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Donofrio

(54) **WALL-MOUNTED HOME FITNESS TRAINING EQUIPMENT**

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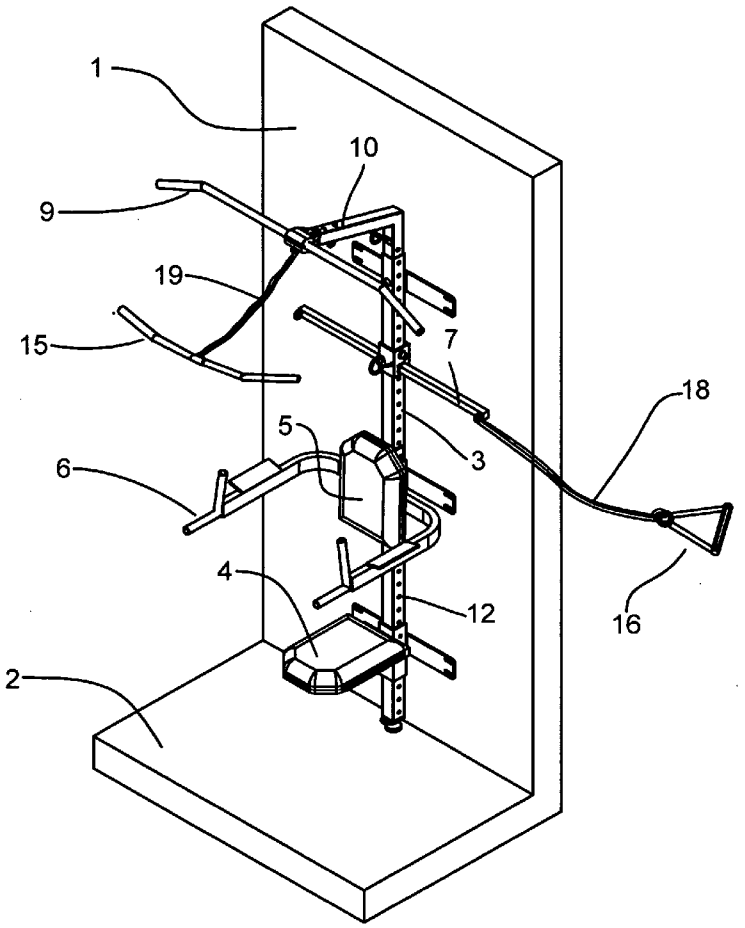
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(52) **U.S. Cl.** **482/130**; 482/131; 482/138; 482/142

(57) **ABSTRACT**

An overall fitness trainer and can be a wall mounted unit that can utilize clip resistance bands as well as other techniques. These bands generally clip on the unit and onto different handles, bars and attachments to perform exercises. The unit can have a removable/adjustable pull up bar, dip bar and seat. It also includes a spring loaded, pull pin carriage that moves freely up and down a vertical spine. This allows for easy adjustment of the carriage and allows the user to attach the bands at multiple angles, widths and levels. This in turn increases the number of exercises the user can perform on the unit. The unit also typically has an o ring that attaches through the arm of the pull up attachment as well as a ½ O-ring at the bottom of the unit again increasing the number of exercises the user can perform. The unit can be attached to the wall with lag bolts into two or more studs. Some embodiments of the invention have an adjustable swivel foot that takes the stress off of the lag bolts and also adds to the overall load capacity of the unit. The apparatus typically has an optional telescoping central vertical spine that splits in two pieces to make the unit easier to ship. The central vertical spine allows attachments to be added and removed using spring loaded pins or plunger pins. Various embodiments of the invention can have an oscillating and telescopic bench, a dip bar, a seat, a knee stabilizer and a foot rest. All of these accessories can be attached and removed to the central spine adding to the versatility and scope of exercises that can be performed.



