of the conventional material may be about 1/16-inch while the region of reduced thickness may be about 1/32-inch. The differential of thickness is not limited thereto and may be selected dependent upon the frictional characteristics of the conventional material and the material for the thinner region. There may also be a transition of the thickness change that is gradual rather than stepped, but a stepped change of thickness is an option.

[0012] The friction reducing features of the sock of the present invention may be established in one or more of the indicated primary locations of resistance. Each location may have the friction reducing features. Only one location may have the feature. Any combination of two locations may have the features. Those locations including the features may all have the same features or each or groups of locations may have the same or different features. For example, but not to be limiting, the heel of the foot area of the sock may include the friction reducing fibers incorporated with the conventional material of the sock while the ball of the foot area of the sock may have the reduced material thickness feature. Other combinations may also be adopted for the sock.

[0013] The present invention also includes outer footwear having one or more interior friction reducing features established in areas corresponding to the primary locations of resistance. The friction reducing features may be established in the interior areas of the outer footwear in the manner described with respect to the sock of the present invention. That is, interior areas where friction reduction is desired may be modified using one or more of: a) a low-friction material applied to all or a portion of the interior, e.g., a coating of low-friction material to the interior surface of the outer footwear; b) a low-friction material applied to fibers that are woven or knitted together to form all or a portion of the interior of the outer footwear, e.g., a coating of low-friction material applied to the fibers that make up all or a portion of the interior of the outer footwear rather than being applied on the surface of the interior itself; c) one or more low-friction fibers integrated with one or more materials used to make a conventional outer footwear interior; and d) forming the interior of the outer footwear with a reduced thickness of material in one or more areas associated with the primary resistance locations. The various options noted may be incorporated into the interior of the outer footwear in the

manner described with respect to the implementation of the friction reducing features for the sock of the present invention.

[0014] For the interior of the outer footwear modification options noted, each of these options may be selected to enable a reduction in the extent to which the interior of the outer footwear and the exterior of the foot or a sock engage one another at one or more of the primary resistance locations of the foot. Each of the interior areas may have the friction reducing features. Only one of the interior areas may have the feature. Any combination of two interior areas may have the features. Those interior areas including the features may all have the same features or each or groups of locations may have the same or different features. For example, but not to be limiting, the heel of the foot area of the interior of the outer footwear may include the friction reducing fibers incorporated with the convention material of the heel of the outer footwear while the interior sole associated with the location of the ball of the foot may have the reduced material thickness feature. Other combinations may also be adopted for the outer footwear so modified.

[0015] The present invention also includes a tool configured to facilitate passage of the foot into outer footwear. Unlike a conventional shoehorn, which is rigid, the tool of the present invention is formed of a flexible material having relatively low frictional characteristics and sufficient structural integrity to withstand the loading experienced at the interface of a foot moving into outer footwear. The tool is formed with dimensions sufficient to permit its placement into the interior of the outer footwear without blocking movement of the foot. The tool may have a width about the same as the width of the interior of the heel of the outer footwear, or it may be narrower or wider. If narrower, it should remain wide enough to cover about one-half of the width of the heel. If wider, it should be narrow enough that it does not curl on itself and act as an impediment to foot passage into the outer footwear. The tool may be made of a tough, flexible and low-friction material, such as Mylar®, supplied by DuPont, but not limited thereto. The tool includes a primary body structure formed of a material sufficiently difficult to tear when used between the foot, whether or not covered by a sock, and the interior of the footwear and with frictional resistance lower than frictional characteristics of either or both of a foot/sock and the interior of the footwear.

[0016] The sock, sling and/or outer footwear of the present invention with one or more selective friction reducing features, as well as the optional tool, enable a person to get his or her foot into footwear more easily than is possible with existing foot coverings. This is helpful to children who may have difficulty getting their snow boots on, the elder who may have difficulty getting a shoe on, and the active who wish to put a ski boot on. This and other advantages of the present invention will be more fully understood upon review of the following detailed description, the accompanying drawings, and the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] FIG. 1 is a perspective view of the sock of the present invention.

[0018] FIG. 2 is a side view of the sock of the present invention.

[0019] FIG. 3 is a front view of the sock of the present invention.

[0020] FIG. 4 is a rear view of the sock of the present invention.

[0021] FIG. 5 is a bottom view of the sock of the present invention.

