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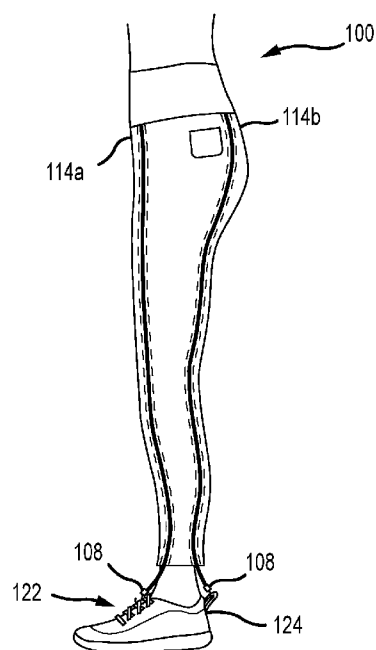


FIG. 1C

(57) Abstract: Aspects of the present disclosure involve a wearable resistive equipment that integrates endurance and strength training capabilities into the clothing, while enhancing the effect of exercise, rest and motion. In one embodiment, the wearable resistive equipment is designed to include built-in resistance bands with end-clasping members for affixing to an external apparatus. In other embodiments the wearable resistive equipment is designed to include built-in resistance bands that can extend to various positions on a user's upper or lower legs. In yet other embodiments, the wearable resistive equipment is designed to include built-in resistance bands that extend upward toward the lower mid-section of a body for abdominal training.

WEARABLE RESISTIVE EQUIPMENT**CROSS-REFERENCE TO RELATED APPLICATION**

[0001] This application claims the benefit of U.S. Provisional Patent Application No. 62/350,267, filed on June 15, 2016, which is hereby incorporated by reference for all purposes.

TECHNICAL FIELD

[0002] The present disclosure relates to wearable resistive equipment and, more particularly, wearable resistive equipment that provides resistance for exercise, rehabilitation or casual, general use.

BACKGROUND

[0003] Exercise clothing may be widely available and often designed to provide various benefits to ordinary people and professional athletes alike. For example, exercise clothing may be designed to trigger the acceleration of blood flow, increase oxygen to the muscles, or even reduce the build-up of lactic acid. Exercise clothing can also be designed to draw moisture away from the body in order to keep a person cool in the summer and warm in the winter. Wearable resistive equipment designed with a built-in mechanism that provides endurance and strength training is, however, minimally available and is often restricted by the characteristics of the clothing material. Wearable resistive equipment with built-in mechanisms that may be currently available, may fail to properly follow the contours of the muscles of a user and therefore fail to provide enhanced or optimal resistance to enhance exercise or increase calorie burn, and decrease workouts or workout time.

SUMMARY

[0004] The present disclosure involves wearable resistive equipment that includes a pant member, a plurality of generally free-floating resistance bands within a plurality of channel systems that are generally contained wholly within the wearable resistive equipment. According to one example, the wearable resistive equipment includes a first end of the plurality of resistance bands that is coupled to a first end of the wearable resistive equipment and a second end of the plurality of resistance bands that is coupled to a second end of the wearable resistive equipment. Each of the resistance bands are substantially parallel to each other, do not intersect, may be generally aligned with the muscle patterns of a user, and comprise a predetermined level of resistance selected from a predefined range. The wearable resistive equipment comprising the plurality of resistive bands is substantially configured to a portion of a user so as to provide a targeted amount of resistance on the muscles of a user. The effect of the wearable resistive equipment may be when the user is not moving, or when the muscles contract, thereby allowing the user, by and through the plurality of resistance bands, to undergo enhanced muscle development, exercise, or rehabilitation, when used by a user.

[0005] According to an embodiment, the pant member includes a first pant leg, a second pant leg and a generally circular waist section, wherein the first and second pant legs are coupled together, and coupled to the waist section. The coupling of the legs may form a crotch area. The pant member may be configured to generally, substantially conform to a portion of a user. The pant member also includes a first resistance band channel system disposed generally adjacent to the first pant leg, a second resistance band channel system disposed generally adjacent to the second pant leg, and a plurality of resistance bands positioned within each of the first and second channel systems.

[0006] Embodiments of the present disclosure also include a method of exercise, which includes positioning a plurality of generally free-floating resistance bands within a plurality of channel systems in a portion of wearable resistive equipment. By coupling a first end of the plurality of resistance bands to a first end of the wearable resistive equipment, coupling a second end of the plurality of resistance bands to a second end of the wearable resistive equipment, and aligning generally the plurality of resistance bands within the wearable resistive equipment generally with the muscle patterns of a user, a user experiences enhanced resistance on their muscles while at rest or when the muscles contract and expand. This method allows a user to undergo enhanced exercise and/or rehabilitation.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] Example embodiments are illustrated in referenced figures of the drawing. It is intended that the embodiments and figures disclosed herein are to be considered illustrative rather than limiting.

[0008] Figure 1A is a front view of an embodiment of a wearable resistive equipment with built-in resistance bands, including clasp member to couple the wearable resistive equipment to an external apparatus, such as a shoe.

[0009] Figure 1B is a rear view of wearable resistive equipment with build-in resistive bands of Figure 1A.

[0010] Figure 1C is a side view of the wearable resistive equipment with build-in resistive bands of Figure 1A.

[0011] Figure 2A is a front view of another embodiment of a wearable resistive equipment with built-in resistance bands including resistive foot support.

[00012] Figure 2B is a back view of the wearable resistive equipment with build-in resistive bands of Figure 2A.

[00013] Figure 2C is a side view of the wearable resistive equipment with build-in resistance bands of Figure 2A.

[00014] Figure 3A is a front view of another embodiment of a wearable resistive equipment with built-in resistance bands including resistive lower, mid-portion support.

[00015] Figure 3B is a back view of the wearable resistive equipment with built-in resistance bands of Figure 3A.

[00016] Figure 4A is a front view of another embodiment of a wearable resistive equipment with built-in resistance bands that extend generally to the lower leg area of a user.

[00017] Figure 4B is a back view of the wearable resistive equipment with build-in resistive bands of Figure 4A.

[00018] Figure 4C is a side view of the wearable resistive equipment with build-in resistance bands of Figure 4A.

[00019] Figure 5A is a front view of another embodiment of a wearable resistive equipment with built-in resistance bands that extend generally to the upper leg area of a user.

[00020] Figure 5B is a back view of the wearable resistive equipment with build-in resistive bands of Figure 5A.

[00021] Figure 5C is a side view of the wearable resistive equipment with build-in resistance bands of Figure 5A.

[00022] Figure 6 describes a method of exercising.

DETAILED DESCRIPTION

[00023] Aspects of the present disclosure involve a wearable resistive equipment that integrates endurance and strength training capabilities into the wearable resistive equipment such that a user may experience an increased level of resistance when wearing the wearable resistive equipment. The present disclosure discloses a wearable resistive equipment that may include a pant member, a plurality of generally free-floating resistance bands within a plurality of channel systems that are contained wholly within the wearable resistive equipment. The wearable resistive equipment may include a first end of the plurality of resistance bands that is secured to a first end of the wearable resistive equipment and a second end of the plurality of resistance bands that is secured to a second end of the wearable resistive equipment. Each of the resistance bands are substantially parallel to each other, do not intersect, generally aligned with the muscle patterns of a user, and comprise a predetermined level of resistance selected from a predefined range. The wearable resistive equipment comprising the plurality of resistive bands is substantially configured to a portion of a user so as to provide a targeted amount of resistance on the muscles of a user after the muscles contract, thereby allowing the user, by and through the plurality of resistance bands, to undergo enhanced muscle development when worn or used by a user.

