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(72) Inventor; and

(71) Applicant : VENTURA, Asaf, Avraham [IL/IL]; 3
Dvora Hanevia Street, 3609174 Kiryat Tivon (IL).

(74) Agent: PUGATSCH, Ena; Reinhold Cohn and Partners,
P.O. Box 13239, 6113102 Tel Aviv (IL).

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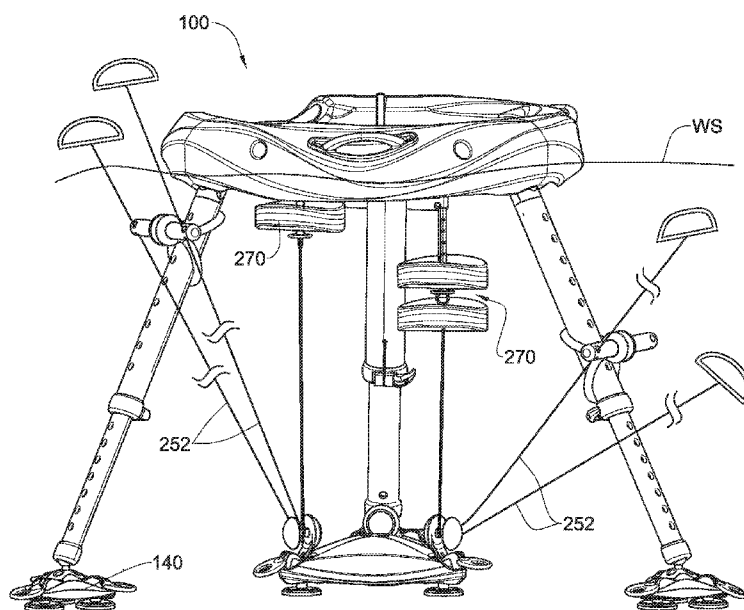


Fig. 6C

(57) Abstract: A training apparatus for use inside a water pool is provided, along with a number of auxiliary devices and accessories that can be used therewith. The training apparatus comprises, at least in its operational state, a floating member made from material having density lower than water density at room temperature, and a support assembly comprising at least one sinking member with at least one suction cup configured to removably adhere the sinking member to a submerged surface of the water pool; and at least one elongated member connecting between the floating member and the at least one sinking member for fixing a position of the floating member with respect to said submerged surface.

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TRAINING APPARATUS

TECHNOLOGICAL FIELD

This presently disclosed subject matter relates generally to sports, and more particularly to a training apparatus for use in a water-based environment.

BACKGROUND

Aquatic therapy, therapeutic aquatic exercise, or aquatic rehabilitation refer to water-based treatments or exercises of therapeutic intent, in particular for relaxation, fitness, and physical rehabilitation. Treatments and exercises are performed while floating, partially submerged, or fully submerged in water. The benefits of aquatic exercise is well documented. Various properties of water contribute to therapeutic effects, including the ability to use water for resistance instead of gravity or weight, as resistance of the water to movement provides soothing therapeutic massage of the muscles; thermal stability that permits maintenance of fairly constant temperature; hydrostatic pressure that supports, and that influences heart and lung function; buoyancy that permits floatation, reduces the effects of gravity and prevents excessive impact on the joints during exercising activity; and turbulence and wave propagation that allow gentle manipulation and movement.

Various techniques and devices are used to deliver therapy in water. For example, US patent 5,242,352 teaches an aquatic exercise apparatus for use in a pool of water by a person in the water for post operative and post injury muscular skeletal therapy and rehabilitation as well as conditioning and toning the muscles. The apparatus has a base member adapted to be removably anchored at the bottom of a pool of water with one or more pulleys removably connected on the base member and one or more flexible lines having a handle at one end, which passes through the pulley(s) and is attached at its other end to at least one buoyant float member. A person in the pool of water physically manipulates the handles to overcome the resistive upward buoyant force of the buoyant

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float member(s) in various exercises to condition and tone the muscles. In one embodiment the base member is a platform upon which the person exercising stands, and in another embodiment the base member is a suction cup member adapted to be removably secured to the bottom surface of the pool of water. The buoyancy of each float member can be selectively altered to provide a range of buoyancy forces.

GENERAL DESCRIPTION

The presently disclosed subject matter provides a novel training apparatus for aquatic exercising, which can be used during post-injury rehabilitation, including for conditioning and toning the muscles, as well as for general aquatic exercising by all ages
5 which suggests a comprehensive, multi-purpose, adjustable, easy to use and safe solution for physical exercising in mimic environment, such as a water pool.

Thus, according to one aspect of the presently disclosed subject matter, there is provided a training apparatus for use inside a water pool, comprising at least when in use:

- a floating member made from material having density lower than water
10 density at room temperature, and
- a support assembly comprising at least one sinking member with at least one suction cup configured to removably adhere the sinking member to a submerged surface of the water pool; and at least one elongated member connecting, at least in use, between said floating member and said at least one sinking member for fixing a position
15 of said floating member with respect to said submerged surface.

In some embodiments, the sinking member can comprise a pedal for activating and inactivating the suction cup.

In some embodiments, to increase stability or endurance to large loads, the number of the suction cups can be two or more, and in such case, for convenience of
20 usage, a single pedal can be configured for activating and inactivating the two or more suction cups.

Each suction cup can have a connection element connecting between the cup's bottom portion and the above pedal such that, during inactivation of the suction cup by the pedal, the connection element pulls said bottom portion off the submerged surface to
25 thereby facilitate its detachment from the submerged surface.

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The sinking member can comprise a chamber and a plurality of holes connecting the chamber to exterior of the sinking member, such that when the sinking member is submerged, said chamber is filled with water to increase the weight of the sinking member.

5 In some embodiments, the elongated member can comprise one or more attachment sites configured for mounting an accessory to the elongated member. In some embodiments, the elongated member be hollow and comprise holes formed therein to allow water entering its interior for increasing its weight. At least one of said holes can be configured for being used as an attachment site for mounting an accessory thereto.

10 In some embodiments, one or more attachment sites can comprise a sliding holder and the elongated member can have such a configuration in its cross-section as to enable sliding of said holder along the length of the elongated member while disabling its pivoting about the elongated member.

 In some embodiments, the elongated member can have an adjustable length to
15 enable its installation at different water levels. The elongated member can also be configured for being connected to the floating member either so as to be inclined to a horizontal reference plane at a single angle or at a variety of angles, and one such angle can be close to or equal zero.

 The training apparatus can have a horizontal reference plane and it can be foldable
20 from its operational state into a storage state, in which its overall height in the direction perpendicular to this plane is smaller than that in the operational state. In addition, the storage state of the training apparatus can be such that projection of the at least one elongated member on the reference plane overlaps with that of the floating member to a greater extent than in the operational position, thus occupying minimal space during
25 storage.

 The training apparatus can be used with a variety of auxiliary devices or training accessories to provide a comprehensive, one-shop solution for exercising in water. Moreover, its structure is upgradeable and additional auxiliary devices or training accessories can be designed to work with the apparatus of the presently disclosed subject
30 matter.

 According to another aspect of the presently disclosed subject matter, there is provided a device, which can be used with the above training apparatus, or can be independently used inside water, the device comprising a sinkable fixation device

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configured to removably adhere to a submerged surface of the water pool, said sinkable fixation device comprising:

- a floatable member being made from material having density lower than water density at room temperature and comprising a chamber configured to be filled with
5 water when the sinkable device is in use;
- at least one suction cup configured to removably adhere the sinkable device to a submerged surface of the water pool;
- a plurality of holes connecting said chamber to exterior of the sinkable device, such that when the sinkable device is submerged, said chamber is filled with water
10 to thereby increase weight of the sinkable device; and
- at least one pulley configured for passing therethrough a rope element connected at one end thereof to a resistance device and having its other end configured to be at least indirectly pulled by a user.

The suction cup/s can be configured as described above with respect to the sinking
15 member.

In some embodiments, the resistance device can be a floating device, which when pulled into water, faces its resistance. The floating device can be configured with variable surface area to provide a plurality of levels of resistance to water, when the device is pulled inside water. In some embodiments, the floating device can be constructed from a
20 series of floating members such that varying said surface area is achievable by changing mutual orientation of said members.

According to a further aspect of the presently disclosed subject matter, there is provided a device, which can be used inside a water pool as an accessory to the above training apparatus or other suitable devices, comprising:

- 25 - a seat chamber configured to be filled with water when the training device is in use,
 - controllable water inlet and air outlet in the seat chamber,
- wherein height of the seat chamber inside the water can be controlled by said controllable water inlet and said controllable air outlet.

30 According to a further aspect of the presently disclosed subject matter, there is provided a device, which can be used inside a water pool as an accessory for the above training apparatus or other suitable devices, comprising:

- a seat;

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- two cycling pedals;
- a rotor with vanes, rotatable by said pedals; and
- a housing accommodating said rotor so as to allow its rotation, and having at least one water inlet.

5 In some embodiments, disposition of the vanes relative to the housing is variable to provide different levels of resistance of the vanes to water during the rotor rotation.

 According to still further aspect of the presently disclosed subject matter, there is provided a connector, which can be generally used for mounting a first elongated element to a second elongated element in spaced non-parallel orientation, and which can be particularly used for mounting different kinds of accessories to the elongated member/s
10 of the above training device. The connector can have mutually perpendicular horizontal and vertical reference planes and comprise two element engaging portions disposed on two sides of the vertical reference plane,

- a first passage in one of the element engaging portions, the passage extending
15 along a first axis parallel to said vertical reference plane and being configured for receiving therein said first elongated element;

- two spaced apart mounting loop members constituting the other element engaging portion and extending on two sides of the horizontal reference plane so that a distance between them increases in the direction away from vertical plane, said loop
20 members forming a second passage extending along a second axis parallel to the vertical reference plane and not parallel to the first axis, configured to allow for passing therethrough of the second elongated element with a sliding contact therebetween; and

- a locking element disposed between the two loop members so that the connector can be moved along the second element with said loop members in sliding contact
25 therewith until the locking element engages the second member so as to prevent the connector from further movement relative to the second member.

 In some embodiments, the first passage has two passage portions spaced along the passage axis by a spacing region. The spacing region can be configured to receive therein an annular protrusion of an accessory in alignment with the two passage portions so as to
30 allow said first elongated member to pass therethrough.

