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(54) HIT-PRACTICING DEVICE

(57) A hit-practicing device is provided, including: a support body, having a seat end and an assembling end which are located along a first direction, the assembling end having an assembling structure; a hit mechanism, including a first mounting structure and a first hit member pivoted to the first mounting structure, the first mounting structure being optionally pivoted with the assembling structure and rotatable around the first direction, one of the first mounting structure and the first hit member having a first position mechanism and the other having at least one second position mechanism, the first hit member pivoting relatively to the first direction between a first position and a second position which are arranged in different positions, when the first hit member is located in the first position, the first position mechanism and the at least one second position mechanism releasably positioned relative to each other.

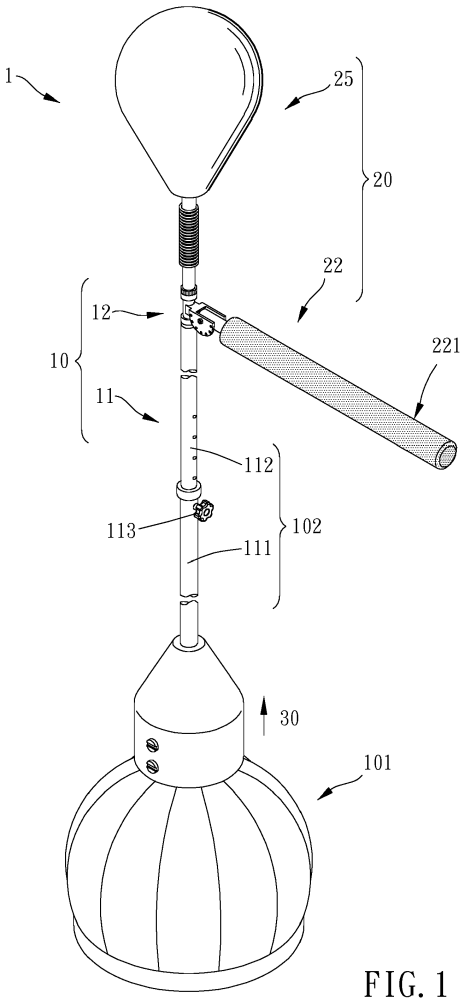

FIG. 1

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Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates to a hit-practicing device.

Description of the Prior Art

[0002] Conventionally, a hit-practicing device has a target for a user to practice striking skills.

[0003] In a conventional hit-practicing device, the target is only positioned at one position, so that the user cannot adjust the target to a suitable angle, it causes the angular limitation of a hit training. The user needs to purchase different kinds of hit-practicing devices to meet different needs, so it is inconvenient to use and also increases a cost of the hit training.

[0004] The present invention has arisen to mitigate and/or obviate the afore-described disadvantages.

SUMMARY OF THE INVENTION

[0005] The major object of the present invention is to provide a hit-practicing device, which can be use in various angles.

[0006] To achieve the above and other objects, a hit-practicing is provided, including: a support body having a seat end and an assembling end which are located along a first direction, the assembling end having an assembling structure; a hit mechanism including a first mounting structure and a first hit member which is pivoted to the first mounting structure, the first mounting structure being optionally pivoted with the assembling structure and rotatable around the first direction, one of the first mounting structure and the first hit member having a first position mechanism and the other having at least one second position mechanism, the first hit member pivoting relatively to the first direction between a first position and a second position which are arranged in different positions, when the first hit member is located in the first position, the first position mechanism and the at least one second position mechanism releasably positioned relative to each other.

[0007] The present invention will become more obvious from the following description when taken in connection with the accompanying drawings, which show, for purpose of illustrations only, the preferred embodiment(s) in accordance with the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008]

Fig. 1 is a stereogram of the present invention;
Fig. 2 a breakdown view of the present invention;
Fig. 3 is a partially-breakdown view of the present invention;
Fig. 4 to 6 are illustrations of the present invention in use;
Fig. 7 is a partially-cross-sectional view of the present invention; and
Fig. 8 is another illustration of the present invention in use.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0009] The present invention will be clearer from the following description when viewed together with the accompanying drawings, which show, for purpose of illustrations only, the preferred embodiment in accordance with the present invention.

[0010] Please refer to Figs. 1 to 8 for the present invention. A hit-practicing device 1 includes a support body 10, and a hit mechanism 20.

[0011] The support body 10 has a seat end 11 and an assembling end 12 which are located along a first direction 30, the assembling end 12 has an assembling structure 13; the hit mechanism 20 includes a first mounting structure 21 and a first hit member 22 which is pivoted to the first mounting structure 21, the first mounting structure 21 is optionally pivoted with the assembling structure 13 and rotatable around the first direction 30, one of the first mounting structure 21 and the first hit member 22 has a first position mechanism 24 and the other has at least one second position mechanism 231, the first hit member 22 pivots relatively to the first direction 30 between a first position and a second position which are arranged in different positions, when the first hit member 22 is located in the first position, the first position mechanism 24 and the at least one second position mechanism 231 releasably positioned relative to each other. As a result, the first hit member 22 can rotate freely and be adjustable to be positioned at a desired angle (such as in an unfolded position or a folded position) relative to the first direction 30 according to various needs for training. When the first hit member 22 is positioned in the first position, the first hit member 22 and the first mounting structure 21 are positioned and maintained in position relative to each other and form an included angle therebetween .

[0012] In this embodiment, the first position mechanism 24 is arranged on the first hit member 22.

