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[21]	Appl. No.	815,910
[22]	Filed	Apr. 14, 1969
[45]	Patented	Jan. 26, 1971

FOREIGN PATENTS

750,826	1/1967	Canada	272/83
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[54] EXERCISE APPARATUS
8 Claims, 5 Drawing Figs.

[52] U.S. Cl..... 272/83

[51] **Int. Cl.**..... A63b 21/00,
A63b 21/10, A63b 23/04

[50] **Field of Search**..... 272/83, 82,
79, 67; 128/25; 272/58; 272/81

[56] **References Cited**

UNITED STATES PATENTS

2,223,309	11/1940	Swanson.....	272/83
2,733,922	2/1956	Diego	272/58
3,120,954	2/1964	Apostol	272/58
3,342,485	9/1967	Gaul.....	272/58

ABSTRACT: Exercise apparatus is described incorporating a combination of adjustable leg and arm exercising features. Mounted on one end of a table is a pivotal leg exerciser which is engaged by the ankle and pivoted against an adjustable spring force. Mounted on the sides of the table are hand grips attached by cables to adjustable springs for exercising the arms, shoulders and chest. Mounted above the table is a bar which is to be pressed up with the legs against the force of an adjustable spring. This bar may be pivoted downwardly from its normal leg exercising position to a lowered position for pressing with the arms. The hand grips are attached to the bar to provide the resisting force in this lowered position. In either the raised or lowered position the bar is supported so that it cannot accidentally fall on the person exercising.

