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P. E. HUEBNER

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WEIGHT LIFTER'S EXERCISING DEVICE

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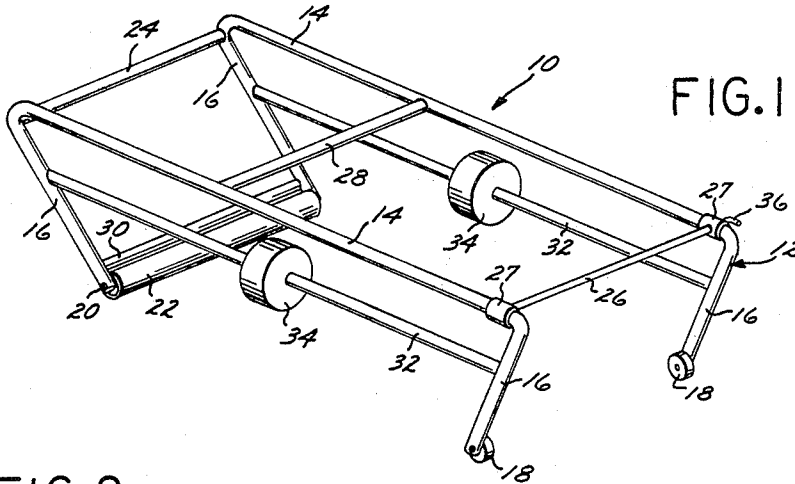


FIG. 1

FIG. 2

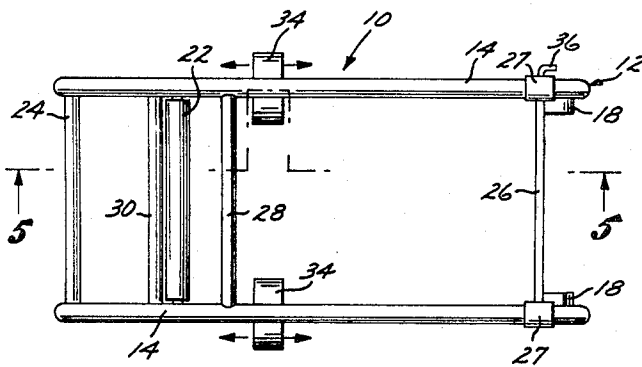


FIG. 3

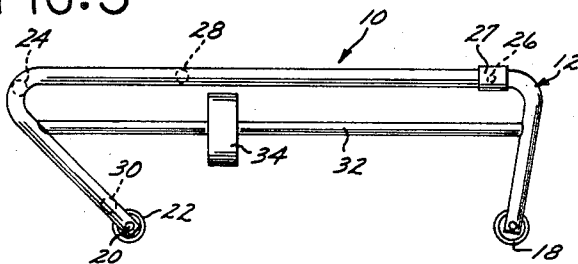


FIG. 4

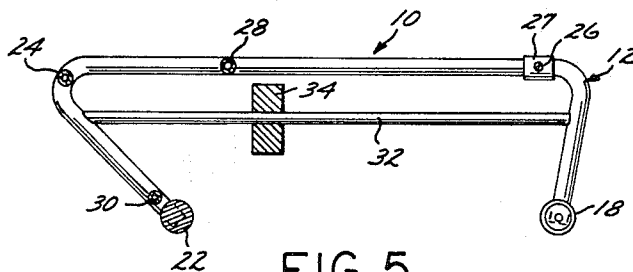
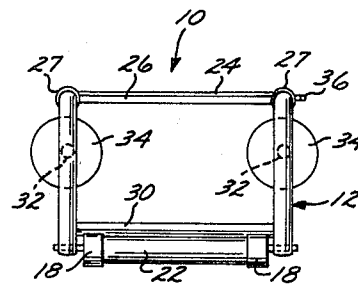


FIG. 5

INVENTOR.
PAUL E. HUEBNER

BY *Inglwider, Patton, Kiebel,*
Lee & Utecht
ATTORNEYS

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WEIGHT LIFTER'S EXERCISING DEVICE

Paul E. Huebner, 1608 Espinosa Circle,

Palos Verdes Estates, Calif. 90274

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1 Claim. (Cl. 272—81)

ABSTRACT OF THE DISCLOSURE

A weight lifting frame having two spaced longitudinal side rails joined at each end by a pair of transverse bars. Connected to each side rail is a longitudinally adjustable weight. One end of the frame has a weighted cylindrical roller extending between the side rails. The other end of the frame has a wheel connected at the bottom of each side rail. The user may lift with his feet against the transverse bar at the weighted roller end or with his hands against the transverse bar at the other end. The roller and wheels facilitate transportation of the device.