[0013] In this embodiment, a number of the at least one of the second position mechanism 231is plural, each the second position mechanism 231 is a position hole, the first position mechanism 24 has a resilient engagement member 241, wherein the resilient engagement member 241 can be a ball spring, a spiral spring, etc., in this embodiment the resilient engagement member 241 is a v-shaped spring, the resilient engagement member 241 is optionally resiliently engaged within one of the second position mechanisms 231, so as to adjust an an-

gle of the first hit member 22 relative to the first direction 30, and the first hit member 22 can be positioned at the optional angle. Specifically, the first mounting structure 21 further includes an angle adjustment mechanism 23 which is laterally connected therewith, the angle adjustment mechanism 23 includes an U-shaped frame 223, the U-shaped frame 223 includes two plate bodies 233 disposed relatively, the two plate bodies 233 defining a receiving recess 234, the two plate bodies 233 each have a plurality of said second position mechanisms 231 which are arranged correspondingly, the first position mechanism 24 has a rod pivotally disposed through the receiving recess 234, the rod 242 has two hole structures 243 which are corresponding to each other, the resilient engagement member 241 disposed in the rod 242, the resilient engagement member 241 optionally resiliently engaged within two of the second position mechanisms 231 which are corresponding to each other and the two hole structures 243, so as to adjust the angle of the first hit member 22 relative to the first direction 30. Each of the plate bodies 233 can be a circular-shaped plate body, a squared-shaped plate body, a c-shaped plate body, a curve-shaped plate body, etc.; in this embodiment, each of the plate bodies 233 is a curve-shaped plate body, the second position mechanisms 231 are arranged along the peripheries of the plate bodies 233. In other embodiment, the at least one second position mechanisms can be disposed on the first mounting structure. Wherein the plurality of second mechanisms 231 are arranged separately or continuously on the plate bodies 233, to adjust the angle of the first hit member 22 relative to the first direction 30.

[0014] The hit mechanism 20 further includes a second hit member 25, the second hit member 25 has a second mounting structure 26, the second mounting structure 26 is detachably assembled with the assembling structure 13 positionably, to provide various configurations in accordance with different training requirements.

[0015] In this embodiment, the assembling structure 13 has a first threaded section 131, the second mounting structure 26 has a second threaded section 261 screwed with the first threaded section 131, one of the first threaded section 131 and the second threaded section 261 has an interior threaded portion, and the other of the first threaded section 131 and the second threaded section 261 has an exterior threaded portion so that the second hit member 25 can be stably screwed to the support body 10. The second hit member 25 includes a connecting body portion 251 and a first hit portion 252 disposed on one of two ends of the connecting body potion 252, and the second mounting structure 26 is disposed on the other of the two ends of the connecting body portion 251. Specifically, the connecting body portion 251 includes a rod body 253 and a spiral spring 254, the rod body 253 has the second mounting structure 26 and a first exterior threaded section 255, the first hit portion 252 extends to form a second exterior threaded section 256, and the spiral spring 254 is screwed with the first and second exterior threaded sections 255, 256 respectively, and the spiral spring 254 allows rock of the first hit member 22 and buffers the first hit member 22. The first mounting structure 21 is a barrel which is pivotally disposed around the assembling structure 13; the first hit member 22 has a second hit portion which is laterally connected to the first position mechanism 24, the second hit portion 221 is surrounded by a wrapping member 222, to reduce a counterforce when in use. At least one bearing 221 is further disposed between the first mounting structure 21 and the assembling structure 13, and the at least one bearing 221 allows the first hit member 22 to rotate laterally relative to the first direction 26 more smoothly.

[0016] The support body 10 includes a base 101 and a support rod 102, the base 101 includes an engaging seat 103, the engaging seat 103 has at least one longitudinal groove 104 recessed on a circumference thereof, a bottom of the longitudinal groove 104 has at least one hole portion 105, two ends of the support rod 102 are respectively provided with the assembling structure 13 and a sleeve portion 106, an inner wall of the sleeve portion 106 has at least one longitudinal engaging protrusion 107 arranged longitudinally thereon and at least one penetrating hole 108 which is lateral to the inner wall and corresponds to the at least one longitudinal engaging protrusion 107, the sleeve portion 106 is sleeved on the engaging seat 103, the at least one longitudinal engaging protrusion 107 is restrictedly engaged within the at least one longitudinal groove 104, and the at least one penetrating hole 108 corresponds to the at least one hole portion 105 and is fixed by at least one fastening member 116 disposed therethrough so that the support rod 102 and the base 101 can be engaged with each other stably. The hit-practicing device 1 further includes a cover body 40, the support rod 102 is disposed through the cover body 40, the cover body 40 has at least one pass hole 108 which corresponds to the at least one penetrating hole 41, the cover body 40 is sleeved on the sleeve portion 106 and fixed by the at least one fastening member 116 disposed therethrough; and the cover body 40 can stabilize the support rod 102 and make the hit-practicing device 1 more appearing. The engaging seat 103 further has an exterior threaded column 109, and the exterior threaded column 109 allows the base 22 to be engaged with a support rod 102, for example (but not limited thereto), the support rod 102 can be directly screwed with the exterior threaded column 109 so that the support rod 102 and the base 22 can be fixed without additional bolts.

[0017] The support rod 102 includes a first support rod 111 and a second support rod 112 which are retractably axially connected with each other, the first support rod 111 has at least one first through hole 114 and the sleeve 106, the second rod 112 has a plurality of second through holes 115 and the assembling structure 13, and a resilient positioning mechanism 113 is positionably disposed through one of the first through holes 114 and resiliently engaged within one of the second through holes 115 so that the user can choose to make one of the first through

holes 114 correspond to the at least one second through hole 115 and positionably adjust a length of the support rod 102 via the resilient positioning mechanism 113.

[0018] The hit-practicing device 1 further includes a lid member 50, wherein when the at least one first hit member 22 is pivoted to the assembling structure 13 singularly, the lid member 50 is detachably assembled to a top of the assembling structure 13 to block the first mounting structure 21 on the first direction 30 so as to prevent each of the first hit members 22 from falling off when in use.

[0019] In use, as Fig. 4, the hit-practicing device 1 can be only assembled the first hit member 22, and the angle of the first hit member 22 relative to the first direction 30 can be adjusted via the angle adjustment mechanism 23 and the first position mechanism 24; meanwhile the first hit member 22 can be rotated around the first direction 30 freely when in training. Besides, as Fig. 8, the hit-practicing device 1 can be assembled with the first hit member 22 and the second hit member 25 at the same time for various training needs.