[0022] FIG. 6 is a perspective view of the sling of the present invention.

[0023] FIG. 7 is a cross sectional view of the outer footwear of the present invention.

[0024] FIG. 8 is a plan view of the outer footwear of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS OF THE INVENTION

[0025] A sock 10 of the present invention is shown in FIGS. 1-5. As with most socks, the sock 10 includes a leg portion 12, a heel portion 14, an instep portion 16, a foot portion 18, a toe portion 20 and a sole portion 22. The foot portion 18 includes a top arch portion 24 and the sole portion 22 includes a ball portion 26. The heel portion 14 covers the heel of the foot of a person wearing the sock 10. The arch portion 24 covers the longitudinal and transverse arches of the foot of a person wearing the sock 10. The ball portion 26 covers the metatarsals of the foot of a person wearing the sock 10.

[0026] The sock 10 of the present invention includes modifications to one or more of the heel portion 14, the arch portion 24 and the ball portion 26. In particular, one

or more of those portions of the sock 10 include a friction reducing feature or configuration that facilitates the passage of a foot covered by the sock 10 into footwear. It is to be understood that the sock 10 shown in FIGS 1-5 is a representative illustration and is not intended to limit the sock 10 to the relative dimensions shown. For example, the leg portion 12 may be shorter or longer than illustrated without deviating from the relevant features of the invention. The sock 10 may be fabricated of a wide range of materials in a wide range of thicknesses with those portions of the sock other than at least one of the heel portion 14, the arch portion 24 and the ball portion 26 fabricated of one or more conventional materials and in a conventional manner of the type generally used by those skilled in the art of sock manufacture ordinarily employ, whether manually, such as by sewing, or by machine, such as by knitting, but not limited thereto.

[0027] In a first embodiment of the sock 10, at least one of the heel portion 14, the arch portion 24 and the ball portion 26 is fabricated with a low-friction material applied to a portion or substantially all of the outer surface of such one or more portions. The low-friction material may be a viscoelastic material or a nonviscoelastic material having a low coefficient of friction. For example, the material may be silicone. Alternatively, the low-friction material may be a spray-on material adhered to the surface of the sock 10 at one or more of the heel portion 14, the arch portion 24 and the ball portion 26. The spray-on material may be a Teflon® spray material but not limited thereto. The low-friction material applied to the sock 10 at one or more of the indicated portions may also be a metallic or a nonmetallic material selected for a coefficient of friction that is less than the remainder of the material used to make the sock 10.

[0028] In a second embodiment of the sock 10, at least one of the heel portion 14, the arch portion 24 and the ball portion 26 is fabricated with one or more fibers coated with a low-friction material applied to a portion or substantially all of the outer surface of such fibers. The low-friction material may be a viscoelastic material or a nonviscoelastic material having a low coefficient of friction. For example, the material may be silicone. The fibers that are coated may be any manmade or natural fibers. The fibers may be selected from, but are not limited to, cotton and wool. The coated fibers may be integrated, that is, interspersed, with the other fibers or weaves of the conventional material(s) used to make the other portions of the sock 10 in one or more of the portions

14, 24 and 26, such as cotton, or they may be used as replacements for the materials in those areas. In that embodiment, the coated fibers would be joined with adjacent conventional fibers, such as by weaving, rather than by interspersing the different materials together.

[0029] In a third embodiment of the sock 10, at least one of the heel portion 14, the arch portion 24 and the ball portion 26 is fabricated with one or more low-friction fibers. The one or more low-friction fibers may be any manmade or natural fibers having a coefficient of friction less than the coefficient of friction of the remainder of the material used to make the sock 10. The low-friction fibers may be selected from, but are not limited to, nylon, polyethylene and polypropylene fibers. Other viscoelastic and non-viscoelastic materials may be selected for that purpose. The fibers may be integrated, that is, interspersed, with the other fibers or weaves of the conventional material(s) used to make the other portions of the sock 10 in one or more of the portions 14, 24 and 26, such as cotton, or they may be used as replacements for the materials in those areas. In that embodiment, the low-friction fibers would be joined with adjacent conventional fibers, such as by weaving, rather than by interspersing the different materials together.

