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(54) **FREE WEIGHT TRAINING SIMULATION APPARATUS**

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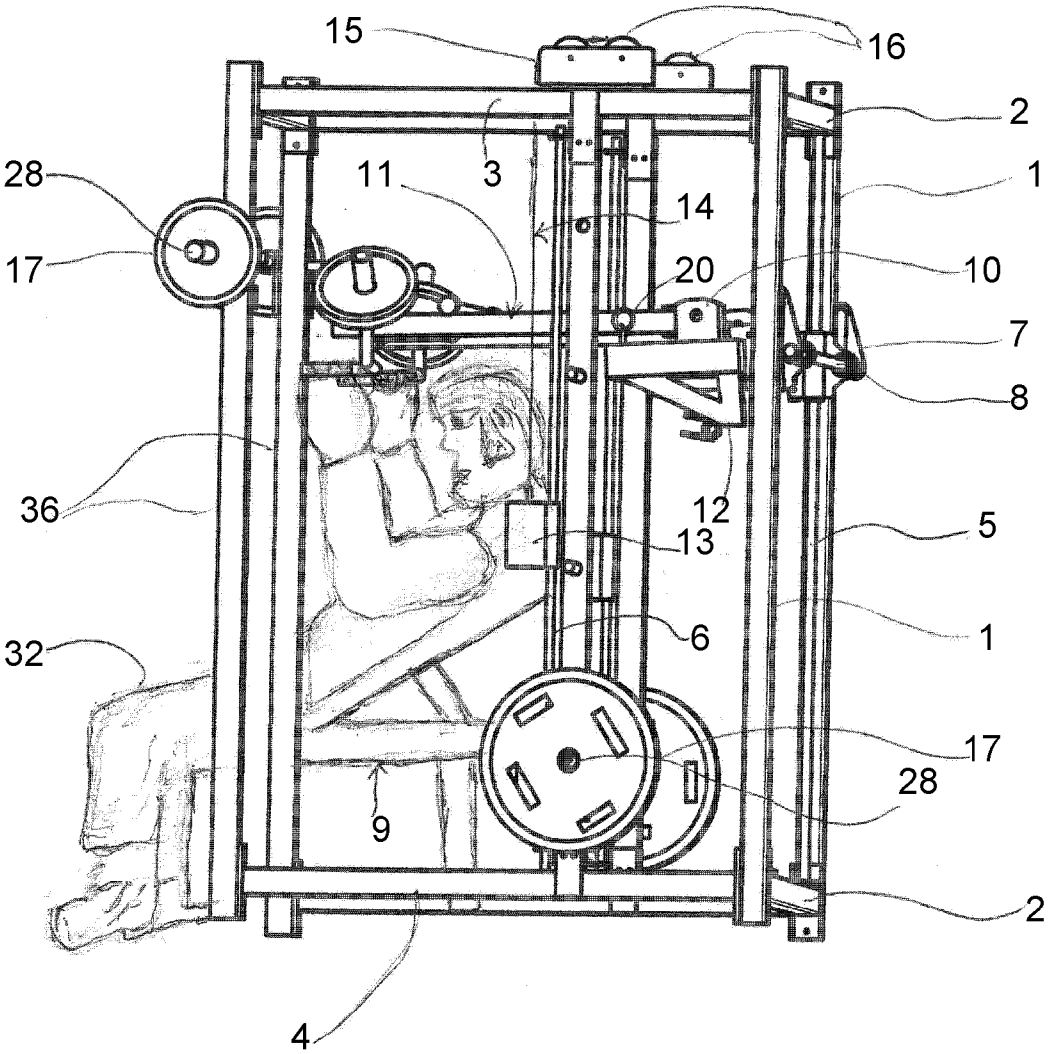
(57) **ABSTRACT**

A weight training apparatus that simulates free weight lifting exercise. It allows the user to load regular Olympic plates to adjust weight resistance, and thereby eliminate the need to pick-up or replace a dumbbell set each time he wants to adjust the weight resistance. The apparatus comprises a cage like frame and a vertically adjustable table with arm extension supports with a series of handles and weight loadable pin attached to each arm. The arm extensions can swivel, rotate in a circular manner and independently to provide the feel of the unrestrained free motions many free weight lifters prefer when working with regular dumbbells or free weights.



