United States Patent [19]

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[54] **EXERCISER DEVICE**

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[52] **U.S. Cl.** ..... **272/58;** 272/60 R; 272/62

[51] **Int. Cl.** **A63b 17/00**

[58] **Field of Search** ..... 272/56, 57 R, 58, 60 R; D34/5 H

[56] **References Cited**

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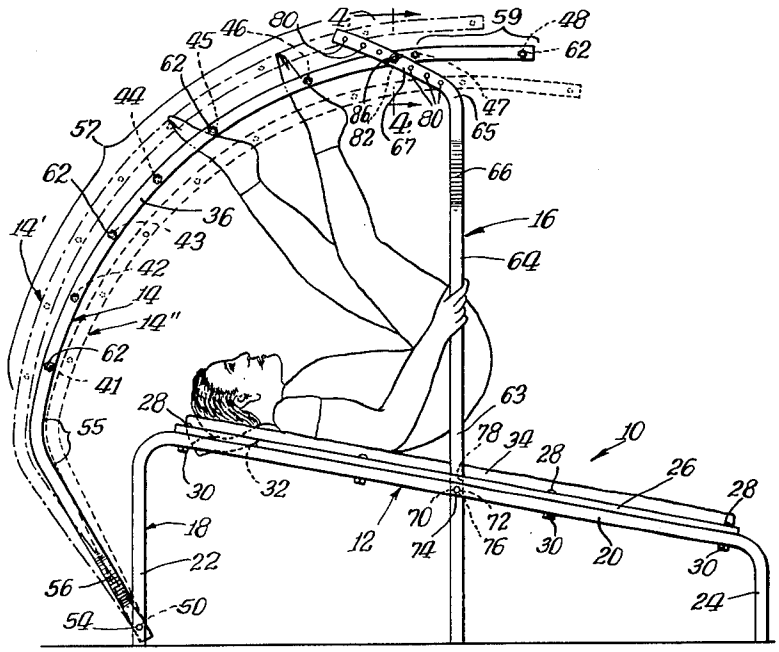
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[57] **ABSTRACT**

An exerciser device is provided for exercising various parts of the body, particularly the back and legs of a person using the device. The exerciser device comprises a back support on which a person may lie and a ladder member having an end extending over the person. The device may further comprise an upright support for supporting the extending end of the ladder member. The extending end of the ladder member is adjustably connected to the upright support and the other end of the ladder member is pivotally connected to the back support. The ladder member has variably spaced rungs extending along its length on which a person may "walk" his legs to increase the flexibility and movement of his back and legs.