[0030] In a fourth embodiment of the sock 10, at least one of the heel portion 14, the arch portion 24 and the ball portion 26 is fabricated to have a material thickness that is less than the thickness of the material of the sock 10 in the remaining portions of the sock 10. The reduced thickness feature may be accomplished by transitioning from the conventional material of the remainder of the sock 10 in a gradual manner to a selectable reduced thickness at one or more of the heel portion 14, the arch portion 24 and the ball portion 26. The material of the reduced thickness portions may be formed of the same or a different material as that of the conventional material. In one example of this embodiment of the sock 10, the leg portion 12, the instep portion 16, the foot portion 18, the toe portion 20 and the sole portion 22 may be fabricated with a thickness of about 1/16-inch while one or more of the heel portion 14, the arch portion 24 and the ball portion 26 may be fabricated with a thickness of about 1/32-inch. The differential of thickness is not limited thereto and may be selected dependent upon the frictional characteristics of the conventional material and the material used to make one or more of

the heel portion 14, the arch portion 24 and the ball portion 26. As indicated, the transition of the thickness change may be gradual, but it may alternatively be stepped.

[0031] The present invention may also combine a conventional sock with a separate component that may be applied to a convention sock to reduce the frictional characteristics of the conventional sock. A sling 50 of the present invention suitable for that purpose is shown in FIG. 6. The sling 50 includes a heel section 52, an arch section 54 and a ball section 56. The sling 50 is arranged for placement on a conventional sock. It may be affixed to the sock or it may be removable from the sock. The heel section 52, the arch section 54 and the ball section 56 are joined together such as by string, threading, elastic material or the like selected to enable the sling 50 to be placed on a foot or on a sock so that the heel section 52 is aligned with the heel of a person, the arch section 54 is aligned with the upper arch of a person's foot and the ball section 56 is aligned with the ball of the foot when placed on the foot or a sock covering the foot. Tab 58 attached to the heel section 52 enables the user to manipulate the sling 50, such as when it is retained inside footwear. The materials used for the sling 50 sections may be any of those of the friction reducing portions of the four embodiments identified above for the sock 10 of the present invention. When the sling 50 is applied to a sock, it will give an appearance similar to that of the sock 10 of FIGS. 1-5.

[0032] An outer footwear 100 of the present invention is shown in FIGS. 7 and 8. The outer footwear 100 includes an upper 102, an outer heel 104, an interior heel 106, an outsole 108, an insole 110, an outer instep portion 112, an interior instep portion 114, an outer toe portion 116 and an interior toe portion 118. The interior instep portion 114 includes a top arch portion 120 and the insole 110 includes a ball portion 122. The interior heel 106 contacts the heel of the foot of a person wearing the outer footwear 100. The top arch portion 120 contacts the longitudinal and transverse arches of the foot of a person wearing the footwear 100. The ball portion 122 contacts the metatarsals of the foot of a person wearing the footwear 100.

[0033] The footwear 100 of the present invention includes modifications to one or more of the interior heel 106, the top arch portion 120 and the ball portion 122. In particular, one or more of those portions of the footwear 100 include a friction reducing feature or configuration that facilitates the passage of a foot into the footwear 100. It is to

be understood that the footwear 100 shown in FIGS. 7 and 8 is a representative illustration and is not intended to limit the footwear 100 to the particular configuration shown. For example, the upper 102 may be shorter or longer than illustrated without deviating from the relevant features of the invention. The footwear 100 may be fabricated of a wide range of materials in a wide range of shapes and sizes with those portions of the footwear 100 other than at least one of the interior heel 106, the top arch portion 120 and the ball portion 122 fabricated of one or more conventional materials and in a conventional manner of the type generally used by those skilled in the art of footwear manufacture ordinarily employ, whether manually or by machine.

[0034] In a first embodiment of the footwear 100, at least one of the interior heel 106, the top arch portion 120 and the ball portion 122 is fabricated with a low-friction material applied to a portion or substantially all of the surface of such one or more portions. The low-friction material may be a viscoelastic material or a nonviscoelastic material having a low coefficient of friction. For example, the material may be silicone. Alternatively, the low-friction material may be a spray-on material adhered to the interior surface of the footwear 100 at one or more of the interior heel 106, the top arch portion 120 and the ball portion 122. The spray-on material may be a Teflon® spray material but not limited thereto. The low-friction material may also come in a tape form that may be attached to the interior of the footwear 100 at one or more desired locations. The low-friction material applied to the interior of the footwear 100 at one or more of the indicated portions may also be a metallic or a nonmetallic material selected for a coefficient of friction that is less than the remainder of the material used to make the interior of the footwear 100.