[00024] In an embodiment the pant member may include a pant member comprising a first pant leg, a second pant leg and a generally annular waist section, wherein the first and second pant legs are coupled together via the waist section that extends down to a crotch area. The pant member may be configured to generally, or substantially conform to a portion of a user. The pant member also includes a first resistance band channel system disposed on the first pant leg, a second resistance

band channel system disposed on the second pant leg, and a plurality of resistance bands positioned within each of the first and second channel systems.

[00025] Figures 1A - 1C depict an embodiment of an apparatus that offers resistive training without the need for external equipment. Specifically, Figure 1A is a front view of a first embodiment of a wearable resistive equipment 100 with a plurality of generally free-floating resistance bands 104 within a plurality of channel systems 102 that are contained generally wholly within the wearable resistive equipment 100. Figures 1B and 1C provide the back and side views of the wearable resistive equipment 100. As seen in Figure 1B, the wearable resistive equipment 100 includes a pant member 126 with resistance bands 104 disposed generally vertically in each pant leg. In other embodiments, the resistance bands 104 may be disposed horizontally, or in other configurations, in each pant leg to align generally with the contours and/or directions of the muscles of a user.

[00026] In one embodiment, a front of each leg of the pant member 126 includes two resistance bands 104, one in each channel system 102, spaced apart from each other and generally extending parallel with each other as they extend between a first end of the pant member 130, which is located generally adjacent to a first end of the resistance bands 140 and the waist area 112 of the pant member 126, that extends generally downwardly to a crotch area 150, and a second end of the pant member 132, which is located generally adjacent to the second end of the resistance bands 142 of the first 134 and second legs 136 of the pant member 126. In this embodiment, one resistance band 104 is provided in each of the channel systems 102 on the pant member 126. In other embodiments, more than one resistance band 104 may be provided in each of the channel systems 102 on the pant member 126, or some channel systems 102 may have resistance bands 104 and others may not.

[00027] As seen in Figures 1B and 1C, a back of each leg of the pant member 126 may include two resistance bands 104 spaced apart from each other and generally extending parallel with each other

as they extend between the first end of the pant member 130. The first end of the pant member 130 is located generally adjacent to the first end of the resistance bands 140 and the waist section 112 of the pant member 126. A second end of the pant member 132 is located generally adjacent to the second end of the resistance bands 142, which is coupled generally adjacent to the first 134 and second legs 136 of the pant member 126. In this embodiment, one resistance band 104 is provided in each of the channel systems 102 adjacent to the pant member 126. In other embodiments, more than one resistance band 104 may be provided in each of the channel systems 102 adjacent to the pant member 126.

[00028] The resistance bands 104 may be positioned within a channel system 102 (shown in dashed lines) designed to generally house or enclose the resistance bands 104 therein. In this way, the resistance bands 104 are generally-free floating within the channel system 102, thereby allowing the resistance bands 104 to stretch (i.e. provide resistance) within the channel system 102, and not be exposed on an outside of the pant member 126. Additionally, as the resistance bands 104 stretch, the resistance bands 104 follow the contours of the body of a user and do not otherwise obstruct or block the user from performing certain movements. This configuration enhances the comfort, safety, and usability of the wearable resistive equipment 100 for a user.

[00029] To create the band channel 102, fabric slightly wider than the range of widths of the resistance bands 104 can be stitched to the pant member 126 on two parallel sides to provide an area between the stitches that fits the resistance bands 104 therein. The resistance bands 104 can extend the length of the channel system 102 and can be secured or generally coupled at both a first end of the pant member 130, which is located generally adjacent to the first end of the resistance bands 140 and the waist section 112 of the pant member 126, and a second end of the pant member 132, which is located generally adjacent to the second end of the resistance bands 142 and the first 134 and

second legs 136 of the pant member 126. The resistance bands 104, located generally inside the channel systems 102, can be secured to the wearable resistive equipment 100 by way of stitching, sonic welding, buttons, zippers, snaps, clasps, Velcro, or by other methods and configurations suitable for this use.

[00030] The channel system 102 can be made to provide sufficient room within the channel system 102 such that the resistance bands 104 are able to move and stretch as needed to provide a desired tensile strength. In other words, the resistance bands 104 can be free-floating in the channel systems 102 so that the resistance bands 104 are able to stretch freely between the first and second ends of the channel systems 102. That is, the resistance bands 104 are not restricted or constrained by being attached to the fabric of the pant member 126 along the entire length of the channel systems 102, except for at the first and second ends of the channel systems 102. The channel systems 102 may appear generally bunched when the wearable resistive equipment 100 is not in use. This allows channel systems 102 to expand when in use to accommodate the stretching of the resistance bands 104.

[00031] The resistance bands 104 fit within the channel systems 102 with adequate spacing such that the location of the resistance bands 104 remain in general alignment with the pant member 126, and so as to align with the contours of the leg and muscles of a user. The location of channel systems 102 on each leg 134 and 136 of the pant member 126 may play a role in strength training and/or endurance training, as the location of the channel systems 102 and corresponding resistance bands 104 can target specific muscles groups. For example, in Figure 1A, the resistance bands 104 are placed in alignment with the frontal muscle groups extending from a front hip end 114a to a front ankle end 116a. This placement can correspond to the quadriceps and tibialis anterior muscle groups, among others, which can be impacted by the location of the resistance bands 104 in

accordance with Figure 1A. Similarly, Figure 1B illustrates the resistance bands 104 which are placed about the posterior muscles groups extending from the back hip end 114b to the back ankle end 116b and impacting the hamstring, gluteus, and calf muscles among others.

[00032] The front hip end 114a and back hip end 114b provide an adjoining point for the resistance bands 104 to be secured to the pant member 126. At the front and back hip ends, 114a and 114b, the resistance bands 104 can be permanently, selectively, or removably coupled to the wearable resistive equipment 100. In some instances, the resistance bands 104 may be removably coupled to the wearable resistive equipment 100 via buttons, zippers, clasps, snaps, Velcro, or by other methods and systems. In other instances, the resistance bands 104 may be permanently secured into the wearable resistive equipment 100 via stitching, sonic welding, or by other methods or systems. In one example, the coupling of the resistance band 104 to the pant member 126 can be at the hip area 114a and 114b with the pant member 126 extending to the waist area 112. In some embodiments, the exercise pant 126 may have a high-rise design, where the resistance bands 104 are designed to extend up generally past the hips 114a and 114b towards the abdomen and lower back areas of a user.

[00033] The front and back ankle ends 116a and 116b may be configured to be locations where the resistance bands 104 can loosely extend out from the band channel 102 for attachment to an external apparatus, such as a shoe. For the attachment of the resistance bands 104 to an external apparatus, the resistance bands 104 can be configured to include clasping members or hooks 108 that affix to an apparatus such as a shoe 122 and 124. For example, the hooks 108 can attach to shoe laces 122 and/or loops 124 for foot and speed resistive training, and other training. Further, although the use of hooks 108 are described herein, other attachment units can be used including, but not limited to, clasps, latches, clips, fish hooks, lobster clasps, S hooks, or by other methods or systems.