The present invention relates to exercise apparatus and more particularly to weight lifting exercise apparatus which is pivotable about at least one of its ends to thereby utilize the weight of the apparatus as part of the exercise weight, and which also carries longitudinally movable weights for varying the effort required to pivot the exercise apparatus.

There is an urgent need for less expensive weight lifting equipment for use in physically conditioning groups of individuals such as high school and college classes, athletic teams, and armed forces units. Presently available equipment such as barbells and the like is relatively expensive for group use and is subject to loss and theft. So-called weight lifting "machines" can be used to rapidly handle a group of individuals but these machines are not only very costly but employ a ponderous supporting structure for the weights which prevents easy movement of the machine from one location to another. Moreover, the heavy support structure is inefficient in that no part of it is utilizable as part of the exercise weight.

Accordingly, it is an object of the present invention to provide exercise apparatus which is inexpensive, relatively simple and safe to use, adapted to be made portable, and characterized by a complete absence of readily detachable components.

Another object of the invention is the provision of apparatus of the aforementioned character which is rugged in construction and which can be left outdoors without damaging effect upon its operation.

A further object of the invention is to provide exercise apparatus of heavy construction which is adapted to be pivoted about one end for a leg exercise and pivoted about its opposite end for an arm exercise so that substantially all of the weight of the apparatus forms a part of the exercise weight. A related object of the invention is to enable adjustment of the effort required to pivot the apparatus by providing weights on the apparatus which are longitudinally movable between the ends of the apparatus. Another related object is to employ a relatively heavy weight at the pivot axis of the leg exercise end of the machine to thereby provide a weight for leg presses without adding to the weight which must be raised to oppositely pivot the apparatus by arm presses at the opposite of arm exercise end of the apparatus.

Another object of the invention is to provide exercise apparatus of the aforementioned character which includes wheels, rollers or the like on the pivot axis at one end of the apparatus so that the apparatus can be tilted about such axis for rolling transport from one location to another. A related object is to mount the longitudinally mov-

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able weights on rails which extend beyond such pivot axis so that such weights can be positioned to counterbalance the weight of the apparatus and thereby facilitate tilting and transport thereof.

5 A further object of the invention is the provision of exercise apparatus of the aforementioned character wherein the structure of the apparatus and the location of the longitudinally movable weights is so arranged that an open central area is defined to accommodate a prone user of the apparatus.

10 A further object of the invention is to provide exercise apparatus pivotable at one end and including a longitudinally movable exercise bar and longitudinally movable weights so that the bar can be located between the weights and the pivot axis to maximize the exercise effort required to pivot the weights with the apparatus.

15 Yet another object of the invention is to provide exercise apparatus of the aforementioned character which includes an arm exercise bar at one end of the apparatus and a leg exercise bar at the opposite end of the apparatus, and wherein the rails supporting the longitudinally movable weights are located beneath such bars to thereby lower the center of gravity of the apparatus and consequently reduce the apparent reduction of effort experienced in an arm or a leg press as the apparatus is pivoted upwardly in an arcuate path.

20 Other objects and features of the invention will become apparent from consideration of the following description taken in connection with the accompanying drawings, in which:

FIG. 1 is a perspective view of exercise apparatus according to the present invention;

FIG. 2 is a top plan view of the apparatus of FIG. 1;

