T. E. VAUGHN.

EXERCISING APPARATUS.

APPLICATION FILED NOV. 22, 1916.

1,237,588.

Patented Aug. 21, 1917.

2 SHEETS—SHEET 1.

Fig. 1.

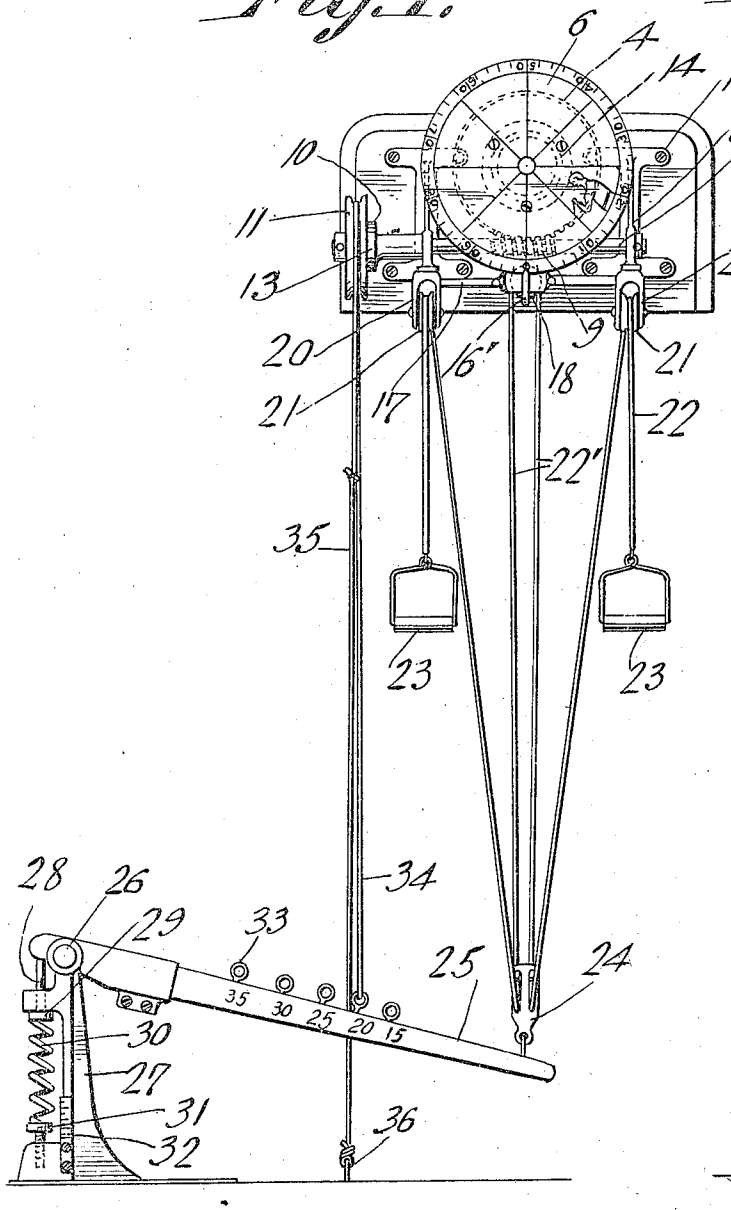
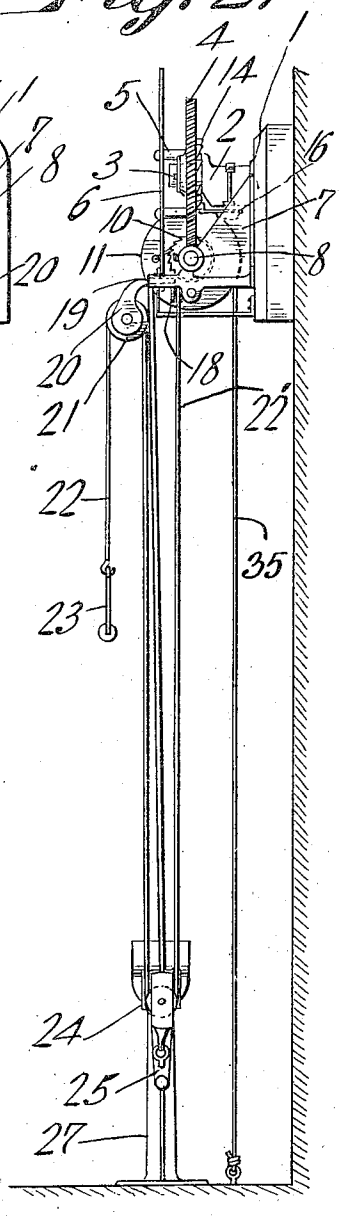


