

(19)



(11)

EP 3 552 674 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
21.04.2021 Bulletin 2021/16

(51) Int Cl.:
A63B 21/02 ^(2006.01) **A63B 21/045** ^(2006.01)
A63B 23/02 ^(2006.01) **A63B 21/04** ^(2006.01)

(21) Application number: **19165498.7**

(22) Date of filing: **27.03.2019**

(54) **MULTIFUNCTIONAL CURVED TRAINING DEVICE**

MULTIFUNKTIONALE GEKRÜMMTE TRAININGSVORRICHTUNG

DISPOSITIF D'ENTRAÎNEMENT MULTIFONCTIONNEL INCURVÉ

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**

(30) Priority: **02.04.2018 TW 107204346 U**

(43) Date of publication of application:
16.10.2019 Bulletin 2019/42

(73) Proprietor: **Deng, Jenung**
106 Taipei City (TW)

(72) Inventor: **Deng, Jenung**
106 Taipei City (TW)

(74) Representative: **Banse & Steglich**
Patentanwälte PartmbB
Patentanwaltskanzlei
Herzog-Heinrich-Straße 23
80336 München (DE)

(56) References cited:
EP-A1- 2 946 815 CN-U- 207 076 053
US-A- 4 789 154 US-A- 5 720 700
US-A1- 2008 032 876

EP 3 552 674 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates to a multifunctional curved training device, and more particularly, to an auxiliary tool that can be selectively used by a user for multiple workout types including push-ups, arm training and abdominal crunches for different workout patterns.

Description of the Related Art

[0002] To work out and thus achieve fitness, various types of workout devices have been developed in the industry as options that be chosen by individuals to train different parts of the human body. In actual practice, single-type workout equipment can produce an independent training function and cannot be replaced by another type of workout equipment. Therefore, to meet different training requirements involving different types of workout equipment, these different types of workout equipment needs to be separately purchased, resulting in economical burdens on users and more space required for storage. Further, a certain type of workout equipment capable of providing multiple workout functions is usually relatively large in volume, which similarly occupies a large storage space and is more complicated and inconvenient to use.

[0003] Document EP2946815 A1 discloses Muscular exercise equipment comprising an upper support bar having connecting rods disposed at both sides thereof and also having a predetermined length, a lower support bar having connecting rods disposed at both sides thereof and also having a predetermined length; and a central support bar to which the connecting rods of the upper support bar and the connecting rods of the lower support bar are coupled so that the upper support bar and the lower support bar has a predetermined contained angle, and which supports a bending motion of at least one of the upper support bar and the lower support bar, and is provided to be rolled.

[0004] Document US2008/032876A1 discloses a gymflexor training device, comprising torus-shaped hermetic reinforced chamber under pressure, equipped with a flush-mounted valve and device allowing to change the form of a chamber, wherein torus-shaped hermetic armored chamber consists of hermetic internal chamber, made of elastic gas-proof material, multilayer textile reinforcement, located on screw line around hermetic internal chamber, where coils of textile reinforcement in adjacent layers are directed in opposite directions, with angle between coils of 30 to 150°, and where outer shell is made of elastic fabric or porous material, and with device allowing to change the shape of the chamber consists of belt rings and a belt, equipped with an adjustable buckle.

SUMMARY OF THE INVENTION

[0005] In view of the above, in order to provide a structure different from the prior art and to improve the above disadvantages, the Inventor provides the present invention on the basis of years of experience and constant research, development and improvement.

[0006] It is an object of the present invention to provide a collapsible, bendable and highly elastic auxiliary tool allowing a user to selectively perform workout types including push-ups, arm training and abdominal crunches, so as to form a multifunctional curved training device for different workout patterns. Thus, disadvantages of the prior art, such as the need of separately purchasing different types of workout equipment to meet different user training requirements involving different types of workout equipment, resulting in economical burdens of the user and an increased storage space, or a large storage space occupied and being more complicated and inconvenient to use when a certain type of large workout equipment having multiple workout functions is used, are solved, thereby achieving different workout effects, saving costs needed for purchasing different types of workout equipment, saving storage spaces and being convenient to use and operate.

[0007] To achieve the above object of the invention, a multifunctional curved training device provided by the present invention includes a first main body, a second main body, a left elastic connecting member and a right elastic connecting member. The first main body is in an U shape, and includes a first middle portion, and a first left branch and a first right branch respectively extending in the same direction from two ends of the first middle portion and parallel to each other, wherein a first supporting bracket is provided between the first left branch and the first right branch. The second main body is in an U shape, and includes a second middle portion, and a second left branch and a second right branch respectively extending in the same direction from two ends of the second middle portion and parallel to each other, wherein a second supporting bracket is provided between the second left branch and the second right branch. The left elastic connecting member is arched in shape, and includes a left spring and a left flexible sleeve enveloping an outer periphery of the left spring. Two ends of the left elastic connecting member are respectively connected to the first left branch and the second left branch. The right elastic connecting member is arched in shape, and includes a right spring and a right flexible sleeve enveloping an outer periphery of the right spring. Two ends of the right elastic connecting member are respectively connected to the first right branch and the second right branch.

[0008] In implementation, the first supporting bracket includes a first left supporting portion, a first right supporting portion and a first middle supporting portion. One end of the first left supporting portion is connected to the first left branch, one end of the first right supporting por-

tion is connected to the first right branch, and one end of the first middle supporting portion is connected to the first middle portion.

[0009] In implementation, one end of the first left supporting portion includes a first left handle for being connected to the first left branch, one end of the first right supporting portion includes a first right handle for being connected to the first right branch, and one end of the first middle supporting portion includes a first middle handle for being connected to the first middle portion.