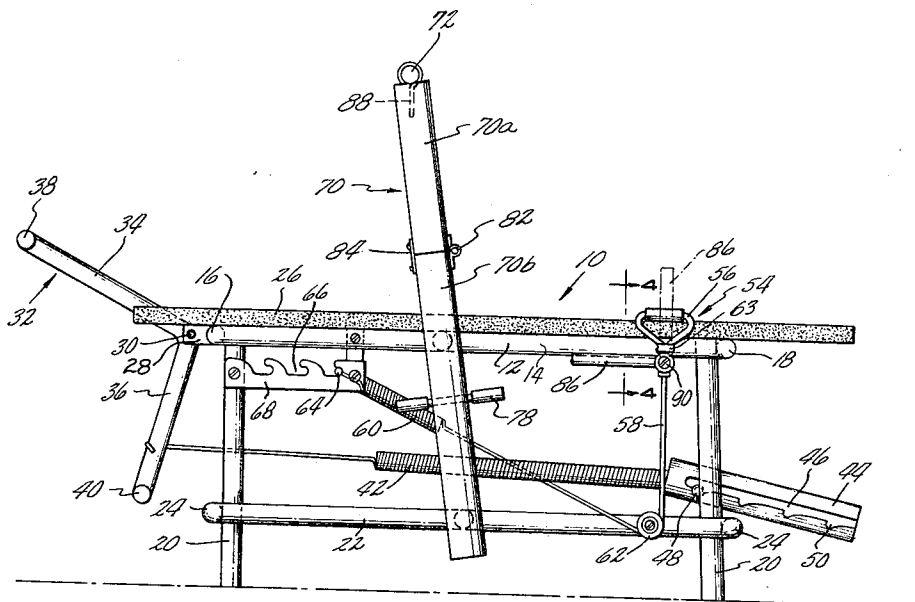
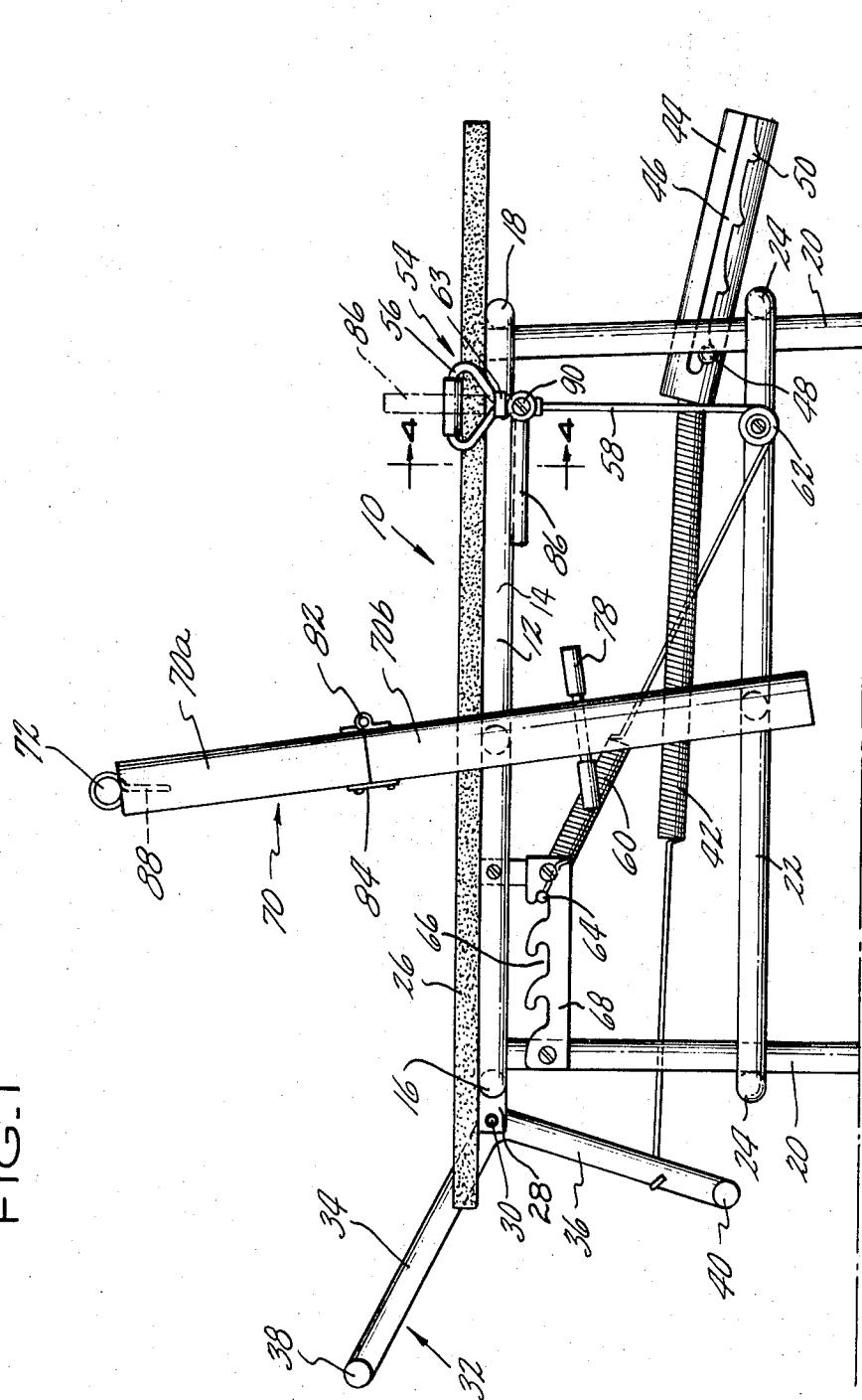