[0035] In a second embodiment of the footwear 100, at least one of the interior heel 106, the top arch portion 120 and the ball portion 122 is fabricated with one or more fibers coated with a low-friction material applied to a portion or substantially all of the outer surface of such fibers. The low-friction material may be a viscoelastic material or a nonviscoelastic material having a low coefficient of friction. For example, the material may be silicone. The fibers that are coated may be any manmade or natural fibers. The fibers may be selected from, but are not limited to, cotton and wool. The coated fibers

may be integrated, that is, interspersed, with the other materials used to make the interior of the footwear 100 in the areas where the low-friction coated fibers are located.

[0036] In a third embodiment of the footwear 100, at least one of the interior heel 106, the top arch portion 120 and the ball portion 122 is fabricated with one or more low-friction fibers. The one or more low-friction fibers may be any manmade or natural fibers having a coefficient of friction less than the coefficient of friction of the remainder of the material used to make the interior of the footwear 100. The low-friction fibers may be selected from, but are not limited to, nylon, polyethylene and polypropylene fibers. Other viscoelastic and non-viscoelastic materials may be selected for that purpose. The fibers may be integrated, that is, interspersed, with the materials used to make the remainder of the interior of the footwear 100.

[0037] In a fourth embodiment of the footwear 100, at least one of the interior heel 106, the top arch portion 120 and the ball portion 122 is fabricated to have a material thickness that is less than the thickness of the material of the adjacent portions of the interior of the footwear 100. The reduced thickness feature may be accomplished by transitioning from the material of the remainder of the interior of the footwear 100 in a gradual manner to a selectable reduced thickness at one or more of the interior heel 106, the top arch portion 120 and the ball portion 122. The material of the reduced thickness portions may be formed of the same or a different material as that of the conventional material. In one example of this embodiment of the footwear 100, the insole 110, the interior instep portion and the interior toe portion 118 may be fabricated with a thickness of about 1/16-inch while one or more of the interior heel 106, the top arch portion 120 and the ball portion 120 may be fabricated with a thickness of about 1/32-inch. The differential of thickness is not limited thereto and may be selected dependent upon the frictional characteristics of the conventional material and the material used to make one or more of the interior heel 106, the top arch portion 120 and the ball portion 122. As indicated, the transition of the thickness change may be gradual, but it may alternatively be stepped.

[0038] It is to be noted that the sock 10 and the footwear 100 may be used separately or in combination. Further, the sling 50 may be used with either or both of the sock 10 and the footwear 100.

[0039] The present invention has been described with respect to various example embodiments. Nevertheless, it is to be understood that various modifications may be made without departing from the spirit and scope of the invention. All equivalents are deemed to fall within the scope of this description of the invention.

What Is Claimed Is:

1. A sock comprising:
   a. a heel portion;
   b. an arch portion; and
   c. a ball portion,

wherein one or more of the heel portion, the arch portion and the ball portion includes a friction reducing feature.

2. The sock of claim 1 wherein the friction reducing feature is a low-friction material applied to a surface of one or more of the heel portion, the arch portion and the ball portion.

3. The sock of claim 1 wherein the friction reducing feature is formed of one or more low-friction fibers forming one or more of the heel portion, the arch portion and the ball portion.

4. The sock of claim 3 wherein the one or more low-friction fibers are integrated with a material used to make portions of the sock other than the one or more portions of the sock including the friction reducing feature.

5. The sock of claim 3 wherein the one or more low-friction fibers are separately formed and joined to a material used to make portions of the sock other than the one or more portions of the sock including the friction reducing feature.

6. The sock of claim 1 wherein the friction reducing feature is formed by reducing a thickness of one or more of the heel portion, the arch portion and the ball portion to be less than a thickness of other portions of the sock.

7. The sock of claim 6 wherein the portion of reduced thickness is a gradual transition from the portions of the sock that are not of a reduced thickness.

8. The sock of claim 6 wherein the portion of reduced thickness is a stepped transition from the portions of the sock that are not of a reduced thickness.