[0010] In implementation, the second supporting bracket includes a second left supporting portion, a second right supporting portion and a second middle supporting portion. One end of the second left supporting portion is connected to the second left branch, one end of the second right supporting portion is connected to the second right branch, and one end of the second middle supporting portion is connected to the second middle portion.

[0011] In implementation, one end of the second left supporting portion includes a second left handle for connecting to the second left branch, one end of the second right supporting portion includes a second right handle for connecting to the second right branch, and one end of the second middle supporting portion includes a second middle handle for connecting to the second middle portion.

[0012] In implementation, the left spring is a helical spring in an arched shape, and the right spring is an arched helical spring.

[0013] In implementation, the left elastic connecting member and the right elastic connecting member are in an arched shape with their openings arranged in the same direction. A first left curved portion is provided between the first middle portion and the first left branch, and a first right curved portion is provided between the first middle portion and the first right branch, so as to have one end of the first left branch and one end of the first right branch to simultaneously extended in a bending direction.

[0014] In implementation, second left curved portion is provided between the second middle portion and the second left branch, and a second right curved portion is provided between the second middle portion and the second right branch, so as to have one end of the second left branch and one end of the second right branch to simultaneously extended in a bending direction.

[0015] The above and other aspects of the invention will become better understood with regard to the following detailed description of the preferred but non-limiting embodiments. The following description is made with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016]

FIG. 1 is an exploded diagram of components ac-

cording to a preferred embodiment of the present invention;

FIG. 2 is a perspective appearance diagram according to a preferred embodiment of the present invention; and

FIG. 3 to FIG. 9 are schematic diagrams of states of use according to a preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0017] Referring to FIG. 1 and FIG. 2, a multifunctional curved training device 1 according to a preferred embodiment of the present invention includes a first main body 2, a second main body 3, a left elastic connecting member 4 and a right elastic connecting member 5.

[0018] The first main body 2 is a U-shaped tube formed by continuously bending a metal tube, and an outer periphery of the tube is enveloped by foam sponge. The first main body 2 includes a first middle portion 21, a first left branch 22 and a first right branch 23. The first left branch 22 and the first right branch 23 respectively extend in the same direction from left and right ends of the first middle portion 21 and are parallel to each other. A first left curved portion 24 is provided between the first middle portion 21 and the first left branch 22, and a first right curved portion 25 is provided between the first middle portion 21 and the first right branch 23. Thus, one end of the first left branch 22 and one end of the first right branch 23 are simultaneously extended in a bending direction and form a bending angle with the first middle portion 21. A first supporting bracket 26 is connected between the first left branch 22 and the first right branch 23. The first supporting bracket 26 is an elastic Y-shaped plate made of thermoplastic rubber (TPR), and includes a first left supporting portion 261, a first right supporting portion 262 and a first middle supporting portion 263. One end of the first left supporting portion 261 includes a first left handle 27, which sleeves the first left branch 22. One end of the right supporting portion 262 includes a first right handle 28, which sleeves the first right branch 23. One end of the first middle supporting portion 263 includes a first middle handle 29, which sleeves the first middle portion 21.

[0019] The second main body 3 is a U-shaped tube formed by continuously bending a metal tube, and an outer periphery of the tube is enveloped by foam sponge. The second main body 3 includes a second middle portion 31, a second left branch 32 and a second right branch 33. The second left branch 32 and the second right branch 33 are respectively extended in the same direction from left and right ends of the second middle portion 31 and are parallel to each other. A second left curved portion 34 is provided between the second middle portion 31 and the second left branch 32, and a second right curved portion 35 is provided between the second middle

portion 31 and the second right branch 33. Thus, one end of the second left branch 32 and one end of the second right branch 33 are simultaneously extended in a bending direction and form a bending angle with the second middle portion 31. A second supporting bracket 36 is connected between the second left branch 32 and the second right branch 33. The second supporting bracket 36 is an elastic Y-shaped plate made of thermoplastic rubber (TPR), and includes a second left supporting portion 361, a second right supporting portion 362 and a second middle supporting portion 363. One end of the second left supporting portion 361 includes a second left handle 37, which sleeves the second left branch 32. One end of the second right supporting portion 362 includes a second right handle 38, which sleeves the second right branch 33. One end of the second middle supporting portion 363 includes a second middle handle 39, which sleeves the second middle portion 31.

[0020] The left elastic connecting member 4 and the right elastic connecting member 5 are arched bodies having openings in the same direction, and the opening direction thereof is opposite to an opening direction of the two bending angles of the first main body 2 and the second main body 3. The left elastic connecting member 4 includes an arched helical spring and a bellow tube, wherein the helical spring is used as a left spring 41, and the bellow tube sleeves and covers an outer periphery of the left spring 41 and is used as a left flexible sleeve 42. Two ends of the left elastic connecting member 4 are respectively connected to one end of the first left branch 22 and one end of the second left branch 32. The right elastic connecting member 5 includes a helical spring in an arched shape and a bellow tube, wherein the helical spring is used as a right spring 51, and the bellow tube sleeves and covers an outer periphery of the right spring 51 and is used as a right flexible sleeve 52. Two ends of the right elastic connecting member 5 are respectively connected to one end of the first right branch 23 and one end of the second right branch 33.

[0021] As shown in FIG. 3 to FIG. 9, a user can use the above structure to perform workout types including push-ups, abdominal crunches in a sitting posture, abdominal crunches in a sideways sitting posture, arm training, assisted sit-ups, presses in a sideways reclining posture, and abdominal crunches in a reclining posture, thus achieving effects of training muscles of various body parts.

[0022] Therefore, the present invention provides the following advantages.

