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(54) **RESISTANCE EXERCISE CLOTHING**

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(60) Provisional application No. 62/902,972, filed on Sep.
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(57)

ABSTRACT

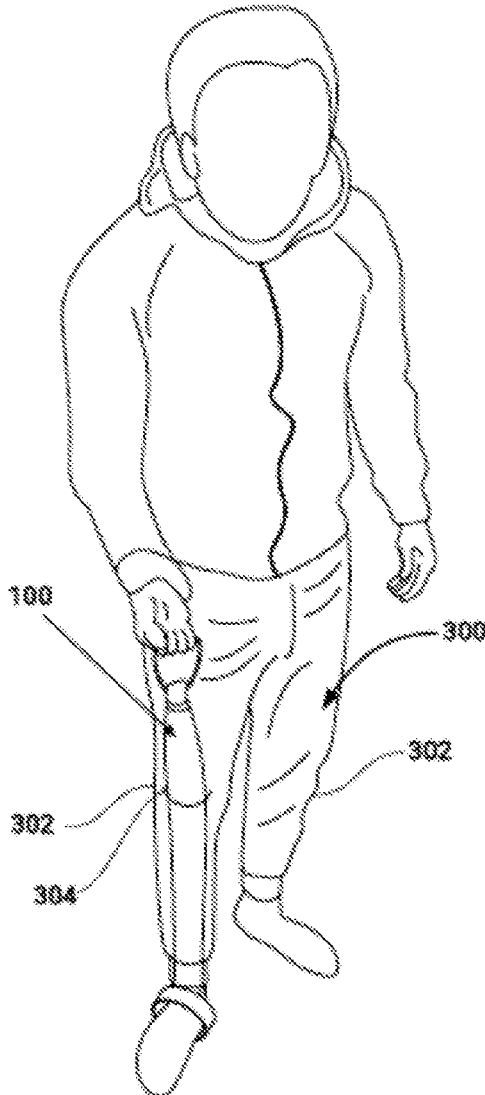
Presented is a resistance exercise clothing or resistance
exercise devices that can be incorporated within an exercise
clothing such as a pant, a shirt or the like. The resistance
exercise devices incorporated into the clothing facilitate a
wearer to do resistance exercises for arms and legs at
anytime and anywhere as per wear's convenience.

Publication Classification

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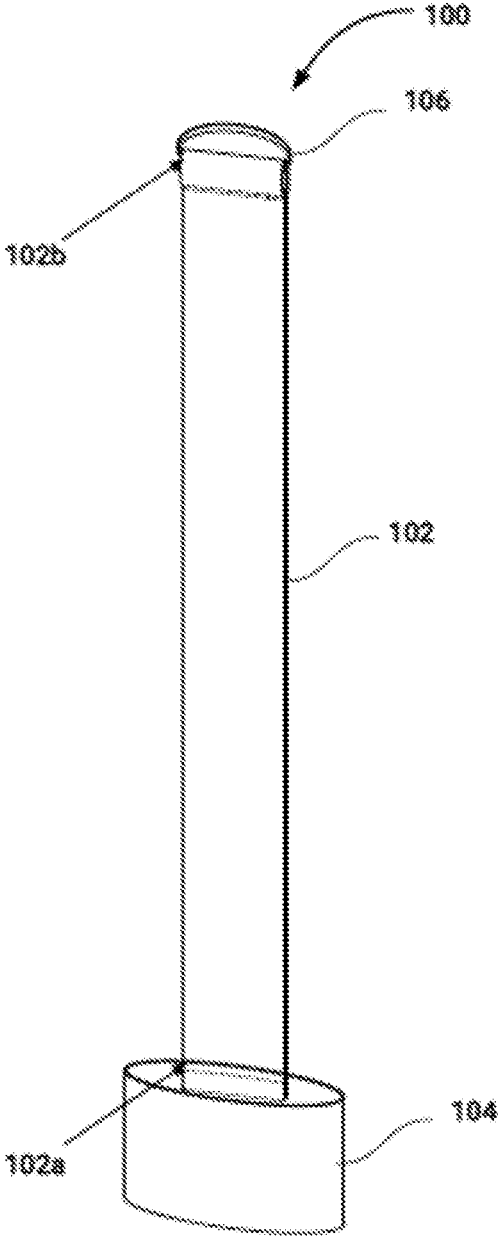