[0020] While we have shown and described various embodiments in accordance with the present invention, it should be clear to those skilled in the art that further embodiments may be made without departing from the scope of the present invention.

Claims

1. A hit-practicing device (1), including:

a support body (10), having a seat end (11) and an assembling end (12) which are located along a first direction (30), the assembling end (12) having an assembling structure (13);
a hit mechanism (20), including a first mounting structure (21) and a first hit member (22) which is pivoted to the first mounting structure (21), the first mounting structure (21) being optionally pivoted with the assembling structure (13) and rotatable around the first direction (30), one of the first mounting structure (21) and the first hit member (22) having a first position mechanism (24) and the other having at least one second position mechanism (231), the first hit member (22) pivoting relatively to the first direction (30) between a first position and a second position which are arranged in different positions, when the first hit member (22) is located in the first position, the first position mechanism (24) and the at least one second position mechanism (231) releasably positioned relative to each other.

2. The hit-practicing device (1) of claim 1, wherein a number of the at least one of the second position mechanism (231) is plural, each second position mechanism (231) is a position hole, the first position mechanism (24) has a resilient engagement member (241), the resilient engagement member (241) is optionally resiliently engaged within one of the second position mechanisms (231).

3. The hit-practicing device (1) of claim 1, wherein the hit mechanism (20) further includes a second hit member (25), the second hit member (25) has a second mounting structure (26), the second mounting structure (26) is detachably assembled with the assembling structure (13) positionably.

4. The hit-practicing device (1) of claim 3, wherein the assembling structure (13) has a first threaded section (131), the second mounting structure (26) has a second threaded section (261) screwed with the first threaded section (131), one of the first threaded section (131) and the second threaded section (261) has an interior threaded portion, and the other of the first threaded section (131) and the second threaded section (261) has an exterior threaded portion.

5. The hit-practicing device (1) of claim 4, wherein the second hit member (25) includes a connecting body portion (251) and a first hit portion (252) disposed on one of two ends of the connecting body potion (252), and the second mounting structure (26) is disposed on the other of the two ends of the connecting body portion (251).

6. The hit-practicing device (1) of claim 5, wherein the connecting body portion (251) includes a rod body (253) and a spiral spring (254), the rod body (253) has the second mounting structure (26) and a first exterior threaded section (255), the first hit portion (252) extends to form a second exterior threaded section (256), and the spiral spring (254) is screwed with the first and second exterior threaded sections (255, 256) respectively.

7. The hit-practicing device (1) of claim 1, wherein the support body (10) includes a base (101) and a support rod (102), the base (101) includes an engaging seat (103), the engaging seat (103) has at least one longitudinal groove (104) recessed on a circumference thereof, a bottom of the longitudinal groove (104) has at least one hole portion (105), two ends of the support rod (102) are respectively provided with the assembling structure (13) and a sleeve portion (106), an inner wall of the sleeve portion (106) has at least one longitudinal engaging protrusion (107) arranged longitudinally thereon and at least one penetrating hole (108) which is lateral to the inner wall and corresponds to the at least one longitudinal engaging protrusion (107), the sleeve portion (106) is sleeved on the engaging seat (103), the at least one longitudinal engaging protrusion (107) is restrictedly engaged within the at least one longitu-

dinal groove (104), and the at least one penetrating hole (108) corresponds to the at least one hole portion (105) and is fixed by at least one fastening member (116) disposed therethrough.

8. The hit-practicing device (1) of claim 1, wherein the support body (10) includes a first support rod (111) and a second support rod (112) which are retractably axially connected with each other, one of the first and second support rods (111, 112) has at least one first through hole (114), the other of the first and second support rods (111, 112) has a plurality of second through holes (115), and a resilient positioning mechanism (113) is positionably disposed through one of the first through holes (114) and resiliently engaged within one of the second through holes (115).

9. The hit-practicing device (1) of claim 6, wherein a number of the at least one of the second position mechanism (231) is plural, each second position mechanism (231) is a position hole, the first position mechanism (24) has a resilient engagement member (241), the resilient engagement member (241) optionally resiliently engaged within one of the second position mechanisms (231); the first mounting structure (21) further includes an angle adjustment mechanism (23) which is laterally connected therewith, the angle adjustment mechanism (23) includes an U-shaped frame (223), the U-shaped frame (223) includes two plate bodies (233) disposed relatively, the two plate bodies (233) define a receiving recess (234), the two plate bodies (233) each have a plurality of said second position mechanisms (231) which are arranged correspondingly, the first position mechanism (24) has a rod pivotally disposed through the receiving recess (234), the rod (242) has two hole structures (243) which are corresponding to each other, the resilient engagement member (241) disposed within the rod (242), the resilient engagement member (241) optionally resiliently engaged within two of the second position mechanisms (231) which are corresponding to each other and the two hole structures (243); the first position mechanism (24) is arranged on the first hit member (22); the second position mechanisms (231) are arranged along peripheries of the plate bodies (233); the first mounting structure (21) is a barrel which is pivotally disposed around the assembling structure (13); the first hit member (22) has a second hit portion which is laterally connected to the first position mechanism (24), the second hit portion (221) is surrounded by a wrapping member (222); at least one bearing (221) is further disposed between the first mounting structure (21) and the assembling structure (13); the support body (10) includes a base (101) and a support rod (102), the base (101) includes an engaging seat (103), the engaging seat (103) has at least one longitudinal groove (104) recessed on a circumference thereof, a bottom of the longitudinal groove (104) has at least one hole portion (105), two ends of the support rod (102) are respectively provided with the assembling structure (13) and a sleeve portion (106), an inner wall of the sleeve portion (106) has at least one longitudinal engaging protrusion (107) arranged longitudinally thereon and at least one penetrating hole (108) which is lateral to the inner wall and corresponds to the at least one longitudinal engaging protrusion (107), the sleeve portion (106) is sleeved on the engaging seat (103), the at least one longitudinal engaging protrusion (107) is restrictedly engaged within the at least one longitudinal groove (104), and the at least one penetrating hole (108) corresponds to the at least one hole portion (105) and is fixed by at least one fastening member (116) disposed therethrough; the hit-practicing device (1) further includes a cover body (40), the support rod (102) is disposed through the cover body (40), the cover body (40) has at least one pass hole (108) which corresponds to the at least one penetrating hole (41), the cover body (40) is sleeved on the sleeve portion (106) and fixed by the at least one fastening member (116) disposed therethrough; the engaging seat (103) further has an exterior threaded column (109); the support rod (102) includes a first support rod (111) and a second support rod (112) which are retractably axially connected with each other, the first support rod (111) has at least one first through hole (114) and the sleeve (106), the second rod (112) has a plurality of second through holes (115) and the assembling structure (13), and a resilient positioning mechanism (113) is positionably disposed through one of the first through holes (114) and resiliently engaged within one of the second through holes (115).