 The presently disclosed subject matter enables forming kits for assembling a training apparatus from its components described above with or without accessories. One such kit can comprise at least the floating member and the support assembly. In some

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embodiments, the kit can further comprise the sinkable fixation device and the resistance device as described above. In yet other embodiments, the kit can further comprise one or more of the auxiliary devices and/or training accessories as described above and as will further be described in the Detailed Description.

5 Any component of the training apparatus, the auxiliary devices and the training accessories described above can be fully or partially made from light-weight materials, most of which can be floating materials (i.e. their density is lower than that of the water), or therefore it is friendly to handle, enabling quick and easy installation and transferring between different locations. The use of such components in water allows them, where
10 required, to bear loads of magnitudes, which they would not be able to bear in the air due to them being made of the above mentioned materials.

 In addition, the presently disclosed subject matter provides for a solution for those of the above light-weight components that are intended for use when submerged or for sinking at the pool's floor, associated with filling at least a part of the interior of these
15 components with water. Some of the solutions utilize vacuum attachment principles, by providing suction cups, which can have a conventional or novel configurations for use on a submerged surface.

BRIEF DESCRIPTION OF THE DRAWINGS

20 In order to better understand the subject matter that is disclosed herein and to exemplify how it can be carried out in practice, embodiments will now be described, by way of non-limiting examples only, with reference to the accompanying drawings, in which:

Figs. 1A-1B exemplify a training apparatus according to one embodiment of the
25 presently disclosed subject matter;

Figs. 2A-2B exemplify a floating member that can be used in an apparatus according to the presently disclosed subject matter;

Figs. 3A-3B exemplify a part of a support assembly that can be used with a training apparatus according to presently disclosed subject matter;

30 **Figs. 4A-4D** exemplify another part of a support assembly that can be used with a training apparatus according to the presently disclosed subject matter;

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Fig. 5A illustrates a support assembly comprising parts of the kind shown in Figs. 3A to 4D, and carrying auxiliary devices according to different embodiments of the presently disclosed subject matter;

Figs. 5B-5E illustrate different views of one of the auxiliary devices shown with the support assembly of Fig. 5A;

Fig. 5F illustrates another auxiliary device shown with the support assembly of Fig. 5A;

Figs. 6A-6D exemplify further auxiliary devices that can be used with a training apparatus according to further embodiments of the presently disclosed subject matter;

Fig. 7 exemplifies a training accessory that can be used with a training apparatus according to further embodiments of the presently disclosed subject matter; and

Figs. 8A-8B exemplify another training accessory that can be used with a training apparatus according to still further embodiments of the presently disclosed subject matter.

DETAILED DESCRIPTION OF EMBODIMENTS

Reference is made to **Fig. 1A** showing a training apparatus **100** configured for use inside a water pool, in accordance with one example of the present presently disclosed subject matter, in its operational state.

As shown in **Fig. 1A**, the training apparatus **100** includes a floating member **110** configured for floating on the water when disposed therein, and a support assembly **120** configured for installing the training apparatus **100** inside the water pool, e.g. by fixing it to a solid submerged surface of the water pool. The training apparatus **100** has a horizontal reference plane **HRP**, on which the floating member **110** resides when it is in a horizontal position, i.e. the horizontal reference plane **HRP** can coincide with the water surface, when the floating member is freely disposed thereon.

The floating member **110** is typically made from material which has a density lower than water density at room temperature, enabling it to float independently and to be independently used, free of the support assembly **120**, in various training exercises as will be further detailed below. More details about the floating member **110** are described with reference to **Figs. 2A-2B** below.

In the described example, the support assembly **120** includes three sinking members **140** each having three suction cups **142** configured to removably adhere the

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sinking member **140** to a submerged surface of the water pool (not shown). The support assembly **120** further includes three elongated members **130** each connecting between one floating member **110** and one sinking member **140**, for fixing a position of the floating member **110** with respect to the submerged surface of the water pool during use. The
5 number of the elongated members **130** and sinking members **140** in the support assembly **120** can be any one, i.e. it can even be one, and the same is correct with respect to the suction cups **142**. In addition, the number of the sinking and elongated members can be different, e.g. it could be the case that a plurality of elongated members (two or more) connect between the floating member **110** and a single sinking member.

10 The support assembly **120** can be configured to stabilize or fixate the floating member, while it floats on the water surface, with respect to the submerged surface, with the latter having any possible orientation or construction. To this end, the submerged surface of the water pool, to which the floating member **110** is fixed by using the support assembly **120**, can be horizontal, vertical or inclined with respect to the reference plane
15 **HRP** (and the water surface). Additionally or alternatively, the submerged surface can possess a combination of the three mentioned orientations, and in such a case, the support assembly **120** can include a plurality of sinking and elongated members having different corresponding dimensions/orientations. Non-limiting examples of the submerged surface include, inter alia, a single surface, in a horizontal (floor), vertical (side wall) or inclined
20 orientation (floor or side wall); in which case a single sinking member with one or more elongated members could be used; or a plurality of surfaces having any combination of the three mentioned orientations (horizontal, vertical or inclined), in which case a plurality of sinking and elongated members can be used. In the example illustrated in Fig. 1, three sinking members with three respective elongated members are deemed to provide
25 desired stability of the floating member. In the described example, the length of the elongated member is controllably variable to suit to the inclination of , depth of or distance to the submerged surface(s).

Connections between the floating member and the elongated members, and/or between the corresponding elongated and sinking members, in at least one of such pairs
30 of the connected members, can be configured to allow for their relative movement and/or orientation.

Thus, in the described example, all the elongated members **130** are mounted at a proximal end thereof to the floating member, using a pivot **152** enabling the elongated

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member to form with the reference plane **HRP** a desired angle, which can be variable. In particular, in the described example, this angle is acute for each of the elongated members, if measured exteriorly with respect to the floating member, so that the elongated member extends away from the floating member, in the direction along the reference plane.

5 However, the above angle can also be about 90 deg. when the elongated member/s has/have vertical orientation, or it can be close to or equal zero, when the elongated member/s extends/extend almost parallel or completely parallel to the reference plane **HRP** in the direction away from the floating member.

Regarding the connection between the elongated members' distal end and their corresponding sinking members, such connection can be in the form of a joint or a hinge,

10 such as a spherical hinge **154**, to enable an optimal contact between the sinking member and the submerged surface, no matter how this the surface is oriented.

The training apparatus **100** can be foldable for bringing it into a storage state, and **Figs. 1B-1 and 1B-2** illustrate, in bottom and side view respectively, one of possible storage states of the training apparatus **100**. The storage state allows for space-saving storage as well as for easy transport from one pool to another whenever needed.

15

To enable the folding of the training apparatus **100** as shown in **Figs. 1B-1 and 1B-2**, the pivoting connection of its elongated members to the floating member should be configured accordingly, i.e. should allow the elongated members to be pivoted to a position under the floating member, in which an angle formed thereby with the reference plane interiorly with respect to the floating member is close to zero or equals zero. Alternatively, the elongated members can be foldable at a location spaced from but adjacent to their proximal end, in which case the height of the training apparatus in such storage state will be somewhat greater than that in the storage state shown in **Figs. 1B-1**

20 **and 1B-2**. Additional storage state of the training apparatus could be by disassembling it to the floating member, the elongated member(s) and the sinking member(s), to enable storing them in a dedicated package for easy carriage and transport.

25

Reference is made to **Figs. 2A and 2B** illustrating one non-limiting example of the floating member **110**, which has an annular shape. As already mentioned, the floating member can be used for exercising purposes as an independent, stand-alone exercising device, or as part of the training apparatus **100**. Therefore, the floating member can be configured in different shapes and sizes to suit different uses. It can be round, as shown

30

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in the figure, or have a polygonal shape. It can be manufactured in different sizes to meet different ages or personal weights.

The floating member or at least a portion thereof can be made from a lightweight material, the density of which is lower than that of the water such that it floats naturally.

5 The floating member can have a unitary body or it can be integrally formed of a number of components, such as e.g. a lower component configured to face mainly downwardly, when the floating member is located on the surface of a water pool, and to be connected to the support assembly, and an upper component to be contacted by the user. In the latter case, the lower component can be made of a material which is more
10 rigid than the upper component. In this case, the upper component can be inflatable.

In the described example, the floating member **110** comprises a lower component in the form of a rigid hollow tube unit **118** (**Fig. 2B**) configured to enhance its overall rigidity and maintain its annular shape.

Outer surface of the floating member, which is to be contacted with the user, can
15 be formed with a pattern or a texture, which are not slippery in a mimic environment.

The floating member can also be equipped with integral handle(s), e.g. such as handle **112**, to facilitate both gripping it by a user during various exercises and carrying it, with or without the support assembly, from one place to another.

The floating member can be formed with one or more depression(s), e.g. such as
20 depression **114**, formed in its upper surface and having such extensions along the peripheral and radial directions of the upper surface of the floating member, to allow functioning of the depression(s) as user supporting region(s), e.g. seating or standing region(s). The floating member can have attachment sites, e.g. such as holes **116**, configured to attach one or more accessories to it.

25

Reference is made to **Figs. 3A and 3B** illustrating one non-limiting example of the elongated member **130**. In this example, the elongated member **130** has a hollow body with a cylindrical outer surface of an oval cross-sectional shape. Alternatively, the hollow body of the elongated member can be in the form of an elongated prism with an outer
30 surface having polygonal cross-sectional shape.

The elongated member **130** can be made from a rigid material, which is non-deformable under normal operational conditions of the training apparatus. The material can be a light-weight material, e.g. such that has a density lower than that of water. In this

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case, to increase its relative weight and help it to sink, the elongated member can include through holes, such as holes **138** extending between the outer surface of the elongated member and its hollow interior, thereby allowing water to enter and air to exit during its sinking.

5 As shown, the elongated member includes at its proximal ends a proximal connecting portion **132** and at its distal end a distal connection portion **134** for pivotally connecting it to the floating member and to the spherical hinge on the sinking member, respectively, at least in the operational state of the training apparatus.

10 The elongated member can further include one or more attachment site(s), which can be used to securely mount thereon a training accessory. The attachment site(s) can be formed along the elongated member in a spaced-apart relationship, to thereby enable mounting one or more accessories at different locations of the elongated member, e.g. at different heights with respect to the pool's floor or the water's surface. In the described embodiment, one or more of the hole(s) **138** can be used, additionally or alternatively, as
15 attachment sites for securely mounting training accessories on the elongated member.

