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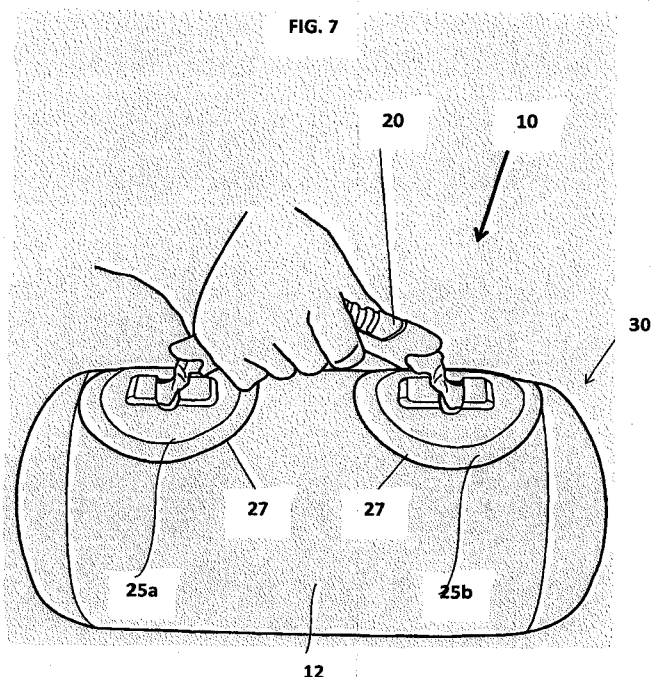
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(54) Title: AN EXERCISE DEVICE



(57) Abstract: An exercise device (10) comprising a hollow body (12) comprising a flexible wall which defines a cavity (18) therein, wherein the cavity (18) can be substantially emptied to configure the body (12) into a collapsed configuration and the cavity (18) can be substantially filled to configure the body (12) into an expanded configuration and at least one handle (20) having first and second mounting means (25a, 25b) and a grip (21) therebetween, wherein the first and second mounting means (25a, 25b) are fixedly attached to the body (12).

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AN EXERCISE DEVICE**Field of the Invention**

The present invention relates to an exercise device.

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The invention has been developed primarily for use with exercise activities and will be described hereinafter with reference to this application. However, it will be appreciated that the invention is not limited to this particular field of use.

Background of the Invention

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There are many exercise products presently available in the market. Most are individual machines which focus on specific body parts only. Some products, such as Kettlebells, Swiss Exercise Balls and free weights offer a wider range of exercises but all have a limitation the range of exercises they offer, the location where such devices can be used and how such devices can be used.

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The present invention seeks to provide an exercise device, which will overcome or substantially ameliorate at least some of the deficiencies of the prior art, or to at least provide an alternative.

It is to be understood that, if any prior art information is referred to herein, such reference does not constitute an admission that the information forms part of the common general knowledge in the art, in Australia or any other country.

Summary of the Invention

According to a first aspect, the present invention provides an exercise device comprising:

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a hollow body comprising a flexible wall which defines a cavity therein, wherein the cavity can be substantially emptied to configure the body into a collapsed configuration and the cavity can be substantially filled to configure the body into an expanded configuration; and

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at least one handle having first and second mounting means and a grip therebetween, wherein the first and second mounting means are fixedly attached to the body.

Preferably, the at least one handle comprises at least two handles fixedly attached to spaced portions of the body.

Preferably, the body is substantially flat in the collapsed configuration.

- 5 Preferably, the exercise device further comprises a valve assembly mounted in the body for emptying or filling the cavity.
- Preferably, the cavity can be filled with a solid and/or a gas and/or a liquid.
- Preferably, the body comprises a tubular mid-portion.
- Preferably, the body comprises substantially hemispherical first and second end portions
- 10 attached to the mid-portion.
- In one embodiment, the body is at most 30 cm in length when in the expanded configuration, most preferably around 25 to 27 cm.
- Preferably, the body is at most 20 cm in width when in the expanded configuration, most preferably between 15 to 18 cm.
- 15 Preferably, the body is made from polyurethane, polyvinyl chloride or chlorosulfonated polyethylene synthetic rubber.
- Preferably, the valve assembly comprises a one way filling valve.
- Preferably, the filling valve is adapted such that both air and liquid can be inserted into the cavity via the filling valve.
- 20 Preferably, the filling valve is mounted in a valve housing which is attachable to the body.
- Preferably, the body comprises an aperture having a tube mounted therein, wherein the valve housing is mountable to the tube.
- Preferably, the valve housing comprises an externally threaded hollow section and the
- 25 tube comprises an internally threaded section.
- Preferably, the valve housing comprises a generally flat section which is substantially flush with an external surface of the body when mounted,
- Preferably, the flat section includes a central recess within which the filling valve is mounted.
- 30 Preferably, the valve assembly further includes a closing cap.
- Preferably, the at least one handle is attached to a side wall of the mid-portion.
- Preferably, the first and second mounting means mount the grip in a spaced manner from the body in use.

5 Preferably, the grip comprises a curved rubberised tube.

Preferably, the grip comprises first and second end straps which attach to the respective first and second mounting means.

10 Preferably, each mounting means comprises a first pad attached to a lower surface of a respective end strap, and a second pad positioned over a respective end strap and first pad and attached thereto.

Preferably, the second pad is larger than the first pad and edges of the second pad extending beyond edges of the first pad are attached to the body.

Preferably, the first and second pads are attached to the body via cold glue or other suitable adhesive.

15 In one embodiment, the cavity is formed with multiple chambers which can be separately emptied or filled.

In one embodiment, the handle is rigidly attached to the body.

In one embodiment, the handle is configured as a glove shaped attachment.

20 In one embodiment, the exercise device further comprises at least one additional handle attached to the body.

In one embodiment, two handles are on opposing sides of the body.

In one embodiment, the handle is disposed at an end portion of the body.

In one embodiment, the exercise device further includes a second handle disposed at an opposite end portion of the body.

25 In one embodiment, the exercise device further includes a connection means disposed at an end portion of the body.

Preferably, the connection means comprises a ring.

The present invention also provides an exercise device comprising:

30 a hollow body comprising a flexible wall which defines a cavity therein, wherein the cavity is filled such that the body is in an expanded configuration; and

a handle attached to the body;

wherein the body is made from polyurethane, polyvinyl chloride or chlorosulfonated polyethylene synthetic rubber.

- 5 Preferably, the handle is fixedly attached to the body.
- Preferably, the cavity is filled with a solid and/or a gas and/or a liquid.
- Preferably, the body comprises a tubular mid-portion.
- Preferably, the body comprises substantially hemispherical first and second end portions attached to the mid-portion.
- 10 Preferably, the body is at most 30 cm in length.
- Preferably, the body is at the most 20 cm in width, most preferably between 15 to 18 cm.
- In another embodiment, the body is between 30 cm and 100 cm in length.
- Preferably, the body comprises at least one supplementary weight within the cavity.
- Preferably, the at least one supplementary weight comprises a solid weight.
- 15 Preferably, the at least one supplementary weight is fixedly attached to an internal wall of the cavity.
- Preferably, the at least one supplementary weight is positioned at a centre portion of the body.
- In another embodiment, the at least one supplementary weight is positioned off centre to
- 20 the longitudinal length of the body.
- In another embodiment, the at least one supplementary weight comprises two or more weights either side by side or spaced along the longitudinal length of the body.
- Preferably, the at least one supplementary weight has a round circumference which fits with the inner circumference of the cavity.
- 25 In another embodiment, the at least one supplementary weight is disposed off centre to the central longitudinal axis of the body
- In another embodiment, the at least one supplementary weight extends longitudinally in shape.
- In another embodiment, the two or more weights are spaced relative to the central
- 30 longitudinal axis of the body.
- Preferably, the remainder of the cavity not occupied by the supplementary weight(s) can be fully filled or partially filled with other material.

5 In another embodiment, the cavity is divided into chambers which individually receives the materials as desired.

In another embodiment, the exercise device comprises a first pair and a second pair of handles.

10 Preferably, the handles of the first pair are arranged adjacent the respective first and second end portions.

Preferably, the grips of the first pair are generally parallel to each other and transverse to the central longitudinal axis of the body.

Preferably, the handles of the second pair arranged inwardly of the first pair.

15 Preferably, the grips of the second pair are generally aligned with each other and parallel to the central longitudinal axis of the body.

Preferably, the effective length of the grip between the first and second mounting means is adjustable.

20 Preferably, the grip comprises an elongated strap having a first end portion attached to the first mounting means, looped through a ring in the second mounting means and a second end portion of the strap is adjustably attached to the first end portion.

Alternatively, the grip comprises a first portion attached to the first mounting means and a second portion attached to the second mounting means, wherein the first and second portions are detachably attachable to each other.

Preferably, the position of the second portion relative to the first portion is adjustable

25 Preferably, the respective lengths of the first and second portions are adjustable prior to these portions being attached to each other.

30 In another embodiment, the exercise device comprises at least two handles on each of generally opposing sides thereof, the handles on each respective side being disposed with their grips generally aligned with each other and parallel to a central longitudinal axis of the body.

In another embodiment, the exercise device comprises at least three handles on each of generally opposing sides thereof, the handles on each respective side being disposed with their grips generally aligned with each other and parallel to a central longitudinal axis of the body.

5 Preferably, the handles are fixed length handles, variable length handles or any combination thereof.

Preferably, the exercise device further comprises means for substantially retaining the exercise device in position on the ground or other structure.

10 Preferably, the retaining means comprises at least one device retainer, each device retainer comprising two portions for engaging opposing sides of the exercise device.

Preferably, the two portions are wedges joined at their narrow edge portions to form a generally concave upper portion which receives the exercise device.

Preferably, the retaining means comprises an elevated platform.

15 Preferably, the retaining means comprises spaced elevated platforms having differing heights for orienting the exercise device at an inclined angle.

In another embodiment, the exercise device comprises:

20 a hollow body comprising a flexible wall which defines a cavity therein, wherein the cavity can be substantially emptied to configure the body into a collapsed configuration and the cavity can be substantially filled to configure the body into an expanded configuration; and

at least one handle having a grip and at least one mounting means, wherein the at least one mounting means is fixedly attached to the body.

Other aspects of the invention are also disclosed.

Brief Description of the Drawings

25 Notwithstanding any other forms which may fall within the scope of the present invention, preferred embodiments of the present invention will now be described, by way of examples only, with reference to the accompanying drawings in which:

Fig. 1 is a front view of an exercise device in accordance with a preferred embodiment of the present invention;

30 Fig. 2 is an end perspective view of the exercise device of Figure 1 showing the filling valve;

Fig. 3 shows the filling valve of the exercise device of Figure 1 removed using a valve removal tool;

- 5 Figure 4 shows a bottom view of an attachment pad of the handle for the exercise device of Figure 1;
- Figure 5 shows a first step in the attachment of the handle to the exercise device of Figure 1;
- Figure 6 shows a second step in the attachment of the handle to the exercise device of
- 10 Figure 1;
- Figure 7 shows the exercise device as held by a user in use using the handle; and
- Figure 8 is a front view of an exercise device in accordance with a second preferred embodiment of the present invention;
- Fig. 9 is a side view of the exercise device of Figure 8;
- 15 Fig. 10 is an enlarged view of one end of the exercise device of Figure 8;
- Fig. 11 shows the exercise device of Figures 1 to 7 with a modified handle;
- Fig. 12 shows the exercise device of Figures 8 to 10 with a modified handle;
- Fig. 13 shows another embodiment of the modified handle
- Figure 14 is a first perspective view of an exercise device in accordance with another
- 20 embodiment of the present invention;
- Figure 15 is a second perspective view of the exercise device of Figure 15;
- Figure 16 is a first perspective view of the exercise device of Figure 14 with device floor retainers for use of the exercise device as an exercise bench;
- Figure 17 is a second perspective view of the assembly of Figure 14;
- 25 Figure 18 is a front perspective view of the assembly of Figure 14;
- Figure 19 is a side perspective view of the device floor retainers of Figure 16;
- Figure 20 show the collapsed exercise device of Figure 14 and folded device floor retainers of Figure 19; and
- Figure 21 is an end perspective view of the exercise device of Figure 14.

30 **Description of Embodiments**

It should be noted in the following description that like or the same reference numerals in different embodiments denote the same or similar features.

5 Figures 1 to 7 show an exercise device 10 according to a preferred embodiment of the present invention. The exercise device 10 comprises a hollow body 12 having a handle 20 and a valve assembly 30.

10 The body 12 comprises a tubular mid-portion 14 with substantially hemispherical first and second end portions 15 and 16 which together define an internal cavity 18 within the body 12. The body 12 is made from a flexible fluid impervious wall material. The cavity 18 can be substantially emptied to configure the body 12 into a collapsed substantially flat configuration (substantially shown in Figure 3), and the cavity 18 can be substantially filled to configure the body 12 into a (filled) expanded configuration (as shown in Figures 1, 2 and 7). The body 12 is at most about 30 cm in length and 20 cm in width/diameter
15 when in the expanded configuration. In the preferred embodiment, the body 12 is 26 cm in length and 16 cm in width in the expanded configuration.