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

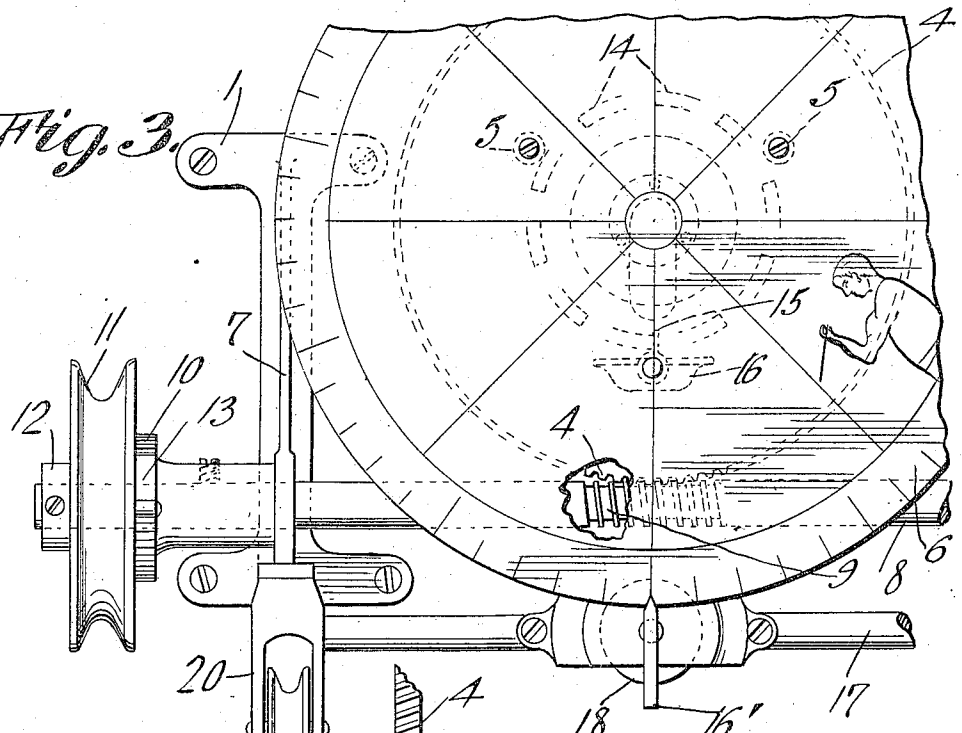
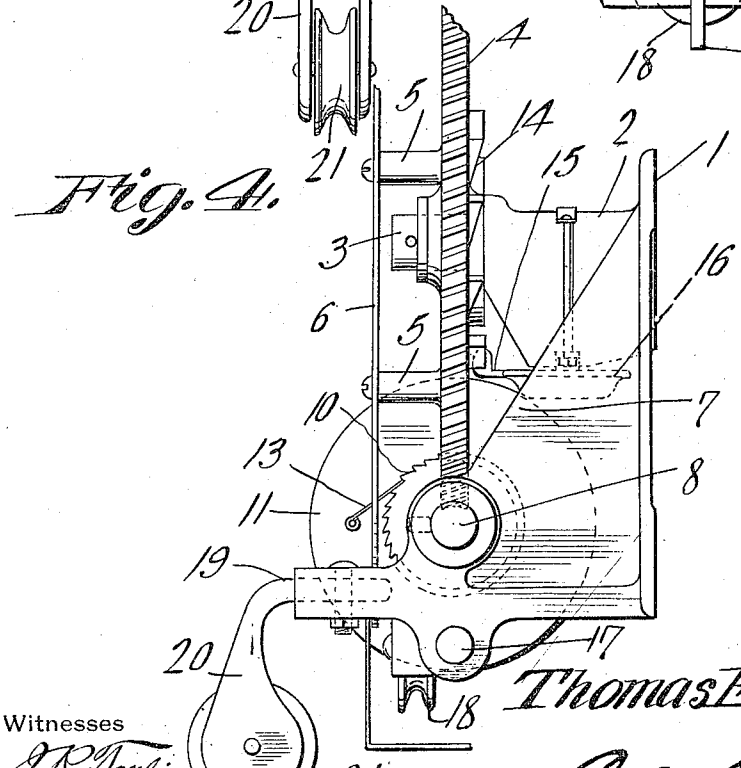


Fig. 4.



