M. B. & W. F. REACH.

GYMNASIUM APPARATUS WITH CLAMPING DEVICE.

APPLICATION FILED MAY 29, 1911.

1,013,687.

Patented Jan. 2, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

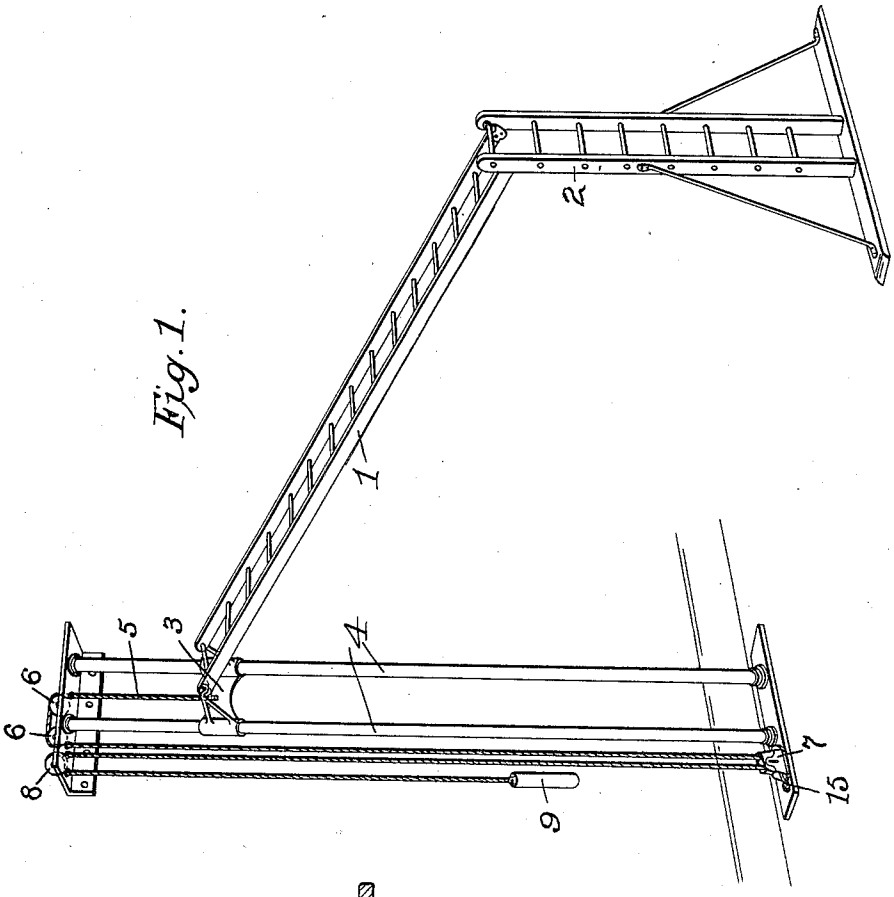


Fig. 2.

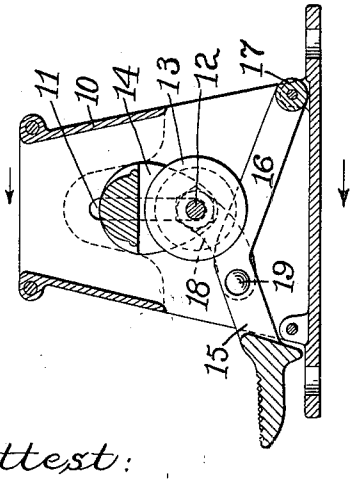
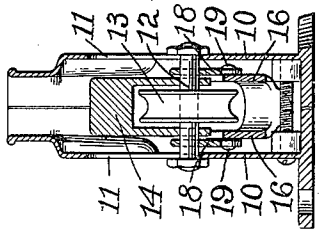


Fig. 3.