25 FIG. 3 is a side elevational view of the apparatus of FIG. 1;

FIG. 4 is a right end elevational view of the apparatus of FIG. 1; and

30 FIG. 5 is a cross-sectional view taken along line 5—5 of FIG. 2.

40 Referring now to the drawings, there is illustrated a weight lifting exercise apparatus 10 comprising, generally, a frame 12 of generally rectangular, elongated configuration in plan view, and having a left end, as viewed in FIG. 1, constituting a leg exercise end, and further having a right end constituting an arm exercise end. The frame 12 includes a pair of elongated frame elements 14 made of relatively heavy metal tubing or pipe and transversely spaced apart in parallel, horizontal relation. The end portions of the frame 12 are defined by reversely formed portions of the extremities of the frame elements. The reversely formed portions depend in inwardly inclined relation to the horizontal frame elements to form four legs 16 at the four corners of the frame 12. The ground engaging extremities of the legs 16 at the arm exercise end of the frame rotatably mount a pair of wheels 18, while the corresponding extremities of the opposite pair of legs 16 at the leg exercise end of the frame mount stub axles 20 which rotatably support a transversely oriented, cylindrical leg weight 22.

50 An elongated transverse leg exercise bar 24 is welded at its opposite ends to the leg exercise end extremities of the frame elements 12, and a similar elongated bar 26 constituting an arm exercise bar carries a pair of longitudinally oriented sleeves 27 at its opposite ends. The sleeves 27 are longitudinally slidable on the frame elements 12 from the arm exercise end extremity thereof to a point just beyond the middle of the frame elements. As will be seen, the leg exercise bar 24 is utilized to lift the leg exercise end of the frame 12 and thereby pivot the frame 12 about a horizontal transverse axis defined by the centers of rotation of the wheels 18. In similar

fashion the arm exercise bar 26 is utilized to lift the arm exercise end of the frame 12 to thereby pivot the frame about a horizontal transverse axis defined by the longitudinal axis of rotation of the cylindrical leg weight 22. Depending upon which end of the frame is raised, the wheels 18 or leg weight 22 provide a rolling means for transporting the apparatus from one location to another.

Additional structural rigidity for the frame is provided by an elongated transverse brace 28 which is welded at its opposite ends to the frame elements 14 between the ends of the frame. The brace 28 is located somewhat closer to the leg exercise end to enable slidable movement of the arm exercise bar 26 and also to better handle the greater stresses imparted to the frame by the heavy leg weight 22 compared to the other lesser weights utilized, as will be seen. Structural rigidity is also provided by a transverse brace 30 located just above the leg weight 22, and welded at its opposite ends to the adjacent pair of legs 16.

A pair of transversely spaced apart, parallel, and longitudinally extending rails 32 are located beneath the pair of frame elements 14, respectively, in parallel, spaced and substantially coextensive relation therewith. The rails 32 are made of pipe or relatively heavy circular bar stock and are welded at their opposite ends to the legs 16.

The rails 32 extend through the central openings of a pair of annular weights 34 which are longitudinally slidable along the rails 32 for the purpose of varying the exercise effort required to pivot the apparatus 10 about one or the other of its pivot axes.

It is particularly noted that the rails 32 extend toward the leg exercise end of the frame 12 beyond the leg exercise axis defined by the leg weight 22. This permits the weights 34 to be located on the rails 32 beyond the leg exercise axis so that the weights 34 tend to counterbalance the weight of the apparatus 10 on the opposite side of such axis. Depending upon the particular weights of the frame and the weights 34, it is possible to so locate the weights 34 that negligible effort is required to lift the arm exercise end of the frame. This greatly facilitates the handling and transport of the apparatus 10 on the rolling leg weight 22. Alternatively, the apparatus 10 can be transported without raising either end by merely rolling it along on the wheels 18 as well as on the leg weight 22.

Although the rails 32 could be eliminated and the weights 34 longitudinally mounted on the frame elements 14, it has been found preferable to locate the weights below the arm and leg exercise bars 24 and 26. More particularly, this lowers the center of gravity of the apparatus 10 and minimizes the apparent reduction of effort experienced in an arm or leg press as the apparatus is pivoted upwardly in an arcuate path. The higher the weights 34 are located with respect to the pivotal axis of the frame, the more the apparent loss of weight for a given arc of travel of the weights. Consequently, the user of the apparatus 10 is desirably required to exert a more uniform effort in an arm or leg press when the weights 34 are located on the rails 32 rather than on the higher frame elements 14.

