

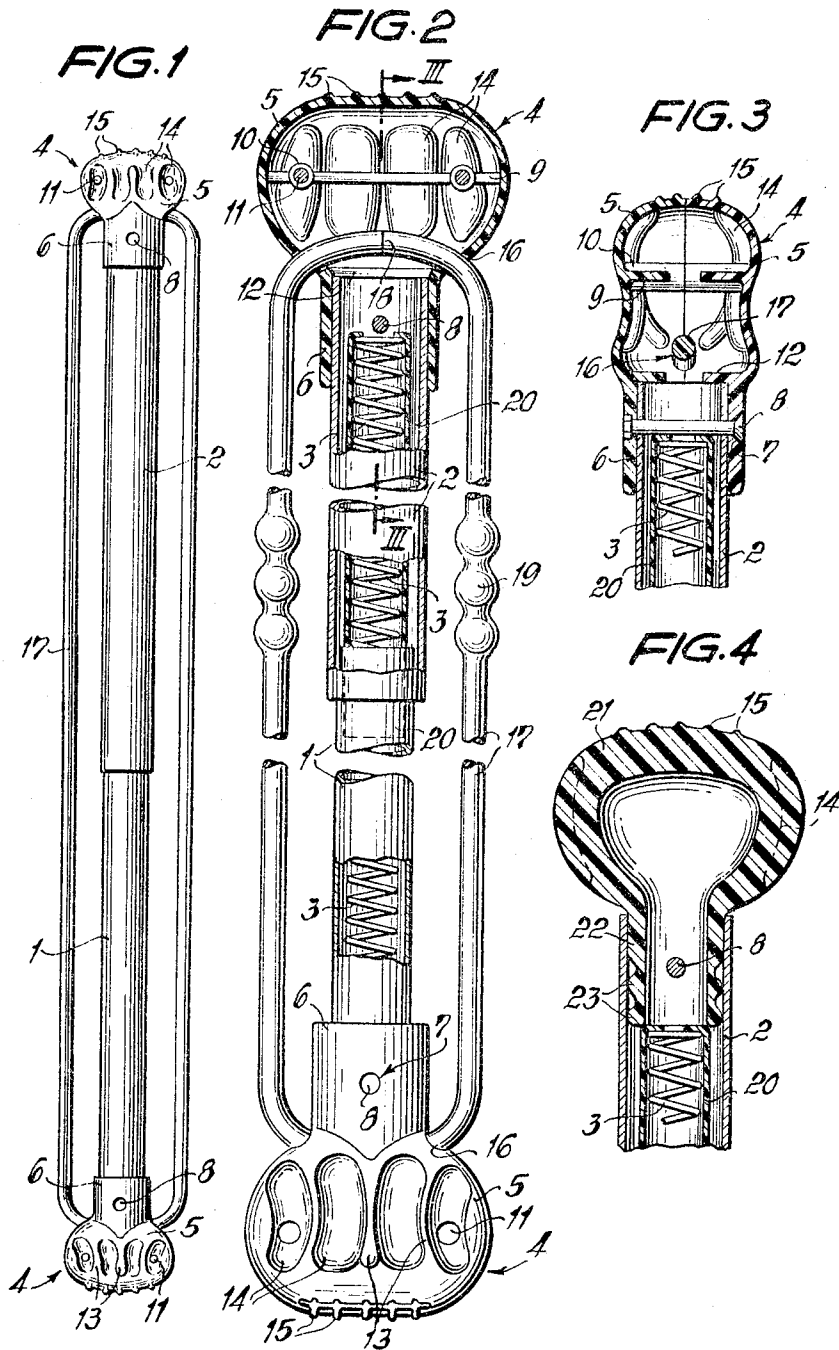
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SPRING TYPE PHYSICAL EXERCISER

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SPRING TYPE PHYSICAL EXERCISER

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The invention relates to physical exercisers, and more particularly to a device for human use by which a large variety of physical exercisers for training and strengthening the muscular system of the body may be carried out.

