

I. O. ALLEN.
EXERCISING MACHINE.
APPLICATION FILED OCT. 22, 1917.

1,279,633.

Patented Sept. 24, 1918.

2 SHEETS—SHEET 1.

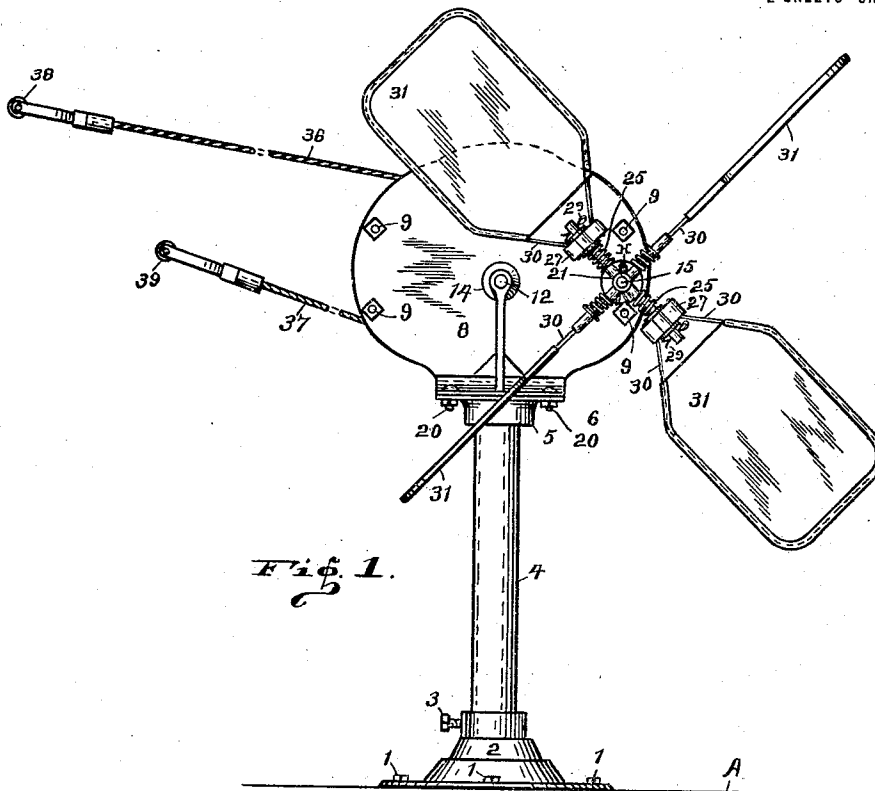


Fig. 1.

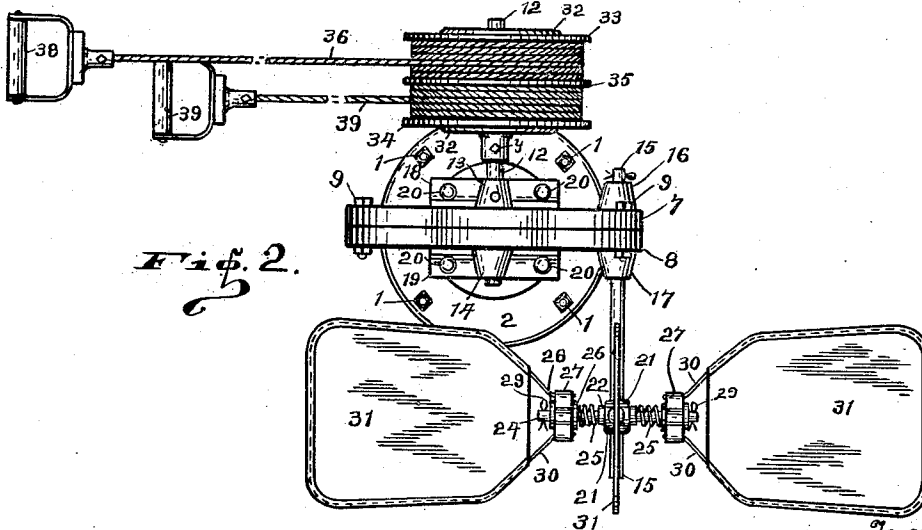


Fig. 2.

