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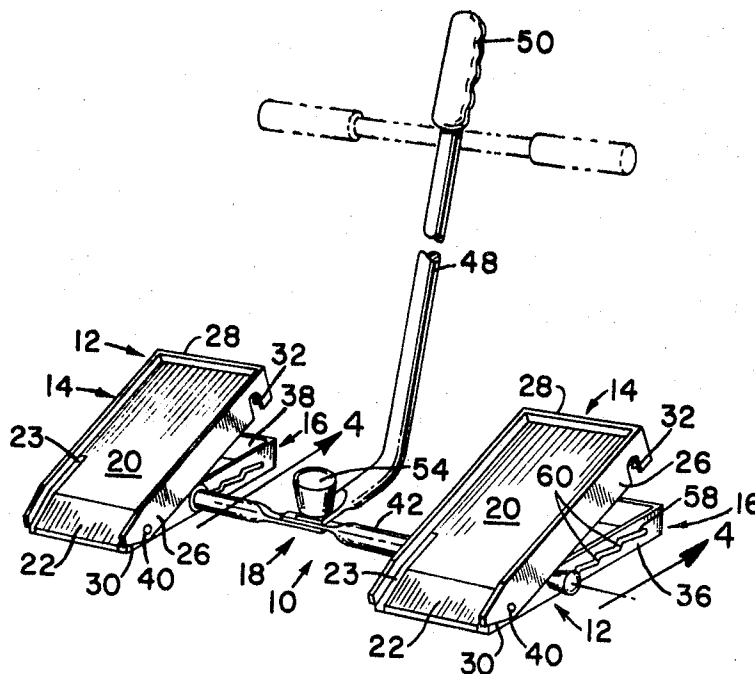
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[54] **EXERCISING APPARATUS INCLUDING
 PIVOTALLY CONNECTED WEIGHT-SUPPORTING
 UNITS**
 9 Claims, 4 Drawing Figs.

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 59

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ABSTRACT: Calf-exercising apparatus including a unit for each leg, with each unit including a foot-engaging platform for supporting the weight of the user. The elevational and lateral angles of each platform are independently adjustable, so that the attitude of each platform can be varied and controlled, and thereby provide a wide range of settings whereby the user can selectively choose the degree of difficulty and amount of stress that is required to perform the exercises. The foot-engaging platforms are provided on separate units that are pivotally connected to one another, and the structures are collapsible to a relative compact form for convenience of storage.



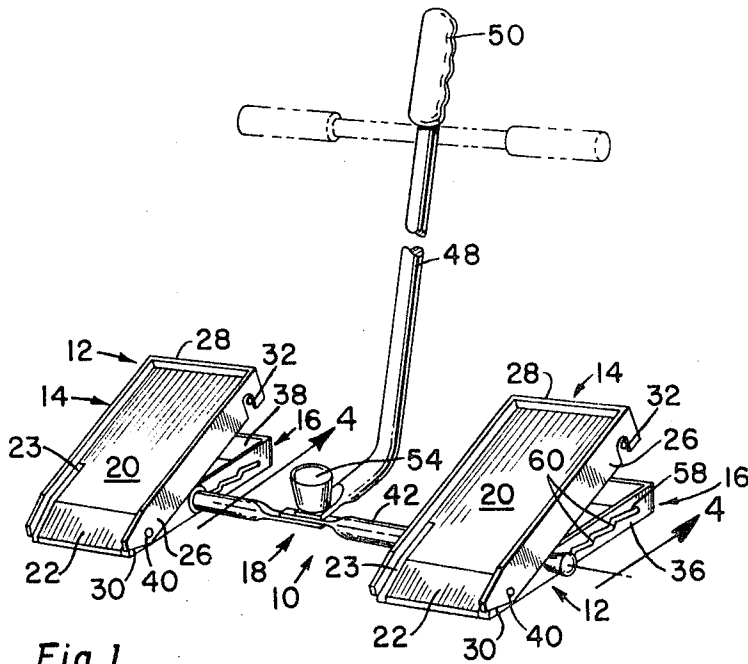


Fig. 1.

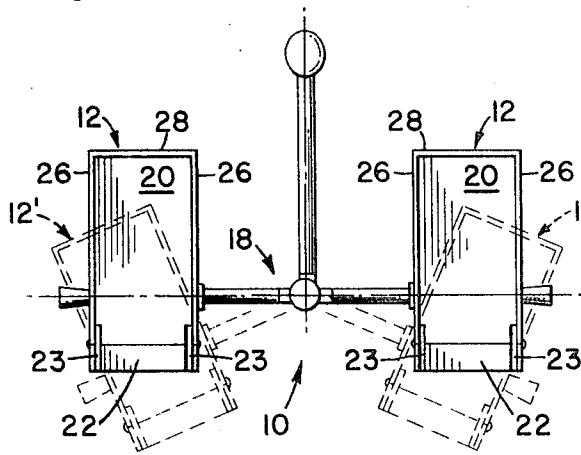


Fig. 3.