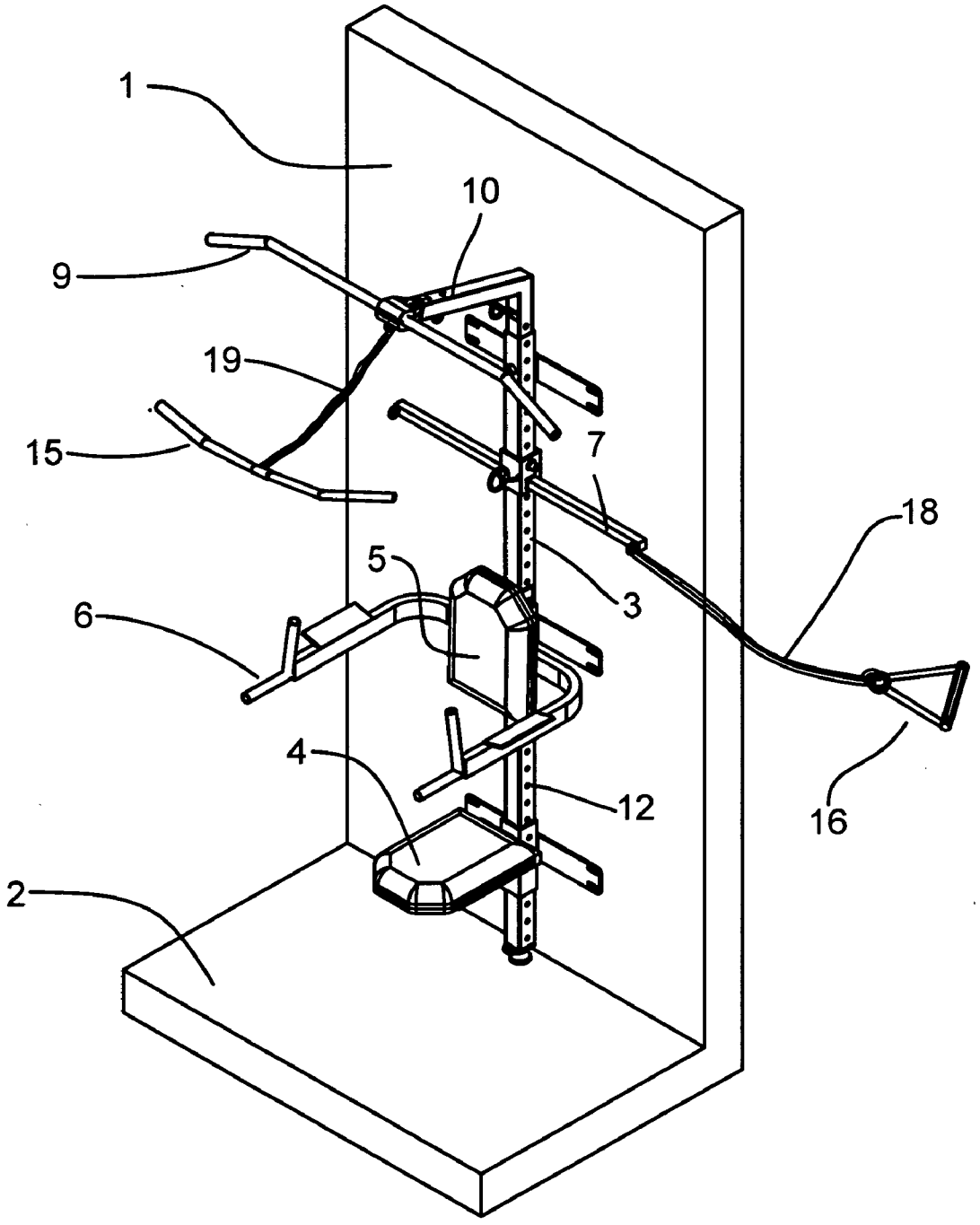


FIG. 1

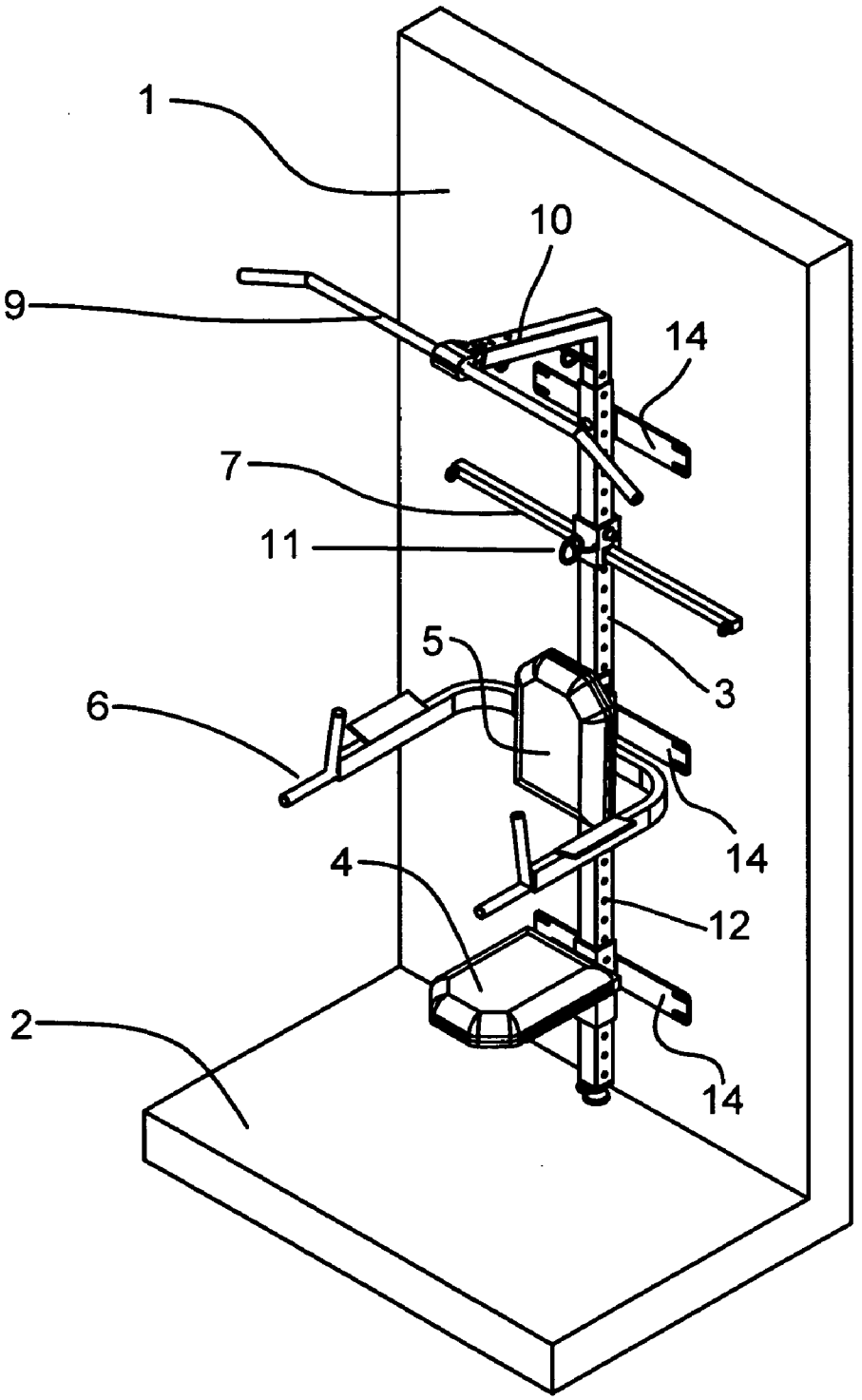


FIG. 2

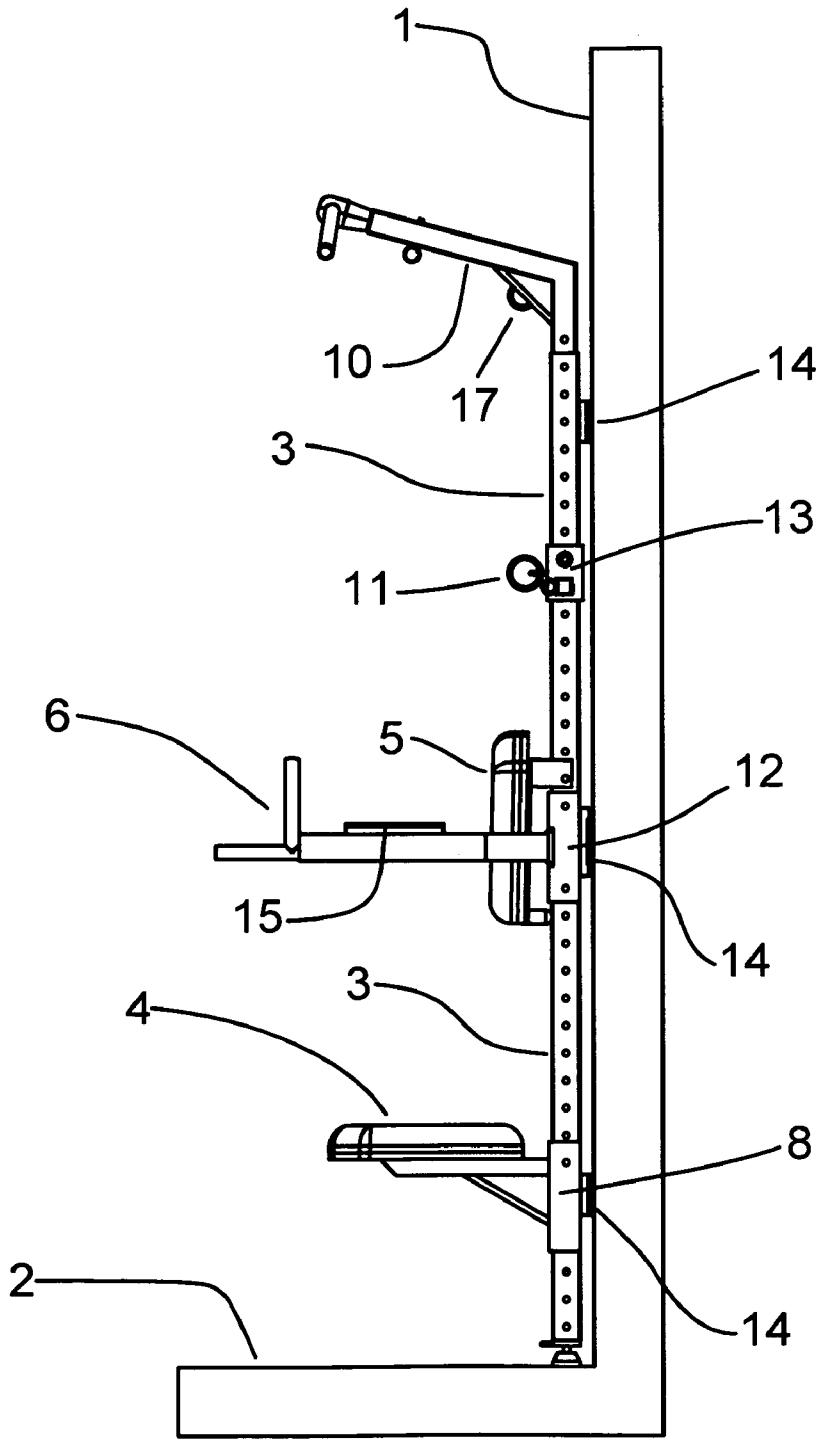


FIG. 3

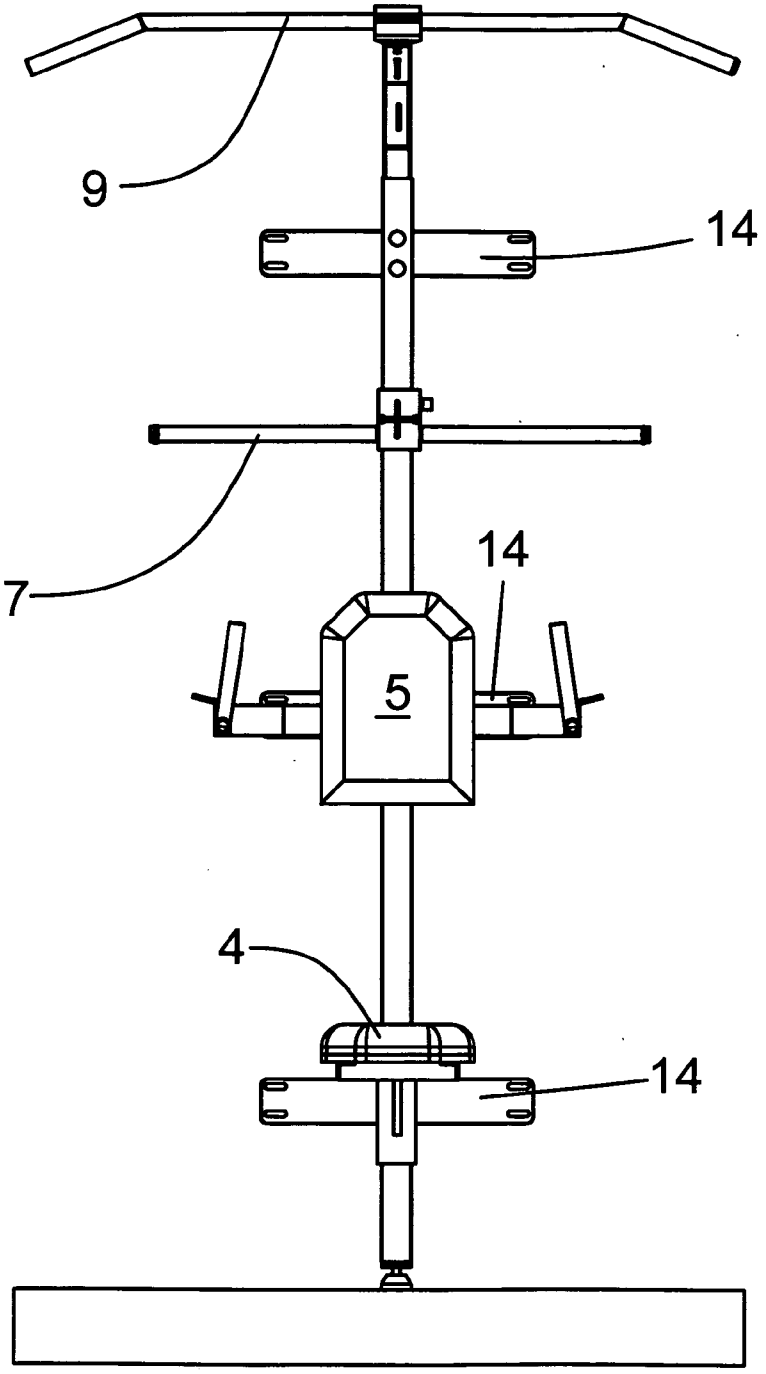


FIG. 4

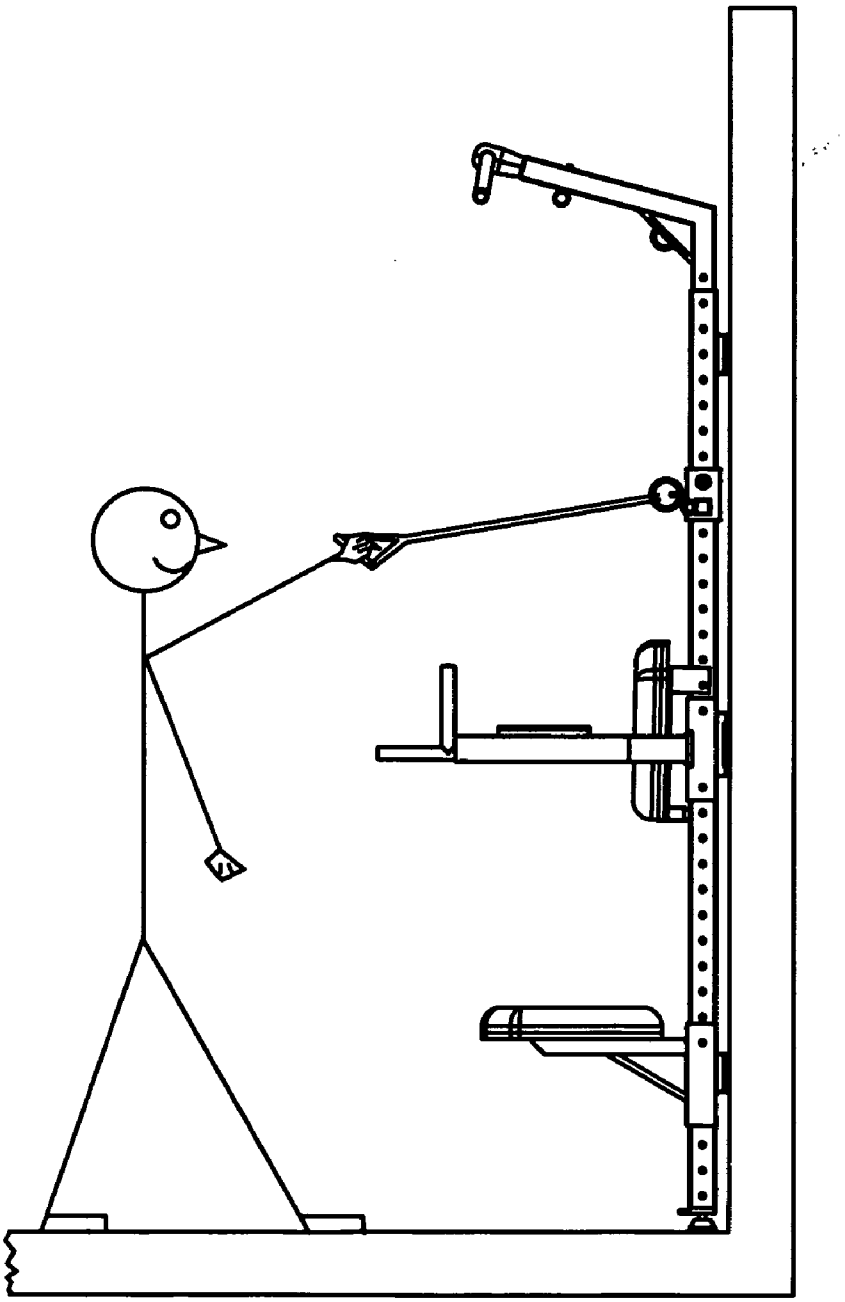


FIG. 5

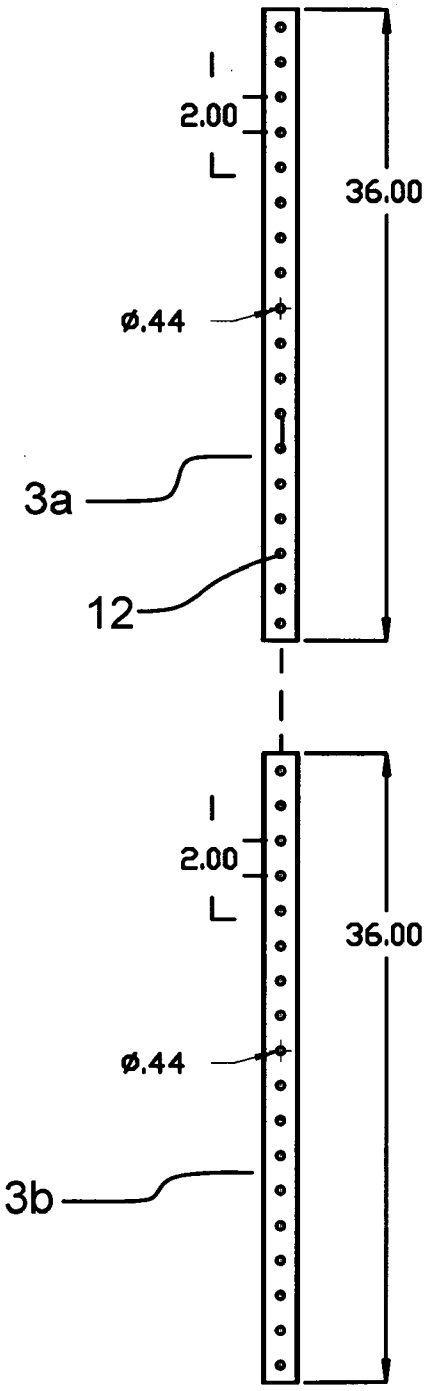


FIG. 6

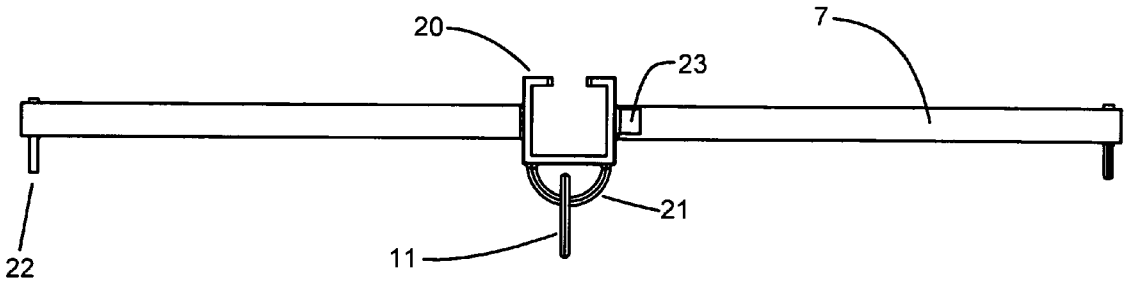


FIG. 7

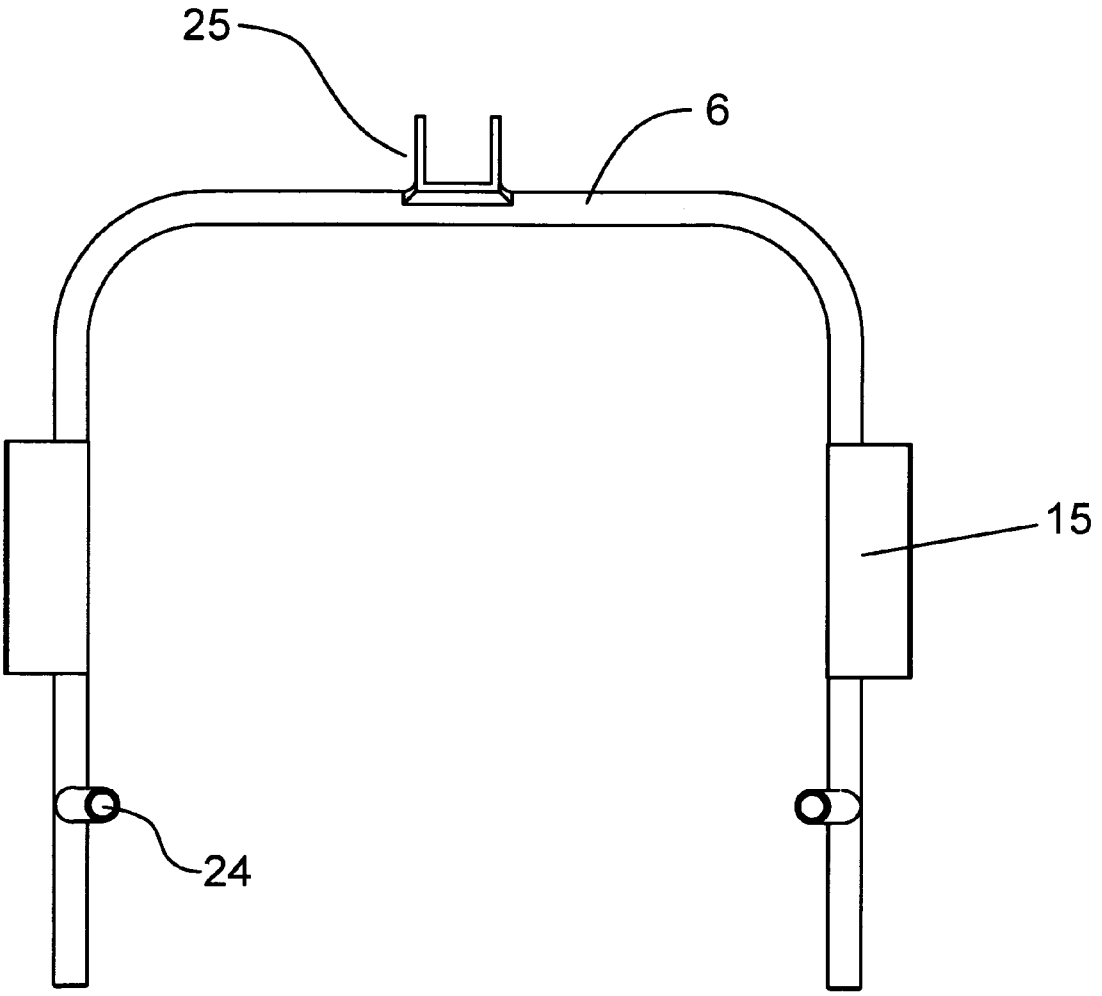


FIG. 8

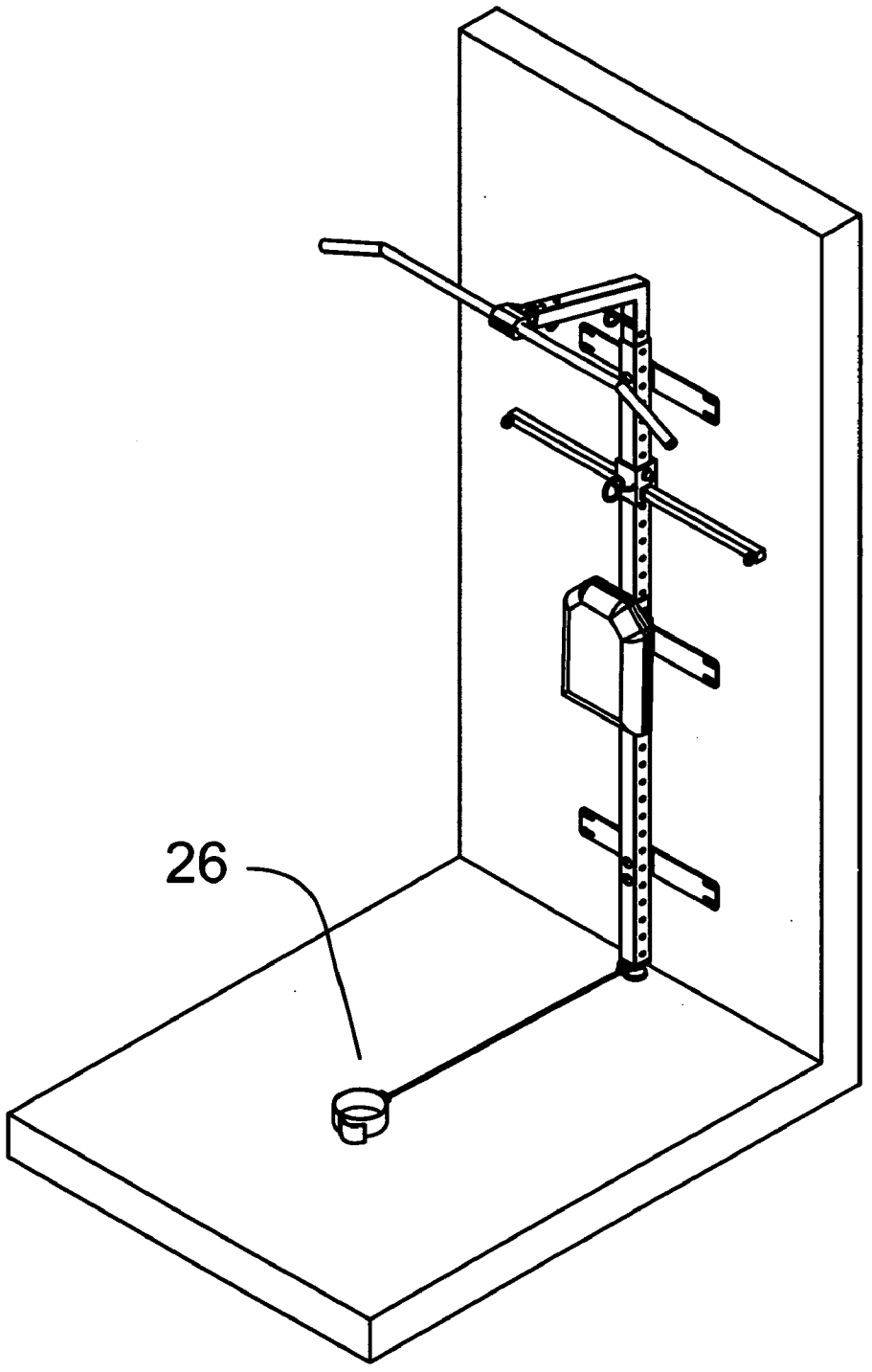


FIG. 9

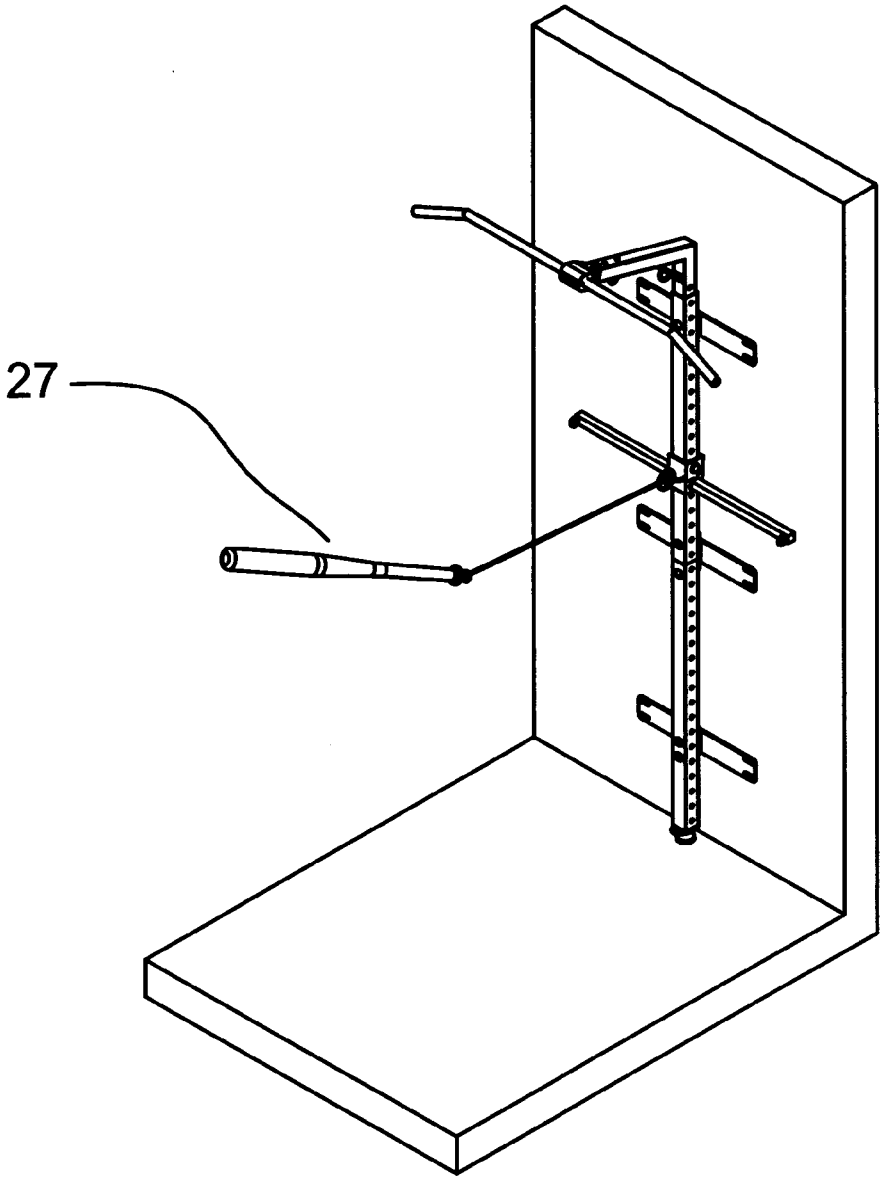


FIG. 10

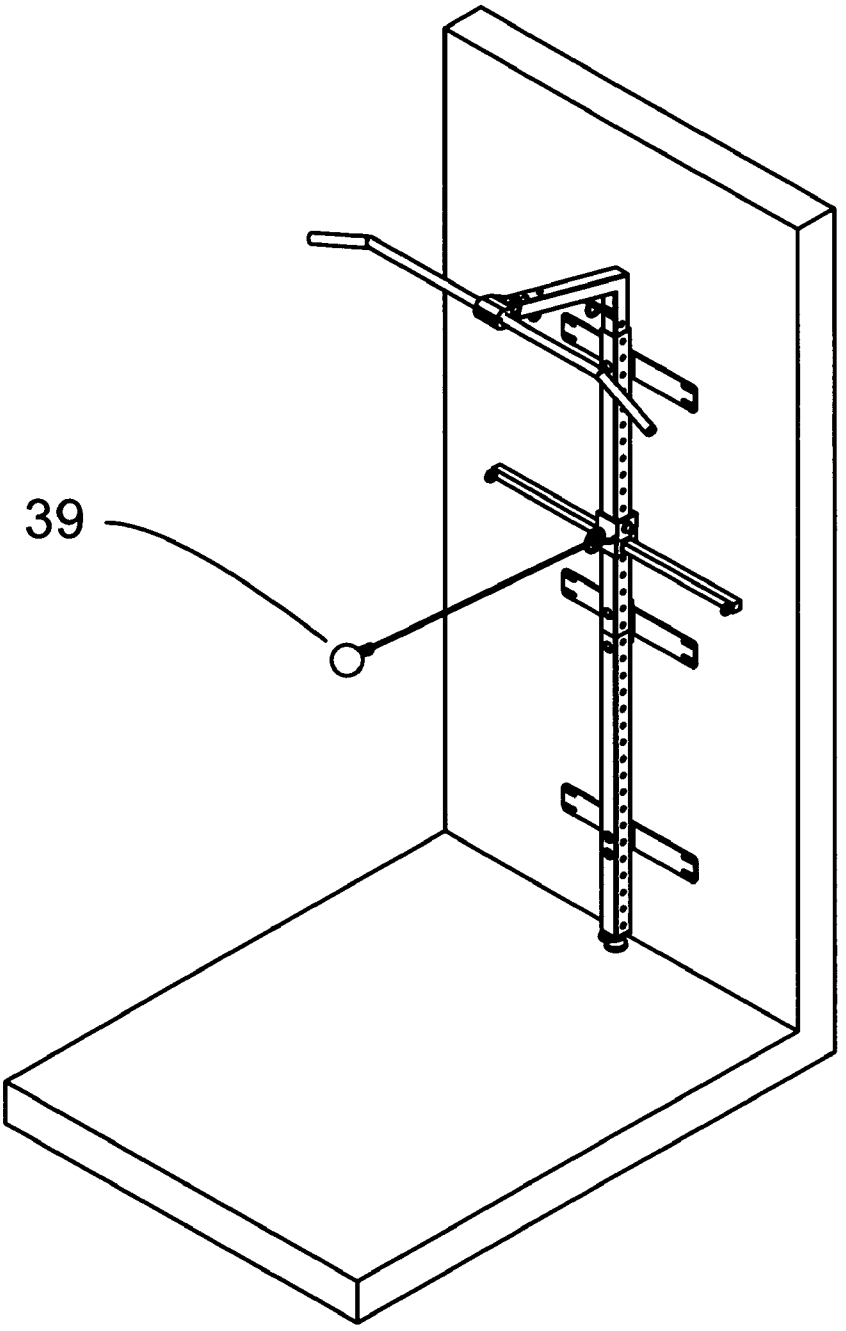


FIG. 11

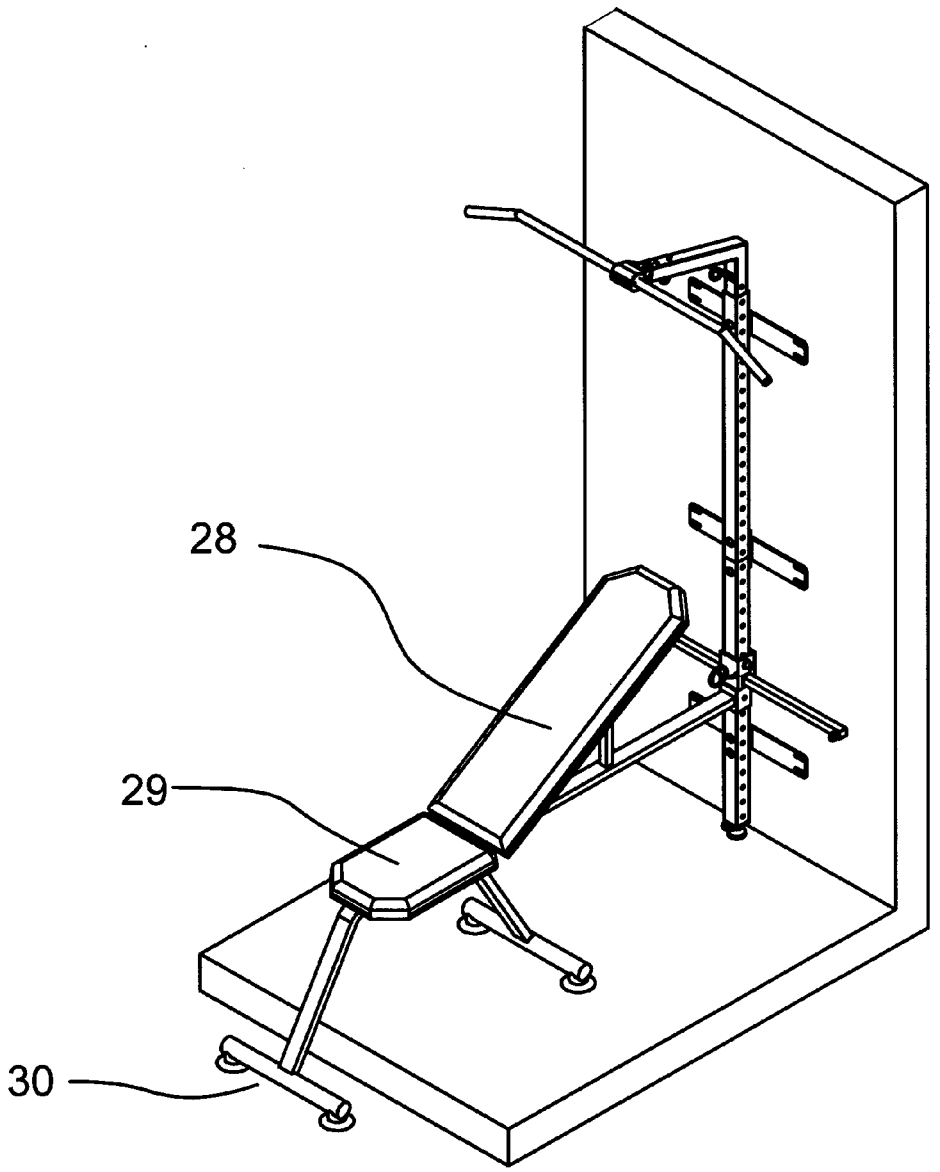


FIG. 12

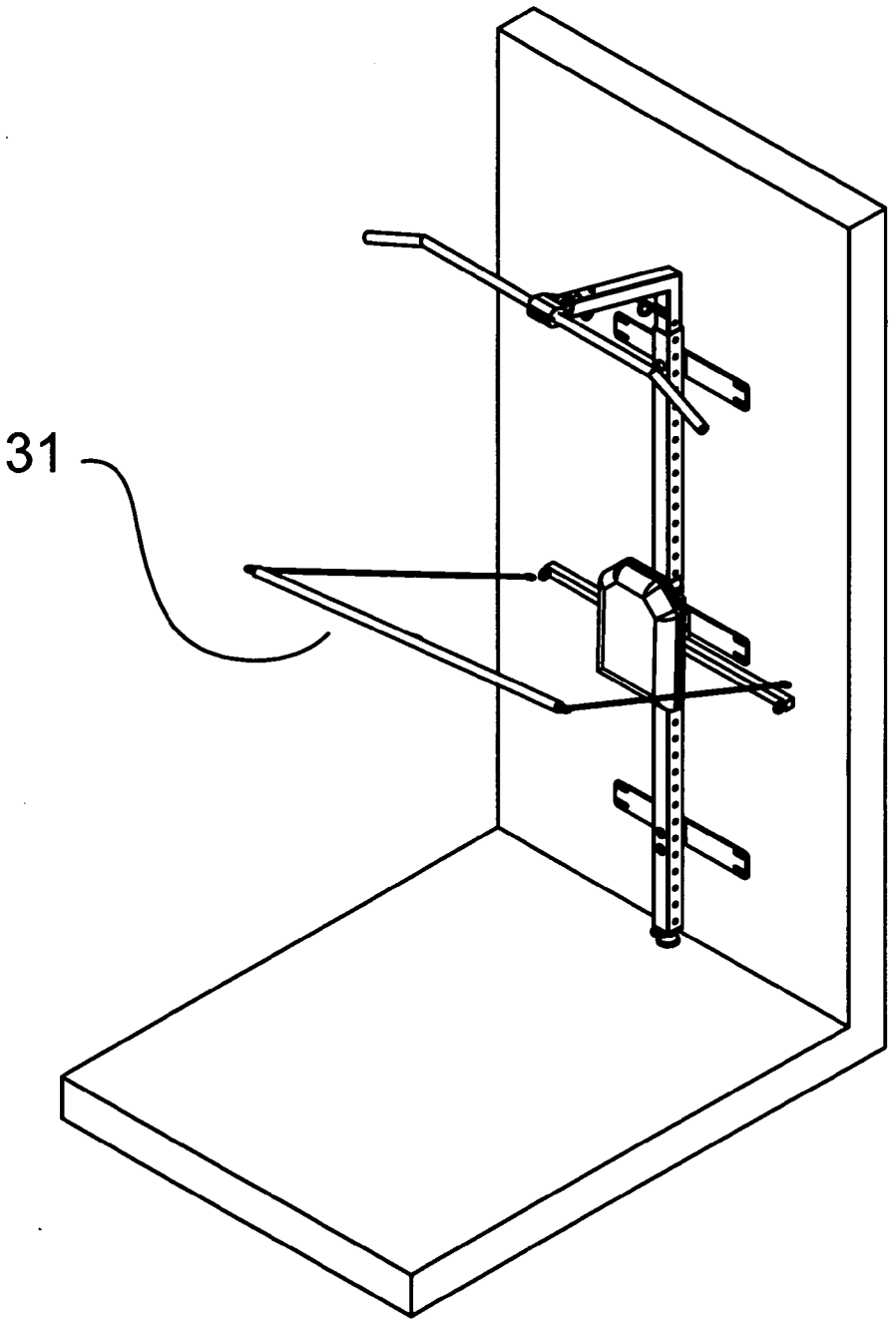


FIG. 13

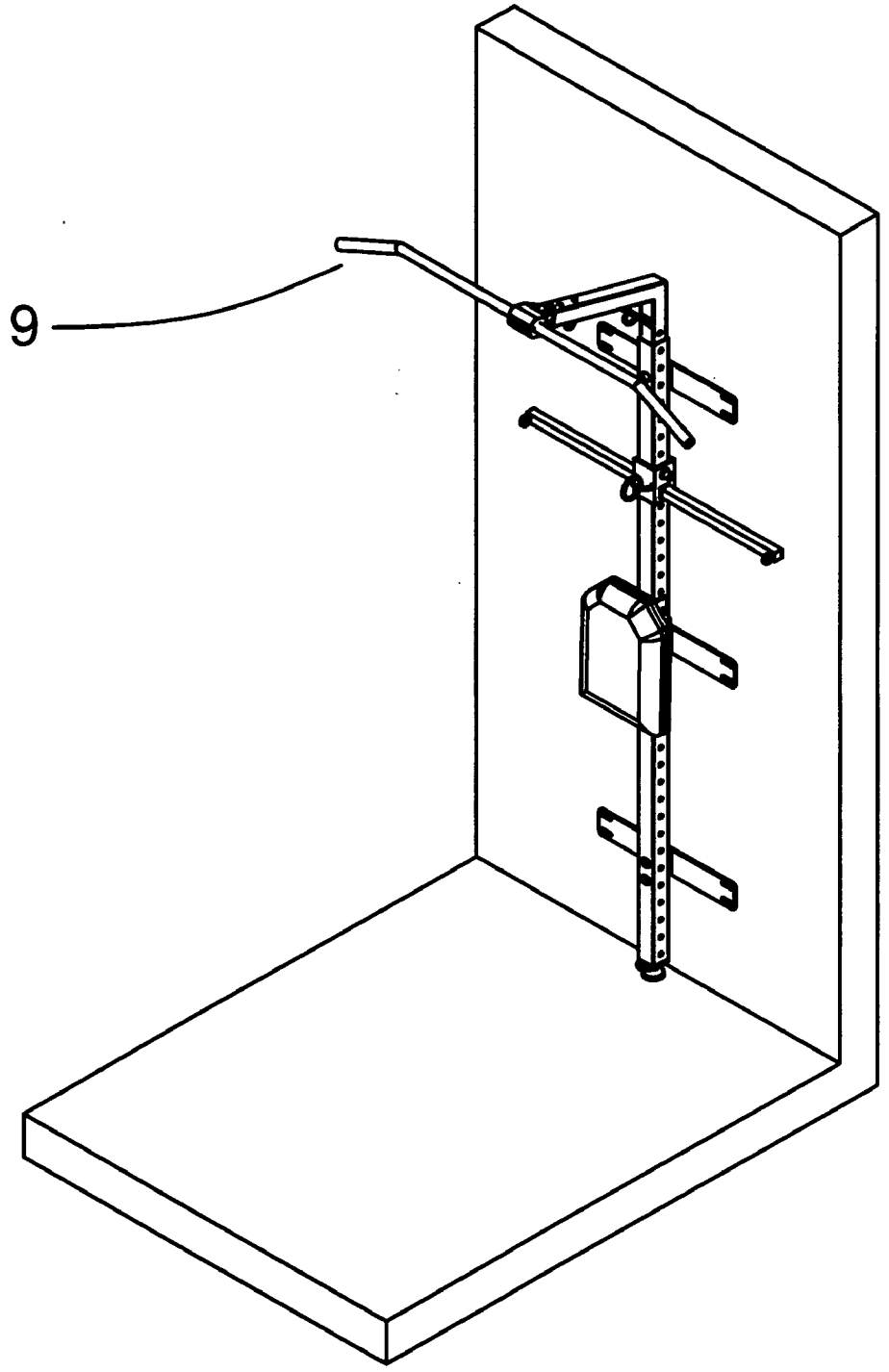


FIG. 14

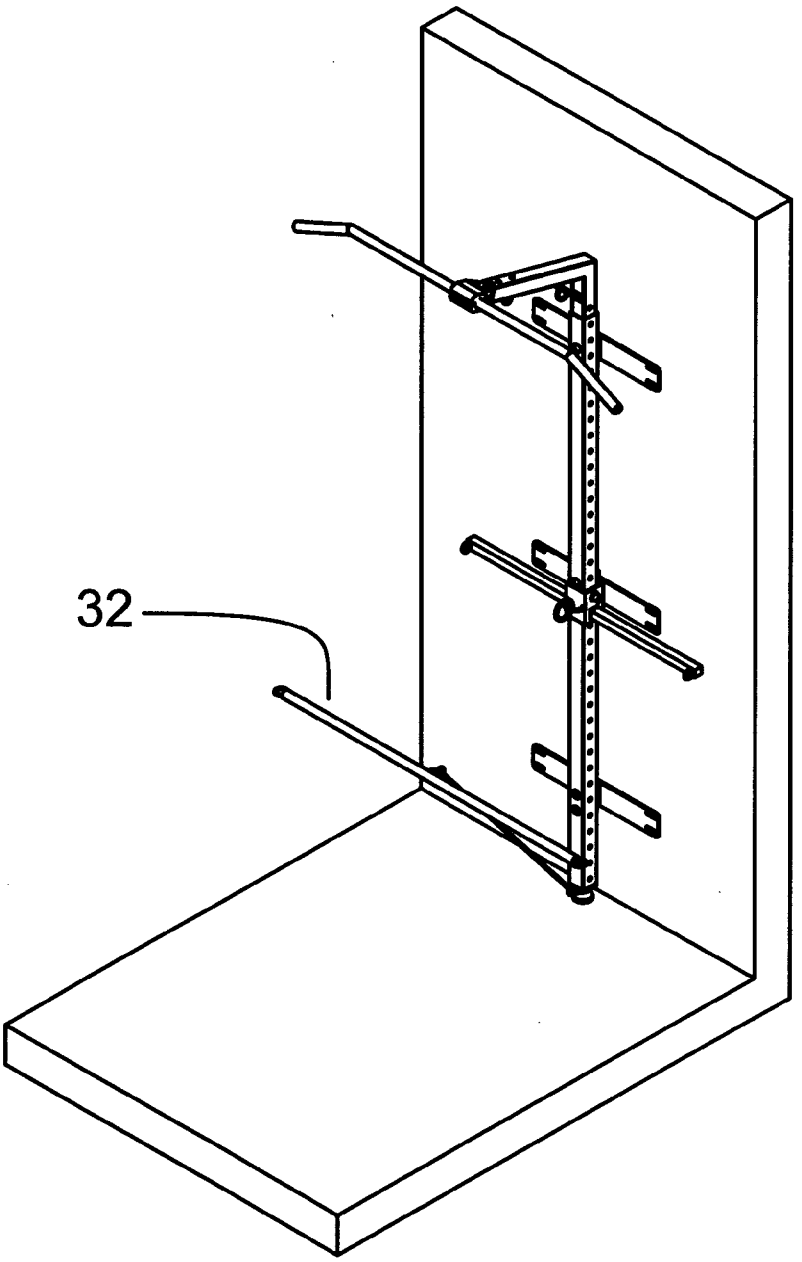


FIG. 15

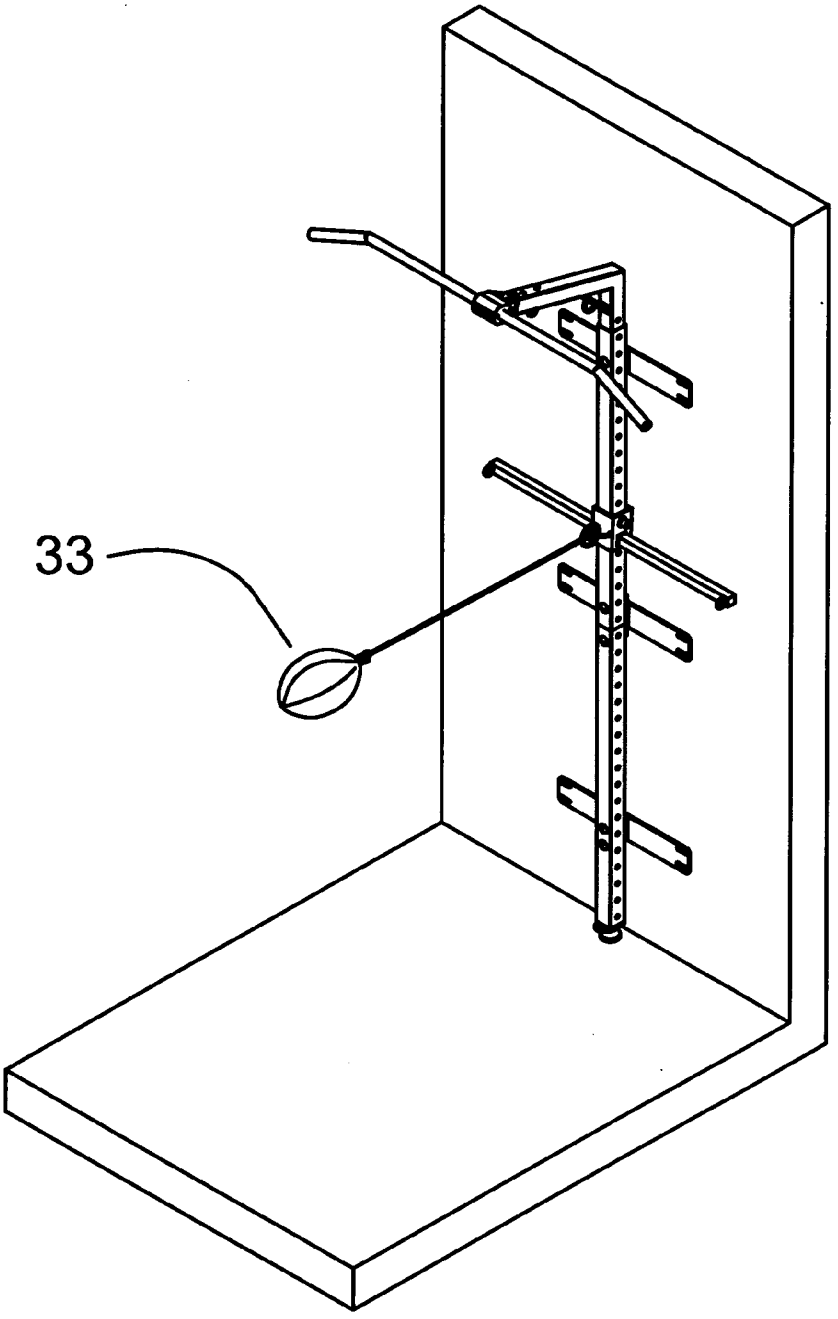


FIG. 16

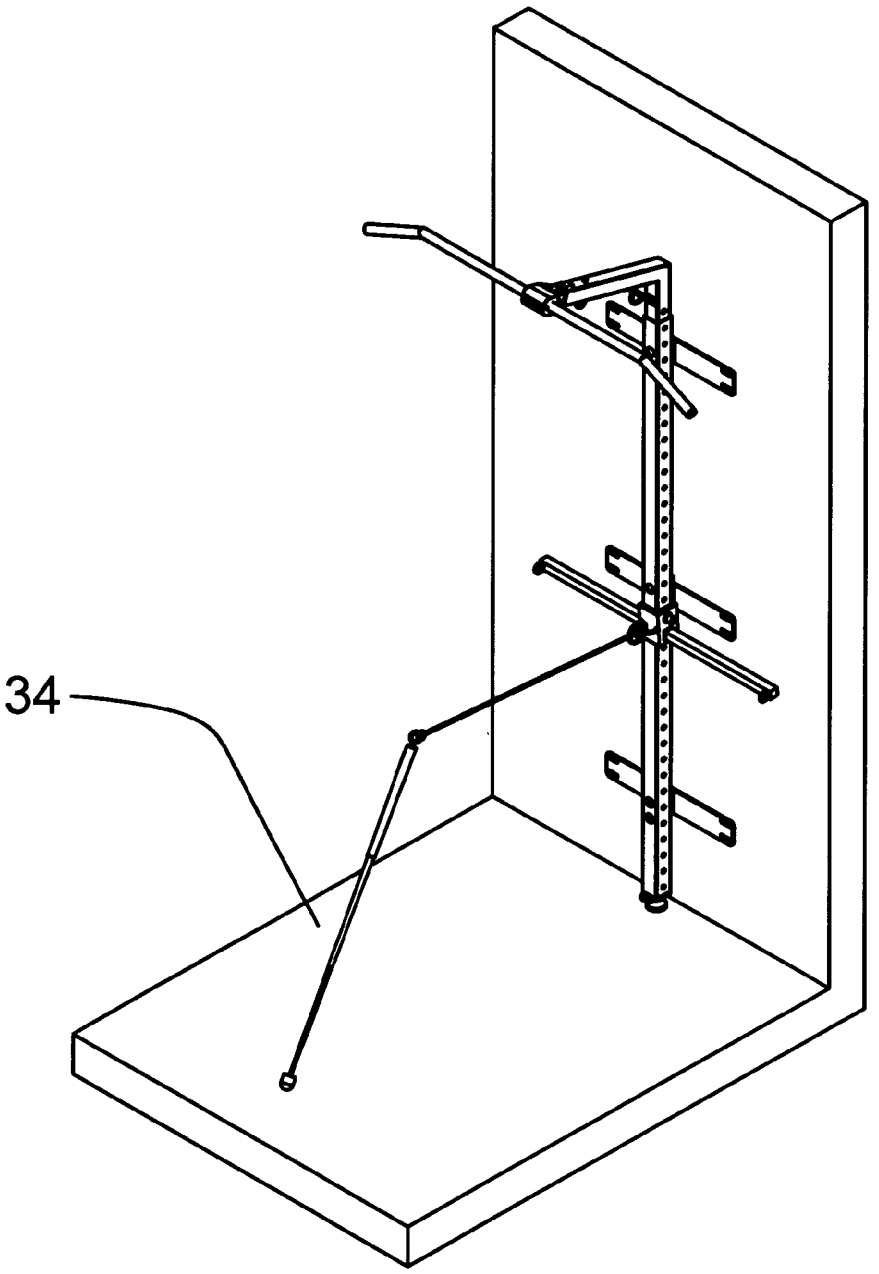


FIG. 17

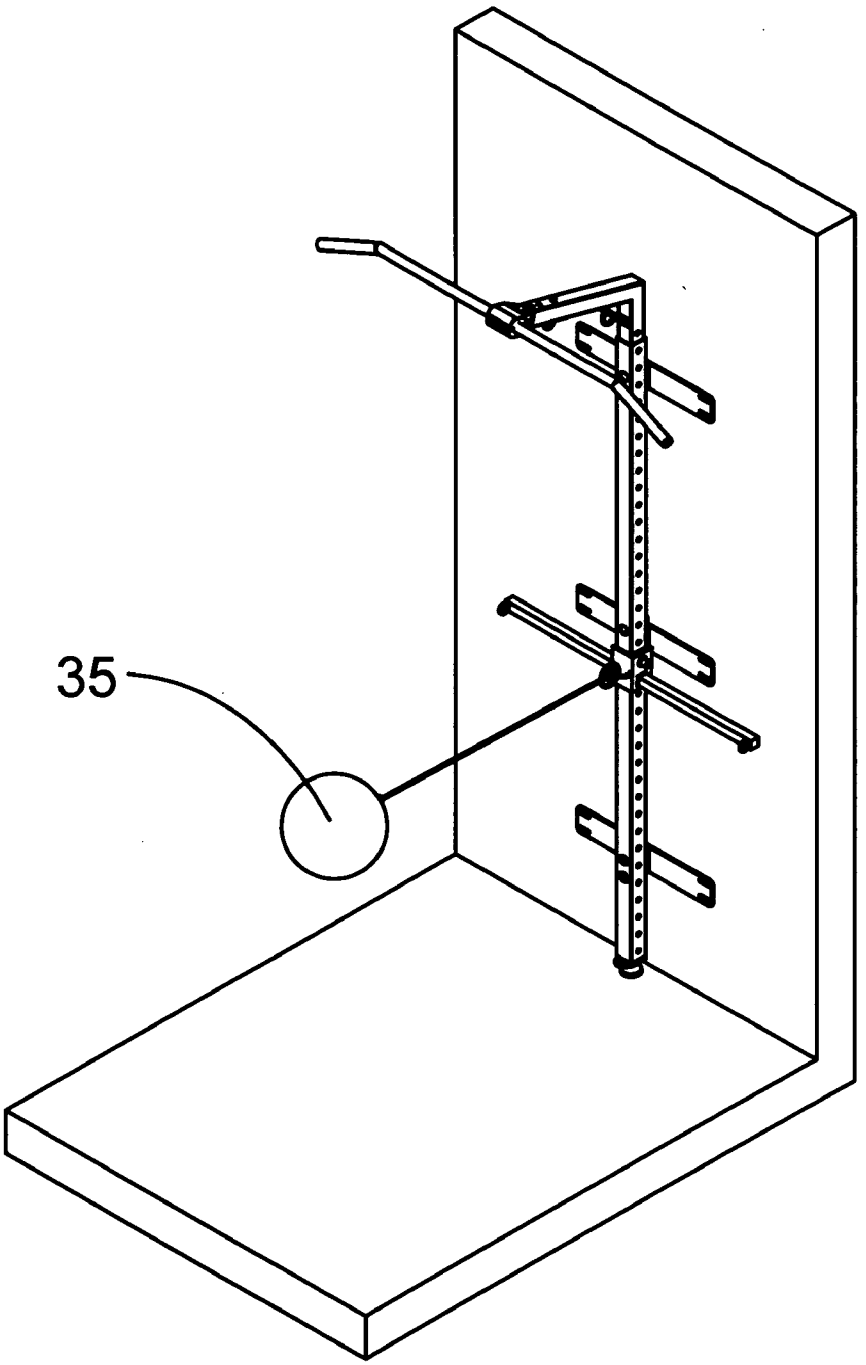


FIG. 18

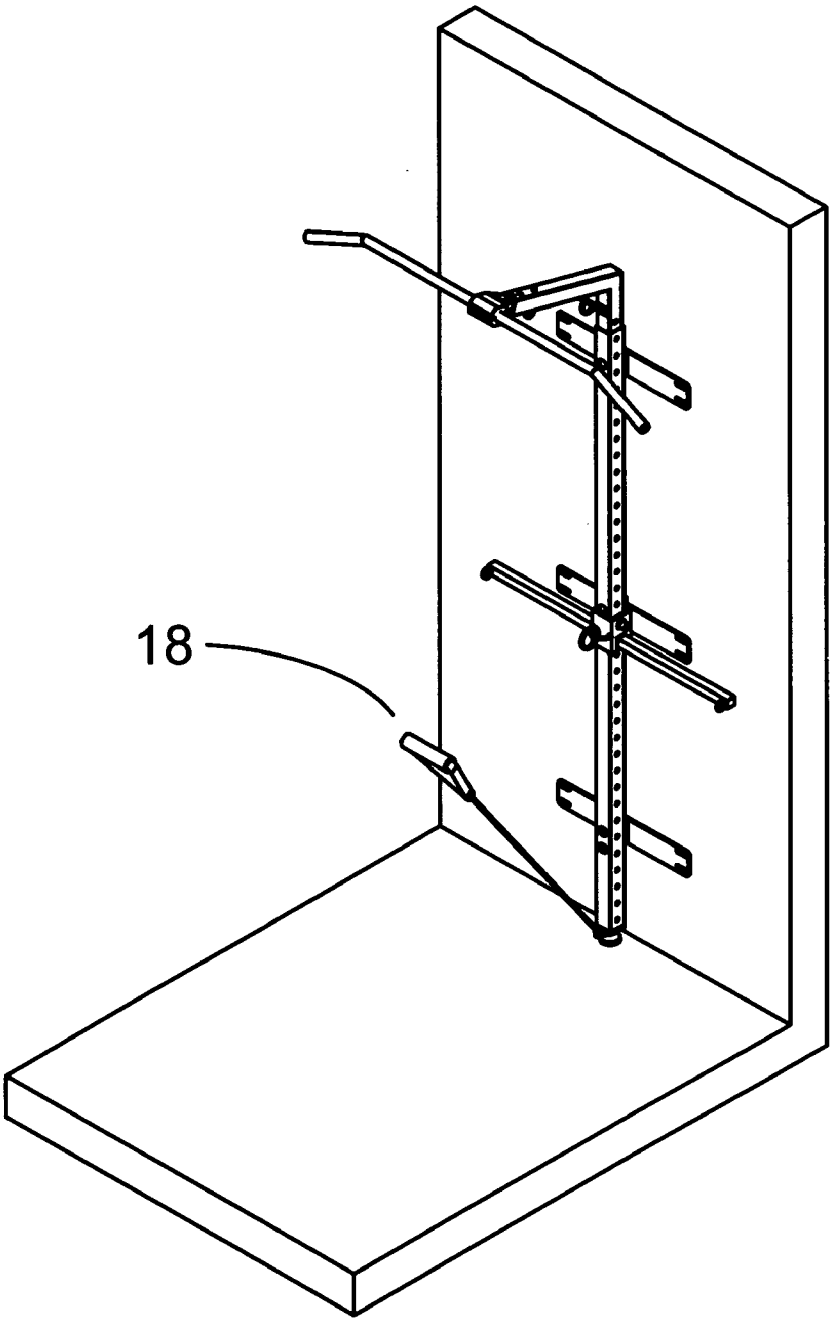


FIG. 19

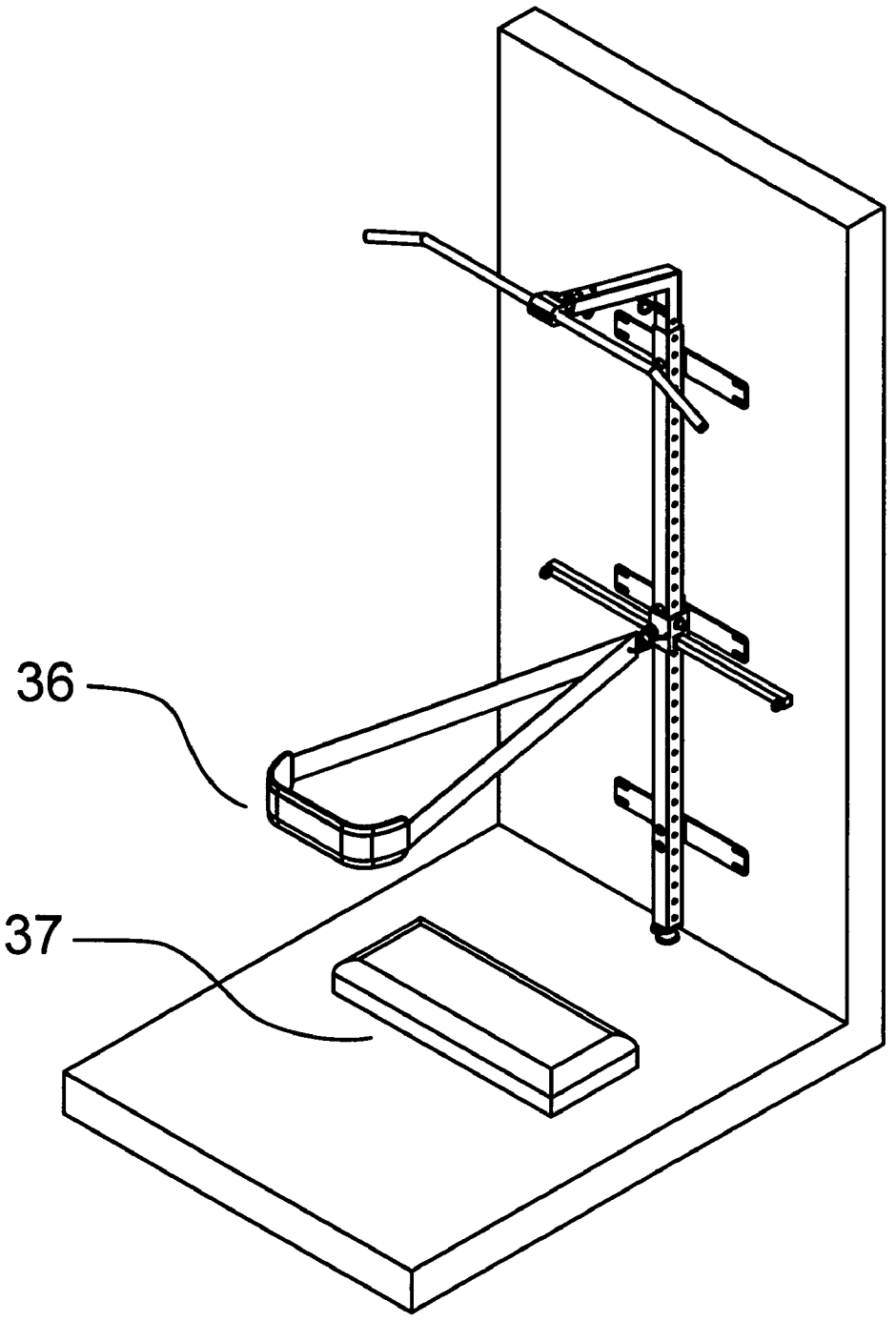


FIG. 20

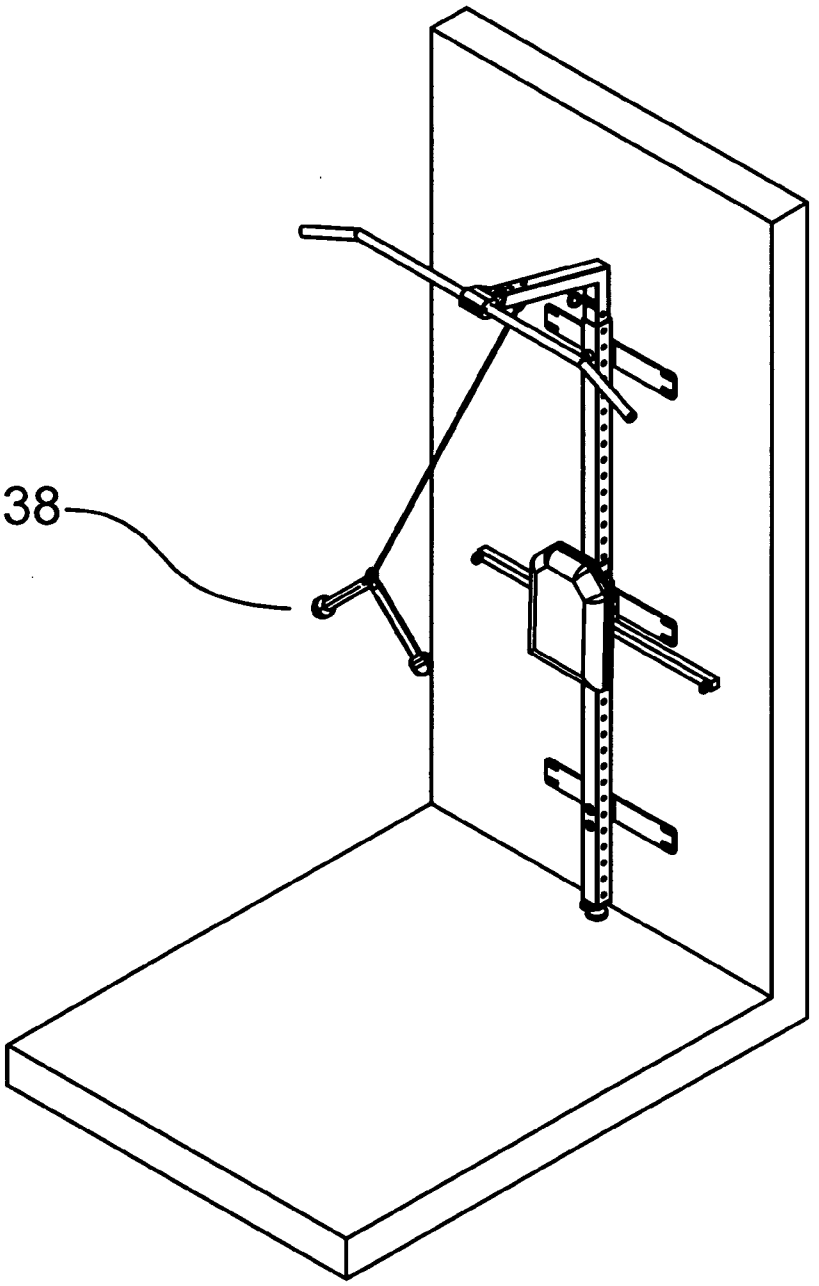


FIG. 21

WALL-MOUNTED HOME FITNESS TRAINING EQUIPMENT

BACKGROUND

[0001] 1. Field of the Invention

[0002] The present invention relates generally to the field of home exercise equipment and more particularly to a wall-mounted home fitness unit with removable parts that adapts to numerous different exercises.

[0003] 2. Description of the Prior Art

[0004] It is known in the art to provide exercise equipment into the home which can be wall-mounted. For example, U.S. Pat. No. 4,339,125 teaches a single column exercising apparatus using a stack of weights. U.S. Pat. No. 5,383,525 teaches a wall-mounted shower exercise machine used for stretching muscles. U.S. Pat. No. 4,402,504 teaches an adjustable exercise device that uses a two-ended cable for providing resistance