



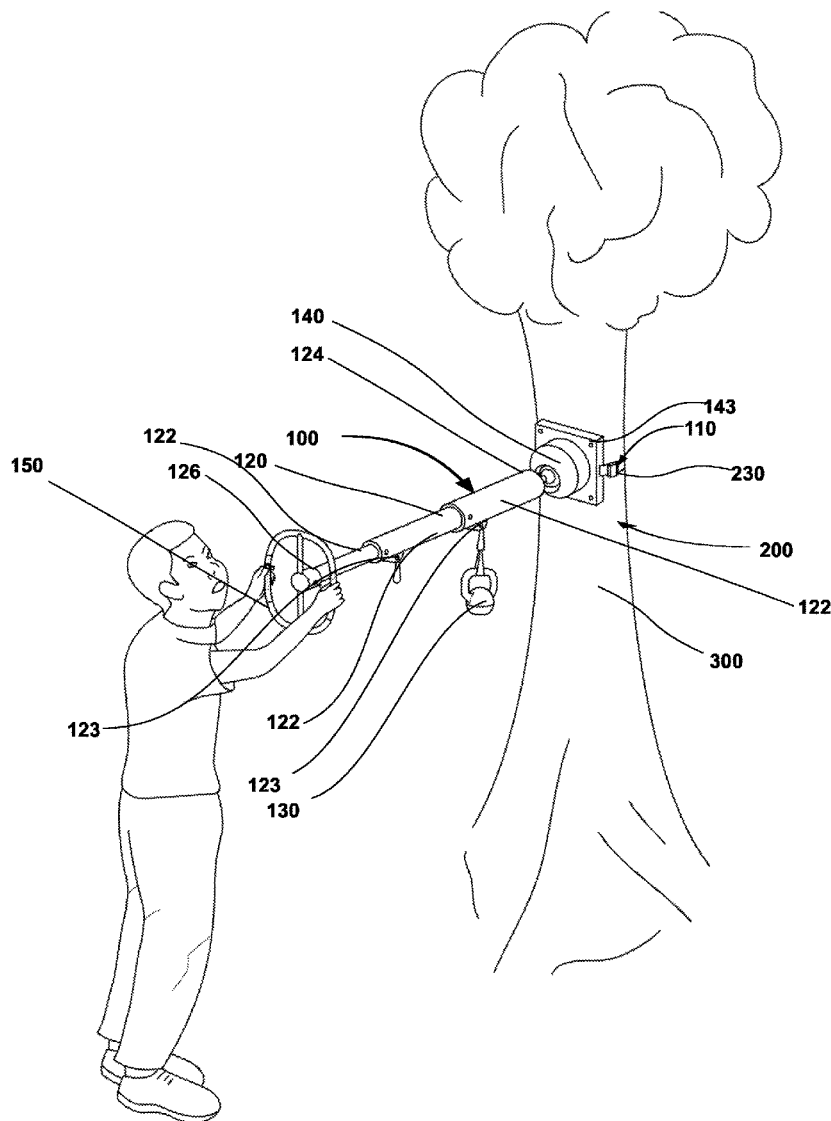
US 20220355155A1

(19) **United States**(12) **Patent Application Publication**
Won(10) **Pub. No.: US 2022/0355155 A1**(43) **Pub. Date: Nov. 10, 2022**(54) **EXERCISING APPARATUS***A63B 21/1618* (2013.01); *A63B 21/072*
(2013.01)(71) Applicant: **Paul Won**, Seattle, WA (US)(72) Inventor: **Paul Won**, Seattle, WA (US)

(57)

ABSTRACT(21) Appl. No.: **17/313,366**(22) Filed: **May 6, 2021****Publication Classification**(51) **Int. Cl.***A63B 21/16* (2006.01)*A63B 21/00* (2006.01)*A63B 21/08* (2006.01)(52) **U.S. Cl.**CPC *A63B 21/16* (2013.01); *A63B 21/4035*(2015.10); *A63B 21/4049* (2015.10); *A63B**21/08* (2013.01); *A63B 2225/09* (2013.01);

Presented is an exercising apparatus capable of capable of being used by a user for performing a variety of physical exercises. The exercising apparatus includes a handle, a mounting assembly, a clamp assembly and an arm extension assembly. The arm extension assembly includes multiple telescopically nestable arms. At least one telescopically nestable arm includes a weight attachment portion such that a user can lift weight attached to the weight attachment portion of the arm extension assembly by moving the handle. The mounting assembly is configured to allow rotation of the arm extension assembly in at least one direction. The exercising apparatus is collapsible and could be easily assembled and disassembled and installed at multiple locations depending on the user's requirements.



