April 12, 1960 H. ZINKIN 2,932,509

BODY EXERCISING APPARATUS

Filed Aug. 2, 1957 3 Sheets-Sheet 1

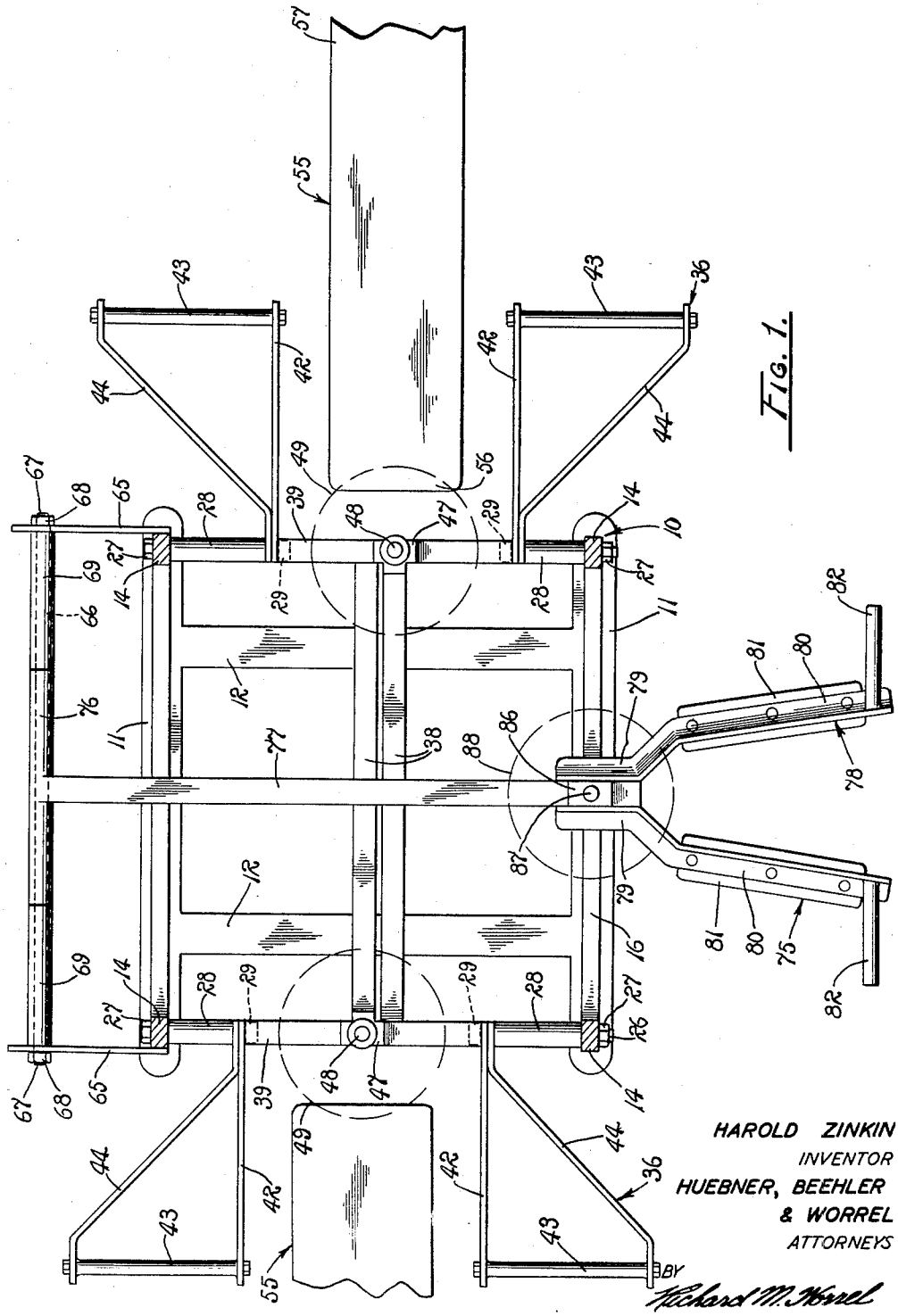


FIG. 1.