 The body 12 is made from polyurethane, polyvinyl chloride (PVC) or chlorosulfonated polyethylene (CSPE) synthetic rubber (CSM) such as that sold under the trade marks HYPALON, TOSOH-CSM and EXTOS.

20 The valve assembly 30 comprises an internally threaded tube 17 and a valve housing 35. The tube 17 is mounted to an aperture 19 formed in the first end portion 15. The valve housing 35 comprises an externally threaded hollow first section 31 and a generally flat second section 32. The second section 32 includes a central recess 33 within which a one way filling valve 36 is mounted. The central recess 33 also includes an internal thread or
25 bayonet mount tabs which are engaged by a closing cap 38 for covering the valve cavity 33 and the protecting the filling valve 36.

 When the valve housing 35 is attached to the tube 17 as shown in Figures 1 and 2, the second section 32 is substantially flush with the external surface of the first end portion 15. The filling valve 36 functions as a one way valve which means air can be pumped into
30 the cavity 18 but does not allow air to escape from the cavity 18 except when desired. A valve adaptor (not shown) is used which attaches to the threads or mount tabs of the central recess 33. The valve adaptor is attached to a hose nozzle of an air pump (not shown), which can be a manual or an electric air pump. Thus, the cavity 18 can be filled with air into the expanded configuration of the body 12.

35 Additionally or alternatively, the cavity 18 can be partially or fully filled with liquid such as water. In this case, a liquid valve adaptor can be used which attaches to the cavity 33.

5 Such an adaptor allows liquid to be inserted into the cavity 18 as desired via the valve 36 without having to remove the valve housing 35. Alternatively, the valve housing 35 can be removed from the tube 17 by unthreading using a valve wrench 40. Water can then be poured into the cavity 18 as desired, until it is full or only partially full. The remaining space in the cavity 18 is then filled with air by reattaching the valve housing 35 to the
10 body 12. Further alternatively, the cavity 18 can be partially or fully filled with a solid product such as sand if a heavy weight is desired.

The handle 20 is fixedly attached to a side wall of the mid-portion 14. The handle 20 comprises a grip 21 and first and second mounting means 25a and 25b attached to ends thereof. The grip 21 comprises a curved rubberised tube dimensioned for gripping with a
15 user's hand and fingers and adapted to avoid slippage. The grip 21 comprises end straps 22a and 22b which attach to the respective mounting means 25a and 25b.

As shown in Figures 4 to 6, each mounting means 25 comprises a first pad 26 and a second larger pad 27. The first pad 26 is attached to a lower surface of a respective end strap 22, and a lower surface of the first pad 26 is attached to the mid-portion 14. The
20 second (larger) pad 27 is positioned over a respective end strap 22 and first pad 26, and attached thereto. Edges of the second pad 27 extending beyond the edges of the first pad 26 are attached to the mid-portion 14. The first and second pads 26 and 27 are attached to the mid-portion 14 and to each other via suitable means, such as cold glue or other suitable adhesive. This ensures that the mounting means 25 are fixedly attached to
25 the body 12 to securely attach the grip 21 thereto.

Use of the exercise device 10 will now be described. In the empty unassembled configuration, the exercise device 10 is soft, light, small in size and easily transported. To use, the exercise device 10 is filled as desired with only air, only water, sand or any mixture thereof, using the filling attachment nozzles which can be done in about one
30 minute.

The exercise device 10 can then be used in conjunction with any exercise, such as lifting, walking, jogging, lunges, jumping, skipping, running, or it can be used in exercises similar to those used with medicine balls and kettle bells. The exercise device 10 can also be used in conjunction with many other exercise items like Swiss Balls. Because of the
35 soft wall structure of the exercise device 10, it can be swung around with possible injury from impacts with the body being reduced compared to steel weights and kettlebells.

5 The assembled exercise device 10 is user friendly as it is soft and comfortable to use, and minimises potential injury and safety issues. In a partially liquid filled state (10% to 80% water filled and the rest air filled), the water will slosh within the cavity 18 and this unsteadiness requires the user to stabilise the exercise device 10 using his core and stabilising muscles, thus providing an advantage not provided by other exercise devices.

10 The exercise device 10 allows a user to emulate sport functional exercises such as cricket bowling, tennis swing or golf swing. The exercise device 10 can also be used in the water for aqua exercises for rehabilitation or elderly exercises. When used in a stable format (full of water or solid material such as sand), the exercise device 10 is then used as a true weighted training device.

15 The exercise device 10 thus provides a number of advantages. Typically, only specialised water equipment can be used for training in the water. However, the exercise device 10 can also be used for exercising in the water. The exercise device 10 is user friendly and can be used in a huge number of different exercises. The exercise device 10 is light and packs flat when empty which makes it handy to take and use on holidays, which is
20 generally not possible with conventional weights. The exercise device 10 can be made into any shape, colour and can include a pattern or advertising thereon. It can be used in aqua training aid for the elderly and injury rehabilitation. The exercise device 10 can be used in a stable or unstable form, which provides a distinct advantage over conventional weights. It can also be used for sports specific exercises and movements. The exercise
25 device 10 is very strong & durable and can be thrown to the ground. This is handy for example in Boot Camp style group classes where participants can perform lifting exercises with the exercise device 10 and drop it to the ground before doing a sprint. The risk of injury to the participant and damage to the ground is minimised compared to conventional weights. Resistance, Kettlebell, compound, isolation, functional,
30 cardiovascular and power training exercises are thus all possible with the exercise device 10.

The exercise device folds substantially flat and is very light when empty. This allows a personal trainer for example to easily transport ten or more of such exercise device 10 in a bag in the collapsed state, and then assemble the exercise device 10 prior to a group class
35 for use by participants using an air pump and a water tap on site. The exercise device 10 can then be collapsed again after a group class. In contrast, such number of conventional

5 steel weights generally cannot be conveniently carried. Another advantage of the present exercise device is that the weight thereof can be varied as desired.

It is apparent that modifications can be made with the exercise device 10 described. For example, the cavity 18 can be formed with multiple chambers which may be separately inflated or filled with different materials. For example, one half of the exercise device 10
10 can be filled with water and the other half filled with air. This provides different exercise dynamics to the exercise device 10. In other possibilities, the chambers can extend the length of the exercise device 10. Also, the chambers for liquids can be formed in a helical manner within the cavity 18, which can add to the unstableness of the direction of liquid sloshing within the cavity 18.

15 In relation to the handle, the handle can be made to have a rigid attachment to the exercise device body, rather than the flexible end strap attachment shown in the exercise device 10. Also, the grip can be configured into a glove shaped attachment such that the user grips the body 12. The exercise device body can also be provided with more than one handle, for example two handles on opposing sides. The handles can alternatively be
20 provided at one end portion or both end portions.

A ring or other connection means can also be attached to one or both end portions. The ring can be used to attach two or more exercise devices to each other via a connecting strap. Also, when filled with water or solid material such as sand, a user can wear a harness which is attached to the exercise device such that the user would then drag the
25 exercise device whilst doing walking, jogging, sprints, etc.

The cover cap 38 can also include a soft cover to avoid any injury to users.

Figures 8 to 10 show an exercise device 10a according to a second preferred embodiment of the present invention. The exercise device 10a is similar to the exercise device 10 above and also comprises a hollow body 12a and a valve assembly 30a. The body 12a
30 also comprises a tubular mid-portion 14a with substantially hemispherical first and second end portions 15a and 16a. The body 12a in this embodiment is still about 16 cm in width/diameter when in the expanded configuration.

The main differences between the exercise device 10a and the exercise device 10 above are that the exercise device 10a is longer at about 75 cm in length, includes a solid weight
35 within its cavity 18 and includes four handles 20 as further described below.

5 The cavity 18 comprises at least one supplementary weight (not shown) therein, such as a four or five kilo lead or steel weight fixedly attached to an internal wall of the cavity 18. The supplementary weight(s) can be positioned anywhere along the longitudinal length of the body 12a but is preferably positioned at a centre portion thereof. It is however possible to have the supplementary weight(s) disposed off centre to the longitudinal length of the body 12a to provide different exercise dynamics. It is also possible to have two or more of such weights either side by side or spaced along the longitudinal length of the body 12a.

15 The supplementary weight(s) can also be of any desired shape and can be positioned anywhere along the inner circumference of the cavity 18. In the preferred embodiment, the supplementary weight has a round circumference which fits with the inner circumference of the cavity 18. It is however possible to have the supplementary weight(s) disposed off centre to the central longitudinal axis 24a of the body 12a to provide different exercise dynamics. The supplementary weight(s) can also be longitudinally extended in shape and two or more of such weights can be spaced relative to the central longitudinal axis 24a of the body 12a.

20 The remainder of the cavity 18 not occupied by the supplementary weight(s) can be fully filled or partially filled with other material, such as sand, air, water, or any combination thereof. The cavity 18 can be divided into chambers which individually receives the materials as desired.

25 The exercise device 10 comprises four handles, a first pair 23a being handles 20a and 20b, and a second pair being handles 20c and 20d. The handles 20a and 20b of the first pair 23a are arranged adjacent the respective first and second end portions 15a and 16a, with their grips 21a and 21b generally parallel to each other and transverse to the central longitudinal axis 24a of the body 12a. The first pair 23a of handles thus allows a user to have a wide grip on the exercise device 10a. The handles 20c and 20d of the second pair 23b are arranged inwardly of the first pair 23a with their grips 21c and 21d generally aligned with each other and parallel to the central longitudinal axis 24a of the body 12a. The second pair 23b of handles thus allows a user to have a narrower straight grip on the exercise device 10a.

35 The exercise device 10a thus provides a vast array of exercises with a heavier weight as well as two handed dynamic exercises.

Fig. 11 shows the exercise device of Figures 1 to 7 with a modified handle 20e. The handle 20e is fixedly attached to a side wall of the mid-portion 14. In this embodiment, the effective length of the grip 21 between the first and second mounting means 25a and 25b is adjustable. The handle 20e comprises the first and second mounting means 25a and 25b and the grip 21 comprises an elongated strap 21. The second mounting means 25b includes a ring 29 attached thereto. The strap 21 has a first end portion 28a attached to the mounting means 25a, the strap 21 is then looped through the ring 29 and a second end portion of the strap 28b is adjustably attached back to the first end portion 28a via hook and loop means (VELCROTM), buttons or other suitable attachment which allows the effective length of the strap 21 between the first and second mounting means 25a and 25b to be adjustable.

Fig. 12 shows the exercise device of Figures 8 to 10 with two modified handles 20e. The handles 20e are the same position as the handles 21c and 21d described above.

The adjustable handle 20e allows a user to use such handles 20e as foot straps, in that the user can insert their respective foot between the mid-portion 14 and the handles 20e, tighten the grip 21 onto their foot, and perform exercises as desired.

Fig. 13 shows another embodiment of the modified handle 20f which allows for the effective length of the grip 21 between the first and second mounting means 25a and 25b to be adjustable. The grip 21 in this embodiment comprises a first portion 21a attached to the first mounting means 25a and a second portion 21b attached to the second mounting means 25b. The first portion 21a has a lower section 61 and an upper section 62. In use, the second portion 21b is sandwiched between the lower and upper sections 61 and 62 and attached to each other via hook and loop means (VELCROTM). By adjusting the position of the second portion 21b relative to the first portion 21a, the effective length of the strap 21 between the first and second mounting means 25a and 25b is adjustable

In other embodiments, the first and second portions 21a and 21b can be connectable to each other via suitable buckles such as side release buckles used in bags and camping equipment. The respective length of the first and second portions 21a and 21b will then be made adjustable prior to these portions being connected to each other via the buckle, which thus allows the effective length of the strap 21 to be adjustable.

In other possible modifications, the body can be of any desired dimensions and can have a diameter of 25 cm to 32 cm and a length 1 m to 1.2 m. The number of handles 20 may

5 vary from 2 to 8, or adjustable handles 20e or 20f which can vary in number from 2 to 6. Such devices allow for many different exercises.

Figures 14 and 15 show an exercise device 10b in accordance with another embodiment of the present invention. The exercise device 10b is similar to the exercise device 10a above and also comprises a hollow body 12b and a valve assembly 30. The body 12a also
10 comprises a tubular mid-portion 14a with substantially hemispherical first and second end portions 15a and 16a.

The body 12b in this embodiment has a maximum width/diameter of 30 cm when in the expanded configuration and a maximum length of 120 cm. The cavity 18 can also comprises at least one supplementary weight (not shown) therein if desired,

15 The exercise device 10b comprises six handles, being handles 20a to 20c on one side and handles 20d to 20f on an opposite side thereof. The handles 20 on each respective side are disposed with their grips 21 generally aligned with each other and parallel to the central longitudinal axis 24a of the body 12b.

