



US 20140073492A1

(19) **United States**(12) **Patent Application Publication**
HUNTER(10) **Pub. No.: US 2014/0073492 A1**(43) **Pub. Date: Mar. 13, 2014**(54) **FULL-BODY EXERCISE MACHINE**(76) Inventor: **Terrance Gerod HUNTER**, Fairfax, VA
(US)(21) Appl. No.: **13/614,675**(22) Filed: **Sep. 13, 2012****Publication Classification**(51) **Int. Cl.**
A63B 21/062 (2006.01)(52) **U.S. Cl.**USPC **482/98**(57) **ABSTRACT**

An exercise machine which can be configured to perform a plurality of different exercises, and which can include a base, a vertical support column attached to the base, a cylinder and piston assembly adjustably attached to the vertical support column, and a horizontal weight beam carriage adjustably attached to both the vertical support column and the cylinder and piston assembly, which includes adjustable provisions for attaching weights and for manipulating the exercise apparatus.

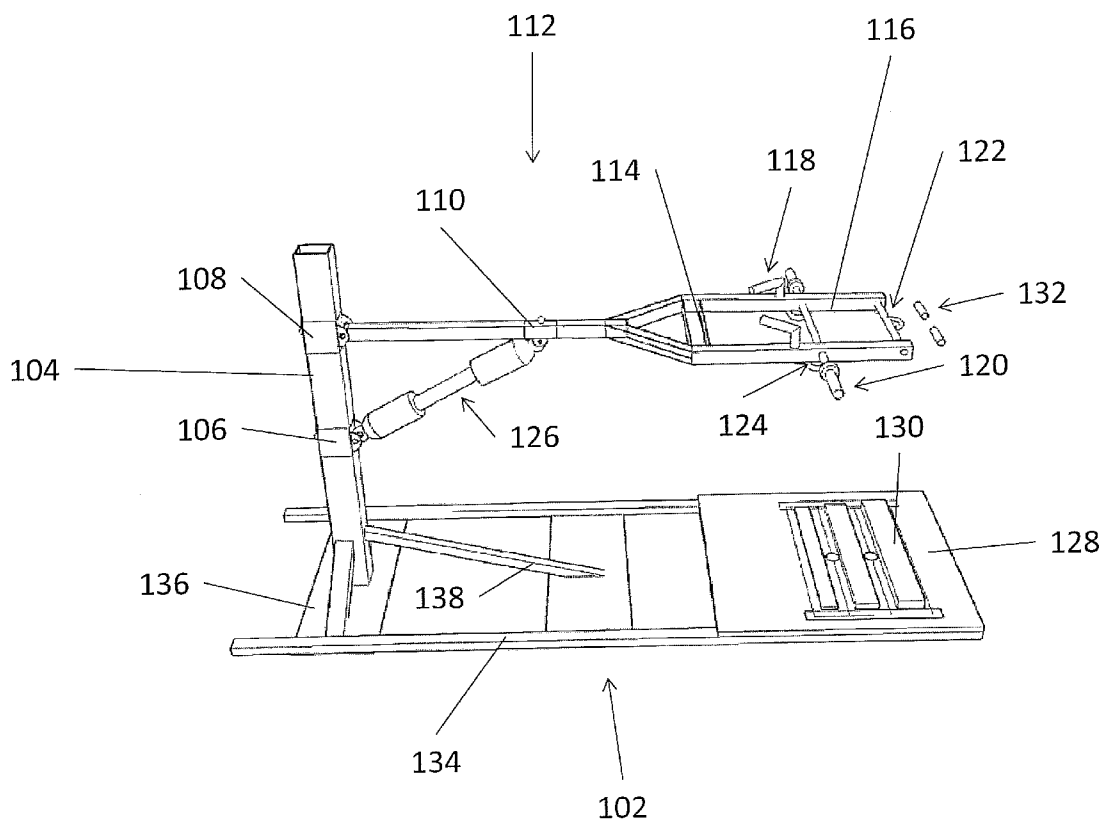
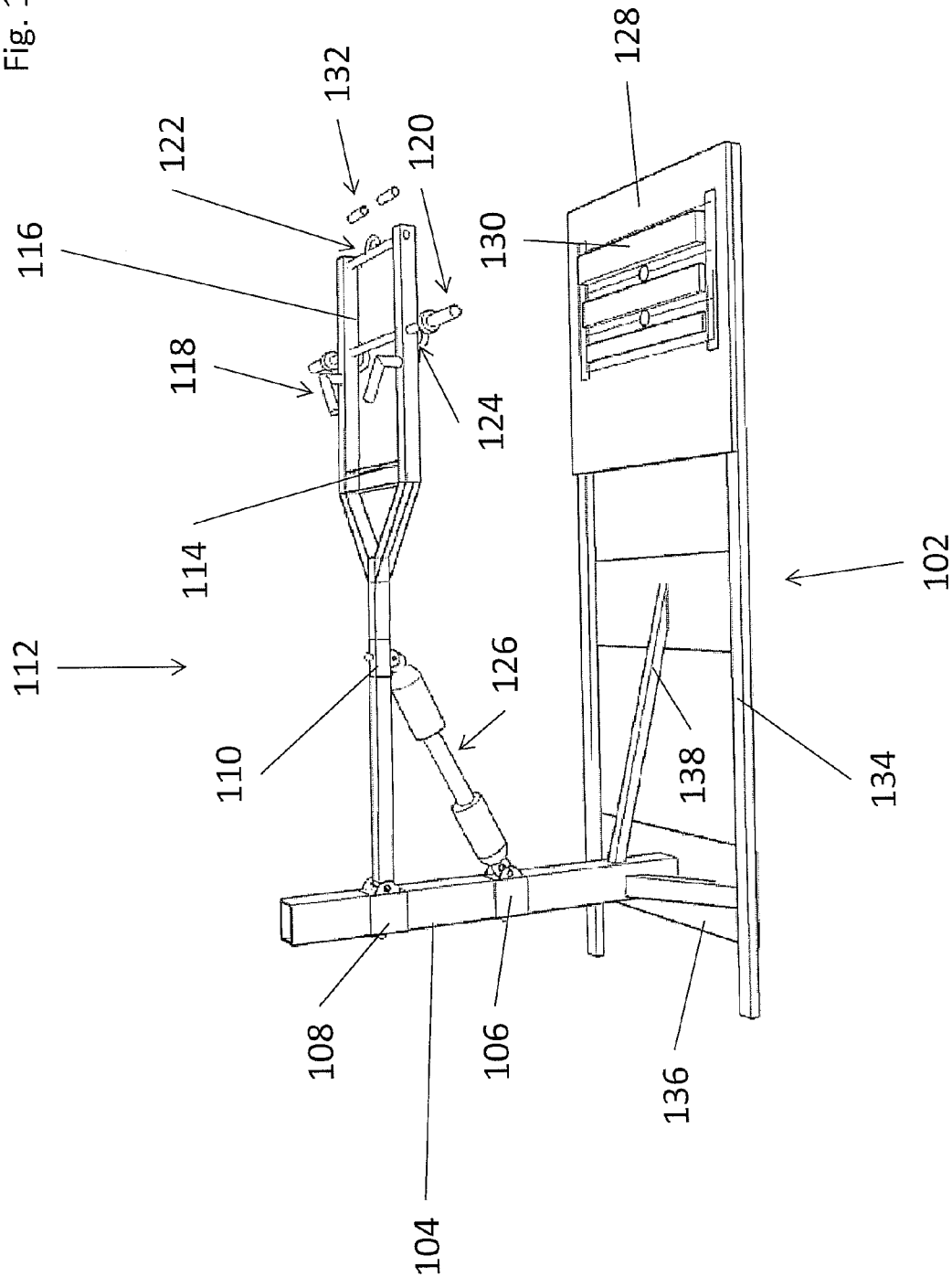