to pulling. U.S. Pat. No. 6,328,679 teaches a wall-mountable device that uses a horizontal hinge rod assembly with springs. U.S. published application 2001/0004624 teaches a body exerciser that leans against a wall. U.S. published application 2003/0158024 teaches a door mounted exercise device that allows pulling on bungee cords. None of these prior art systems allow parts to be removed and exchanged for different exercises. Also most of the prior art wall-mounted home systems do not allow adjustment for different users and for causing different muscles to be exercised. It would be advantageous to have a wall-mounted, home exercise system that overcomes the difficulties of prior art systems.

SUMMARY OF THE INVENTION

[0005] The present invention relates to an overall fitness trainer and can be a wall mounted unit that can utilize clip resistance bands as well as other techniques. These bands generally clip on the unit and onto different handles, bars and attachments to perform exercises. The unit can have a removable/adjustable pull up bar, dip bar and seat. It also includes a spring loaded, pull pin carriage that moves freely up and down a vertical spine. This allows for easy adjustment of the carriage and allows the user to attach the bands at multiple angles, widths and levels. This in turn increases the number of exercises the user can perform on the unit. The unit also typically has an o ring that attaches through the arm of the pull up attachment as well as a ½ O-ring at the bottom of the unit again increasing the number of exercises the user can perform. The unit can be attached to the wall with lag bolts into two or more studs with two being preferred. Some embodiments of the present invention have an adjustable swivel foot that takes the stress off of the lag bolts and also adds to the overall load capacity