FIG. 1

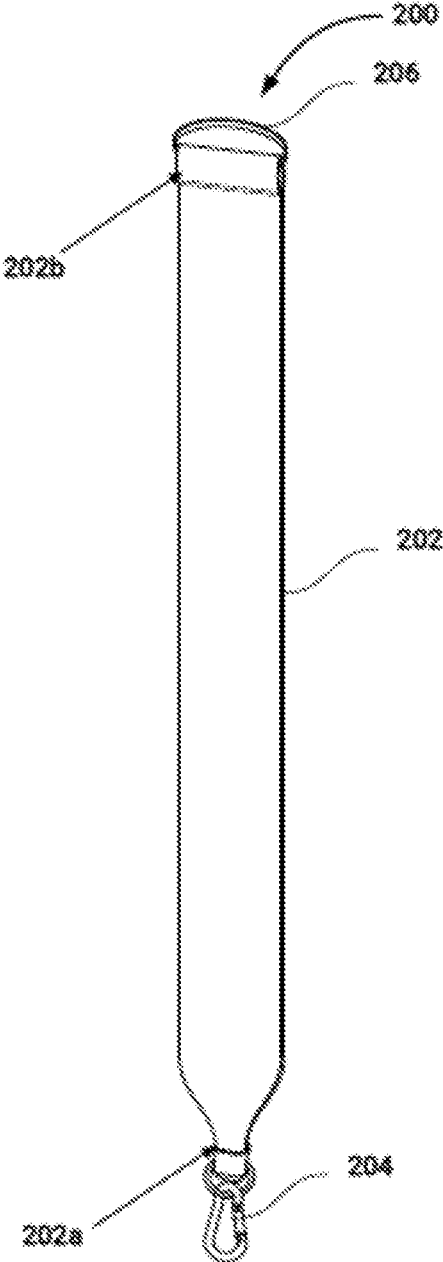


FIG. 2

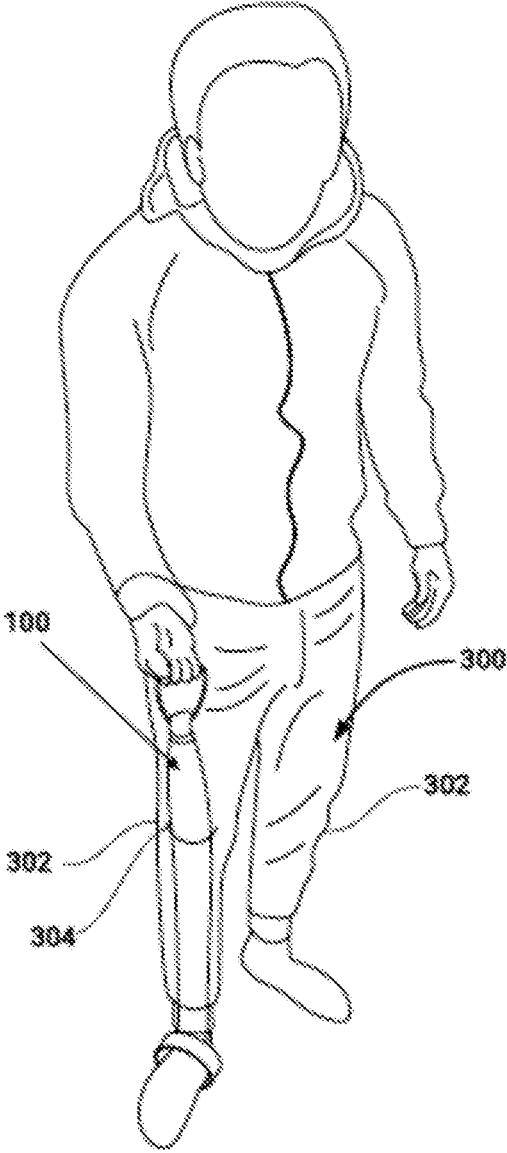


FIG. 3

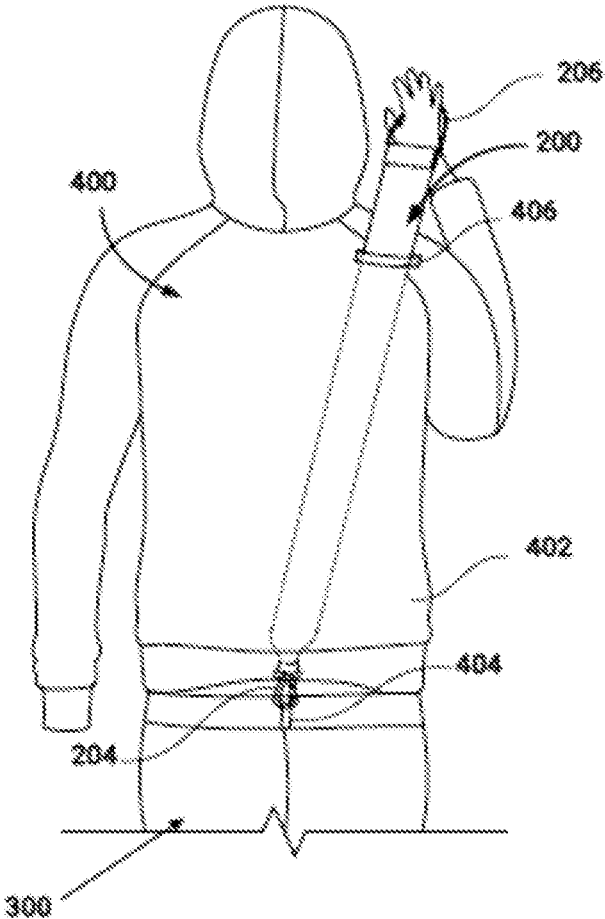


FIG. 4

RESISTANCE EXERCISE CLOTHING

TECHNICAL FIELD OF INVENTION

[0001] The present invention was first described in and claims the benefit of U.S. Provisional Application No. 62/902,972, filed Oct. 20, 2019, the entire disclosure of which are incorporated herein by reference.

[0002] This invention relates generally to exercising devices, and more particularly to a resistance exercise device incorporated into clothing, such as a shirt, a pant using which a user can perform resistance exercises to strengthen and tone his/her limbs related muscles.

BACKGROUND

[0003] Resistance exercise bands/resistive bands are widely used by users to strengthen, stabilize and tone their muscles. Commonly used resistive bands are manufactured using a variety of materials such as rubber, latex compounds, elastics, and metal springs. These conventional bands suffer from limitations concerning the overall performance and versatility of these bands. Some of these resistive bands require the users to wrap the band around their hands or tie a knot to form a loop for the desired exercises. Some of these bands have handles made of a harder material such as wood, plastic, or metal, that are attached separately to the bands. Various types of resistance exercise bands are disclosed in the prior arts. For example, US20100292054 discloses a resistance band comprised of a first end and a second end and one or more grip holes through the first end and the second end that provide a means of facilitating grip for a user as to prevent or lessen the accidental release of the resistance exercise device.

[0004] Similarly, U.S. Pat. No. 8,858,408 discloses a double loop exercise strap that includes an outer strap anchored to a fixed object (e.g., a wall, rail or other fixed platform) and an inner strap that wraps firmly around a limb, extremity (e.g., hand or foot) or torso of the human body. The inner strap has two ends, a