Fig. 1



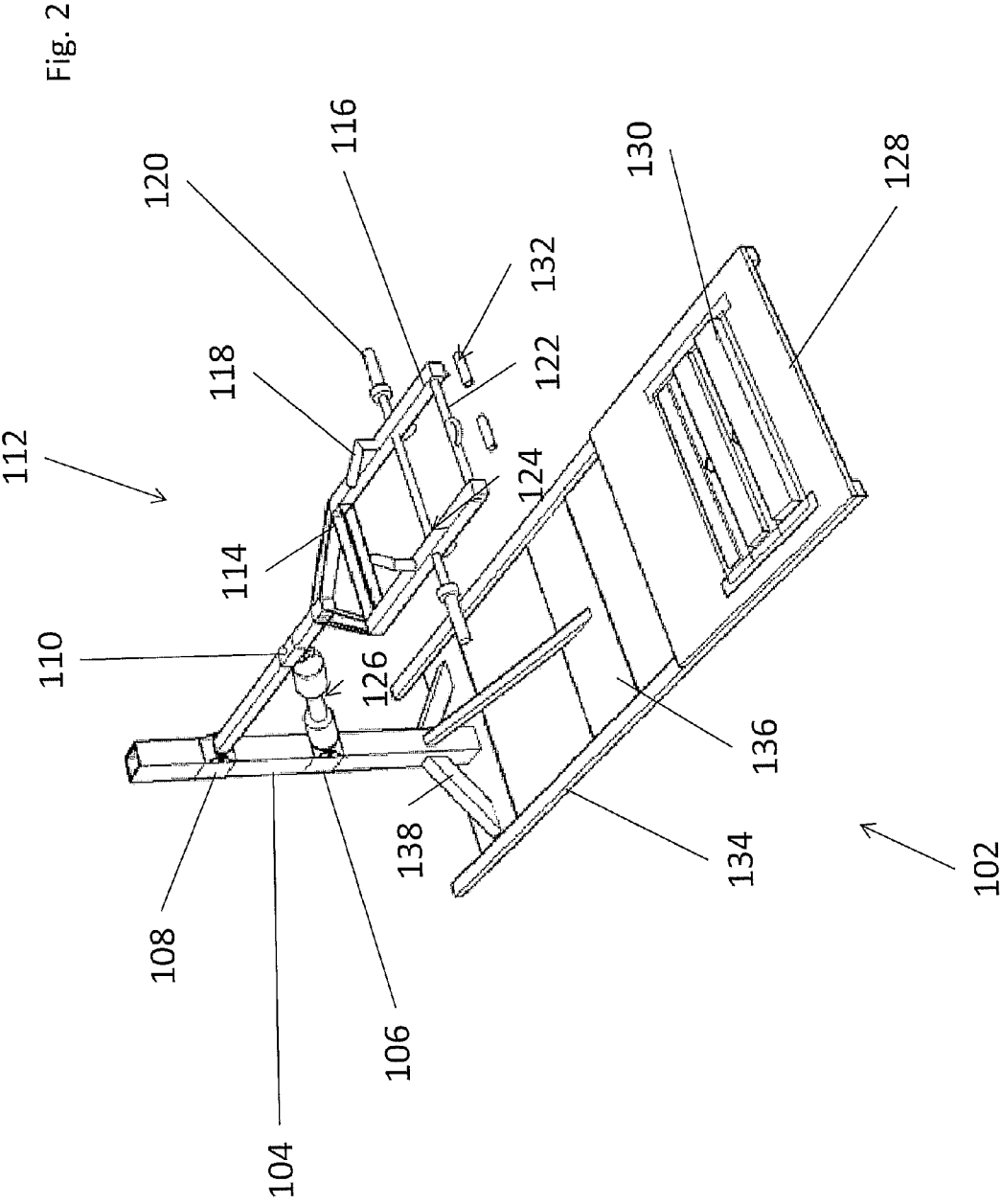


Fig. 3

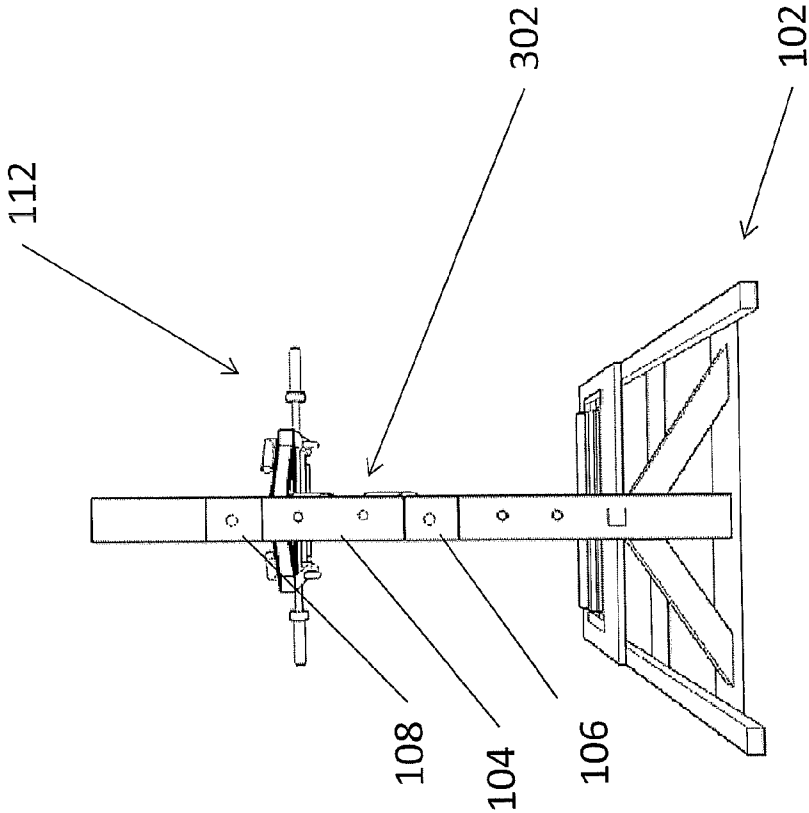
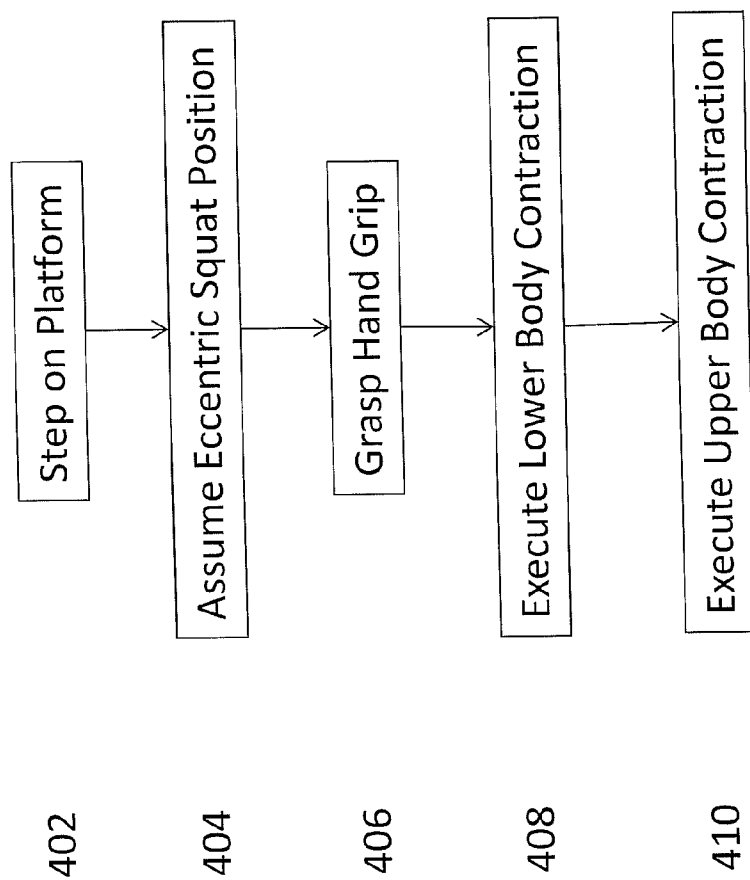


Fig. 4



FULL-BODY EXERCISE MACHINE

BACKGROUND

[0001] Physical training is often a tedious, time-consuming, and dangerous ordeal. Common gym equipment can be difficult to set up and difficult to use. Exercise machines are often extremely specialized, focusing entirely on only one type of exercise per machine, causing frustration in users who wish to transition quickly from exercise to exercise, or who wish to combine multiple exercises into one compound exercise.