The handles 20a and 20d, 20c and 20f are arranged adjacent the respective first and
20 second end portions 15a and 16a. The handles 20b and 20e are arranged at the mid-portion 14a. .

The handles 20 can have a fixed length or be variable length handles and the device 10b can have any desired combination of such handles. The exercise device 10b, due to its size and handle configuration again provides different exercises to the other exercise
25 devices above.

Figures 16 to 18 show the exercise device 10b with device floor retainers 80 for use of the exercise device 10b as an exercise bench.

Referring to Figures 19 and 20, each device floor retainer 80 comprises two wedge portions 82 joined at their narrow edge portions 84. Each floor retainer 80 thus forms a
30 generally concave upper portion 86 and a flat lower portion 88.

Referring back to Figures 16 to 18, the floor retainers 80 are positioned in a spaced manner with the lower portions 88 engaging the floor or table 100. The exercise device 10b is then disposed over the concave upper portions 86 such that the exercise device 10b is retained laterally by the wedge portions 82.

5 The exercise device 10b can then be used as a resistance training bench and core balance device. A user can lay on the body 12 between the handles 20. Also, by using the different handles 20, the exercise device 10b can be used as an unstable resistance training device.

10 Figure 20 shows the collapsed exercise device of Figure 14 and folded device floor retainers of Figure 19. This allows the device to be transported or stored easily unlike conventional exercise benches.

In another embodiment, the retainers 80 can be formed with elevated platforms for raising the exercise device 10b off the ground. The elevated platforms can also have differing heights for orienting the exercise device 10b at an inclined angle.

15 Further, with air out of the exercise device 10b and having water or sand within its cavity 18, the exercise device 10b can be used like a Sand Bag. Figure 21 is an end perspective view of the exercise device 10b showing an attachment and/or ring 90 for attaching the exercise device 10b to an exercise harness.

20 In another possible embodiment of the exercise device 10, the handle can only have one mounting means with the other end being a free end.

The present invention also provides a set of exercise devices comprising at least one of each of the exercise devices 10 and 10a, and preferably with the exercise device 10b, and preferably with the floor retainers 80.

Interpretation

Embodiments:

25 Reference throughout this specification to “one embodiment” or “an embodiment” means that a particular feature, structure or characteristic described in connection with the embodiment is included in at least one embodiment of the present invention. Thus, appearances of the phrases “in one embodiment” or “in an embodiment” in various places
30 throughout this specification are not necessarily all referring to the same embodiment, but may. Furthermore, the particular features, structures or characteristics may be combined in any suitable manner, as would be apparent to one of ordinary skill in the art from this disclosure, in one or more embodiments.

35 Similarly it should be appreciated that in the above description of example embodiments of the invention, various features of the invention are sometimes grouped together in a

5 single embodiment, figure, or description thereof for the purpose of streamlining the disclosure and aiding in the understanding of one or more of the various inventive aspects. This method of disclosure, however, is not to be interpreted as reflecting an intention that the claimed invention requires more features than are expressly recited in each claim. Rather, as the following claims reflect, inventive aspects lie in less than all
10 features of a single foregoing disclosed embodiment. Thus, the claims following the Detailed Description of Specific Embodiments are hereby expressly incorporated into this Detailed Description of Specific Embodiments, with each claim standing on its own as a separate embodiment of this invention.

15 Furthermore, while some embodiments described herein include some but not other features included in other embodiments, combinations of features of different embodiments are meant to be within the scope of the invention, and form different embodiments, as would be understood by those in the art. For example, in the following claims, any of the claimed embodiments can be used in any combination.

Different Instances of Objects

20 As used herein, unless otherwise specified the use of the ordinal adjectives "first", "second", "third", etc., to describe a common object, merely indicate that different instances of like objects are being referred to, and are not intended to imply that the objects so described must be in a given sequence, either temporally, spatially, in ranking, or in any other manner.

Specific Details

25 In the description provided herein, numerous specific details are set forth. However, it is understood that embodiments of the invention may be practiced without these specific details. In other instances, well-known methods, structures and techniques have not been shown in detail in order not to obscure an understanding of this description.

Terminology

30 In describing the preferred embodiment of the invention illustrated in the drawings, specific terminology will be resorted to for the sake of clarity. However, the invention is not intended to be limited to the specific terms so selected, and it is to be understood that each specific term includes all technical equivalents which operate in a similar manner to
35 accomplish a similar technical purpose. Terms such as "forward", "rearward", "radially",

5 "peripherally", "upwardly", "downwardly", and the like are used as words of convenience to provide reference points and are not to be construed as limiting terms.

Comprising and Including

10 In the claims which follow and in the preceding description of the invention, except where the context requires otherwise due to express language or necessary implication, the word "comprise" or variations such as "comprises" or "comprising" are used in an inclusive sense, i.e. to specify the presence of the stated features but not to preclude the presence or addition of further features in various embodiments of the invention.

15 Any one of the terms: including or which includes or that includes as used herein is also an open term that also means including at least the elements/features that follow the term, but not excluding others. Thus, including is synonymous with and means comprising.

Scope of Invention

20 Thus, while there has been described what are believed to be the preferred embodiments of the invention, those skilled in the art will recognize that other and further modifications may be made thereto without departing from the spirit of the invention, and it is intended to claim all such changes and modifications as fall within the scope of the invention. For example, any formulas given above are merely representative of procedures that may be used. Functionality may be added or deleted from the block diagrams and operations may be interchanged among functional blocks. Steps may be added or deleted to methods described within the scope of the present invention.

25 Although the invention has been described with reference to specific examples, it will be appreciated by those skilled in the art that the invention may be embodied in many other forms.

Industrial Applicability

30 It is apparent from the above, that the arrangements described are applicable to the exercise and fitness industries.

5 Claims

The claims defining the invention are as follows:

1. An exercise device comprising:

a hollow body comprising a flexible wall which defines a cavity therein, wherein the cavity can be substantially emptied to configure the body into a collapsed configuration and
10 the cavity can be substantially filled to configure the body into an expanded configuration;
and

at least one handle having first and second mounting means and a grip therebetween,
wherein the first and second mounting means are fixedly attached to the body.

2. The exercise device of claim 1 wherein the at least one handle comprises at least two
15 handles fixedly attached to spaced portions of the body.

3. The exercise device of claim 1 wherein the body is substantially flat in the collapsed configuration.

4. The exercise device of claim 1 further comprising a valve assembly mounted in the body for emptying or filling the cavity.

20 5. The exercise device of claim 1 wherein the cavity can be filled with a solid and/or a gas and/or a liquid.

6. The exercise device of claim 1 wherein the body comprises a tubular mid-portion.

7. The exercise device of claim 6 wherein the body comprises substantially hemispherical first and second end portions attached to the mid-portion.

25 8. The exercise device of claim 1 wherein the body is at most 30 cm in length when in the expanded configuration

9. The exercise device of claim 1 wherein the body is at most 20 cm in width when in the expanded configuration.

30 10. The exercise device of claim 1 wherein the body is made from polyurethane, polyvinyl chloride or chlorosulfonated polyethylene synthetic rubber.

11. The exercise device of claim 4 wherein the valve assembly comprises a one way filling valve.

5 12. The exercise device of claim 11 wherein the filling valve is adapted such that both air and liquid can be inserted into the cavity via the filling valve.

13. The exercise device of claim 11 wherein the filling valve is mounted in a valve housing which is attachable to the body.

10 14. The exercise device of claim 13 wherein the body comprises an aperture having a tube mounted therein, wherein the valve housing is mountable to the tube.

15. The exercise device of claim 14 wherein the valve housing comprises an externally threaded hollow section and the tube comprises an internally threaded section.

16. The exercise device of claim 13 wherein the valve housing comprises a generally flat section which is substantially flush with an external surface of the body when mounted,

15 17. The exercise device of claim 16 wherein the flat section includes a central recess within which the filling valve is mounted.

18. The exercise device of claim 4 wherein the valve assembly further includes a closing cap.

20 19. The exercise device of claim 6 wherein the at least one handle is attached to a side wall of the mid-portion.

20. The exercise device of claim 1 wherein the first and second mounting means mount the grip in a spaced manner from the body in use.

21. The exercise device of claim 1 wherein the grip comprises a curved rubberised tube.

25 22. The exercise device of claim 1 wherein the grip comprises first and second end straps which attach to the respective first and second mounting means.

23. The exercise device of claim 22 wherein each mounting means comprises a first pad attached to a lower surface of a respective end strap, and a second pad positioned over a respective end strap and first pad and attached thereto.

30 24. The exercise device of claim 23 wherein the second pad is larger than the first pad and edges of the second pad extending beyond edges of the first pad are attached to the body.

25. The exercise device of claim 23 wherein the first and second pads are attached to the body via cold glue or other suitable adhesive.

- 5 26. The exercise device of claim 1 wherein the cavity is formed with multiple chambers which can be separately emptied or filled.
27. The exercise device of claim 1 wherein the handle is rigidly attached to the body.
28. The exercise device of claim 1 wherein the handle is configured as a glove shaped attachment.
- 10 29. The exercise device of claim 1 further comprising at least one additional handle attached to the body.
30. The exercise device of claim 29 wherein two handles are on opposing sides of the body.
31. The exercise device of claim 1 wherein the handle is disposed at an end portion of the
15 body.
32. The exercise device of claim 31 further including a second handle disposed at an opposite end portion of the body.
33. The exercise device of claim 31 further including a connection means disposed at an end portion of the body.
- 20 34. The exercise device of claim 1 wherein the connection means comprises a ring.
35. An exercise device comprising:
- a hollow body comprising a flexible wall which defines a cavity therein, wherein the cavity is filled such that the body is in an expanded configuration; and
- a handle attached to the body;
- 25 wherein the body is made from polyurethane, polyvinyl chloride or chlorosulfonated polyethylene synthetic rubber.
36. The exercise device of claim 35 wherein the handle is fixedly attached to the body.
37. The exercise device of claim 35 wherein the cavity is filled with a solid and/or a gas and/or a liquid.
- 30 38. The exercise device of claim 35 wherein the body comprises a tubular mid-portion.
39. The exercise device of claim 38 wherein the body comprises substantially hemispherical first and second end portions attached to the mid-portion.

- 5 40. The exercise device of claim 35 wherein the body is at most 30 cm in length.
41. The exercise device of claim 35 wherein the body is at the most 20 cm in width.
42. The exercise device of claim 1 wherein the body between 30 cm and 100 cm in length.
43. The exercise device of claim 1 wherein the body comprises at least one
10 supplementary weight within the cavity.
44. The exercise device of claim 43 wherein the at least one supplementary weight comprises a solid weight.
45. The exercise device of claim 44 wherein the at least one supplementary weight is fixedly attached to an internal wall of the cavity.
- 15 46. The exercise device of claim 44 wherein the at least one supplementary weight is positioned at a centre portion of the body.
47. The exercise device of claim 44 wherein the at least one supplementary weight is positioned off centre to the longitudinal length of the body.
48. The exercise device of claim 44 wherein the at least one supplementary weight
20 comprises two or more weights either side by side or spaced along the longitudinal length of the body.
49. The exercise device of claim 44 wherein the at least one supplementary weight has a round circumference which fits with the inner circumference of the cavity.
50. The exercise device of claim 44 wherein the at least one supplementary weight is
25 disposed off centre to the central longitudinal axis of the body
51. The exercise device of claim 44 wherein the at least one supplementary weight extends longitudinally in shape.
52. The exercise device of claim 51 wherein the two or more weights are spaced relative to the central longitudinal axis of the body.
- 30 53. The exercise device of claim 44 wherein the remainder of the cavity not occupied by the supplementary weight(s) can be fully filled or partially filled with other material.
54. The exercise device of claim 53 wherein the cavity is divided into chambers which individually receives the materials as desired.

5 55. The exercise device of claim 1 comprising a first pair and a second pair of handles.

56. The exercise device of claim 55 wherein the handles of the first pair are arranged adjacent the respective first and second end portions.

57. The exercise device of claim 55 wherein the grips of the first pair are generally parallel to each other and transverse to the central longitudinal axis of the body.

10 58. The exercise device of claim 55 wherein the handles of the second pair arranged inwardly of the first pair.

59. The exercise device of claim 55 wherein the grips of the second pair are generally aligned with each other and parallel to the central longitudinal axis of the body.

15 60. The exercise device of claim 1 wherein the effective length of the grip between the first and second mounting means is adjustable.

61. The exercise device of claim 60 wherein the grip comprises an elongated strap having a first end portion attached to the first mounting means, looped through a ring in the second mounting means and a second end portion of the strap is adjustably attached to the first end portion.

20 62. The exercise device of claim 60 wherein the grip comprises a first portion attached to the first mounting means and a second portion attached to the second mounting means, wherein the first and second portions are detachably attachable to each other.