[0023] 1. Two main bodies are connected at the two ends of the elastic connecting members on the two sides, and are covered by a flexible material. Further, the helical springs of the elastic connecting members on the two sides are collapsible, bendable and highly flexible, such that the invention can be used as an auxiliary tool for various workout types such as push-ups. Therefore, in addition to being used for performing various types of muscle training according to user requirements to

achieve different workout effects, the present invention can further effectively save costs for purchasing different types of workout equipment, save a storage space and be convenient to use and operate.

[0024] 2. The helical springs in the elastic connecting members of the present invention are directly formed as arched in shape. Hence, not only good elasticity is provided but also sufficient bending strength is produced for prolonging durability.

[0025] One end of the first left branch and one end of the first right branch of the first main body simultaneously are extended in a bending direction and form a bending angle with the first middle portion. One end of the second left branch and one end of the second right branch of the second main body are simultaneously extended in a bending direction and form a bending angle with the second middle portion. Thus, a buffer space is formed between the main bodies and a body of the user or the ground, so as to facilitate operations and produce more stable position effects relative to the body of the user or the ground.

[0026] In conclusion, on the basis of the contents disclosed by the above description, the present invention achieves expected objects, and provides a multifunctional curved training device capable of serving as an auxiliary tool for achieving different workout effects, effectively saving costs for purchasing different types of workout equipment, saving a storage space, prolonging durability, and being convenient to use and operate. The present invention is industrially applicable. Therefore, a patent is filed according to provisions.

Claims

1. A multifunctional curved training device (1), comprising:

a first main body (2), in an U shape, comprising a first middle portion (21) and a first left branch (22) and a first right branch (23) respectively extending in the same direction from two ends of the first middle portion (21) and parallel to each other, a first supporting bracket (26) being provided between the first left branch (22) and the first right branch (23), wherein the first supporting bracket (26) comprises a first left supporting portion (261), a first right supporting portion (262) and a first middle supporting portion (263), one end of the first left supporting portion (261) is connected to the first left branch (22), one end of the first right supporting portion (262) is connected to the first right branch (23), and one end of the first middle supporting portion (263) is connected to the first middle portion (21);

a second main body (3), in an U shape, comprising a second middle portion (31) and a second left branch (32) and a second right branch

- (33) respectively extending in a same direction from two ends of the second middle portion (31) and parallel to each other, a second supporting bracket (36) being provided between the second left branch (32) and the second right branch (33); a left elastic connecting member (4), arched in shape, the left elastic connecting member (4) comprising a left spring (41) and a left flexible sleeve (42) enveloping an outer periphery of the left spring (41), two ends of the left elastic connecting members (4) respectively being connected to the first left branch (22) and the second left branch (32); and a right elastic connecting member (5), arched in shape, the right elastic connecting member (5) comprising a right spring (51) and a right flexible sleeve (52) enveloping an outer periphery of the right spring (51), two ends of the right elastic connecting member (5) respectively being connected to the first right branch (23) and the second right branch (33).
2. The multifunctional curved training device (1) according to claim 1, wherein one end of the first left supporting portion (261) comprises a first left handle (27) for being connected to the first left branch (22), one end of the first right supporting portion (262) comprises a first right handle (28) for being connected to the first right branch (23), and one end of the first middle supporting portion (263) comprises a first middle handle (29) for being connected to the first middle portion (21).
 3. The multifunctional curved training device (1) according to claim 1, wherein the second supporting bracket (36) comprises a second left supporting portion (361), a second right supporting portion (362) and a second middle supporting portion, one end of the second left supporting portion (361) is connected to the second left branch (32), one end of the second right supporting portion (362) is connected to the second right branch (33), and one end of the second middle supporting portion (363) is connected to the second middle portion (31).
 4. The multifunctional curved training device (1) according to claim 3, wherein one end of the second left supporting portion (361) comprises a second left handle (37) for being connected to the second left branch (32), one end of the second right supporting portion (362) comprises a second right handle (38) for being connected to the second right branch (33), and one end of the second middle supporting portion (363) comprises a second middle handle (39) for being connected to the second middle portion (31).
 5. The multifunctional curved training device (1) according to claim 1, wherein the left spring is a helical

spring in an arched shape.

6. The multifunctional curved training device (1) according to claim 1, wherein the right spring is a helical spring in an arched shape.
7. The multifunctional curved training device (1) according to claim 1, wherein the left elastic connecting member (4) and the right elastic connecting member (5) are in a arched shape with their openings arranged in the same direction, a first left curved portion is provided between the first middle portion (21) and the first left branch (22), and a first right curved portion is provided between the first middle portion (21) and the first right branch (23), so as to have one end of the first left branch and one end of the first right branch (23) simultaneously extended in a bending direction.
8. The multifunctional curved training device (1) according to claim 7, wherein a second left curved portion (34) is provided between the second middle portion (31) and the second left branch (32), and a second right curved portion (35) is provided between the second middle portion (31) and the second right branch (33), so as to have one end of the second left branch (32) and one end of the second right branch (33) simultaneously extended in a bending direction.