[00034] Although the wearable resistive equipment 100 is described herein to include resistance bands 104 that terminate at the front 116a and back 116b ankle ends for attachment to an external apparatus, many other band 104 configurations are possible. For example, Figures 2A – 2C depict another embodiment of the wearable resistive equipment 200 with resistance bands 204. In Figures 2A – 2C wearable resistive equipment 200 is illustrated with resistance bands 204 that are configured to extend beyond the ankle ends 116a and 116b and loop around 203 a lower extremity (e.g. under the foot 206 in this embodiment). In this embodiment, instead of the bands 104 being coupled to the shoes of a user via hooks 108 as in the embodiment of Fig. 1, the resistance bands 204 extend under the foot of a user.

[00035] Figures 2A – 2C provide an illustration of an embodiment of the pant member 205 with resistance bands 204 disposed on the leg of the pant member 205. The resistance bands 204 are placed to generally correspond with the front and back muscle groups of the lower body. Accordingly, the quadriceps, and tibialis anterior muscle groups, as well as the hamstring and calf muscles groups, among others, will be affected by the location and operation of the resistance bands 204 in accordance with the embodiment of Figures 2A – 2C.

[00036] In Figure 2C, which shows an underfoot view of a right foot of a user wearing the pant member 205, the pant material and the resistance bands 204 loop around 203 under the foot 206 to define an open-toe extension 208. The open-toe extension 208 of the pant member 205 enables the resistance bands 204 to extend from the front hip end 114a to the back hip end 114b, where the resistance bands 204 can be affixed to the pant member 205. The resistance bands 204 may remain disposed in a free-floating manner within the channel system 202 to allow for better tensile strength.

[00037] Still referencing Figure 2A – 2C, the resistance bands 204 can be configured to provide support starting generally at the hip area 114a and 114b and generally around to the gluteus maximus

muscles within a pant member 205 with a high-rise design. The pant member 205 includes a first end of the plurality of resistance bands 230 that is located generally adjacent to a first end of the pant member 240, which is also generally adjacent to the hip area 114a and 114b, and a second end of the plurality of resistance bands 232 that is located generally adjacent to a second end of the pant member 242, which is also generally adjacent to the foot 206 area of a user. Each of the resistance bands 204 is generally aligned with the muscle patterns of a user, and each of the resistance bands 204 comprises a predetermined level of resistance selected from a predefined range. The wearable resistive equipment 200 comprising one or more resistive bands 204, is substantially configured to a portion of a user so as to provide a targeted amount of resistance on the muscles of a user during rest or after the muscles contract, thereby allowing the user, by and through the plurality of resistance bands 204, to undergo enhanced muscle development when used or worn by a user.

[00038] Moving on to another embodiment of the wearable resistive equipment 300, reference is made to Figures 3A – 3B. As seen in the figures, the various elements of the wearable resistive equipment 300 are similar to that of the embodiment in Figures 2A – 2C, however, resistive bands 304 extend beyond the hip ends 112a, 112b to generally the abdomen area of a user. Resistive bands 304 may still reside within the channel system 302 in order to provide free-floating stretch and/or expansion within the channel systems 302.

[00039] As illustrated in Figures 3A and 3B, the resistance bands 304 can extend inferiorly or towards the foot from the front abdomen area 360a and the back abdomen area 360b to provide abdominal and gluteus resistive support. Therefore, the resistive bands 304 can continue down the lower body and loop around 308 the bottom foot similar to the second embodiment shown in Figures 2A – 2C. In some instances, the resistance bands 304 may be disposed about the side of the top pant leg 340, around the knee area 342 and over the front of the lower leg 344. Resistance bands 304

with such placement, for example, can impact the quadriceps and calf muscles, among others, while avoiding contact resistance on the knees.

[00040] As illustrated in Figures 3A and 3B, the wearable resistive equipment 300 can further be configured to include a mesh material 306 to provide added ventilation to provide heat dissipation during athletic training, and when the wearable resistive equipment 300 is on a user. The wearable resistive equipment 100, 200, 400, 500 may also be configured to include the mesh material 306 for various portions of the wearable resistive equipment.

[00041] Further, like many exercise pants, the wearable resistive equipment 300 can also be equipped with one or more pockets 310 for storage of belongings. The pocket 310 may be located on the front, back, or side of the exercise pant 304. In addition, the pocket 310 may be open-ended, or closable via buttons, Velcro, snaps, clasps, zippers, or other methods or systems. Pocket 310 or other storage configurations can also be included in wearable resistive equipment 100, 200, 400, or 500 of the embodiments, as illustrated in Figures 1B – 1C, 2B – 2C, 4B – 4C, and 5B – 5C.

[00042] Further, the wearable resistive equipment 100, 200, 300 can be designed to be a short or calf-length (e.g. capri) pant. For example, as shown in Figures 4A – 4C, the wearable resistive equipment 400 includes resistance bands 404 that terminate at the front 440 and back areas 442 of the lower legs 407 of a user. The resistance bands 404 and the channel systems 402 are configured in a similar way to those described in Figures 2A – 2C, except that the resistance bands 404 and channel systems 402 terminate at the front 440 and back areas 442 of the lower legs 407 of a user. The pant member 405 also includes a loop around 403 that extends beyond the ankle ends 116a, 116b in order to loop around 403 a lower extremity (e.g. under the foot 406).

[00043] Figures 4A – 4C provide an illustration of the pant member 405 with resistance bands 404 disposed on the leg of the pant member 405. Similar to the resistance bands 204 in Figures 2A – 2C,

resistance bands 404 are generally configured to generally correspond with the front 440 and back 442 muscle groups of the lower body of a user. Accordingly, the quadriceps, and tibialis anterior muscle groups as well as the hamstring and calf muscles groups, among others, will be affected by the location of the resistance bands 404 in accordance with the embodiment of Figures 4A – 4C.

[00044] In Figure 4C, which describes a bottom view of an underfoot embodiment of a foot 408 of a user wearing the pant member 405, the resistance bands 404 terminate generally adjacent to the front 440 and back 442 areas of the lower leg 407 of the user, and wherein the pant member 405 loops around 403 under the foot 406 to define an open-toe extension 408. The resistance bands 404 may remain disposed in a free-floating manner within the channel system 402 to allow for better tensile strength among other advantages.

[00045] Still referencing Figures 4A – 4C, the resistance bands 404 can be configured to provide support starting generally at the hip area 114a and 114b and generally around to the gluteus maximus muscles within a pant member 405 with a high-rise design. In addition, and as seen in Figure 2C, the resistance bands 404 terminate at the front 440 and back areas 442 of the lower legs 407 of a user and the pant member 405 continues under the foot 406. In other embodiments, the pant member may not continue under the foot 406.

[00046] Figures 5A – 5C provide an illustration of the short member 505 with resistance bands 504 disposed on the upper leg 507 of the short member 505. Resistance bands 504 may be configured to correspond with the front 509 and back 511 muscle groups of the upper legs 507 of the user.

[00047] The wearable resistive equipment 500 of the embodiments in Figures 5A – 5C, may include resistance bands 504 that couple at the front 509 and back 511 areas of the upper legs 507 of a user. The resistance bands 504 and the channel systems 502 are configured in a similar way to those described in Figures 2A – 2C, except that the resistance bands 504 and channel systems 502

terminate or couple to the wearable resistive equipment 500 at the front 509 and back 511 areas of the upper legs 507 of a user. A front 509 of each leg of the short member 505 includes two resistance bands 504, one in each channel system 502, spaced apart from each other and generally extending parallel with each other as they extend between a first end of the short member 530, which is located generally adjacent to a first end of the resistance bands 540 and the waist area 112 of the short member 505, that extends generally downwardly to a crotch area 550, and a second end of the short member 532, which is located generally adjacent to the second end of the resistance bands 542 of the first 534 and second legs 536 of the short member 505. The resistance bands 504 may remain disposed in a free-floating manner within the channel system 502 to allow for better tensile strength among other advantages.