of the unit. The present invention typically has an optional telescoping central vertical spine that splits in two pieces to make the unit easier to ship. The central vertical spine allows attachments to be added and removed using spring loaded pins or plunger pins. Various embodiments of the invention can have an oscillating and telescopic bench, a dip bar, a seat, a knee stabilizer and a foot rest. All of these accessories can be attached and removed to the central spine adding to the versatility and scope of exercises that can be performed. The present invention is suitable for physical therapy/rehabilitation facilities, commercial gyms and schools, as well as home use.

DESCRIPTION OF THE FIGURES

[0006] Attention is directed to several figures that illustrate the concepts of the present invention:

[0007] FIG. **1** shows a perspective view of an embodiment of the present invention with several accessories attached.

[0008] FIG. **2** shows the embodiment of FIG. **1** with several metal accessories on the vertical spine.

[0009] FIG. **3** shows a side view of the embodiment of FIG. **2**.

[0010] FIG. **4** shows a front view of the embodiment of FIG. **2**.

[0011] FIG. **5** shows a user facing the unit performing an exercise.

[0012] FIG. **6** shows a particular embodiment of a two-piece spine.

[0013] FIG. **7** shows a detail of a removable horizontal bar.

[0014] FIG. **8** shows a detail of a removable arm bar.

[0015] FIG. **9** shows an embodiment of the invention with an ankle cuff.

[0016] FIG. **10** shows an embodiment of the invention with a baseball bat.

[0017] FIG. **11** shows an embodiment of the invention with a baseball.

[0018] FIG. **12** shows an embodiment of the invention with the bench attached and extended.

[0019] FIG. **13** shows an embodiment of the invention arranged for chest presses.

