EXERCISING DEVICE HAVING A NORMALLY HORIZONTAL LEVER MOVABLE UPWARD AGAINST SPRING RESISTANCE

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Fig. 2

Fig. 1

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EXERCISING DEVICE HAVING A NORMALLY HORIZONTAL LEVER MOVABLE UPWARD AGAINST SPRING RESISTANCE

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EXERCISING DEVICE HAVING A NORMALLY HORIZONTAL LEVER MOVABLE UPWARD AGAINST SPRING RESISTANCE

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ABSTRACT OF THE DISCLOSURE

A secondary frame is mounted for vertical adjustment on three vertical frame members arranged in a triangle on a base. A lever is pivoted on the secondary frame close to one of the vertical members and extends between the other two. The secondary frame has a horizontal cross piece below the lever, and coil springs connected between the cross piece and the lever. A stop on the secondary frame engages the lever to prevent it from moving downward below a horizontal position.

The invention relates to an exercise device and more particularly to a device intended for use in practicing the usual weight lifting exercises, which, however, relies on springs rather than weights.

The primary object of the invention is to provide a compact and inexpensive arrangement which enables the user to simulate various types of weight lifting exercises, without the requirement for loose weights which are likely to be misplaced, or to fall, causing injury to the user or damage to the floor or other articles in the vicinity of the weight lifter.

Another object of the invention is to provide such a device which allows for a considerable number of different types of weight lifting exercises with an easy change from one type to another.

In general, the invention contemplates the use of a frame on which is pivoted a lever, the frame being composed of a stationary frame member and a second frame member movable vertically to different positions on the stationary frame member, the lever being mounted on the movable frame member and being drawn downwardly by springs, so that upward pressure on the lever moves the lever to an upwardly inclined position and stretches the springs and the resistance needed for the exercise is obtained.

Further objects and advantages of the invention will appear more fully from the following description, particularly when taken in conjunction with the accompanying drawings which form a part thereof.

In the drawings:
Fig. 1 shows in side elevation an exercise device according to the invention;
Fig. 2 is a top plan view thereof;
Fig. 3 is a front view; and
Fig. 4 is a detail of the spring connections.

The arrangement includes a base 2, up from which stand two front posts 4 spaced apart from each other at opposite sides of the base and a rear post 6 forming substantially an equilateral triangle with the two front posts. The front posts 4 are connected at the top to the back post 6 by braces 8, which join front posts themselves are connected by a curved transverse brace 10.

Sleeves 12 are vertically adjustable on the front posts 4 and can be secured in any adjusted position by set screws with wing nuts 14. Likewise, a sleeve 16 is vertically slideable on the back posts 6 and can be secured in any desired position by a set screw and wing nut 18. There are horizontal frame members 20 welded to the inner sides of the sleeves 12, and at the ends of these frame members remote from the rear posts 6 are downwardly extending vertical frame members 22, connected at the bottom by a cross frame member 24. Braces 26 extend upward at an angle from each end of the cross frame member 24 and are welded or otherwise secured at their upper ends to the inner sides of the sleeves 12. The braces 26 are connected by a cross bar 28. The rear ends of the frame members 20 are connected by a cross frame member 30, which is welded on the inner face of the sleeve 16.

Pivoted at 32 on a lug projecting from the cross frame member 32 is a lever member 34 which is in the form of a rectangular tube, and into the end of which remote from the pivot 32 there is slideable a bar 36, the position of which can be fixed by a set screw 38. This bar carries a cross handle member 40 having forwardly bent portions 42 and grid sections 44.

The handle 34 carries a cross piece 46, which is positioned above and can engage with the horizontal frame members 20. Coils springs 48, preferably three in number, are connected between the horizontal frame members 20 and hooks 52 carried by an angle iron 53 positioned below the cross member 46 and welded to it and to the frame member 22. By reason of the hooks 52, these springs can be connected or disconnected as desired, to change the tension against which the lever must be operated. The cross bar 28 is located closer to the transverse frame member 24 than the length of the coil springs 48, so that when these springs are not in use they may lie against the cross bar.

A spring 54 is connected between a member 55 carried by the frame member 10 and frame member 8 of the stationary frame section and the cross bar 28, and helps to counteract some of the weight of the movable frame section composed of the sleeves 12 and 16, the horizontal parts 20 and the vertical parts 22 and all the other parts connected or pivoted thereto. It is thus easier to raise and lower the movable frame part, since a part of this weight is taken up by the spring 54.

In the upper portion of the movable frame, the device can be used for simulating the military press and the reverse military press. With the movable frame at hip level, the device can be used to simulate the curl, the reverse curl and leg lift. When the carriage or military frame is at floor level, the head lift and bench press can be practiced.

The resistance to be overcome can be changed by changing the number of springs which are hooked up, and by adjusting the length of the lever. Of course, if further variations are needed, additional springs of different strength could be used which would be stronger or weaker than those provided with the machine to begin with.

While I have described here in one embodiment of my invention, I wish to be understood that I do not intend to limit myself thereby except within the scope of the claims hereto or hereinafter appended.

I claim:
1. An exercising device comprising an upstanding frame; a lever pivoted on said frame to turn about a vertically adjustable horizontal axis between a substantially horizontal position and an upwardly inclined position having a handle portion projecting a substantial distance from the frame; stop means on the frame engageable by the lever to limit downward movement of the lever beyond substantially horizontal position; and spring means connected between the lever and the frame exerting a downward pull on the lever.
2. In a device as claimed in claim 1, said lever being pivoted to the frame at a point substantially at the side of the frame remote from the side from which the handle portion extends; said spring means being connected to the lever at a point between the handle portion and the pivot point.
3. In a device as claimed in claim 2, said spring means comprising at least one coil spring extending downwardly from said lever.

4. In a device as claimed in claim 1, said frame comprising a first fixed frame section, and a second frame section mounted on said first frame section for vertical adjustment thereon; said lever being pivoted on said second frame section and said spring means and stop means being secured to said second frame section.

5. In a device as claimed in claim 4, said first frame section including spaced vertical frame members at the side from which the handle portion of the lever extends; said second frame section comprising parts slidably mounted on said spaced vertical frame members; downwardly extending members fixed with respect to the slidably mounted parts, a bottom cross member secured at the bottom ends of the downwardly extending members located on the side of the vertical frame members opposite from the pivot of the lever and braces extending upwardly at a slant from said bottom cross member to said slidable parts, said spring means being attached to said cross member.

6. In a device as claimed in claim 5, said spring means comprising substantially vertical coil springs; said lever having a cross piece thereon the side of the vertical frame members opposite from the pivot of the lever, said springs being connected at one end to the cross member and being releasably connected at the other end to said cross piece, and a rod connected to said braces at a point substantially higher than the cross member but at a less distance from the cross member than the length of the springs to form a rack for springs not in use.

7. In a device as claimed in claim 6, spring means connected between the top of the first frame member and the rod for exerting an upward force on the second frame member.

8. In a device as claimed in claim 5, said frame comprising a third vertical frame member parallel to said spaced vertical frame members and forming a triangle with said spaced vertical frame members, said lever being pivoted on said third vertical frame member and extending between said spaced vertical frame members.

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