[00048] Alternative wearable resistive equipment 100, 200, 300, 400, 500 designs may be contemplated that may include alternate placement of the resistance bands 104, 204, 304, 404, 504 that extend to a low, mid, and high-rise waist area 112a and 112b. Additionally, or alternatively, the wearable resistive equipment 100, 200, 300, 400, 500 can be configured to provide resistance bands 104, 204, 304, 404, 504 that only extend to a portion of the body and/or can have varying resistance band 104, 204, 304, 404, 504 placement. The wearable resistive equipment 100, 200, 300, 400, 500 can target one muscle group such as the calf muscles, hamstrings, and/or quadriceps, or others. As another example, the wearable resistive equipment can target the entire lower body such that one or a group of resistive bands are disposed through-out the pant member. In certain embodiments, the wearable resistive equipment 100, 200, 300, 400, 500 may include resistance bands 104, 204, 304, 404, 504 that are natural rubber. In certain embodiments, the wearable resistive equipment may include resistance bands 104, 204, 304, 404, 504 that are about 30 millimeters in width. In certain

embodiments, the band channels 102, 202, 302, 402, 502 are about 42 inches or about 1067 millimeters in length.

[00049] Further, the wearable resistive equipment 100, 200, 300, 400, 500 can be configured for various tensile strengths. In an embodiment, various versions of the wearable resistive equipment 100, 200, 300, 400, 500 may exist with each version supporting a different tensile strength. Furthermore, each version of the pant or short member can include different tensile strengths. In some embodiments, the tensile strengths can vary between 10 -100 pounds. The thickness of the resistance bands 104, 204, 304, 404, 504 may be one manner of varying the tensile strength, which can range from 0.6 millimeters to 2.5 millimeters. Thicker resistance bands 104, 204, 304, 404, 504 may be used for greater tensile strength. In certain instances, the resistance bands 104, 204, 304, 404, 504 may be configured to be removable from within the channel systems 102, 202, 302, 402, 502 such that bands of different tensile strength can be interchanged in the resistive system. Also, in certain instances, multiple resistance bands 104, 204, 304, 404, 504 can be enclosed in one channel systems 102, 202, 302, 402, 502.

[00050] Still further, the wearable resistive equipment 100, 200, 300, 400, 500 may include exterior seams that are over-lock seams. Still in some embodiments, the exterior seams of the wearable resistive equipment 100, 200, 300, 400, 500 may include seams such as, but not limited to, flat-felled seams, whipstitch seams, topstitch seams, lock-stitch seams, chain-stitch seams, etc.

[00051] Although various representative embodiments of this invention have been described above with a certain degree of particularity, those skilled in the art could make numerous alterations to the disclosed embodiments without departing from the spirit or scope of the inventive subject matter set forth in the specification. For example, one skilled in the art could use the embodiments described in Figures 1A – 1C, 2A – 2C, 3A – 3C, 4A – 4C and 5A – 5C, to configure a shirt member, with long

or short sleeves, a cycling or wrestling singlet, a wearable resistive equipment that covers the abdominal area of a user, or a wearable resistive equipment the covers the entire body of a user. These designs could contain a plurality of similar resistance bands that are generally free-floating within a plurality of similar channel systems that are contained wholly within the wearable resistive equipment. The resistance bands in these designs can be disposed vertically, horizontally, or in other designs, to align generally with the contours of the muscles of a user. The resistance bands in these designs could comprise a similar channel system to those described in 102, 202, 302, 402, 502 to house or enclose the resistance bands therein. In this way, the resistance bands in these designs are generally free-floating within the channel system, thereby allowing the resistance bands to stretch (i.e. provide resistance) within the channel system and not be exposed on an outside of the wearable resistive equipment.

[00052] The present disclosure also discloses a method of exercise 600, which includes positioning a plurality of generally free-floating resistance bands within a plurality of channel systems in a portion of a wearable resistive equipment 602. By securing and/or coupling a first end of the plurality of resistance bands to a first end of the wearable resistive equipment 604, securing and/or coupling a second end of the plurality of resistance bands to a second end of the wearable resistive equipment 606, and aligning generally the plurality of resistance bands within the wearable resistive equipment generally with the muscle patterns of a user 608, a user can experience enhanced resistance on his or her leg muscles while the muscles contract 610 or are at rest. This method allows a user to undergo enhanced exercise, enhanced calorie burn, and/or reduce the time of exercise.

[00053] The plurality of resistance bands may be substantially configured to a particular user, in part using characteristics of a user, such as waist size, inseam, height, weight, among other

characteristics. Using these characteristics, the bands may be generally aligned with the muscles in the legs of a user. A first end and a second end of the plurality of resistance bands runs substantially parallel to the muscles in the legs of a user, thereby providing an enhanced amount of resistance, at least in part via the targeted resistance bands, on the leg muscles of a user while the leg muscles of a user contract or are at rest. The method of exercise, by and through the wearable resistive equipment, enhances the effects of exercise and/or rehabilitation of a user.

[00054] All directional references (e.g. top, bottom, front, back) are only used for identification purposes to aid the reader's understanding of the embodiments of the present invention, and do not create limitations, particularly as to the position, orientation, or use of the invention unless specifically set forth in the claims. Joinder references (e.g. attached, coupled, connected, and the like) are to be construed broadly and may include intermediate members between a connection of elements and relative movement between elements. As such, joinder references do not necessarily infer that two elements are directly connected and in fixed relation to each other.

[00055] In methodologies directly or indirectly set forth herein, various steps and operations are described in one possible order of operation, but those skilled in the art will recognize that steps and operations may be rearranged, replaced, or eliminated without necessarily departing from the spirit and scope of the present invention. It is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative only and not limiting. Changes in detail or structure may be made without departing from the spirit of the invention as defined in the appended claims.

WHAT IS CLAIMED IS:

1. A wearable resistive equipment comprising:
 - two or more generally free-floating resistance bands positioned generally within two or more corresponding channel systems, which are contained generally wholly within the wearable resistive equipment comprising:
 - a first end of the two or more resistance bands coupled adjacent to a first end of the wearable resistive equipment;
 - a second end of the two or more resistance bands coupled adjacent to a second end of the wearable resistive equipment;
 - wherein the two or more resistance bands and corresponding channel systems are substantially parallel to each other and do not intersect with each other;
 - wherein each of the resistance bands comprises a predetermined level of resistance that is varied via a thickness of the resistance bands selected from a predefined range,
 - wherein the wearable resistive equipment comprising the two or more resistive bands is generally substantially configured to a portion of a user so as to provide a targeted amount of resistance on the muscles of a user, thereby enhancing exercise of the user; and
 - wherein the wearable resistive equipment comprises a pant member.
2. The wearable resistive equipment of claim 1, wherein the pant member further comprises:
 - a first pant leg, a second pant leg, and a generally annular waist section, wherein the first and second pant legs are coupled together via the waist section, the coupling of the first and second pant legs extending generally downwardly to a crotch area; and wherein the pant member will substantially conform to a portion of a user, wherein the pant member further comprises;

a first resistance band channel system disposed adjacent to the first pant leg;
a second resistance band channel system disposed adjacent to the second pant leg;

wherein the two or more resistance bands are generally positioned within each of the first and second channel systems;

and wherein the two or more resistance bands are substantially parallel to each other and do not intersect.