9. The sock of claim 1 wherein the friction reducing feature is formed of one or more fibers coated with a low-friction material and forming one or more of the heel portion, the arch portion and the ball portion.

10. Outer footwear comprising:

a. an interior heel;

b. a top arch portion; and

c. a ball portion,

wherein one or more of the interior heel, the top arch portion and the ball portion includes a friction reducing feature.

11. The footwear of claim 10 wherein the friction reducing feature is a low-friction material applied to a surface of one or more of the interior heel, the top arch portion and the ball portion.

12. The footwear of claim 10 wherein the friction reducing feature is formed of one or more low-friction fibers forming one or more of the interior heel, the top arch portion and the ball portion.

13. The footwear of claim 12 wherein the one or more low-friction fibers are integrated with a material used to make portions of an interior of the footwear other than the one or more portions of the interior of the footwear including the friction reducing feature.

14. The footwear of claim 12 wherein the one or more low-friction fibers are separately formed and joined to a material used to make portions of the interior of the footwear other than the one or more portions of the interior of the footwear including the friction reducing feature.

15. The footwear of claim 10 wherein the friction reducing feature is formed by reducing a thickness of one or more of the interior heel, the top arch portion and the ball portion to be less than a thickness of other portions of the interior of the footwear.

16. The footwear of claim 15 wherein the portion of reduced thickness is a gradual transition from the portions of the interior of the footwear that are not of a reduced thickness.

17. The footwear of claim 15 wherein the portion of reduced thickness is a stepped transition from the portions of the interior of the footwear that are not of a reduced thickness.

18. A sling comprising:

a. a heel portion;

b. an arch portion; and

c. a ball portion,

wherein the heel portion, the arch portion and the ball portion are joined together and wherein one or more of the heel portion, the arch portion and the ball portion includes a friction reducing feature.

19. The sling of claim 18 wherein the friction reducing feature is a low-friction material applied to a surface of one or more of the heel portion, the arch portion and the ball portion.

20. The sling of claim 18 wherein the friction reducing feature is formed of one or more low-friction fibers forming one or more of the heel portion, the arch portion and the ball portion.

21. The sling of claim 18 wherein the friction reducing feature is formed of one or more fibers coated with a low-friction material and forming one or more of the heel portion, the arch portion and the ball portion.

22. A tool to assist in the passage of a foot into the interior of outer footwear, the tool comprising a primary body structure formed of a material sufficiently difficult to tear when used between a foot and the interior of the footwear and with frictional resistance lower than frictional characteristics of either or both of a sock and the interior of the footwear.