Patentansprüche

1. Multifunktionales gekrümmtes Trainingsgerät (1), umfassend:

einen ersten Hauptkörper (2) in einer U-Form, der einen ersten mittleren Abschnitt (21) und einen ersten linken Schenkel (22) und einen ersten rechten Schenkel (23) aufweist, die sich jeweils in der gleichen Richtung von zwei Enden des ersten mittleren Abschnitts (21) und parallel zueinander erstrecken, wobei ein erster Stützbügel (26) zwischen dem ersten linken Schenkel (22) und dem ersten rechten Schenkel (23) vorgesehen ist, wobei der erste Stützbügel (26) einen ersten linken Stützabschnitt (261), einen ersten rechten Stützabschnitt (262) und einen ersten mittleren Stützabschnitt (263) aufweist, wobei ein Ende des ersten linken Stützabschnitts (261) mit dem ersten linken Schenkel (22) verbunden ist, ein Ende des ersten rechten Stützabschnitts (262) mit dem ersten rechten Schenkel (23) verbunden ist, und ein Ende des ersten mittleren Stützabschnitts (263) mit dem ersten mittleren Abschnitt (21) verbunden ist;

einen zweiten Hauptkörper (3) in einer U-Form, der einen zweiten mittleren Abschnitt (31) und

- einen zweiten linken Schenkel (32) und einen zweiten rechten Schenkel (33) umfasst, die sich jeweils in einer gleichen Richtung von zwei Enden des zweiten mittleren Abschnitts (31) und parallel zueinander erstrecken, wobei ein zweiter Stützbügel (36) zwischen dem zweiten linken Schenkel (32) und dem zweiten rechten Schenkel (33) vorgesehen ist;
- ein linkes elastisches Verbindungselement (4), das eine gebogene Form aufweist, wobei das linke elastische Verbindungselement (4) eine linke Feder (41) und eine linke flexible Hülse (42) umfasst, die einen Außenumfang der linken Feder (41) umgibt, wobei zwei Enden der linken elastischen Verbindungselemente (4) jeweils mit dem ersten linken Schenkel (22) und dem zweiten linken Schenkel (32) verbunden sind; und
- ein rechtes elastisches Verbindungselement (5), das eine gebogene Form aufweist, wobei das rechte elastische Verbindungselement (5) eine rechte Feder (51) und eine rechte flexible Hülse (52) umfasst, die einen Außenumfang der rechten Feder (51) umgibt, wobei zwei Enden des rechten elastischen Verbindungselements (5) jeweils mit dem ersten rechten Schenkel (23) und dem zweiten rechten , das eine gebogene Form aufweist, (33) verbunden sind.
2. Multifunktionales gekrümmtes Trainingsgerät (1) nach Anspruch 1, wobei ein Ende des ersten linken Stützabschnitts (261) einen ersten linken Griff (27) umfasst, der mit dem ersten linken Schenkel (22) verbunden ist, ein Ende des ersten rechten Stützabschnitts (262) einen ersten rechten Griff (28) umfasst, der mit dem ersten rechten Schenkel (23) verbunden ist, und ein Ende des ersten mittleren Stützabschnitts (263) einen ersten mittleren Griff (29) umfasst, der mit dem ersten mittleren Abschnitt (21) verbunden ist.
 3. Multifunktionales gekrümmtes Trainingsgerät (1) nach Anspruch 1, wobei der zweite Stützbügel (36) einen zweiten linken Stützabschnitt (361), einen zweiten rechten Stützabschnitt (362) und einen zweiten mittleren Stützabschnitt umfasst, wobei ein Ende des zweiten linken Stützabschnitts (361) mit dem zweiten linken Schenkel (32) verbunden ist, wobei ein Ende des zweiten rechten Stützabschnitts (362) mit dem zweiten rechten Schenkel (33) verbunden ist und wobei ein Ende des zweiten mittleren Stützabschnitts (363) mit dem zweiten mittleren Abschnitt (31) verbunden ist.
 4. Multifunktionales gekrümmtes Trainingsgerät (1) nach Anspruch 3, wobei ein Ende des zweiten linken Stützabschnitts (361) einen zweiten linken Griff (37) umfasst, der mit dem zweiten linken Schenkel (32) verbunden ist, ein Ende des zweiten rechten Stützabschnitts (362) einen zweiten rechten Griff (38) umfasst, der mit dem zweiten rechten Schenkel (33) verbunden ist, und ein Ende des zweiten mittleren Stützabschnitts (363) einen zweiten mittleren Griff (39) umfasst, der mit dem zweiten mittleren Abschnitt (31) verbunden ist.
 5. Multifunktionales gekrümmtes Trainingsgerät (1) nach Anspruch 1, wobei die linke Feder eine Schraubenfeder in einer gebogenen Form ist.
 6. Multifunktionales gekrümmtes Trainingsgerät (1) nach Anspruch 1, wobei die rechte Feder eine Schraubenfeder in einer gebogenen Form ist.
 7. Multifunktionales gekrümmtes Trainingsgerät (1) nach Anspruch 1, wobei das linke elastische Verbindungselement (4) und das rechte elastische Verbindungselement (5) eine gekrümmte Form aufweisen, wobei ihre Öffnungen in der gleichen Richtung angeordnet sind, wobei ein erster linker gekrümmter Abschnitt zwischen dem ersten mittleren Abschnitt (21) und dem ersten linken Schenkel (22) vorgesehen ist, und wobei ein erster rechter gekrümmter Abschnitt zwischen dem ersten mittleren Abschnitt (21) und dem ersten rechten Schenkel (23) vorgesehen ist, so dass ein Ende des ersten linken Schenkels und ein Ende des ersten rechten Schenkels (23) gleichzeitig in einer Biegerichtung verlängert sind.
 8. Multifunktionales gekrümmtes Trainingsgerät (1) nach Anspruch 7, wobei ein zweiter linker gekrümmter Abschnitt (34) zwischen dem zweiten mittleren Abschnitt (31) und dem zweiten linken Schenkel (32) vorgesehen ist, und ein zweiter rechter gekrümmter Abschnitt (35) zwischen dem zweiten mittleren Abschnitt (31) und dem zweiten rechten Schenkel (33) vorgesehen ist, so dass sich ein Ende des zweiten linken Schenkels (32) und ein Ende des zweiten rechten Schenkels (33) gleichzeitig in einer Biegerichtung erstrecken.
- ## Revendications
1. Dispositif d'entraînement courbe multifonctionnel (1), comprenant :
 - un premier corps principal (2), en forme de U, comprenant une première partie centrale (21) et une première branche gauche (22) et une première branche droite (23) s'étendant respectivement dans la même direction à partir de deux extrémités de la première partie centrale (21) et parallèlement l'une à l'autre, un premier support (26) étant prévu entre la première branche gauche (22) et la première branche droite (23), dans

