

[54] **WEIGHT LIFTING TYPE EXERCISER WITH INDICATOR**

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73/379 R, 73/381, 272/68

[51] Int. Cl. ... A63b 1/00, A63b 21/06, A63b 21/00

[58] Field of Search 272/DIG. 5, 62, 63,
272/67, 68, 81, 57 R, 82, 83; 116/115, 124;
73/379 R, 380, 381

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[57]

ABSTRACT

An exercising apparatus for particularly exercising upper extremities of a person. The apparatus includes an upright frame and at least one weight plate vertically movable along the frame. A cable is connected at one free end to the weight plate, looped over a top end of the frame and over a guide roller adjacent a lower frame end. A chin-up bar is connected to the upper portion of the frame and extends laterally away therefrom for the performance of chin-ups while the other free end of the cable is connected to the body of the exercising person so that he must lift the weight plate during each chin-up. A counter is coupled with the apparatus for visibly indicating to the user the number of times he performs a given exercise.

8 Claims, 7 Drawing Figures

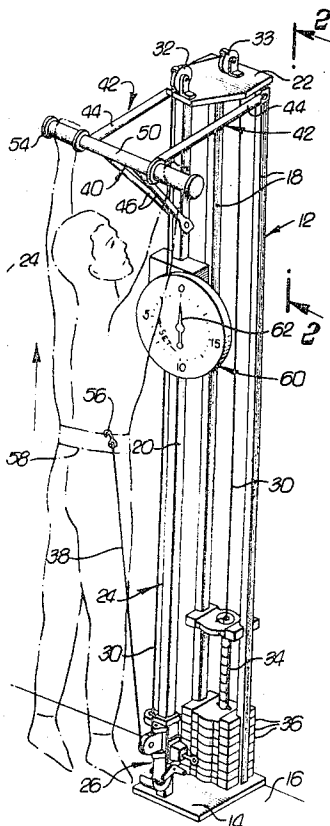


FIG. 2.

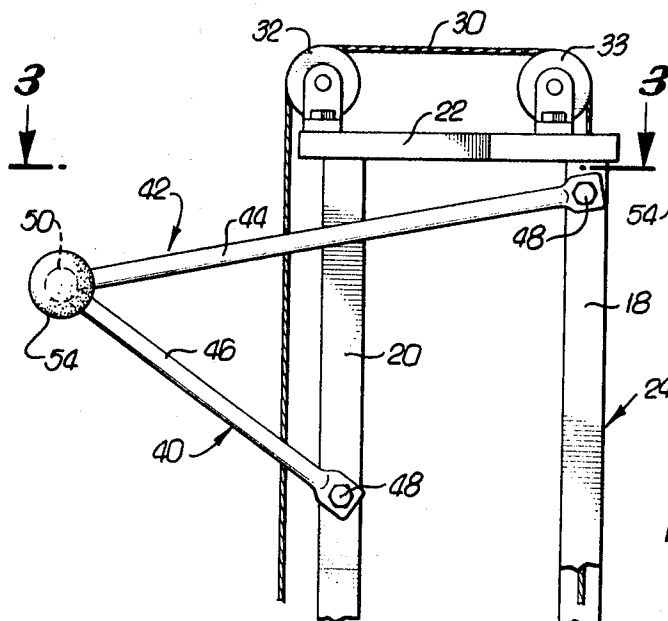


FIG. 1.