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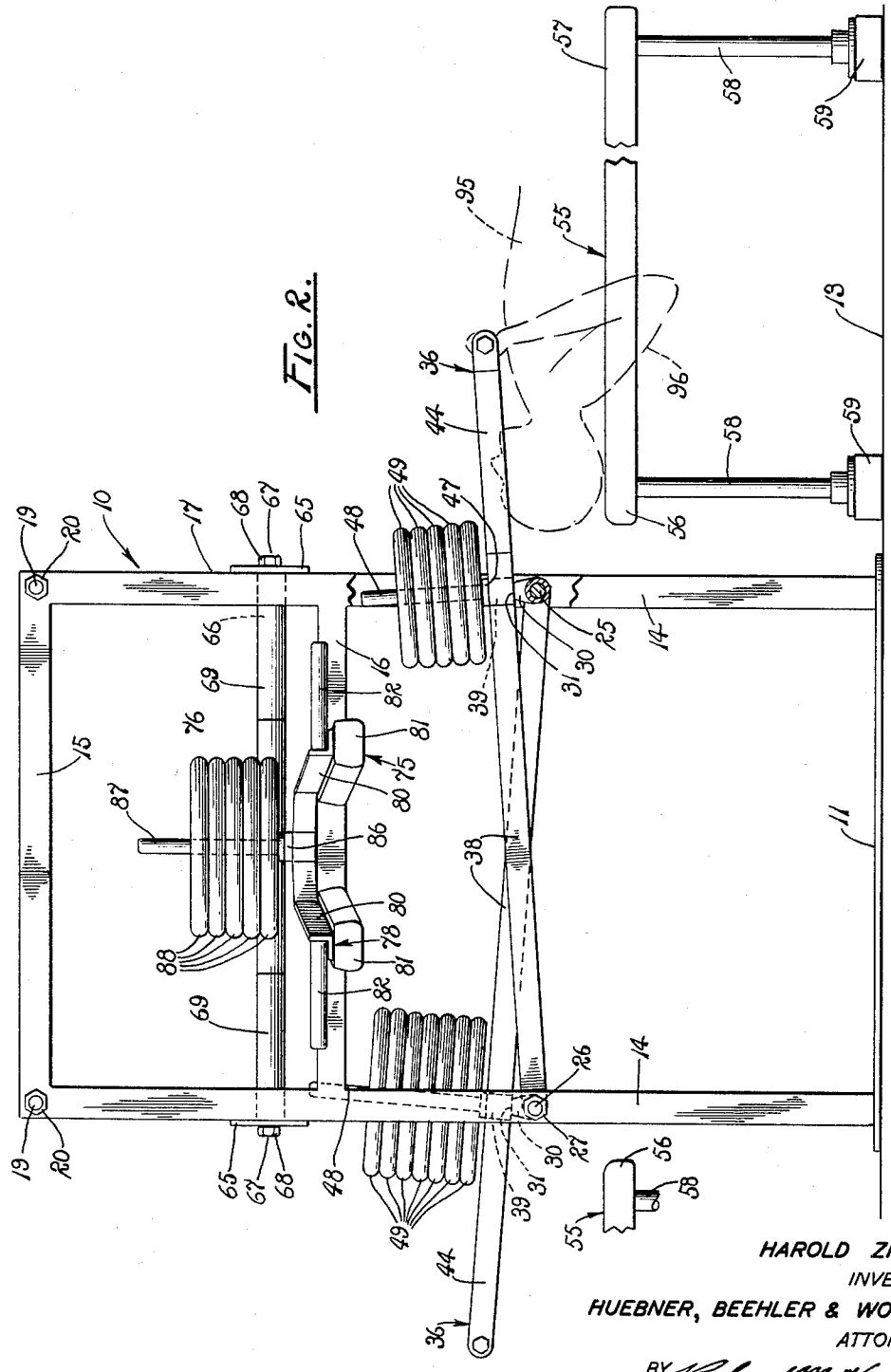
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BODY EXERCISING APPARATUS

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FIG. 2.



