

Feb. 13, 1973

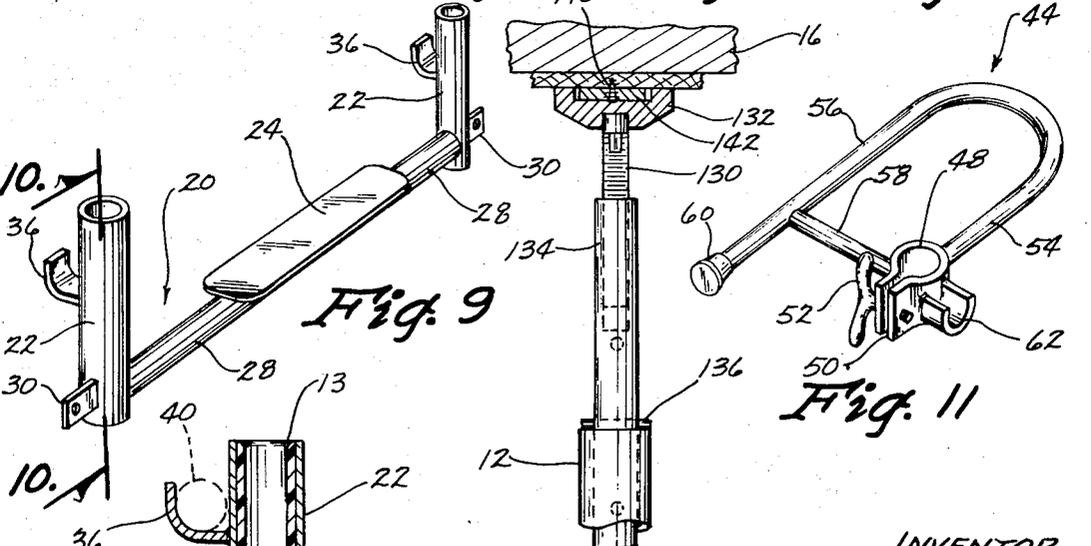
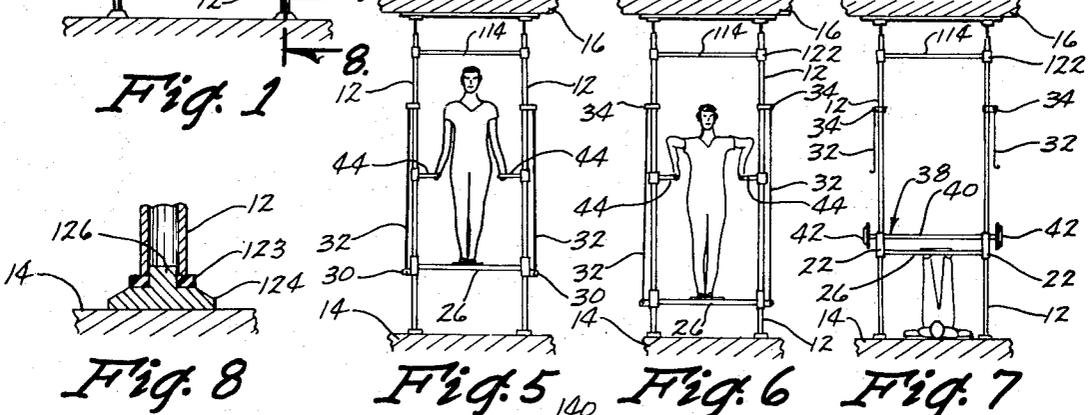
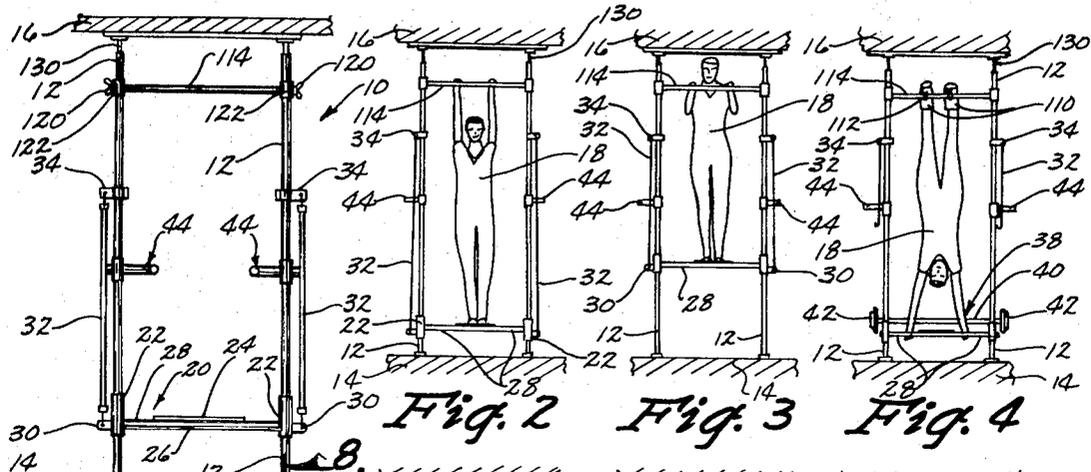
R. M. MARTIN