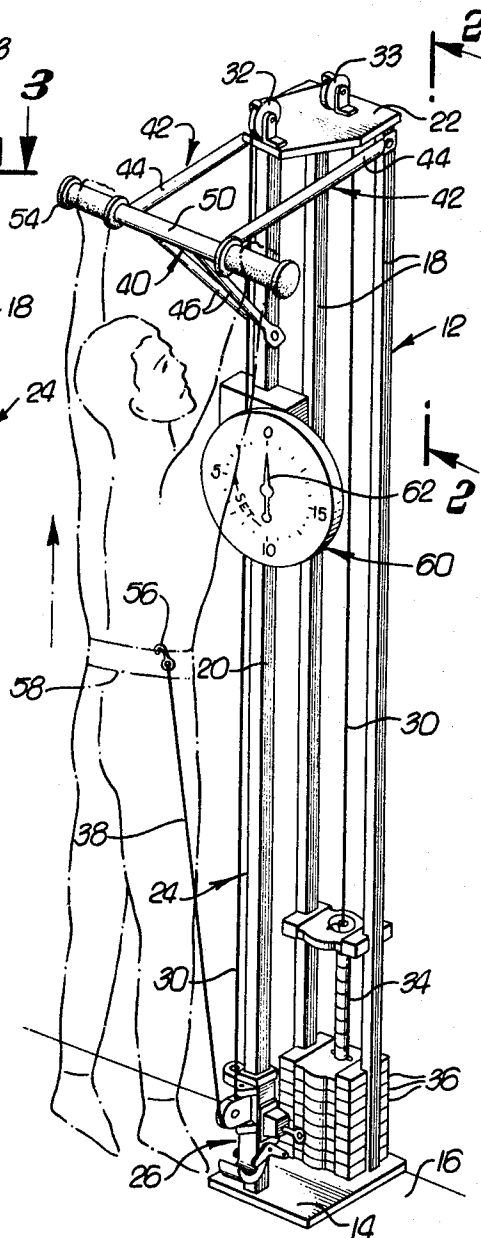


FIG. 3.

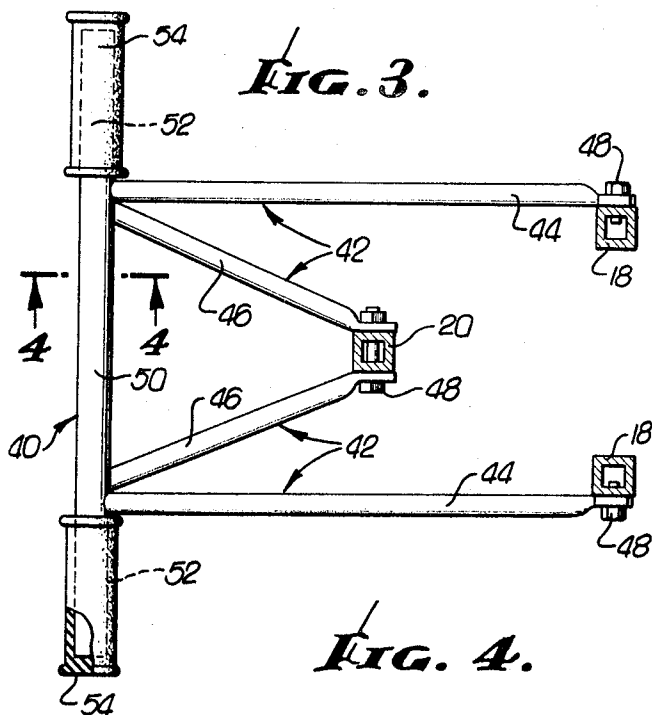


FIG. 4.

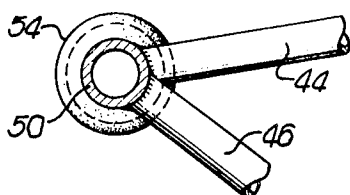


FIG. 5.

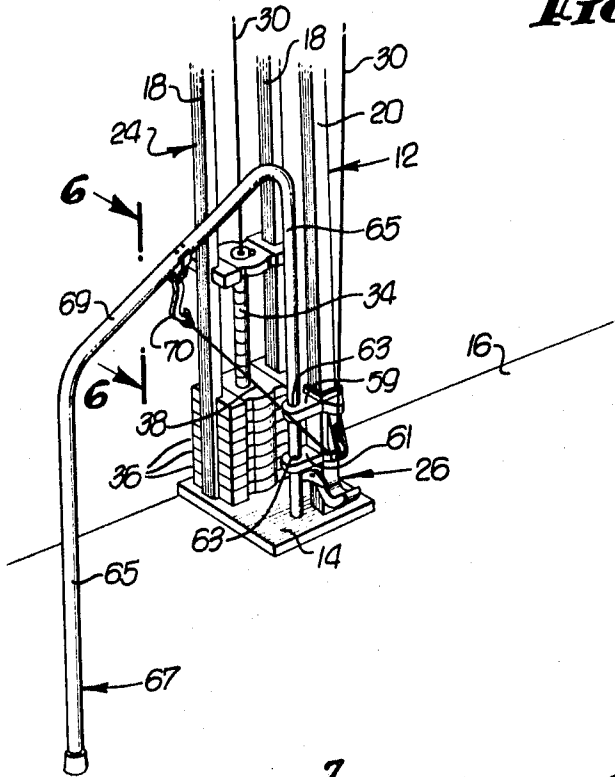


FIG. 7.