63. The exercise device of claim 62 wherein the position of the second portion relative to the first portion is adjustable

25 64. The exercise device of claim 62 wherein the respective lengths of the first and second portions are adjustable prior to these portions being attached to each other.

65. The exercise device of claim 1 comprising at least two handles on each of generally opposing sides thereof, the handles on each respective side being disposed with their grips generally aligned with each other and parallel to a central longitudinal axis of the body.

30 66. The exercise device of claim 1 comprising at least three handles on each of generally opposing sides thereof, the handles on each respective side being disposed with their grips generally aligned with each other and parallel to a central longitudinal axis of the body.

67. The exercise device of claim 65 or 66 wherein the handles are fixed length handles, variable length handles or any combination thereof.

5 68. The exercise device of claim 65 or 66 further comprising means for substantially retaining the exercise device in position on the ground or other structure.

69. The exercise device of claim 68 wherein the retaining means comprises at least one device retainer, each device retainer comprising two portions for engaging opposing sides of the exercise device.

10 70. The exercise device of claim 69 wherein the two portions are wedges joined at their narrow edge portions to form a generally concave upper portion which receives the exercise device.

71. The exercise device of claim 68 wherein the retaining means comprises an elevated platform.

15 72. The exercise device of claim 68 wherein the retaining means comprises spaced elevated platforms having differing heights for orienting the exercise device at an inclined angle.

73. An exercise device comprising:

20 a hollow body comprising a flexible wall which defines a cavity therein, wherein the cavity can be substantially emptied to configure the body into a collapsed configuration and the cavity can be substantially filled to configure the body into an expanded configuration; and
at least one handle having a grip and at least one mounting means, wherein the at least one mounting means is fixedly attached to the body.

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FIG. 1

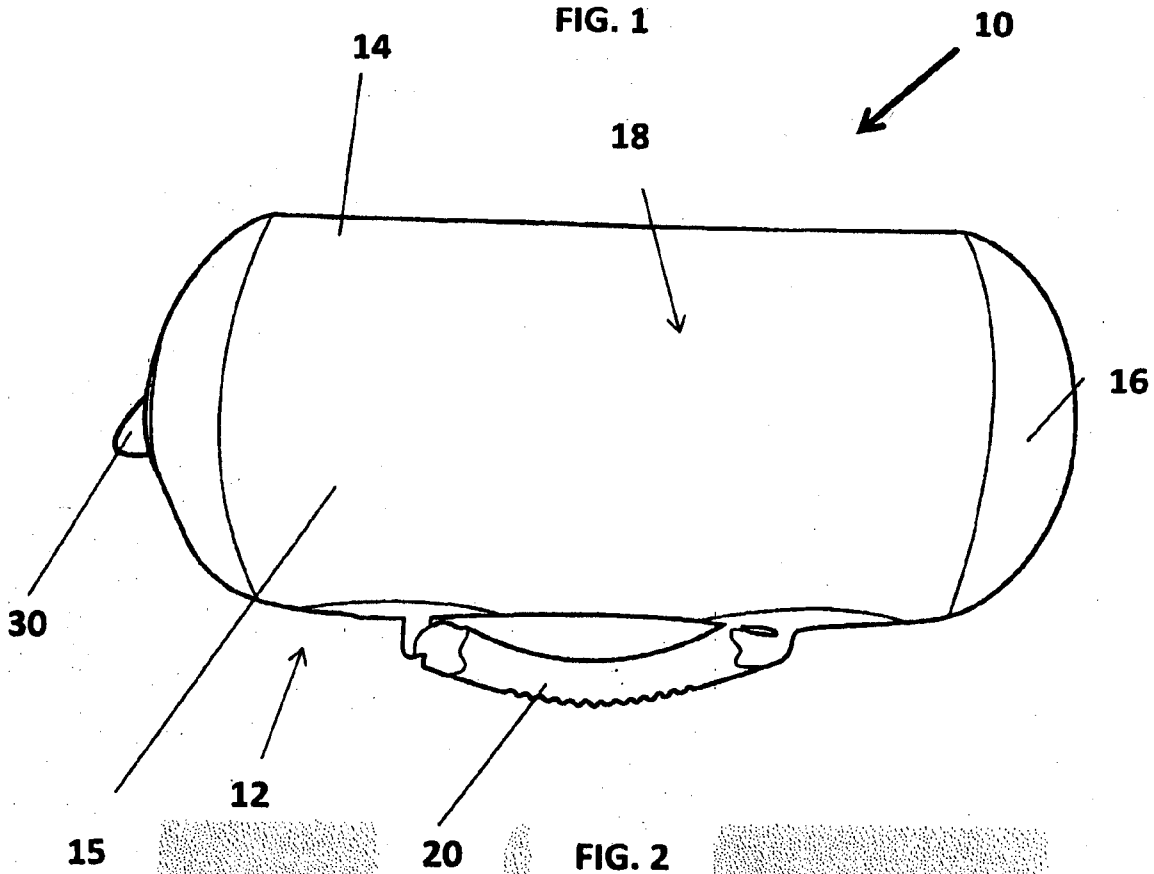
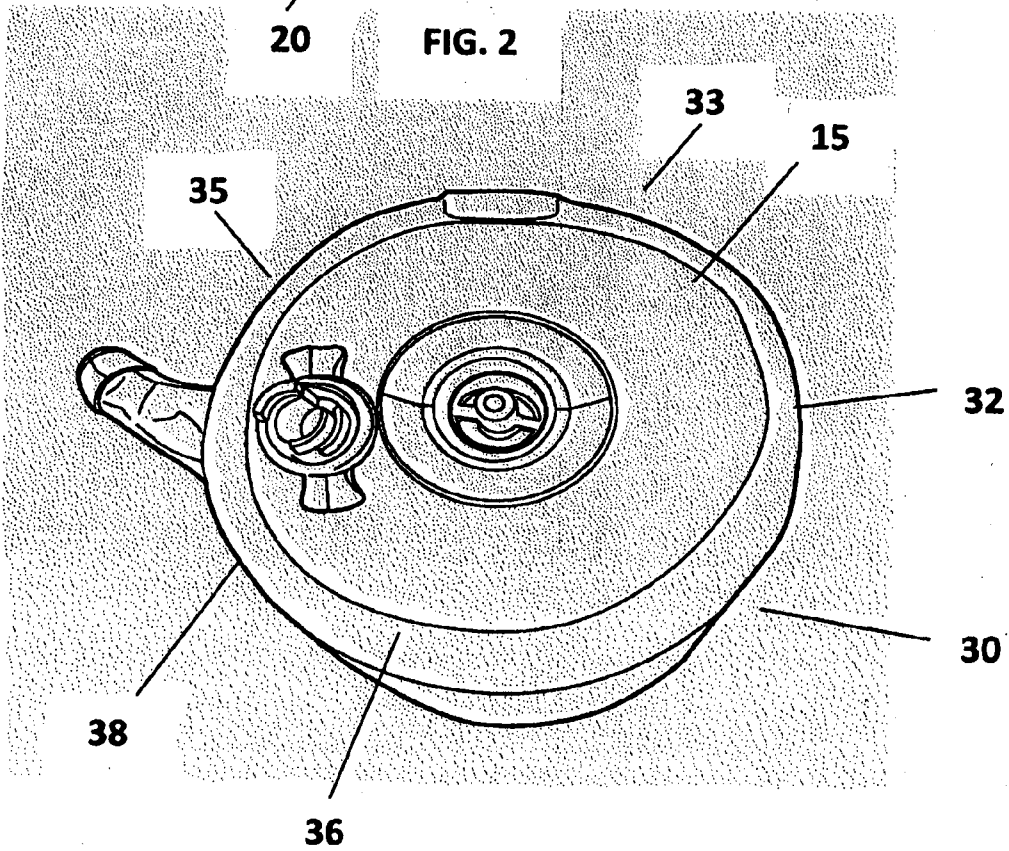
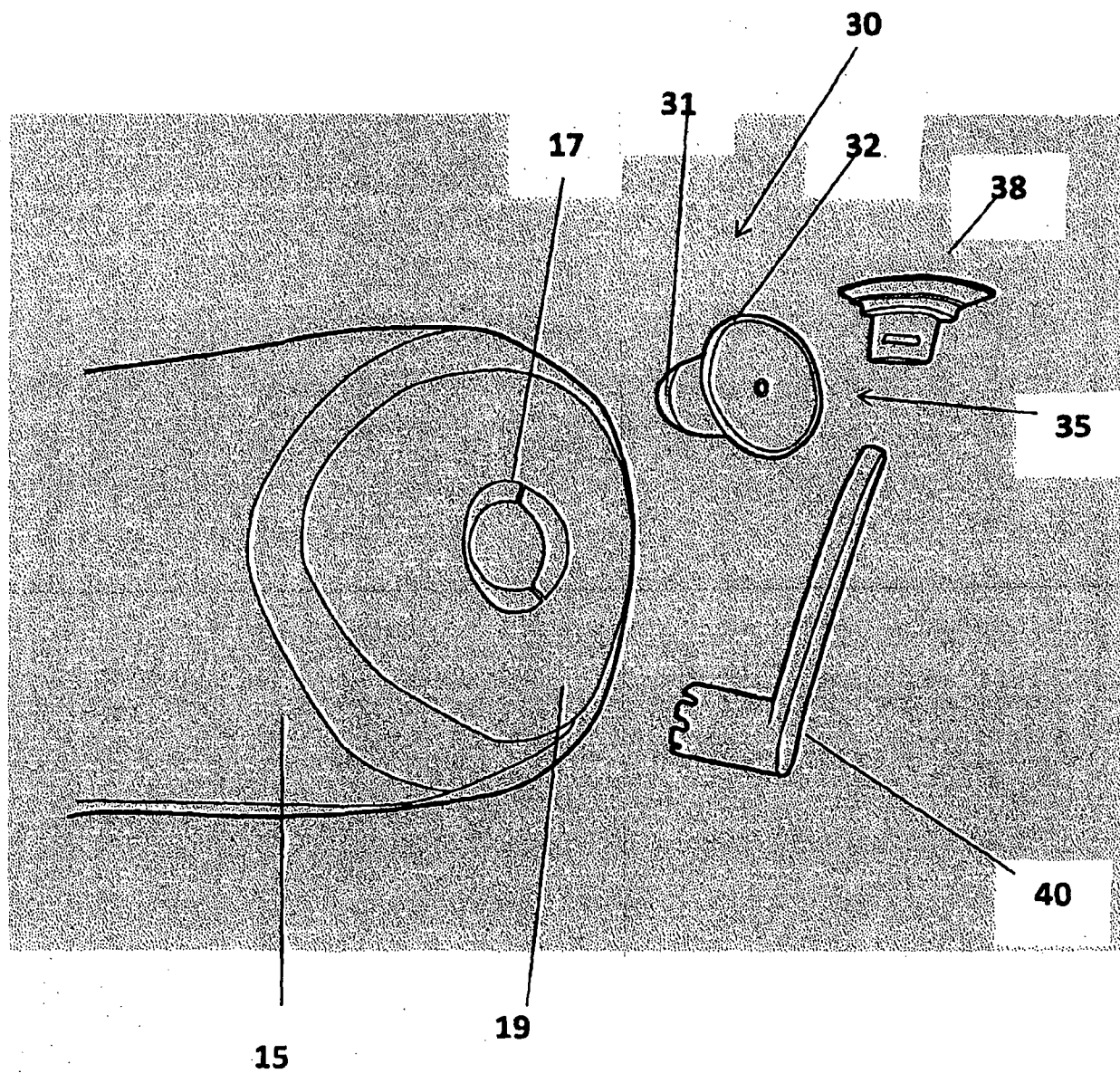


FIG. 2



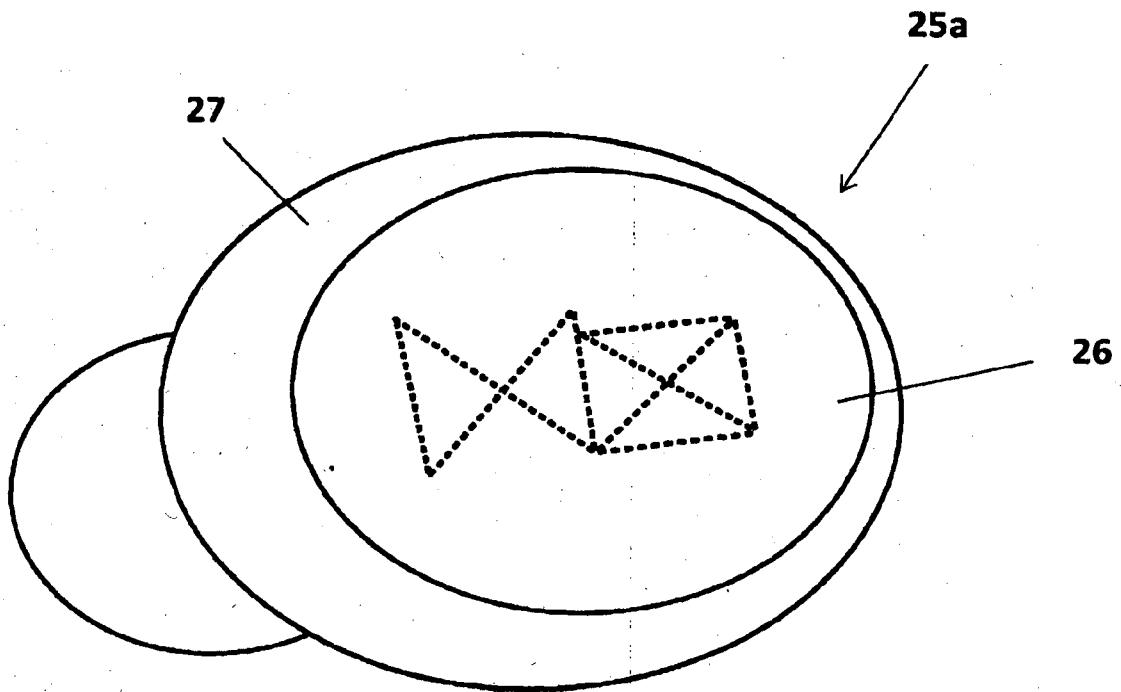
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FIG. 3