[0020] FIG. **14** shows an embodiment of the invention arranged for chin-ups.

[0021] FIG. **15** shows an embodiment of the invention arranged for curls.

[0022] FIG. **16** shows an embodiment of the invention with a football.

[0023] FIG. **17** shows an embodiment of the invention with a golf club.

[0024] FIG. **18** shows an embodiment of the invention with a plyo ball.

[0025] FIG. **19** shows an embodiment of the invention arranged for a single curl.

[0026] FIG. **20** shows an embodiment of the invention arranged for a squat.

[0027] FIG. **21** shows an embodiment of the invention arranged for a tricep exercise.

[0028] Several drawings and illustrations have been presented to aid in understanding the present invention. The scope of the present invention is not limited to what is shown in the figures.

DESCRIPTION OF THE INVENTION

[0029] The present invention relates to a wall-mountable home fitness or exercise apparatus and method that allows a user to perform numerous exercises on the same piece of equipment by simply changing out accessory parts. The unit generally has a single rigid central spine. A two inch rectangular steel channel is preferred; however, any strong vertical member can be used. Onto this spine, a group of removable accessories can be attached or removed at will. Several different elastic cord attachments and attachment points inject resistance into various exercises. At least the following acces-

sories can be used with the present invention: straight bar with ½ O-ring and outer attachments, leg press, ankle cuffs, Ab blaster/leg extension, single Handle, curl bar, rope, bench, step, Ab slings, Plyo ball, boxing gloves w/sewn in D-ring, base ball bat handle, golf handle, baseball/softball and football. It should be noted that the abbreviation Ab means abdomen.