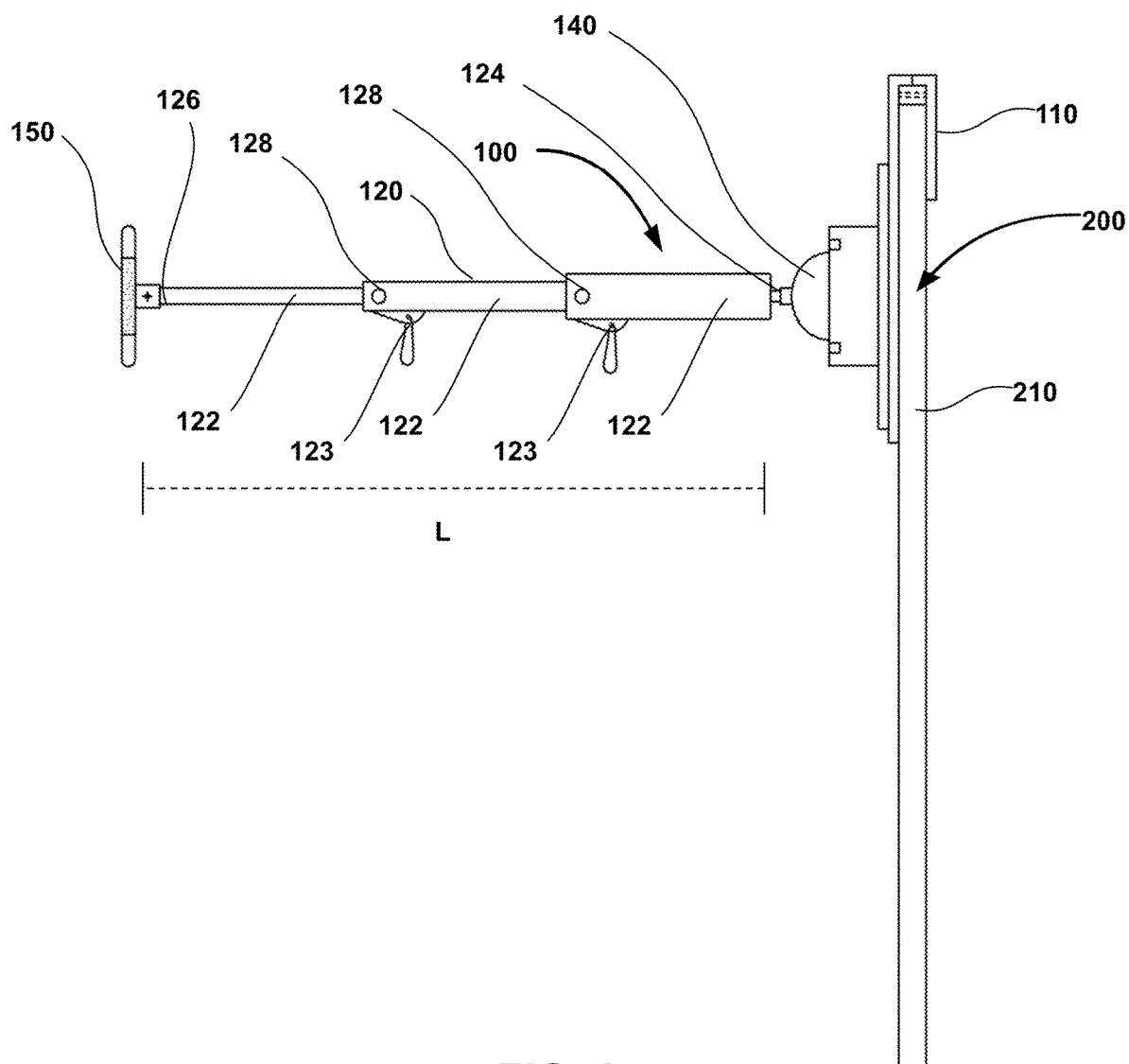


FIG. 2

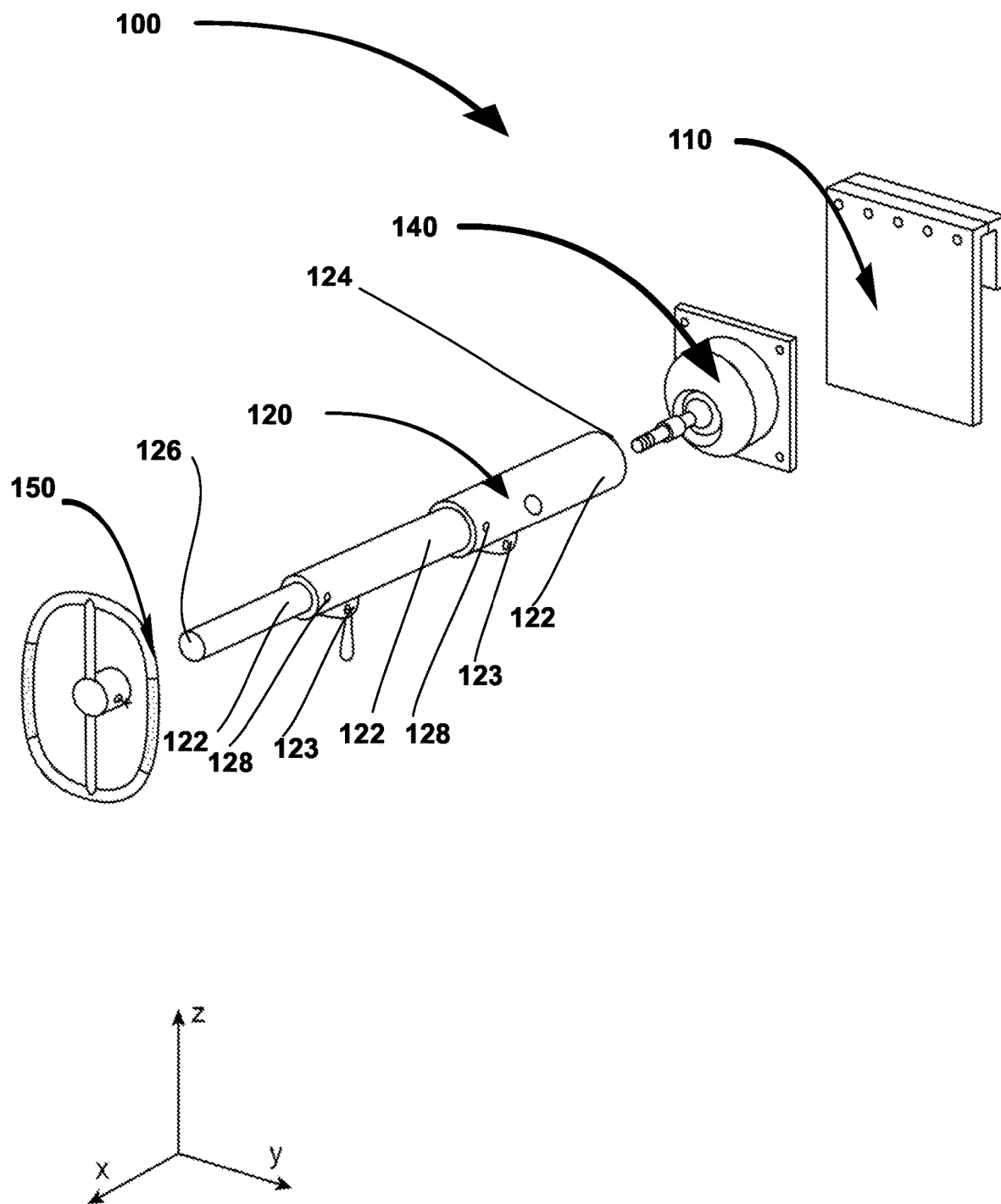
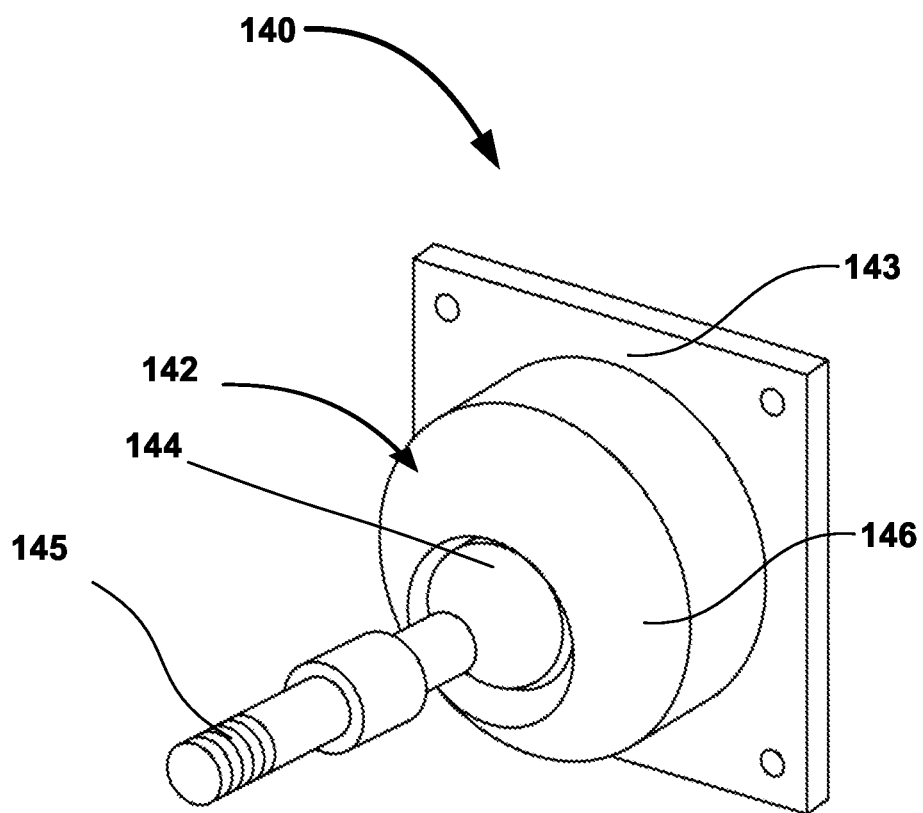