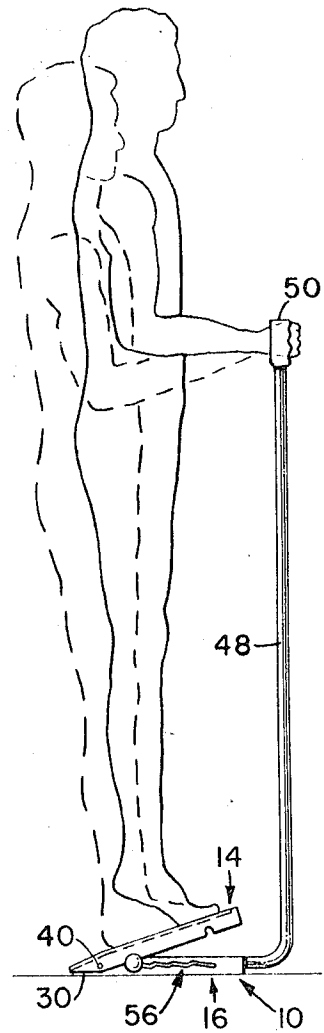


Fig. 2.

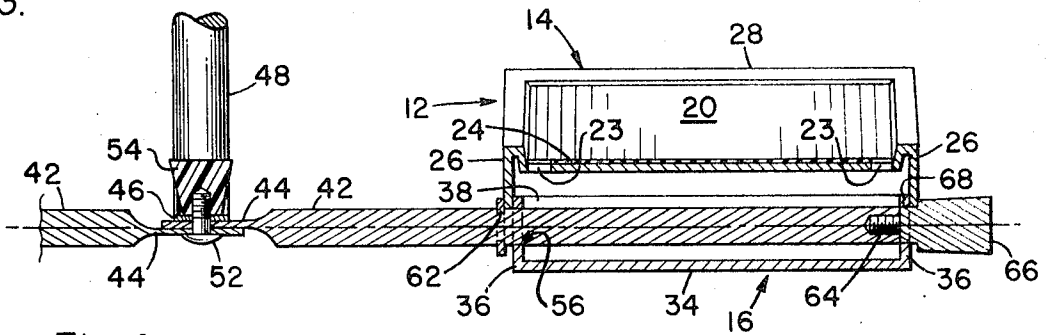


Fig. 4.

EXERCISING APPARATUS INCLUDING PIVOTALLY CONNECTED WEIGHT-SUPPORTING UNITS

BACKGROUND OF THE INVENTION

One of the most popular calf-developing exercises is the so-called "toe-up" exercise, where the exerciser rises up on his toes and then back down again to particularly stress the muscles of the lower leg. To increase the stress to the calf muscles in performing toe-up exercises, it has been common for exercisers to perform the toe-up exercise after placing the exerciser's toes on a vertical elevation, such as a book or a stair. The use of books and other similar objects has proven to be very unsatisfactory, because of the unsteady nature of the support. The use of stairs or the like in performing toe-up exercises has also not been satisfactory, because a stair usually provides such a large vertical elevation that it is dangerous to the exerciser, particularly when barbells or weights are being used to increase the stress to the lower leg muscles.

SUMMARY OF THE INVENTION

The apparatus of the present invention provides a unique structure upon which toe-up exercises can be performed to develop the calves of the exerciser in a progressive manner with complete safety. More particularly, the apparatus of the present invention includes foot support platforms that are adjustable about a vertical or elevational angle with retention means being provided for positively, yet releasably, retaining the platform means in the selected position. By gradually increasing the elevational angle of the platform means, an exerciser, with or without weights, can build up the calf muscles to the desired point. The platform means for each foot are individually adjustable, so that different stresses can be imparted to the calf of each leg, in the event of unequal development, as for example in the case of a diseased limb. Furthermore, the foot-supporting platforms of the present invention may be played inwardly or outwardly with respect to one another, to bring different muscles into play during performance of the toe-up exercises. The structures of the present invention are all foldable into a compact unit, so as to occupy a minimum amount of space during storage.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a first embodiment of the exercising apparatus of the present invention;

FIG. 2 is a side elevational view of the structure illustrated in FIG. 1;

FIG. 3 is a top plan view of the structure illustrated in FIG. 1, and showing the foot-supporting platforms in an adjusted position in broken lines; and

FIG. 4 is an enlarged cross-sectional view taken generally along line 4-4 of FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

While the invention is susceptible of embodiment in many different forms, there is shown in the drawings and will herein be described in detail a preferred embodiment of the invention, with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the embodiment illustrated. The scope of the invention will be pointed out in the appended claims.