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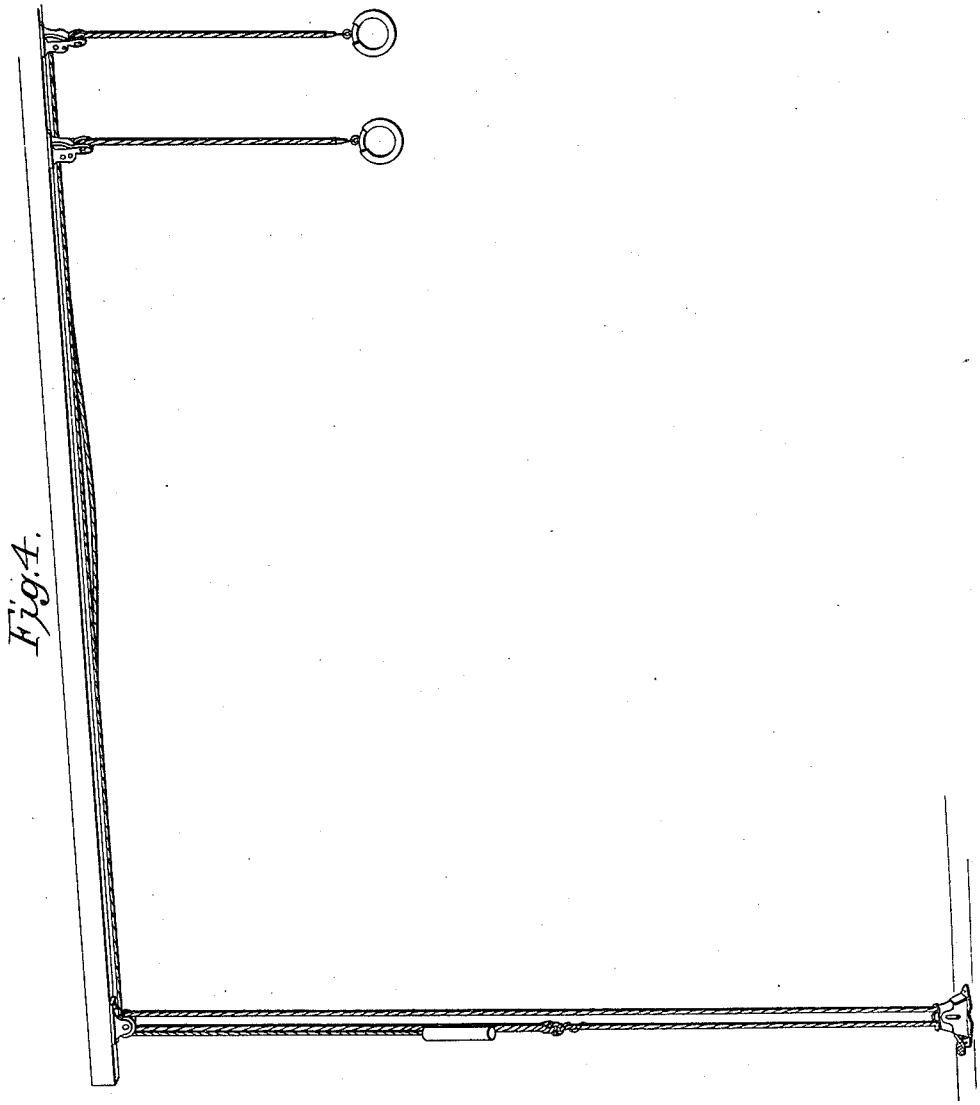

Fig. 4.

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UNITED STATES PATENT OFFICE.

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GYMNASIUM APPARATUS WITH CLAMPING DEVICE.

1,013,687. Specification of Letters Patent. **Patented Jan. 2, 1912.**

Application filed May 29, 1911. Serial No. 630,006.

To all whom it may concern:

Be it known that we, MILTON B. REACH and WILLIAM F. REACH, citizens of the United States, residing at Springfield, Massachusetts, have invented certain new and useful Improvements in Gymnasium Apparatus with Clamping Device, of which the following is a specification.

Our present invention relates to gymnasium apparatus and particularly to means for controlling the position of such apparatus, for instance, such as a ladder, flying rings or the like.

In the accompanying drawings, we show in Figure 1 a perspective view of our invention embodied in an apparatus which includes an exercising ladder; Fig. 2 is a vertical sectional view through the clamping means of our invention; Fig. 3 is a similar view taken at right angles to the view of Fig. 2; Fig. 4 is a view indicating that our invention may be embodied in another form of apparatus, for instance, in connection with flying rings