9 Claims, 4 Drawing Figures



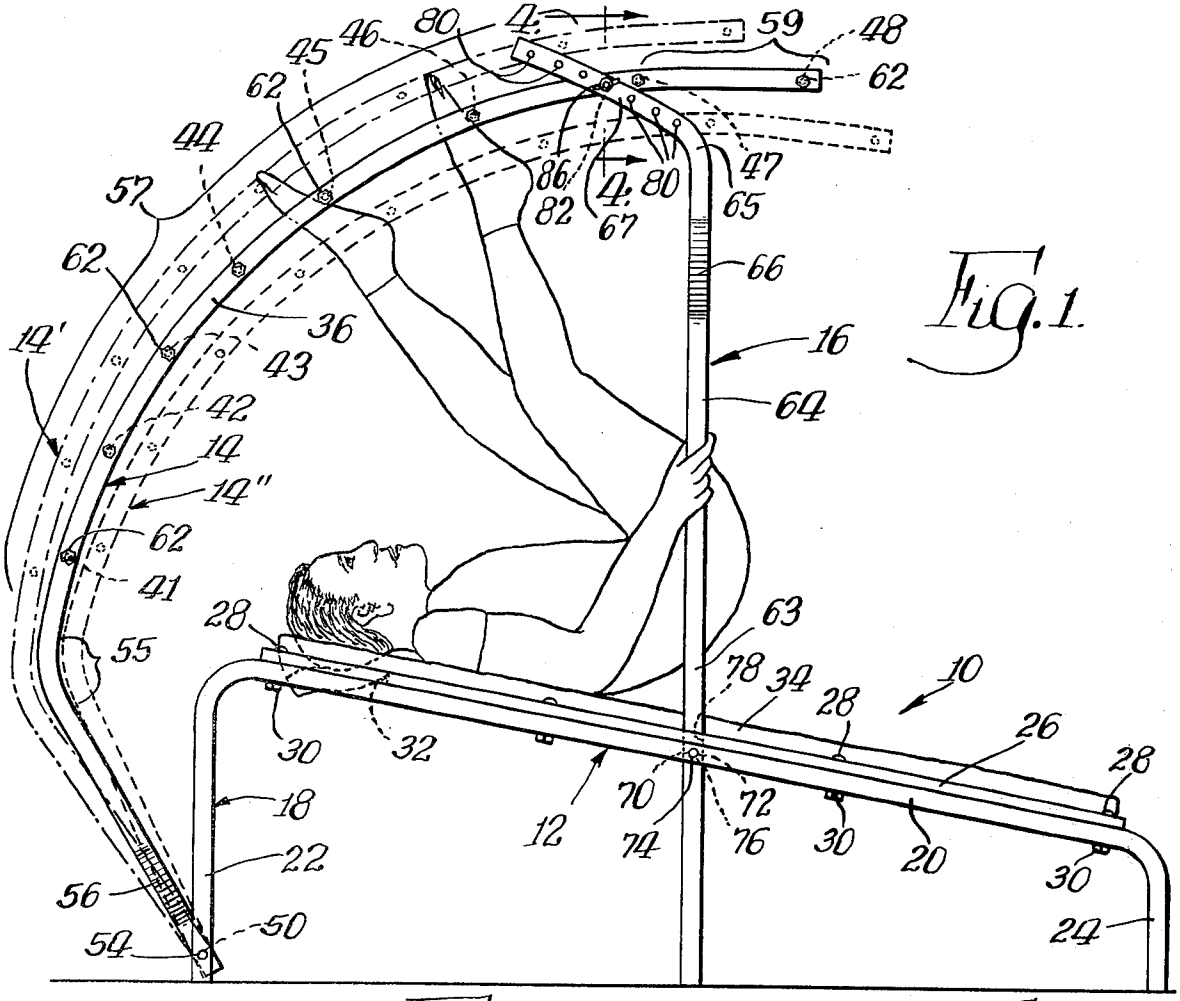


Fig. 1.

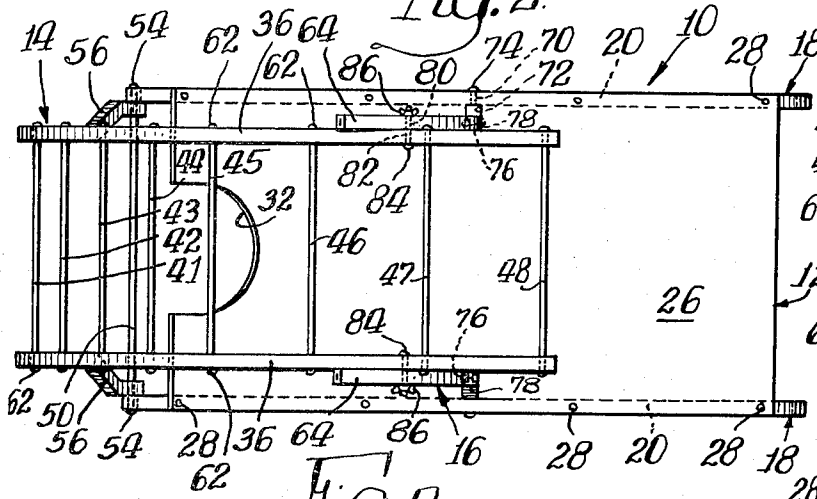


Fig. 2.

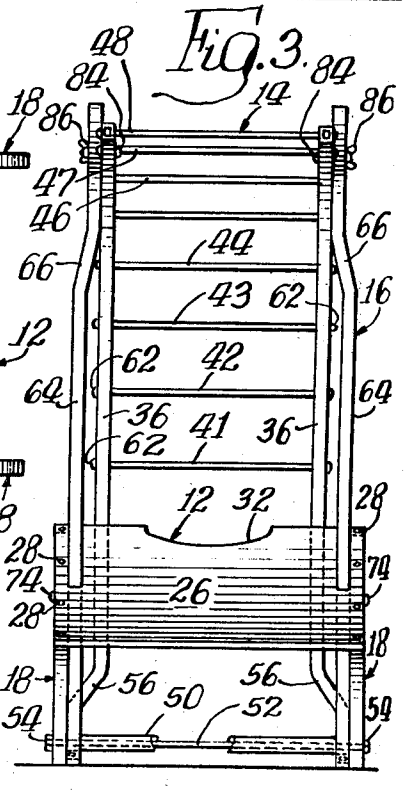


Fig. 3.