20 The elongated member's length can be adjustable, to enable installation of the training apparatus at different depths or in different positions. In the described example, the elongated member has a telescopic construction for adjusting its length, and it comprises two coaxially elongated sections, an outer section **130o** and an inner section **130i** slidable within the outer section and lockable thereto in a desired position. Examples of a locker that can be used for this purpose, are a locking ring **130L** as shown in **Figs. 3A** and **3B**, or a locking pin (not shown), each of which can use holes **136** to provide the locking.

25 Reference is made to **Figs. 4A – 4D** illustrating a non-limiting example of the sinking member **140**. The sinking member **140** has a body **144** configured to allow pivotally connecting to its top the distal end of the elongated member **130**, as mentioned above. In the described example, such connection is provided by a spherical hinge constituted by a spherical male element **146** protruding upwardly from the body **144** of the sinking member **140**, and a corresponding spherical female cavity formed at the distal
30 connection portion **134** of the elongated member **130**.

As also mentioned above, the sinking member **140** is further configured to be removably secured to a submerged surface of the water pool by one or more attaching elements **142** mounted to the body **144** at its bottom. The attaching elements **142** can be

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in the form of suction cups configured to adhere the sinking member to the submerged surface using vacuum, as any conventional suction cup.

Referring to **Figs. 4A, 4C-1 and 4C-2**, the body **144** also includes pedals **148** for easily and comfortably activating and inactivating the suction cups **142**, when the sinking member rests on the submerged surface, e.g. by pressing the pedal with the foot to activate, or by pulling it upwards by the foot to inactivate. The activated pressed-down position of the pedal is illustrated in dashed lines in **Fig. 4C-2**. To increase efficiency, the sinking member **140** can be configured with a single pedal which activates and inactivates all its suction cups. This option is illustrated in **Fig. 4B**.

10 The sinking member **140** can be made from any suitable material that enables it to sink in water. For example, the sinking member can be made from light-weight material having density lower than water density at room temperature and it can be configured to float, when no steps are performed to increase its weight in order to facilitate its sinking. In the described example, to enable performing such steps, the sinking member includes
15 a chamber **162** (as shown in **Fig. 4C-2**, which is a cross-sectional view of the sinking member taken along line C-C in **Fig. 4C-1**) and at least two holes **164** connecting the chamber to exterior of the sinking member, such that when the sinking member is submerged, the chamber **162** is filled with water through at least one of the holes, and air exits the chamber through at least one other hole.

20 The suction cups of the sinking member can each have a contact surface **CS** configured to ensure effective attachment and adherence of the cup to a plurality of different kinds of surfaces used in conventional water pools, such as flat smooth surfaces or textured, rough or patterned surfaces. To this end, the suction cup or at least its bottom portion including the contact surface can be made from a material capable of conforming
25 its shape to that of the surface it contacts with in the presence of water. One example of such material is Silicon.

Figs. 4D-1 and 4D-2 illustrate a special design of a suction cup configured to facilitate detaching of the sinking member **140** having an increased weight as described above, from the submerged surface. As shown, the suction cup has a connection element
30 **166** which connects between its bottom portion at a peripheral edge of the contact surface **CS** and the pedal **148** such that, during inactivation of the suction cup by raising the pedal, the connection element **166** upwardly pulls with it the peripheral edge of the contact surface off the submerged surface. The connection element can be a resilient element

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which does not exert any force on the contact surface **CS** when the pedal is pressed to activate the vacuum, and it can be formed as a unitary body with the bottom portion of the suction cup, as shown in **Figs. 4D-1 and 4D-2**. The connection element can be configured to take a loose and relaxed state during the activation of the suction cup, as in
5 **Fig. 4D-1** in which the pedal **148** is down, and a stretched state of its maximum length during the inactivation of the suction cup, as in **Fig. 4D-2** in which the pedal **148** is up, in which the connection element **166** is configured to pull with it the contact surface **CS**.

The training apparatus **100** can be used with a plurality of accessories, which can be mounted directly to the above described components of the training apparatus or by
10 means of auxiliary devices. **Figs. 5B – 5F** illustrate non-limiting examples of one kind of auxiliary devices configured for being held by the elongated member **130** of the training apparatus, as shown in **Fig. 5A**. More particularly, **Figs. 5C to 5E** show a connector **170** configured for being dressed on the elongated member **130** prior to its assembly with the floating member and/or the sinking member, and **Fig. 5F** shows a connector **180**, which
15 can be attached to the elongated member **130** also after its assembling with the floating member and the sinking member.

Both connectors **170** and **180** are configured for connecting to the elongated member **130**, a holder **182** for holding one or more accessories, as will be described further below. In the described example, the holder **182** is in the form of a rod oriented
20 transversely to the elongated member, as shown in **Fig. 5A**. In the described example, the connector **170**, **180** and/or the holder **182** can be made from a light-weight material, i.e. the material's density is lower than water's density at room temperature, such that when not connected to the elongated member, it is configured to float on the surface of water. In operation, the connector **170**, **180** can slide along the elongated member **130** to enable
25 attachment of the training accessory thereto by means of the holder **182** at different heights with respect to the reference plane **HRP** of the training apparatus **100**. The different heights are defined by the attachment sites **136** of the elongated member. As such, while it is configured to slide along the elongated member, the connector has, as shown in **Fig. 5E**, a locking mechanism **LM**, which in the present example is in the form
30 of a protrusion **178** configured for being received in one of the holes **136**, thereby fixing the connector to the elongated member.

Referring to **Fig. 5A**, each of the connectors **170**, **180** has a first, elongated-member engaging portion **170A**, **180A** and a second, holder engaging portion **170B**,

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180B. As appreciated, the connectors **170** and **180** are similar at their second portions **170B** and **180B** to which the holder **182** can be attached, and are only different at their first portions **170A** and **180A**.

More particularly, as best seen in **Figs. 5C** and **5D**, the first, elongated-member
5 engaging portion **170A** of the connector **170** is in the form of two loop members **172A**
and **172B** having a closed configuration. The loop members have such size and are so
oriented with respect to each other so as to form a passage **171** configured to slidably
receive therein the elongated member while at the same time enabling entrance of the
protrusion **178** into one of the holes **138** when aligned therewith, thereby locking the
10 connector **170** in place.

As seen in **Fig. 5F**, the first, elongated-member engaging portion **180A** of the
connector **180** differs from that of the connector **170** in that its loop members **182A** and
182B, instead of being closed as the loops **172A** and **172B**, are in the form of oppositely
curved wings **182A** and **182B**, each constituting a portion of an imaginary closed loop
15 and extending along a majority of such loop so as to form a passage **182** configured to
slidably receive therein the elongated member **130** by embracing it with the two loop
portions **182A** and **182B** in spaced opposite directions.

The second portions **172B** and **182B** of the connectors **170** and **180** are each in
the form of two holder receiving annular arms **172** and **174** spaced by a region **176**, with
20 aligned through holes constituting two portions of a single passage **177** for slidably
receiving therein the holder **182**.

With reference to **Figs. 5B** and **5C**, the connector **170**, **180** can be considered as
having mutually perpendicular horizontal and vertical reference planes **HP** and **VP** that
intersect at the connector's central region of merger of the first and second portions along
25 a connector axis **X**. The two portions of the connector **170A** and **170B** (or **180A** and
180B) are thus disposed on two sides of the vertical reference plane **VP**, with:

- the passage **177** extending along an axis **186** parallel to the vertical plane **VP**
and spaced therefrom along the horizontal reference plane **HP**, and
- the two loop members **172A** and **172B** (or **182A** and **182B**) extending on two
30 sides, **192A** and **192B**, of the horizontal reference plane **HP** so that a distance between
them increases in the direction away from the vertical plane **VP** and so that the passage
171 (or **181**) extends along an axis **Y** parallel to the vertical plane **VP** and spaced
therefrom along the horizontal plane **HP**.

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In the described example, the axes **X** and **Y** of the respective passages **177** and **171** (or **181**) are oriented so that their projections on the vertical plane **VP** are perpendicular to each other, though in general this does not need to be the case and they can be oriented so that that their above projections cross each other at an angle other than
5 90 deg.

Each loop member **172A**, **172B** of the connector **170** can be described as extending along a line lying on an intersection between an imaginary cylindrical surface (corresponding to the outer surface of the elongated member **130**) and a plane inclined with respect to the horizontal plane **HP**, such that the planes of the two loop members
10 define equal angles on different sides with the horizontal reference plane **HP** on different sides thereof. Each loop member **182A**, **182B** of the connector **180** can be similarly described as extending along a majority of the above line.

Reference is made to **Figs. 6A-6D**, illustrating a training apparatus **200** according to another embodiment of the present presently disclosed subject matter. As will be
15 described further below, the training apparatus **200** can be used independently as a stand-alone trainer or can be used in conjunction with the training apparatus **100** constituting its auxiliary device.

Referring to **Fig. 6A**, the training apparatus **200** further includes a sinkable fixation device **240** similar to the sinking member **140** described above (except for the
20 absence of the male hinge portion), though it can have a larger size to suit its function, as further described below. Accordingly, every feature in the sinkable device which is similar in its function to the corresponding feature in the sinking member **140** is given a respective number being increased by **100**. The sinkable device **240** thus has a body **244** having a chamber and holes similar to those of the body **144** of the sinking member **140**,
25 configured to adhere to a submerged surface of the water pool, in a removable way by using one or more attaching means. In the described example, these means are in the form of suction cup(s) **242**, which can have the same features and are activated and inactivated in the same manner as those of the sinking member **140**.

Referring to **Fig. 6B**, the training apparatus **200** further includes a resistance
30 device **270**, and the sinkable fixation device **240** further includes one or more pulleys **250** each configured for passing therethrough a rope element for any desired purpose. In the described example, such rope element **252** is connected at one end thereof to the resistance device **270** and at another end thereof to a handle **260** so as to be pulled by a

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user. **Fig. 6B** illustrates using the apparatus **200** as an independent training apparatus, while **Fig. 6C** shows how it can be used with the training apparatus **100**.

In the configuration of **Fig. 6C**, the rope can be passed through a dedicated hole in the rod **182** held by the connector **170**. Further, two ropes can be passed through one
5 pulley of the sinkable member **240** and two spaced holes in the rod **182**, so that a user can use both hands to pull the resistance device **270**. When the device **240** includes more than one pulley, a corresponding plurality of users can do exercises from different sides of the device **240**, at the same time.

In the described example, the resistance device **270** is a floating device, i.e. it is
10 made from material having density lower than water density at room temperature, so as to be able to float on the water surface **WS**, until it is pulled inside water, e.g. downwardly. Such pulling causes the device to face resistance to progression from the water and to thereby perform its 'resistance' function. The floating device **270** can be configured with variable surface area to provide a plurality of levels of resistance to water, when the
15 device is pulled inside water. For example, the floating device can be constructed from a series of floating members such that varying the surface area is achievable by changing mutual orientation of said members.