3. The wearable resistive equipment of claim 2, wherein the first end of the two or more resistance bands is coupled adjacent to the first end of the pant member, and wherein the first end of the pant member is coupled generally adjacent to the waist section of the pant member.

4. The wearable resistive equipment of claim 3, wherein the second end of the two or more resistance bands is coupled adjacent to the second end of the pant member, which is located generally adjacent to the bottom of the first and second pant legs.

5. The wearable resistive equipment of claim 4, wherein clasp members are coupled generally adjacent to the second end of the plurality of resistance bands, and configured to generally mechanically couple to an external apparatus.

6. The wearable resistive equipment of claim 4, wherein the resistance bands further comprise a loop around extension configured to generally loop around a lower extremity of a user.

7. The wearable resistive equipment of claim 4, wherein the second end of the two or more resistance bands extend generally to a lower leg area of the user.

8. The wearable resistive equipment of claim 4, wherein the second end of the two or more resistance bands extend generally to an upper leg area of the user.

9. The wearable resistive equipment of claim 1, wherein the resistance of the one or more resistance bands is varied via a thickness of the one or more resistance bands, wherein the thickness of the resistance bands is from 0.2 millimeters to 10 millimeters.

10. The wearable resistive equipment of claim 1, wherein the two or more of the resistance bands comprise natural rubber.

11. The wearable resistive equipment of claim 1, wherein fabric used in the construction of the wearable resistive equipment is washable, and comprises an anti-microbial treatment or properties to reduce odor and fungus.

12. The wearable resistive equipment of claim 1, wherein the two or more resistance bands are coupled at least in part adjacent to the wearable resistive equipment at each of the first and second ends by stitching, buttons, Velcro, clasps and/or snaps.

13. The wearable resistive equipment of claim 1, wherein the wearable resistive equipment enhances the effects of exercise and/or rehabilitation of a user via the two or more resistance bands, which are generally aligned with the muscle patterns of a user.

14. The wearable resistive equipment of claim 1, wherein the wearable resistive equipment enhances the effects of exercise and/or rehabilitation of a user.

15. The wearable resistive equipment of claim 1, further comprising a loop around portion configured to couple to a foot of a user.

16. A method of exercise comprising:
positioning two or more generally free-floating resistance bands within two or more channel systems in a portion of wearable resistive equipment, which are contained generally wholly within the wearable resistive equipment, that are substantially parallel to each other and do not intersect;

coupling a first end of the two or more resistance bands adjacent to a first end of the wearable resistive equipment;

coupling a second end of the two or more resistance bands adjacent to a second end of the wearable resistive equipment;

aligning, generally, the two or more resistance bands within the wearable resistive equipment with the muscle patterns of a user so as to provide resistance on muscles of a user;

selecting a specific level of resistance, from a predefined range, for each of the resistance bands within the channel systems; and

providing a predetermined amount of resistance to the muscles of a user, thereby providing the user with enhanced benefits of movement.

17. The method of claim 16, wherein the two or more resistance bands are substantially configured to a particular characteristic of a user; wherein the resistance bands are substantially parallel to each other and do not intersect with each other; and wherein the two or more resistance bands are generally aligned with the muscles in the legs of a user.

18. The method of claim 17, wherein the first end and the second end of the two or more resistance bands run substantially parallel to the muscles in the legs of a user, thereby providing an enhanced amount of resistance, at least in part via the two or more resistance bands, on the leg muscles of a user while the leg muscles of a user contract or are at rest.

19. The method of claim 16, wherein the wearable resistive equipment enhances the effects of exercise and/or rehabilitation of a user.

20. A wearable resistive equipment comprising:

two or more generally free-floating resistance bands positioned generally within two or more corresponding channel systems, both of which are contained generally wholly within the wearable resistive equipment comprising:

a first end of the two or more resistance bands coupled adjacent to a first end of the wearable resistive equipment;

a second end of the two or more resistance bands coupled adjacent to a second end of the wearable resistive equipment;

wherein the two or more resistance bands and corresponding channel systems are substantially parallel to each other and do not intersect with each other;

wherein each of the resistance bands comprises a predetermined level of resistance that is varied via a thickness of the resistance bands selected from a predefined range, wherein the thickness of the resistance bands is from 0.2 millimeters to 10 millimeters;

wherein the wearable resistive equipment comprising the two or more resistive bands is generally substantially configured to a portion of a user so as to provide a targeted amount of resistance on the muscles of a user, thereby enhancing exercise of the user; and

wherein the wearable resistive equipment comprises a pant member.