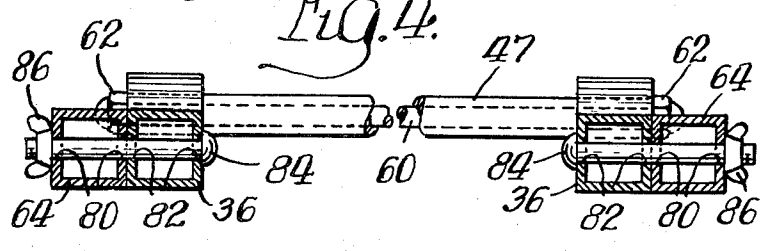


Fig. 4.

EXERCISER DEVICE

This invention relates to an exerciser device, and more particularly to an exerciser device for exercising various parts of the body, particularly the back and legs.

As is well known, a person loses flexibility in his back and legs due to inadequate exercise, injury, disease or simply aging. Frequently, moderate exercise of the back and legs can restore the lost flexibility.

The exerciser device of the present invention can be used by a person to restore such lost flexibility, and comprises a back support on which a person may lie and a ladder member having an end extending over the person. In the present instance, the device also includes an upright support for supporting the extenting end of the ladder member which is adjustable to accommodate different size persons. The ladder member has variably spaced rungs along its length on which a person may "walk" his legs to increase the flexibility and movement of his body, particularly of his back and legs.

It is the primary object of the present invention to provide an exerciser device for performing mild or moderate exercise to increase the flexibility of a person's body, particularly of the back and legs.

Another object of the exerciser device of the present invention is to provide an exerciser device that permits a type of exercise which can be gradually increased in magnitude over a period of time so as to extend and increase the flexibility of the back and legs of a user.

While the exerciser device of the present invention has been designed primarily for such type exercise, it has the advantage that it can also be conveniently used to exercise other parts of the body.

Another advantage of the exerciser device of the present invention is that it may be easily disassembled and collapsed into a relatively small space either for storage or transportation.

These and other objects and advantages of the exerciser device of the present invention will become apparent from the following description and the accompanying figures of the drawing wherein:

FIG. 1 is an elevational view of an exerciser device of the present invention, portions of the device being shown in alternate positions in dashed lines;

FIG. 2 is a top view of the exerciser device shown in FIG. 1;

FIG. 3 is an end view of the exerciser device shown in FIG. 1; and

FIG. 4 is a cross-sectional view taken along the line 4—4 of FIG. 1.

The exerciser device **10** of the present invention is illustrated in FIG. **1**, and comprises a back support **12** and ladder member **14.** In the present instance, the device **10** also includes an upright support **16** for supporting the ladder member **14.**

The back support **12** is generally horizontal with its head end slightly higher than its opposite end, thus making it easier to lie down and particularly to get up. The back support **12** includes two tubular elements **18,** each having a straight, central section **20** joining a pair of generally vertical leg sections **22** and **24** at the head end and opposite end of the back support **12,** respectively. The elements **18** are made of one-inch square aluminum tubing with an eighth-inch sidewall thickness. As is shown in FIG. **2,** the two elements **18** stand in vertical planes parallel to each other and are spaced

approximately **22** inches apart. The back support **12** further includes a top **26,** in this instance of plywood, which is secured to the central sections **20** of the elements **18.** The plywood top **26** is secured to sections **20** with a plurality of screws **28** and nuts **30.** Both the plywood top **26** and central sections **20** of the elements **18** have appropriate openings to receive the screws **28.** As is shown in FIG. **1,** the legs **22** are longer than the legs **24** to incline the central sections **20** and plywood top **26,** with the head end above the other end.

A central cut-out **32** (FIG. **4**) is provided in the head end of the plywood top **26** to receive the head of a person using the exerciser device **10.** If desired, the top **26** may be fitted with a cushion or pad **34.** The pad **34** could extend across the cut-out **32** to help support the head of the user, as shown in FIG. **1.**

The ladder member **14** is secured at its lower end to the head end of the back support **12.** The ladder member **14** rises initially away and upwardly from its lower end and then curves up over the back support **12,** terminating above the opposite end of the back support **12.** The curve of the ladder member **14** is such that the ladder member generally lies on the locus generated by a person lying on the back support **12** and pivoting an extending foot from a vertical position above his buttocks to a nearly horizontal position above his head. The ladder member **14,** preferably, comprises two side rails **36** having a plurality of rungs **41** through **48,** inclusive.