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FIG. 4



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FIG. 5

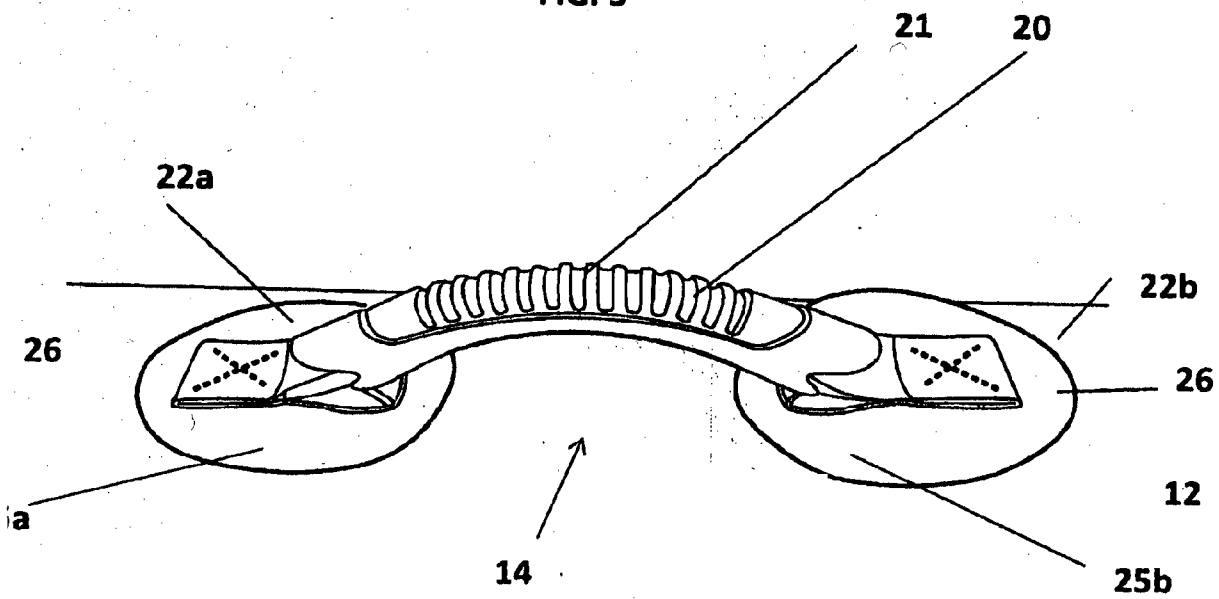
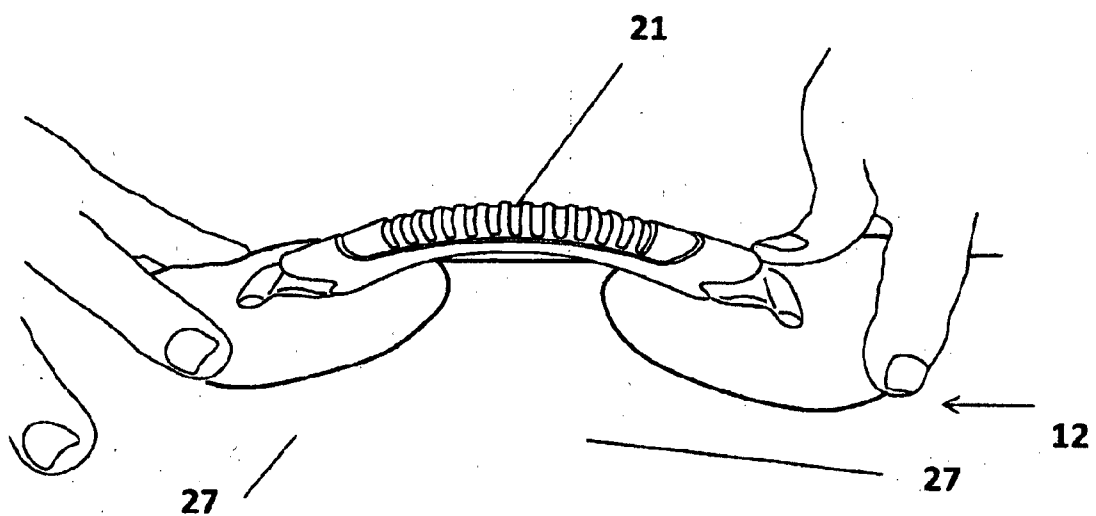
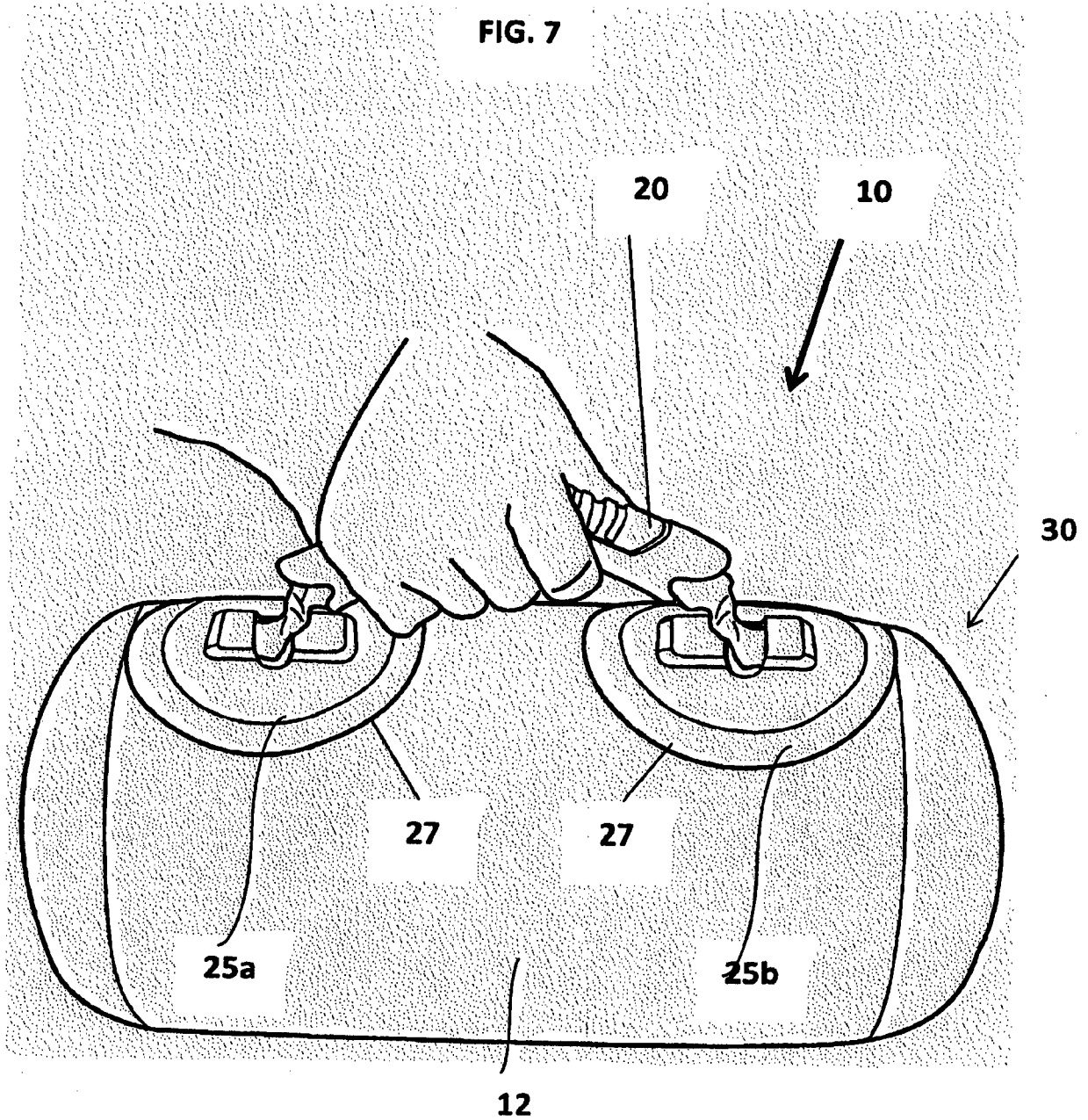