Referring now to the drawings in detail, the exercising apparatus illustrated in FIGS. 1-4 is indicated in its entirety by reference numeral 10, and the apparatus 10 includes a pair of laterally spaced, identical units 12, one unit for each foot of the exerciser. Each unit 12 includes a foot-supporting platform means 14 adjustably mounted upon a floor-engaging brace means 16. Connecting structure 18 joins both of the units 12 together into a unitary structure, as will hereinafter appear.

Each of the platform means 14 may be formed by stamping a sheet of metal, or the like, and the sheet must be of sufficiently heavy gauge to support the weight of the exerciser supplemented by a relatively large additional weight, because of the common practice of performing toe-up exercises with weights and barbells. Each platform means 14 includes an upwardly facing, generally rectangularly shaped foot-engaging surface 20, and the forward end of the foot-engaging surface is preferably sloped downwardly as shown at 22 to facilitate mounting of the apparatus with a barbell. Elongate cutouts or slots 23 are provided at the forward portion of the foot-engaging surface 20 and the inclined portion 22 to accommodate the sides of the brace means 16 as will hereinafter appear. A grid pattern may be stamped into the foot-engaging surfaces 20 to provide a tread for preventing the exerciser from slipping upon the apparatus and alternatively, a nonslip surface 24 (FIG. 4) may be secured to the upper surface of each of the platform means.

Sidewalls 26 extend downwardly from the lateral edges of the foot-supporting surface 20, and a backwall 28 extends downwardly from the rearward edge of the foot-engaging surface. The forward edges of the sidewalls 26 are tapered at 30 to facilitate pivotal movement of the platform 14 relative to the brace means 16, and the rearward portion of sidewalls 26 are provided with downwardly facing notches 32 to accommodate the means for retaining the platforms in an elevated position, when the units 12 are stored. The forward portions of sidewalls 26 are provided with aligned holes for reception of a pivot pin, as will hereinafter appear. As mentioned above, the platforms 14 can be formed stamping, and alternatively, the platforms can be formed by die casting.

Brace means 16 are identical, and are each in the form of a shallow, upwardly open pan that includes a rectangularly shaped floor-engaging portion 34, upright sidewalls 36, and an upright rear wall 38. Braces 16 are also preferably formed of a relatively heavy gauge metal material that may be manufactured by diecasting, stamping, or the like. The forward portions of sidewalls 36 are provided with aligned holes for reception of transverse pivot pins 40, which impale the opening in walls 26 and 36 to mount the platform means 14 upon the brace means 16 in a manner such that the elevational angle of the platform means can be varied and adjusted. As can be best seen in FIG. 4, the sidewalls 26 of the platform means 14 are positioned outwardly of the sidewalls 36 of the brace means 16, and in a like manner, the rearward wall 28 of the platform means 14 is positioned slightly outwardly of the rear wall 38 of the brace means 16, when the platform means are pivoted into the collapsed storage position.

Retention means is provided for retaining the platform means 14 in the selected position of adjustment for performance of the toe-up exercises, and conveniently, the retention means is associated with the means 18 for connecting the two units 12 into a unitary structure. As can be best seen in FIG. 4, retention members 42 extend outwardly from each unit 12 toward one another, and the retention members 42 have flattened end portions 44 with openings therein positioned in registry. The flattened end portion 46 of an optional, generally L-shaped exerciser-stabilizing member 48 may be positioned on top of flattened end portions 44, and flattened portion 46 also has an opening that is positioned in registry with the openings in the flattened end portions 44 of the retention members 42. As is evident from FIGS. 1 and 2, a gripping member 50 may be provided at the upper end of stabilizing member 48, so that the exerciser can steady himself during the performance of the toe-up exercises. A bearing screw 52 extends upwardly through the aligned openings in flattened portions 44 and 46, and a nut 54 is threaded upon the upper end of a screw 52. As is evident from FIG. 3, the connection provided by bearing screw 52 and nut 54 provides a means whereby the lateral angle of the units 12 may be adjusted relative to one another. To effect the adjustment of the lateral angle, it is necessary only to loosen nut 42 and to pivot the units 12 into the desired angular orientation relative to one another,

whereupon the nut 54 is tightened to positively retain the units in the selected position.