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UNITED STATES PATENT OFFICE.

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EXERCISING APPARATUS.

1,237,588. Specification of Letters Patent. Patented Aug. 21, 1917.

Application filed November 22, 1916. Serial No. 132,836.

To all whom it may concern:

Be it known that I, THOMAS E. VAUGHN, a citizen of the United States, residing at Crafton, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Exercising Apparatus, of which the following is a specification.

This invention relates to exercising apparatus of that type utilizing grips adapted to be pulled against the resisting action of springs or the like.

One of the objects of the invention is to provide exercising apparatus of this character having combined with it an indicator on which are arranged pictures or other data clearly disclosing different exercises to be used in succession, this indicating means being shiftable automatically so that, on the completion of a predetermined number of movements, the indicator will be brought to position to show the next exercise to be followed.

A further object is to provide means whereby after the completion of a predetermined number of movements a signal will be given automatically to notify the user that the next exercise of the series is to be taken up.

A still further object is to provide exercising apparatus which can be adjusted readily so as to operate the signal after any desired number of strokes or movements.

Another object is to combine with the exercising machine a graduated indicator especially useful in test and competitive work.

A further object is to provide apparatus of this character which is simple and compact in construction and can be set up as readily as the ordinary wall machines of this type.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—

Figure 1 is a front elevation of the apparatus.

Fig. 2 is a side elevation thereof.

Fig. 3 is an enlarged front elevation of a portion of the apparatus.

Fig. 4 is an enlarged side elevation of a portion of the apparatus.

Referring to the figures by characters of reference 1 designates an attaching plate having a central outstanding bracket 2 provided with a stud 3 on which is mounted a large worm gear 4 having forwardly extending posts 5 to which is secured a dial 6. In the construction illustrated the dial is provided with a series of graduations at the periphery thereof and which graduations are designated by suitable numerals. In addition to these graduations the front face of the dial is divided into segments. Each segment is adapted to contain an illustration of one exercise of a series to be followed. In the drawing only one of these illustrations has been shown, but it is to be understood that each of the segments is to be provided with a different picture. Instead of having pictures to illustrate the successive exercises, any other suitable means such as descriptions of the exercises, names, or the like may be used.

Extending forwardly from the attaching plate 1 near the sides thereof are brackets 7 and journaled within these brackets is a transverse shaft 8 having a worm 9 adapted to mesh with the gear 4. Secured to the shaft 8 is a ratchet wheel 10 and mounted for rotation on this shaft is a grooved wheel or sheave 11 which is maintained close to the ratchet wheel by a collar 12 secured to the shaft. Secured to one side of the sheave is a pawl 13 adapted to transmit motion in one direction from the sheave to the shaft.

Arranged upon the back face of the gear 4 are tripping cams 14 equal in number to the segments on the front face of the dial, these cams being arranged in a circle and adapted successively to engage the lever 15 of a bell 16 which is connected to the bracket 2 as shown particularly in Fig. 4. The parts are so positioned relative to each other that each time a dividing line between two segments is brought into register with an index 16′ arranged adjacent the dial, the lever 15 which has been gradually shifted by one of the cams 14 will be released so that the bell 16 will be sounded and give warning that the exercise is to be changed.

Index 16′ is mounted on a cross bar 17

connecting the brackets 7 and journaled within the central portion of this cross bar is an intermediate guide sheave 18.

Swiveled in the outer end of each bracket 7 is the stem 19 of a downwardly extending fork 20, there being a guide sheave 21 journaled within each fork. Extending over the guide sheaves 21 are the end portions of a cord 22 which are secured to grips 23. The cord is extended downwardly from the sheaves 21 and through a pulley block 24, the middle portion of the cord forming an elongated upwardly extending loop 22′ which is supported by the intermediate sheave 18. The pulley block 24 is attached to one end portion of a controlling lever 25 which is fulcrumed as at 26 upon a suitable support 27. The pulley block is preferably attached to a long arm of the lever while the other arm of the lever which is quite short, bears upon a stem 28 which is slidably mounted within the support 27 and has a foot 29 which bears on a compression spring 30. This compression spring, in turn, is supported by an adjusting screw 31 and obviously by shifting the screw upwardly or downwardly the tension of the spring can be increased or diminished as desired. A graduated scale 32 may be arranged close to and parallel with the path of the screw 31 so as to indicate the resistance in pounds or other units of measurement produced by a predetermined adjustment of the screw.