[0002] Although these compound exercises can be performed using free weights, it is generally unsafe to do so without assistance. In addition, common configurations of exercise machines and free weight systems rarely allow for quick transition between, for example, strength training and aerobic training, or vice versa.

SUMMARY

[0003] An exemplary embodiment of an exercise machine is disclosed. The exercise machine can include a base which can have adjustable provisions for standing, a vertical support column which can be attached to the base, a cylinder and piston assembly which can be adjustably connected to the column, and a horizontal weight beam carriage which can be adjustably connected to both the column and the assembly. The carriage can have adjustable provisions for attaching weights and for manipulating the exercise machine. The adjustable provisions and adjustable attachments can allow the exercise machine to be configured to perform one or more different exercises

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] Advantages of embodiments of the present invention will be apparent from the following detailed description of the exemplary embodiments. The following detailed description should be considered in conjunction with the accompanying figures in which:

[0005] FIG. 1 is a side view of an exemplary embodiment of an exercise machine.

[0006] FIG. 2 is an oblique view of an exemplary embodiment of an exercise machine.

[0007] FIG. 3 is a rear view of an exemplary embodiment of an exercise machine.

[0008] FIG. 4 is a flow chart of an exemplary process for executing a compound exercise.

DETAILED DESCRIPTION

[0009] Aspects of the present invention are disclosed in the following description and related figures directed to specific embodiments of the invention. Those skilled in the art will recognize that alternate embodiments may be devised without departing from the spirit or the scope of the claims. Additionally, well-known elements of exemplary embodiments of the invention will not be described in detail or will be omitted so as not to obscure the relevant details of the invention.

[0010] As used herein, the word “exemplary” means “serving as an example, instance or illustration.” The embodiments described herein are not limiting, but rather are exemplary only. It should be understood that the described embodiments are not necessarily to be construed as preferred or advantageous over other embodiments. Moreover, the terms

“embodiments of the invention”, “embodiments” or “invention” do not require that all embodiments of the invention include the discussed feature, advantage, or mode of operation.

[0011] Generally referring to FIGS. 1-4, an exercise machine **100** is disclosed. The exercise machine can allow for any desired combination of flexibility, strength, or stamina physical training through exercises such as isolation exercises or multiple compound joint exercises, as desired.

[0012] The exercise machine **100** can allow a user to engage in any desired type of physical training by providing any of a number of adjustment options, for example varying degrees of weight, height, angle of lift, body position, handgrip position, or any other type of option, as desired. In this way, in exemplary embodiments the exercise machine **100** can provide a multiple position, free-weight, full-body circuit training experience which can include multiple compound joint and isolation exercises. These exercises can affect any desired muscle or group of muscles, for example the calves, upper legs, buttocks, core, lower back, chest, upper back, shoulders, forearms, biceps, triceps, or any other desired body part. As described below, exemplary embodiments of exercise machine **100** can be configured in such a way that all of these exercises and any others as desired can be performed upon one exercise machine in a safe and timely manner.

[0013] The exercise machine **100** can also be configured in such a way that no human assistance is required for a user to execute any of the exercises. In some exemplary embodiments, the weight load of the machine can be stabilized and controlled solely by the user who is executing the exercise from start to finish. In this way, exercise machine **100** can provide a safe and efficient full-body circuit-training exercise routine upon one machine.

[0014] If desired, exercise machine **100** can also be adapted to be positioned near and used with various cardio-vascular machines, allowing for a strength training and aerobic conditioning exercise session to be performed in an efficient manner. In some exemplary embodiments, the exercise machine can be incorporated into a gymnasium setting and positioned alongside cardio-vascular machines such as treadmills, elliptical machines, stationary bicycles, stair climbers, rowing machines or any other cardiovascular or other device as desired, allowing a user the opportunity to engage in a cross-fit/full-body training experience.