10. The hit-practicing device (1) of claim 1, further including a lid member (50), wherein when the at least one first hit member (22) is pivoted to the assembling structure (13) singularly, the lid member (50) is detachably assembled to a top of the assembling structure (13) to block the first mounting structure (21) on the first direction (30).

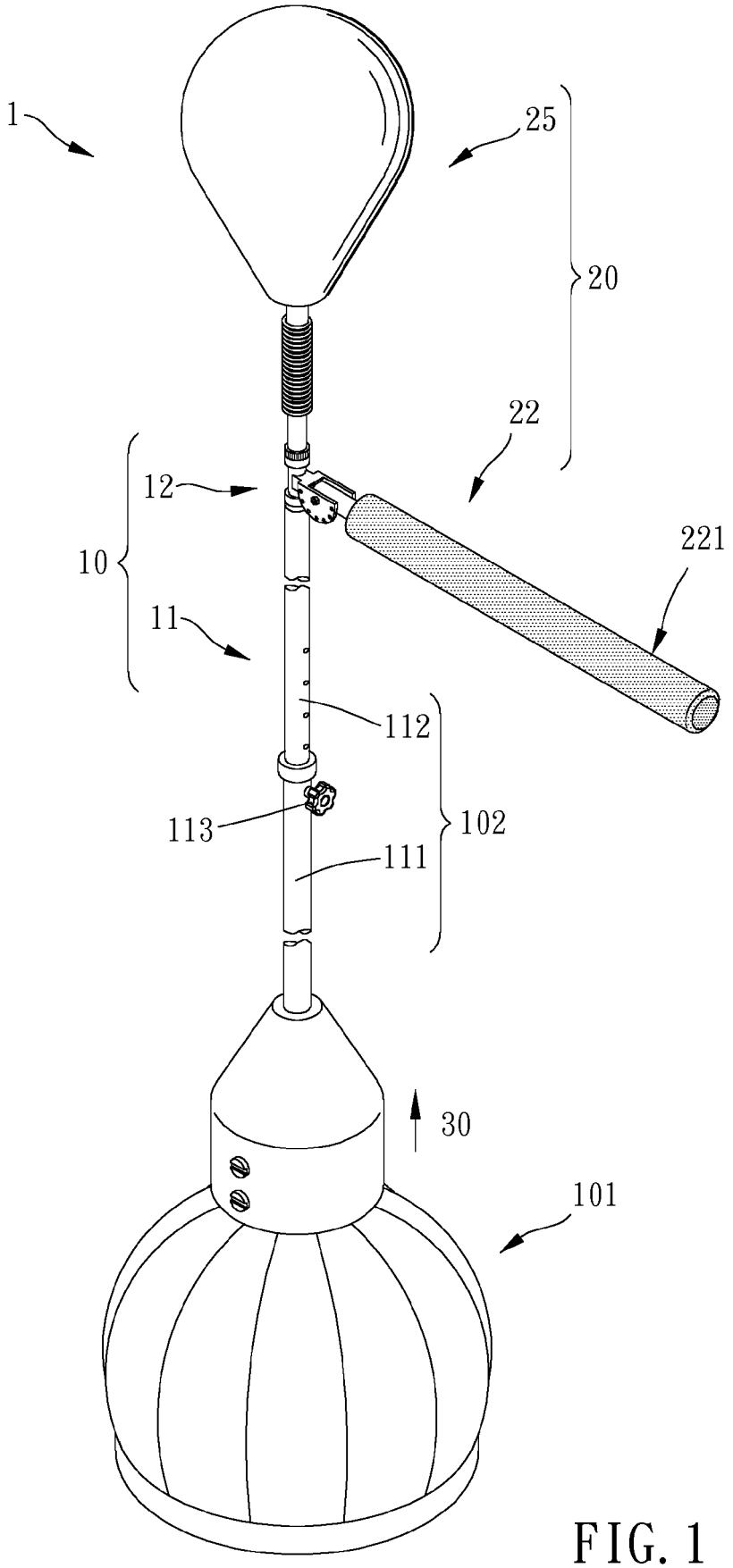
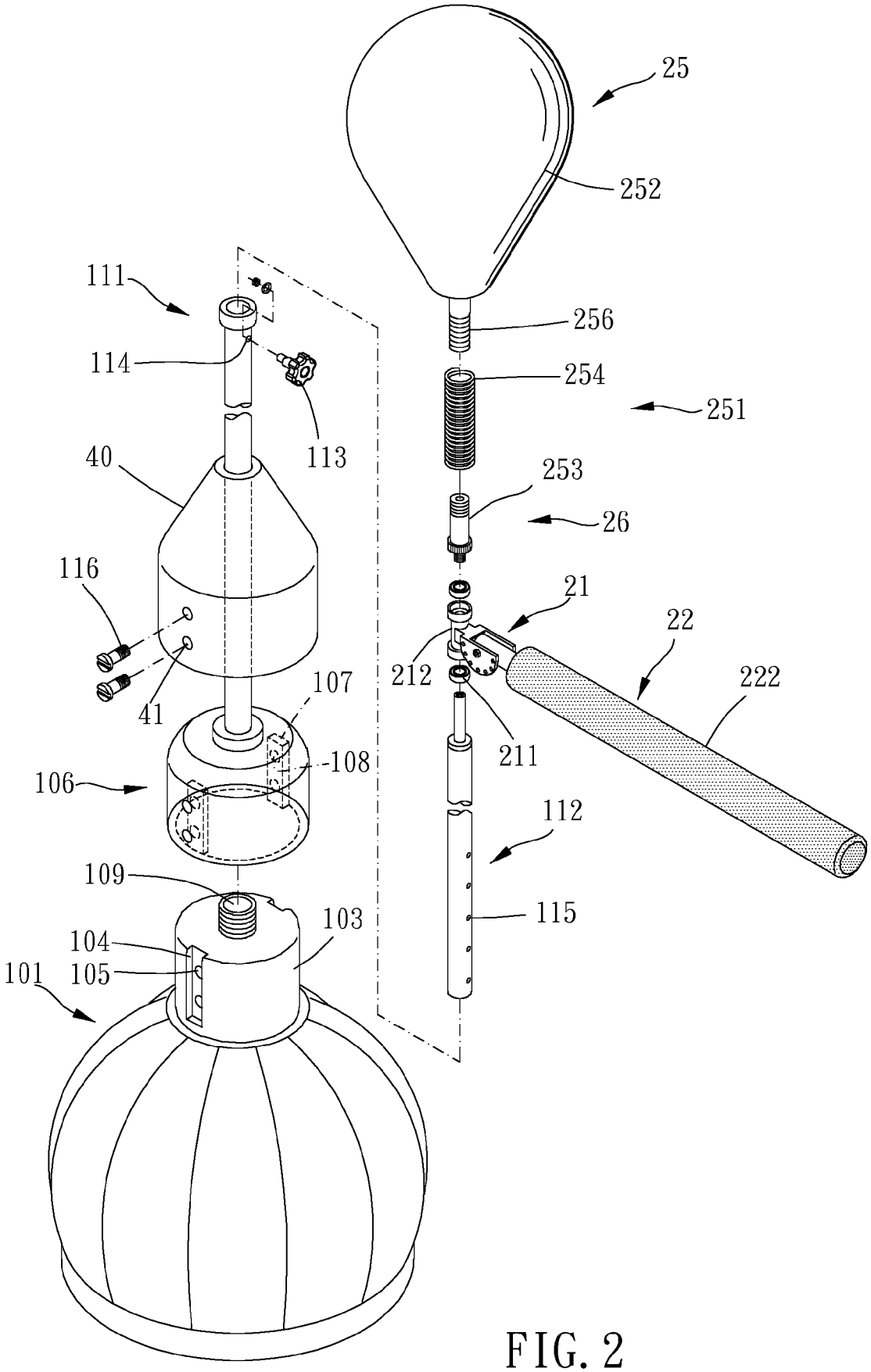