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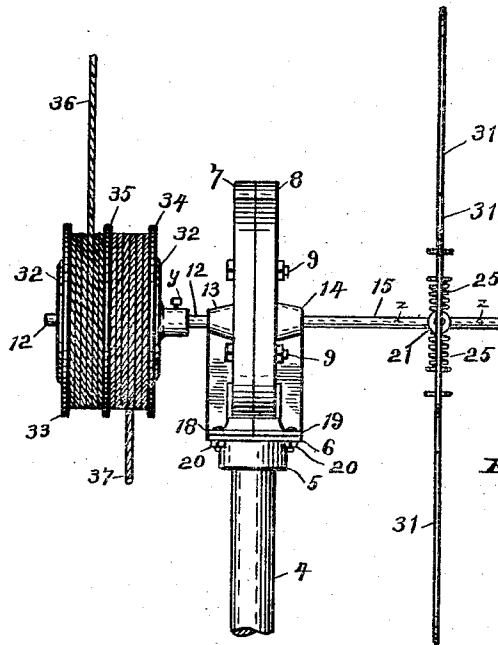


Fig. 3.

Fig. 4.

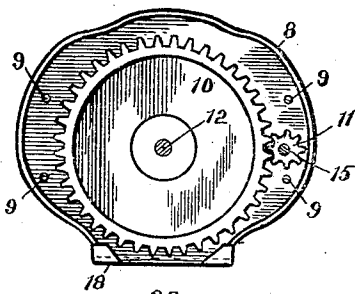
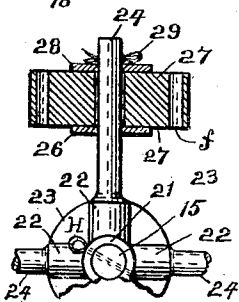


Fig. 6.

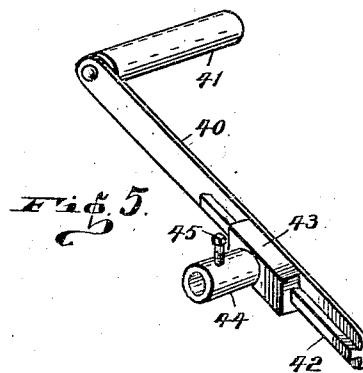


Fig. 5.

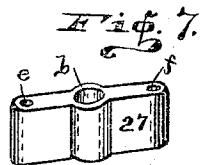


Fig. 7.

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UNITED STATES PATENT OFFICE.

IRVIN O. ALLEN, OF FRANKLIN COUNTY, INDIANA.

EXERCISING-MACHINE.

1,279,633.

Specification of Letters Patent. Patented Sept. 24, 1918.

Application filed October 22, 1917. Serial No. 197,951.

To all whom it may concern:

Be it known that I, IRVIN O. ALLEN, a citizen of the United States, residing in the county of Franklin, in the State of Indiana, have invented a new and useful Exercising-Machine, of which the following is a full, clear, and comprehensive exposition and specification, the same being such as will enable others to make and use the same with exactitude.

The object of this invention, broadly speaking, is to provide an exercising machine which will be strong and durable in construction, neat and attractive in appearance, adapted to occupy a minimum amount of space, adapted to provide a maximum of efficiency with a minimum of mechanical parts, and which can be manufactured and sold at a comparatively low price.

More specifically stated my object is to provide an exercising machine with which a plurality of exercising devices may be connected to provide various results and to afford the highest degree of efficiency; and having means whereby the machine will give any desired degree of resistance by reason of the resistance of atmospheric air, and having means whereby the degree of resistance may be instantly changed in order to meet various conditions and preferences of the operator thereof.

In fine, my object is, to provide an exercising machine in which I employ normal atmospheric air as the element of resistance.

Other objects and particular advantages of the invention will be brought out and will suggest themselves in the course of the following description, and that which is new will be correlated in the appended claims.

The preferred means for carrying out the principles of my invention in a practical and a mechanical manner is shown in the accompanying drawings, in which—Figure 1 is a front elevation of my machine complete, and showing it in operative position. Fig. 2 is a top plan view of the invention. Fig. 3 is an edge view in elevation of the main portions of the machine. Fig. 4 is an interior view of the case, showing the gears therefor.

Fig. 5 is a perspective view of an adjustable crank, which provides one of the exercising devices. Fig. 6 is a detail view of the hub for the fan, and showing the manner of mounting the blades of the fan. And Fig. 7 is a detail in perspective of one of the clips

of the blades and by which the blades are mounted rotatably in position.