The block 24 is attached as before stated, to the free end of the long arm of the lever. At intermediate points this long arm has eyes 33 to any one of which may be attached one end of a cord 34 which extends over the sheave 11 and thence downwardly to a spring 35 which is anchored as at 36 and may be in the form of a strip of elastic, a coiled spring or the like.

The eyes 33 may be designated by numerals indicating the number of strokes which may be taken while carrying out any one exercise. For example, the eyes can be indicated by numerals arranged in steps of five and ranging from 15 to 35 as indicated.

Assuming that the user of the apparatus is a beginner and that it is desirable to use the minimum number of movements in each exercise, then the cord 34 should be connected to the first eye 33 and which is designated by the numeral 15. Likewise the screw 31 should be adjusted downwardly so that spring 30 will offer the minimum resistance to the movement of the lever 25. The grips 23 can then be grasped and pulled in the manner indicated by that portion of the chart or dial designated by the index 16′. During each upward movement of the lever 25 due to a pull upon the grips 23, the cord 34 will be held taut by the spring 35 and will cause sheaves 11 to rotate and transmit motion through the pawl 13 to the shaft 8. The worm on this shaft will slowly rotate the gear 4, the movement being such that upon the completion of the fifteenth movement, the lever 15 of the alarm will be released by one of the cams 14 so that the alarm will be sounded and at the same time the illustration of the next exercise will be brought to position at the index 16′. The user then begins to go through the movements illustrated by this second chart and upon the completion of the fifteenth movement, the alarm will again be sounded and another illustration will be found in position at the index 16′. When the dial has completed one revolution the entire series of exercises will have been included. As the user becomes stronger, the cord 34 can be shifted to the next eye 33 and the series of exercises repeated. After the cord 34 has been shifted to all of the eyes so that in the structure illustrated, there will be thirty-five movements to each exercise, the screw 31 can be adjusted to increase the resistance of the spring 30, whereupon the operator can begin over again and operate the machine at this increased resistance.

By providing the peripheral graduations on the dial 6 it becomes possible to make tests or to hold competitions. For example the user can, with the machine adjusted to a certain resistance, operate the mechanism continuously until he becomes tired and can make a note of the number of movements executed. Later on the user can try the same test and by comparing the results can determine to what extent his strength has increased. Also, in contests, two or more persons can endeavor to rotate the dial the greatest distance without becoming exhausted.

What is claimed is:—

1. Exercising apparatus including an indicator having separate means thereon for designating different exercises, a grip, yielding means for resisting the movement of the grip, and means operated by the grip for actuating the indicator, said means being adjustable to drive the indicator different distances.

2. Exercising apparatus including an indicator having separate means thereon for designating different exercises, a grip, means for resisting the movement of the grip, said means being yieldable, means operated by successive movement of the grip for intermittently actuating the indicator, and an alarm actuated when the indicator is brought to every one of a series of positions.

3. Exercising apparatus including an indicator having separate means thereon, for designating different exercises, a grip, yielding means for retarding the movement of the grip, means operated by the grip for

intermittently actuating the indicator, and means operated by the indicator for sounding an alarm when each of the separate means on the indicator is brought to a predetermined position.

4. Exercising apparatus including a revoluble exercise indicator, a yieldingly controlled lever, a grip connected to and adapted to actuate the lever, a shaft, means for transmitting motion from the lever to the shaft to intermittently rotate the shaft in one direction during the oscillation of the lever, and mechanism for transmitting motion from the shaft to the indicator.

5. Exercising apparatus including a revoluble indicator, an index coöperating with the indicator, a yieldingly controlled lever, a grip for actuating the lever, a shaft, yieldingly held means adjustably connected to the lever for intermittently rotating the shaft during the oscillation of the lever, and gearing for transmitting motion from the shaft to the indicator.

6. Exercising apparatus including a revoluble indicator, a lever, adjustable means for yieldingly restraining the lever, a grip, a connection between the grip and lever to actuate the lever, a yieldingly held member adjustably connected to the lever, a shaft driven by said member, and means for transmitting motion from the shaft to the indicator.

7. Exercising apparatus including a revoluble indicator, a lever, adjustable means for yieldingly restraining the lever, a grip, a connection between the grip and lever to actuate the lever, a yieldingly held member adjustably connected to the lever, a shaft driven by said member, means for transmitting motion from the shaft to the indicator, an alarm, and means operated by the rotation of the indicator for sounding the alarm.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

THOMAS E. VAUGHN.

Witnesses:

ALBERT CROUSE, Jr.,

ARTHUR CROUSE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."