3,716,231

USER CONTROLLED EXERCISER FRAME

Original Filed July 23, 1970

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

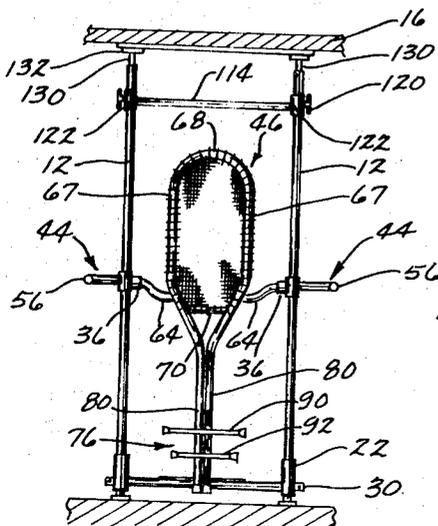


Fig. 13

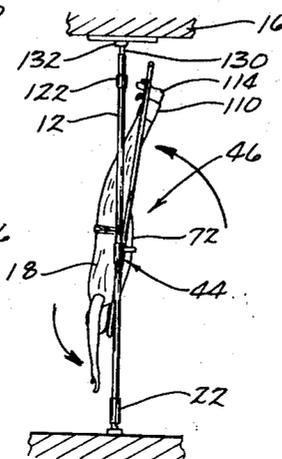


Fig. 14

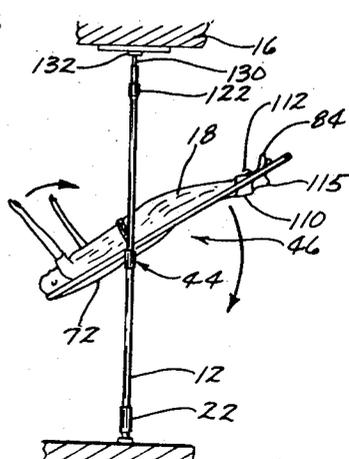


Fig. 15

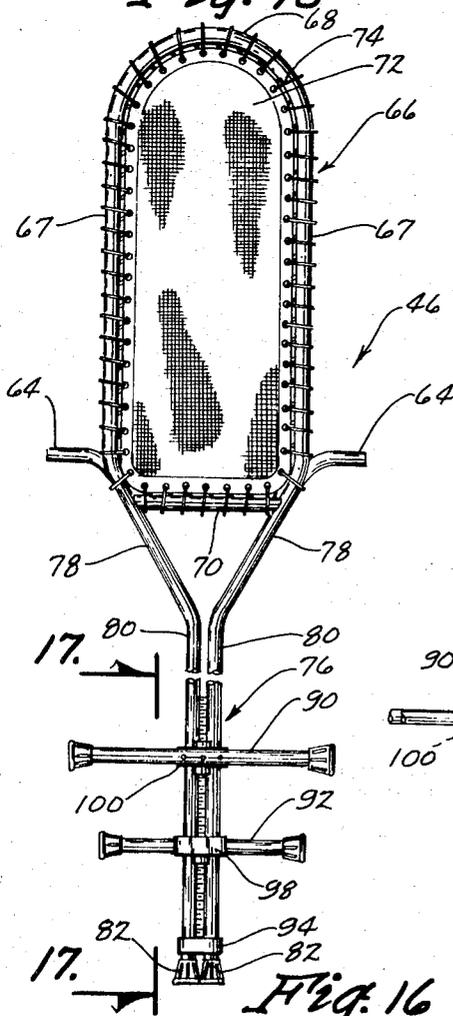


Fig. 16

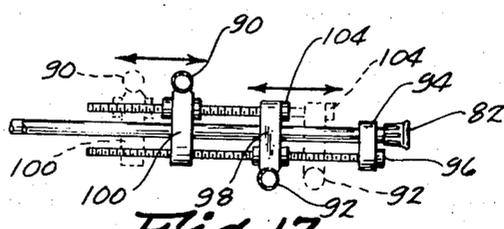


Fig. 17

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3,716,231

USER CONTROLLED EXERCISER FRAME

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Original application July 23, 1970, Ser. No. 57,532.

Divided and this application Aug. 9, 1971, Ser.
No. 170,028

Int. Cl. A63b 23/02

U.S. Cl. 272—58

10 Claims

ABSTRACT OF THE DISCLOSURE

An exercise device including a pair of upright poles interconnected by top and bottom cross members. U-shaped members are pivotally and slidably connected to the poles to provide parallel handles when pivoted to an inwardly extending position and provide supports for a pivotal bed frame when the U-shaped members are pivoted outwardly. The bed frame is pivoted such that the center of gravity of the exerciser will be shifted back and forth across the pivotal axis by moving the hands from the sides towards the head. A canvas material supports the buttocks, back and head while a pair of cross elements engage the ankles and the feet. The cross elements are adjustable along the length of the body frame and with respect to each other. A pair of U-shaped hooks may be secured to the exerciser's ankles and engage the top cross bar to suspend the exerciser in an inverted position or engage one of the cross elements on the body frame to hold the exerciser stationary on the body frame as he pivots from an upright position to an inverted position.