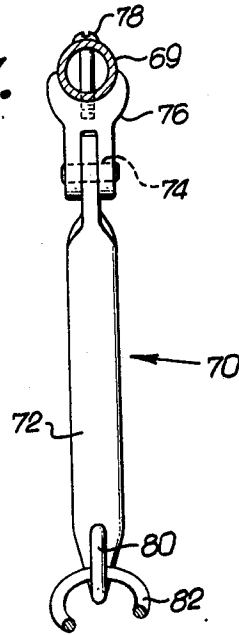
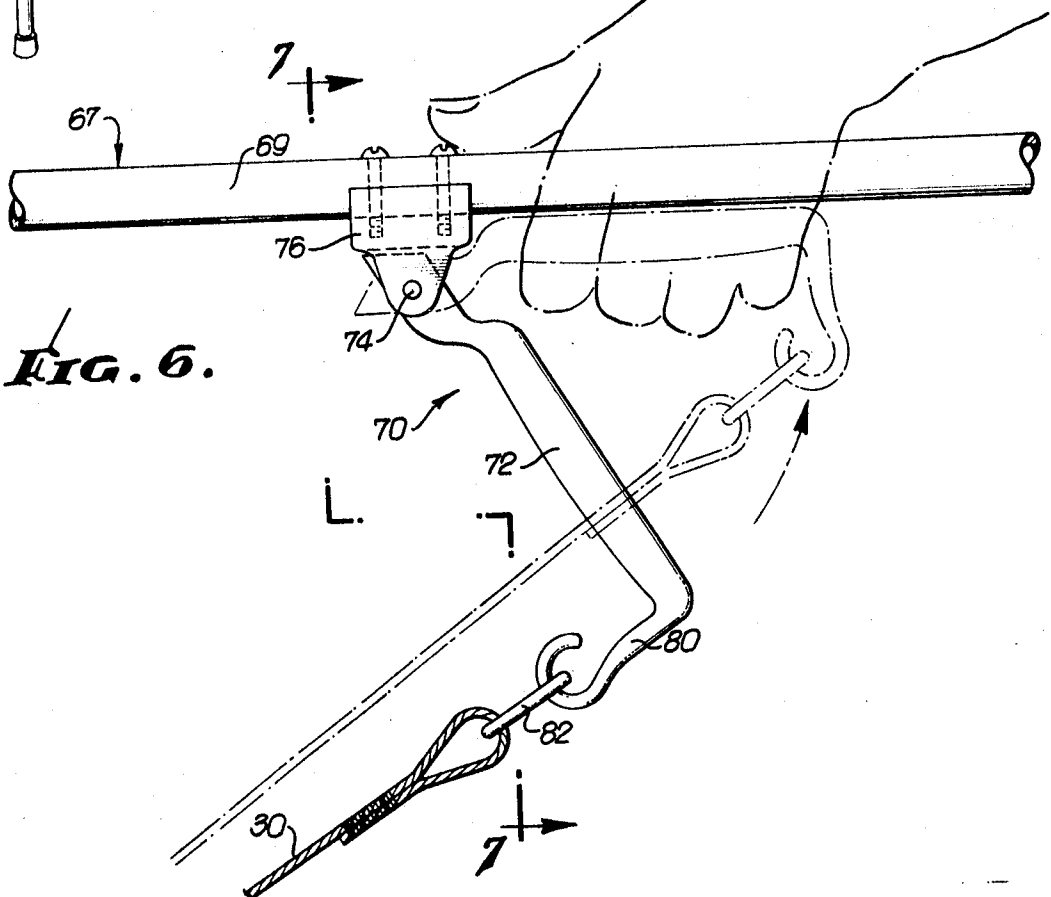


FIG. 6.