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BODY EXERCISING APPARATUS

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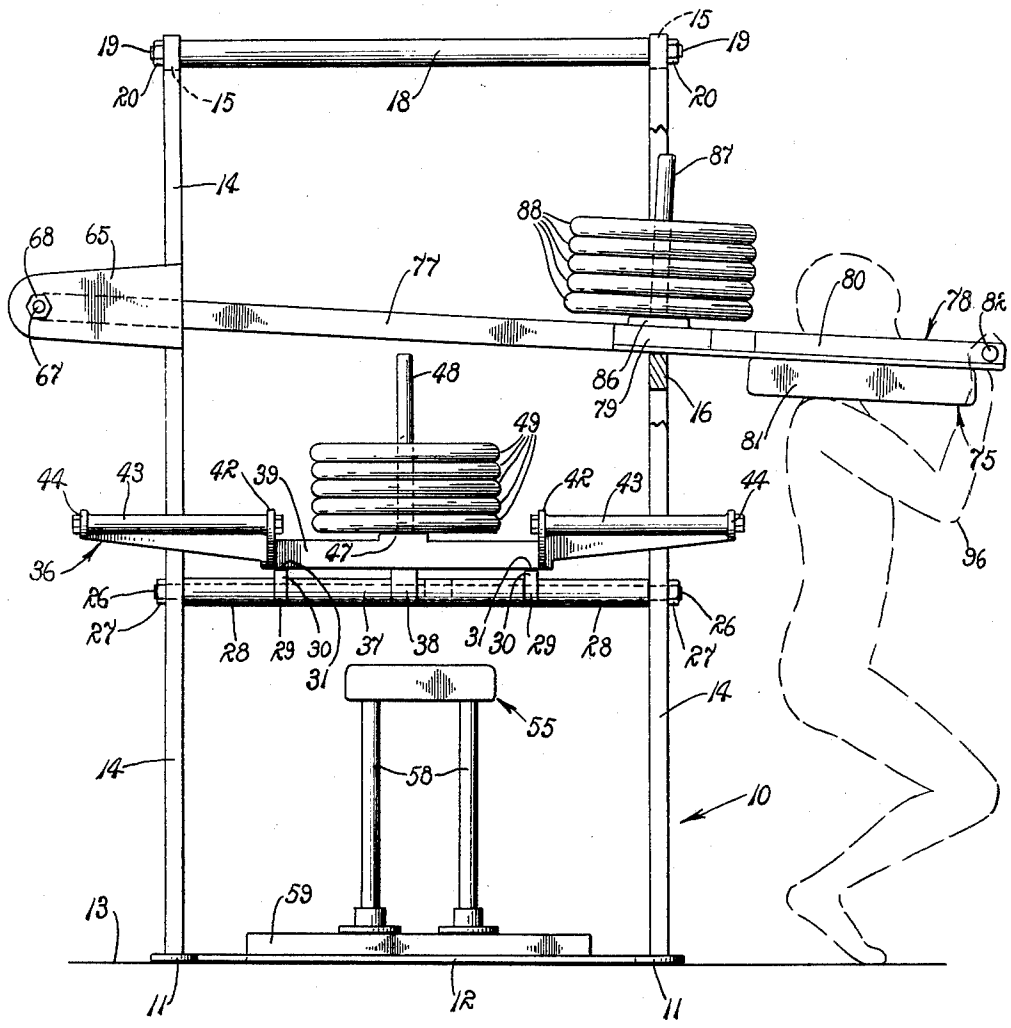


FIG. 3.

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2,932,509

BODY EXERCISING APPARATUS

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Application August 2, 1957, Serial No. 675,841

8 Claims. (Cl. 272—58)

The present invention relates to a body exercising apparatus and more particularly to such a device for exercising certain selected muscles of the body in a safely controlled manner so as to avoid undue strain and the hazards incident thereto.