The floating device **270** can also be configured with holes extending along its length, i.e. in the direction of movement inside the water, such that by closing one or more
20 of them the resistance of water to device's progression increases. In some other embodiments, when a series of elements are used, by altering their mutual orientation, e.g. by turning one with respect to the other, the surface area facing the water changes causing change in the overall resistance. As shown in **Figs. 6D-1 and 6D-2**, two examples of the floating device **270** are presented. In the example described in **Fig. 6D-1**, the
25 floating device **270A** includes four identical elements, disposed above each other, having a predetermined shape and two holes **H1** and **H2** formed therein. By displacing or turning one or more of the elements around an axis passing through the hole **H1** perpendicularly to the sheet plane, the overall surface area is varied and the resistance increases. In the four figures of the example described, the resistance increases from left to right. In the
30 example described in **Fig. 6D-2**, the floating device **270B** includes a series of four identical round elements above each other, with holes formed therein. Turning at least one element with respect to the others, around an axis passing through **H3** perpendicularly

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to the sheet plane, blocks portions of the holes and thereby the resistance increases gradually from the left to the right figure.

The resistance device, the rope and the handles described above, when used with the training apparatus **100**, can be considered as its training accessories.

5 Reference is made to **Fig. 7** illustrating a non-limiting example of a further training accessory for use with the training apparatus **100**, in the form a training device **300** mountable on one of the elongated members **130** of the training apparatus **100** using the connector **170**. More particularly, the training device **300** is in the form of a seat **302** having a backrest **303** formed with a support ring **305**, which when located between the
10 arms **172** and **174** of the connector **170** in alignment therewith constitute a central part of the passage **177**, in which the rod **182** is received, the arrangement being such that at least when downward force is applied on the seat **302**, e.g. when a user is seated thereon, the rotation thereof about the axis **X** of the connector **170** is prevented.

 The seat **302** includes a chamber **304** configured to be filled with water when the
15 training device is in use inside the water. As appreciated, a user can sit on the seat and perform several exercises, some of which are described below.

 The training device **300** can be made from light-weight material(s), having a density lower than water at room temperature, such that it can float when its chamber **304** is empty of water.

20 The training device **300** includes at least one controllable water inlet **306** and at least one controllable air outlet **308** to enable filling it with water. The water inlet **306** and air outlet **308** are controlled to thereby control the amount of water that enters the chamber **304**. For example, the water inlet and air outlet can be configured with suitable one-way valves and which permit either water or air to flow through but not both. The amount of
25 water inside the chamber defines the overall weight of the device, and the latter determines the buoyancy of the device. This way, it is possible to define the sinking level of the seat, i.e. the distance down from the water's surface, or the height above the pool's floor. Additionally, because of its controllable floating property, the device **300** can be used to transport inside water a user, who cannot walk independently, and to bring him
30 to the training apparatus in order to perform exercises. When the user reaches the training apparatus, the device **300** can be mounted to one of the elongated members **130**, as described above.

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Reference is made to **Figs. 8A and 8B**, illustrating another non-limiting example of a training accessory for use with the training apparatus **100**, which is in the form of a training device **400** mounted on the training apparatus **100** using the connector **170** in the same way as described above with respect to the device **300**.

5 The training device **400** includes a seat **402**, two cycling pedals **404**, a rotor **406** with vanes **408**, rotatable by the pedals, and a housing **410** accommodating the rotor, to comply with safety measures, and so as to allow safe and uninterrupted rotation of the rotor, and at least one water inlet (disposed on a non-shown side) to fill the housing **410**, around the rotor and vanes, with water. Optionally, the device can further include gripping
10 handles **412**, and a button **414** for setting training difficulty levels of the device. The housing **410** is mounted on a hollow tube **416** including holes and/or attachment sites for mounting the housing **410** at different locations thereon. The button **414** can be used to control orientation of the vanes **408** of the rotor **406** relative to the housing, by controlling their orientation angle, and/or their radial spacing from the housing, to thereby provide
15 different levels of resistance of the vanes to water during the rotor rotation caused by cycling of the cycling pedals.

According to the presently disclosed subject matter, one or more training kits can be arranged from two or more training devices and accessories described above. For example, one such training kit can include the floating member and the support assembly
20 of training apparatus **100**. Additionally, the kit can include the sinkable fixation device and a resistance (e.g. floating) device. Additionally, or alternatively, the kit can include one or more of the training devices **300** and **400**. Accordingly, the presently disclosed subject matter provides a wide range of novel rich combinations of training devices for use in a water pool, in a portable, extremely safe and cost effective manner.

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CLAIMS:

1. A training apparatus for use inside a water pool, comprising at least when in an operational state:
 - a floating member made from material having density lower than water
 - 5 density at room temperature, and
 - a support assembly comprising at least one sinking member with at least one suction cup configured to removably adhere the sinking member to a submerged surface of the water pool; and at least one elongated member connecting between said floating member and said at least one sinking
 - 10 member for fixing a position of said floating member with respect to said submerged surface.
2. The training apparatus of claim 1, wherein said elongated member comprises one or more attachment sites configured for mounting an accessory to the elongated member.
3. The training apparatus of claim 1 or 2, wherein said sinking member comprises a
- 15 pedal for activating and inactivating said suction cup.
4. The training apparatus of claim 3, wherein the number of said suction cups is at least two, and said pedal is configured for activating and inactivating the at least two suction cups.
5. The training apparatus of claim 3 or 4, wherein the suction cup has a bottom
- 20 portion adjacent its contact surface configured to adhere to the submerged surface, and a connection element connecting between said bottom portion and said pedal such that, during inactivation of the suction cup by the pedal, said connection element pulls said bottom portion upwardly from the submerged surface to thereby facilitate detachment of the contact surface from the submerged surface.
- 25 6. The training apparatus of any one of the preceding claims, wherein said sinking member is made from a material having density lower than water density at room temperature, and comprises a chamber and a plurality of holes connecting said chamber to exterior of the sinking member, such that when the sinking member is submerged, said chamber is filled with water to increase the weight of the sinking member.
- 30 7. The training apparatus of any one of the preceding claims, wherein said floating member has a surface comprising non-slippery texture.
8. The training apparatus of any one of the preceding claims, wherein said elongated member has an adjustable length.

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9. The training apparatus of any one of the preceding claims, wherein said elongated member comprises a telescopic portion allowing adjusting of its length.
10. The training apparatus of Claim 2 or any one of Claims 2 to 9, when dependent on Claim 2, wherein the attachment sites are in a spaced-apart relationship along the
5 elongated member, to thereby enable mounting one or more accessories at different locations of the elongated member.
11. The training apparatus of Claim 2 or any one of Claims 2 to 9, when dependent on Claim 2, wherein at least one of the attachment sites comprises a sliding holder and said elongated member has such a configuration in its cross-section as to enable sliding
10 of said holder along the length of the elongated member while disabling its pivoting about the elongated member.
12. The training apparatus of any of the preceding claims, wherein said elongated member is hollow and comprises holes formed therein to allow water entering the elongated member for increasing its weight.
13. The training apparatus of claim 12, wherein at least one of said holes is configured for being used as an attachment site for mounting an accessory thereto.
14. The training apparatus of any of the preceding claims, wherein the number of each of the sinking and elongated members is at least two, optionally, three.
15. The training apparatus of any one of the preceding claims, wherein the apparatus
20 has a horizontal reference plane, and at least in use of the apparatus said at least one elongated member is configured for being connected to the floating member in one of the following manners:
- so as to be inclined to said plane; or
 - so as to extend along said plane in the direction away from the floating member.
16. The training apparatus according to Claim 15, wherein said support assembly has
25 an operational state taken by it when the apparatus is ready for use and a storage state, in which the apparatus is not intended for use.
17. The training apparatus according to Claim 16, comprising a horizontal reference plane and foldable from its operational state into a storage state, in which its overall height
30 in the direction perpendicular to this plane is smaller than that in the operational state.
18. The training apparatus of Claim 17, wherein in the storage state of the support assembly, projection of the at least one elongated member on the reference plane overlaps with that of the floating member to a greater extent than in the operational state.

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- 19.** A training apparatus for use inside a water pool, comprising a sinkable fixation device configured to removably adhere to a submerged surface of the water pool, said sinkable fixation device comprising:
- a floatable member made from material having density lower than water density at room temperature and comprising a chamber configured to be filled with water when the sinkable device is in use;
 - at least one suction cup configured to removably adhere the sinkable device to a submerged surface of the water pool;
 - a plurality of holes connecting said chamber to exterior of the sinkable device, such that when the sinkable device is submerged, said chamber is filled with water to thereby increase weight of the sinkable device; and
 - at least one pulley configured for passing therethrough a rope element configured for being connected at its one end to a resistance device and for being at least indirectly pulled by a user at the other end.
- 20.** The training apparatus of Claim 19, wherein said sinkable device comprises a pedal for activating and inactivating said suction cup.
- 21.** The training apparatus of claim 20, wherein the number of said suction cups is at least two, and said pedal is configured for activating and inactivating said at least two suction cups.
- 22.** The training apparatus of Claim 20 or 21, wherein the suction cup has a bottom portion adjacent its contact surface configured to adhere to the submerged surface, and a connection element connecting between said bottom portion and said pedal such that, during inactivation of the suction cup by the pedal, said connection element pulls said bottom portion upwardly from the submerged surface to thereby facilitate detachment of the contact surface from the submerged surface.
- 23.** The training apparatus of any one of Claims 19 to 22, wherein said resistance device is a floating device.
- 24.** A floating device for use inside water during a training activity, said floating device being configured with variable surface area to provide a plurality of levels of resistance to water, when the device is pulled inside water.
- 25.** The floating device of Claim 24, comprising a series of floating members such that varying said surface area is achievable by changing mutual orientation of said members.