FIG. 3

**FIG. 4**

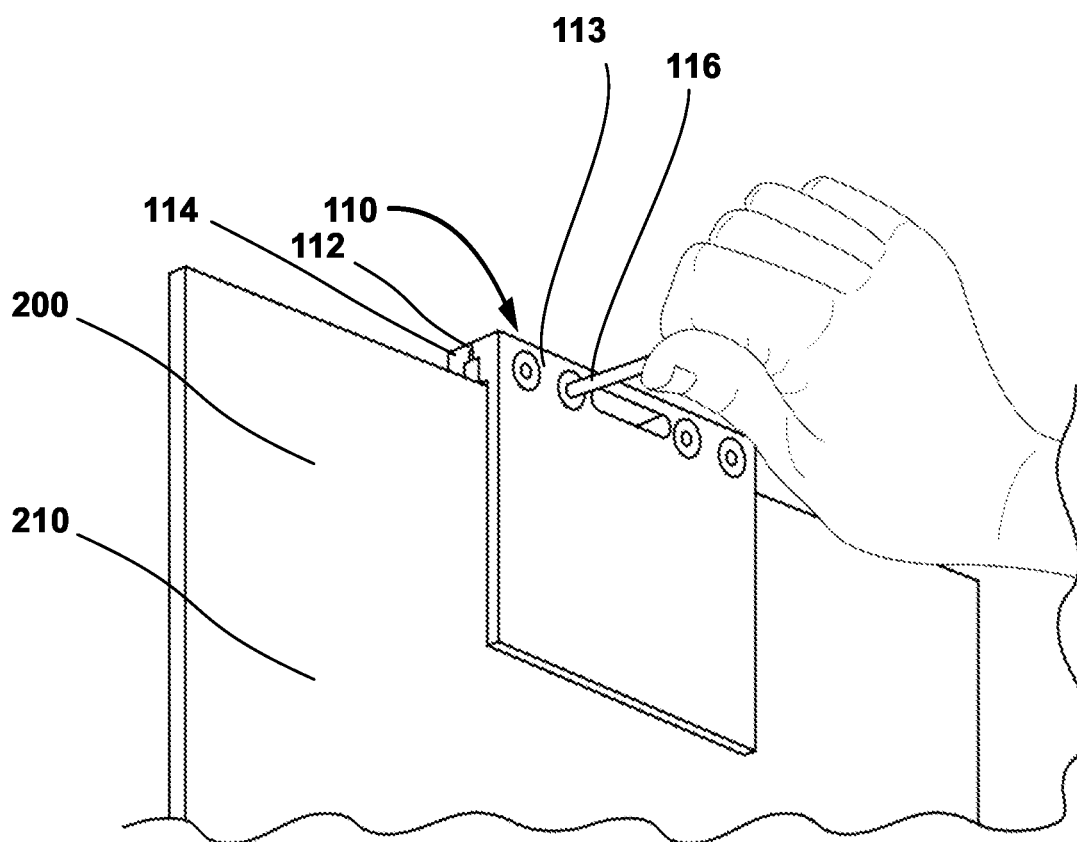


FIG. 5

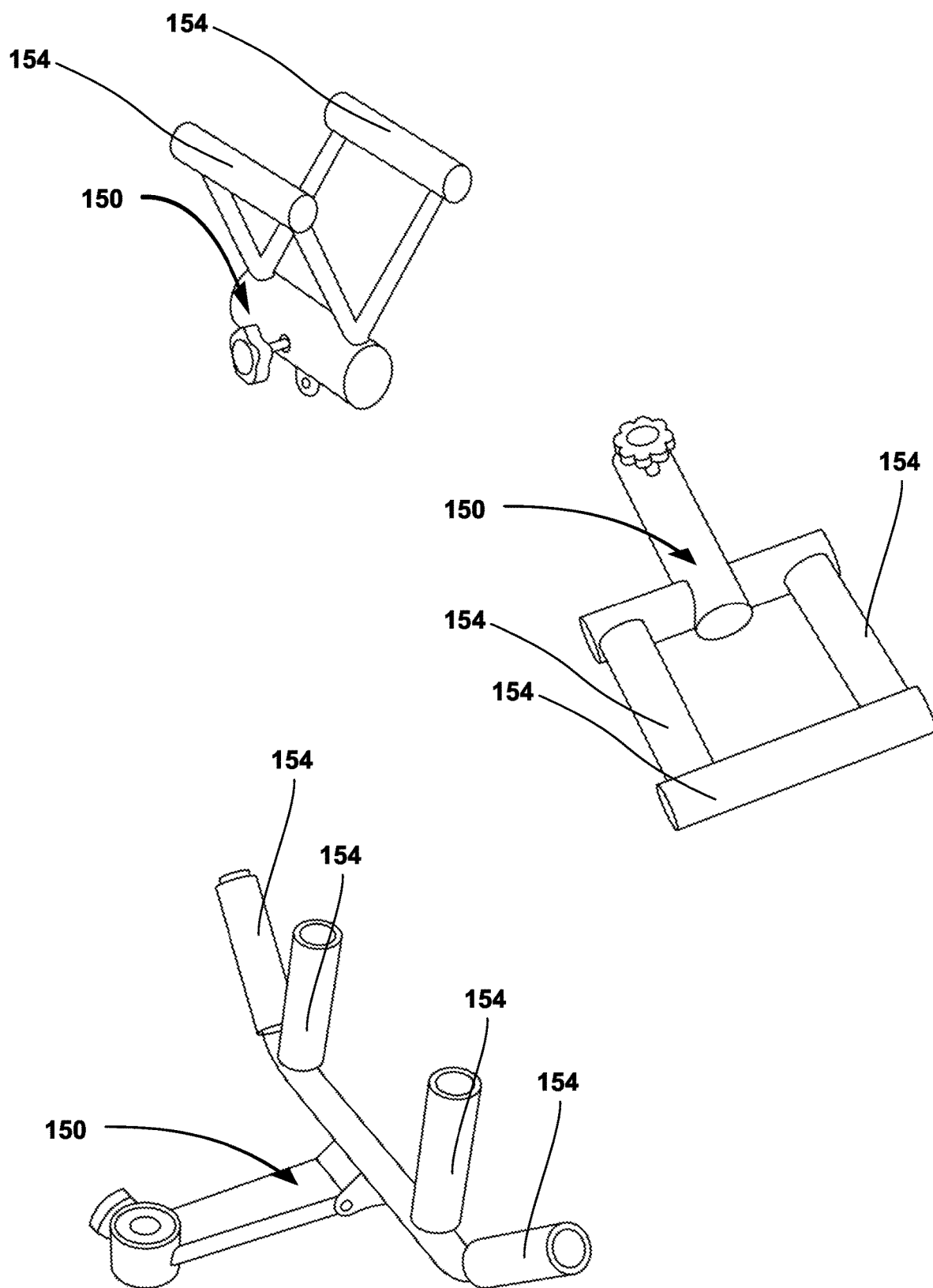


FIG. 6

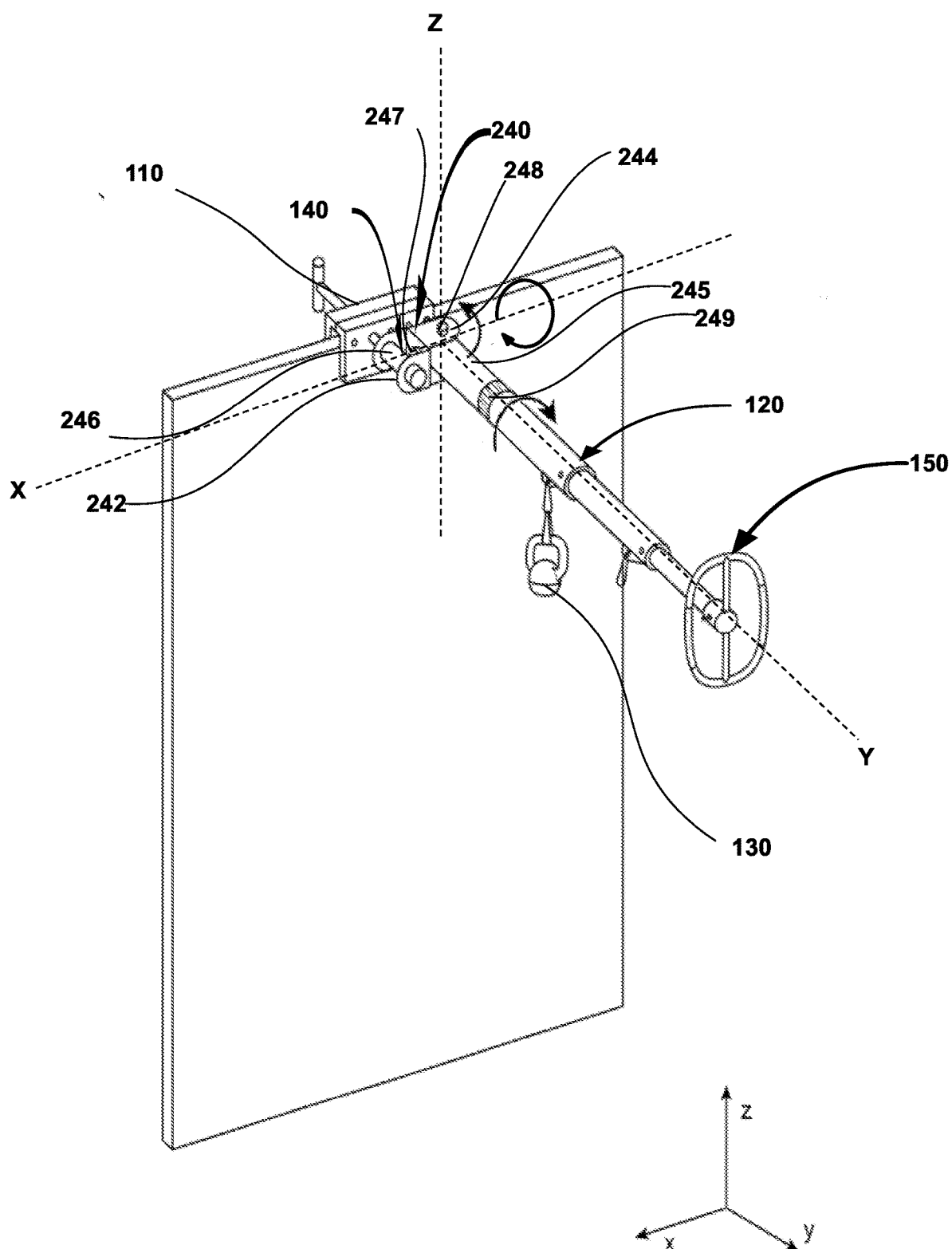