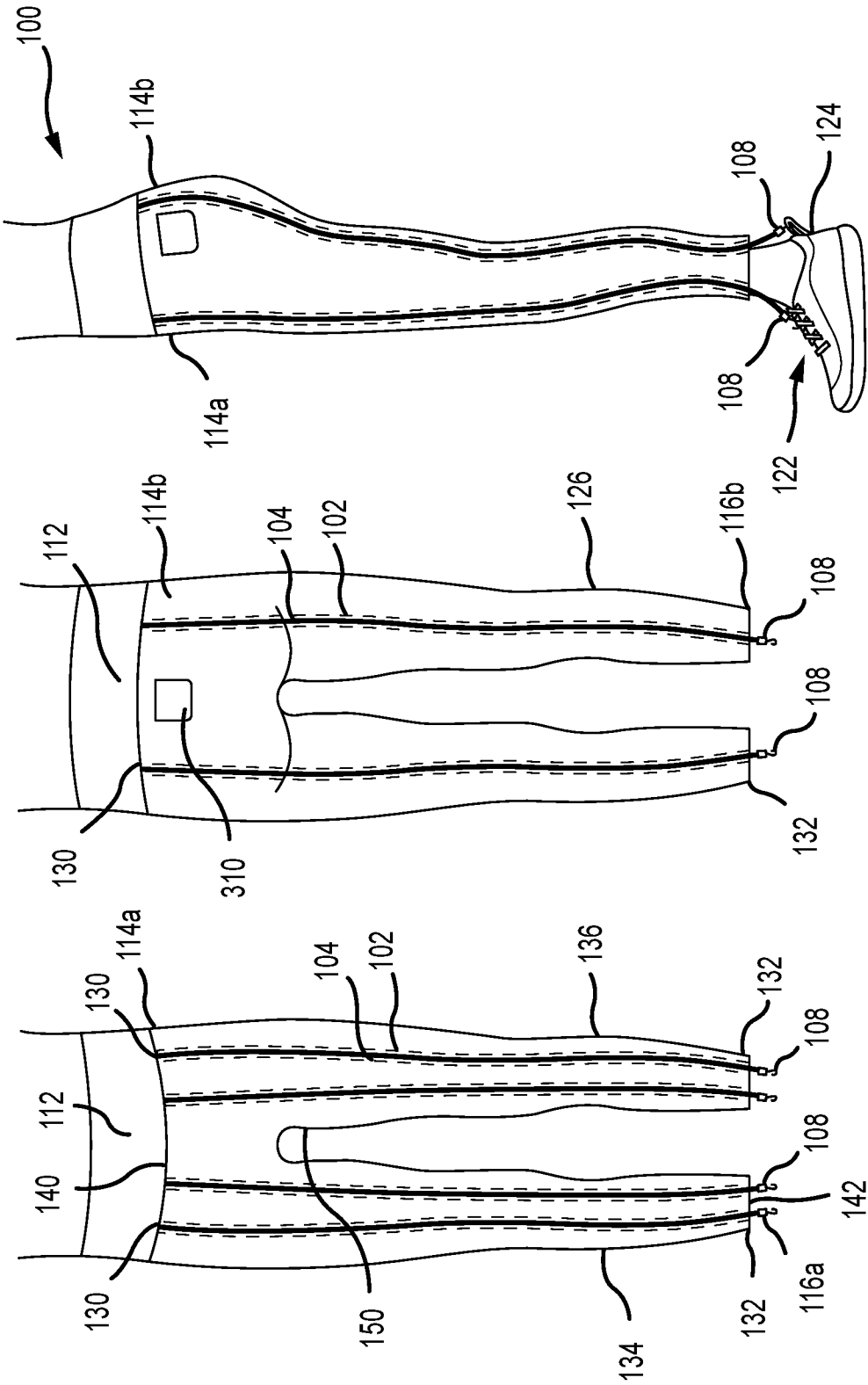
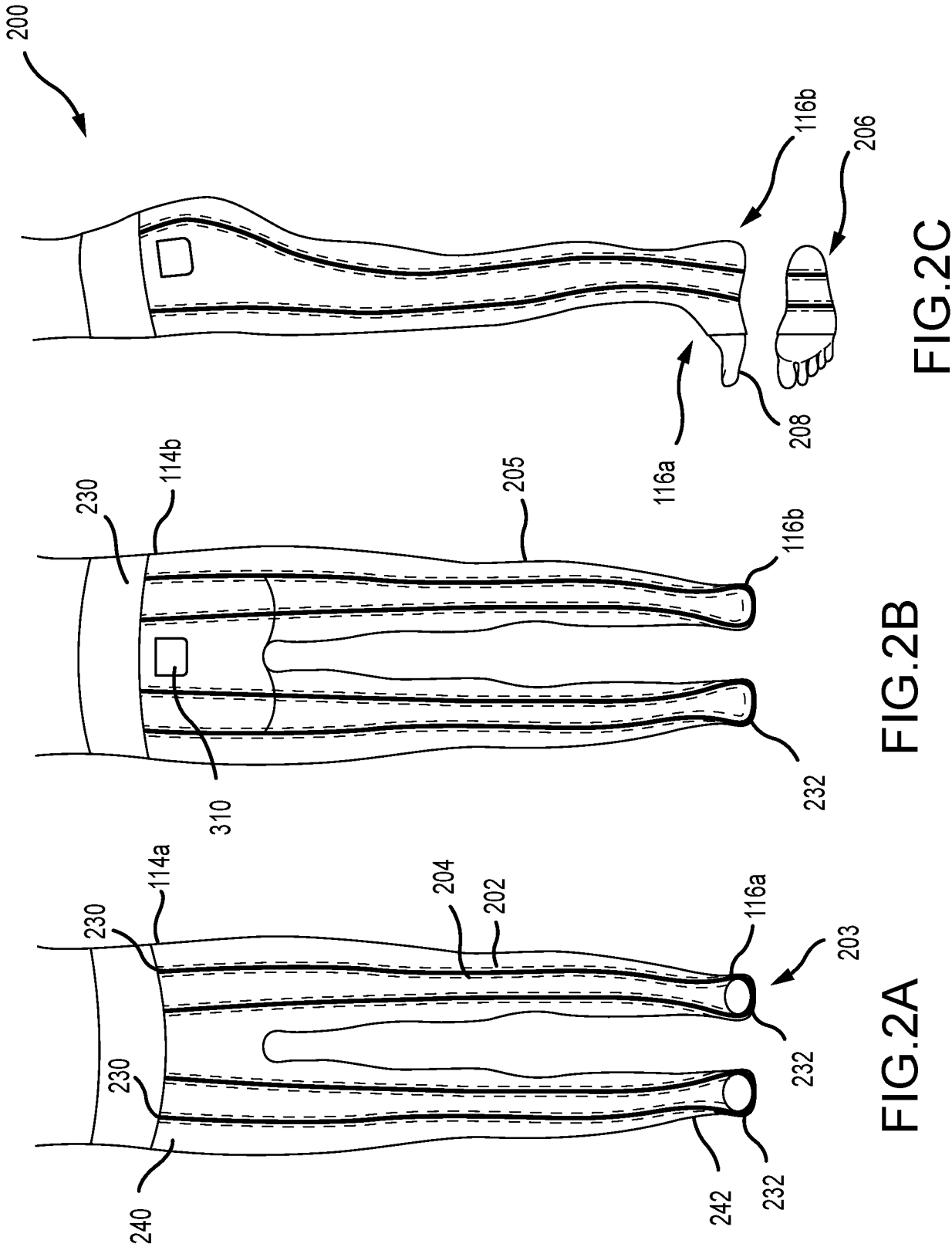