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- 26.** A training device for use inside a water pool, comprising:
- a seat chamber configured to be filled with water when the training device is in use,
 - controllable water inlet and air outlet in the seat chamber,
- 5 wherein height of the seat chamber inside the water is controlled by said controllable water inlet and said controllable air outlet.
- 27.** The training device of claim 26, configured for use with the training apparatus of any one of claims 1 to 17 and configured for mounting the training device to the elongated member of the training apparatus at its one or more attachment sites.
- 10 **28.** A training cycling device for use inside a water pool, comprising:
- a seat,
 - two cycling pedals;
 - a rotor with vanes, rotatable by said pedals; and
 - a housing accommodating said rotor so as to allow its rotation, and having at
- 15 least one water inlet.
- 29.** The training device of Claim 28, wherein disposition of the vanes relative to the housing is variable to provide different levels of resistance of the vanes to water during the rotor rotation.
- 30.** The training device according to Claim 28 or 29, configured for mounting the
- 20 training device to the elongated member of the training apparatus at its one or more attachment sites .
- 31.** A kit for assembling a training apparatus, as defined in any one of Claims 1 to 18, comprising at least the floating member and the support assembly.
- 32.** The kit of Claim 31, further comprising a sinkable fixation device and a resistance
- 25 device as defined in any one of Claims 19 to 23.
- 33.** The kit of Claim 32, wherein the resistance device is as defined in Claim 24.
- 34.** The kit of any one of Claims 31 to 33, further comprising one or more of the training devices as defined in any one of the Claims 26 to 30.
- 35.** A connector configured for mounting a first elongated element to a second
- 30 elongated element in spaced apart non-parallel orientation, the connector having mutually perpendicular horizontal and vertical reference planes and comprising:
- two element engaging portions disposed on two sides of the vertical reference plane,

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- a first passage in one of the element engaging portions, the passage extending along a first axis parallel to said vertical reference plane and being configured for receiving therein said first elongated element;
 - two spaced apart mounting loop members constituting the other element
5 engaging portion and extending on two sides of the horizontal reference plane so that a distance between them increases in the direction away from vertical plane, said loop members forming a second passage extending along a second axis parallel to the vertical reference plane and not parallel to the first axis, configured to allow for passing therethrough of the second elongated element with a sliding contact therebetween; and
 - 10 - a locking element configured to allow the connector to be moved along the second element so that said loop members are in sliding contact therewith until the locking element engages the second member so as to prevent the connector from further movement relative to the second member.
- 36.** The connector of Claim 35, wherein the connector is made from material having
15 density lower than water density at room temperature.
- 37.** The connector of Claim 35 or 36, wherein each loop member extends along at least a majority of a line lying on an intersection between an imaginary cylindrical surface and a plane, the planes of the two loop members defining equal angles with the horizontal reference plane on different sides thereof.
- 20 **38.** The connector of Claim 37, wherein said first passage has two passage portions spaced along the passage axis by a spacing region.
- 39.** The connector of Claim 38, wherein the spacing region is configured to receive therein an annular protrusion of an accessory in alignment with the two passage portions so as to allow said first elongated member to pass therethrough.

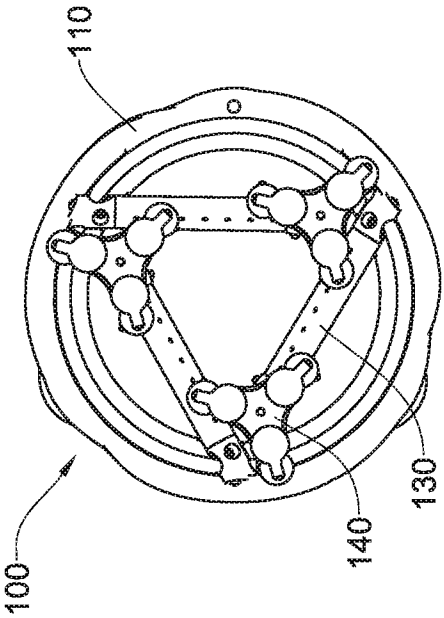


Fig. 1B-1

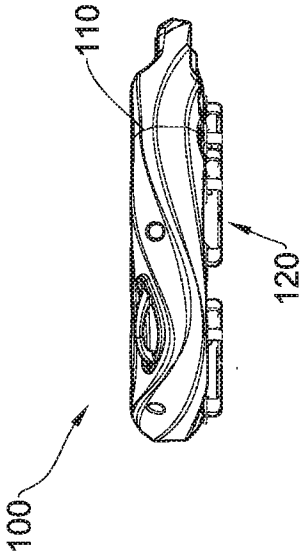


Fig. 1B-2

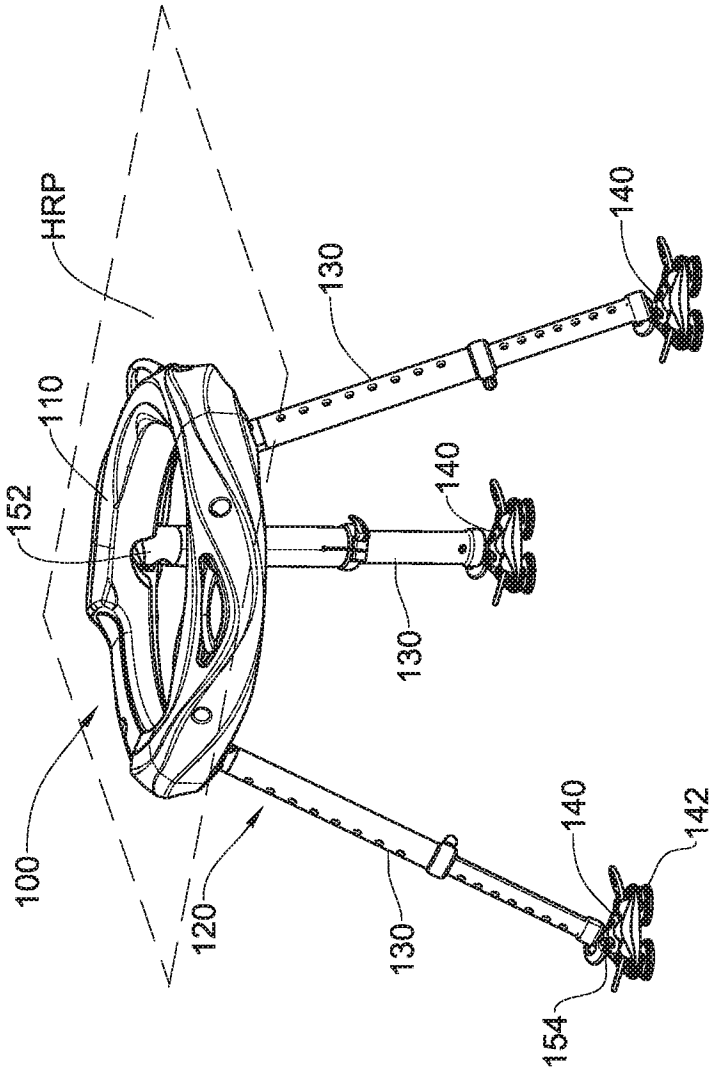


Fig. 1A

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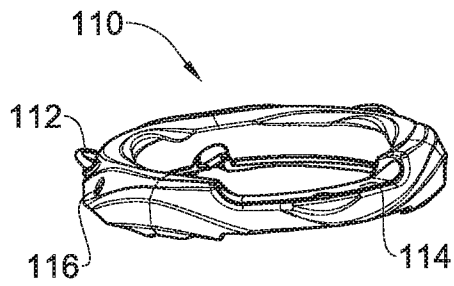