- lequel le premier support (26) comprend une première partie de support gauche (261), une première partie de support droite (262) et une première partie de support centrale (263), une extrémité de la première partie de support gauche (261) est reliée à la première branche gauche (22), une extrémité de la première partie de support droite (262) est reliée à la première branche droite (23) et une extrémité de la première partie de support centrale (263) est reliée à la première partie centrale (21) ;
 un deuxième corps principal (3), en forme de U, comprenant une deuxième partie centrale (31) et une deuxième branche gauche (32) et une deuxième branche droite (33) s'étendant respectivement dans une même direction à partir de deux extrémités de la deuxième partie centrale (31) et parallèlement l'une à l'autre, une deuxième support (36) étant prévue entre la deuxième branche gauche (32) et la deuxième branche droite (33) ;
 un élément de liaison élastique gauche (4), de forme arquée, l'élément de liaison élastique gauche (4) comprenant un ressort gauche (41) et un manchon flexible gauche (42) enveloppant une périphérie extérieure du ressort gauche (41), deux extrémités des éléments de liaison élastiques gauches (4) étant respectivement reliées à la première branche gauche (22) et à la deuxième branche gauche (32) ; et
 un élément de liaison élastique droit (5), de forme arquée, l'élément de liaison élastique droit (5) comprenant un ressort droit (51) et un manchon flexible droit (52) enveloppant une périphérie extérieure du ressort droit (51), deux extrémités de l'élément de liaison élastique droit (5) étant respectivement reliées à la première branche droite (23) et à la deuxième branche droite (33).
2. Dispositif d'entraînement courbe multifonctionnel (1) selon la revendication 1, dans lequel une extrémité de la première partie de support gauche (261) comprend une première poignée gauche (27) pour être reliée à la première branche gauche (22), dans lequel une extrémité de la première partie de support droite (262) comprend une première poignée droite (28) pour être reliée à la première branche droite (23), et dans lequel une extrémité de la première partie de support centrale (263) comprend une première poignée centrale (29) pour être reliée à la première partie centrale (21).
 3. Dispositif d'entraînement courbe multifonctionnel (1) selon la revendication 1, dans lequel le deuxième support (36) comprend une deuxième partie de support gauche (361), une deuxième partie de support droite (362) et une deuxième partie de support cen-
 - trale, une extrémité de la deuxième partie de support gauche (361) est reliée à la deuxième branche gauche (32), une extrémité de la deuxième partie de support droite (362) est reliée à la deuxième branche droite (33), et une extrémité de la deuxième partie de support centrale (363) est reliée à la deuxième partie centrale (31).
 4. Dispositif d'entraînement courbe multifonctionnel (1) selon la revendication 3, dans lequel une extrémité de la deuxième partie de support gauche (361) comprend une deuxième poignée gauche (37) pour être reliée à la deuxième branche gauche (32), une extrémité de la deuxième partie de support droite (362) comprend une deuxième poignée droite (38) pour être reliée à la deuxième branche droite (33), et une extrémité de la deuxième partie de support centrale (363) comprend une deuxième poignée centrale (39) pour être reliée à la deuxième partie centrale (31).
 5. Dispositif d'entraînement courbe multifonctionnel (1) selon la revendication 1, dans lequel le ressort gauche est un ressort hélicoïdal en forme d'arc.
 6. Dispositif d'entraînement courbe multifonctionnel (1) selon la revendication 1, dans lequel le ressort droit est un ressort hélicoïdal de forme d'arc.
 7. Dispositif d'entraînement courbe multifonctionnel (1) selon la revendication 1, dans lequel l'élément de liaison élastique gauche (4) et l'élément de liaison élastique droit (5) sont en forme d'arc avec leurs ouvertures disposées dans la même direction, dans lequel une première partie courbe gauche est prévue entre la première partie centrale (21) et la première branche gauche (22), et une première partie courbe droite est prévue entre la première partie centrale (21) et la première branche droite (23), de manière à avoir une extrémité de la première branche gauche et une extrémité de la première branche droite (23) simultanément étendues dans une direction de flexion.
 8. Dispositif d'entraînement courbe multifonctionnel (1) selon la revendication 7, dans lequel une deuxième partie courbe gauche (34) est prévue entre la deuxième partie centrale (31) et la deuxième branche gauche (32), et une deuxième partie courbe droite (35) est prévue entre la deuxième partie centrale (31) et la deuxième branche droite (33), de manière à avoir une extrémité de la deuxième branche gauche (32) et une extrémité de la deuxième branche droite (33) simultanément étendues dans une direction de flexion.