WEIGHT LIFTING TYPE EXERCISER WITH INDICATOR

BACKGROUND OF THE INVENTION

The present invention relates to the devices for human physical conditioning in which exercises are performed by pulling on a cable to lift weights.

Generally speaking, such a device is well known. It usually employ handle bars secured to an end of the cable which are pulled downwardly or upwardly for the performance of various exercises. It is also known to attach special fittings to the cable end to enable the grasping of that end with one hand only, to attach the cable end to the exerciser's leg or the like.

Exercisers of this type are constructed of an upright frame, preferably defined by a plurality of two spaced apart posts that rest on a support plate. Their upper end is joined with a suitable top plate. Weight plates engage one or more of the posts and are vertically movable therealong. A cable attached to the weight plates is looped over pulleys at the upper end of the frame and extends downwardly along a frame post and over a guide pulley mounted to a carriage vertically movable along that post so that the vertical position at which the free cable end extends away from the frame can be suitably adjusted.

Such exercising apparatus is convenient to use and quite effective to the extent it can be employed while exercising a human body. However, this type and variety of exercises that can be performed with such apparatus is limited. The relatively high cost of such apparatus together with their use limitations therefore frequently discourages people from acquiring such apparatus.

SUMMARY OF THE INVENTION

The present invention provides exercising apparatus of the type described in the preceding paragraphs which is constructed to enable the performance of additional exercises and thus significantly increase the versatility of the apparatus. It is particularly well adapted for exercising the musculature of upper body portions, including the arms and hands although other body portions can be exercised if desired. Briefly, the exercising apparatus of the present invention comprises an upright frame, at least one weight plate vertically movable along the frame, a cable having a first end for connection with the weight plate and a second free end and means carried by the frame for guiding the cable from the weight plate upwardly to a top portion of the frame and hence downwardly towards a lower portion of the frame for extension of a cable portion adjacent the second end away from the lower frame end. Attachment means is mounted to the frame including gripping means for grasping with at least one hand of the person. Means is further provided for the transfer of motions of upper extremities of the exercising person to the second cable end whereby such motions are transferred to the first cable end and cause a corresponding vertical displacement of the weight plate.

In the preferred embodiment of the invention, means operatively coupled to the cable is provided and mounted to the upright frame in plane view of the exercising person for counting the number of times the cable has been operated to raise the weight plate. This facilitates the ease with which the exercising person can control the extent of his exercise.

The attachment means provided by the present invention can be readily installed on existing exercisers to thus increase their versatility. This together with their relatively low cost substantially enhances the attractiveness of the described exercising apparatus to the general public and thus facilitates their wide-spread use.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an elevational perspective view of an upright weight lifting exerciser provided with a chin-up attachment and a cycle counter in accordance with the present invention;

FIG. 2 is a fragmentary, enlarged side elevational view of the chin-up attachment as seen in the direction 2-2 of FIG. 1;

FIG. 3 is a plan view, in section, of the chin-up attachment and is taken on line 3-3 of FIG. 2;

FIG. 4 is an enlarged, fragmentary side elevational view of a portion of the chin-up attachment and is taken on line 4-4 of FIG. 3;

FIG. 5 is a fragmentary side elevational view of a lower portion of the weight lifting exercising apparatus fitted with a stabilizing bar and hand grip exercising device constructed in accordance with the present invention;

FIG. 6 is an enlarged, fragmentary side elevational view in the direction 6-6 of FIG. 5 and shows, in phantom lines, a second position of the grip device; and

FIG. 7 is a fragmentary side elevational view of the hand grip device and is taken on line 7-7 of FIG. 6.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring first to FIG. 1, the exercising apparatus 12 of the present invention comprises a base 14 which is preferably secured, e.g. bolted to the supporting floor 16, a pair of spaced apart rear vertical posts 18, a forward vertical post 20 and a top plate 22 interconnecting the posts to form a rigid upright frame 24. A carriage 26 is vertically movable along forward post 2 and provides a guide pulley 2 over which a cable 30 is looped. The cable extends generally upwardly from guide pulley 28, over a pair of stationary pulleys 32, 33, mounted to top plate 22, and hence downwardly towards base 14. At the lower end of the cable there is mounted a connecting member 34 for interconnecting the cable with one or more of a plurality of vertically stacked weight plates 36 resting on base 14 for movement of the connected plates with the cable in an axial direction of the cable along rear posts 18 in a vertical direction whenever an axial cable force is applied to a free cable end portion 38 extending away from carriage 26.