Similar indices denote like parts throughout the several views.

In order that the construction, the operation, and the advantages of my invention may be more fully understood and appreciated I will now take up a detailed description thereof, in which I will set forth the invention as fully and as comprehensively as I may.

In the drawings letter A denotes the floor line. Secured to the floor by a plurality of bolts 1 is the base 2. Adjustably secured in the base by the set-screw 3 is the vertical standard 4. Secured around the upper end of the standard is the collar 5, which has a horizontal flange 6 integral therewith.

The gear-case comprises the two members 7 and 8 which are substantially identical with each other, they being oppositely disposed and secured together, as shown, by a plurality of bolts 9, there being a gear-space formed therebetween in which are located the major gear 10 and the minor gear or pinion 11. The gear 10 is secured on the drive-shaft 12, the latter being revolubly mounted in the hub formed by the members 13 and 14 which project laterally from the respective members 7 and 8. The minor gear or pinion 11 is secured on the driven-shaft 15, which is parallel with the shaft 12, and it is located in such position that the pinion 11 will mesh with the gear 10, as shown in Fig. 4. The shaft 15 is revolubly mounted in the hub formed by the members 16 and 17 which project laterally from the respective members 7 and 8, substantially as shown.

The projecting portions of the shafts 12 and 15 extend in opposite directions with relation to each other, as shown in Fig. 2.

The lower portions of the members 7 and 8 terminate in the respective flanges 18 and 19, which together fit the flange 6, to which they are secured by a plurality of bolts 20.

Formed through the shaft 15 are a plurality of small apertures z , which are for the purpose hereinafter set forth.

The fan, or resistance element, comprises a hub 21, including a plurality of socket members 22 radiating therefrom, each two of which are connected by a web-section 23. Extending out radially from the socket members are the spokes 24. Surrounding

each of the spokes is a helical spring 25, whose inner ends rest on its respective socket-member 22. Numeral 26 denotes a washer fitting the spoke 24 and resting on the spring 25. Numeral 27 denotes a clip, or block, having a central aperture *b* and end apertures *e* and *f*, all of which apertures are parallel with each other, and as shown in Fig. 7. The spoke 24 fits in the aperture *b* whereby the clip is rotatably mounted on the spoke as shown in Fig. 6. A second washer 28 is placed on the spoke 24 and it contacts with the clip 27 as does also the washer 26. Numeral 29 denotes a cotter-pin which is inserted in an aperture formed through the spoke 24 and it is so located that before the pin 29 can be inserted the clip must be pressed inward against the resiliency of the spring 25, whereby the clip is frictionally clamped between the washers 26 and 28.

Each of the blades (four in this instance) is composed of a single wire 30 which is bent into substantially the form shown in Figs. 1 and 2, the two ends thereof being brought parallel with each other and they are inserted through and are secured in the apertures *e* and *f* of the respective clip 27.

Stretched over and secured to said wire, and extending across the space inclosed thereby, is the fabric 31, however other suitable material may be employed if desired. Letter H denotes a cotter-pin which is inserted through the hub 21 and through one of the apertures *z* in the shaft 15 to prevent the fan from turning on the shaft 15.

From the above it will be apparent that the blades may be turned edgewise or flat, with reference to the direction of travel thereof, or to any degree of angle therebetween, as the clip 27 will rotate on the spoke 24 when the blade is turned, and that the spring 25 will retain the blade in any position to which it has been turned.

On the projecting portion of the shaft 12 it is proposed to secure any one of a number of exercising devices, as for instance the double pulley shown in Figs. 2 and 3, which comprises a core 32 which may be secured around and concentric of the shaft 12 by means of a set-screw *y*, or otherwise as desired. Extending out from the core are the two end flanges 33 and 34 and the center flange 35, thereby forming two circular channels in each of which may be located one of the ropes or cords 36 and 37. The inner ends of both of said ropes or cords are secured to the pulley, and said ropes or cords are adapted to wind around the pulley in reverse directions with relation to each other whereby as one is being wound the other will be unwinding. Attached to the outer ends of the ropes or cords 36 and 37 are the respective handles 38 and 39.