Referring to Figs. 1, 2 and 3, the exercising apparatus consists of a ladder 1 supported upon a suitable standard 2, and pivotally mounted at its upper end upon a slide or carriage 3 movable upon guide rods 4, the said carriage being controlled as to its vertical position by a rope 5 passing over pulleys 6, thence downwardly through our improved clamp device, indicated at 7, from whence the rope extends upwardly around a pulley 8 and then downwardly, carrying at its lower end a counterbalance weight 9. The clamp 7 comprises a frame or box 10, the end walls of which incline or converge upwardly, as shown in Fig. 2, whereas the side walls are substantially parallel. These side walls are slotted at 11, and receive a bolt 12 forming the journal or bearing for a pulley 13 having a grooved periphery adapted for the passage of the rope 5 about it. Mounted on the bolt 12 is a wedge block 14, the sides of which partly embrace the pulley, as shown in Fig. 3, the said block extending upwardly in relation to the contracted space between the walls 10, and the general form of this block being that of a wedge with its tapered end directed upwardly. The rope 5 passes down on one side of this wedge block around the pulley 13, and thence upwardly on the other side of the wedge block, and it will thus be seen that upward pull on the rope will raise the wedge block and thus grip the rope against the convergent walls of the casing 10, and the stronger the upward pull the stronger will be the grip of the wedge upon the rope. In order to secure the release of the rope, we provide a lever mechanism comprising a foot lever 15. This we prefer to form as a casting having the sides 16 with a cross piece 17 at their ends pivotally mounted in ears of the frame or boxing. The sides of this lever are connected by links 18 with the bolt or journal pin 12 of the pulley and wedge, the said links being pivotally mounted at 19 on the sides 16 of the foot lever. When the clamp is gripping the rope, the foot lever is of course raised from the position shown in Fig. 2, and by placing the foot on this lever and pressing the same downwardly, the wedge is drawn down, thus releasing the rope which may then be moved through the clamping device so long as the lever is pressed upon. The rope may also be threaded through the clamping device by pressing down on one side or strand of the rope, while pulling up on the other strand. As shown in Fig. 1, this clamping device is placed in convenient position to be operated by the foot of the user of the exercising apparatus, and from Fig. 4 it will be observed that this clamp may be employed in connection with forms of apparatus other than that shown in Fig. 1.

It will be seen that the pulley provides a guide for the rope while the wedge provides a clamp therefor, and both the guiding pulley and the wedge are movable within the case, being mounted on the same bolt and both are controlled from the foot lever which connects with the same slidable bolt upon which the pulley and wedge are mounted.

While we refer to a wedge block in the appended claims, we employ this term in a generic sense to include any device which, coacting with the convergent walls of the frame, will act to clamp the rope.

We claim as our invention:—

1. In exercising apparatus, an exercising device, a rope connected therewith for adjusting it to different elevations, upper and lower guiding means for the rope for directing it downwardly and upwardly, and

clamping means for the rope supported independently of the rope at a fixed point, substantially as described.

2. In exercising apparatus, an exercising device, a rope connected therewith for adjusting it to different elevations, guiding means for the rope, clamping means for the rope supported independently of the rope at a fixed point, and means for taking care of the terminal end of the rope to prevent slack, substantially as described.

3. In exercising apparatus, an exercising device, a rope connected therewith for adjusting it to different elevations, upper and lower guiding means for the rope, clamping means for the rope supported independently of the rope at a fixed point, and a weight for taking care of the terminal end of the rope to prevent slack, substantially as described.

4. In exercising apparatus, an exercising device, a rope connected therewith for adjusting it to different elevations, guiding means for the rope, and clamping means for the rope supported independently of the rope at a fixed point, said clamp being controlled by the foot, substantially as described.

5. In exercising apparatus, an exercising device, a rope connected therewith for adjusting it to different elevated positions, a guide for directing the rope downwardly, and a lower guide and clamp supported independently of the rope at a fixed point.

6. In exercising apparatus, an exercising device, a rope connected therewith for adjusting it to different elevated positions, a guide for directing the rope downwardly, a lower guide and clamp supported independently of the rope at a fixed point, said lower guide and clamp comprising a guide pulley and a box against the wall of which the rope is pressed, substantially as described.

7. In combination in an exercising machine, an exercising device, a rope connected thereto for raising and lowering it, a pulley for guiding the rope downwardly, a box secured to the floor, a guide and clamping member within the box and a foot lever for operating the clamp, substantially as described.

In testimony whereof, we affix our signatures in presence of two witnesses.

MILTON B. REACH.
WILLIAM F. REACH.

Witnesses:
ROBERT W. BURKE,
A. B. HORNE.