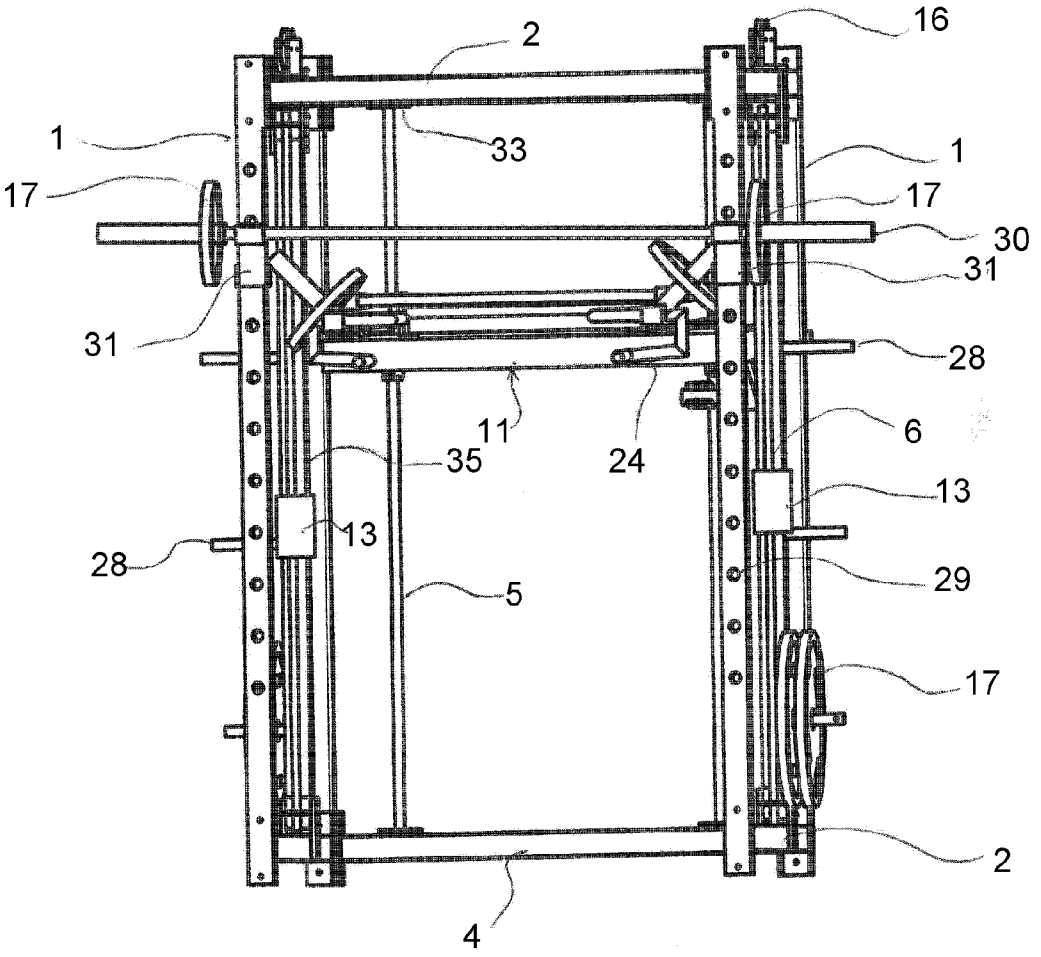


FIG. 1

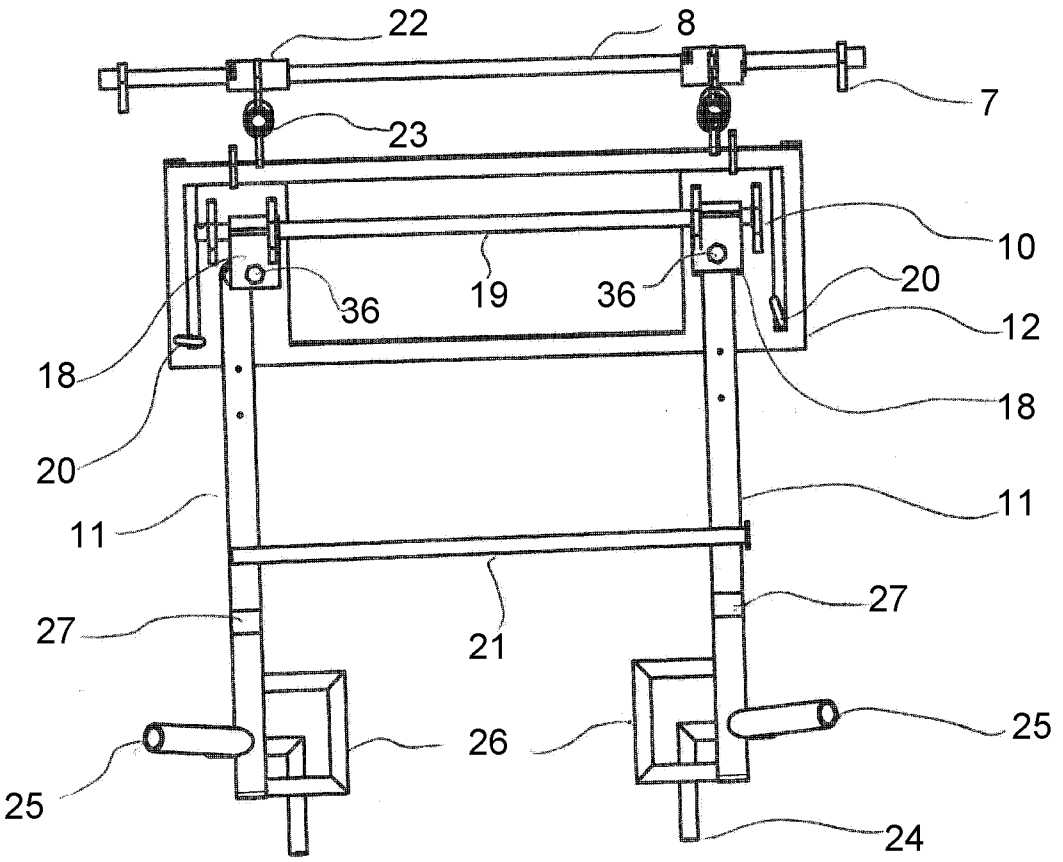


FIG. 2

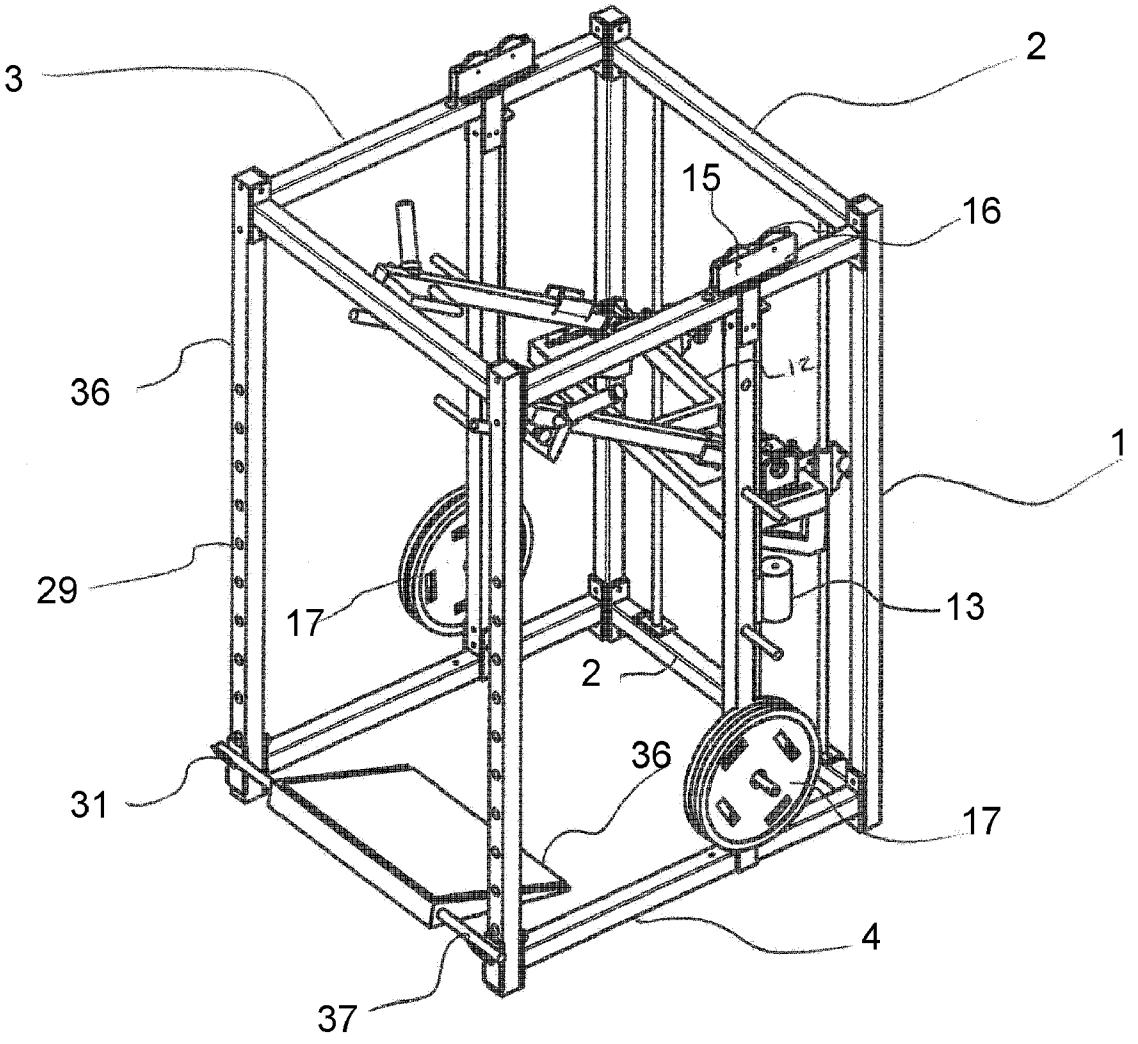


FIG. 3

FIG. 4A

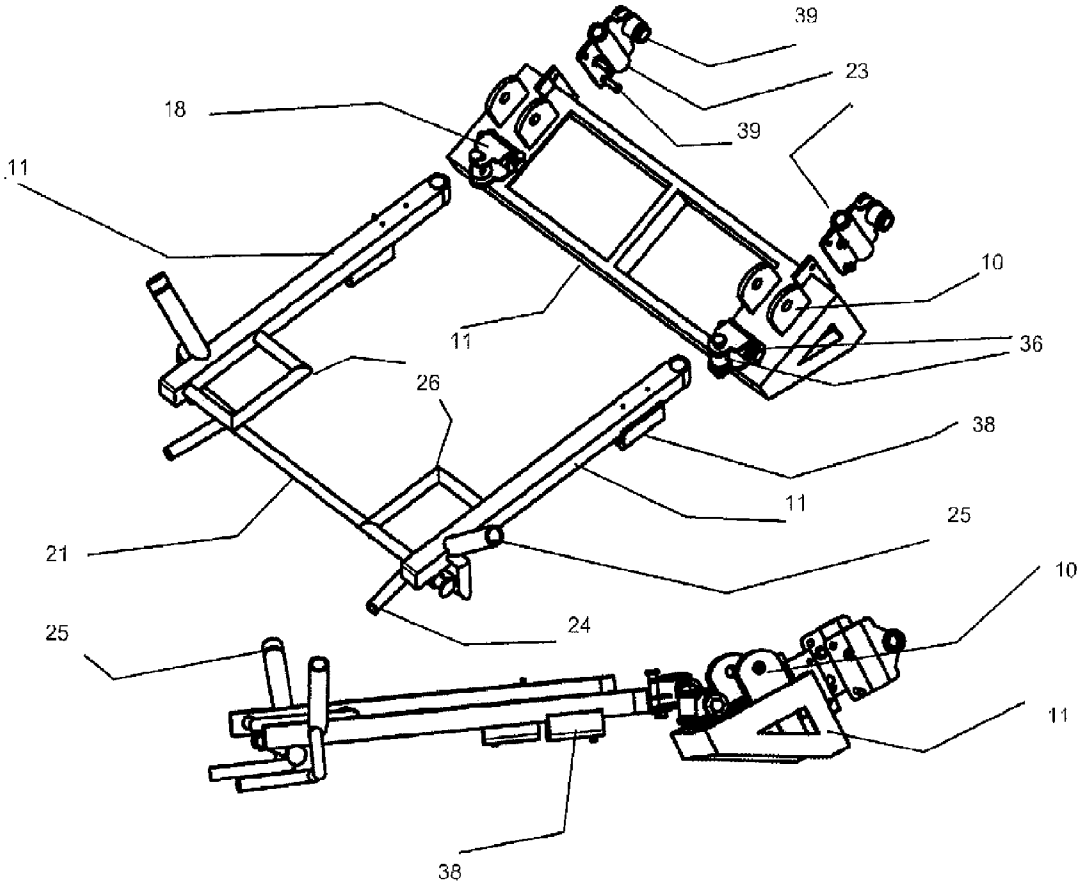


FIG. 4B

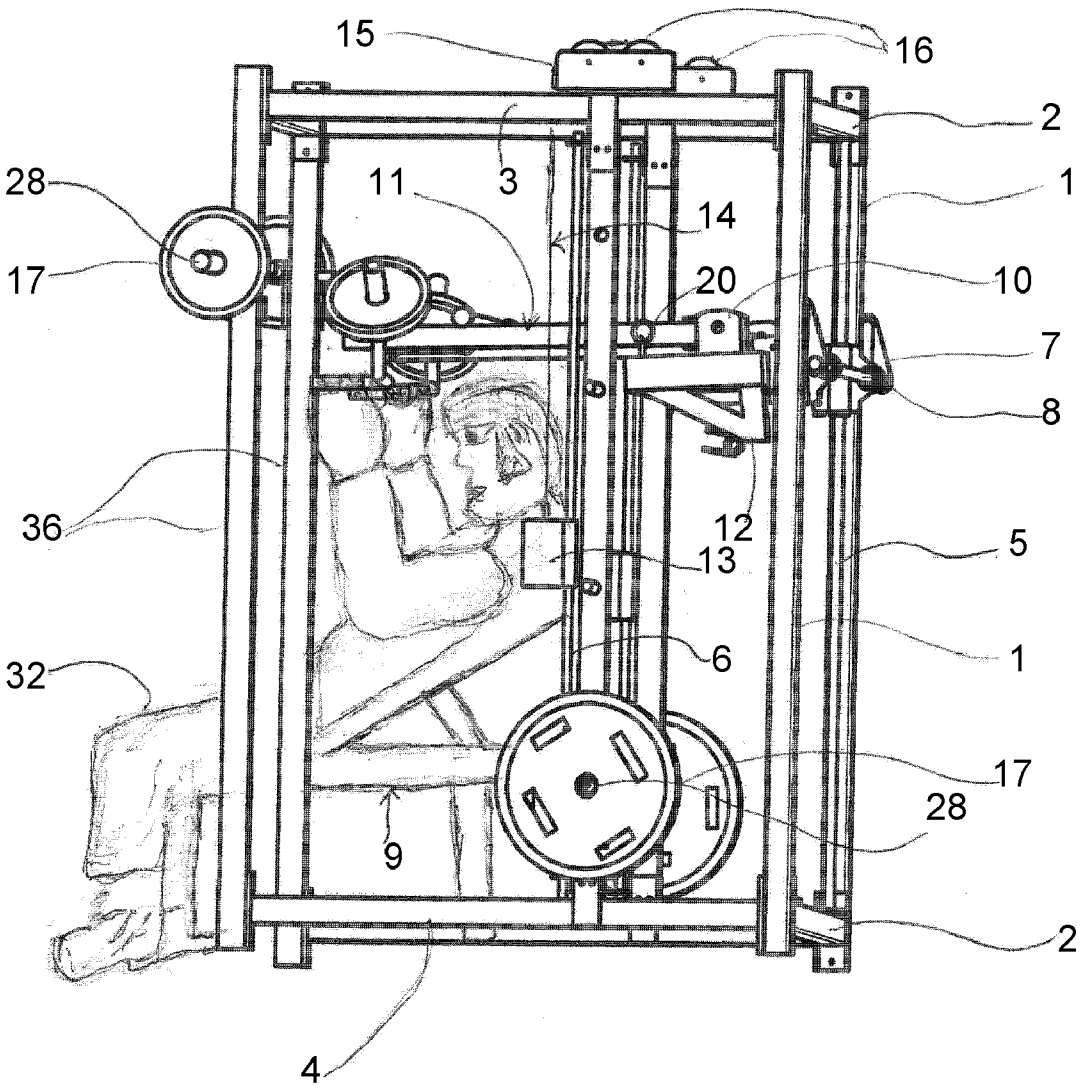


FIG. 5

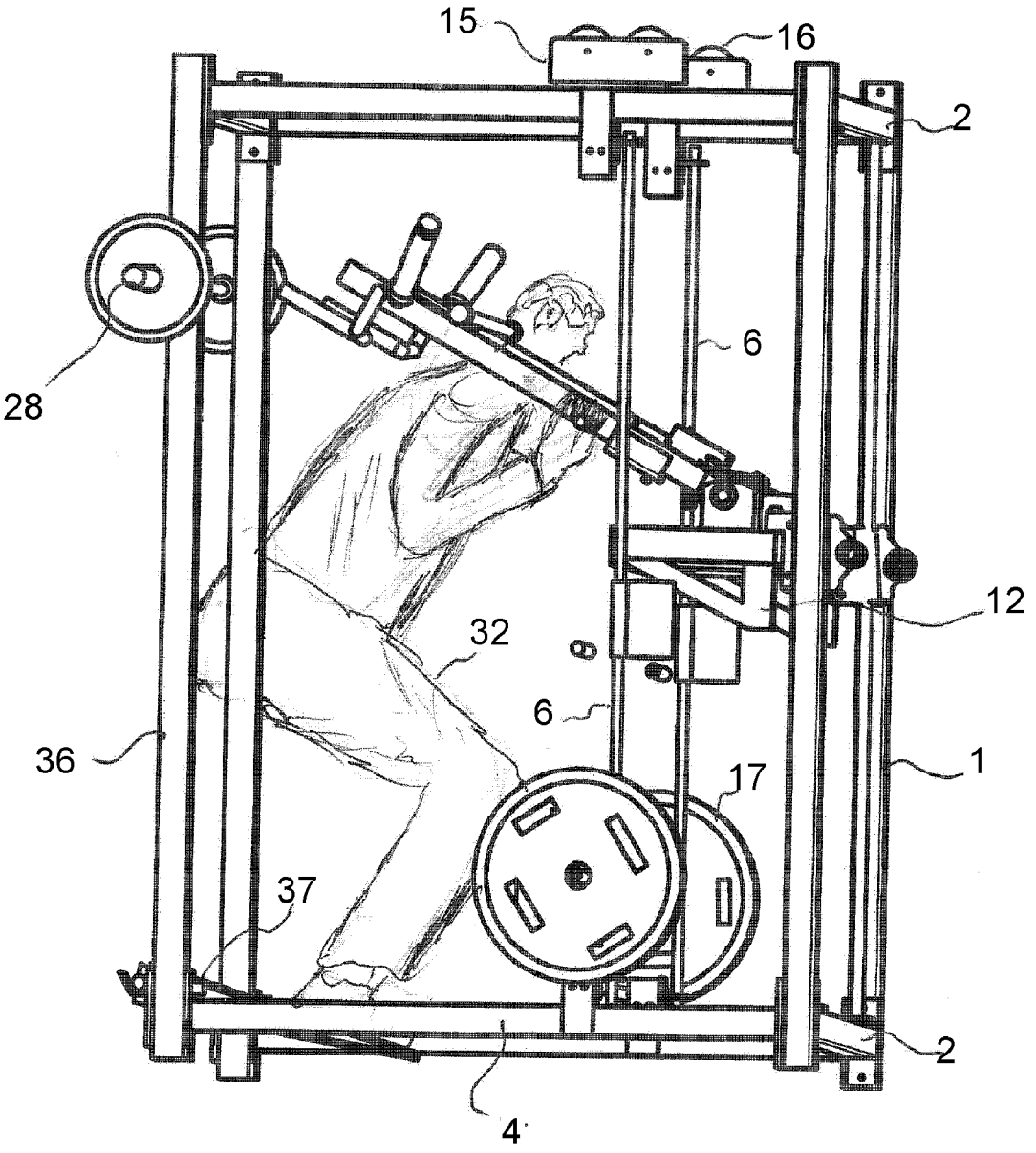


FIG. 6

FREE WEIGHT TRAINING SIMULATION APPARATUS

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] The Present Application is the non-provisional counterpart to U.S. Provisional Application Ser. No. 61/176,288 filed May 7, 2009 entitled DUMBBELL/FREE WEIGHT TRAINING SIMULATION APPARATUS, and which is incorporated by reference in its entirety herein. The Present Application claims the benefit of and priority to said provisional patent application.

BACKGROUND OF THE INVENTION

[0002] Gymnasia have become popular over the last half-century to accommodate those who want to remain fit. Formerly, gymnasia hosted climbing ropes, parallel bars, exercise horses, mats, etc. Weight training was performed by a user repetitively lifting dumbbell weights. Today, most gyms primarily host exercise machines that allow repetitive motion exercise by their users. Exercise machines have existed for many years. However, current exercise machines, when used for weight training, have a very limited range of motion. When using free weights, a large inertial force is required to begin moving the weights, which prevents users from performing to their maximum level, especially users with latent injuries.