Referring to FIGS. 1 through 4, a chin-up device 40 is mounted to the upper end of frame 24. The device comprises laterally spaced sets 42 of first and second legs 44 and 46, respectively, which have their aft ends secured to rear posts 18 and front post 2, respectively, with threaded bolts 48. The forward end of the legs is welded to a horizontally disposed, transverse handle bar 50 to define a rigid, unitary attachment for exercising apparatus 12 and which extends past leg sets 42 to define gripping portions 52. Grip members 54 constructed of rubber, plastic or a like material is slipped over handle bar gripping portions 52 and facilitates the

secure grasping of the gripping portions by the hands of an exercising person.

Chin-up device 40 is so mounted to the upper end of frame 24 that gripping portions 52 are sufficiently high above ground 16 to require the exercising person to stretch his arms before he can reach the gripping portions. Adjustability can be provided by including a plurality of vertically spaced bars for threaded bolts 48 to adjust the vertical position of the gripping portions according to the height of the exercising person.

The free end of cable 30 is provided with a suitable hook 56 for engaging a belt 58 or the like of the exercising person so that during each chin-up he must raise weight plates 36.

A cycle indicator 60 is preferably mounted to forward post 20 and operatively connected with cable 30 so that a pointer 62 of the indicator is advanced an increment each time the exercising person completes an exercising cycle by lifting and lowering weight plates 36. Such a cycle indicator is disclosed in the commonly owned, copending patent application bearing Ser. No. 37,553, filed May 15, 1970, for EXERCISER which is incorporated herein by reference. The detailed construction of the cycle indicator is therefore not further set forth herein.

Referring to FIGS. 5 through 7, carriage 26 includes a pair of vertically spaced, laterally projecting horizontal flanges 59 and 61 which have vertically aligned apertures 63 through which a vertical leg 65 of the balancing bar 67 extends. The balancing bar includes a substantially horizontally disposed, or slightly downwardly sloped, transverse or horizontal member 69 which can be grasped by an exercising person. When not needed the balancing bar is virtually instantaneously removed from the exercising device by simply withdrawing it from apertures 63.

A grip exercising device 70 is mounted to horizontal member 69 of the balancing bar about midway between upright legs 65 thereof. The hand exercising device comprises a grip handle 72 one end of which is pivotable about a pin 74 of a mounting block 76 secured to the underside of horizontal bar 69 with a pair of threaded bolts 78. The other end of the handle defines a hook portion 80 engaged by a suitable connecting link 82 of the free end of cable 30. Weight plate 36 applied to the other end of cable 30 biases grip 72 in a clockwise direction, as viewed in FIG. 6 away from horizontal member 69.

An exercising person can thus balance himself with balancing bar 67 and at the same time perform arm and hand musculature exercises by grasping grip 72 and repeatedly pivoting it in a counterclockwise direction as viewed in FIG. 6, into its position (shown in phantom lines) adjacent horizontal member 69 of the balancing bar and, thereafter, again releasing the grip. The earlier described cycle indicator (not shown in FIGS. 5 through 7) is again utilized to keep track of the number of exercising cycles performed by the exercising person.

The attachments provided by the present invention, namely chin-up devices 40 and hand exercising device 70 do not alter the basic operating principle of exerciser 12 as fully described in the above referenced copending patent application. When, however, in the course of a complete exercising program arm and hand musculature exercise and particularly chin-ups or gripping exercises are called for, they can be performed on

exerciser 12 by employing the vertical weight lifting feature built into this exerciser by merely connecting the free end of cable 30 to the belt or the like of the exerciser's clothing in the case of chin-up exercises, or to hook portion 80 of grip 72 in case of hand exercises. The cycle indicator helps the exerciser to pace and count his exercises. After completion of these exercises, the exerciser can again be employed for any other desired exercise that can be performed with it.