The apparent connection between bodily ills and sedentary occupations, the objectionable appearance of obesity, and the popular emphasis on the values of exercise in the promotion of physical fitness have led to a re-emphasis of the advantages of regular physical exercise. So that the exercise may be properly suited to the individual needs, professional planning of exercise schedules and guidance in their performance are highly desirable. Many who undertake planned exercise have previously become so lacking in muscle tone and condition that very gradual and careful re-conditioning is required.

It is well-known to employ weights for muscle and general body building. For the trained athlete or comparatively physically fit, bar bells and dumbbells are excellent equipment for weight lifting exercises. For the inexperienced however, this equipment is sometimes difficult and even dangerous to use. Furthermore, it is sometimes desirable but difficult to concentrate exercise on only certain muscles at a time with conventional weight lifting apparatus. Because of the difficulty of balancing and/or strain of holding a bar bell over the head, many people are discouraged from using it or do not obtain the full benefits of arm exercise which should be derived. Sometimes, a bar or dumbbell is dropped because of muscular fatigue or cramps, or because too much weight has been lifted, thereby causing injury to the user.

Accordingly it is an object of the present invention to provide an improved body exercising apparatus.

Another object is to provide a device for exercising selected muscles of the body without imposing undue strain or causing rupture of these muscles or other parts of the body.

Another object is to provide body exercising devices which are safer to use.

Another object is to enable persons in relatively poor physical condition to exercise the muscles gradually and under accurately controlled conditions.

Another object is to provide a weight lifting apparatus which avoids the strains, hazards, and balancing problems incident to the use of conventional weight lifting apparatus, such as bar bells and dumbbells.

Another object is to provide a body exercising apparatus adapted for group workouts under professional guidance.

Another object is to provide a body exercising apparatus which is adjustable to provide more or less exercise for those of different physical conditions.

Another object is to provide a body exercising apparatus particularly adapted for exercising the arm muscles and which provides the type of action best suited for developing and strengthening the muscles.

Another object is to provide an exercising device which has a wide range of movement.

Other objects are to provide an exercising apparatus of the nature described which is simple and economical to construct and use, durable in structure, dependable in operation, and which is highly effective for accomplishing its intended purposes.

These, together with other objects, will become more fully apparent upon reference to the following description.

In the drawings:

Fig. 1 is a top plan view of a body exercising apparatus embodying the principles of the present invention with portions thereof shown fragmentarily.

Fig. 2 is a fragmentary side elevation of the exercising apparatus of Fig. 1 showing fragmentarily in dashed line a person exercising with a part of the apparatus.

Fig. 3 is also a side elevation of the apparatus of Fig. 1 but taken at a position 90° displaced from Fig. 2 and also showing a person in dashed line exercising with another portion of the apparatus.

Referring more particularly to the drawings, a supporting structure or framework 10 includes a pair of spaced, parallel flat longitudinal base members 11 interconnected by a pair of spaced parallel transverse flat base members 12. The base members are adapted to rest in substantially horizontal position on a floor indicated at 13. The framework also includes a plurality of rectangularly arranged corner posts 14 having lower ends secured to the longitudinal base members and being upwardly extended from the base members. As best seen in Fig. 2, pairs of the corner posts are rigidly interconnected at their upper ends by spaced parallel longitudinally extended upper beams 15, and spaced longitudinally extended intermediate beams 16 below the upper beams. The interconnected posts, and their respective upper and intermediate beams form A-frames 17. As best seen in Fig. 3, the A-frames are releasably interconnected in spaced parallel relation by a pair of transversely extended beams 18 having opposite threaded ends 19 extended through the upper ends of the corner posts. Nuts 20 are screw-threadably mounted on the outwardly extended ends of the transverse beams and tightened downwardly against the posts. It will be evident that the described construction forms a highly durable and rigid framework.