Fig. 2A

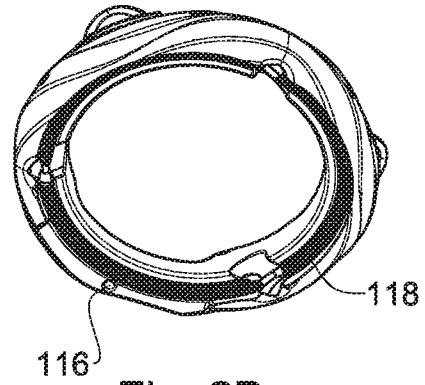


Fig. 2B

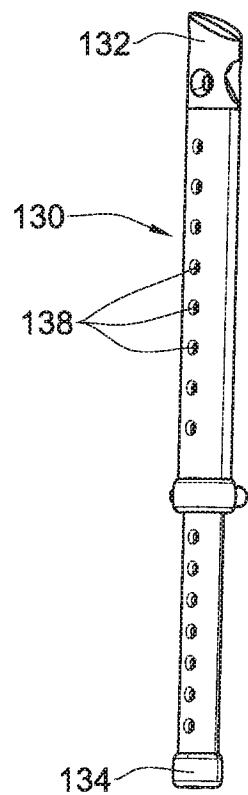


Fig. 3A

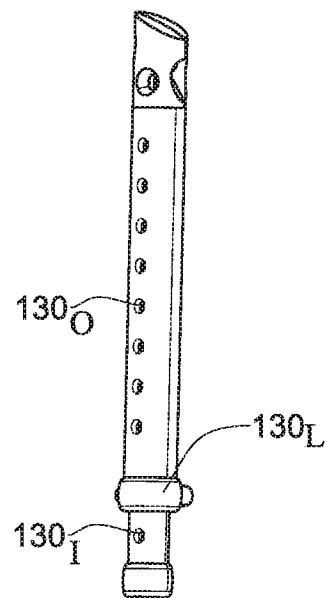
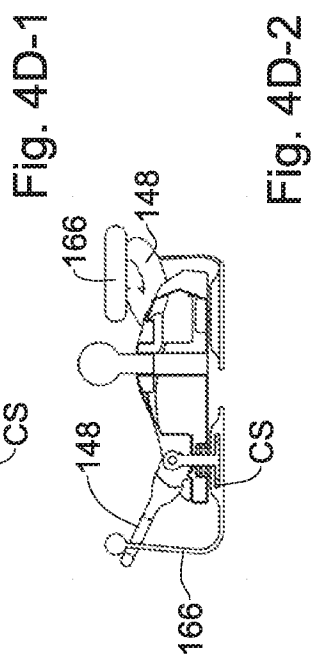
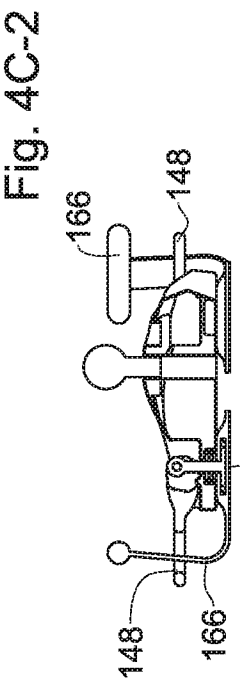
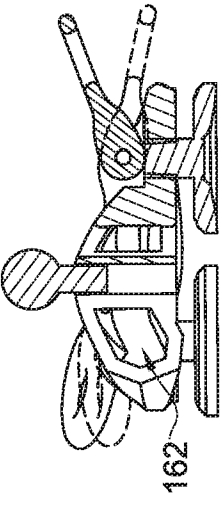
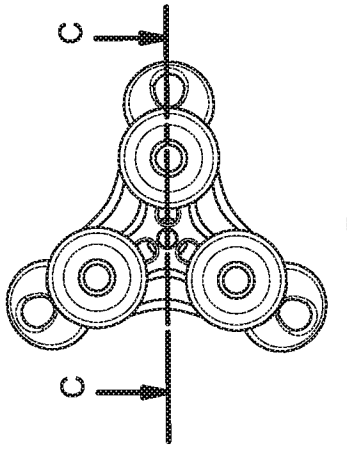
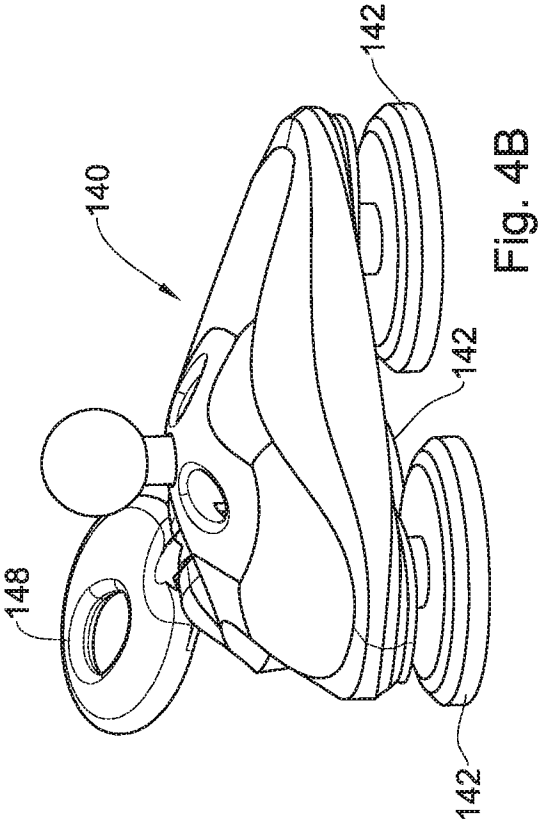
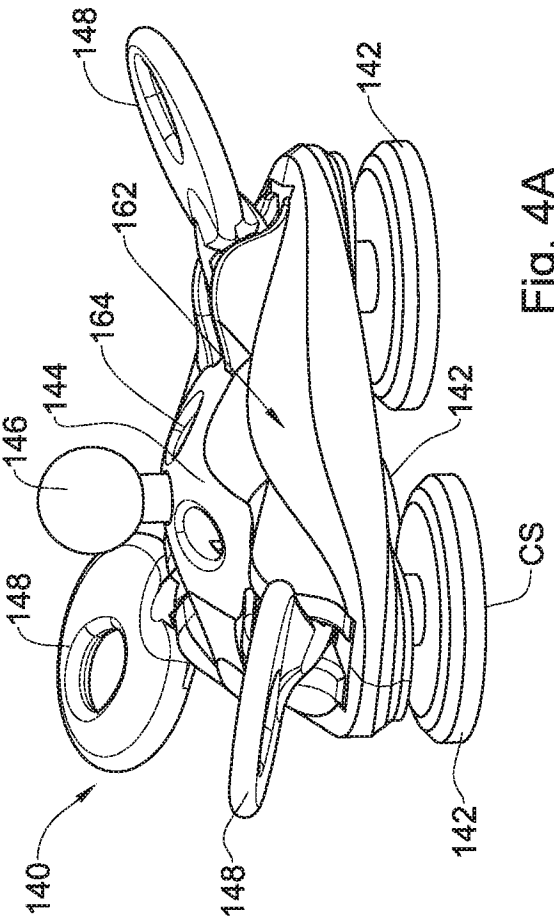


Fig. 3B



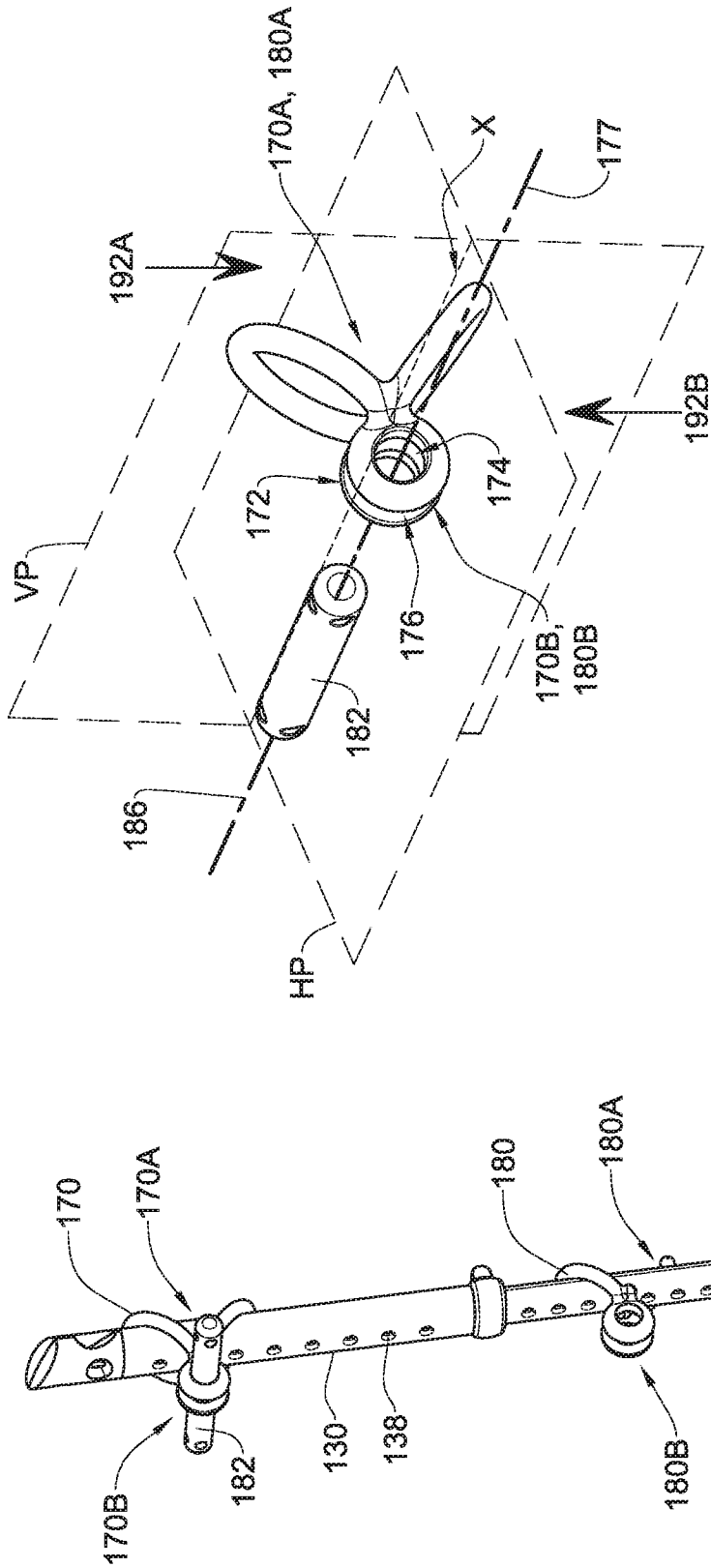


Fig. 5B

Fig. 5A

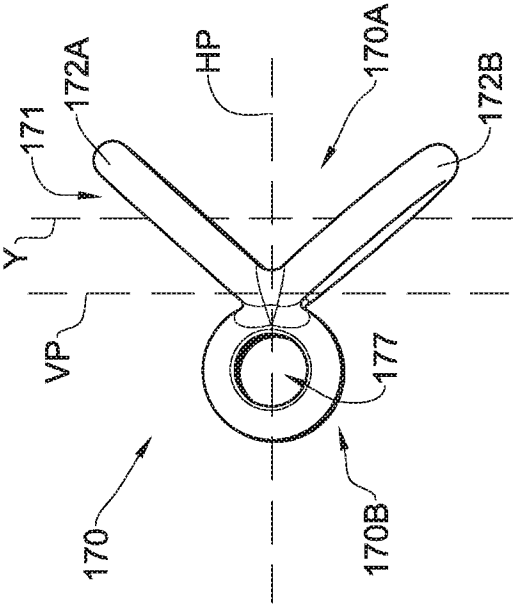


Fig. 5C

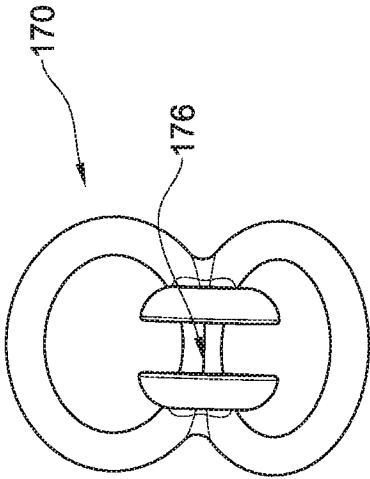


Fig. 5D

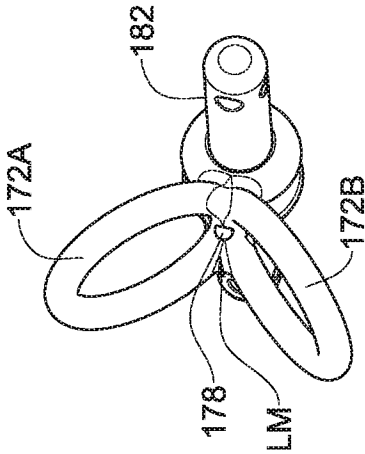


Fig. 5E

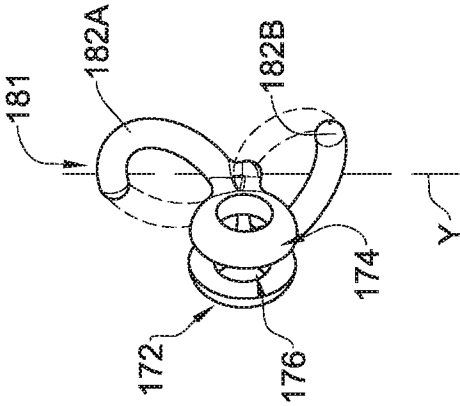


Fig. 5F

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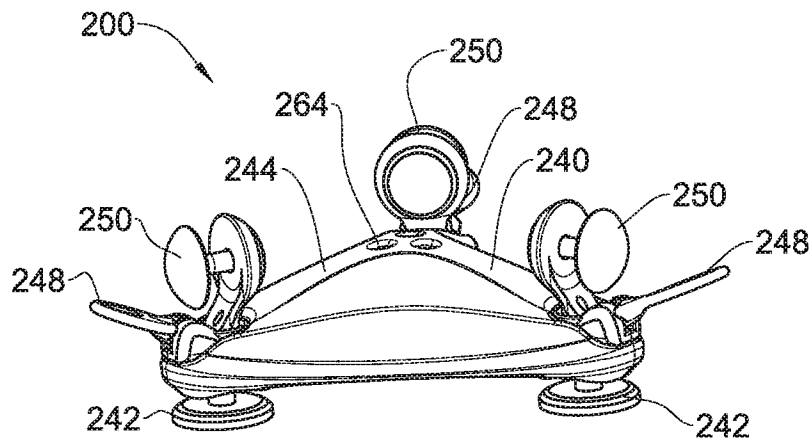