BRIEF DESCRIPTION OF THE DRAWINGS

[0003] FIG. **1** is a front elevation view of the apparatus.
[0004] FIG. **2** is a top plan view of the arm extension table.
[0005] FIG. **3** is an isometric view of the apparatus from the viewpoint looking down on the top, front, and right side.
[0006] FIG. **4** represents isometric views of the arm extension and extension support assemblies.
[0007] FIG. **4**A observes the assemblies from the top.
[0008] FIG. **4**B observes the assemblies from the side.
[0009] FIG. **5** shows a right side elevation of the apparatus with a user lying inclined on a bench.
[0010] FIG. **6** shows a right side elevation of the apparatus with a user standing in the apparatus.

SUMMARY OF THE INVENTION

[0011] A weight training apparatus, that simulates free weights lifting exercise. It allows the user to load regular Olympic plates to adjust weight resistance, and thereby eliminate the need to pick-up or replace a dumbbell set each time he wants to adjust the weight resistance. This weight training apparatus comprises a cage like frame made of multiple vertical posts and horizontal crossbars.
[0012] It further comprises a vertically adjustable table otherwise referred to as the arm extension support frame or slider, and a pair of extended arms with a series of handles and weight loadable pin attached to each arm
[0013] The arm extensions can swivel, rotate in a circular manner and independently to provide the feel of the unrestrained free motions many free weight lifters prefer when working with regular dumbbells or free weights.
[0014] The horizontal frame or arm extension support frame is vertically adjustable based on the user's preference and based on the exercise he/she wants to perform.
[0015] Due to the unrestrained motions of the arm extensions and the adjustability of the table, a user can perform various upper body exercises with or without an exercise weight bench. He can perform lower body exercises as well.
[0016] Before starting his exercise routine, the user can place a weight bench in the middle of the cage and adjust it according to which type of exercise he wants to perform, for example, flat, decline, incline, military/shoulder press exercises, just to cite a few.

DETAILED DESCRIPTION OF THE INVENTION

[0017] FIG. **1** is a front elevation view of the apparatus that is constructed as a cage. FIG. **2** is a top plan view of arm extension table assembly. FIG. **3** is an isometric view of the cage from the viewpoint looking down on the top, front, and right side. FIG. **4** shows the detail of the arm extension table assembly. The four drawings should all be referred to as a unit for a better understanding of the construction.
[0018] The cage comprises vertical frame structure posts, **1**, into which a series of holes are drilled to facilitate mounting various elements thereon at selected heights. Horizontal crossbars, **2**, provide support for the cage across the front and rear. Top side crossbars, **3**, and bottom side crossbars, **4**, also support the frame. Two vertical rods, **5**, allow a table to slide up and down, based upon a user's preference. Counterweight rods, **6**, maintain counter weights to prevent oscillation during use. bar hooks, **7**, engage the back post, thereby securing the arm extension table (see FIG. **4**A and FIG. **4**B), and holding it in place. The slot select bar, **8** (see FIG. **5**), is also a hook bar onto which the user grabs to engage or disentangle the member hooks, **7**, to the frame back posts, **1**. The arm extension assembly, **11**, is shown more clearly in FIGS. **4**A and **4**B. The extension arm support frame **12** is adjustably coupled to the vertical rods, **5**. The counterweights, **13**, assist the user to easily slide the arm extension table up and down for adjustment. The counterweight cable **14** links the arm extension table to the counter weights. The pulley housing, **15**, holds the pulley assemblies, **16**, that passes cable through steadily to link the arm extension support table to the counterweights. Removable plate weights, **17**, provide weight resistance to the user. Swivel connectors **18** allow free motion of the arm extensions. Arm support shaft, **19**, around which the swivel connector, **18**, rotates to allow the arms to move up and down, while part, **36**, allows motion from side to side. Therefore, the combination of these two motions makes it possible for the arms to move in a continuous manner as to provide a circular motion in any direction.
[0019] Cable hook, **20**, attaches the counterweight cable to the arm extension table. Arm extension stabilizer bar, **21**, provides an option for the user to restrict independent motion of the arm extension if he or she desires. The arm stabilizer bar, **21**, joins both arms together through the loops, **27**. While standing, and resting the bar behind his or her neck, the user can perform leg exercises commonly known in the fitness world as squats.
[0020] There is a fitting assembly pair, **22**, through which the hook bar is coupled to the vertical rods through second fitting assembly pair, **23**, which allow the arm extension table to slide up and down on the vertical rods, **5**.
[0021] The arm extension assembly is shown in more detail in FIGS. **4**A and **4**B. The unit comprises arm extension handles, **24**. A weight pin, **25**, is coupled to the arm extensions, where the weight plates are loaded. An optional handle, **26**, allows use by the user when performing stand-up exercises. Tubing slots, **27**, join the arm stabilizer, **21**, with both arm extensions, **11**. Storage pins, **28**, hold the weight plates,