FIG. 6



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FIG. 7



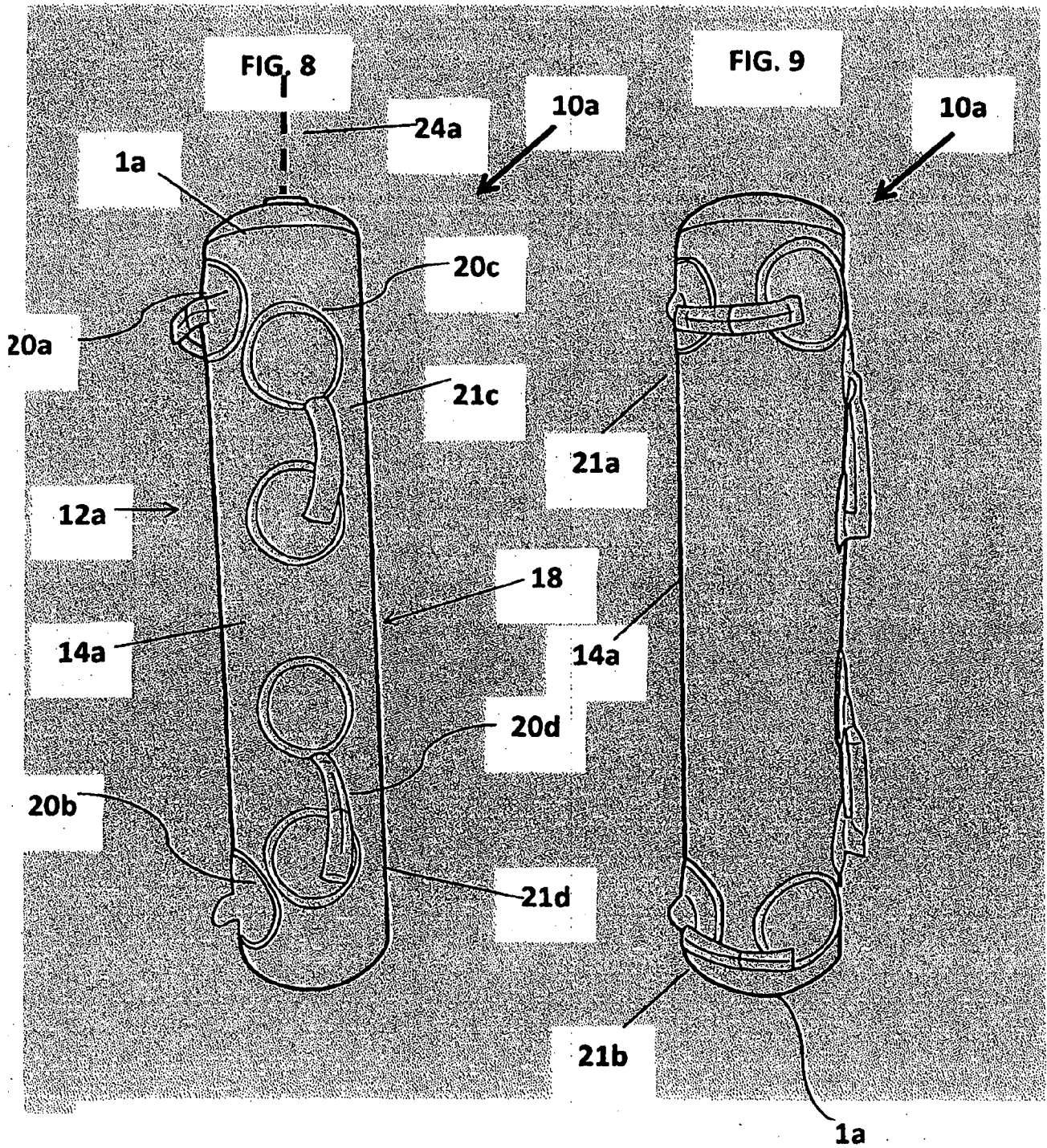
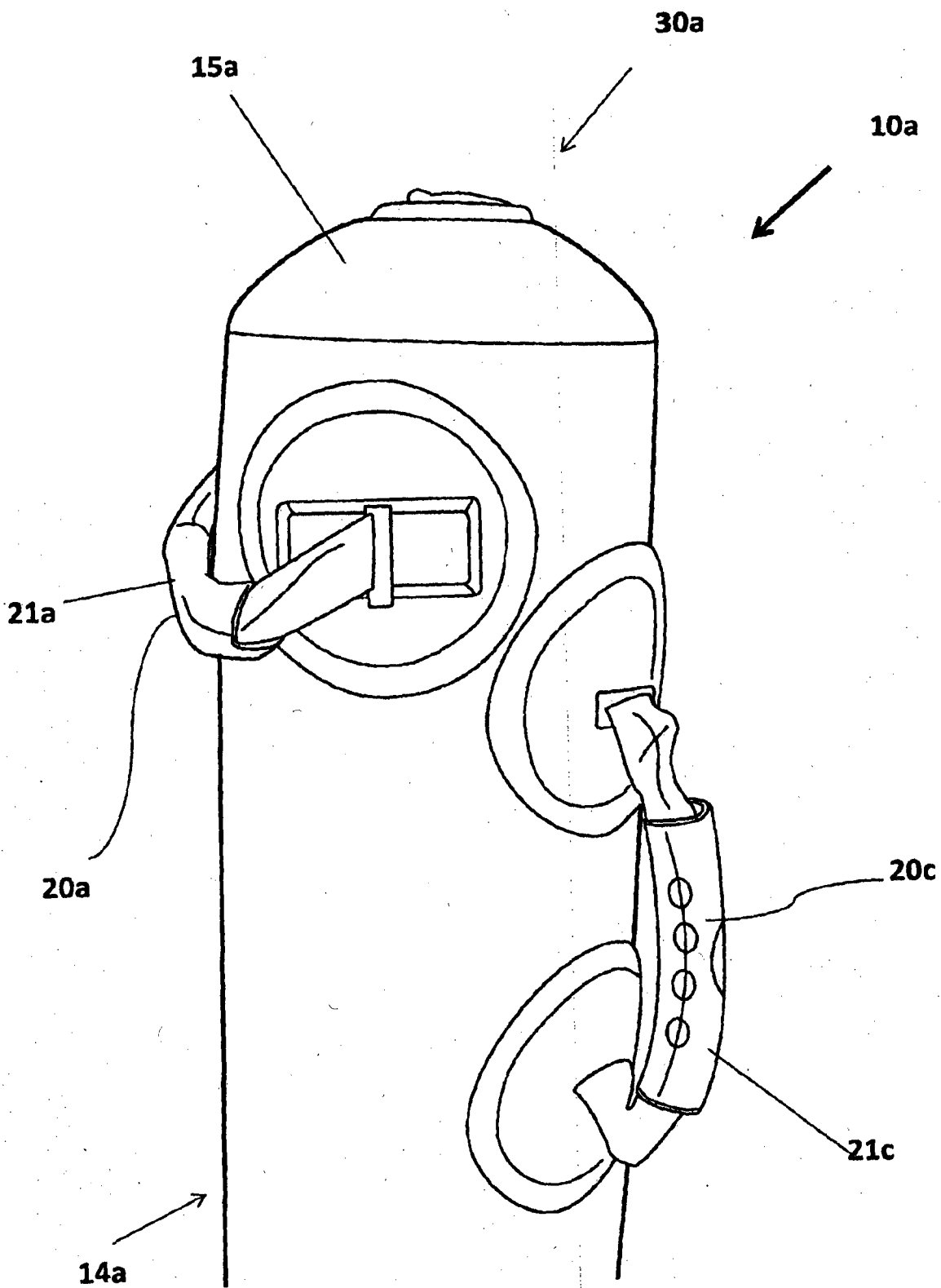


FIG. 10



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FIG. 11

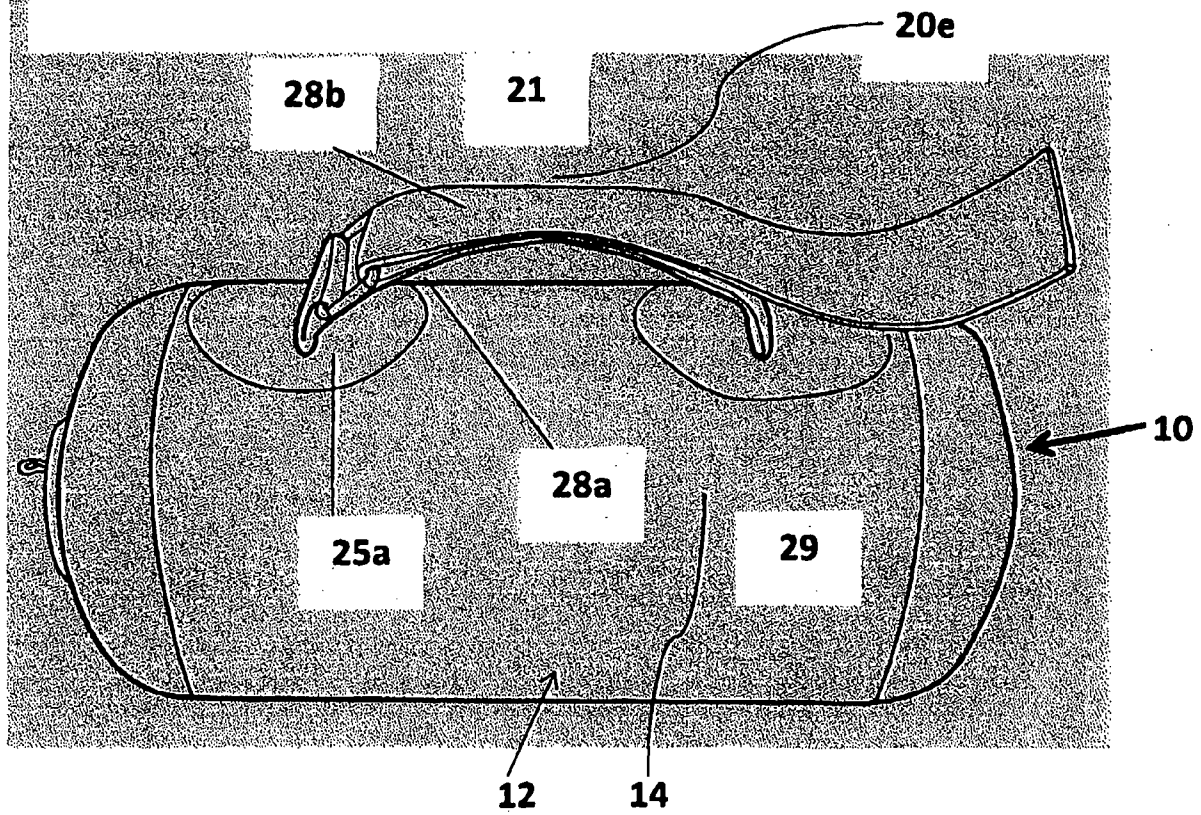
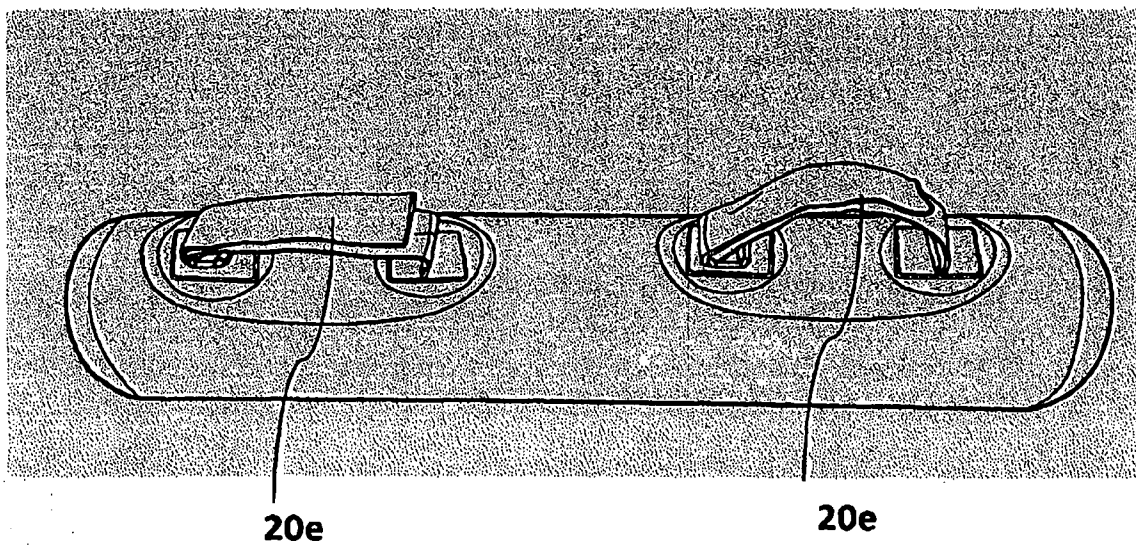
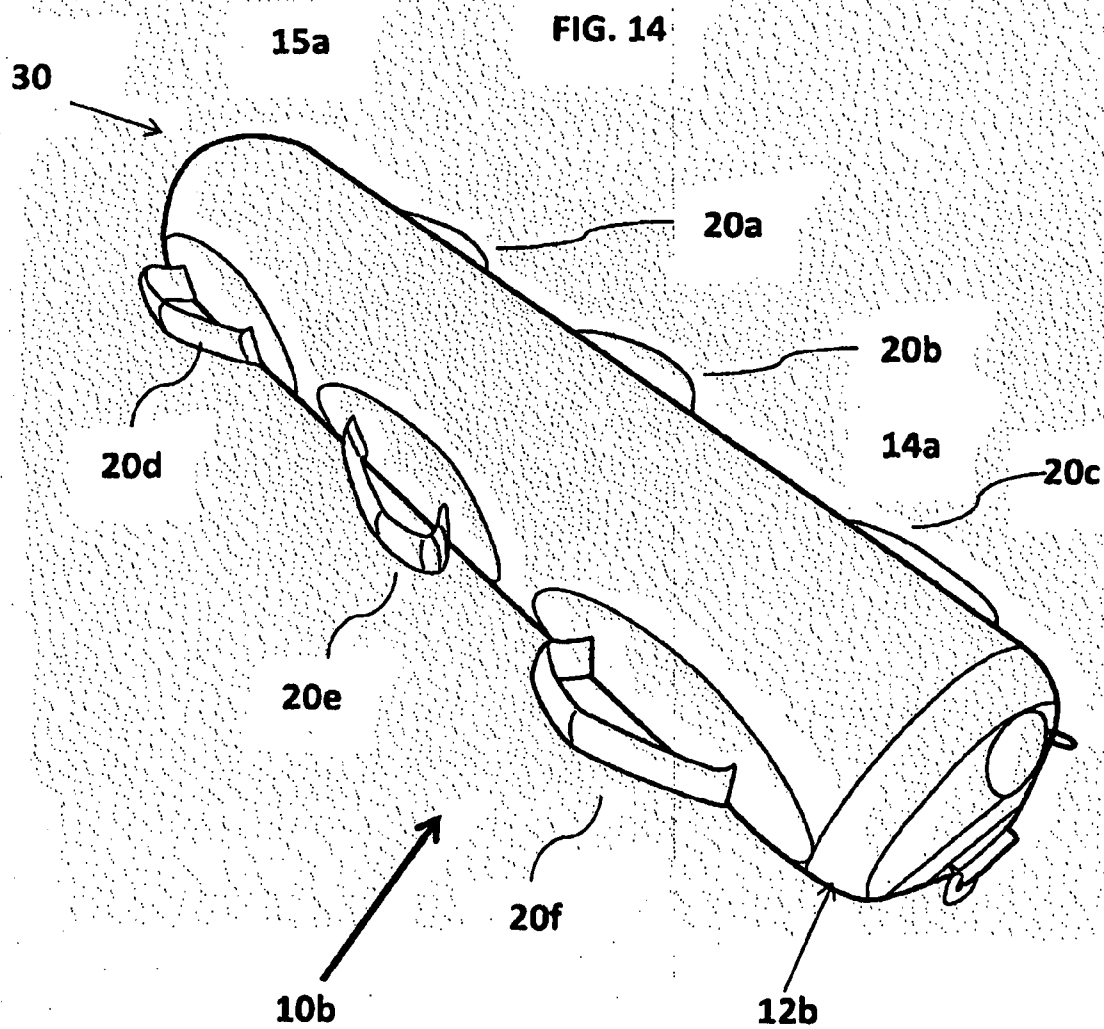
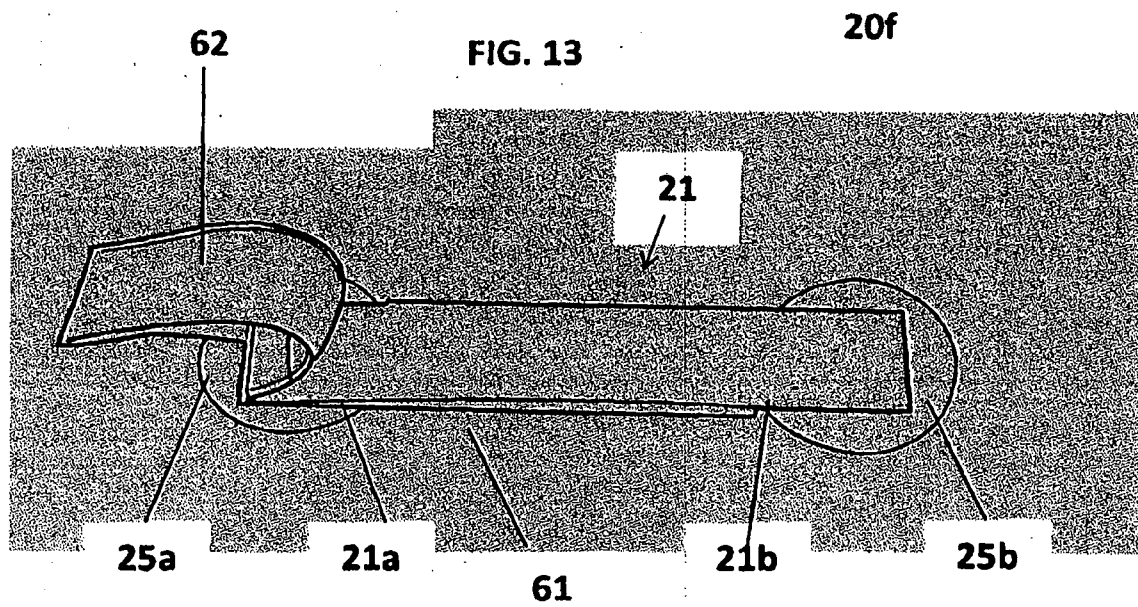