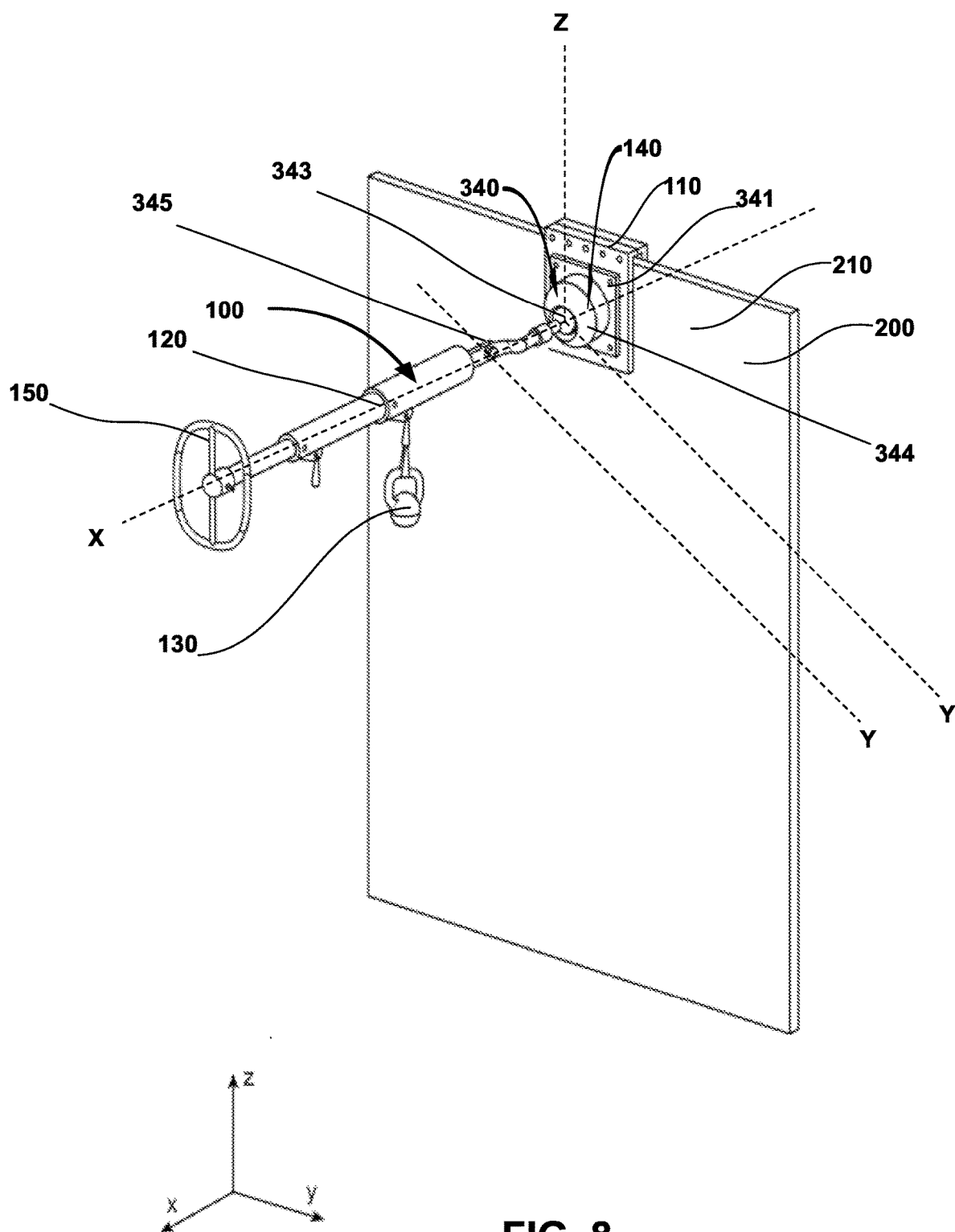


FIG. 7



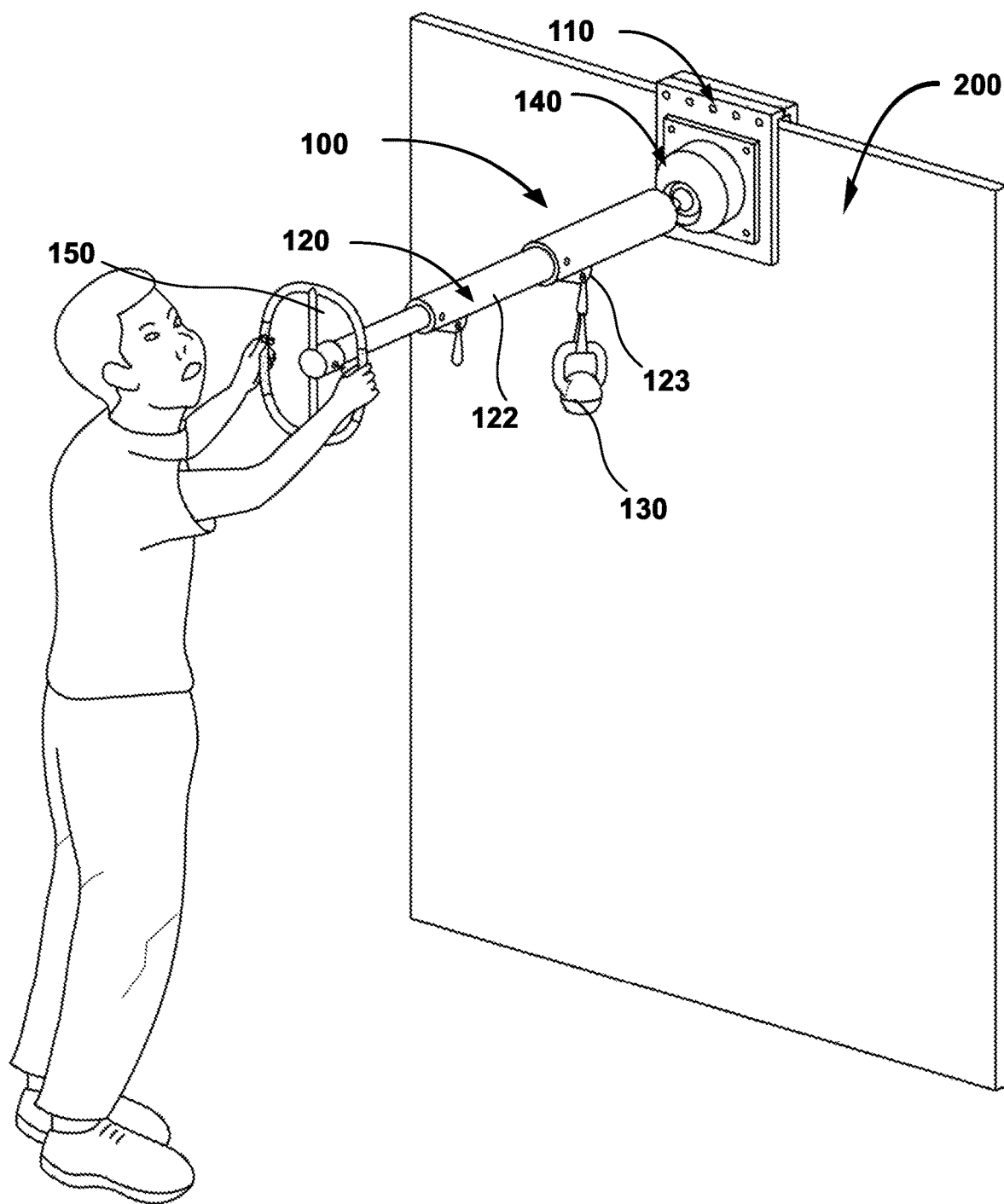
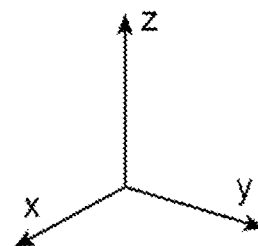