FIG. 1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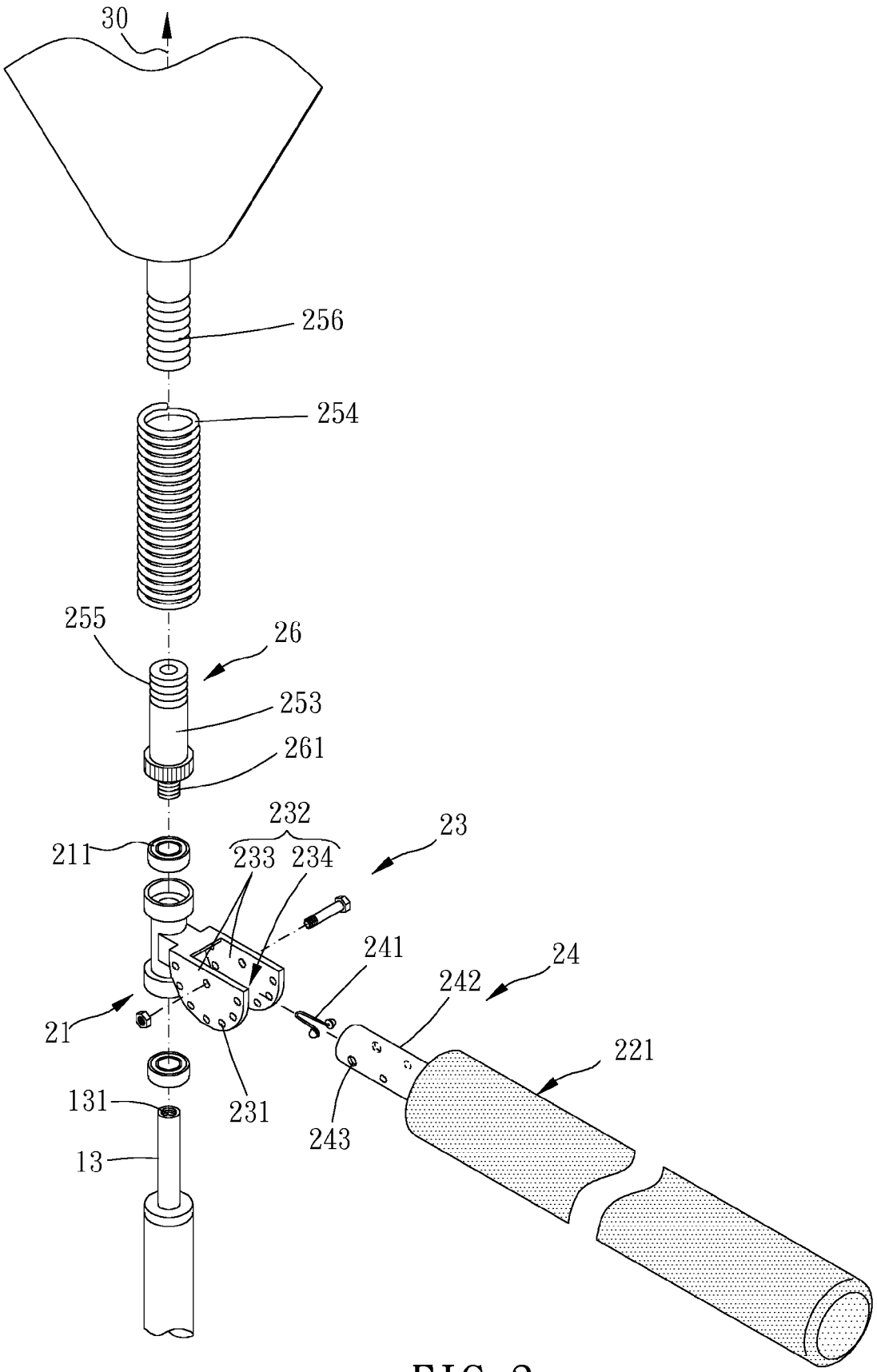
101
105