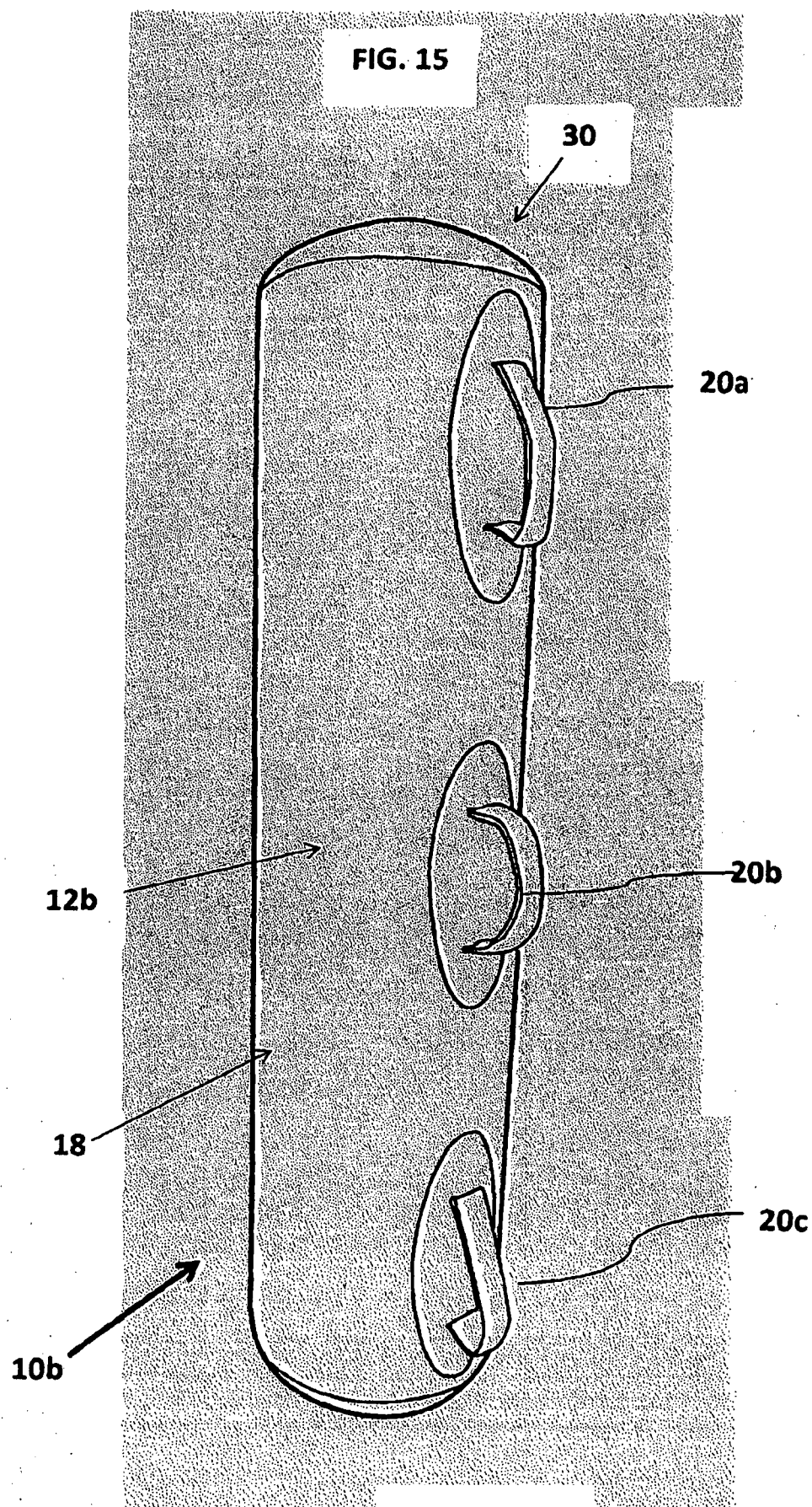
FIG. 12



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FIG. 16

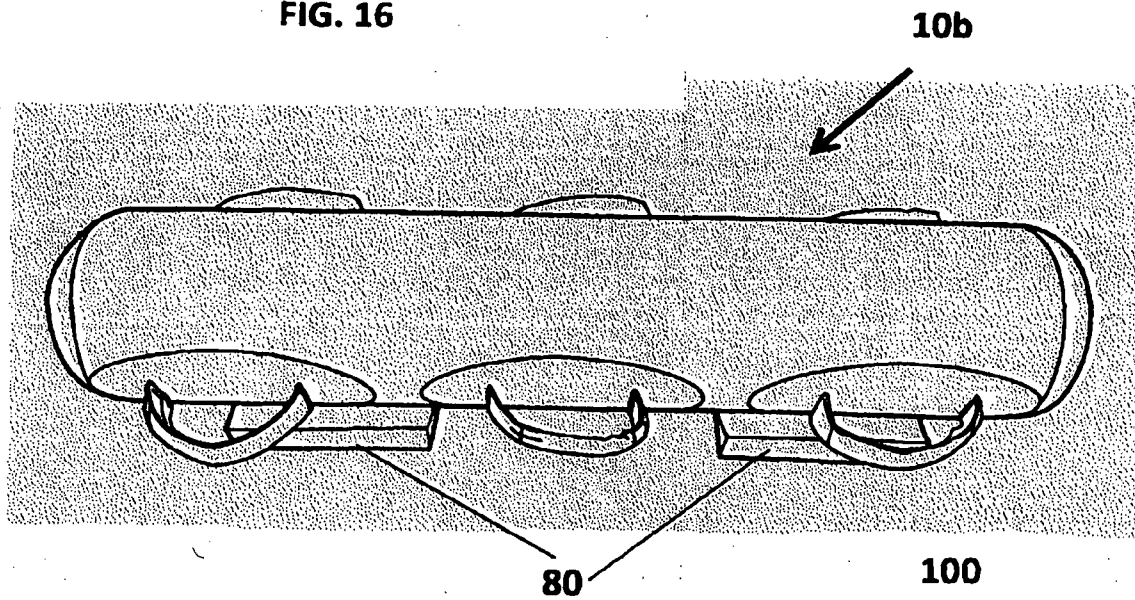
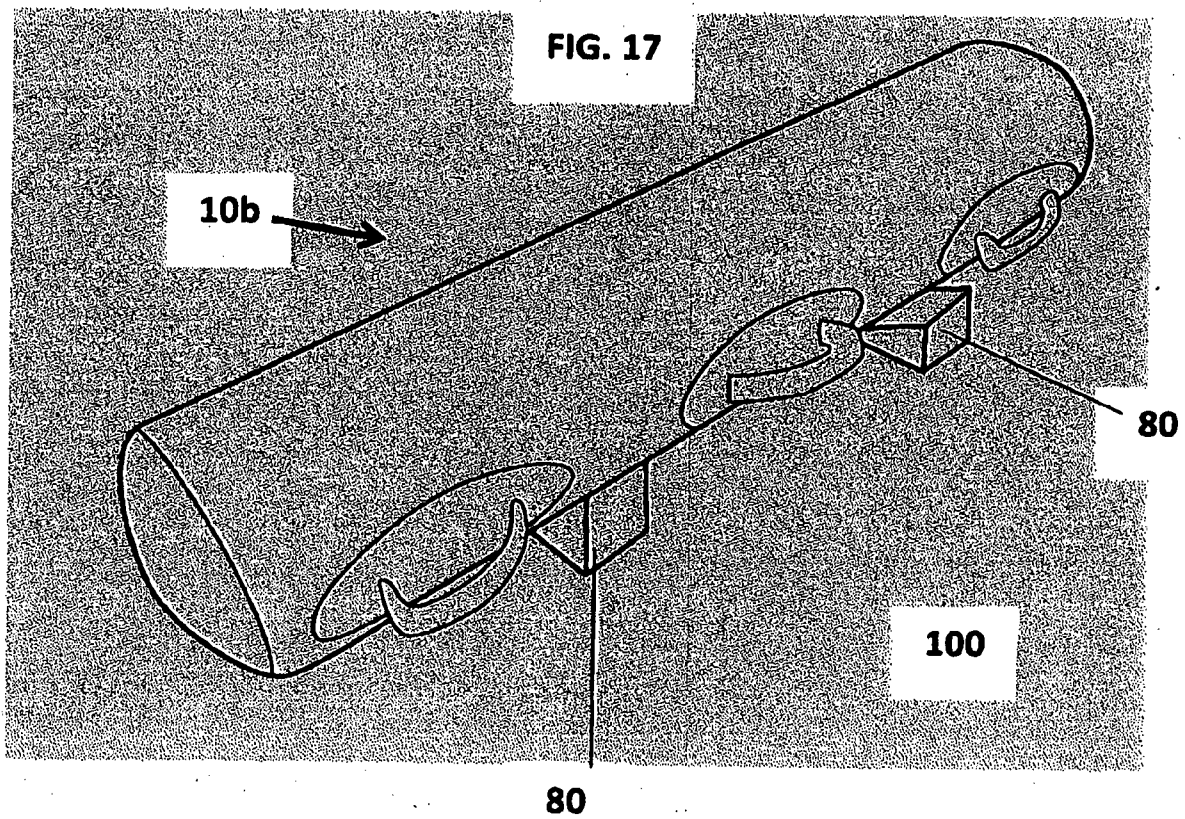
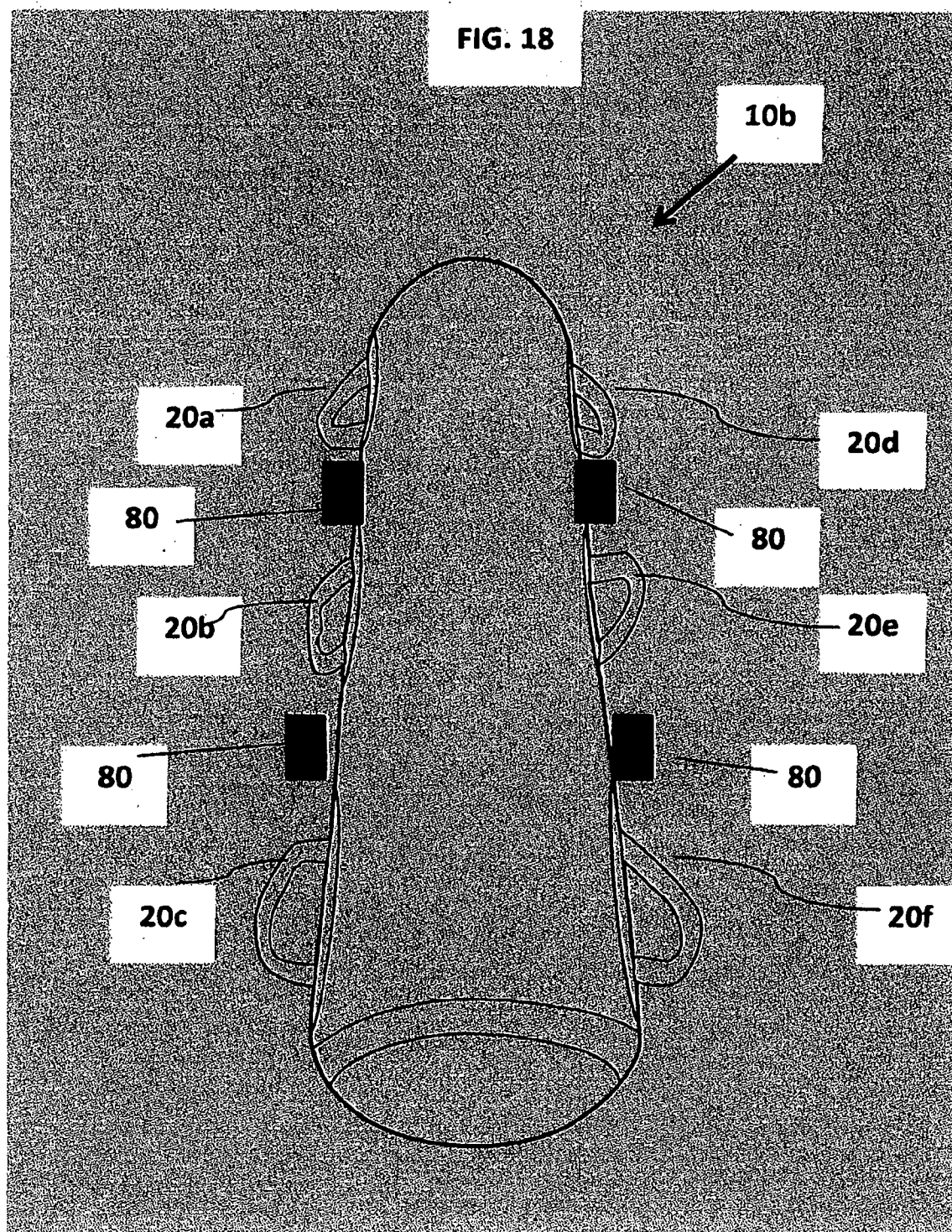


