Nov. 18, 1941. A. E. JOHNSON 2,263,135

EXERCISER AND STRENGTH TESTER

Filed May 19, 1941

Fig. 1.

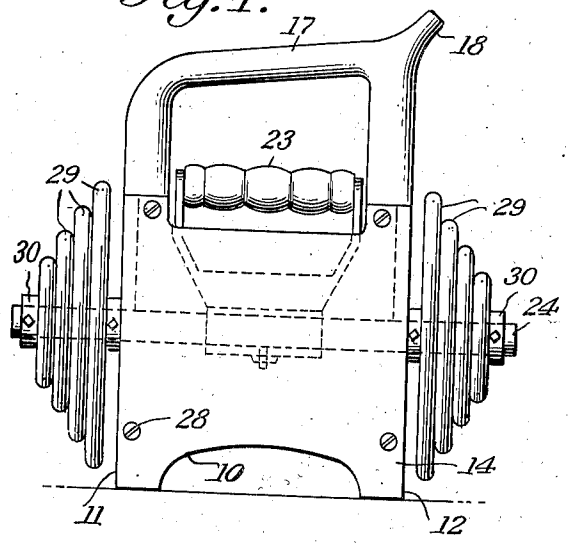


Fig. 2.

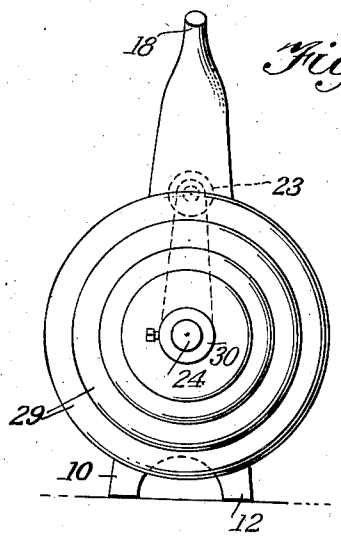


Fig. 3.

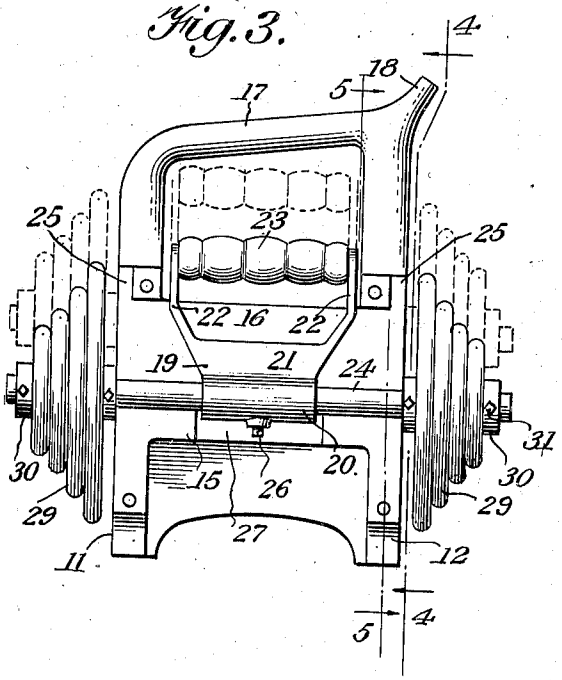


Fig. 4.

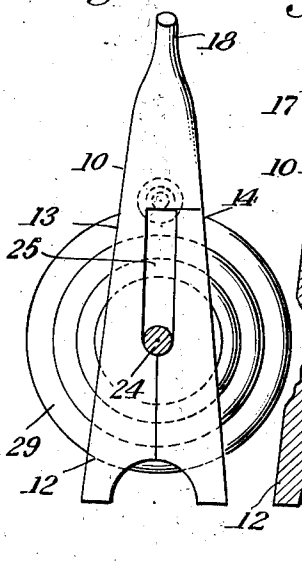
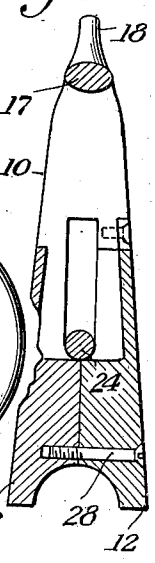


Fig. 5.