fixed end that may advantageously be sewn or attached to the outer strap and a free end that wraps around the human limb, extremity or torso and is threaded through an outer strap slot before being attached to the outside of the outer strap using VELCRO, buckles or other types of fasteners to thereby create a closed double loop system.

[0005] Further, U.S. Pat. No. 8,403,818 discloses an improved exercise resistance system that helps users to conduct numerous body exercises. The exercise resistance system includes an adjustable elastic resistance cord or flat band that may be combined with weights, or each type of resistance may be used alone, in order to vary the means of creating resistance during exercise. The length of the elastic resistance cord or flat band may be adjusted by means of a slip free, length quick adjustment device. The elastic resistance cord or flat band may be passed through the length quick adjustment device which may be secured at various points along the length of the elastic resistance cord or flat band, to change its effective usable length and thus change the level of strength, and range of motion. The length quick adjustment device may be secured by pulling an elastic resistance cord or flat band in one direction, and released by pulling the elastic resistance cord or flat band in the opposite direction.

[0006] Further, in the past, resistance bands are proposed for home uses where the bands are fastened to standard doors or other surfaces using some nylon straps and clamps or the like mechanisms. For example, US20060084556 discloses use of an anchoring strap to secure the exercise apparatus to either a door frame or to another immovable object. Further, U.S. Pat. No. 5,766,118 discloses an exercise device that can be attached to the door with a clamp that is fastened to the top of a door or wall. Further, U.S. Pat. No. 7,322,907 discloses an exercise resistance cable apparatus for engagement with a pulley assembly of a support structure and with a cable locking pin of an anchor assembly of the support structure.