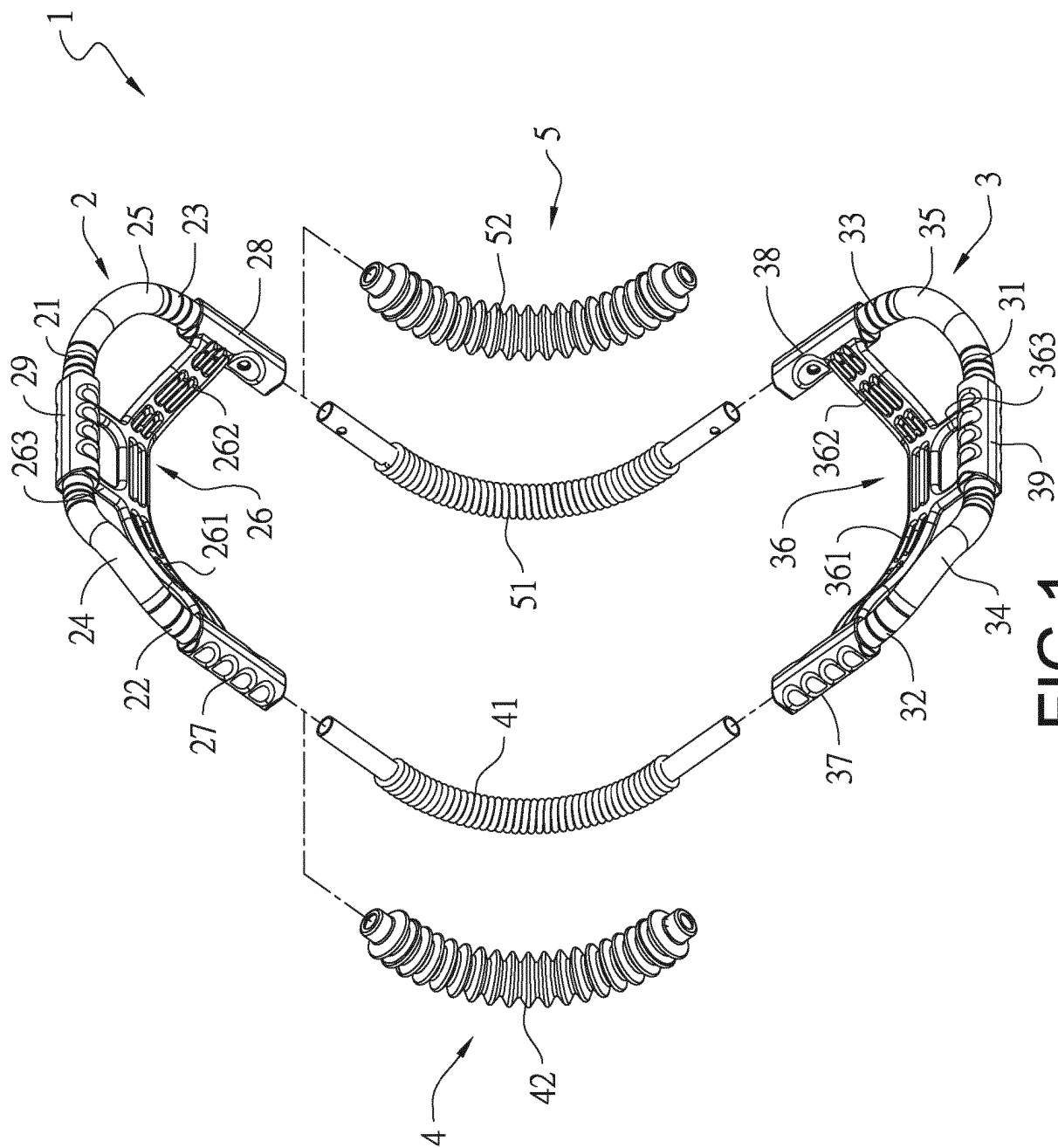


FIG.1

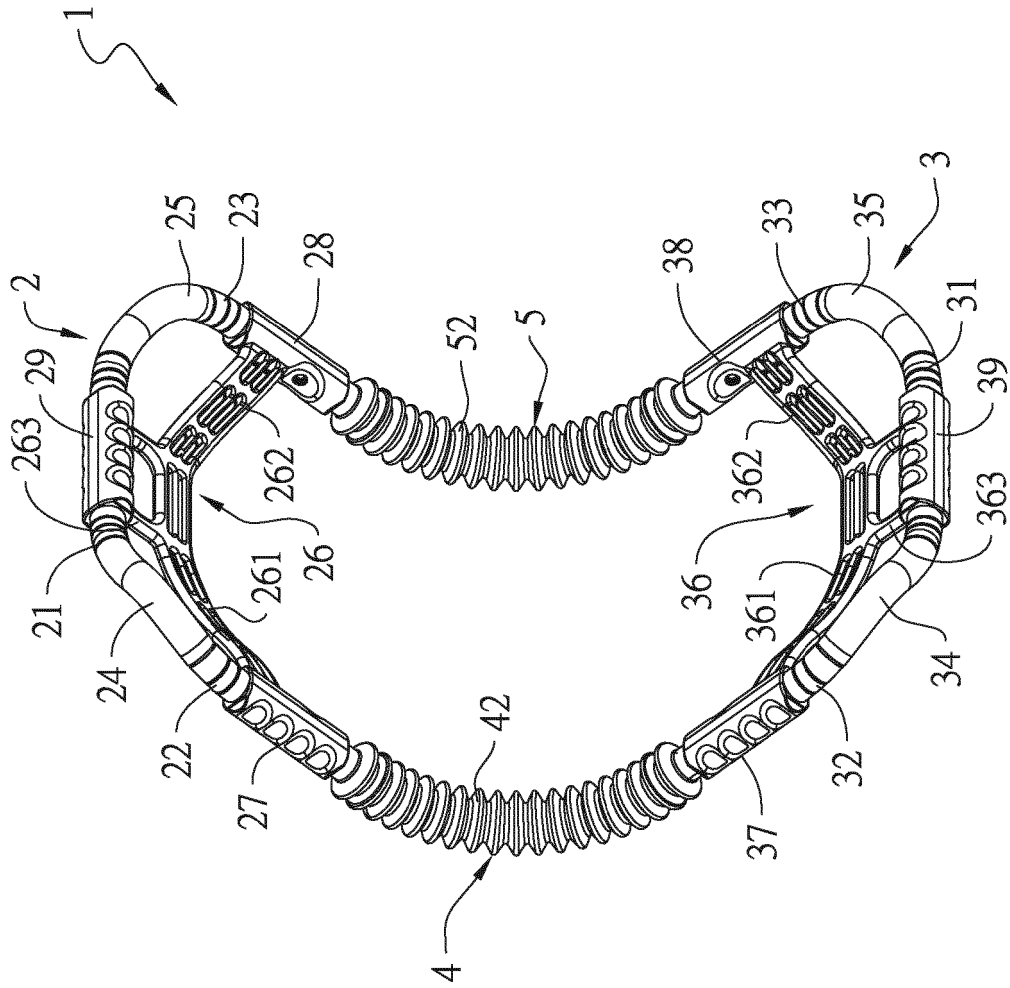


FIG. 2

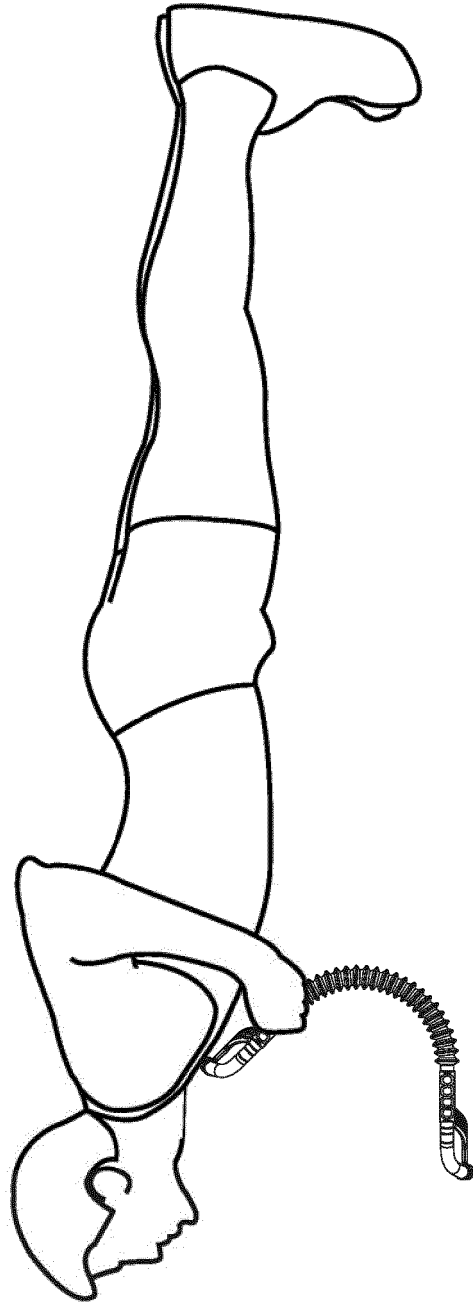


FIG. 3