Allen E. Johnson
INVENTOR

BY Victor J. Evans & Co.
ATTORNEYS

Patented Nov. 18, 1941 2,263,135

UNITED STATES PATENT OFFICE

2,263,135

EXERCISER AND STRENGTH TESTER

Allen E. Johnson, Bridgeton, N. J.

Application May 19, 1941, Serial No. 394,185

7 Claims. (Cl. 272—68)

My invention relates to new and useful improvements in exercisers.

An important object of my invention is to provide an exciser that is particularly and uniquely adapted to develop the muscles of the hand and forearm.

Still another object of my invention is the provision of an exerciser of the above-mentioned character that includes relatively movable parts, one of said parts being unique to permit weight means to be selectively applied thereto or removed therefrom in a manner whereby resistance offered by the weights to movement of the parts relative to each other may be regulated in accordance with the strength and fancy of the user.

Yet another object of my invention is the provision of an exerciser of the above-mentioned character wherein the resistance offered to movement of the parts relative to each other may be accurately calculated in terms of pounds or other weight units to permit the person attempting movement of the parts to accurately ascertain the gripping power of his hand as measured in terms of such weight units.

A further object of my invention is the provision of an exerciser of the above-mentioned character that is strong and durable in its construction and that comprises essentially few parts to promote simplicity of construction and efficiency of operation.

Other objects and advantages of my invention, will be apparent during the course of the following description.

In the drawing, forming a part of this specification, and wherein like numerals are employed to designate like parts throughout the same,

Figure 1 is a side elevation of a device embodying my invention,

Figure 2 is an end elevation thereof,

Figure 3 is a side elevation of my device and showing the side plate removed therefrom,

Figure 4 is a vertical sectional view taken on the line 4—4 of Figure 3, and

Figure 5 is a vertical sectional view taken on the line 5—5 of Figure 3.

In the accompanying drawing, wherein for the purpose of illustration, is shown a preferred embodiment of my invention, the numeral 10 designates a supporting frame having spaced substantially wedge-shaped end walls 11 and 12 connected by upwardly convergent side walls 13 and 14. The bottom 15 of the frame is disposed substantially above the bottom edges of the end and side walls and the upper edges of the side walls are spaced laterally of each other to provide an elongated slotted opening 16. An arch portion 17 is arranged above the upper edge of the side and end walls and the ends thereof integrally connect the ends of the frame. The arch comprises a stationary hand grip portion and the upper end thereof is preferably substantially straight rather than curved and is inclined slightly from the horizontal. The upper end is provided at the apex thereof with an upwardly inclined projection 18 which normally extends between the thumb and forefinger when the hand is applied to the arch and serves to support and comfortably accommodate the hand when gripping pressure is applied to the device.

A carriage 19, mounted within the frame, is provided with a lower sleeve portion 20 normally resting upon and supported by the bottom wall 15. The carriage is adapted for vertical movement within the frame and the sleeve is, therefore, provided with an upwardly extending web 21 the opposite ends of which are formed with upward extensions or arms 22. The arms extend through the slot 16 of the frame and a finger piece 23 is disposed in bridging relation therewith above the side walls of the frame and substantially below the closed end of the arch 17.

A rod 24 is received by the sleeve 20 and the opposite ends thereof extend exteriorly of the frame through the elongated vertical slots 25 in the end walls 11 and 12. Extending through the sleeve at substantially its middle is a set screw 26 which engages the rod in a manner to hold the same normally fixedly disposed within the sleeve. The opening 27 in the bottom of the frame receives the set screw and permits adjustment of the same to be made without opening the frame. However, as a matter of expediency and in order that the various parts may be easily assembled, I have made the side 14 removable, as best illustrated in Figure 5. The side is detachably secured to the end walls of the frame by means of the bolts 28, or the like, the upper bolts being preferably imbedded in the connecting ends of the arch 17 and the lower bolts being received by the portion of the end walls extending below the bottom 15.