[0007] Besides this, even the inventors in the past have envisioned resistance exercise clothing/garments. For example, US20130067628 discloses a resistance exercise clothing device. As disclosed in the published patent application, resistance bands may be permanently installed and may also be removably installed into the clothing such as pants and shirts. U.S. Pat. No. 5,570,472 also discloses resistant exercise shirt and pants that can be considered as making up a resistant exercise suit. Further, U.S. Pat. No. 5,308,305 is directed to a device to augment exercises. Many embodiments are presented in this patent; as an example, the patent discloses a shoulder harness with two adjustable shoulder assemblies having corresponding buckles. An elongated resistance member is adjustably attached to buckle; and the shoulder assembly has a loop attached, which secures the buckle. There is a pant-leg garment, which includes the passageways. Resistance member is threaded through the opening/passageway and may be formed from some type of elastic webbing or cord.

[0008] Although several attempts are made in the past to devise resistance exercise devices. Most of these existing resistance exercise devices are expensive to manufacture, complex in their design, and the biggest shortcoming is that they are mainly manufactured or designed for use in a fitness facilities such as gyms or fitness studios or indoors (when the users are exercising at their home). Thus, the inventor of the invention disclosed herein has felt a need for a novel and reliable solution in the form of a resistance exercise device incorporated into garments, such as shirts, pants so that the users can perform resistance exercises anywhere and at any time at their convenience to strengthen and tone their limbs related muscles.

SUMMARY

[0009] It is an objective of the present invention to provide an exercise clothing with resistance exercise device that would facilitate a wearer to do resistance exercises for arms and legs, with the resistance exercise device being worn during movement.

[0010] Another objective of the present invention is to provide the exercise clothing with resistance exercise device that is unobtrusive in appearance.

[0011] Another objective of the present invention is to provide the exercise clothing with resistance exercise device that can be used by a wearer at his/her convenience at any place to perform resistance exercises.

[0012] According to an embodiment, there is provided a resistance exercise device (100) for exercise clothing such as a pant/trouser (300). The device (100) includes an elongated flat body (102) coupled underside a front portion of at least one pant leg (302), the elongated flat body (102) having a

first end (102a) and a second end (102b), wherein the first end (102a) having a loop portion (104) that can detachably fit around an ankle of a wearer, and the second end (102b) having a handle (106) accessible through an opening (304) on the at least one pant leg (302) by the wearer to perform a resistance exercise while the loop portion (104) is fitted around the ankle of the wearer and pulled down under the heel.

[0013] According to an embodiment, there is provided a resistance exercise device (200) for exercise clothing such as a shirt, hoodie (400). The device (200) includes an elongated flat body (202) coupled underside a back portion (402) of the shirt (400), the elongated flat body (202) having a first end (202a) and a second end (202b), wherein the first end (202a) having a hook (204) attached therein that can detachably connect to a belt or a belt loop (404) disposed around the waist portion of a pant (300), and the second end (202b) having a handle (206) accessible through an opening on top of a shoulder by the wearer to perform a resistance exercise while the hook (204) is connected to the belt or belt loop (404) of the pant (300) of the wearer.

[0014] These and other objects and advantages of the present invention will be apparent from a review of the following specification and accompanying drawings.

BRIEF DESCRIPTION OF DRAWINGS

[0015] FIG. 1 shows an exemplary resistance exercise device configured to be incorporated into clothing, such as a pant/trouser using which a user/wearer can perform resistance exercises related to legs, according to an embodiment of the present invention;

[0016] FIG. 2 shows an exemplary resistance exercise device configured to be incorporated into clothing, such as a shirt using which a user/wearer can perform resistance exercises related to arms and/or shoulders, according to an embodiment of the present invention;

[0017] FIG. 3 shows an exemplary exercise clothing with the resistance exercise device of FIG. 1 incorporated therein; and

[0018] FIG. 4 shows another exemplary exercise clothing with the resistance exercise device of FIG. 2 incorporated therein.

DETAILED DESCRIPTION

[0019] References to “one embodiment”, “an embodiment”, “another embodiment”, “an example”, “another example”, “alternative embodiment”, “some embodiment”, “yet another embodiment”, and so on, indicate that the embodiment(s) or example(s) so described may include a particular feature, structure, characteristic, property, element, or limitation, but that not every embodiment or example necessarily includes that particular feature, structure, characteristic, property, element or limitation. Furthermore, repeated use of the phrase “in an embodiment” does not necessarily refer to the same embodiment. Unless stated otherwise, terms such as “first”, “second”, are used to arbitrarily distinguish between the elements such terms describe. Thus, these terms are not necessarily intended to indicate temporal or other prioritization of such elements.