[0015] FIG. 1 shows a side view, and FIG. 2 shows an oblique view, of an exemplary embodiment of an exercise machine **100**. Exercise machine **100** can be a full-body circuit training platform which can allow a user to perform a variety of exercises, for example a lower body squat, an overhead press, a calf raise, a dead lift, a biceps curl, a triceps extension, an upright row, or any other exercise as desired.

[0016] Still referring to FIGS. 1 and 2, exercise machine **100** can include a base **102**. Base **102** can include base rails **134**, base plates **136** and lower supporting beams **138**. Base rails **134** can support an exercise platform **128**, which can include an opening which can be any desired shape, for example a rectangle. Base **102** can also include foot risers **130**, which can be adapted to cover the opening in platform **128**. Base **102** can include any desired number of foot risers **130**, and foot risers **130** can be reversible, adjustable, or otherwise configurable to meet the particular needs of a user in any situation. As an example, in some exemplary embodiments foot risers **130** can be flat on one side and augmented with elevated attachments of varying height on the other side,

and can be adjusted forward or backward along the opening in platform **128** in any desired position. In this way, a combination of foot risers **130** can be used in unison for a flat surface that is level with the remainder of the platform **128**, or as desired any number them can be selected and positioned anywhere within the rectangular opening of the platform **128** for elevated heel or toe exercise positions. As a result, the foot positioning requirements of a number of different exercises can be accommodated, for example squats, calf raises or dead lifts.

[0017] Referring again to FIGS. **1** and **2**, exercise machine **100** can also include a vertical weight support column **104**, which can be supported by base **102**. Column **104** can be adapted to receive upper adjustable pivot clamp **108** and lower adjustable pivot clamp **106**. FIG. **3** shows a rear view of an exemplary embodiment of exercise machine **100**, in which can be seen a plurality of positioning holes **302** by which upper adjustable pivot clamp **108** and lower adjustable pivot clamp **106** can be attached to column **104** using any desired attachment, for example a spring-loaded pin.

[0018] Returning to FIGS. **1** and **2**, exercise machine **100** can also include a horizontal support weight beam carriage **112**, which can be attached to the pivoting end of upper adjustable pivot clamp **108**, and can thereby be secured to column **104**. In some exemplary embodiments, horizontal support weight beam carriage **112** can also have one or more positioning holes to which a horizontal adjustable pivot clamp **110** can be attached.

[0019] The pivoting end of horizontal adjustable pivot clamp **110** can be linked to one end of a cylinder and piston assembly **126**. Assembly **126** can serve a variety of functions. For example, in some exemplary embodiments, assembly **126** can act as a guide along a user's range of motion, can provide support for the weight load when the machine is not in use, or can provide ample ground clearance for the user if there is a failure to complete a full repetition of an exercise while the user is underneath the weight load of the horizontal support weight beam **112**. Assembly **126** can provide support or assistance for the user, or assembly **126** can be configured in such a way that it does not assist or restrict the user's eccentric or concentric contractions during the execution of an exercise, as desired.

[0020] The other end of assembly **126** can be attached to a pivoting end of lower adjustable pivot clamp **106**. In this way, the combined positioning of lower adjustable pivot clamp **106**, upper adjustable pivot clamp **108**, and horizontal adjustable pivot clamp **110** can determine a number of different parameters of an exercise to be performed on exercise machine **100**. For example, the positioning of upper adjustable pivot clamp **108** and lower adjustable pivot clamp **106** on the vertical weight support column **104** can be used to determine the height at which the user can execute an exercise. As another example, the position of horizontal adjustable pivot clamp **110** on horizontal support weight beam carriage **112** can be used to determine the angle at which the user can execute an exercise.

[0021] Still referring to FIGS. **1** and **2**, horizontal support weight beam carriage **112** can also include side rails **116**. Side rails **116** can establish the length of the area in which the user can perform exercises using the exercise machine **100**. Side rails **116** can contribute to the stability of exercise machine **100**, and can also serve as attachment points for any combination of weights or user interaction devices as desired. For example, in some exemplary embodiments, side rails **116** can

include provisions for attaching modified-angled front hand grips **118**, barbell **120**, underhanded hand grips **124**, and rotating arc bar **122**.