FIG.1C

FIG.1B

FIG.1A



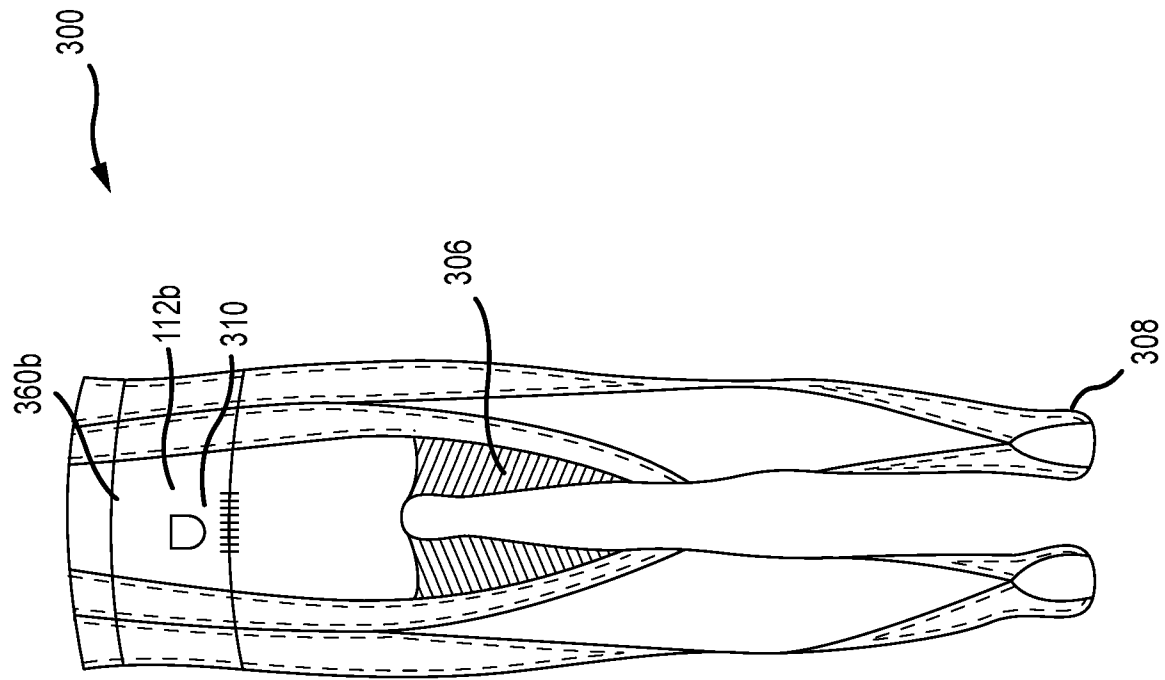


FIG. 3B

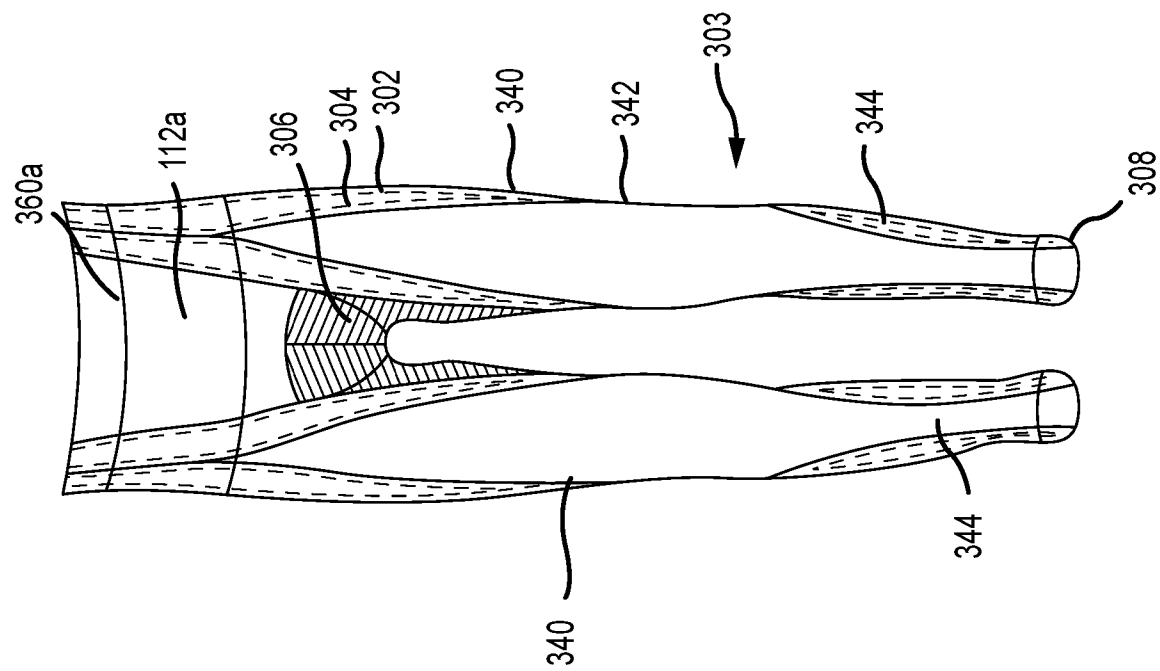
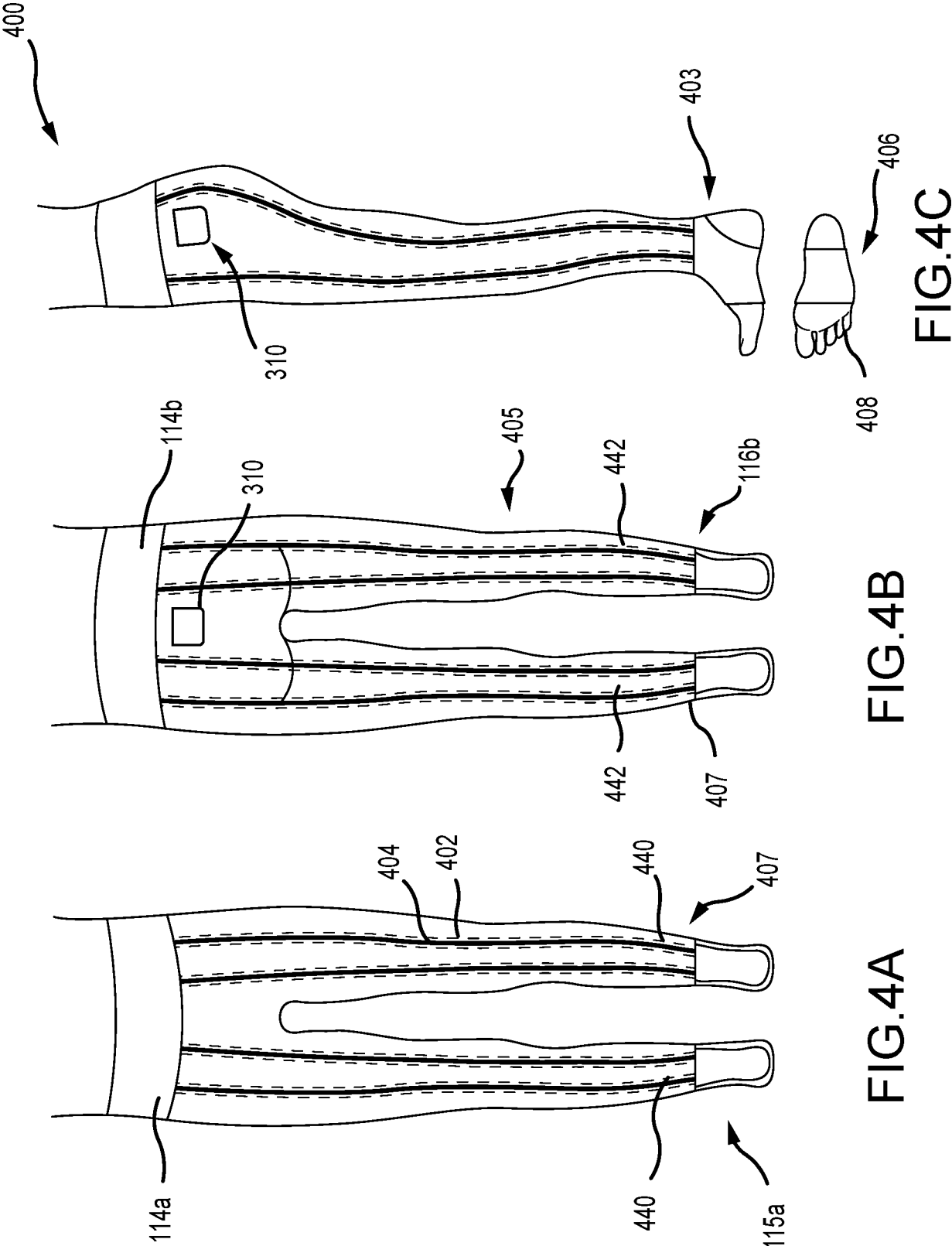