FIG. 1



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FIG. 2

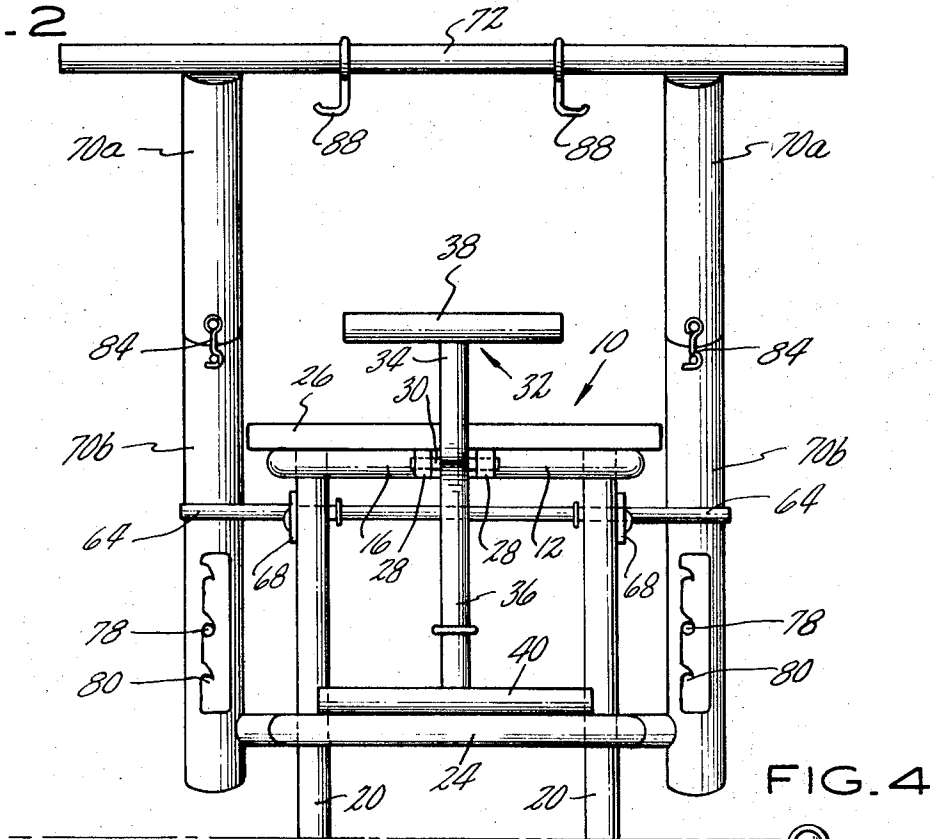


FIG. 4

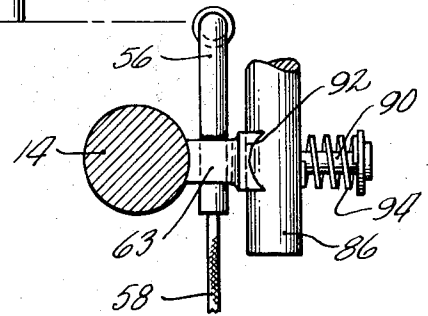
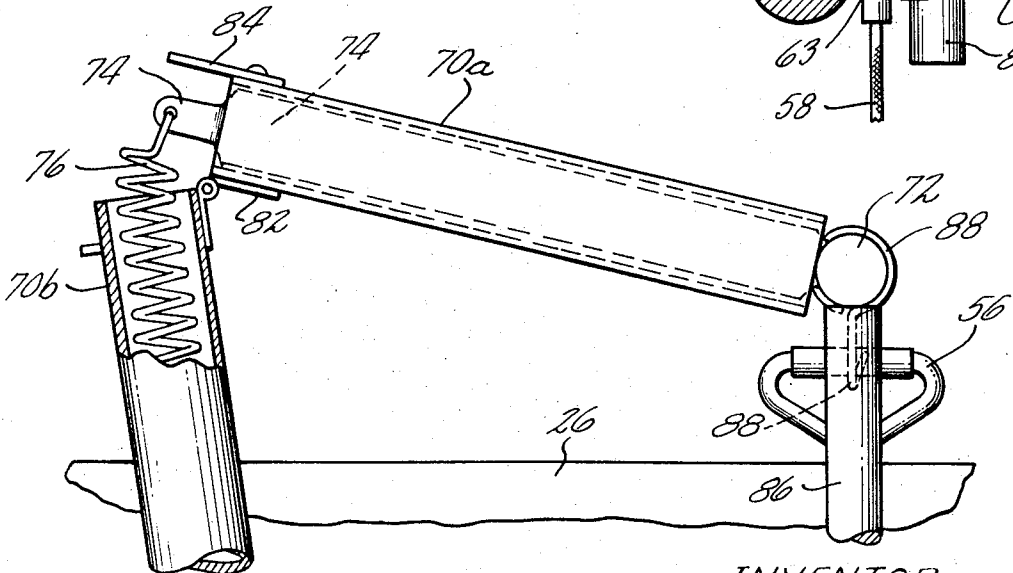
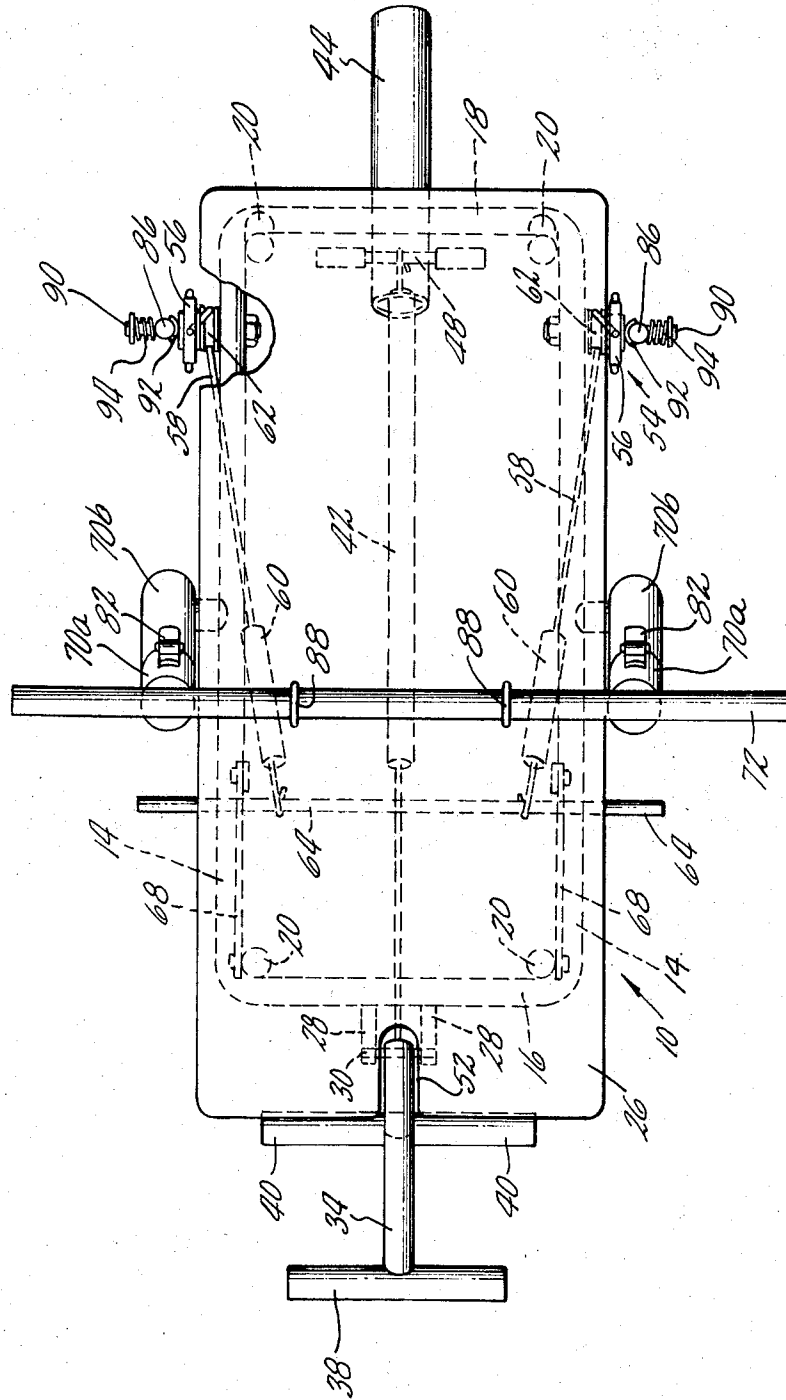


FIG. 5



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FIG. 3



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EXERCISE APPARATUS

BACKGROUND AND OBJECTS

The present invention relates to apparatus for use in the field of physical therapy and physical development such as the training of athletes. The invention specifically relates to exercise apparatus which is manipulated by either the upper or lower limbs to develop the respective associated muscle groups.

One conventional exercise device which is used extensively is the barbell and one method of using it is to press it either with the legs or arms from the prone position. The barbell is usually placed on some sort of rest and pressed upwardly from this point. This technique involves a certain degree of hazard since there is little protection should the barbell be dropped. Also, it is necessary to have available a large number and variety of weights to be added.

One of the primary objects of the present invention is to provide on one exercise table several exercise devices which can be used in a variety of ways and which can be converted from one use to another. Another object of the invention is to provide exercise devices which are readily adjustable and which cannot accidentally fall on the exerciser. All of the features, advantages and objects of the invention will be apparent from the following detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side view of the exercising table of the present invention.