FIG. 9



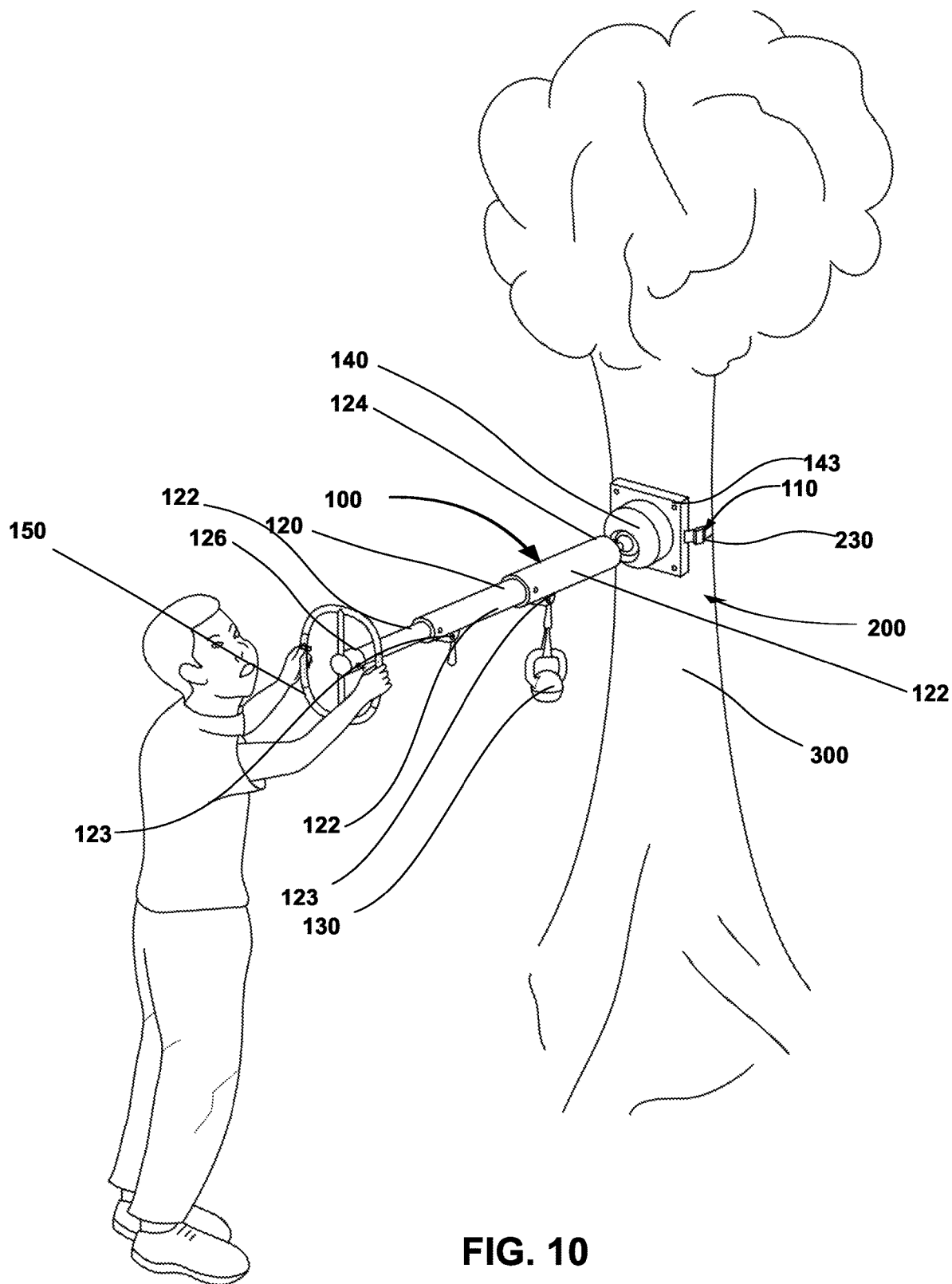


FIG. 10

EXERCISING APPARATUS

TECHNICAL FIELD OF INVENTION

[0001] The present invention generally relates to an exercising apparatus and more particularly the present invention pertains to an exercising apparatus comprising a handle, a mounting assembly, a clamp assembly and an arm extension assembly wherein arm extension assembly comprises at least one weight attachment portion such that a user can lift weight attached to the weight attachment portion of the arm extension assembly by moving the handle.

BACKGROUND

[0002] Nowadays, daily exercising has become a necessity in the modern world. Generally, a user can perform various exercises in home-made gyms or commercial gym facilities. The commercial gym offers a quality environment to perform exercises and it is also a place for social gathering for many users. Typically, gyms are equipped with various exercising equipments such as but not limited to dumbbells, weightlifting bars, weight training racks, landmine holders, and gym machines and so on.

[0003] Various exercises such as but not limited to squats, presses, landmine row and so on are performed in the gym using landmine holders. The landmine holders generally include a hollow portion in which an end of a barbell is inserted and the user can lift the opposite end of the barbell using his/her hands. A user can increase or decrease physical effort required (resistance) by adding appropriate weights such as weight plates carried on the barbell. Further, the user can alternatively place the barbell end against a corner of a room and then lift the other end of barbell to perform these exercises. However, the improper connection of the barbell and the corner could result in accidents.

[0004] Landmine holders involving use of barbells has few drawbacks. Generally, barbell does not include graspable handles at the ends which could result in difficulty of gripping the end of barbells during exercising especially when the weights are attached to the barbells. A user can lift the barbell using a v shaped handle. However, these handles are not properly connected to the barbell and the handle can slide relative to the barbell thereby adding discomfort of the user. Further, barbells generally can carry weight plates only and so, other types of weighted objects such as but not limited to kettlebells, dumbbells and so on cannot be readily added to the barbell thereby limiting type of weighted objects that can be attached to the barbell. Further, even if user attaches, the weighted objects cannot be properly attached to the barbell and thus, the weighted objects can accidentally fall when user is performing exercises thereby posing some safety risks.

[0005] Additionally, the landmine holders generally are fixedly connected to a gym machine or a similar support structure. Thus, the landmine holders cannot be readily transported from one location to another by merely detaching it from the support structure. Further, landmine holder generally allows limited range of movement of barbell in either one direction (i.e. Movement along x direction) or two directions (movement along either x direction and y direction). Thus, a user is unable to perform some specific exercises which require free movement of the barbell (movement along x axis, y axis and z axis) thereby limiting the use of landmine holders. Further, a user can not readily

perform exercises in open areas such as public parks, homes using landmine holders as landmine holders currently available in markets cannot be readily attached to multiple structures such as trees, doors and so on.

[0006] Many attempts to provide solutions to some of the problems discussed hereinabove may be found in the prior art, such as for example: U.S. Pat. No. 8,974,354B1 discloses a landmine apparatuses including a mounting base and a receptacle for receiving a weight bar. The receptacle is coupled to the mounting base and rotatable about a horizontal axis and in 360 degrees about a vertical axis. A vertical pivot connects the receptacle to the mounting base such that the receptacle is retained in a single horizontal plane while rotating about the vertical axis.

[0007] U.S. Pat. No. 4,323,236A discloses a body exercising apparatus, in the form of a weight lifting apparatus, which includes an elongate lever arm having first and second opposite ends. The first end of the lever arm is capable of being pivotally mounted to a supporting structure, and preferably a relatively vertically disposed wall. For this purpose, a mounting element is provided on the first end of the lever arm for pivotally mounting this lever arm to such relatively permanent structure and preferably such vertically disposed wall. A weight retaining rod is operatively mounted on the lever arm and is capable of receiving conventional bar-bell type weights in selected amounts. A handle member is located at the second end of the lever arm for engagement by the hands of a user of the apparatus so this user can attempt to lift the lever arm about the pivotal connection with respect to the supporting structure against one or more weights placed on the weight retaining rod.