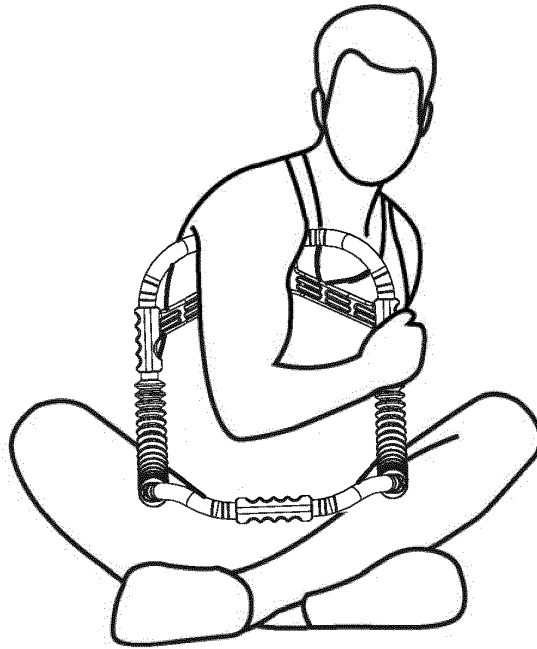


FIG. 4



FIG. 5

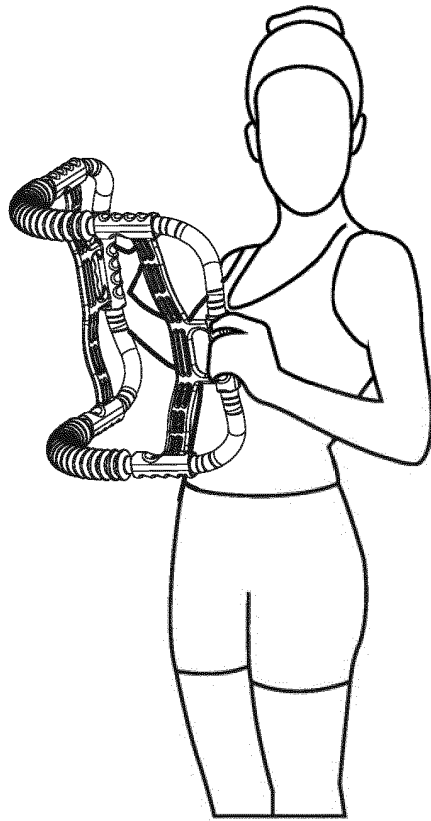


FIG. 6

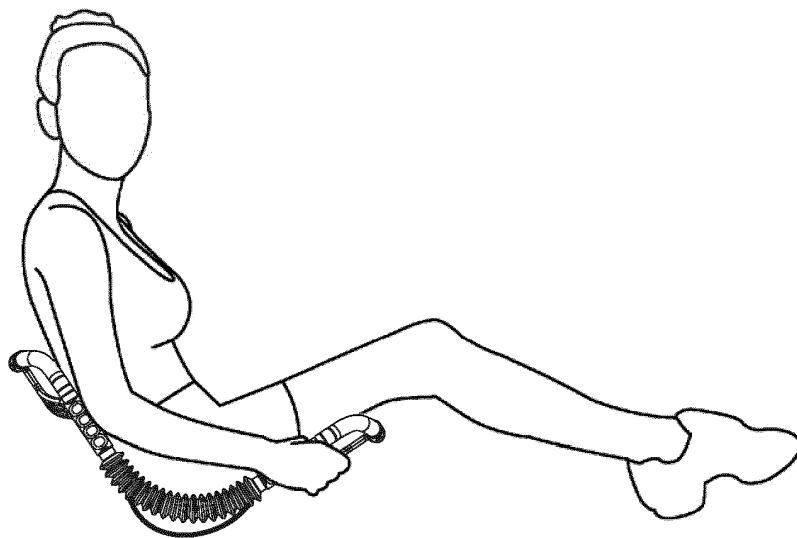


FIG. 7

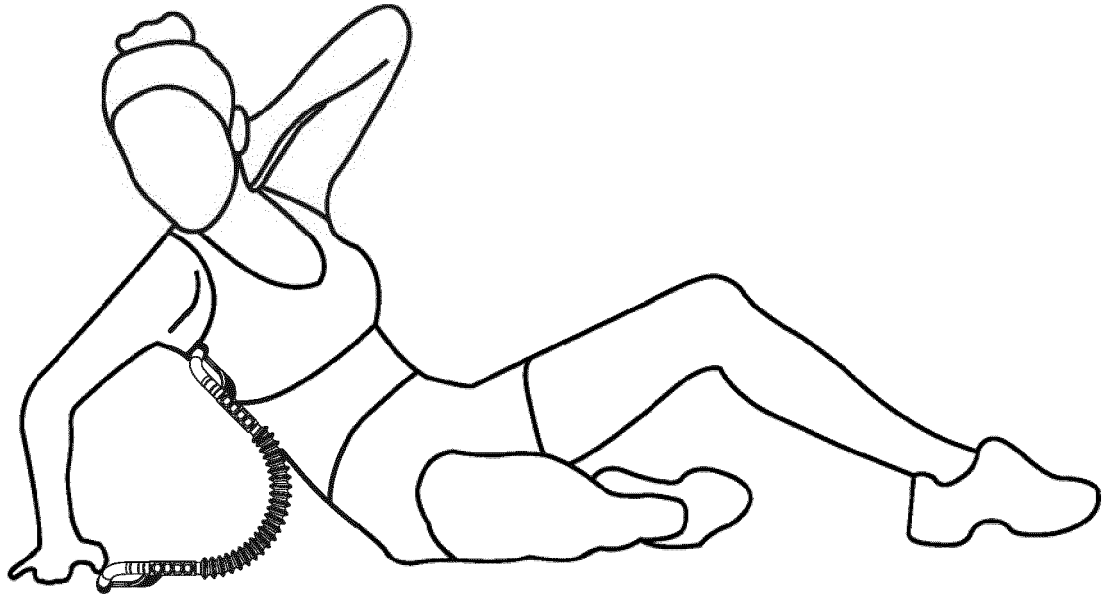