I claim:

1. An exercising apparatus for particularly exercising the musculature of an upper portion, including upper extremities of an exercising person, the apparatus comprising: an upright frame, at least one weight plate vertically movable along the frame, a cable having a first free end connected to the weight plate and a second free end, means carried by the frame for guiding the cable from the weight plate upwardly to a top portion of the frame and hence downwardly towards a lower portion of the frame for extension of a cable portion adjacent the second end away from the lower frame end, gripping means rigidly secured to the frame adjacent an upper end thereof at a sufficient height from a supporting ground to enable a person to hang therefrom without touching the ground, and means for securing the second free end to a user so that while grasping the gripping means, which is cantilevered from the upper end of the upright frame, any body raising motions by a user spaced from and whose position during an exercise program is substantially parallel to the upright frame, will be transferred to the first free end and cause vertical displacement of the weight plate.

2. Apparatus according to claim 1 including means demountably securing the gripping means to the frame.

3. Apparatus according to claim 2 including means for securing the gripping means to an upper portion of the frame.

4. Apparatus for exercising body musculature by vertically displacing a weight comprising: an upright frame including a body support surface, the frame terminating in an upper end spaced several feet above ground, a weight plate vertically movable along the frame, cable means having a first and second free end, said first free end engageable with the weight plate, cable guide means for guiding the cable means from the weight plate to adjacent the body support surface, said body support surface comprising a pair of spaced apart handles cantilevered from the upper end of the upright frame, means for immovably securing the handles to the frame adjacent the upper end of the frame at a position spaced above the ground a sufficient distance so that a person must stretch overhead to grasp the handles, and means attached to the second free end of the cable means for securing said second free end to a user whereby any upward movement of a user spaced from and whose position during an exercise program is substantially parallel to the upright frame, during an exercise program will cause an upward movement of the weight plate.

5. Apparatus according to claim 4 wherein the frame further includes substantially vertical, spaced apart forward and rear posts, wherein the cable guiding means guides the cable means in a generally vertical direction along the forward post to adjacent the body support surface, the handle securing means comprising a laterally extending support structure projecting in the direction from the rear post, remote from the user, to the

forward post, immediately adjacent a user, past the forward post and terminating in spaced apart ends, and including a substantially horizontally disposed bar member rigidly interconnecting the ends, and said bar member having laterally protruding end sections defining the handles.

6. Apparatus according to claim 5 including means for visibly indicating to the exercising person the number of chin-ups performed by him, said last mentioned means being carried by the frame, operatively connected with the cable means, and a user.

7. In an apparatus for exercising musculature by vertically lifting a weight, the apparatus having an upright frame mounted to a support plate, at least one weight plate guided by the frame for vertical movement therealong, a cable having a first free end connected to the weight plate, a cable payout carriage movable along the frame in a vertical direction, cable guide means guiding the cable from the weight plate over an upper frame portion and into engagement with the carriage so that a second free end of the cable depends from the carriage, the improvement comprising: a chin-up attachment including a support frame for connection to an

upper end of the frame, a horizontally extending handle bar cantilevered from the upper end of the upright frame defining first and second hand grip portions, the support frame and the handle bar being constructed so that the grip portions are disposed a sufficient distance above ground that an exercising person must stretch his arms upwardly for grasping the grip portions, and means for connecting the second free cable end to a user's body so that any upward movement by a user spaced from and whose position during an exercise program is substantially parallel to the upright frame while grasping the gripping portion, while the second free end cable end is connected to a user's body, will cause the weight plate to be moved vertically.

8. Apparatus according to claim 7 wherein the frame comprises a pair of spaced apart rear posts and at least one front post spaced from the rear posts, wherein the support frame includes a pair of laterally spaced sets of first and second legs secured to the rear and front posts, respectively, and wherein the handle bar forms a rigid connection between free ends of the first and second legs sets to thereby form a rigid chin-up attachment.

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