No. 676,771. Patented June 18, 1901.

R. REACH.

EXERCISING MACHINE.

(Application filed Feb. 28, 1901.)

(No Model.) 2 Sheets—Sheet 1.

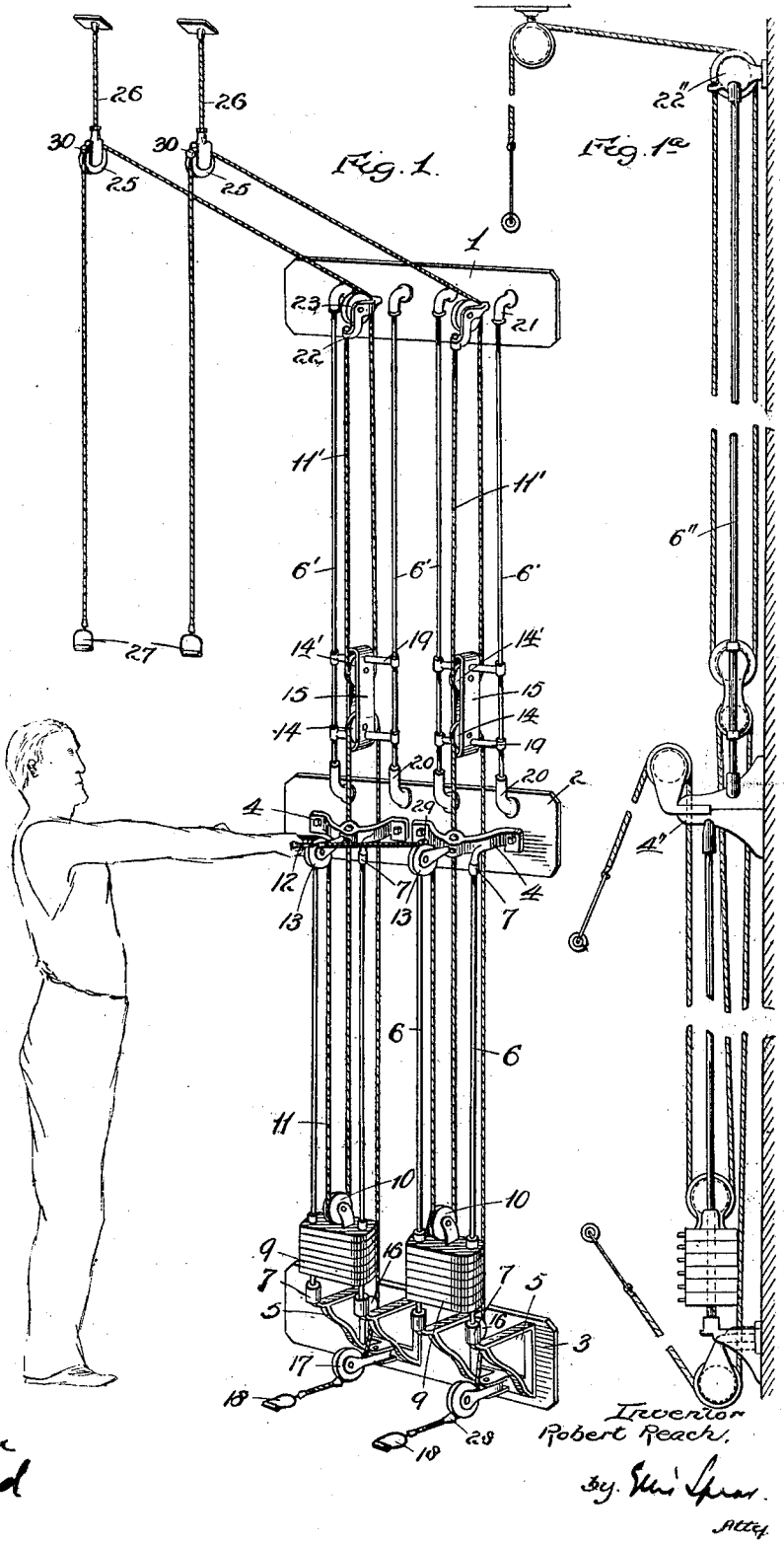

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Fig. 2.