This is a divisional application of application Ser. No. 57,532 filed July 23, 1970.

There are presently several exercising devices on the market however, they each have limited capabilities for the exerciser. The exercise device of this invention is compact, sturdy and fulfills the need of a multi-purpose exercising unit.

The exercise unit capitalizes on what is called "gravity guiding system" involving the alternating of the body's posture in respect to the fixed center of gravity. Examples of this are freely hanging by the hands, freely hanging by the feet, chinning with a spring assist, an inverted squat, an inverted setup, drawup with weights, parallel dip with assist, free hang by feet with weights, and an inverted extension. There are other basic exercises that use the natural force of gravity to help restore the muscle tone and improve healthful posture. These are exercises that most men and women, regardless of age, have possibilities of achieving.

The use of a body frame or slant bed involves the exerciser wearing boots having hooks thereon secured to cross elements on a pivotal body frame. The feet rest against a parallel cross element. The slant bed is operated by leaning against the bed which starts a slow motion to a horizontal position. With the slow movement of the arms up and over the head the inversion action begins. The bringing of the arms back to the sides returns the slant bed back to the normal upright starting position. The arm action will hold any position by stopping arm motion. It is the action of the arms only that controls the entire movement from start to finish. The boot hooks disclosed in this application are covered by applicant's issued Patent 3,380,447, Apr. 30, 1968.