[0008] However, U.S. Pat. No. 4,323,236A does not allow rotation of the lever arm along three degrees of freedom. Further, the prior art U.S. Pat. No. 4,323,236A involves use of bar bell weights only, thereby limiting the use of the body exercising apparatus. Further, the U.S. Pat. No. 4,323,236A does not include a detachable body exercising apparatus which could be transported to another location and stored before being used.

[0009] Thus, in the light of the above-mentioned background art, it is evident that, there is a need for a relatively simple, versatile, safe, and inexpensive exercising apparatus that would be simple in terms of design and at the same time could overcome above discussed drawbacks. The exercising apparatus could be removably installed at multiple locations and can be easily assembled and disassembled and could be stored for later use.

BRIEF SUMMARY

[0010] Before the present systems and methods, enablement are described, it is to be understood that this application is not limited to the particular systems, and methodologies described, as there can be multiple possible embodiments which are not expressly illustrated in the present disclosures. It is also to be understood that the terminology used in the description is for the purpose of describing the particular versions or embodiments only, and is not intended to limit the scope of the present application.

[0011] It is an object of the present invention to provide an exercising apparatus that is used for performing a multitude of physical exercises.

[0012] It is an object of the present invention to provide an exercising apparatus that is collapsible.

[0013] It is an object of the present invention to provide an exercising apparatus that can be easily assembled and disassembled and could be stored for later use.

[0014] It is an object of the present invention to provide an exercising apparatus that can be easily installed at multiple locations.

[0015] It is an object of the present invention to provide a clamp assembly configured to be easily and removably attached to a support structure.

[0016] It is an object of the present invention to provide an exercising apparatus comprising an arm extension assembly capable of being easily collapsed and extended according to user requirements.

[0017] Embodiments of the present invention disclose an exercising apparatus for mounting on a support structure, the exercising apparatus comprising: a clamp assembly comprising a releasable clamp for removable connection to a support structure, an arm extension assembly comprising a plurality of telescopically nestable arms wherein the arm extension assembly includes a first end and an opposite second end, wherein at least one nestable arm comprises a weight attachment portion for removably connecting a weighted object, a mounting assembly rotatably connected to the first end of an arm extension assembly and the mounting assembly is connected to the clamp assembly, a handle assembly secured at the second end of the arm extension assembly for engagement by a user such that a user can perform physical exercises using the exercising apparatus by moving the handle assembly to rotate the arm extension assembly relative to the clamp assembly.

[0018] Embodiments of the present invention disclose an exercising apparatus mounted on a support structure. The exercising apparatus comprises a clamp assembly comprising a releasable clamp for removable connection to a support structure, an arm extension assembly comprising a plurality of telescopically nestable arms, a mounting assembly coupled to the clamp assembly and the arm extension assembly. The exercising apparatus comprises further comprises a handle assembly secured to the arm extension assembly for engagement by a user. At least one nestable arm comprises a weight attachment portion for removably connecting a weighted object. The mounting assembly is configured to allow rotation of the arm extension assembly along three degrees of freedom, each of the three degrees of freedom having a different rotational axis substantially perpendicular to one another.

[0019] Embodiments of the present invention disclose a mounting assembly that allows rotation of the arm extension assembly in at least one rotational direction relative to the clamp assembly.

[0020] In an embodiment, the mounting assembly comprises a spherical bearing. The spherical bearing comprises a ball portion connected to the arm extension assembly. Further, the spherical bearing comprises a socket portion connected to the clamp assembly.

[0021] In another embodiment, the mounting assembly comprises an offset U shaped link assembly comprising two U shaped links. Further, offset U shaped link assembly comprises an elongate connector and a key connector. The first U shaped link is removably connected to the clamp assembly by using the key connector. The first U shaped link and the second U shaped link are rotatably connected to each other using a first pivoting element. The second U shaped link is rotatably connected to the elongate connector using a

second pivoting element. The elongate connector is further rotatably connected to the arm extension assembly by a rotating element. The configuration of the first pivoting element, second pivoting element and the rotating element allows the movement of the arm extension assembly substantially in x direction, z direction and y direction respectively in the predefined angular range.

[0022] Embodiments of the present invention disclose a clamp assembly that comprises a releasable clamp for removable connection to a support structure.

[0023] In an embodiment, the clamp assembly comprises a releasable clamp having two movable clamp jaws. Further, the clamp assembly comprises a tensioning member i.e. Screw and nut, keys to adjust the clamping force of the clamp assembly. The tensioning member will move first clamp jaw relative to the second clamp jaw against the support structure to removably connect the releasable clamp with the support structure.

[0024] Embodiments of the present invention disclose an arm extension assembly that comprises a plurality of telescopically nestable arms. At least one nestable arm comprises a weight attachment portion such as but not limited to hook, carabineer, maillon, rope, harness, band and/or combination thereof. Weighted objects such as but not limited to weight plate, kettlebell, barbell, dumbbell and/or combination thereof are removably connected to the weight attachment portion of at least one nestable arm.

[0025] Embodiments of the present invention disclose a handle assembly secured to the arm extension assembly for engagement by a user.

[0026] In various embodiments, the handle assembly comprises a removable grip handle, a multi-grip handle, v shaped handle and/or combinations thereof.

[0027] Various objects, features, aspects and advantages of the present invention will become more apparent from the following detailed description of the embodiments of the invention, along with the accompanying drawings in which like numerals represent like components.

BRIEF DESCRIPTION OF THE DRAWINGS

[0028] The foregoing summary, as well as the following detailed description of preferred embodiments, is better understood when read in conjunction with the appended drawings. There is shown in the drawings example embodiments, however, the application is not limited to the specific system and method disclosed in the drawings.

[0029] FIG. 1 illustrates an exercising apparatus installed on a door, according to an embodiment of the present invention;

[0030] FIG. 2 illustrates a side view of the exercising apparatus installed on a door, according to an embodiment of the present invention;

[0031] FIG. 3 illustrates an exploded view of the exercising apparatus of FIG. 2;

[0032] FIG. 4 illustrates a perspective view of a mounting assembly, according to an embodiment of the present invention;

[0033] FIG. 5 illustrates a perspective view of a clamp assembly, according to an embodiment of the present invention;

[0034] FIG. 6 illustrates a perspective view of a handle assembly, according to various embodiments of the present invention;

[0035] FIG. 7 illustrates an exercising apparatus installed on a door, according to another embodiment of the present invention;

[0036] FIG. 8 illustrates an exercising apparatus installed on a door, according to yet another embodiment of the present invention;

[0037] FIG. 9 illustrates an exercising apparatus installed on a door and being used by a user, according to an embodiment of the present invention; and

[0038] FIG. 10 illustrates an exercising apparatus installed on trunk of a tree and being used by a user, according to yet another embodiment of the present invention.

DETAILED DESCRIPTION

[0039] Some embodiments, illustrating its features, will now be discussed in detail. The words “comprising,” “having,” “containing,” and “including,” and other forms thereof, are intended to be equivalent in meaning and be open ended in that an item or items following any one of these words is not meant to be an exhaustive listing of such item or items, or meant to be limited to only the listed item or items. It must also be noted that as used herein and in the appended claims, the singular forms “a,” “an,” and “the” include plural references unless the context clearly dictates otherwise. Although any methods, and systems similar or equivalent to those described herein can be used in the practice or testing of embodiments, the preferred methods, and systems are now described. The disclosed embodiments are merely exemplary.

[0040] The various features and embodiments of an exercising apparatus of the present invention will now be described in conjunction with the accompanying figures, namely FIGS. 1-10.