It is an object of the invention to provide an exerciser usable by compression, pull and expansion. Another object is to provide an exerciser of simple and robust construction which is safe against accidents. A further object is to provide an exerciser which the user may manipulate with his hands and feet and may also support against the floor, wall or ceiling of a room.

These and other objects of this invention will become apparent from the following description of an embodiment of the invention in connection with the accompanying drawings which form part of this specification. In the drawings,

FIGURE 1 is a side elevation of the exerciser embodying this invention,

FIGURE 2 is on an enlarged scale a side elevation with parts broken away and parts in section of the exerciser embodying this invention,

FIGURE 3 is a fragmentary cross-sectional view being taken on the line III—III of FIGURE 2, and

FIGURE 4 is a fragmentary sectional view of a modification of this invention.

In the embodiment illustrated in FIGURES 1 to 3 the exerciser includes an internal telescopic tube 1, slidable within an external tube 2. Inside the tubes 1, 2 is located a coil spring 3. The external end of either tube 1 or 2 is closed by a handle 4 which consists of two equal bowl-shaped pieces 5 arranged symmetrically. With their respective collars 6, the handle pieces 5 extend over the ends of tubes 1, 2 where they are rigidly held together and secured to said tubes by means of a screw bolt 8 which is inserted in a bore 7 of each tube 1 and 2. The respective pieces 5 are strutted by a transverse rib 9 which is of smaller height than the edges of pieces 5. The transverse rib 9 has two cylindrical reinforcements 10 which extend as far as the plane of the edges of pieces 5, as can be seen from FIGURE 3. The cylindrical reinforcements 10 have the same height as the edge of the two pieces 5 and they receive screw bolts 11, by which the two pieces 5 of either handle 4 are secured together. The pressure of these bolts, when tightened, is absorbed by the reinforcements 10, which will then move closely together.

At their transition into collar 6, the pieces 5 are provided with a partition wall 12, which is adjacent to the ends of tubes 1 and 2. The bolt 8 forms a stop for the coil spring 3 inside tubes 1, 2.

The two parts 5 of each handle 4 are adapted to the shape of the hand and are provided with three rounded longitudinal ribs 13, which have grooves 14 between them, into which the fingers of the user's hands can be placed, so that he may have a firm grasp. The head of each piece 5 has a roughly finished surface so that the device is safe against slipping when supported on the floor, against a wall or a ceiling.

Each piece 5 where it joins its collar part 6 is provided with a semicircular recess 16. With two respective pieces 5 being put together to form the handle 4, the two recesses 16 form a circular hole, through which an endless tensioning rope 17 is laid. The rope 17 is of smooth surface and should consist of a tension-proof plastic ma-

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terial, such as nylon, or some other polyamide. It is welded together to an endless rope at a joint 18 inside one of the two handles 4. As shown in FIGURE 2 either track of rope 17 may be provided with a handle 19, made of the same substance as the rope itself and being one part with the rope.

For part of its length, the coil spring 3 is surrounded by a hose 20 made of a plastic foil, such as nylon, which extends over the whole length of the external tube 2 and half the length of internal tube 1. This hose prevents the coil spring 3 pressing against tubes 1 and 2 when the handles 4 are pressed together, and it saves lubricants for the spring. Further, this construction obviates any noise which would otherwise arise through rubbing of spring 3 against the internal walls of tubes 1 and 2.

The length of rope 17 is such that, under the impact of the coil spring 3, it is under a certain initial tension when the rope 17 limits the expansion of tubes 1 and 2.

Referring now to FIGURE 4 which illustrates a modified example of the invention, the handle 4 is made up by one piece 21 instead of the two bowl-shaped pieces 5, but in the same way adapted to the anatomy of the hand, and also provided with grooves 14 for reception of the fingers, and at its external end it has a roughly finished surface 15. With its collar 22, the handle piece 21 extends into the ends of tubes 1 and 2. So that the collar 22 is given a firm mounting in tubes 1 and 2 respectively, it is provided with a plurality of annular ribs 23. The internal end of collar 22, which extends into tubes 1 and 2 respectively, at the same time forms the stop for coil spring 3.