The ends of the rods 24 extending exteriorly of the frame are adapted to detachably receive a plurality of weight means designated generally by the numeral 29. For the purpose of the present invention, the weight means are of various sizes and preferably vary in a regular manner to permit the user to ascertain at any time the exact weight carried by the rod. The weights

are preferably in the form of disks which may be slidably applied to or removed from the extending ends of the rod. In order that the disks may be securely held on the rod, I have provided collars **30**, one collar being disposed at each side of each group of weights and each collar being fixedly associated with the rod by means of set screws **31**, or the like. The outer collars are the only ones that will be generally removed and it will be readily apparent that removal of the collar will permit any one or all of the weight disks to be removed from the rod and that disks totaling any selected weight may be applied to the rod. The outer collar is then slipped onto the portion of the rod extending beyond the weight means and moved into abutting relation with the outermost weight to securely hold the same on the rod.

In operation, the hand is applied to the arch **17** in the manner hereinabove described. The fingers extending downwardly at one side of the arch are curled under the finger piece **23** and, if the hand is contracted, the carriage **19** may be moved vertically within the frame. The rod **24** will travel within the vertical slots **25** in the end walls of the frame and the weights **29** at the opposite ends thereof will be raised therewith. The purpose and utility of the device is obvious. A relatively large number of weights may be applied to the rod to permit a person to test the maximum weight that he is capable of lifting by tensing the muscles of his hand and forearm. This application will permit him to easily and accurately determine his gripping ability in terms of pounds. Another, and probably more universal application of the device resides in its adaptability as an exerciser. If the number of weights are reduced so that the user may raise the carriage with relative ease, the carriage may be raised and lowered a number of times to exercise and strengthen the muscles of the hand and forearm. Obviously, the weights may be carefully selected in accordance with the strength and age of the user.

It is to be understood that the form of my invention, herewith shown and described, may be taken as a preferred example of the same, and that various changes in the size, shape and arrangement of parts may be resorted to without departing from the spirit of my invention, or scope of the appended claims.

Having thus described my invention, I claim:

1. An exerciser comprising a frame, a carriage vertically movable within the frame, spaced hand grip portions carried by the frame and carriage respectively, and a plurality of weight means detachably mounted on the carriage.

2. An exerciser comprising a stationary frame having a hand grip portion, a carriage vertically movable within said frame including a hand grip portion normally disposed in substantially spaced relation with the first-mentioned hand grip, a supporting member attached to the carriage and extending through vertical slots in the end walls of the frame, and a plurality of weight means detachably mounted on the portions of the supporting member extending exteriorly of the frame, whereby gripping of both of the hand grip portions to slide the carriage and weights relative to the frame will effect exercising of the hand and forearm muscles.

3. An exerciser comprising a frame provided with an upstanding arch portion, an open top and vertically slotted end walls, a carriage within said frame having an upwardly extending arch portion extending through the open top of the frame to be normally disposed in vertically spaced relation with the first-mentioned arch portion, a rod attached to the carriage having its opposite ends extending through the vertical slots in the frame, and a plurality of weight means detachably mounted on the extending ends of the rod.

4. An exerciser comprising a frame provided with an upwardly extending arch portion, an open top and vertically slotted end walls, a carriage within said frame having an upwardly extending arch portion extending through the open top of the frame to be normally disposed in spaced relation below the first-mentioned arch portion, a rod attached to the carriage having its opposite ends extending through the vertical slots in the frame, a plurality of weight means dtachably mounted on the extending ends of the rod, and means for normally holding the weight means fixedly secured to the ends of the said rods.

5. An exerciser comprising a hollow frame having an upwardly extending hand grip portion, a carriage vertically movable within said frame including a complementary hand grip portion normally spaced substantially below the first-mentioned hand grip, and weight means detachably associated with the said carriage for resisting movement of the last-mentioned hand grip means in the direction of the first-named hand grip means.

6. An exerciser comprising a hollow frame having vertically slotted end walls and an upwardly extending hand grip portion, a carriage vertically movable within said frame including a complementary hand grip portion normally spaced substantially below the first-mentioned hand grip portion, and a rod attached to the carriage having its opposite ends extending through the slots in the ends of the frame and normally seated in and supported by the lower ends of the slots, whereby the extending ends of the rod may be suitably weighted to resist movement of the said carriage within the said frame.

7. An exerciser comprising relatively movable parts having hand grip portions normally disposed a substantial distance apart, one of said parts having provision for detachably receiving a plurality of weight means whereby the complementary hand grip portions may be manually grasped and moved toward each other and whereby the weights may be uniquely applied to the mentioned part to vary the resistance offered thereby to movement of the parts in the above manner.

ALLEN E. JOHNSON.