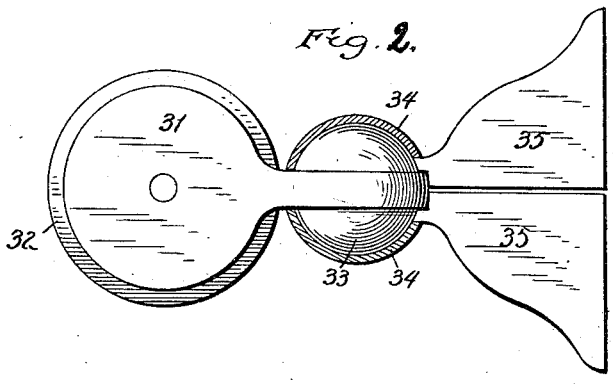


Fig. 3

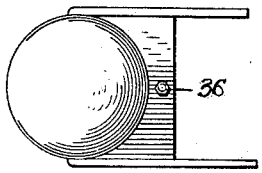
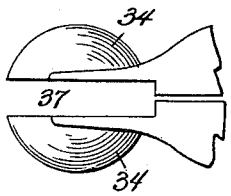


Fig 4



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UNITED STATES PATENT OFFICE.

ROBERT REACH, OF PHILADELPHIA, PENNSYLVANIA.

EXERCISING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 676,771, dated June 18, 1901.

Application filed February 28, 1901. Serial No. 49,316. (No model.)

To all whom it may concern:

Be it known that I, ROBERT REACH, a citizen of the United States, residing at Philadelphia, Pennsylvania, have invented certain new and useful Improvements in Exercising-Machines, of which the following is a specification.

My invention is an improvement in wall exercising apparatus, and I aim to provide a machine which will be susceptible of a wide range of use and may be employed for the upper-chest movement, back-and-loin movement, or the upper-chest and intercostal movements. The parts of said machine need no adjustment to change from one movement to another, but are always ready for the person exercising to select either movement he desires or to change from one to the other by simply taking hold of the proper connections or handles.

My invention includes the machine capable of being used for each of the three movements—upper-chest, back-and-loins, and intercostal—and, further, it includes a particular form of pulley-support.

My invention includes other features, hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the machine. Fig. 1ª is a side view of the preferred form of my invention. Figs. 2, 3, and 4 show details of the pulley.

The machine comprises a top board 1, an intermediate board 2, and a lower board 3, the two former being attached to the wall and the latter being attached to the base-board.

The board 2 has attached thereto a pair of brackets 4, while the lower board has brackets 5 secured thereto. Between these brackets guide-rods 6 extend, being attached to projections 7 on the brackets. These rods guide weight-carriages 9, to which are connected pulleys 10, and ropes 11, having handles or grips 12 attached thereto, pass over pulleys 13, supported by the bracket 4 of the middle board 2, and thence the ropes pass under the weight-pulleys, and from here they extend upwardly and pass between the brackets 4 and the middle board 2 and over the lower members 14 of compound pulleys 15, hereinafter described, and from here the ropes extend downward and pass back of idler-pulleys 16, carried by the lowermost bracket 5, and thence forwardly under the pulley 17, also supported by said brackets, the ropes terminating in handles 18 at the floor. The compound pulley is made up of the blocks 15, having the lower members or pulleys 14 and the upper members or pulleys 14′, and these blocks have arms 19, extending laterally therefrom to engage and slide upon the guide-rods 6′, which extend from brackets 20 of the middle board 2 and connect at their upper ends by brackets 21 with the upper board 1. The compound pulleys rest by their members or pulleys 14′ in the loops of upper cords 11′, one end of each of said cords being secured to pulley-brackets 22, connected with the upper board 1, from which point the said cords extend downwardly under the pulleys 14′, and thence upwardly and over pulleys 23, journaled in the brackets 22, and from these pulleys 23 the cords extend about overhead pulleys 25, which are suspended from the ceiling by means of flexible hangers or cords 26. The depending ends of these ropes have the handles 27 secured thereto. Upon the ropes 11 stops or balls 28 29 are arranged, these being located, respectively, at or near the lower and upper ends of said cords, and the upper cords 11′ also have attached thereto the balls or stops 30.