FIG. 2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131
13

FIG. 3

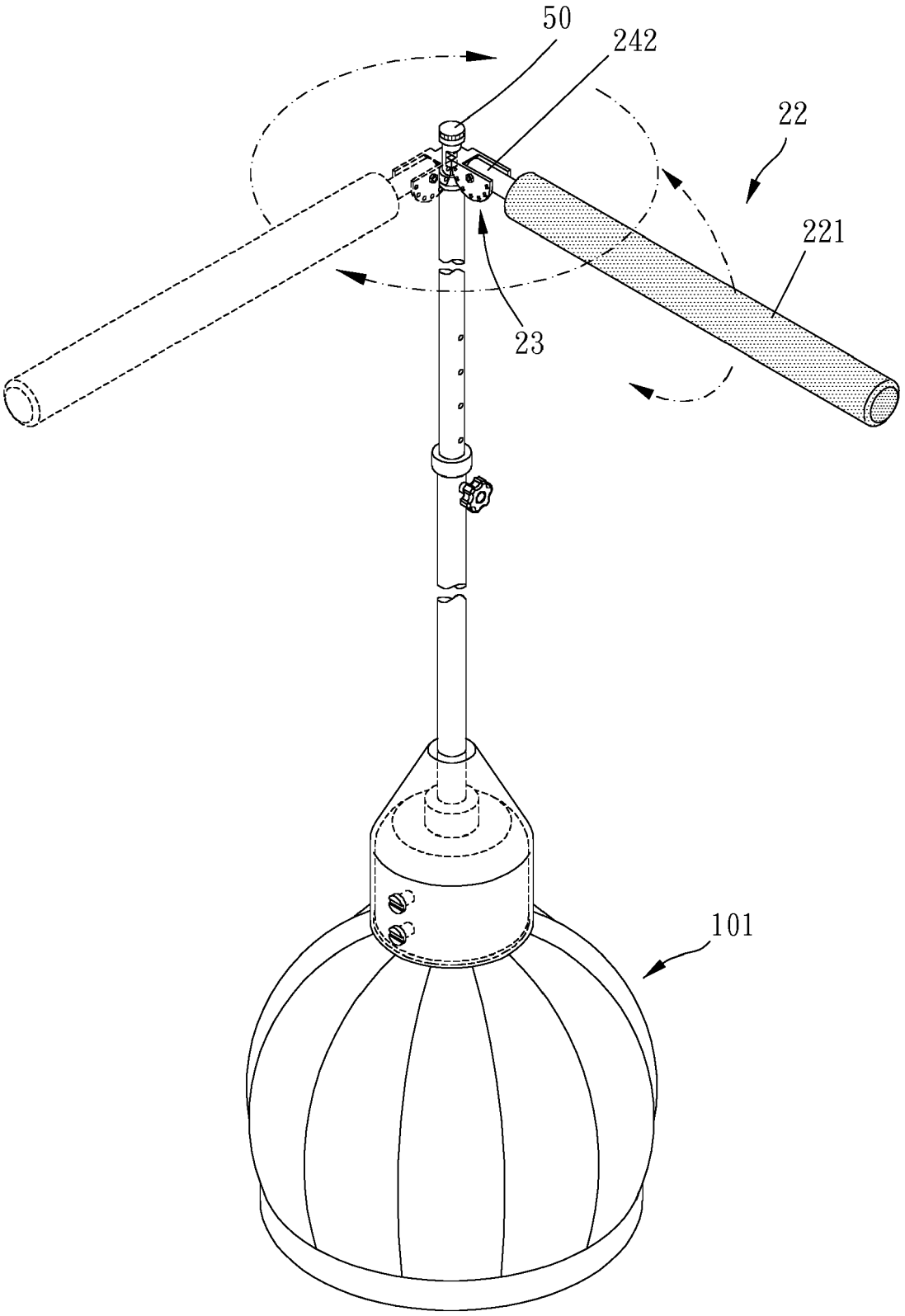

FIG. 4

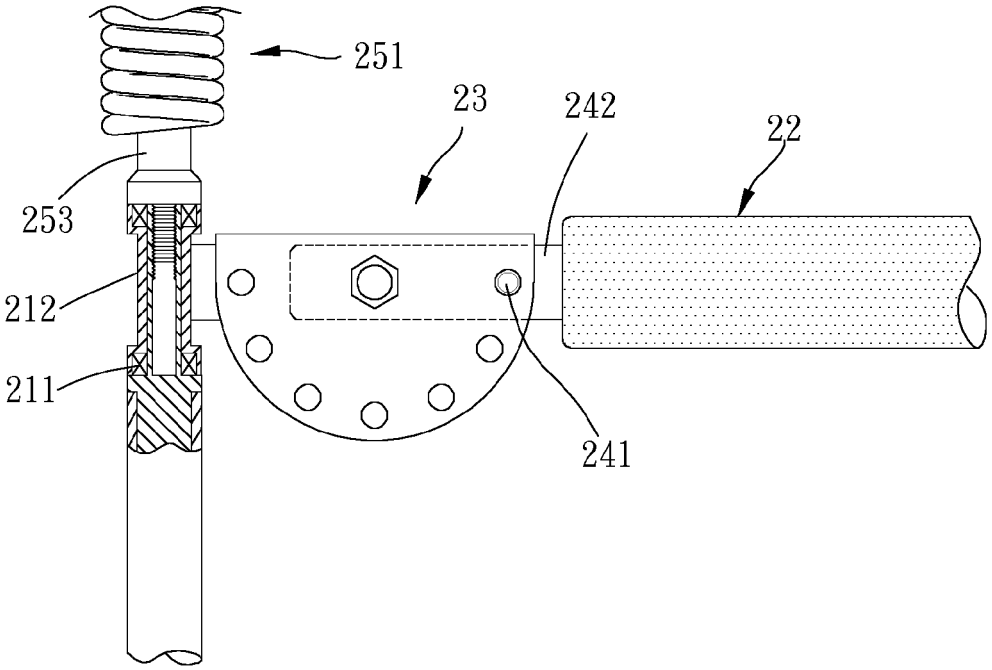

FIG. 5

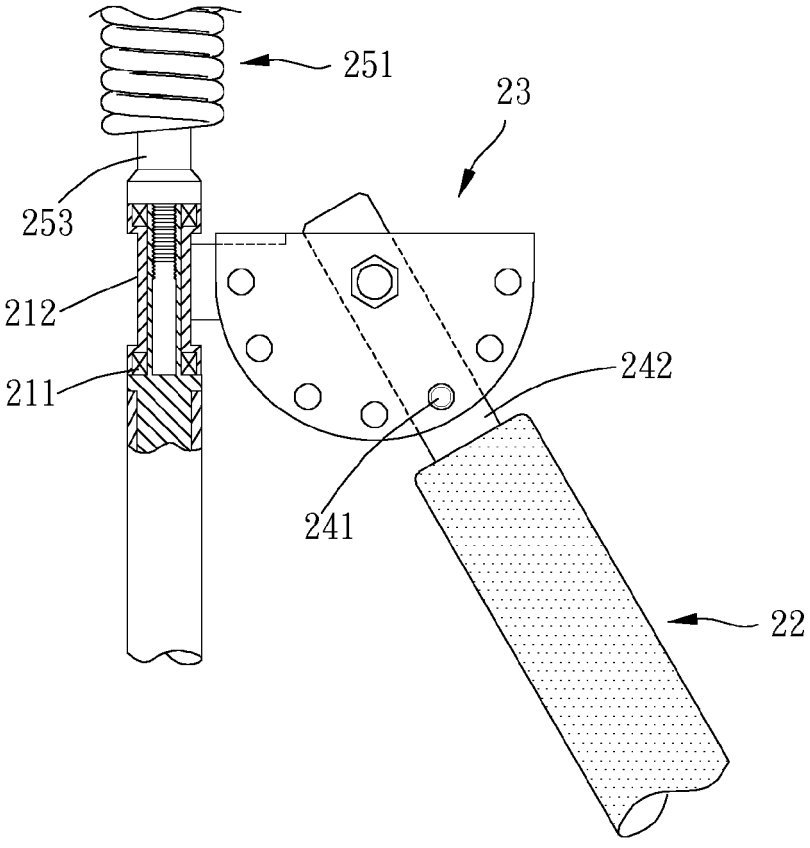

FIG. 6

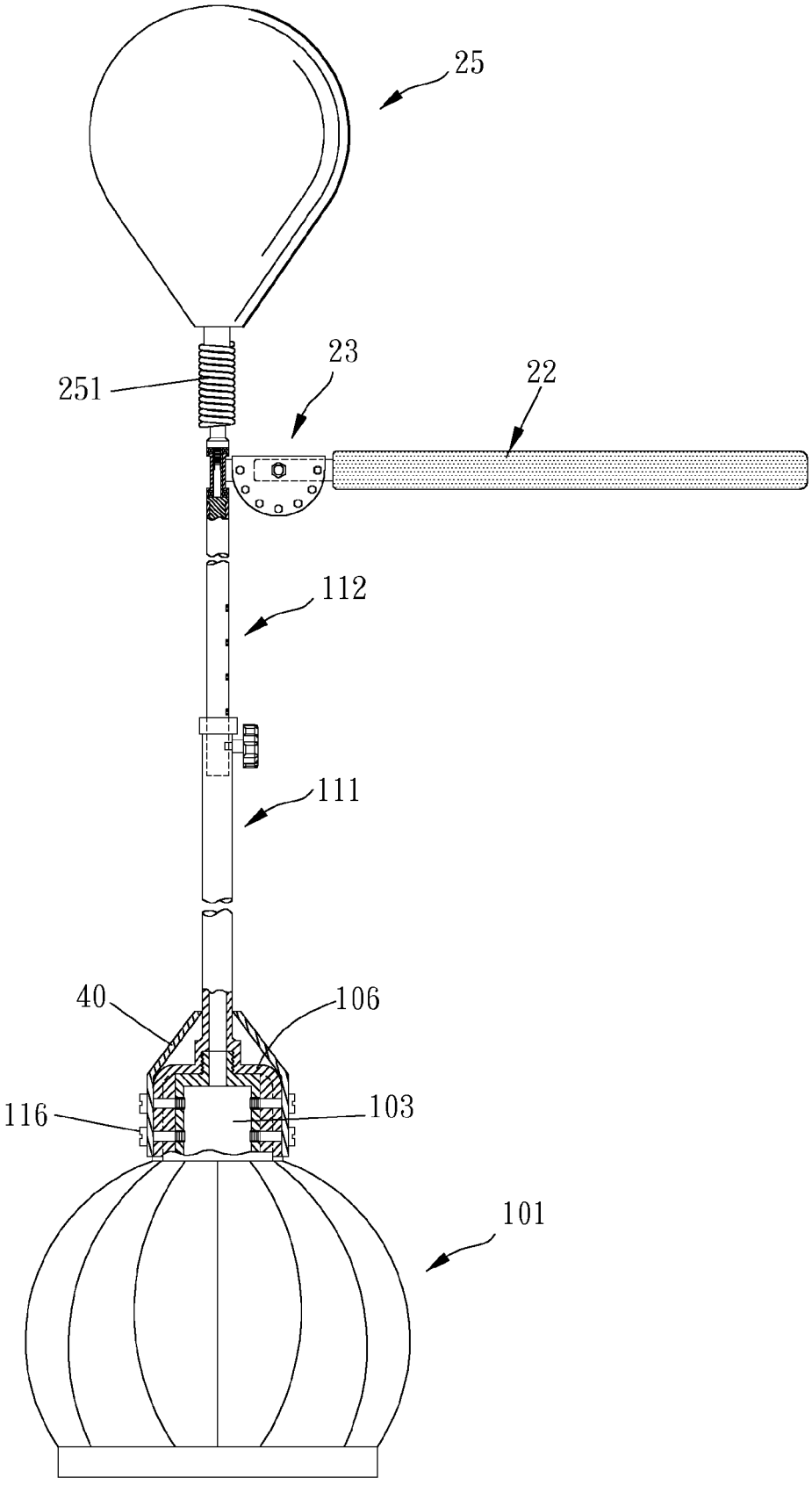

FIG. 7

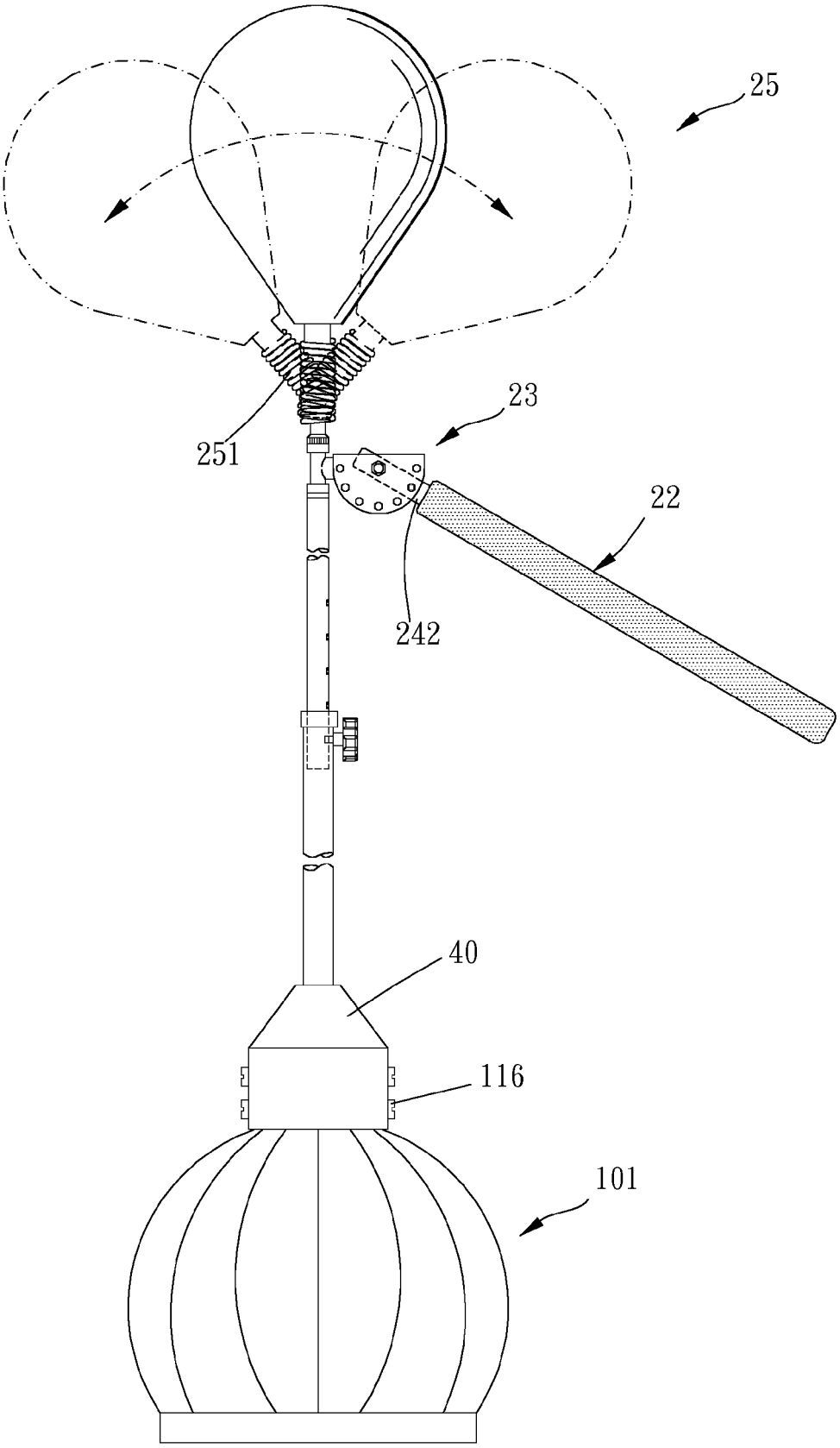

FIG. 8

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EUROPEAN SEARCH REPORT

Application Number
EP 17 17 0741

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2014/302969 A1 (CHEN TINA [TW]) 9 October 2014 (2014-10-09) * paragraphs [0014] - [0020]; figures 1,3 * -----	1-6,9,10	INV. A63B69/20
X	WO 2014/041371 A1 (MYRIE STEVEN; GILL JASVINDER SINGH) 20 March 2014 (2014-03-20) * pages 12,13; figures 3,4,6,7 * -----	1-10	
X	US 2007/197348 A1 (KU YUAN-SHENG [TW]) 23 August 2007 (2007-08-23) * the whole document * -----	1-10	

TECHNICAL FIELDS SEARCHED (IPC)

A63B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	5 October 2017	Haller, E

CATEGORY OF CITED DOCUMENTS

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05-10-2017

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		WO 2014041371 A1	20-03-2014
US 2007197348 A1	23-08-2007	NONE	

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