As can be appreciated, the above-mentioned locus will vary with the size of the person, and to accommodate this variation the ladder member **14** is adjustable. To this end, the side rails **36** of the ladder member **14** are pivotally secured to the lower ends of the legs **22** of the back support **12.** The ladder member **14** has a spreader **50** located between the lower ends of the side rails **36** and the adjacent associated legs **22** of the back support **12.** The spreader **50** is a piece of one-half inch diameter aluminum tubing. A threaded rod **52** (FIG. **3**) extends through openings in the legs **22** of the back support **12,** through the lower ends of the side rails **36** and through the spreader **50.** Nuts, such as acorn nuts **54,** engage the ends of the threaded rod **52** to hold the legs **22** against the side rails **36** and to hold the side rails tight against the ends of the spreader **50.** Thus, the ladder member **14** is held in pivotable relation to the back support **12** by the spreader, rod and nut assembly.

The side rails **36** extend initially outwardly straight from their lower ends for about 16 inches and then bend about 40° toward the opposite end of the device **10,** as indicated at **55.** The side rails **36** then bend, on about a 35 inch radius, along an arc for 80° as indicated at **57,** and terminate in a **6** inch straight section at the opposite end, as indicated at **59.** As is shown in FIGS. **2** and **3,** the side rails **36** are offset inwardly toward each other just above their lower ends so as to provide clearance near the opposite ends for the upright support **16.** The side rails are offset or bent inwardly toward each other and then bent straight again, as generally indicated at **56.**

The ladder member **14,** in this instance has the eight rungs **41** through **48,** inclusive, which are unequally spaced along the side rails **36** so as to provide convenient exercise increments. Rungs **41** through **45** near the head end are spaced closer together than the other rungs **46** through **48** near the opposite end since it is more difficult for a person to reach rungs **41** through

45 with his feet. The lowest rung 41 is located slightly above the 40° bends (55) in the side rails 36, the next four rungs, 42 through 45, inclusive, are spaced 6 inches apart, and the upper three rungs 46 through 48, inclusive, are spaced nine inches apart.

Each of the rungs 41 through 48 comprises a length of round half-inch tubing aluminum having an eighth-inch side wall. The side rails 36 are drilled to receive one-quarter inch threaded rods 60 (FIG. 4); each rod 60 extends through one side rail 36, through one of the rungs 41 through 48 and through the opposite side rail 36. The ends of the threaded rods 60 receive nuts, such as acorn nuts 62, to secure the rungs and side rails of the ladder member together.

While the ladder member 14 and back support 12 could be constructed to be free standing, in this instance, the upper end of the ladder member 14 is secured to the upright support 16. The upright support 16 also provides additional leg supports for the middle of the back support 12 and provides convenient handholds while getting on, using or getting off the device. The upright support 16, in this instance, comprises a pair of tubes 64 made of similar material as that of the tubular elements 18 and side rails 36. The tubes 64 have straight lower sections 63, then bend approximately 60° toward the head end, indicated at 65 and terminate in final upper sections 67 of lengths of about 10 inches bent on a 50 inch radius. As is shown in FIG. 3, the tubes 64 forming the upright support 16 are also offset, the tubes 64 first being bent inwardly and then again being bent straight, as indicated at 66.

The upright support 16 is removably secured to the back support 12. As shown in FIG. 2, aligned openings 70 and 72 are provided in the central sections 20 and in the lower sections 63 of the tubes 64, respectively. These openings 70 and 72 receive threaded fasteners 74 which in turn receive wing nuts 76 to hold the tubes 64 in position. An almost square (1 inch × 1- 1/16 inch) opening 78 is provided in each side of the top 26 to accommodate the tubes 64. The openings 78 are somewhat longer than the cross-sectional size of the tubes 64 to accommodate movement of the tubes.