23. The tool of claim 22 wherein the material is flexible.

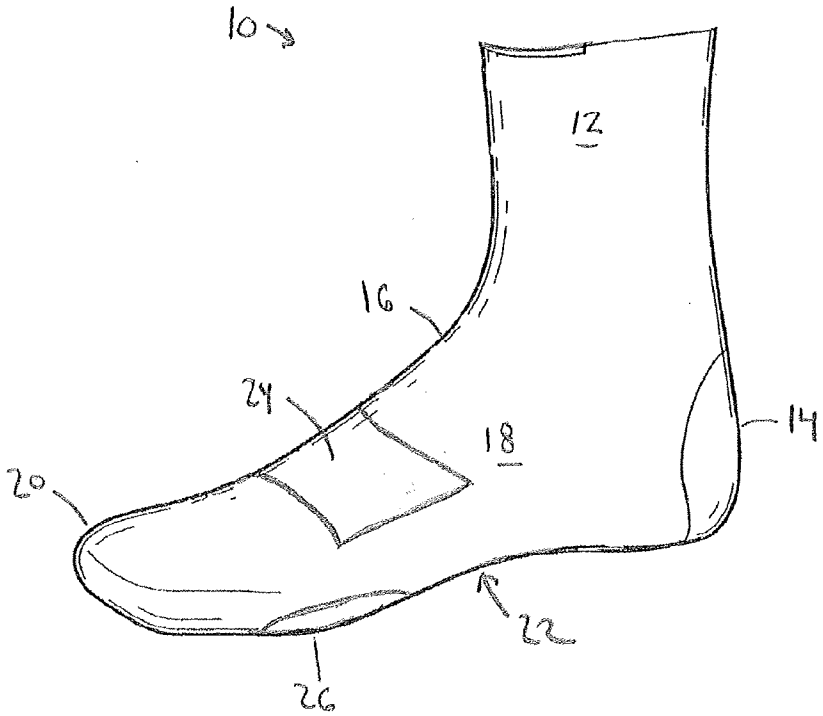

FIG. 1

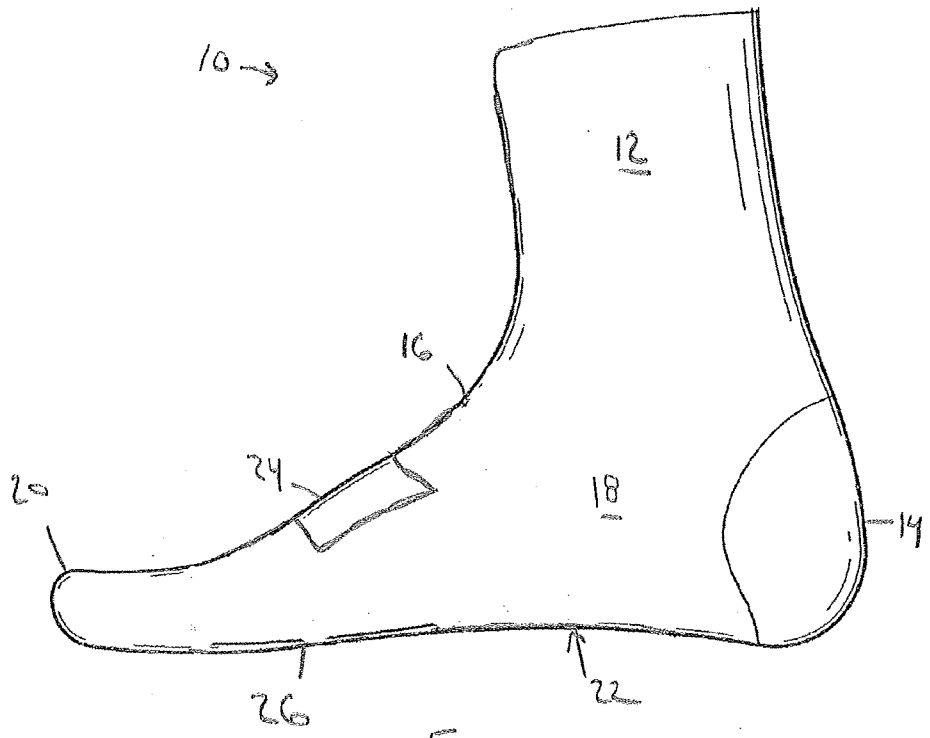