Elongated cylindrical rigid shafts 25 are transversely extended between the corresponding posts 14 of the A-frames 17 in individually spaced parallel relation below the upper transverse beams 18. The shafts have oppositely extended threaded ends 26 extended through the posts, and nuts 27 are releasably screw-threadably turned on such ends into tight engagement with the posts. The shafts are thus mounted in substantially horizontal positions and in a common horizontal plane, as best seen in Fig. 2. End spacer sleeves 28 are fitted on opposite ends of the shafts adjacent to the posts and provide inner ends in longitudinally spaced relation. Collars 29 are also fitted on the shafts adjacent to the inner ends of the sleeves. The collars have upwardly extended bosses 30 providing upper abutment surfaces 31 disposed in a substantially common horizontal plane.

Arm exercising frames 36 provide elongated cylindrical tubes 37 extended transversely of the framework 10 and individually rotatably journaled on the shafts 25 intermediate the collars 28, as best seen in Figs. 1 and 3. Each exercising frame also has an elongated rigid bar 38, preferably of square stock, having an inner mounting end rigidly secured to the inwardly disposed side of one of the tubes 37 and radially extended inwardly of the framework. Each bar has an oppositely extended end terminating adjacent to the shaft 25 opposite to the shaft on which its mounting end is connected. It is to be noted that the bars extend in opposite directions and alongside of each other, as best seen in Fig. 1. Elon-

gated rigid cross members 39 are individually secured in right angular relation to the terminal ends of the bars 38 in parallel relation to and above the shafts 25 adjacent thereto. The bars are thus mounted for individual elevational pivotal movement on the shafts 25 around horizontal axes coaxial with the shafts between lower positions with their respective cross members rested on the abutment surfaces 31 of the collars 29, and upper positions raised out of engagement with said collars.

The arm exercising frames 36 also include pairs of opposed spaced parallel arms 42 having inner ends rigidly connected to the opposite ends of the cross members 39 and outer ends radially outwardly extended therefrom in substantially coplanar relationship with their respective bars 38. Elongated, preferably cylindrical handles 43 have inner ends rigidly connected to the outer ends of the arms and outer ends outwardly extended from the arms in perpendicular relation thereto. The handles are coaxial with each other and also are in substantially the same plane as their respective bars 38. Diagonal braces 44 rigidly interconnect inner ends of the arms and the outer ends of the handles.

Still further, the cross members 39 have upper protuberances 47 thereon, and elongated rigid pins 48 are secured to these protuberances and upwardly extended from the cross members. One or more substantially circular weights 49 providing central bores are releasably fitted over the pins and rested on the protuberances thereby to impose a downward bias on the arm exercising frames 36.

Elongated, subsstantially rectangular tables 55 provide inner head ends 56 respectively positioned between the arms 42 of the exercising frames 36 on opposite sides of the framework 10. The tables also have outwardly extended foot ends 57. The tables are preferably longitudinally aligned with the bars 38 of their respective exercising frames 36, as best seen in Fig. 1. The tables are supported in substantially horizontal positions by means of downwardly extended legs 58 having blocks 59 on their lower ends rested on the floor 13. The tables are supported at elevations just below the shafts 25 so that the arm exercising frames 36, in their lower positions of engagement with the collars 29, extend outwardly over the tables but in upwardly spaced relation thereto, as best seen in Fig. 2.

With particular reference to Fig. 3, a pair of spaced parallel panels 65 is rigidly connected to the corner posts 14 of one of the A-frames 17 and outwardly extended from the framework. An elongated shaft 66 provides opposite threaded ends 67 extended through the panels and supported thereby in a horizontal position parallel to the upper longitudinal beams 15. Nuts 68 are screw-threadably fitted on the opposite ends of the shaft 66 and tightly turned into engagement with the panels. A pair of end spacer sleeves 69 is fitted on opposite ends of the shaft inwardly of the panels, as best seen in Fig. 1.