These and other features and advantages of this invention will become readily apparent to those skilled in the art upon reference to the following description when taken into consideration with the accompanying drawings, wherein:

FIG. 1 is a front elevation view of the exercise device without the pivotal body frame or slant bed;

FIG. 2 illustrates the exercise device being used for a free hang by hands exercise;

FIG. 3 illustrates the exercise device being used for a chinning with a spring assist exercise;

FIG. 4 illustrates the exercise device being used for an inverted extension exercise;

FIGS. 5 and 6 illustrates the exercise device being used for a parallel dip with a spring assist exercise;

FIG. 7 illustrates the exercise device being used for a press on feet exercise;

FIG. 8 is a cross sectional view of the bottom end of one of the pole uprights taken along line 8—8 in FIG. 1;

FIG. 9 is a perspective view of the bottom cross bar only;

FIG. 10 is a cross sectional view taken along line 10—10 in FIG. 9;

FIG. 11 is a perspective view of the U-shaped horizontal members and bed frame support bracket unit;

FIG. 12 is a fragmentary elevation view of the upper end of the upright poles;

FIG. 13 is a front elevation view of the exercise device including the body frame or slant bed unit in an upright position;

FIG. 14 and 15 illustrate the body frame or slant bed in operation;

FIG. 16 is a top plan view of the body frame or slant bed only; and

FIG. 17 is a side cross sectional view taken along line 17—17 in FIG. 16 illustrating the adjustability of the cross elements on the body frame.

The exercise device of this invention is referred to generally in FIG. 1 by the reference numeral 10 and includes a pair of uprights or poles 12 engaging the floor 14 at the bottom and the ceiling 16 at the top. The poles 12 are spaced apart sufficiently for a person 18 (FIG. 2) to perform exercises there between.

A vertically, slidable bottom cross bar unit 20 includes end sleeves 22 embracing the poles 12. A platform 24 is provided in the center on the cross-bar 26. Outwardly of the platform 24 are hand gripping stations 28 on the cross-bar element 26. The sleeves 22 include outwardly extending elements 30 detachably engaged by vertically positioned elastic spring elements 32 vertically adjustably anchored to brackets 34 on the post 12 thereby normally biasing the cross-bar unit 20 upwardly.

A pair of U-shaped upwardly facing weight support brackets 36 extend perpendicular to the cross-bar unit 20 and are adapted to receive a weight unit 38 including an elongated shaft 40 which extends parallel to the cross-bar unit 20. Weight elements 42 are selectively placed on the shaft 40 of the weight unit 38.

U-shaped handle member units 44 as seen in FIG. 11 are provided on each of the poles 12 and when positioned as seen in FIG. 1 provide parallel bars for the exerciser 18 as seen in FIGS. 5 and 6. The same units 44 facilitate use of an inclined bed or body frame unit 46 as shown in FIG. 13 and which will hereinafter be described in more detail.

The handle units 44 include a sleeve 48 slidable on the poles 12 and adapted to be clamped thereto by the sleeve 48 being open on one side and closeable by a hand adjustable bolt 52. A leg portion 54 extends from the sleeve 48 and terminates in another leg portion 56 providing the parallel bar. A cross element 58 interconnects the legs 54 and 56 of the handle unit 44 and a cap element 60 is provided on the outer end of the leg 56. A U-shaped upwardly facing support bracket 62 extends diametrically opposite the cross element 58 from the sleeve 48 to detachably receive the outer ends of oppositely extending

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pivot shafts 64 on the body frame 46 as seen in FIG. 13. Thus, when the handle unit 44 is pivoted to the position of FIG. 5 it functions as a parallel bar exercise device and when it is pivoted to the position of FIG. 13 it provides a support for the slant bed or body frame 46. In each position the structure for the exercise not being utilized is out of the way and does not interfere with the exercise being performed.

The slant bed or body frame 46 as best seen in FIGS. 13-17 includes an upper generally rectangular in shape frame portion 66 which comprises a pair of parallel side frame members 67 interconnected by rounded end members 68 at the upper end and a straight bar 70 adjacent the pivot shafts 64. A hammock type canvas or the like 72 is stretched between the side bars 67 and the end elements 68 and 70 and is secured in place by cord elements 74. The upper body frame portion 66 provides support for the exerciser from the buttocks to his head.