The upper end of the ladder member 14 is adjustably and removably secured to the upright support 16. In the upper end of each of the tubes 64 forming the upright support 16 are a plurality of holes 80, in this instance seven being illustrated. Each of the holes 80 passes completely through the tube 64 and can be aligned with single openings 82 (FIG. 2) in each of the side rails 36 of the ladder member 14. The openings 82 in the side rails 36 of the ladder member are between the sixth rung 46 and seventh rung 47. The openings 80 and 82 in the side rails 36 and tubes 64, respectively, receive fasteners, such as threaded bolts 84, the bolts 84 being held at their opposite ends by wing nuts 86. By arranging the ladder member 14 so that one set of openings 82 in the side rails 36 are aligned with the openings 80 in the tubes 64, the ladder member 14 can be adjusted to various positions to compensate for different size users, as is shown in FIG. 1 in dashed lines at 14′ and 14″.

In using the exerciser device 10, the user lies down on his back with his head located at approximately the cut-out 32. The user then raises his legs to engage, perhaps, the last rung 48 which is approximately above his buttocks. The user then walks his legs along the rungs 41 through 48 toward his head as far as he can go without undue strain. As a person walks his legs toward the rungs at the head end, his lower back is caused to bend and his buttocks lift somewhat off the back support 12. This exercise limbers up both the legs and back and permits the user to gradually increase the amount of flexibility in his legs and back. At first a person may be able to walk on only the eighth, seventh and sixth rungs 48 through 46, but he will eventually be able to work his way to the fifth rung 45 and, perhaps, the fourth rung 44 or third rung 43. A particular flexible person may be able to walk his legs all the way to the first rung 41.

Other exercises can be performed on the device 10. A person lying on the back support 12 could chin himself on one of the rungs. A person with his legs bent at the knees could hook his heels on the sixth rung 46 and then pressing his hands against his knees, straightening his knees and legs. The user only need exercise his imagination to determine other exercises which can be performed on the device 10.

For ease of storage or transportation the exerciser device 10 can be "knocked down" into a relatively small space. To disassemble the device 10, the fasteners 84 and nuts 86 are removed so that the ladder member 14 can be folded down with the back support member 12. Should further disassembly be desired, the fasteners 74 and nuts 76 can be removed and the upright support 16 can be removed from the openings 78 in the top 26. Also, the rod 52 and nuts 54 can be removed so the ladder member 16 can be disconnected from the back support 12.

While only one embodiment of the invention has been illustrated and described, it is understood that modifications, variations and equivalent structures fall within the scope of the appended claims.

I claim:

1. An exerciser device particularly useful in exercising the back and legs of a person, said exerciser device comprising a back support member upon which the person may lie, said back support member having a head end and an opposite end, a curved ladder member having one end attached to the head end of said back support member, said ladder member rising above said back support member and over the top of said back support member and curving toward the opposite end of said back support member, the other end of said ladder member terminating above said back support member, said ladder member having a plurality of spaced rungs for engagement by the feet of the person, and support means for supporting said other end of said ladder member, said support means being secured to said back support member and extending generally upwardly and being detachably connected to the other end of said ladder member.

2. An exerciser as in claim 1, wherein said ladder member is pivotally secured to the head end of said back support member, and said support means and said other end of said ladder member are adjustably secured together.

3. An exerciser device as in claim 1, wherein said plurality of rungs are spaced varying distances apart, the rungs closest the head end being spaced closer together than the rungs closest the opposite end of said back support member.

4. An exerciser device as in claim 1, wherein said back support member is inclined, said head end of said

back support member being higher than the opposite end of said back support member.

5. An exerciser device as in claim **1,** wherein said back support member includes head and opposite end legs, said ladder member being pivotally secured to the head end legs of said back support member.

6. An exerciser device as in claim **1,** wherein said ladder member comprises a pair of parallel and curved side rails, said side rails being connected together by said plurality of rungs.

7. An exerciser device as in claim **6,** wherein said back support member comprises a top, and a pair of tubular elements, each element having a straight central section and a leg at the head end and a shorter leg at the opposite end, said top being secured to said central sections, said side rails of said ladder member being pivotally secured to the legs at the head end of said back support member.

8. An exerciser device as in claim **7,** further comprising a pair of support tubes, each tube having an upper end bent toward the head end of said back support member, said support tubes being secured to said tubular elements of said back support member, said upper ends of said support tubes and said upper ends of said side rails being adjustably secured together so that said ladder member may be placed in various positions with respect to said back support member.

9. An exerciser device as in claim **8,** wherein said plurality of rungs are spaced varying distances apart, the rungs closest the head end being spaced closer together than the rungs closest the opposite end.

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