The location of the leg exercise axis longitudinally inwardly of the adjacent extremities of the frame elements 14 and the rails 32 enables the weights 34 to be located over such axis to thereby minimize the weight to be raised in a leg press upon the leg exercise bar 24, similar to the manner in which the location of the arm exercise axis longitudinally inwardly of the opposite extremities of the frame elements 14 and the rails 32 enables the weights 34 to be located over or beyond such axis to minimize the weight to be raised in an arm press upon the arm exercise bar 26.

It is noted that the transverse spacing of the legs 16 at the opposite ends of the frame facilitates use of the apparatus 10 by a user lying in a prone position. At the arm exercise end of the frame the user can extend his body

within the open central portion of the apparatus for easy access to the arm exercise bar 26 to perform an arm press. At the leg exercise end of the frame the spacing of the legs 16, coupled with the inward inclination of the legs, permits a prone user to double his legs immediately beneath the leg exercise bar 24 to perform a leg press.

The location of the leg weight 22 upon the arm exercise pivot axis requires that the weight 22 be raised by a user exercising a leg press, and for this purpose the weight 22 is made as large as 200 pounds. This much weight is generally excessive for an arm press, but the amount of the weight 22 is of no consequence to one executing an arm press with the present apparatus since the apparatus merely pivots about the weight 22 during execution of an arm press.

In using the apparatus 10, the exerciser lies on a bench on his back for the arm exercises and grasps the arm exercise bar 26 for upward pressing, the frame 12 and the weights 34 pivoting about the axis of the leg weight 22 during such movement. The amount of weight pressed is adjusted by longitudinally positioning the weights 34. In addition, the arm exercise bar 26 can be moved longitudinally inwardly of the weights 34, to increase the apparent weight lifted in an arm press, and locked in position by a suitable locking handle 36. If desired, the arm exercise bar 26 can be used for leg pressing by pressing with one leg and then with the other. With this arrangement the leg weight 22 can be eliminated to reduce the cost of the apparatus, since all exercises would then be performed by pivoting the apparatus about the arm exercise axis. Moreover, the arm exercise axis end of the apparatus could then be tied or anchored to the ground or other supporting surface in any suitable manner to provide a semi-permanent installation.

When the leg exercise bar 24 is used for exercising the legs, the user lies on the ground and presses both feet upwardly against the leg exercise bar 24. The frame 12 and the weights 22 and 34 pivot about the axis of the wheels 18 during such movement, and the amount of weight pressed is adjusted by longitudinally positioning the weights 34.

From the foregoing it will be apparent that a weight lifting exercise apparatus is provided which is inexpensive, relatively simple and safe to use, and characterized by a complete absence of detachable components. The apparatus is rugged in construction, can be made portable, can be left outdoors without damaging effect upon its operations, and makes efficient utilization of its entire weight as part of the exercise weight.

Various modifications and changes may be made with regard to the foregoing detailed description without departing from the spirit of the invention or the scope of the following claim.

I claim:

1. Exercise apparatus comprising:

an elongated frame including a pair of transversely spaced apart, longitudinally extending frame elements terminating in a leg exercise end having a pair of depending leg portions and an arm exercise end having a pair of depending leg portions, the leg portions at said leg exercise end being reversely formed to dispose their ground engaging extremities along a transverse arm exercise axis located longitudinally inwardly of said frame, said frame further including a transverse arm exercise bar mounted to said frame at said arm exercise end, a transverse leg exercise bar mounted to said frame at said leg exercise end, and a pair of transversely spaced apart, longitudinally extending rails attached at their opposite extremities to said leg portions at said arm and leg exercise ends below said arm and leg exercise bars; and

a pair of weights longitudinally movable along said rails on both sides of said arm exercise axis for varying the effort required to pivot the exercise apparatus about said arm exercise axis, a comparatively heavy cylin-

drical leg weight transversely oriented along said arm exercise axis and rotatably connected to the adjacent pair of leg portions whereby said leg weight increases the effort required on said leg exercise bar to pivot the exercise apparatus without affecting the effort required on said arm exercise bar to pivot said apparatus about said arm exercise axis and said exercise apparatus can be tilted about said arm exercise axis and transported by rolling on said leg weight.

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RICHARD C. PINKHAM, *Primary Examiner.*