A back and leg exercising frame 75 includes an elongated cylindrical tube 76 rotatably journaled on the shaft 66 between the spacer sleeves 69, and an elongated, rigid pole 77 secured to the tube and rigidly radially extended therefrom inwardly of the framework 10. The pole extends transversely outwardly of the opposite side of the framework above the opposite intermediate longitudinal beam 16. A yoke 78 is connected to the extended end of the pole and provides a pair of ears 79 on opposite sides of the pole, and a pair of spaced divergent legs 80 outwardly extended from the ears and in a substantially common plane with the pole and the tube 76. U-shaped cushions 81 are secured to the underside of the legs 80. Substantially coaxial handles 82 are rigidly extended from the legs and are also in a common plane with the pole. The back and leg exercising frame is thus mounted for elevational pivotal movement around a substantially horizontal axis defined by the upper shaft 66 between a lower position with the pole 77 rested on the intermediate and longitudinal beam and a position raised upwardly from said beam.

The pole 77 is provided with a protuberance 86 at a position longitudinally thereof above the intermediate beam 16, and an elongated rigid pin 87 is upwardly extended therefrom. One or more circular weights 88 having central bores are fitted downwardly of the pin and rest on the protuberance.

Operation

The operation of the described embodiment of the subject invention is believed to be readily apparent and is briefly summarized at this point.

A person desiring to obtain concentrated exercise on his arm and chest muscles reclines in a supine position on one of the tables 55, as indicated at 95, so that his head is at the inner end 56 and his feet are at the outer end 57. Further, it is to be noted that the head of the person is located between the spaced arms 42. The handles 43 are conveniently positioned to be grasped in the hands. Thereupon the exercise frame 36 is raised out of engagement from the collars 29 and lowered at a speed and for a number of times depending upon the capabilities of the user. Because the frame is pivoted on the shaft 25, the hands of the user move along an arcuate path. This type of exercising movement develops and strengthens the muscles much better than a straight up and down path of movement of the hands such as would be effected by use of a bar bell, for example. In addition, because the frame is constructed to accommodate the head and body of the user, there is a very wide range of action. By increasing the height of the table 55, or by lowering the shafts 25, it is possible to bring the lowermost position of the handles 43 in substantially the same horizontal plane as the table, or even lower below the table, if desired. Thus, the exercising arc of the frame may extend both above and below the user. Again, this is contrasted with the conventional bar bell which must necessarily always extend above the chest even in its lowermost position if employed in the usual manner.

The number of weights 48 can be varied depending upon the amount of exercise desired, as will be evident. Use of the arm exercising frame 36 enables concentration of the exercise on the arm and chest muscles without imposing undue strain, fatigue, or causing rupture to other parts of the body. Furthermore, if at any time the user desires to rest, the frame can be lowered into engagement with the collars 29. Even if the user is unable gently to lower the frame, there is no danger that either the frame or the weights 49 will fall and injure him. It is to be observed that the shaft 25, or pivot member, of one arm exercising frame 36 serves as the lower limit for the other arm exercising frame, and vice versa.

If it is desired to concentrate exercise on the back and leg muscles, a person, such as indicated at 96, stands with his back to the framework 10 and places the legs 80 of the yoke 78 on his shoulders, with his neck extending upwardly between the legs. The frame 75, when rested on the intermediate beam 16, is at such an elevation as to require the exerciser initially to assume a slightly squat position. The user then grasps the handles 82 and gradually lifts the weights 88 on the frame 75 by pivoting the frame around the shaft 66 thereby raising the frame off from the intermediate beam. The lifting is done with the shoulders and not the hands, the handles 82 serving merely as convenient hand rests and balancers. As before, the user can raise and lower the frame as fast or as many times as he is capable or as are intended according to a planned schedule. The weights 88 can be adjusted according to the needs of the person exercising. Further, if at any time the user has a cramp or becomes fatigued while the frame 75 is raised, he need only relax and allow the frame to drop into engagement with the intermediate beam 16. Again, there is no danger of the weights falling and injuring the person using the device.

It is to be understood that the manner of weighting either of the exercising frames 26 or 75 is not limited to the means illustrated and described. It will be apparent to those skilled in the art that many other means for applying a downward bias on the frames can be utilized.