The lower body frame portion 76 includes converging side frame members 78 extending from the pivotal shaft 64 and terminating in elongated closely adjacent parallel frame members 80 having caps 82 on their lower free ends. The feet 84 of the exerciser as seen in FIGS. 14 and 15 are held on the lower body frame 76 by a pair of cross members 90 and 92. A stationary block 94 is secured to the members 80 and a threaded adjustment bolt 96 extends parallel therefrom into engagement with slidable blocks 98 and 100 engaging the members 80. Thus, the threaded bolt 96 remains stationary relative to the stationary block 94 but threadably engages the blocks 98 and 100 and as it is turned will move the blocks 98 and 100 along with the cross bars 90 and 92 upwardly or downwardly between the solid and dash line positions shown in FIG. 17, the spacing between the cross bars remain the same through this adjustment. A second adjustment threaded bolt 104 extends between the slidable blocks 98 and 100 and remain stationary relative to the block 98 and threadably engages the block 100 such that when the adjustable bolt 104 is turned it will move the block 100 and its cross-bar 90 towards or away from the adjacent cross-bar 92.

In at least two of the exercises capable of being performed on the exercise unit of this invention are the exercises shown in FIGS. 4 and 13-17, the inverted extension exercise and the slant bed exercise respectively and both of these exercises require the use of the specially constructed boots 110 worn on the ankles of the exerciser. These are more specifically covered in applicant's Pat. 3,380,447. The boots 110 include U-shaped hooks 112 adapted to engage the stationary top cross bar 114 secured to the uprights 12 thereby allowing the exerciser to perform the inverted extension exercise as illustrated in FIG. 4. When the exerciser is utilizing the slant bed 46 the hooks 112 engage the cross bar 90 while the feet 115 of the exerciser rest on the cross-bar 92. Depending on the height of the exerciser 18 the cross-bars in 90 and 92 will be positioned accordingly relative to the pivotal shafts 64 and relative to each other for the comfort of the exerciser. It is seen that either in the inverted position of FIG. 14 or an upright position the exerciser has complete safety since he is held to the slant bed 46 through the boots 110 positively holding him to the body frame by the hooks 112 engaging the cross-bar 90 and his feet 115 engaging the lower cross-bar 92.

The upper cross-bar 114 while normally remaining stationary may be selectively vertically positioned on the poles 12 through operation of the hand adjustable bolts 120 associated with the slidable sleeves 122.

The exercise unit 10 is cushioned by the sleeves 12 engaging compressible pads 123 disposed between the bottom ends of the uprights 12 and feet 124 as best seen in FIG. 8. A stub shaft 126 extends through the pads 122 and into the hollow uprights 12. The uprights 12 are in engagement with the ceiling 16 as best seen in FIG. 12 by a threaded rod 130 secured to a base plate 132 thread-

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ably engaging a sleeve 134 extending into the uprights 12 and held in a given vertical position by cross pins 136 passing through the sleeve 134 and engaging the upper ends of the sleeve 134. Thus, the sleeves 134 telescope into the uprights 12 and are selectively locked in place by the pins 136 while additional adjustment is accomplished by rotating the threaded shaft 130 into the threaded sleeve 134. The base plate 132 is secured to the ceiling or the like by a threaded screw 140 which holds a plate 142 in place and allows the base plate 132 to rotate thereabout as the threaded shaft 130 is turned to make the adjustment with the threaded sleeve 134. The sleeves 22 include Teflon bushings 131.

In using the exercise device of this invention it is seen that a variety of different exercises are possible and a representative example of these exercises is illustrated in the drawings and described hereinabove.

In FIGS. 2 and 3 the springs 32 give assist to the free hanging exercise which can turn into a chinning exercise with the springs 32 still giving the assist.

In FIG. 4 the exerciser has positioned himself in an inverted position with the hooks 112 of his boots 110 engaging the top cross-bar 114 and the dumbbell type weight unit having the weights 42 may be lowered and raised by the exerciser engaging the bottom cross-bar at the hand gripping stations 28. The springs 32 may or may not be used as desired.

In FIGS. 5 and 6 the parallel dip with assist exercise is being executed and again the springs 32 perform their assisting function while the exerciser engages the handle units 44 and maintains his feet on the platform 24.

The exercise of FIG. 7 illustrates a press on the soles of the feet utilizing the weight unit 38 carried on the bottom cross-bar 20. Again, the spring assist provided by the spring 32 may or may not be utilized as desired.