[0041] Referring to accompanying figures, especially FIG. 1-FIG. 3, an exercising apparatus 100 installed on a support structure 200 is shown capable of being used by a user for performing a variety of physical exercises, in accordance with an embodiment of present invention. As shown in FIG. 1, the support structure 200 comprises a conventional door 210 that is shown in locked condition relative to a door frame 220. In various embodiments, the support structure 200 could be any substantially stable and rigid structure capable of handling the forces exerted by the user on the exercising apparatus 100. The support structure 200 could further include but not limited to doors, door frames, tree trunks, poles, walls, wooden posts and so on. The exercising apparatus 100 comprises a clamp assembly 110, an arm extension assembly 120, a mounting assembly 140 and a handle assembly 150. The arm extension assembly 120 includes a first end 124 and an opposite second end 126. Further, the arm extension assembly 120 comprises a plurality of telescopically nestable arms 122 wherein at least one nestable arm 122 comprises a weight attachment portion 123 for removably connecting a weighted object 130. The weight attachment portion 123 could include any component capable of removably connecting a weighted object 130 to the telescopically nestable arms 122. The weight attachment portion 123 could include but not limited to: hook, a carabineer, maillon, rope, metal links, harness, band and/or combination thereof. The weighted object 130 removably connected to the weight attachment portion 123 aids in providing resistive force (resistance) to the movement of the arm extension assembly 120. The weighted object 130 could include any object having some substantial weight and

capable of being removably connected to the weight attachment portion 123. The weighted object 130 could include but not limited to: weight plate, kettlebell, barbell, dumbbell and/or combination thereof. The mounting assembly 140 is rotatably connected to the first end 124 of an arm extension assembly 120 and the mounting assembly 140 is further connected to the clamp assembly 110. The handle assembly 150 secured at the second end 126 of the arm extension assembly 120 for engagement by the user such that the user can perform physical exercises using the exercising apparatus 100 by moving the handle assembly 150 to rotate the arm extension assembly 120 relative to the clamp assembly 110.

[0042] In an embodiment, at least one telescopically nestable arm 122 could include a length adjuster hole 128. A pin (not shown in figures) will simultaneously engage at least two length adjuster holes 128 of at least two telescopically nestable arms 122 to decrease the overall length L (as shown in FIG. 2) of the arm extension assembly 120, thereby collapsing the arm extension assembly 120. When the user intends to increase overall length L of arm extension assembly 120, he/she can remove the pin from the length adjuster holes 128 and then, he/she can extend the arm extension assembly 120. Further, the user can select the overall length L of arm extension assembly 120 by selectively engaging at least two length adjuster holes 124 simultaneously using at least one pin (not shown in figures). To facilitate the collapsing and extending movement of the arm extension assembly 120, each telescopically nestable arm 122 have a substantially similar shape including but not limited to cylindrical shape, polygonal shape and so on. Further, as seen in FIGS. 1-3, the plurality of telescopically nestable arms 122 has varying (reduced) cross sectional areas as the telescopically nestable arms 122 are configured to be nested within each other in collapsed state. Further, the number of the telescopically nestable arms 122 is equal or greater than two in number.

[0043] In another embodiment, the support structure 200 comprises a door frame 220. The clamp assembly 110 is removably connected to the door frame 220.

[0044] In another embodiment, the support structure 200 comprises a combination of door 210 and door frame 220. The clamp assembly 110 is removably connected to both door 210 as well as the door frame 220 for better clamping of the clamp assembly 110 to the combination of door 210 and door frame 220.

[0045] In an embodiment as shown in FIG. 3, the weight attachment portion 123 is permanently connected to the distal end of at least one telescopically nestable arm 122. This configuration would allow collapsing of the telescopically nestable arms 122 without the obstruction of the weight attachment portion 123 when the telescopically nestable arms 122 are collapsed.

[0046] In another embodiment, the weight attachment portion 123 is removably connected to the at least one telescopically nestable arm 122. The at least one telescopically nestable arm 122 could include an eyelet (not shown in figures) for removably connecting the weight attachment portion 123 to the at least telescopically nestable arm 122. Thus, the weight attachment portion 123 can be removed from eyelet (not shown in figures) when the user wishes to decrease the overall length L of arm extension assembly 120 by collapsing the telescopically nestable arms 122. This configuration would allow smooth collapsing of the tele-

scopically nestable arms 122 without the obstruction of the weight attachment portion 123.

[0047] In an embodiment as shown in FIG. 4, a perspective view of mounting assembly 140 is visible. The mounting assembly 140 allows rotation of the arm extension assembly 120 in at least one rotational direction relative to the clamp assembly 110.

[0048] In an embodiment as shown in FIG. 4, the mounting assembly 140 comprises a spherical bearing 142 and a mounting plate 143. The spherical bearing 142 comprises a ball element 144 and a socket portion 146. The ball element 144 comprises a connector portion 145 for removable connection of ball element 144 to the first end 124 of the arm extension assembly 120. The connector portion 145 could include but not limited to screw portion, male female arrangement, snap fit lock and so on. Further, the first end 124 of the arm extension assembly includes a connector portion (not shown) to connect with the connector portion 145 of the ball element 144. The ball element 144 is configured to rotate relative to the socket portion 146 in all three directions (x direction, y direction and z direction) in a predefined angular range such that the arm extension assembly 120 is able to rotate freely in a predefined angular range relative to the socket portion 146. Thus, the mounting assembly 140 is configured to allow rotation of the arm extension assembly 120 substantially along three degrees of freedom, each of the three degrees of freedom having a different rotational axis (x axis, y axis and z axis) substantially perpendicular to one another. The mounting plate 143 is connected to the clamp assembly 110. Further, the mounting plate 143 is connected to the socket portion 146.

[0049] In another embodiment (not shown in figures), the mounting assembly 140 could include a rotation limiter arrangement to prevent rotation of the arm extension assembly 120 in at least one rotational direction. The mounting assembly 140 could include at least one engaging element such as but not limited to protrusions, ratchet (not shown in figures) and the arm extension assembly 120 could also include at least one engaging surface such as but not limited to protrusions, ratchet, pawls cavities, and holes and so on. The configuration of the engaging element of the mounting assembly 140 and engaging surface of the arm extension assembly 120 is such that the engaging element of the mounting assembly 140 and engaging surface of the arm extension assembly 120 do not engage against each other when the arm extension assembly 120 is rotated in a direction and at the same time, when the arm extension assembly 120 is rotated in other direction, the engaging element of the mounting assembly 140 and engaging surface of the arm extension assembly 120 will engage against each other, thereby preventing rotation in other direction.

[0050] In another embodiment, the mounting assembly 140 could include any mechanism enabling rotation of the arm extension assembly 120 in at least one rotational direction relative to the clamp assembly 110. In various embodiments, the mounting assembly 140 includes but not limited to: pivot element, a swivel joint, offset U shaped link assembly, a spherical bearing, a hinge joint and/or combination thereof; the entirety of some of the embodiments will be described below in greater detail.

[0051] In an embodiment as shown in FIG. 5, a perspective view of the clamp assembly 110 is visible. The clamp assembly 110 comprises a releasable clamp 112 having two movable clamp jaws, designated as a first clamp jaw 113 and

a second clamp jaw 114. Further, the clamp assembly 112 comprises a tensioning member 116 such as but not limited to screw-nut arrangement, keys, pins and so on to adjust the clamping force of the clamp assembly 110. The tensioning member 116 will move first clamp jaw 113 relative to the second clamp jaw 114 against the support structure 200 to provide a tight connection between the releasable clamp 112 and the support structure 200. Further, the tensioning member 116 is configured to removably connect the releasable clamp 112 with the support structure 200.

[0052] FIG. 6 illustrates a perspective view of the handle assembly 150, according to an embodiment of the present invention. The handle assembly 150 is removably secured at the second end 126 (as shown in FIG. 1) of the arm extension assembly 120. The handle assembly 150 comprises at least one grip portion 154. As shown in various embodiments, the handle assembly 150 could include any shape generally used to perform exercises such as but not limited to a landmine exercise. The handle assembly 150 can include but not limited to multi-grip handles, v shape handles, t shape handles and so on. Further in another embodiment (not shown in figures), the handle assembly 150 could be adjustable allowing the user to adjust the length/orientation/position of the handle assembly 150 according to his/her requirements.

[0053] In another embodiment (not shown in figures), the handle assembly 150 could include a radial multi grip handle comprising four grip portions 154 radially positioned in 90 degree increments. The user can grasp at least one grip portion (preferably two grip portions) using his/her hands and perform various physical exercises such as but not limited to landmine exercises.