The described construction of the device according to the invention makes it possible for the user to carry out a large variety of physical exercises.

To carry out push exercises for improvement of the muscular system of arms and chest, the two handles 4 are pressed together by the palms of the hands so that the telescopic tube 1 is pushed into tube 2 till coil spring 3 is fully compressed. For stretching exercises, the center portions of the two tracks of rope 17 are grasped by the hands and pulled apart, whereby coil spring 3 is also compressed. The grasping of the two tracks of rope 17 is facilitated by the two handles 19 (FIGURE 2). Another variation is to grasp the device with both hands at one handle 4 and to support the other handle against a wall or ceiling, whereupon the device is compressed. Further, it is possible for each of the user's hands to grasp one track of rope 17 and to twist the hands while at the same time the rope is drawn together. This exercise is particularly beneficial to the chest muscles. Also, one may have the device in horizontal position and with his feet tread into one track of rope 17 while the other track is pulled up by both hands. This helps to develop the back muscles. To strengthen the stomach muscles, one end of the device is placed on the floor, and the upper handle is pressed downwards by both hands. This exercise may also be made while sitting on the floor.

There are many more exercises beneficial to the user's physique which could be mentioned. It is apparent that the device according to the invention offers such a variety of exercises that the whole of the muscular system can be improved. Whichever way the device is employed it is safe against accidents as the tension rope acts as a brake when the compressed telescopic tubes due to sudden release of the handles of the device are driven back into their original position.

Although this invention has been illustrated and described with reference to the preferred embodiments thereof, it is to be understood that the invention is in no way limited to the details of such embodiments, but is capable of numerous modifications within the scope of the appended claims.

My claims are:

1. A physical exercising device comprising tubes arranged as a telescopic system, a compression spring means housed therein and biasing said tubes apart, handles mounted on opposite ends of said system, an endless rope having at least one track with a first bight at one end and a second bight at the other end, said first bight connected to one handle and said second bight connected to the other handle.

2. A physical exerciser comprising a first tube, a second tube slidable outside the first tube, compression spring means housed by said tubes and biasing said tubes apart, an end grip attached to one tube, a second end grip attached to the other tube, said grips having a shape adapted to the anatomy form of the hand, an endless rope having two spaced parallel tracks interconnected by a first bight at one end and a second bight at the other end, said first bight connected to one end grip and said second bight connected to the other end grip.

3. The device of claim 1, wherein the endless rope consists of a tension-proof plastic material.

4. The physical exerciser of claim 2, wherein each track of the endless rope is provided with a handle.

5. The physical exerciser of claim 4, wherein said handles consist of the same material as the rope.

6. A physical exercising device comprising a first tube, a second tube slidable outside the first tube, a compression spring means housed by said tubes, a hose of plastic foil enclosing said spring, handles attached on opposite ends of said tubes, recesses in said handles, and an endless rope having at least one track with a first bight at one end and a second bight at the other end, said first bight connected to one handle, and said second bight connected to the other handle.

7. The device of claim 6, wherein the rope has such a length that in the inoperative position of the device said rope is under an initial tension.

8. A physical exerciser comprising tubes arranged as a telescopic system, a compression spring means housed therein and biasing said tubes apart, handles mounted on opposite ends of said system, each handle consisting of two bowl-shaped pieces symmetrically secured to opposite ends of said tubes, recesses in said bowl-shaped pieces, an endless rope having at least one track with a first bight at one end and a second bight at the other end, said first bight passing through the recess of one handle and said second bight passing through the recess of the other handle.

9. A physical exerciser comprising tubes arranged as a telescopic system, a compression spring housed therein, handles mounted on opposite ends of said system, grooves in said handles adapted to receive the fingers of the operator's hand, said handles have a roughly finished surface, and an endless rope of tension-proof material, said rope having at least one track with a first bight at one end and a second bight at the other end, said first bight connected to one handle and said second bight connected to the other handle.

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