[0022] Horizontal support weight beam carriage **112** can also be supported by a reinforcing support beam **114**. Reinforcing support beam **114** can connect side rails **116**, and can establish the width of the area in which the user can perform any desired exercises on exercise machine **100**. Reinforcing support beam **114** can also provide additional support to the horizontal support weight beam carriage **112**, and contribute to even weight distribution throughout the entire exercise machine **100**.

[0023] Horizontal support weight beam carriage **112** can include left and right modified-angled front hand grips **118**. In some exemplary embodiments, the modified-angled front hand grips **118** can be located in a position that can provide a medium hand grip position, allowing a user to exercise, for example, the pectoral muscles.

[0024] Horizontal support weight beam carriage **112** can also include barbell **120**, which include a standard Olympic-style barbell and weight shafts. In some exemplary embodiments, barbell **120** can be positioned substantially in the middle of side rails **116**, which can allow a user to assume the traditional front and behind-the-neck positions for squat and overhead press. In these positions, exercise machine **100** can be used to exercise, for example, the muscles of the chest, back and shoulders. In further exemplary embodiments, barbell **120** can be sized to allow for varying degrees of narrow, medium, or wide hand grip positions, allowing a user to attempt to vary the effect upon the muscles of the chest, back and shoulders when, for example, performing overhead presses individually, or in tandem with squats. Barbell **120** can also include weight shafts at either end. In exemplary embodiments, these weight shafts can extend transversely and can be used to accommodate any type of weight, for example multiple removable standard Olympic-style free-weight plates, as desired by the user.

[0025] Horizontal support weight beam carriage **112** can also include rotating arc bar **122**. Arc bar **122** can be a shortened standard Olympic style barbell which can be augmented by an additional metal bar in the shape of an arc attached to the center portion of the shortened barbell. Arc bar **122** can be linked by its two ends to the two side rails **116**, for example by bushings on each side. In this way, arc bar **122** can rotate, allowing it to be repositioned as desired. In some exemplary embodiments, arc bar **122** can be locked into one or more positions by a spring-loaded locking pin located, for example, on the bottom of the right side rail **116**. In this way, arc bar **122** can be positioned so that the arc can be grasped in various positions, facilitating a variety of exercises. For example, arc bar **122** can be locked into position with the arc parallel to the platform **128** and the opening of the arc facing towards the vertical weight support column **104**, which can facilitate alternate narrow hand grip overhead presses, executed individually or in tandem with squats. As another example, arc bar **122** can be locked into position with the opening of the arc facing the user. When arc bar **122** is in this position, a user can attach detachable polymer training handgrips **132** to arc bar **122**, allowing the user to perform, for example, biceps curls and triceps extensions.

[0026] In the embodiments described above and in other exemplary embodiments, exercise machine **100** can be used to perform a wide variety of exercises. For example, a user can use exercise machine **100** as described above to perform

isolation exercises, which can focus primarily on one muscle or muscle group. In some embodiments, exercise machine **100** can be used to perform, for example, squats, both in front of and behind the neck, calf raises, dead lifts, modified overhead front chest presses, front barbell overhead chest presses, behind the neck barbell overhead presses, underhand shoulder overhead presses, arc bar overhead chest presses, one handed arc bar overhead presses, upright rows, biceps curls, triceps extensions, and any other isolation exercise as desired.

[0027] Exercise machine **100** can also be used to perform combination or compound exercises. Exercise machine **100** can provide a variety of the benefits of compound exercises. For example, when executing a compound exercise the user's core muscles and forearms can be actively engaged during the exercise due to the need to maintain stability and control of the weight load being moved from the lower body to upper body exercise positions. FIG. **4** shows an exemplary embodiment of a process by which a user can perform a compound exercise which includes a squat and an overhead press. At step **402**, the user can step upon the platform **128**. At step **404**, the user can assume the eccentric position of a traditional squat exercise. At step **406**, the user can grasp one of the available hand grip positions attached to the horizontal support weight beam carriage **112**. At step **408**, the user can execute a concentric contraction with the lower body into the concentric position of a traditional squat exercise. At step **410**, the user can complete the execution of a compound joint exercise by executing a concentric contraction with the upper body into the concentric position of a traditional overhead press.