FIG. 2 is an end view taken from the left of FIG. 1.

FIG. 3 is a top view of the table.

FIG. 4 is a view taken along line 4-4 of FIG. 1.

FIG. 5 is a side view of a portion of the table in an alternate position.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings, the apparatus of the present invention comprises a table generally designated 10. This table is formed from a top frame 12, which includes a pair of side members 14 and end members 16 and 18. Legs 20 support the frame 12 and the table at each corner. Attached to the legs a short distance off the floor is a second frame composed of side members 22 and end members 24. Resting on top of the frame 12 and fastened thereto is a table top 26 which is suitable padded and on which the person exercising either sits or lies.

Extending outwardly from the end members 16 of the frame 20 and attached thereto are a pair of support brackets 28. Extending between the brackets 28 is shaft 30 and pivotally mounted on the shaft is a leg exercising device generally designated 32. This device comprises two arms 34 and 36 generally at right angles to each other. Attached to the end of arm 34 is a crossbar 38 while another crossbar 40 is attached to the end of arm 36. Also attached to the arm 36 is one end of a resilient tension means comprising a spring 42. The other end of the spring 42 is adjustable to a variety of anchor positions whereby the pull of the spring on the arm 36 can be adjusted. In the illustrated arrangement, the adjustable anchor comprises tube 44 which has slots 46 in each side. The rod 48, which is attached to the end of the spring 46, fits into the selected notches 50 along the lower edges of the slots 46.

The leg exercising device 32 can be operated several ways. For example, the person can lie face down on the table and hook the crossbar 38 with the heels or back of the ankles. The person then merely lifts by bending the legs at the knees which develops the back of the thighs and calves. This device can also be operated by sitting on the end of the table with the legs hanging down over the edge. The crossbar 40 is hooked with the front of the ankles and the lower leg is then raised to pivot the crossbar 40 out and up so as to exercise the front of the thighs. If desired, padded rollers can be mounted on the crossbars 38 and 40 for comfort and ease of operation. As previously stated, the spring 42 can be adjusted to regulate the ten-

sion on the device 32. As a further means for adjusting the forces on the device 32, weights may be added to the ends of the crossbar 40. As can be seen in FIG. 3, a slot 52 is formed in the table top 26 to accommodate the swing of the arm 34 as it is pivoted.

Another feature of the invention is the arm exercising device generally designated 54. This device comprises handles or hand grips 56 on each side of the table. Each handle is attached by a cable or other flexible strand 58 to a spring 60. The cables ride in the pulleys 62 mounted on the side members 22. The U-shaped members 63 attached to the side members 14 through which the cables 58 pass support the handles 56 in the lowered relaxed position and serve to hold the cables in position. This is more clearly shown in FIG. 4. The tension on springs 60 can be adjusted in a manner similar to that of the spring 42. Both of the springs 60 are attached to a rod 64 which is held in position in the selected notches 66 in the brackets 68. The person exercising merely adjusts the rod 64 to the desired position in the brackets 68, lies face up on the table, grasps the handles 56 and presses up. The rod may be placed in different positions in each bracket so that the tension on the two springs will be different. Also, the springs can be replaced with other resilient tensioning means. This arm exercising device may also be used in a different manner as will be described hereinafter.

The next feature of the invention which will be described serves alternately as a leg and arm exerciser. The leg exercising aspect will be described first. Supports comprising tubes 70 which are formed of sections 70a and 70b are located on either side of the table 10 and fastened to the side members 14 and 22. These tubes, which extend in a generally vertical direction, may be either directly vertical or at a slight angle to the vertical. Across the top of the tube sections 70a is a bar 72. The bar 72 is movable with respect to the tube sections 70a but is attached to rods 74 which extend through the sections 70a as shown in dotted lines in FIG. 5. Fastened to the bottom of the rods 74 are springs 76 which extend down into the tube sections 70b. The bottoms of the springs 76 are attached or anchored to adjustment rods 78 which are adjustable in the notches 80 to vary the spring tension as with the other spring adjusters. The tube sections 70a are pivotally attached or hinged to their respective tube sections 70b by the hinges 82. Hooks 84 opposite the hinges hold the tube sections in the position shown in FIGS. 1, 2 and 3. The person exercising adjusts the tension of the springs 76 as desired, lies on his back on the table and presses up with his feet on the bar 72 against the force of the springs 76. If additional weight is desired beyond that attainable from the springs, conventional barbell weights can be added to the outer ends of the bar 72.