Fig. 6A

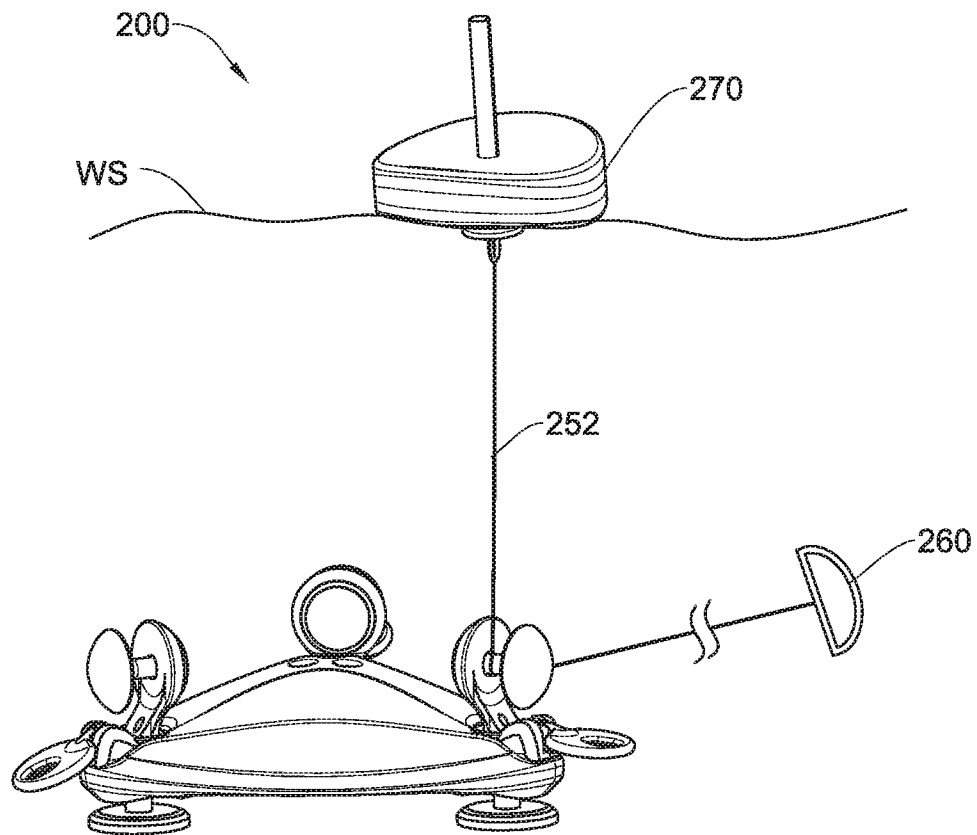


Fig. 6B

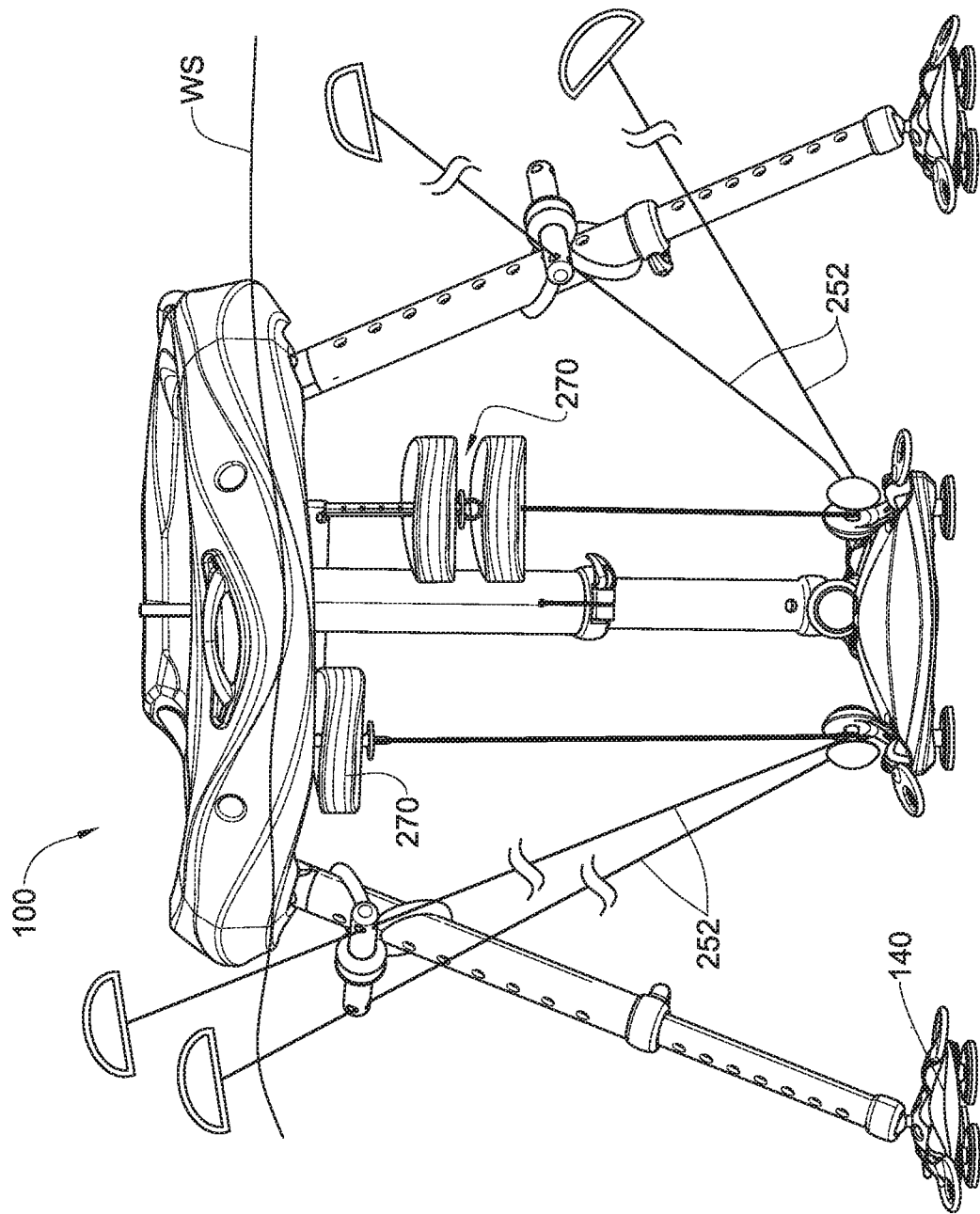


Fig. 6C

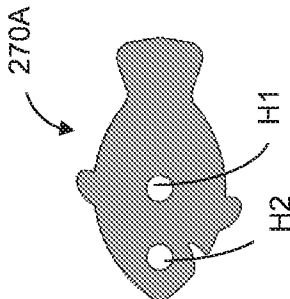
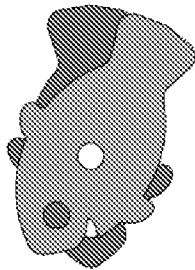
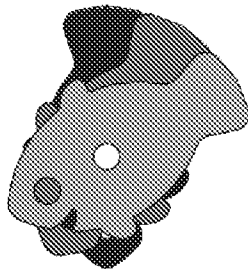
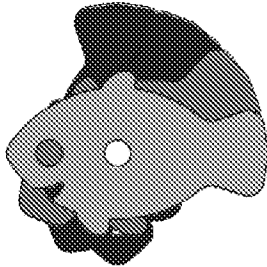


Fig. 6D-1

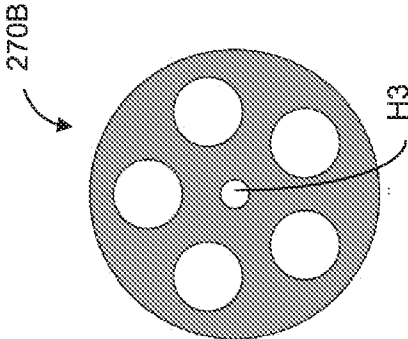
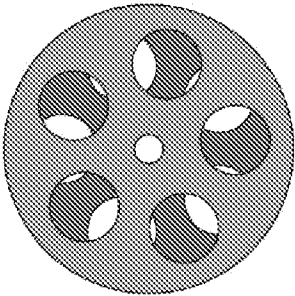
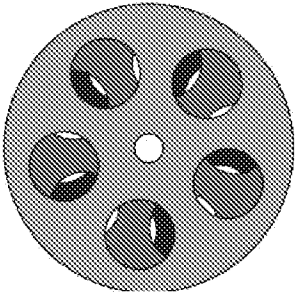
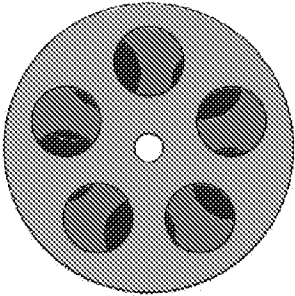