As can be best seen in FIGS. 1 and 2, slot means 56 is provided in each of the sidewalls 36 of the brace means 16, and the slot means are identically shaped and horizontally aligned. The slot means 56 in the illustrated embodiment is internal, i.e., within the confines of the sidewalls 36 as opposed to being on the upper edge thereof, and each slot means 56 includes a plurality of spaced, slightly inclined portions 58 connected by generally upright detent portions 60. Slots 56 have a width slightly in excess of the diameter of members 42, so that the braces 16 can be moved relative to the members 42. As can be best seen in FIG. 4, stop means 62, such as a C-washer, or the like, is provided in an annular groove in the members 42, and the inner side of each of the units 12 butts up against the stops 62. The outermost end of each member 42 has an outwardly facing internally threaded opening 64 that is adapted to receive the externally threaded portion of a nut 66. As is evident from FIG. 4, nut 66 has a portion of reduced diameter 68 that has essentially the same diameter of member 42, so that when the selected detent surface 60 is positioned against the member 42, the lower edges of the sidewalls 26 of the platform means 14 will bear upon member 42 and the nut surface 68 to retain the platform means in the selected position of angular adjustment. Notches 32 have a width that is slightly in excess of the diameter of members 42, so that when the members 42 are positioned at the end of the slots 56, the platform members 14 can be folded into compact nested relationship upon the braces 16. Nut 66 can be tightened to bear against the outer sidewall 16 of the platform means 14 to positively retain the platforms in the collapsed storage position.

What I claim is:

1. Calf exercising and developing apparatus comprising: platform means provided by a pair of units positioned alongside one another, each unit having an independent foot-engaging surface for supporting the weight of the user of the apparatus and for distributing the weight of the user over both of the units; connecting means securing said units to one another, said connecting means including a first member extending from one of said units toward the other of said units and a second member extending from the other of said units toward said one unit, and pivot means securing said members to one another for movement about a vertical axis, whereby the foot-engaging surfaces of said units can be moved from a position disposed in parallelism with one another to positions where said foot-engaging surfaces are disposed at different lateral angles with respect to one another; brace means engageable with the floor for stabilizing said platform means; separate means associated with each unit for independently adjusting the elevational angle of the platform means of each unit relative to said brace means, so that each of said platform means can be moved between an initial collapsed position and

a selected inclined position, whereby the slope of said foot-engaging surfaces can be varied as desired; and separate means associated with each unit for positively, yet releasably, retaining each of the platform means in the selected inclined position to provide a stable structure upon which exercises can be performed, said separate retaining means allowing the foot-engaging surfaces of said units to be positioned at different elevational angles, if desired.

2. Apparatus as set forth in claim 1 including means extending upwardly from said units providing a handgrip whereby the user of the apparatus can stabilize himself on said units.

3. Apparatus as set forth in claim 1 including means pivotally connecting said platform means to said brace means, so that said platform means and brace means can be folded relative to one another into internested relationship, whereby a compact structure is provided for storage purposes.

4. Apparatus as set forth in claim 3 in which said platform means includes a wall at each side thereof that extends downwardly from said foot-engaging surface, said brace means being defined by a U-shaped member having a central floor-engaging bight portion and spaced legs extending perpendicularly with respect to said central portion, each leg being pivotally connected to a wall of said platform means intermediate the length of the wall and each leg having a length adapted to position the central portion adjacent the end of the platform means when said platform means and brace means are folded into internested relationship.

5. Apparatus as set forth in claim 4 in which said adjusting means includes an opening in each sidewall of the platform means, a plurality of spaced openings in each leg of the brace means, each opening in one of the legs being aligned with a corresponding opening in the other of the legs, and means for impaling the openings in said legs and sidewalls when they are placed in registry, said retaining means cooperating with said impaling means to retain said impaling means in position.

6. Apparatus as set forth in claim 3 in which said platform means includes a wall at each side thereof that extends downwardly from said foot-engaging surface, said base means includes spaced-upright walls having said sidewalls pivotally connected thereto, and wherein said adjusting means includes slot means in at least one of said walls and a follower movable in said slot means to engage and support said platform means, said retaining means cooperating with said follower to return said follower to a selected position in said slot.

7. Apparatus as set forth in claim 6 wherein said retaining means includes a plurality of spaced detent surfaces in said slot means for positively locating and holding said follower.

8. Apparatus as set forth in claim 6 wherein said slot means is defined by an internal slot in at least one wall.

9. Apparatus as set forth in claim 6 wherein said slot means is defined by aligned, identically shaped slots in said upright walls.

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