FIG. 2

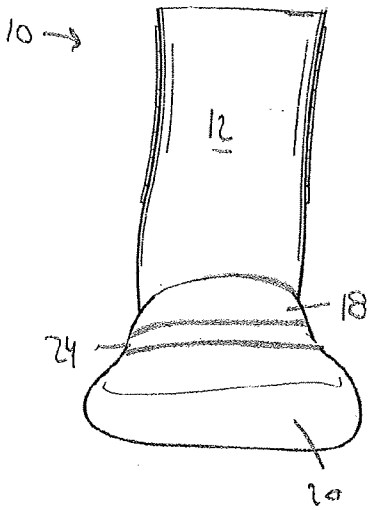

FIG. 3

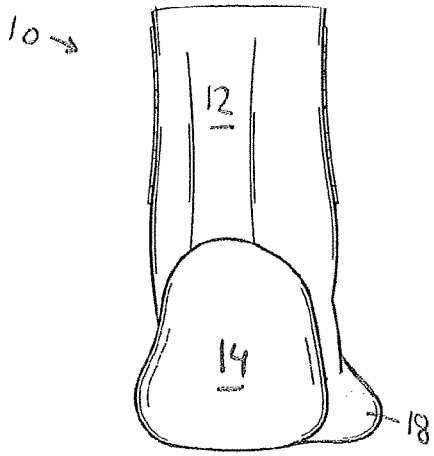

FIG. 4

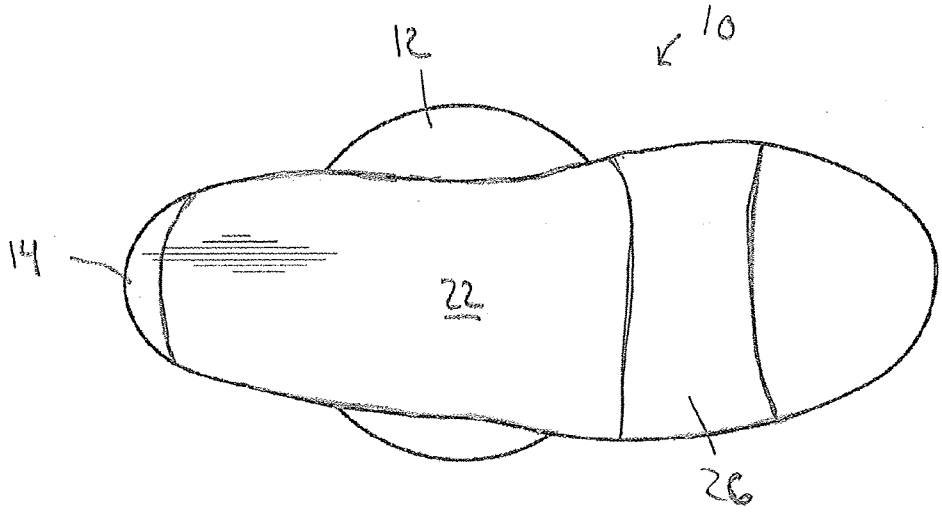