The slant bed of FIGS. 13-17 involve placing the pivotal axial shafts 64 and the U shaped support brackets 36 (FIG. 9) when the handle units 44 are turned outwardly. The height may be selectively positioned by adjustment through the handle 52. The exerciser having secured the boots 110 to each of his legs then steps onto the body frame and engages the hooks 112 on the cross-bar 90 with his feet bearing against the cross-bar 92. The exerciser then may shift his arms towards his head to cause him to tip to an inverted position as seen in FIG. 14 or swing his arms toward his sides to cause him to pivot to an upright position as seen in FIG. 15. Leaning against the slant bed starts the slow motion to a horizontal position and with a slow movement of the arms up over the head the inversion action begins. As indicated the bringing of the arms back to the sides returns the slant bed back to its starting position. Arm action can hold any position by stopping arm motion. It is the action of the arms only, that controls the entire movement from start to finish.

I claim:

1. An exercising device comprising,
 - a pair of spaced apart vertical pole members, means for securing the top and bottom ends of said pole members stationary,
 - a body frame between said poles and including outwardly extending support arms pivotally secured to said poles, said arms engaging said body frame substantially at the center between its opposite ends, and said body frame being sufficiently long to support substantially the full length of the exerciser,
 - said body frame being so positioned on said support arms that center of gravity will shift back and forth across the pivot axis of said body frame as the exerciser moves his arms towards his sides or beyond his head,
 - the lower end of said body frame including securing means for engaging the exerciser's feet to maintain the exerciser stationary relative to the body frame,
 - said securing means including a cross bar on said body

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frame for engagement by hooks on boots worn by the exerciser,

said hooks on said boots being on the forward sides of the exerciser's ankles and said body frame including a foot rest outwardly of said cross bar for engagement by the exerciser's feet, and

said body frame having an upper portion for supporting the exerciser from the buttocks to the head which is at least as wide as the body of the exerciser, and said body frame including a lower elongated portion including said cross bar and said foot rest, said cross bar and said foot rest being longitudinally adjustably secured to said lower elongated portion of said body frame.

2. The structure of claim 1 wherein said foot rest and cross bar are positioned on opposite sides of said elongated portion.

3. The structure of claim 1 wherein said cross bar and foot rest are further defined as being longitudinally adjustable relative to each other.

4. The structure of claim 1 wherein said cross bar and foot rest are further defined as including adjustment means for moving said cross bar and foot rest as a unit longitudinally relative to said elongated portion.

5. The structure of claim 1 wherein said foot rest and cross bar are further defined as including two adjustment means, said first adjustment means being connected to said elongated portion and interconnecting said foot rest and cross bar for longitudinal movement of said foot rest and cross bar as a unit relative to said elongated portion, and said second adjustment means interconnecting said foot rest and cross bar for longitudinal movement relative to each other and said elongated portion.

6. The structure of claim 5 wherein said foot rest and cross bar are further defined as being on opposite sides of said elongated portion and in lateral spaced relation to each other.

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7. The structure of claim 1 wherein said support arms are detachably received in support brackets on said poles, and a rotatable U-shaped handle unit is integral with said bracket, said U-shaped handle and said bracket extend in opposite directions from said post whereby when said U-shaped handles extend inwardly said support brackets extend outwardly and when said support brackets are positioned inwardly of said poles said U-shaped handles are positioned outwardly of said poles.

8. The structure of claim 7 wherein one leg of each of said U-shaped handles is integral with said bracket and the other leg is horizontally spaced therefrom and provides a handle portion, said two handle portions upon being positioned inwardly of said poles are adapted to be positioned parallel to each other.

9. The structure of claim 1 wherein said body frame is formed by a frame member substantially rectangular in shape forming said upper portion and having side portions which merge together downwardly of said pivotal axis to form said lower elongated portion.

10. The structure of claim 9 wherein yieldable and flexible material extends between the sides of said substantially rectangular upper portion of said body frame.

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U.S. Cl. X.R.

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