17, when not in use. Selectable holes, **29**, accommodate a barbell optional bracket, **30**, to allow the user to perform other free weight exercises. The optional barbell support brackets, **31**, are inserted in the selectable holes, **29**, situated on the front posts, **36**. Rod locking plate, **33**, secures the rod on which the arm extension slides up and down. The selectable slots, **34**, are for the hook bar or slot select bar, **8**. Counterweight rods **35**, accommodate the counterweights. Pin, **36**, holds the arm extension to the swivel connector, thereby permitting the arm to move from side to side. Pad, **38**, sits between the arm extension and table, and fasteners, **39**, secure part **23** to **11**. FIG. **5** shows a user, **32**, in a reclining position that allows him to bench press barbells. FIG. **5** is a right side elevation of the device. Weight plates, **17**, (shown at the bottom of the device) are stored on storage pins, **28**. When the user desires to use a particular set of weight plates, **17**, he removes them from bottom storage, and places them symmetrically on pins, **25**, attached to the arm extension table **11**. He grasps the arm extension assembly by the two handles, **24**. Now he is free to move the weights in any direction. As his arm moves the assembly pivots. The weights can be changed as the user desires. While he would primarily move the weight bar up and down either away from or towards his chest, he can also move the bar from side to side with resistance. That motion capability permits a free range of motion for the user. He can keep his arms close to his chest or raise them by extending them high. He can also independently manipulate the weights associated with each arm. Therefore, he can exercise his right arm in a totally different fashion from his left arm. He can move each arm up, down, right, and left as well as in an arc. When he is tired, he can let go of the handles, and the weights will not fall. They remain in the position last used. FIG. **6** shows the user lifting simulated weights with his legs and shoulders. Note that the bench shown in FIG. **5** has been removed. The user may operate the device from a reclined, inclined, sitting, crouching, keeling, or a standing position. A platform, **37**, for him to stand upon may be positioned at the bottom of the device. That platform may be inclined as shown or lie flat. He can face front or rear. The table, **11**, stays where it was last positioned. It is very easy to position table, **11**, and it requires very little effort due to the counterweights attached to the other end of the cable.

I claim:

1. A weight training apparatus comprising:

a) a cage like frame further comprising vertical posts and horizontal crossbars;

b) a vertically adjustable table further comprising a pair of arm extensions each having at least one handle and at least one weight loadable pin;

c) at least one counterweight that helps to maintain the vertically adjustable table in a desired position;

wherein:

i) the arm extensions can swivel, rotate in a circular manner, and operate independently;

ii) the vertically adjustable table can be positioned into a stable vertical position on the frame according as desired by a user;

iii) at least one plate weight can be placed on the at least one weight loadable pin on the arm extensions;

iv) when the at least one plate weight is placed on each of the arm extensions, the user can grasp one or both arm extensions and move them independently in any direction of movement allowed by the arm extensions; and,

v) when the user releases the grasp on the one or both arm extensions, said arm extensions loaded with weights do not move from where they were when last grasped.

2. The weight training apparatus of claim **1** further comprising a bench positioned inside the cage.

3. The weight training apparatus of claim **2**, wherein the bench has a seat and a back that swivel with respect to one another at a joint, such that the back has a range of motion that allows the user to recline horizontally, sit upright, or sit in any position between horizontal and upright.

4. The weight training apparatus of claim **1** wherein the user can perform shoulder press exercises.

5. The weight training apparatus of claim **1** wherein the arm extensions are mounted to a rod and are able swivel independently around the rod.

6. The weight training apparatus of claim **1** wherein the arm extensions are connected by an arm stabilizer to prevent independent movement of the arm extensions.

7. The weight training apparatus of claim **1** wherein the user can rotate each arm extension using wrist movement.

8. The weight training apparatus of claim **1** further comprising a platform for the user to stand upon, wherein said platform may be flat or inclined.

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