When the machine is not in use, the weight-carriages are down and the stops or balls 28 29 30 are against the pulleys and their brackets, and the machine is then ready to be operated by taking hold of either pair of handles 18, 12, or 27. In the drawings the exerciser is shown as using the handles 12 for the chest movement, and by drawing upon these handles the weights will rise and fall, the stops 28 and 30 holding the ends of the ropes 11 and 11′ from movement. During this movement the compound pulley 15 remains at rest. When the lower handles are drawn upon for the back-and-loins movement, the stops 29 hold the other ends of the ropes 11, while the upper ropes 11′ and the compound pulleys are held by the balls 30. If the operator wishes to take the intercostal movement, he grasps the handles 27, and in this movement the stops 28 29 hold the ends of the lower ropes while the intermediate portion of said ropes, together with the weight-carriages, move up

and down, this being caused by the reciprocation of the compound pulleys.

From the above it will be seen that the machine may be operated to get any of the three movements mentioned—namely, the upper-chest, the back-and-loins, and the intercostal. In the latter movement the compound pulley has a traveling movement, while in the other exercises the compound pulley is at rest.

By reason of my use of flexible cords for the overhead pulley the said pulley will work just as well whether it is suspended a foot from the ceiling or five or more feet therefrom, and this forms an inexpensive and effective manner of holding these pulleys. The pulley at the upper chest-bracket is of special construction, and this is shown more particularly in Figs 3, 4, and 5, in which the pulley-frame 31, supporting the pulley 32 in any suitable manner, has connected therewith a ball or sphere 33, fitted to semispherical cups 34, carried by brackets 35 one above the other. These brackets are attached in place in any suitable manner and are connected together by a bolt 36, Fig. 4, and when so connected they hold the ball 33 in their cups 34. The pulley-frame 31 has movement laterally by means of this ball-bearing, a space 37, Fig. 5, being left between the cups 34 to permit this movement. This lateral movement is perfectly free and gives more than a right-angle action. The ball-swivel does away with the bearing-point heretofore used and presents a strong construction.

In Fig. 1ª I show the preferred form of my invention. This is substantially the same as the form shown in Fig. 1 excepting as to minor details of construction. In this form the upper guide-rods 6″ are attached to the upper and lower brackets 22′ 4′, respectively, instead of the boards. The guide-sheave 16 is omitted from this form, and the structure is generally simplified.

It will be understood that the term "weight" or "weight-carriage" as used herein is intended to cover the weight or carriage shown or any equivalent means for applying a resistance to the pull exerted by the operator on the handles.

I claim as my invention—

1. The combination in an exercising-machine, of a weight-carriage, a rope connection therewith, a handle connected to the end of said rope for giving the chest movement, a second handle connected to the opposite end of said rope for giving the back-and-loins movement, a traveling pulley engaging a loop in said rope connection and a handle connected with said traveling pulley, substantially as described.

2. An exercising-machine comprising a weight-pulley, upper means for giving the intercostal movement, means at a lower level for giving another movement, and a traveling pulley connecting the upper and lower means, substantially as described.

3. An exercising-machine comprising a weight-pulley, means for giving one movement, means for giving a different movement and a traveling pulley forming the connection between the two sets of means, substantially as described.

4. In combination in an exercising-machine, a weight-carriage, a chest-pulley, a rope in connection with said pulley and carriage, a lower pulley engaging said rope, handles on the ends of said rope with means whereby either handle will be held while the other handle is operated, a compound pulley engaging said rope and a second rope engaging said compound pulley and having a handle with means for holding said handle in position while either of the other handles is operated, substantially as described.

5. In combination, the weight-carriage, a pulley carried thereby, a traveling pulley, a rope passing around the said pulleys, pulleys at the ends of said rope arranged to permit either end to be pulled and a separate rope for operating the traveling pulley, substantially as described.

6. In combination in an exercising-machine, the weight-carriage, a pulley carried thereby, a pulley 14 having vertical movement and engaging a loop of the operating-cord, a traveling pulley 14′ and independent rope connections extending therefrom, substantially as described.

7. An exercising-machine comprising two separate ropes, a weight connected with one of the ropes, a traveling pulley forming the connection between the two ropes and suitable handles on the ropes, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT REACH.

Witnesses:

C. S. MIDDLETON,

HENRY E. COOPER.