From the foregoing it will be evident that a highly effective body exercising apparatus has been provided. It is especially suited for use by those requiring considerable body building exercises but is also adapted for use by those who are relatively physically fit. It is of especial significance that the device enables concentration of exercise on selected muscles of the body and does not impose serious strain or fatigue on the body. Furthermore, the dangers inherent in the use of conventional weight lifting apparatus are avoided.

Although the invention has been herein shown and described in what is conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of the invention, which is not to be limited to the details disclosed herein but it is to be accorded the full scope of the claims so as to embrace any and all equivalent devices and apparatus.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An apparatus for exercising the arm, chest and other upper extremity muscles of the body comprising an elongated body support providing a surface mounted in a substantially horizontal position having a head end, a foot end oppositely extended from the head end, and being adapted to support a human body in supine position with the head and feet at said head and foot ends of the surface, respectively; an upstanding framework adjacent to the head end of the support surface; an elongated substantially horizontal shaft mounted in the framework; a tube journaled on the shaft; a bar connected to the tube and rigidly radially extended inwardly of the framework; a cross member transversely secured to the bar in substantially parallel relation to the shaft, the bar being elevationally pivotal on the shaft for movement between upper and lower positions; arms rigidly outwardly extended transversely of the cross member and in longitudinally spaced parallel relation therealong on opposite sides of the head end of the body support surface; a pin rigidly upwardly extended from the cross member; weight means releasably slidably fitted on the pin and rested on the cross member; and coaxial handles rigidly outwardly extending from the arms transversely of the support surface and parallel to the shaft for grasping in the hands of an exerciser lying on the support surface to raise and lower the bar and the weight means borne thereby.

2. An apparatus for exercising the arm, chest and other upper extremity muscles of the body comprising an elongated table mounted in a substantially horizontal position having a head end, a foot end oppositely extended from the head end, and being adapted to support a human body in supine position with the head and feet at said head and foot ends of the table, respectively; an upstanding supporting framework adjacent to the head end of the table; a pair of elongated substantially horizontal shafts mounted in horizontally spaced positions in the framework above the level of the table; longitudinally spaced collars mounted on the shafts having upper abutment surfaces; tubes individually journaled on the shafts between the collars; bars individually connected to the tubes and rigidly radially extended inwardly of the framework in opposite directions alongside of each other; cross members individually transversely secured to the bars in substantially parallel relation to and above the shaft opposite to the shaft on which its respective bar is journaled, the bars being elevationally pivotal on the shafts for movement between lower positions with the cross members rested on the abutment surfaces of their respectively adjacent collars and upper positions raised off from the collars; arms rigidly outwardly extended transversely of the cross members and in longitudinally spaced parallel relation therealong on opposite sides of the head ends of their respectively adjacent tables; pins rigidly upwardly extended from the cross members; weight means releasably slidably fitted in the pins and rested on the cross members; and coaxial handles rigidly outwardly extended from the arms in substantially perpendicular relation to the tables and parallel to the shafts for grasping in the hands of exercisers lying on the table to raise and lower the bars and the weight means borne thereby.

3. A body exercising apparatus comprising an elongated substantially horizontal table having a predetermined head end and a foot end, an elongated bar extended from the head end of the table in substantial alignment therewith and having an end adjacent to the table and an opposite end, means pivotally mounting the extended end of the bar for pivotal movement about a substantially horizontal axis transversely of the table and in spaced relation to the head end thereof whereby elevational movement of the bar causes the end thereof adjacent to the table to describe an arc with its concave side disposed toward the table, a pair of handles aligned transversely of the table, means rigidly mounting the handles on the bar for integral pivotal movement therewith, stop means engageable with the bar limiting downward travel of the handles to positions in upwardly spaced relation to the table, and means connected to the bar resistive to upward pivotal movement thereof.