As an example of another device to be secured to the shaft 12 is the crank shown in

Fig. 5. This crank comprises a bar 40, having at one end of the handle 41 which extends at right-angles thereto. Secured along the face of the bar 40, parallel therewith and opposite to handle 41, is the bar 42 which has mounted thereon the sliding block 43, which is dove-tailed in connection with said bar. Extending out from the block 43 is the thimble 44 which is adapted to fit around the end of the shaft 12, to which it may be secured by the set-screw 45.

Modus operandi.—The machine above described should be secured to a floor or the like, as shown in Fig. 1, extending upward from the floor to any height desired as indicated. Now by grasping the handles 38 and 39, for instance, the operator may alternately pull upon one handle and then upon the other, and as the rope or cord of one unwinds the other will wind up, alternately. These movements will cause the fan to revolve first in one direction and then in the other, the amount of resistance offered being determined by the angle to which the blades are set. Or if a movement be desired different from that afforded by said handles then another exercising device may be substituted in place of the pulley, as for instance the crank shown in Fig. 5. It is to be understood that any number of different exercising devices may be substituted for the pulley or the crank, but of course all depending upon the resistance of the fan with relation to the normal air.

I desire that it be understood that various changes may be made in the several details of construction from that herein shown and described, without departing from the spirit of the invention and without sacrificing any of the advantages thereof.

Having now fully shown and described my invention, what I claim and desire to secure by Letters Patent of the United States, is—

1. An exercising machine comprising a fan composed of a plurality of blades, an exercising device connected to the machine, gears connecting the exercising device with the fan in such manner that the operation of the exercising device at a certain speed will rotate the fan at a proportionately higher rate of speed, and means for changing the degree of resistance offered by the fan.

2. An exercising machine comprising a driving shaft, a driven shaft, a major gear wheel connected to the driving shaft, a minor gear wheel connected to the driven shaft and meshing with the major gear wheel, a fan having adjustable blades the fan being connected to the driven shaft, and an exercising device connected to the driving shaft and adapted to impart rotary motion thereto.

3. In an exercising machine, a fan including a hub, a plurality of socket mem-

bers radiating from the hub, spokes radiating from the socket members, a helical spring surrounding each spoke with their inner ends resting on the respective socket members, a washer fitting around each spoke and resting on the outer end of its respective spring, a block for each spoke, each of said blocks being provided with a central aperture to receive its spoke and having an aperture on each side of the central aperture and parallel therewith, means for securing each block rotatably on its spoke with its spring pressing thereagainst, a blade for each block, each blade being formed of a wire forming a loop with the end portions thereof located parallel with each other and secured in their respective apertures in the blocks, a fabric covering the loop portion of each wire, and a shaft on which said hub is detachably secured, all substantially as shown and described.

4. An exercising device comprising a base adapted to be secured to a floor, a vertical standard adjustably secured to and extending up from said base, a collar secured around the upper end of the standard, a horizontal flange integral with said collar, a two-part gear case having a gear-space therein, means for securing together the two parts of said case, a drive shaft extending centrally through said case, a major gear located in the case and secured on the drive shaft, a driven shaft extending through the case at a distance from said drive shaft, a pinion secured to the driven shaft and meshing with the major gear, a hub secured to the driven shaft and located outside said

case, adjustable fan blades carried by said hub, and a plurality of devices either one of which is adapted to be attached to the drive shaft whereby the drive shaft may be operated manually, substantially as set forth.

5. An exercising machine comprising a base adapted to be secured to a floor, a standard extending up from said base, a gear case carried by the upper end of said standard, a driven shaft extending horizontally through the case, a major gear located in the case and secured to said shaft, a driven shaft extending through the case parallel with the drive shaft and located at a distance therefrom, a pinion located in the case the same being secured to the driven shaft and meshing with the major gear, a hub secured to the driven shaft and located outside the case, adjustable fan blades carried by said hub, a double pulley detachably secured on the projecting portion of the drive shaft, a pair of cords having their inner ends secured in their respective channels in the pulley with said cords adapted to wind around the pulley in reverse directions with relation to each other whereby when one is being wound the other will be unwinding, and handles secured to the outer ends of said cords, all substantially as shown and described.

In testimony whereof I have hereunto subscribed my name to this specification in the presence of two subscribing witnesses.

IRVIN O. ALLEN.

Witnesses:

ROBT. W. RANDLE,
R. E. RANDLE.

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