FIG. 8

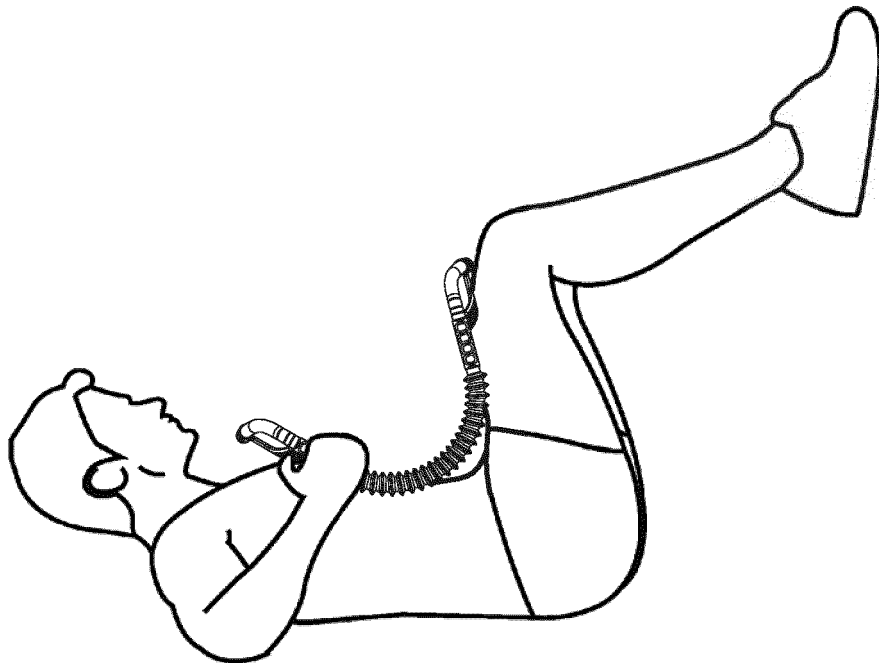


FIG. 9

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- EP 2946815 A1 [0003]
- US 2008032876 A1 [0004]