[0030] Turning to FIG. **1**, a portion of a wall **1** and a floor **2** can be seen. A vertical spine **3** is securely attached to the wall **1**. At the top of the spine **3**, an outward hanging portion **10** allows attachment of various items such as a bungie **19** and bar **15**, a boxing bag or punching bag, or other device. Further down the spine **3**, a horizontal bar **7** is shown with a bungie **18** and hand pull **16**. Further down, a set of arm bars **6** and back rest **5** can be seen. Still further down, a seat **4** is attached. Each of these attachments shown can slide up and down on the spine **3**. In addition, each attachment or accessory can be removed using a pin or spring-loaded pull pin, where the pin inserts in a hole **12** in the spine **3**. In particular, any of the accessories can be arranged vertically in any order. The order shown in FIG. **1** is simply to illustrate a particular configuration of the device.

[0031] FIG. **2** shows the embodiment of FIG. **1** without the bungies. Here several stud mounts or stud plates **14** can be seen. These are typically chosen to reach between two studs so that secure mounting can be made with a pair of lag bolts on each of these stud mounts **14**. The embodiment of FIG. **2** has three stud mounts **14** vertically along the spine **3**. Shown also in FIG. **2** is a ring **11** attached to the center of the horizontal bar **7**.

[0032] FIG. **3** shows a side view of the embodiment of FIGS. **1-2**. The stud mounts **14** can be clearly seen against the wall **1**. Each of the attachments or accessories can have a partial or full channel to fit around the spine **3**. The seat has a channel **8**; the arm bar a channel **12**; the horizontal bar has a channel **13**. The top extension **10** can also be removed vertical from the spine **3**. In FIG. **3**, the ring **11** on the horizontal bar can be seen as well as a ring or half-ring **17** on the top extension **10**. Other rings or attachments may be built into various accessories.