[0028] A variety of compound exercises in addition to the one described above can be accomplished using exercise machine **100**. Included in these are a squat/frontal chest/calf raise compound, a squat/modified overhead front chest press/calf raise compound, a squat/underhand shoulder overhead press/calf raise compound, a squat/arc bar overhead chest press/calf raise compound, a bent over row/bicep curl/calf raise compound, or any other compound exercise as desired.

[0029] The foregoing description and accompanying figures illustrate the principles, preferred embodiments and modes of operation of the invention. However, the invention should not be construed as being limited to the particular embodiments discussed above. Additional variations of the embodiments discussed above will be appreciated by those skilled in the art.

[0030] Therefore, the above-described embodiments should be regarded as illustrative rather than restrictive. Accordingly, it should be appreciated that variations to those embodiments can be made by those skilled in the art without departing from the scope of the invention as defined by the following claims.

What is claimed is:

1. An exercise apparatus, comprising:

- a base which includes adjustable provisions for standing;
- a vertical support column which is attached to the base;
- a cylinder and piston assembly which is connected by an adjustable attachment to the vertical support column; and
- a horizontal weight beam carriage which is connected by adjustable attachments to both the vertical support column and the cylinder and piston assembly, and which includes adjustable provisions for attaching weights and for manipulating the exercise apparatus;

wherein the adjustable provisions and adjustable attachments allow the exercise apparatus to be configured to perform a plurality of different exercises.

2. The apparatus of claim **1**, wherein the adjustable provisions for standing include at least one foot riser with adjustable height.

3. The apparatus of claim **2**, wherein the height of the foot riser can be adjusted to accommodate a user performing at least one of squats, calf raises, or dead lifts.

4. The apparatus of claim **1**, wherein the adjustable attachments allow at least one of the cylinder and piston assembly or the horizontal weight beam carriage to be adjusted for height.

5. The apparatus of claim **1**, wherein the adjustable attachments allow at least one of the cylinder and piston assembly or the horizontal weight beam carriage to be adjusted for angle.

6. The apparatus of claim **1**, wherein the cylinder and piston assembly acts as a guide along a user's range of motion

7. The apparatus of claim **1**, wherein the cylinder and piston assembly provides support for a weight load when the apparatus is not in use.

8. The apparatus of claim **1**, wherein the cylinder and piston assembly provides ground clearance for a user if there is a failure to complete a full repetition of an exercise while the user is underneath the horizontal weight beam carriage.

9. The apparatus of claim **1**, wherein the adjustable provisions for attaching weights to the apparatus includes a barbell.

10. The apparatus of claim **9**, wherein the barbell is an Olympic-style barbell.

11. The apparatus of claim **1**, wherein the adjustable provisions for manipulating the apparatus include at least one of a modified-angled front hand grip, an underhanded hand grip, a barbell, an arc bar, or detachable polymer hand grips

12. The apparatus of claim **11**, wherein the arc bar comprises a shortened standard Olympic style barbell which is augmented by an additional metal bar in the shape of an arc attached to the substantially center portion of the shortened barbell.

13. The apparatus of claim **12**, wherein the arc bar can be adjustably positioned to facilitate a plurality of different exercises.

14. The apparatus of claim **1**, wherein the plurality of different exercises includes at least one isolation exercise.

15. The apparatus of claim **14**, wherein the at least one isolation exercise is at least one of front squats, behind the neck squats, calf raises, dead lifts, modified overhead front chest presses, front barbell overhead chest presses, behind the neck barbell overhead presses, underhand shoulder overhead presses, arc bar overhead chest presses, one handed arc bar overhead presses, upright rows, biceps curls, or triceps extensions.

16. The apparatus of claim **1**, wherein the plurality of different exercises includes at least one compound exercise.

17. The apparatus of claim **16**, wherein the at least one compound exercise is at least one of a squat/frontal chest/calf raise compound, a squat/modified overhead front chest press/calf raise compound, a squat/underhand shoulder overhead press/calf raise compound, a squat/arc bar overhead chest press/calf raise compound, or a bent over row/bicep curl/calf raise compound.

* * * * *