FIG. 5

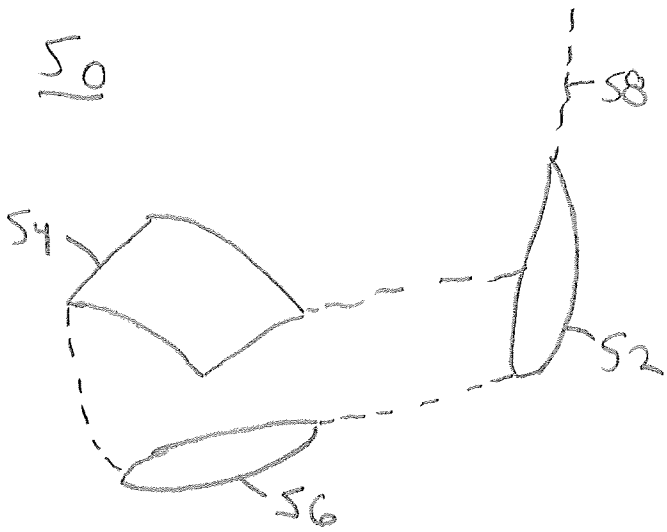

FIG. 6

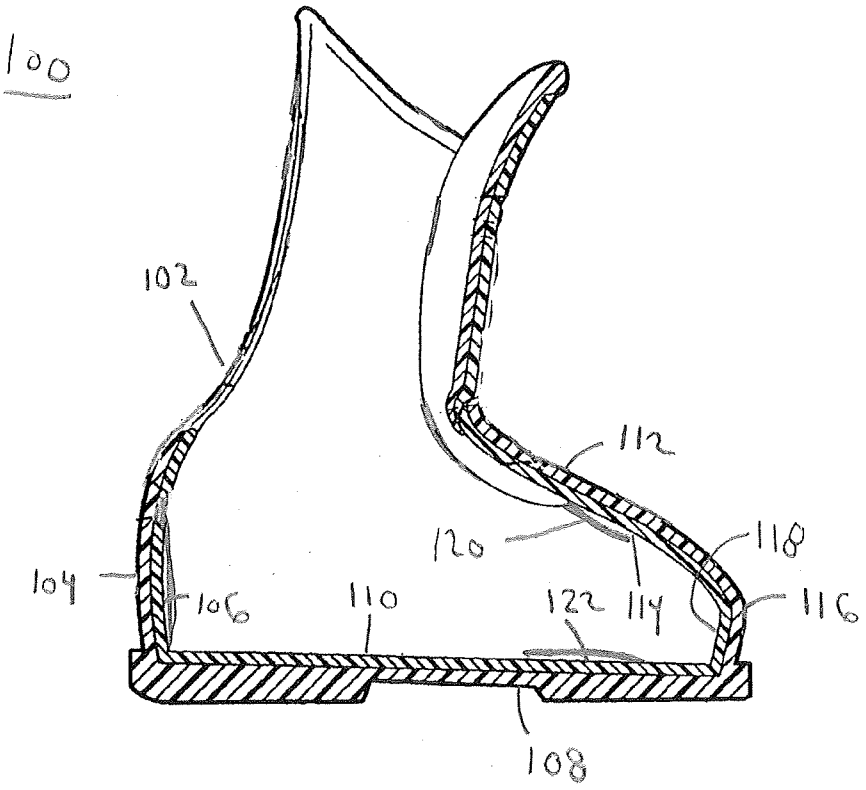

FIG. 7

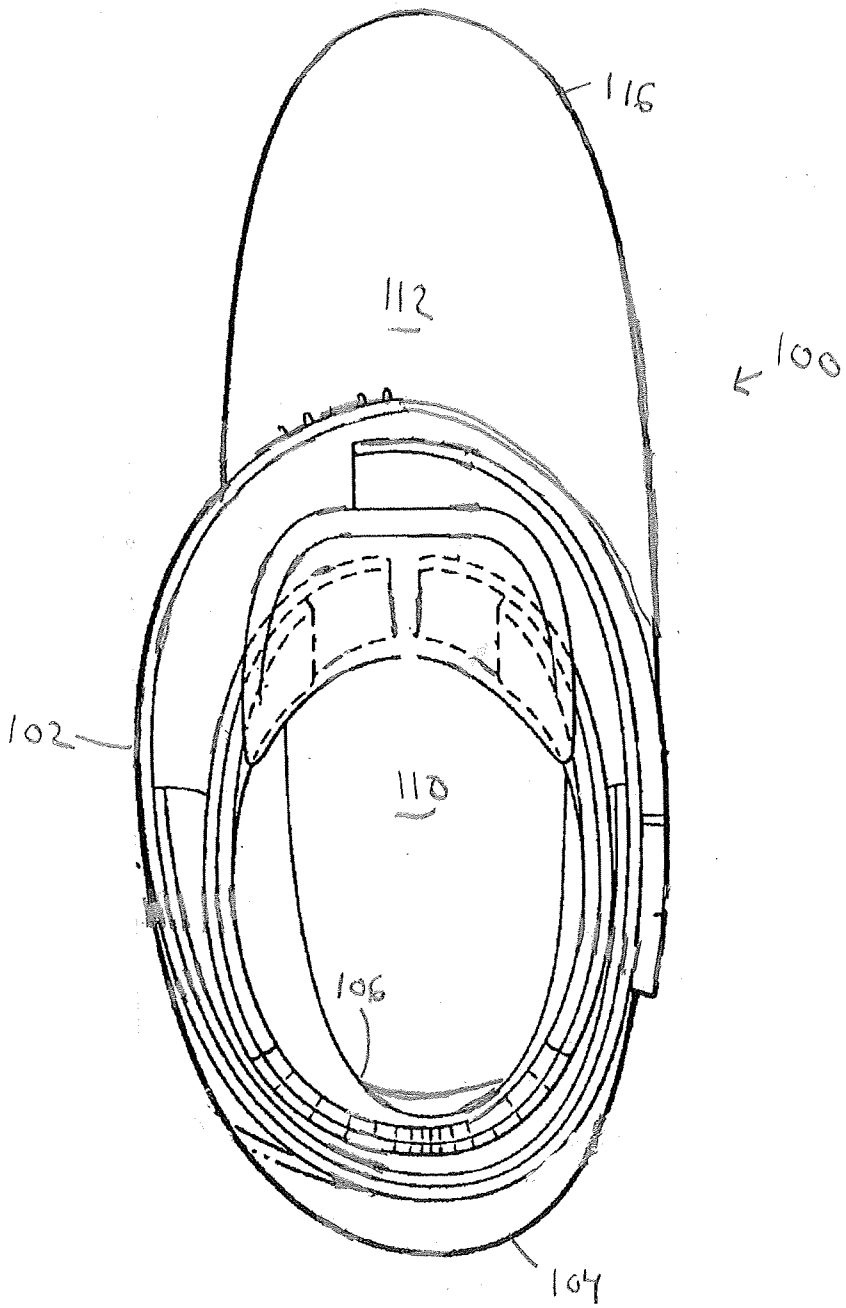

FIG. 8