[0033] FIG. **4** shows a straight-on front view of the embodiment of FIGS. **1-3**. The stud mounts **14** can be seen. It should be noted that the stud mounts **14** can be of any length to fit any types of studs or to attach to more than two studs. While two studs are preferred for strength and ease of mounting, any number of studs is within the scope of the present invention. FIG. **4** also shows a pull-up bar **9** mounted to the top of the unit onto the top extension **10** (see FIGS. **1-3**).

[0034] FIG. **5** shows a stick-figure user performing one particular exercise. It should be noted that the apparatus and method of the present invention allows numerous different exercises to be performed. A complete list of exercises supported by the present invention can be found at the end of this disclosure.

[0035] FIG. **6** shows a detail of a particular embodiment and realization of the vertical spine **3**. This particular embodiment allows the spine **3** to be split into an upper part **3***a* and a lower part **3***b* for ease of packing and shipping. The two parts of the spine can be coupled together with bolts for strength or by any other strong coupling method. The particular embodiment shown in FIG. **6** has dimensions to aid in the understanding of the invention. These dimensions are for example only; any dimensions are within the scope of the present invention. These are preferred dimensions; however, many different dimensions may be used. In this particular example, both the top and bottom half-spines are **36** inches long. Each has holes **2** inches apart, and each hole is 0.44 inch in diameter.