4. A body exercising apparatus comprising an elongated substantially horizontal table adapted to support a person in supine position thereon having a predetermined head end and foot end, a framework adjacent to the head end of the table, an elongated bar pivotally mounted in the framework in substantial alignment with the table for movement about a substantially horizontal axis transversely of the table in spaced relation to the head end thereof and said bar being extended toward the table, a pair of handles rigidly mounted on the bar and disposed on opposite sides of the head end of the table, said bar terminating short of the table and leaving the area above the head end thereof free from obstruction, adjustable weight means borne by the bar, and a stop mounted in the framework engageable with the bar limiting downward pivotal movement thereof to a position with the handles disposed at an elevation above the table.

5. An exercising apparatus comprising a pair of elongated substantially aligned horizontal spaced tables, a framework mounted between the tables, a pair of elongated substantially horizontal shafts mounted in substantially horizontally spaced positions in the framework above the level of the tables, each being adjacent to an end of a table and transversely disposed thereto, a pair of elongated frames substantially longitudinally aligned with the tables, said frames being individually pivotally mounted on the shafts and each having an end extended transversely above the shaft opposite to that on which said frame is mounted, each of said frames including a pair of handles integral with the extended end of their respective frame disposed at opposite sides of the table adjacent to the shaft above which said end is transversely extended, and stop means mounted on each shaft engageable with the end of the frame extended transversely thereabove to limit downward pivotal movement of such frame.

6. An exercising apparatus comprising a pair of elongated substantially aligned horizontal spaced tables, a framework mounted between the tables, a pair of elongated substantially horizontal shafts mounted in substantially horizontally spaced positions in the framework above the level of the tables, each being adjacent to an end of a table and transversely disposed thereto, a pair of elongated frames substantially longitudinally aligned with the tables, said frames being individually pivotally mounted on the shafts and each having an end extended transversely above the shaft opposite to that on

which said frame is mounted, each of said frames including a pair of handles integral with the extended end of their respective frame disposed at opposite sides of the table adjacent to the shaft above which said end is transversely extended, and means mounted on each frame adjustably resistive to upward pivotal movement thereof.

7. An exercising apparatus comprising a pair of elongated substantially horizontal aligned endwardly spaced tables, a framework mounted between the tables, a pair of elongated substantially horizontal shafts mounted in horizontally spaced positions in the framework above the level of the tables, each being adjacent to an end of a table and transversely disposed thereto, a pair of elongated frames substanitally longitudinally aligned with the tables in elevationally spaced relation thereto, said frames being individually pivotally mounted on the shafts and each having an end extended transversely above the shaft opposite to that on which said frame is mounted, each of said frames including a pair of handles integral with the extended end of their respective frame disposed at opposite sides of the table adjacent thereto, stop means mounted on each shaft engageable with the end of the frame extended transversely thereabove to limit downward pivotal movement of such frame, and adjustable weight means borne by each frame at its extended end.

8. An apparatus for exercising the arms, chest and other upper extremity muscles of the body comprising a pair of elongated tables mounted in substantially horizontal positions having adjacent head ends, foot ends oppositely extended from the head ends, and adapted to support a person in supine position thereon; an upstanding framework between the head ends of the tables; a pair of elongated substantially horizontal shafts mounted in horizontally spaced positions in the framework above the level of the tables; longitudinally spaced collars mounted on the shafts having upper abutment surfaces; tubes individually journaled on the shafts between the collars; bars individually connected to the tubes and rigidly radially extended inwardly of the framework in opposite directions alongside of each other and each providing an extended end disposed adjacent and above the shaft opposite to that on which it is mounted; cross members individually transversely secured to the extended ends of the bars, the bars being elevationally pivotal on the shafts for movement between lower positions with the cross members rested on the abutment surfaces of their respectively adjacent collars and upper positions raised from the collars; arms rigidly outwardly extended transversely of the cross members and in longitudinally spaced parallel relation therealong on opposite sides of the head ends of their respectively adjacent tables; adjustable means connected to the bars resistively pivotally urging the bars downwardly; and coaxial handles rigidly outwardly extended from the arms in substantially parallel relation to the shafts for grasping by the hands of a person lying on the table to raise and to lower the bars against the resistance offered by said adjustable means.

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