FIG. 3A



5/6

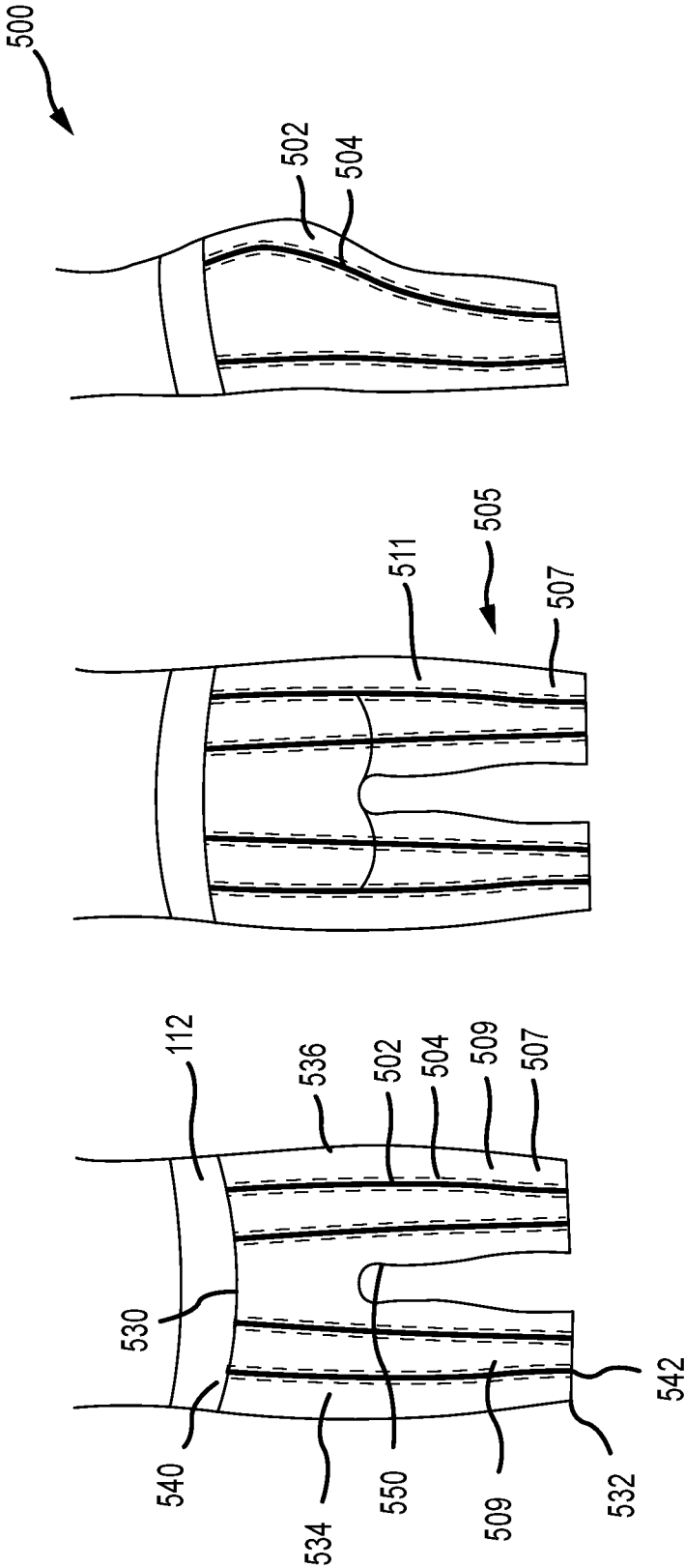


FIG. 5C

FIG. 5B

FIG. 5A

6/6

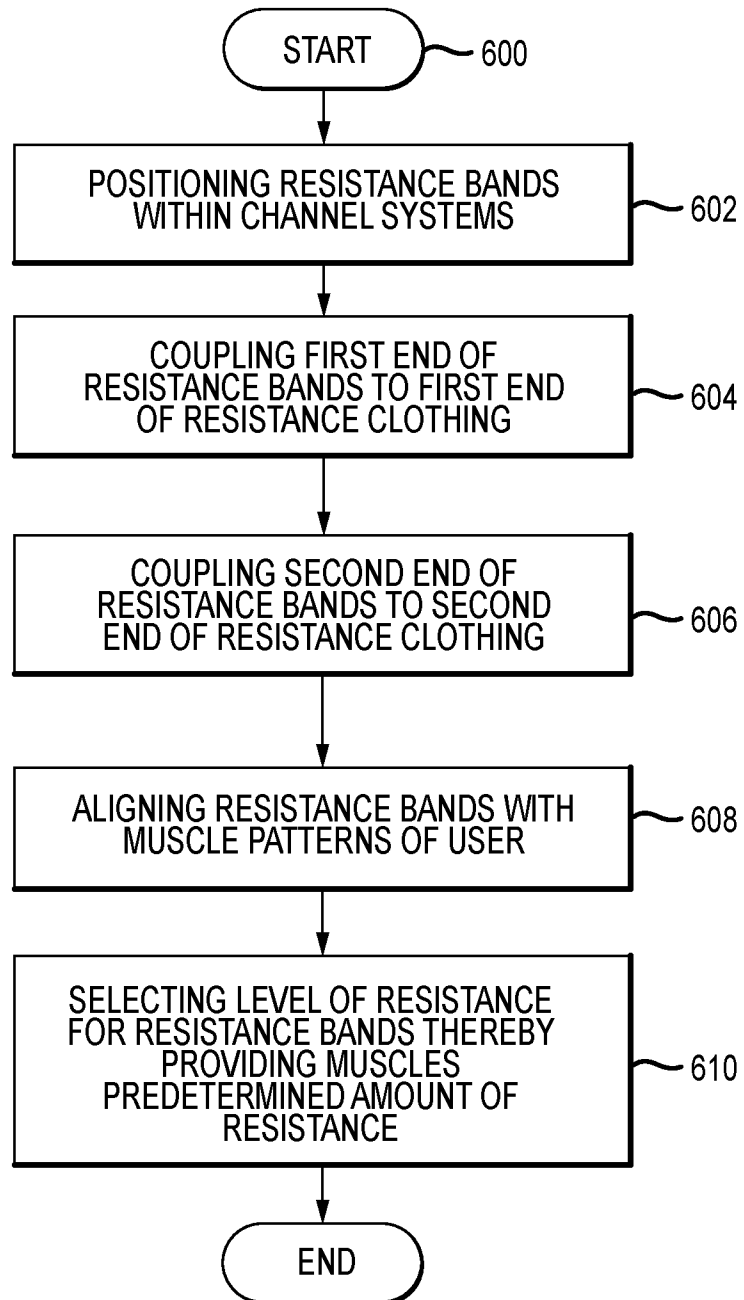


FIG.6

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2017/037661

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A63B 21/02; A41D 1/08; A41D 13/00; A63B 21/00; A63B 21/04; A63B 23/04 (2017.01)

CPC - A63B 21/4025; A41D 2600/10; A63B 21/00058; A63B 21/00061; A63B 21/0407; A63B 21/0552; A63B 21/0557 (2017.05)

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

USPC - 2/69; 482/121; 482/122; 482/124 (keyword delimited)

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

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2014/0200121 A1 (TAU ORTHOPEDICS, LLC) 17 July 2014 (17.07.2014) entire document	1-4, 7-9, 13-17, 19, 20
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Y		5, 6, 10-12, 18
Y	US 2010/0041527 A1 (MILLER) 18 February 2010 (18.02.2010) entire document	5, 6, 10, 12
Y	US 9,132,309 B2 (BOWERS) 15 September 2015 (15.09.2015) entire document	11
Y	US 2015/0306441 A1 (NEW YORK UNIVERSITY) 29 October 2015 (29.10.2015) entire document	18
A	US 5,570,472 A (DICKER) 05 November 1996 (05.11.1996) entire document	1-20
A	US 5,606,745 A (GRAY) 04 March 1997 (04.03.1997) entire document	1-20
A	US 8,544,114 B2 (WILLIAMS et al) 01 October 2013 (01.10.2013) entire document	1-20

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

29 July 2017

Date of mailing of the international search report

21 AUG 2017

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