[0036] FIG. **7** shows a detail of an embodiment of the horizontal bar **7**. Here a partial channel **20** allows it to be inserted and removed from the vertical spine **3** (shown in FIG. **2**). A spring-loaded pull pin **23** allows the bar **7** to be moved vertically along the spine **3** and to be removed. Each end of the bar **7** has attachment points **22** for bungies or other exercise accessories. The center of the bar **7** can be optionally equipped with a half-ring **21** and a full ring **11**.

[0037] FIG. **8** shows a detail of an embodiment of an arm bar **6**. The bar **6** can have flat plates **15** which can hold pads or soft rolls to protect the arm. A half channel **25** allows attachment and removal from the spine **3** (see FIG. **2**). Fittings **24** can hold vertical handles.

[0038] FIG. **9** shows an embodiment of the invention with an ankle cuff **26**. Here the user stands and can pull the cuff **26** against a bungie. FIG. **10** shows an embodiment with a baseball bat **27**. A standing user can swing the bat **27** into a bungie. FIG. **11** shows a baseball **39** attached to a bungie. A standing user can practices throwing the ball **39** against the force of the bungie. FIG. **12** shows an embodiment of the invention fully benched. A seat **29**, back **28** and legs **30** from a sitting bench that can be used in many exercises or with weights. The back **28** and seat **29** can be adjusted both in angle and height. FIG. **13** shows an arrangement of the device set up for chest presses. A bar **31** can be pressed outward against a bungie. FIG. **14** shows an arrangement set up for chin-ups. A standing user can chin themselves vertically on the bar **9**. FIG. **15** shows a set up for curls using the bar **32**. FIG. **16** shows an embodiment of the invention with a football **33**. A standing user can pass the football **33** against the force of the bungie. FIG. **17** shows a set up with a golf club **34**. Here an individual can swing the club **34** into the force of the bungie. FIG. **18** shows a set up with a plyo ball **35**. The user can manipulate the ball **35** against the force of the bungie. FIG. **19** shows a set up for a single curl using a hand grip **18** that works against the force of a bungie. FIG. **20** shows an embodiment of the invention set up for squats. A strap **36** and pad **37** allow the user to perform squats. FIG. **21** shows a setup with a special handle **38** for a tricep exercise.

[0039] The present invention forms a complete system that can accommodate numerous exercises by simply changing the arrangement. The frame can mount simply to the wall in a garage, house or other building.

[0040] Several descriptions and illustrations have been presented to aid in understanding the present invention. One skilled in the art will realize that numerous changes and variations are possible without departing from the spirit of the invention. Each of these changes and variations is within the scope of the present invention.

List of Exercises Supported by the Present Invention

Chest Exercises

[0041] 1 Arm Standing Chest Press w/ Handle
[0042] Standing Chest Press w/ Straight Bar
[0043] Close Grip Bench Press Curl Bar
[0044] Standing Chest Fly w/ Handles
[0045] Seated Incline Bench Press Straight Bar
[0046] Seated Incline Bench Fly w/ Handles
[0047] Seated Bench Press w/ Straight Bar

[0048] Seated Bench Press w/ Handles
[0049] Seated Bench Flies w/ Handles
[0050] Dips on Dip Bar attachment
[0051] Single Arm Chest Fly w/ Handle Perpendicular to Machine
[0052] 2 Handled Chest Squeeze
[0053] Pullovers w/ handles or straight bar
[0054] Cable Cross Over Handles
[0055] Elevated Resistance Push Ups (Feet on Bench)

Back Exercises

[0056] High Standing Row Straight Bar
[0057] Reverse Grip High Standing Row Straight Bar
[0058] One arm high row handle
[0059] One arm low row handle
[0060] Straight Arm Pull Downs Straight Bar
[0061] Low Pulley Row sitting on Step Handle or Straight Bar
[0062] Wide Handled Reverse Fly Handles
[0063] Seated One Arm Pull Down Handle
[0064] Seated Pulldown Straight Bar
[0065] Wide Bent Over Row Straight Bar
[0066] Good Mornings Straight Bar or Rope
[0067] Pull Ups
[0068] Chin Ups
[0069] Back Hyper extensions
[0070] Lat Pull Over on Bench Handles

Biceps

[0071] Standing Curls Straight Bar
[0072] Standing Curls Curl Bar
[0073] 1 Arm Alternating Standing Curl Handles At multiple angles
[0074] 2 Arm Standing Curls Handles
[0075] 1 Arm Hammer Curl
[0076] 1 Arm Handled Concentration Curl
[0077] High Handled Curl
[0078] High Curl Bar
[0079] Seated Curl Back To Machine
[0080] Incline Handled Curl

Triceps

[0081] Push Downs Curl Bar
[0082] Push Downs Straight Bar
[0083] Push Downs Rope
[0084] Incline French Presses Curl Bar or Handles
[0085] Flat French Presses Curl Bar or Handles
[0086] Reverse Grip Pushdowns Curl Bar
[0087] 1 Arm Seated Tricep Extensions
[0088] 1 Arm Handled Reverse Grip Pushdown
[0089] Standing Tricep Extension Back To Machine Rope/Curl Bar
[0090] 1 Arm Kick Backs Handle
[0091] 2 Arm Kick Backs Facing Machine Curl Bar
[0092] Dips
[0093] Bench Dips
[0094] Cross Body Tricep Extension Handles
[0095] Close Grip Bench Press Bar

Shoulders

[0096] Seated Shoulder Press Bar
[0097] 1 Arm Handled Shoulder Press
[0098] 1 Arm Handled Arnold Shoulder Press
[0099] Upright Rows Bar
[0100] Upright Rows Handle
[0101] 1 Arm Handled Lateral Raises
[0102] 2 Arm Straight Bar Frontal Raises
[0103] 1 Arm Handled Frontal Raises
[0104] Bent Over Flies Handled
[0105] Handled External Shoulder Rotation
[0106] Handled Shoulder Rotation Lying Down
[0107] Standing Military Press Bar
[0108] Handled Internal Shoulder Rotation
[0109] Shrugs Bar
[0110] Elevated Push Ups W/ or W/O Band Resistance

Legs

[0111] Squat Bar W/ Resistance
[0112] Squat In U-Can Squat Belt
[0113] 1 Legged Squat In U-Can Squat Belt
[0114] Squats W/ Handled Resistance
[0115] Lunges Bar
[0116] Lunges Handled Resistance
[0117] Standing Leg Curls
[0118] Toe Raises In U Can Squat Belt
[0119] Toes Raises Bar/Handles
[0120] Straight Leg Dead Lift Bar
[0121] Standing Leg Curl Ankle Strap
[0122] Standing Leg Kick Ankle Strap
[0123] Standing Knee Ups Ankle Strap
[0124] Lying Down Single Leg Raise Ankle Strap
[0125] Lying On Side Single Leg Raise
[0126] Leg Raises Incredi-ab Attachment/Ankle Strap
[0127] Standing Leg Abductor Ankle Strap
[0128] Twisting Leg Raises on Dip Attachment
[0129] Seated Leg Extensions Incredi-ab or Ankle Strap
[0130] Standing Leg Adductor Ankle Strap

Abs

[0131] Crunches On Knees Facing Unit Rope
[0132] Resistance Crunches on Bench Rope/Multiple Angles
[0133] Crunches With Exercise Ball and Band Resistance
[0134] Hanging Leg Raises Pull Up Bar
[0135] Knee Ups Sitting on Bench Incredi-ab Attachment
[0136] Oblique Knee Ups on Bench Incredi-ab Attachment
[0137] Bridged Leg Lifts Ankle Strap
[0138] Russian Twist Medicine Ball & Resistance Bands
[0139] Diagonal Chops Medicine Ball & Resistance Bands
[0140] Forward Facing Chops Medicine Ball & Resistance Bands
[0141] Standing Arm Rotation Handle
[0142] Standing Rotational Chops Ball Handle
[0143] Captain's Chair Exercise on Dip Bar Back Support
[0144] Resistance Side Bends
[0145] Seated Ab Twist

Sports Specific

[0146] Baseball Throw
[0147] Softball Throw
[0148] Football Throw
[0149] Golf Swing
[0150] Baseball Swing
[0151] Boxing Punch Training Gloves w/ D Ring
[0152] Heavy Bag Station Attach Bag to Pull Up Arm
[0153] Kicking Training Ankle Bands

1. A wall mounted exercise unit comprising

a single vertical spine adapted to be mounted to at least one wall stud, said vertical spine having a top and bottom end;

a horizontal bar removably and slidingly attached to said vertical spine, said horizontal bar adapted for attachment of a plurality of accessories;

an arm bar removably and slidingly attached to said vertical spine, said arm bar having arm rests and hold bars;

an extension section attached to the top of said vertical spine, said extension section extending outward from said vertical spine, said extension section being adapted for attachment of a plurality of accessories;

a pull-up bar removably attached to said extension section;

and wherein, said plurality of accessories includes at least one accessory chosen from the group consisting of leg press, ankle cuffs, leg extension, single handle, curl bar, bench, step, sling, plyo ball, baseball bat, golf club, baseball and football.

2. The exercise unit of claim **1** further comprising a rigid yoke attached to said extension section or said horizontal bar with at least one elastic cord.

3. The exercise unit of claim **1** further comprising a pull handle attached to said horizontal bar with at least one elastic cord.

4. The exercise unit of claim **1** wherein said vertical spine includes at least one stud plate.

5. The exercise unit of claim **1** further comprising a seat removably and slidingly attached to said vertical spine.

6. The exercise unit of claim **1** further comprising a backrest attached to said arm bar.

7. The exercise unit of claim **1** further comprising a backrest removably and slidingly attached to said vertical spine.

8. The exercise unit of claim **1**, wherein said plurality of accessories includes at least one device attached with an elastic cord.

9. The exercise unit of claim **1** wherein said plurality of accessories includes at least one ball.

10-11. (canceled)

12. The exercise unit of claim **1**, wherein said vertical spine comprises two parts.

13-16. (canceled)

17. A method of home fitness and exercise comprising the steps of:

attaching a vertical spine to wall studs on an interior wall;

removably attaching a sliding horizontal bar to said vertical spine;

removably attaching an arm bar to said vertical spine;

removably attaching an extension member to a top end of said vertical spine; removably attaching at least one of a plurality of accessories to either said horizontal bar, said vertical spine or said extension member with an elastic cord:

performing one or more exercises using said at least one of said plurality of accessories, wherein said plurality of accessories includes an accessory chosen from the group consisting of leg press, ankle cuffs, leg extension, single handle, curl bar, rope, bench, step, sling, plyo ball, baseball bat, golf club, baseball, bench and football.

18-19. (canceled)

20. A wall mounted exercise unit comprising:

a single vertical spine adapted to be mounted to at least one wall stud, said vertical spine having a top and bottom end;

a horizontal bar removably and slidingly attached to said vertical spine, said horizontal bar adapted for attachment of a plurality of accessories, each of said removable accessories being attached with at least one elastic cord;

an arm bar removably and slidingly attached to said vertical spine, said arm bar having arm rests and hold bars;

an extension section attached to the top of said vertical spine, said extension section extending outward from said vertical spine, said extension section being adapted for attachment of a plurality of removable accessories, each of said removable accessories being attached with at least one elastic cord;

a pull-up bar removably attached to said extension section.

21. The wall mounted exercise unit of claim **20** wherein said removable accessories include a baseball bat.

22. The wall mounted exercise unit of claim **20** wherein said removable accessories include a golf club.

23. The wall mounted exercise unit of claim **20** wherein said removable accessories include a baseball.

24. The wall mounted exercise unit of claim **20** wherein said removable accessories include a football.

25. The wall mounted exercise unit of claim **20** wherein said removable accessories include an ankle cuff.

26. The wall mounted exercise unit of claim **20** wherein said removable accessories include a plyo ball.

27. The wall mounted exercise unit of claim **20** wherein said removable accessories include a curl bar.

28. The wall mounted exercise unit of claim **20** wherein said removable accessories include a single handle.

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