This last discussed portion of the apparatus can also be used to exercise with the arms as previously mentioned. This is accomplished by unfastening the hooks 84 and folding the tubes 70 at the hinges 82 to the generally horizontal position shown in FIG. 5. When the apparatus is used in this manner, swivel rests 86 are moved from the position shown in FIG. 1 to the position shown in FIGS. 3, 4 and 5. This prevents the bar 72 from coming down on the exerciser and provides sufficient clearance to enter and exit. The handles 56 are then hooked to the bar 72 by means of the hooks 88 on the bar 72 as shown in phantom in FIG. 5. The springs 60 thus act to hold the bar 72 down against the force of the exerciser's arms. If desired, additional weights can be added to the ends of bar 72 to increase the load over that afforded by the springs. The rests 86 are tubes or bars which are rotatably supported on bolts 90. The bolts 90 are attached to the U-shaped members 63 as shown in FIGS. 3 and 4. The rests 86 are held in either the horizontal or vertical position by the cradle pieces 92. These pieces 92 are curved and shown in the top view of FIG. 3 to form the cradles that hold the rests in the vertical position and have cutouts as shown in FIG. 4 which cradle the rests in the horizontal position. The springs 94 force the rests against the cradle pieces to maintain the rests in the selected position and yet permit their adjustment.

While a preferred embodiment of the invention has been shown and describe, it will be understood that this is merely illustrative and that changes may be made without departing from the invention as claimed.

I claim:

1. Muscle-exercising apparatus comprising:

- a. a table including a table top;
- b. support means attached to each of the two sides of said table, each of said support means extending in a generally vertical direction and extending above said table top;
- c. a bar supported above said table top across the upper ends of said support means and movable with respect thereto,
- d. restraining means limiting movement of said bar to the plane of the support means;
- e. resilient tensioning means attached to said bar;
- f. anchoring means anchoring said resilient tensioning means so as to exert a downward force on said bar whereby said bar may be pushed upwardly by the user from said support means against the force of said resilient tensioning means.

2. Muscle-exercising apparatus as recited in claim 1 wherein said support means comprise hollow supports, said restraining means comprise rods attached to said bar and extending downwardly into said hollow supports and wherein said resilient means comprise springs attached to the lower ends of said rods.

3. Muscle-exercising apparatus as recited in claim 2 wherein said anchoring means include means for varying the anchor position so as to vary the spring force.

4. Muscle-exercising apparatus as recited in claim 1 wherein said support means is hinged at a point above said table top whereby said support means may be folded down to a generally horizontal position in which said bar may be pressed by the arms of the user.

5. Muscle-exercising apparatus as recited in claim 4 and further including a hand grip support on each side of said table, a hand grip mounted on each support, additional resilient tensioning means, flexible strands attaching said hand grips to said additional resilient tensioning means whereby said hand grips may be used for exercising the arms and further including means for attaching said hand grips to said bar when said support means is folded to the generally horizontal position and permitting said additional resilient tensioning means to provide a downward force on said bar.

6. Muscle-exercising apparatus as recited in claim 5 wherein said additional resilient tensioning means comprises separate springs for each of said hand grips and further including means for separately adjusting the tension on each of said separate springs.

7. Muscle-exercising apparatus as recited in claim 6 and further including rests mounted on said table and positioned so as to support said bar above said table top a predetermined distance above the user when said support means are folded.

8. Muscle-exercising apparatus as recited in claim 7 and further including additional leg exercising apparatus at one end of said table comprising brackets attached to said table, a pivot shaft attached between said brackets, two arms pivotally mounted on said shaft and fixed with respect to each other, one of said arms having a rest position extending generally horizontally outwardly from said table and the other of said arms having a rest position extending generally downwardly from said shaft, adjustable resilient tensioning means attached to said other arm so as to vary the resistance of pivotal movement of said arms about said shaft, and a crossbar attached at right angles to each of said arms, said crossbar adapted to be engaged by the exerciser to pivot said crossbar and arms about said shaft.

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