[0020] The various features and embodiments of the exercise clothing with the resistance exercise device will now be better explained in conjunction with FIGS. 1-4.

[0021] Referring to FIG. 1 and FIG. 3, a resistance exercise device 100 that can be incorporated within an exercise clothing such as a pant or trouser 300 are shown. As seen, the device 100 includes an elongated flat body 102 with a first end 102a and a second end 102b. According to an embodiment, the length of the body 102 is kept nearly equal or more than the length from knee portion to ankle portion of the pant leg 302 of the pant 300. The elongated flat body 102 of the device 100 is coupled underside a front portion of at least one pant leg 302. In an example, the device 100 may be sewn underside the front portion of at least one pant leg 302. In some other embodiments, some other means of coupling may be adopted.

[0022] According to the embodiment, the first end 102a of the body 102 includes a loop portion 104 that can detachably fit around an ankle of a wearer/user. The second end 102b of the body 102 includes a handle portion 106 accessible through an opening 304 provided on the at least one pant leg 302 (near the knee portion) that can be grasped and pulled up by the wearer to perform a leg related resistance exercise while the loop portion 104 is fitted around the ankle of the wearer and pulled down under the heel.

[0023] Referring to FIG. 2 and FIG. 4, a resistance exercise device 200 that can be incorporated within an exercise clothing such as a shirt, a hoodie 400 or the like are shown. As seen, the device 200 includes an elongated flat body 202 coupled underside a back portion 402 of the shirt/hoodie 400. According to an embodiment, the length of the body 202 is kept nearly equal or more than the length from shoulder portion to waist portion of the shirt 400. The elongated flat body 202 of the device 200 is coupled underside the back portion 402 of the shirt 400. In an example, the device 200 may be sewn underside the back portion 402 of the shirt 400. In some other embodiments, some other means of coupling may be adopted.

[0024] According to the embodiment, the elongated flat body 202 includes a first end 202a and a second end 202b. The first end 202a of the body 202 includes a hook 204 that can detachably connect to a belt or a belt loop 404 disposed around the waist portion of a pant 300 wearable by the wearer/user. The second end 202b of the body 202 includes a handle 206 accessible through an opening 406 on top of a shoulder by the wearer to perform arms or shoulder related resistance exercise while the hook 204 is connected to the belt or belt loop 404 of the pant 300 of the wearer.

[0025] It should be noted that, the resistance exercise devices 100 and 200, parts thereof described above in FIGS. 1-4 with respect to different embodiments may be made of different suitable materials, particularly suitable stretchable fabric, and be made in different shapes and sizes that may make the presented invention realization in real scenario. It is also possible that different parts (such as body portion, loop portion, handle portions) of the resistance exercise devices 100 and 200 may be made of either using the same single type of stretch material or different types of stretch materials.

[0026] Further, although FIG. 3 shows the resistance exercise device 100 of FIG. 1 incorporated within one pant leg 302 of the pant 300, it should be understood that both pant legs can have the devices 100 attached underside, so that user can perform resistance exercise for both the legs. Likewise, FIG. 4 shows the resistance exercise device 200 of FIG. 2 incorporated at one side on the rear side of the shirt 400 for exercising one arm, it should be understood that a

pair of the resistance exercise device **200** may be incorporated in order to allow the user to perform the resistance exercise for both the arms and/or shoulders.

[0027] The preceding description has been presented with reference to various embodiments. Persons skilled in the art and technology to which this application pertains will appreciate that alterations and changes in the described structures and methods of operation can be practiced without meaningfully departing from the principle, spirit and scope of the present invention.

1. A resistance exercise device comprising an elongated flat body having a first end and a second end, wherein the device is configured to be incorporated within exercise clothing.

2. The resistance exercise device of claim **1** wherein the exercise clothing is pants.

3. The resistance exercise device of claim **2** wherein the length of the elongated flat body is nearly equal to or greater

than the length from the knee portion to the ankle portion of the pant leg worn by the user, and wherein the elongated flat body of the device is coupled underside to a front portion of at least one pant leg.

4. The resistance exercise device of claim **1** wherein the exercise clothing is selected from the group consisting of workout tops, shirts, hoodies, jackets, jumpers and sweaters.

5. The resistance exercise device of claim **4** wherein the elongated flat body is coupled to the underside of a back portion of the exercise clothing. According to an embodiment, the length of the body is kept nearly equal or more than the length from shoulder portion to waist portion of the exercise clothing. The elongated flat body of the device is coupled to the underside of the back portion of the exercise clothing.

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