Fig. 6D-2

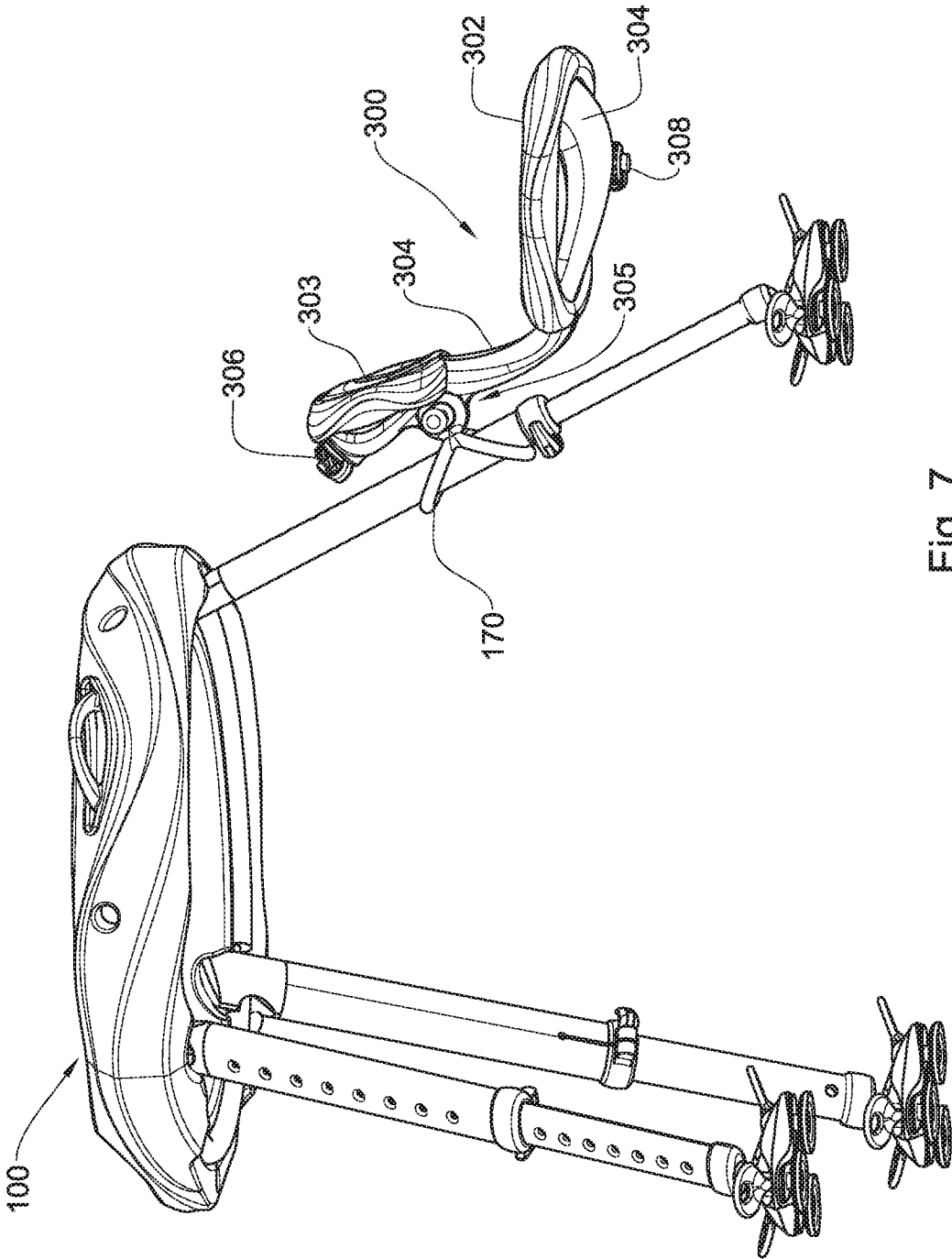
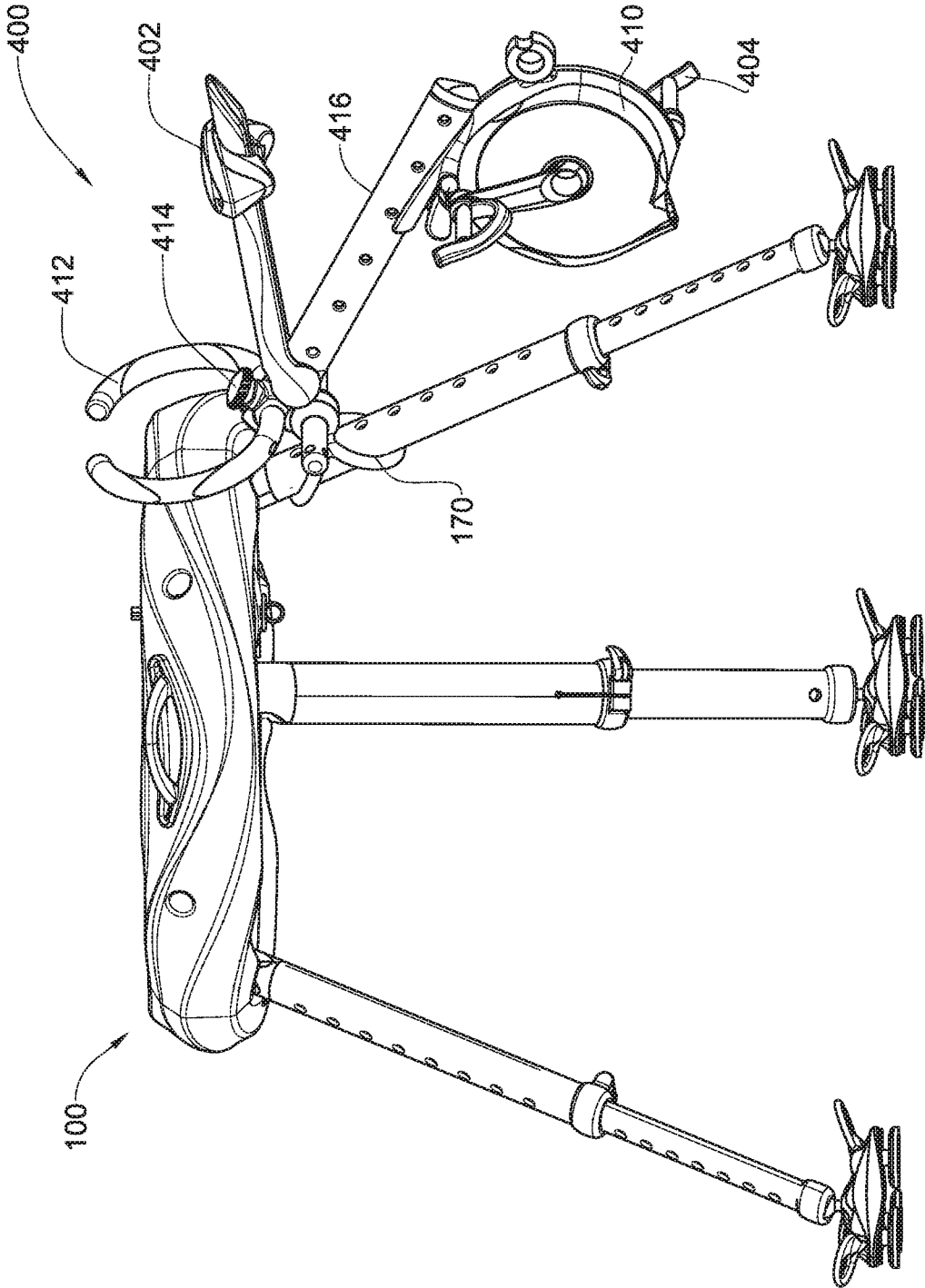


Fig. 7



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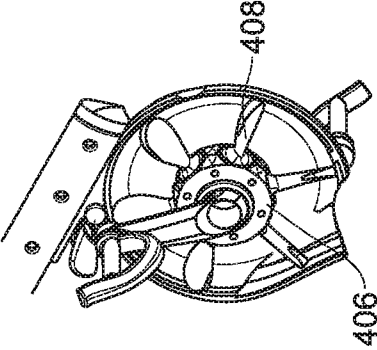


Fig. 8B

Fig. 8A

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL2016/050799

A. CLASSIFICATION OF SUBJECT MATTER

IPC (2016.01) A63B 21/06, A63B 23/12, A63B 23/035, A63B 21/00

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)

IPC (2016.01) A63B 21/06, A63B 23/12, A63B 23/035, A63B 21/00

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)

Databases consulted: THOMSON INNOVATION, Google Patents

Search terms used: aqua underwater submerge immers sunken vault tripod stool seat chair platform table chassis

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5665039 A HYDROFORCE INC 09 Sep 1997 (1997/09/09) the whole document	28
A	EP 1020205 A1 SOGEIS S R L 19 Jul 2000 (2000/07/19) the whole document	1-39
A	WO 9322002 A2 ROWE VICTOR LOPEZ? 11 Nov 1993 (1993/11/11) the whole document	1-39

☐ 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

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Date of the actual completion of the international search

08 Nov 2016

Date of mailing of the international search report

08 Nov 2016

Name and mailing address of the ISA:

Israel Patent Office

Technology Park, Bldg.5, Malcha, Jerusalem, 9695101, Israel

Facsimile No. 972-2-5651616

Authorized officer

KATZ Itay

Telephone No. 972-2-5657814

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL2016/050799

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See extra sheet.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL2016/050799

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet):

* This International Searching Authority found multiple inventions in this international application, as follows:

- | | | |
|---------------|---|--------------------|
| Invention/s 1 | An aquatic training apparatus that comprises a floating member providing gripping points for the user, wherein the floating member is mounted on a support assembly that comprises attachment sites for various training accessories, and wherein the accessories are mounted on the support assembly using specialized connectors. | Claim/s 1-27,31-39 |
| Invention/s 2 | A training cycling device for use inside a water pool | Claim/s 28-30 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/IL2016/050799

Patent document cited search report	Publication date	Patent family member(s)	Publication Date
US 5665039 A	09 Sep 1997	US 5665039 A	09 Sep 1997
		EP 0803270 A2	29 Oct 1997
		EP 0803270 A3	28 Apr 1999
EP 1020205 A1	19 Jul 2000	EP 1020205 A1	19 Jul 2000
		EP 1020205 B1	04 Oct 2006
		AT 341374 T	15 Oct 2006
		DE 60031017 D1	16 Nov 2006
		DE 60031017 T2	09 Aug 2007
		DK 1020205 T3	12 Feb 2007
		ES 2273659 T3	16 May 2007
		IT MN990003 A1	18 Jul 2000
		IT 1314368 B1	09 Dec 2002
		PT 1020205 E	31 Jan 2007
WO 9322002 A2	11 Nov 1993	WO 9322002 A2	11 Nov 1993
		WO 9322002 A3	20 Jan 1994
		AU 2586992 A	29 Nov 1993
		US 5106078 A	21 Apr 1992