[0054] FIG. 7 illustrates an exercising apparatus 100 installed on a support structure 200, according to another embodiment of the present invention. The exercise equipment 100 shown in FIG. 7 is similar to the exercise equipment 100 as shown in FIG. 1-FIG. 3 except for the modifications in the mounting assembly 140. As shown in FIG. 7, the mounting assembly 140 comprises an offset U shaped link assembly 240 comprising two U shaped links designated as a first U shaped link 242 and a second U shaped link 244. Further, the offset U shaped link assembly 240 comprises an elongate connector 245 and a key connector 246. The first U shaped link 242 is removably connected to the clamp assembly 110 by using the key connector 246. The first U shaped link 242 and the second U shaped link 244 are rotatably connected to each other using a first pivoting element 247. The second U shaped link 244 is rotatably connected to the elongate connector 245 using a second pivoting element 248. The elongate connector 245 is further rotatably connected to the arm extension assembly 120 by a rotating element 249. The rotating element 249 includes, but not limited to roller bearing, needle bearing and so on. The first pivoting element 247 and/or the second pivoting element 248 includes but not limited to rotational screw, cylindrical pin, bearing and so on. The configuration of the first pivoting element 247, second pivoting element 248 and the rotating element 249 allows the movement of the arm extension assembly 120 substantially in x direction, z direction and y direction respectively in the predefined angular range.

[0055] FIG. 8 illustrates an exercising apparatus 100 installed on a support structure 200, according to another embodiment of the present invention. The exercise equip-

ment 100 shown in FIG. 8 is similar to the exercise equipment 100 as shown in FIG. 1-FIG. 3 except modifications in the mounting assembly 140. As shown in FIG. 8, the mounting assembly 140 comprises a combination swivel joint and spherical bearing assembly. The combination swivel joint and spherical bearing assembly comprises a spherical bearing 340 and a mounting plate 341. The spherical bearing 340 comprises a ball element 343 and a pivoting element 345. The pivoting element 345 is rotatably connected to the arm extension assembly 120. Further, the spherical bearing 340 comprises a socket portion 344. The ball element 343 is configured to rotate relative to the socket portion 344 substantially in all three directions (x direction, y direction and z direction) in a predefined angular range. Further, the arm extension assembly 120 is configured to rotate relative to a pivoting element 345 substantially in y direction as shown in FIG. 8. The mounting plate 341 is connected to the clamp assembly 110. Further, the mounting plate 341 is connected to the socket portion 146. The configuration of the pivoting element 345 and the spherical bearing 340 is such that it increases predefined angular range of movement of the arm extension assembly 120 when compared to the embodiment shown in FIG. 1.

[0056] FIG. 9 illustrates an exercising apparatus 100 installed on a door and being used by a user, according to an embodiment of the present invention. The user can grasp the handle assembly 150 using his/her body parts such as but not limited to hands, legs and so on and such that a user can perform physical exercises using the exercising apparatus 100 by moving the handle assembly 150 to rotate the arm extension assembly 120 along at least one direction in a predefined angular range relative to the clamp assembly 110. Further, in an embodiment, the rotational movement of the arm extension assembly 120 could have substantially along three degrees of freedom, each of the three degrees of freedom having a different rotational axis (x axis, y axis and z axis) substantially perpendicular to one another. The rotation of arm extension assembly 120 is resisted by the weighted object 130 removably connected to the at least one weight attachment portion 123 of the arm extension assembly 120 in at least one rotational direction. The user can increase/decrease weighted object 130 removably connected to the at least one weight attachment portion 123 to better suit his/her requirements.

[0057] FIG. 10 illustrates an exercising apparatus 100 installed on a trunk of a tree and being used by a user, according to yet another embodiment of the present invention. The exercise equipment 100 shown in FIG. 10 is similar to the exercise equipment 100 as shown in FIG. 1-FIG. 3 except modifications in the clamp assembly 110 and the support structure 200. As shown in FIG. 10, the clamp assembly 110 comprises a ratchet strap 230 and the support structure 200 comprises a tree trunk 300. The ratchet strap 230 is connected to the mounting plate 143 of the mounting assembly 140. The user can adjust tightness of the ratchet strap 230 according to the diameter of the tree trunk 300. Further, the ratchet strap 230 provides a removable connection of the exercise equipment 100 to the tree trunk 300.

[0058] While the arrangement illustrated in FIG. 10 is effective in accordance with the present invention, the exercising apparatus 100 is uniquely designed so that it can be removably installed to a tree trunk 300.

[0059] The exercise equipment 100 of the present invention including various components, parts thereof may be configured in many different shapes, sizes and using different kinds of materials, including but not limited to metals, plastics, ceramics, wood, composites, polymers, rubber, silicone and one should not construe these aspects to be a limiting factor for the invention disclosed herein.

[0060] It should be understood that the various components, parts of the various embodiments of exercise equipment 100 of the present invention are similar and interchangeable. It is obvious to the one skilled in the art that the various components, parts of the exercise equipment 100 of one embodiment of the present invention could be considered for other embodiments with little or no variation.

[0061] It should be understood according to the preceding description of the present invention that the same is susceptible to changes, modifications and adaptations, and that the said changes, modifications and adaptations fall within scope of the appended claims.

What is claimed is:

1. An exercising apparatus (100) for removable installation on a support structure (200), the exercising apparatus (100) comprising:

a clamp assembly (110) comprising a releasable clamp (112) for removable connection to a support structure (200);

an arm extension assembly (120) comprising a plurality of telescopically nestable arms (122) wherein the arm extension assembly (120) includes a first end (124) and an opposite second end (126);

Wherein at least one nestable arm (122) comprises a weight attachment portion (123) for removably connecting a weighted object (130);

a mounting assembly (140) connected to the first end (124) of an arm extension assembly (120) and the mounting assembly (140) is connected to the clamp assembly (110); and

a handle assembly (150) secured at the second end (126) of the arm extension assembly (120) for engagement by a user such that a user can perform physical exercises using the exercising apparatus (100) by moving the handle assembly (150) to rotate the arm extension assembly (120) in at least one direction relative to the clamp assembly (110).

2. The exercising apparatus (100) as claimed in claim 1, wherein the clamp assembly (110) comprises a tensioning member (116) for adjusting the clamping force of the clamp assembly (110).

3. The exercising apparatus (100) as claimed in claim 1, wherein the telescopically nestable arms (122) are equal or greater than two in number.

4. The exercising apparatus (100) as claimed in claim 1, wherein the overall length L of the telescopically nestable arms (122) is manually set by a length adjuster hole (128).

5. The exercising apparatus (100) as claimed in claim 1, wherein the weight attachment portion (123) comprises a hook, a carabineer, a maillon, a rope, a harness, a band.

6. The exercising apparatus (100) as claimed in claim 1, wherein the weighted object (130) comprises a weight plate, a kettlebell, a barbell, a dumbbell.

7. The exercising apparatus (100) as claimed in claim 1, wherein the mounting assembly (140) comprises a pivot element, a swivel joint, an offset U shaped link assembly, a spherical bearing, a hinge joint.

8. The exercising apparatus (100) as claimed in claim 1, wherein the mounting assembly (140) allows rotation of the arm extension assembly (120) in at least one rotational direction relative to the clamp assembly (110).

9. The exercising apparatus (100) as claimed in claim 1, wherein the mounting assembly (140) comprising a rotation limiter arrangement to prevent rotation of the arm extension assembly (120) in at least one rotational direction.

10. The exercising apparatus (100) as claimed in claim 1, wherein the mounting assembly (140) allows free rotation of the arm extension assembly (120) relative to the clamp assembly (110) in all three rotational directions substantially perpendicular to one another.

11. The exercising apparatus (100) as claimed in claim 1, wherein the handle assembly (150) comprises a multi-grip handle, a v shape handle, a t shape handle.

12. The exercising apparatus (100) as claimed in claim 1, wherein the support structure (200) includes a door, a door frame, a tree trunk, a pole.

13. An exercise apparatus (100) for removable installation on a support structure (200), the exercise apparatus (100) comprising:

a clamp assembly (110) comprising a releasable clamp (112) for removable connection to a support structure (200);

an arm extension assembly (120) comprising a plurality of telescopically nestable arms (122);

Wherein at least one nestable arm (122) comprises a weight attachment portion (123) for removably connecting a weighted object (130);

a mounting assembly (140) coupled to the clamp assembly (110) and the arm extension assembly (120);

Wherein the mounting assembly (140) is configured to allow rotation of the arm extension assembly (120) along three degrees of freedom, each of the three degrees of freedom having a different rotational axis substantially perpendicular to one another; and

a handle assembly (150) secured to the arm extension assembly (120) for engagement by a user.

14. The exercising apparatus (100) as claimed in claim 13, wherein the mounting assembly (140) comprises a pivot element, a swivel joint, an offset U shaped link assembly, a spherical bearing, a hinge joint.

* * * * *