FIG. 17



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FIG. 18



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FIG. 19

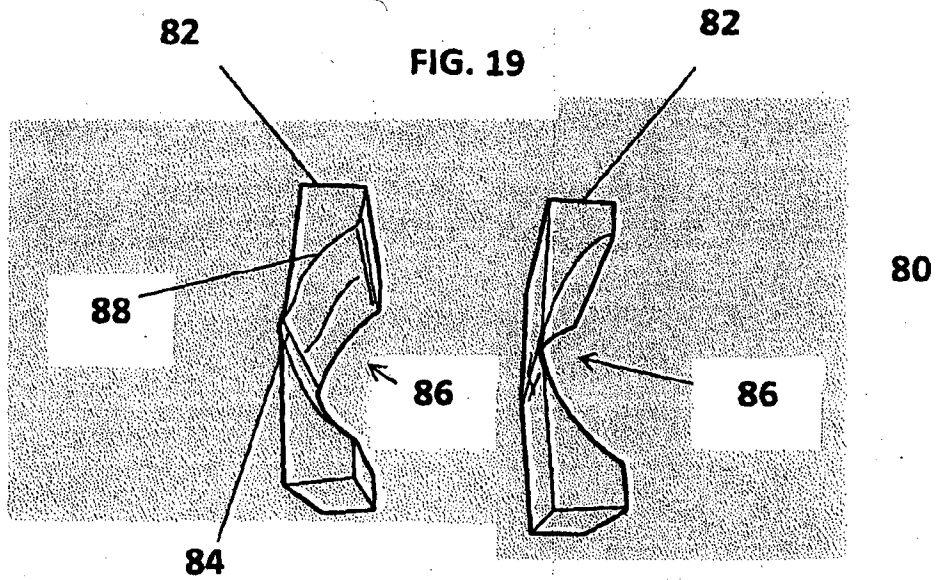
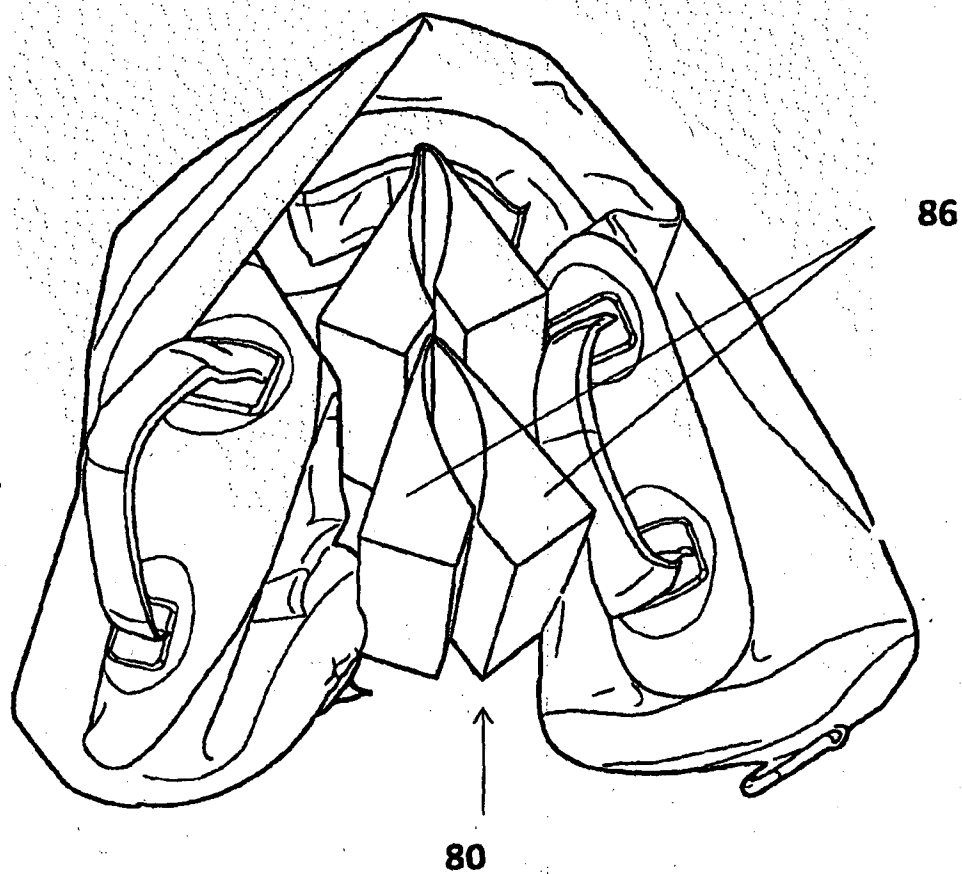


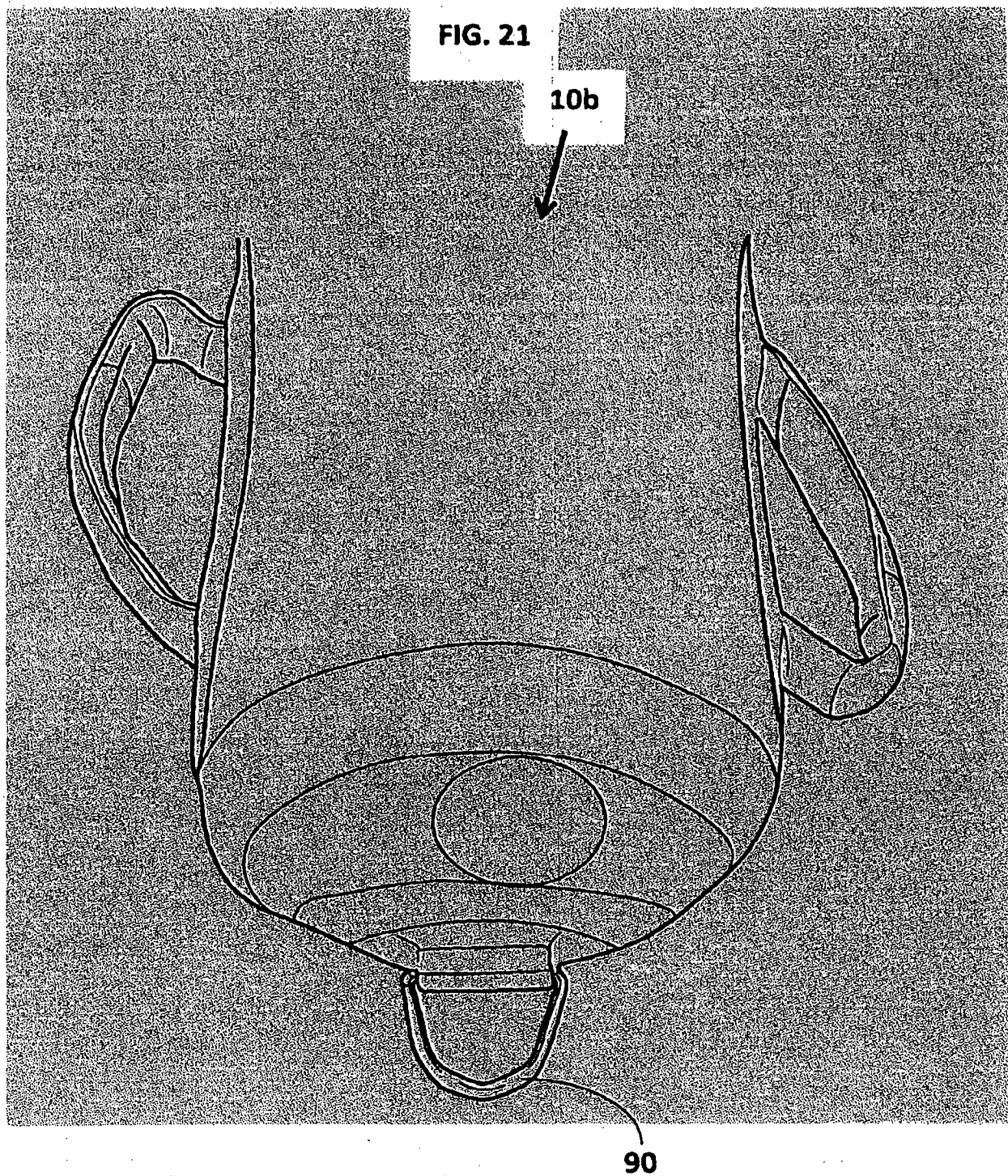
FIG. 20



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FIG. 21

10b



INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2013/000339

A. CLASSIFICATION OF SUBJECT MATTER

A63B 21/06 (2006.01)

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)

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

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

EPODOC, WPI: IPC A63B21 and Keywords (bag, pouch, pocket, stachel, compartment, variable, weight, mass, resistance, fill, inflate and like terms)

Google/Google Patents websites: similar keywords as above

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	Documents are listed in the continuation of Box C	

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

* "A"	Special categories of cited documents: document defining the general state of the art which is not considered to be of particular relevance	"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
"E"	earlier application or patent but published on or after the international filing date	"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
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"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
"O"	document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search
12 July 2013Date of mailing of the international search report
12 July 2013

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INTERNATIONAL SEARCH REPORT		International application No.
C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		PCT/AU2013/000339
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2005/075026 A1 (POSPISIL) 18 August 2005 Abstract, page 2 lines 13-17, page 2 line 19 – page 3 line 9, page 3 lines 11-12, page 3 line 20 - page 4 line 4, page 4 lines 22-28, page 4 lines 30-31, page 5 lines 3-6, page 6 line 1- page 7 line 15, page 6 lines 9-11, page 6 lines 14-19, page 7 lines 3-4, page 7 lines 8-9, page 7 line 11, page 7 lines 17-19, page 7 lines 25-26 and Figs 1, 2, 3 and 4.	1-29, 33-54, 60-64, 68-73
Y	page 6 lines 2-3, Fig 1, 2, 4	30-32, 55-59, 65-67
Y	GB 2474062 A (BOOTH et al.) 06 April 2011 page 3 paras 4, 7-10, Figs A and C	30-32, 55-59, 65-67

Form PCT/ISA/210 (fifth sheet) (July 2009)

INTERNATIONAL SEARCH REPORT Information on patent family members		International application No. PCT/AU2013/000339	
This Annex lists known patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.			
Patent Document/s Cited in Search Report		Patent Family Member/s	
Publication Number	Publication Date	Publication Number	Publication Date
WO 2005/075026 A1	18 Aug 2005	None	
GB 2474062 A	06 Apr 2011	WO 2011042712 A2	14 Apr 2011
End of Annex			