Jan. 7, 1936. R. J. FORHAN 2,027,273

EXERCISING APPARATUS

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Fig. 1.

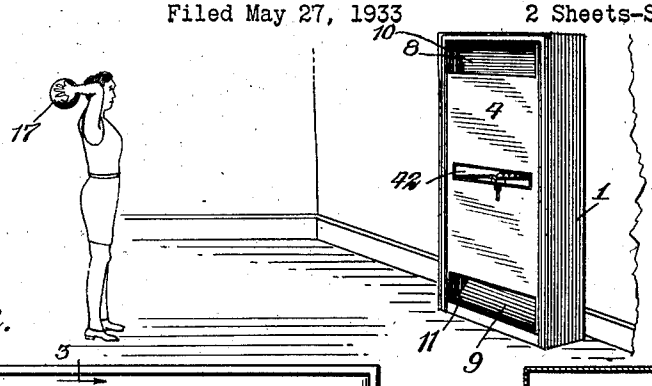


Fig. 2.

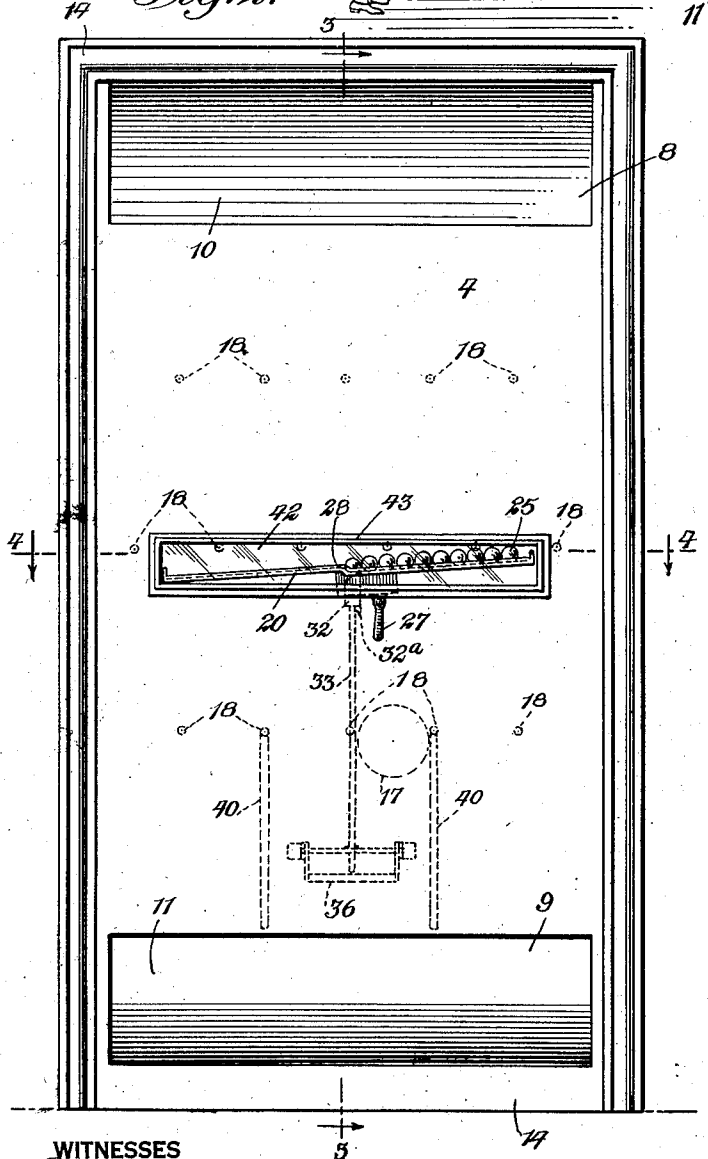
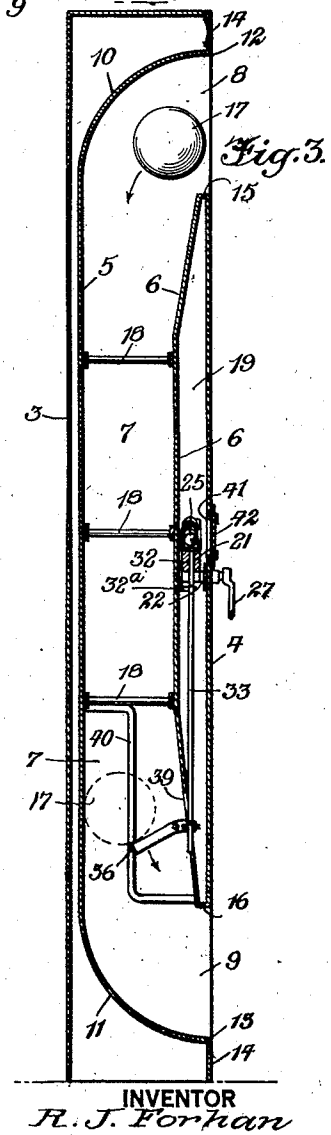


Fig. 3.



WITNESSES

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Fig. 4.

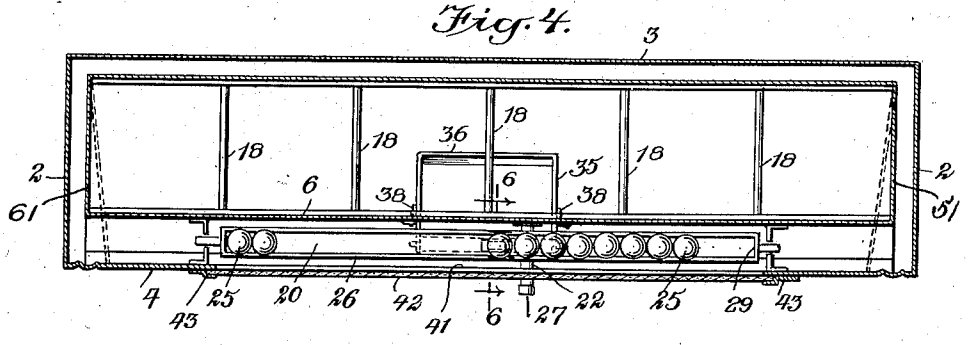


Fig. 5.

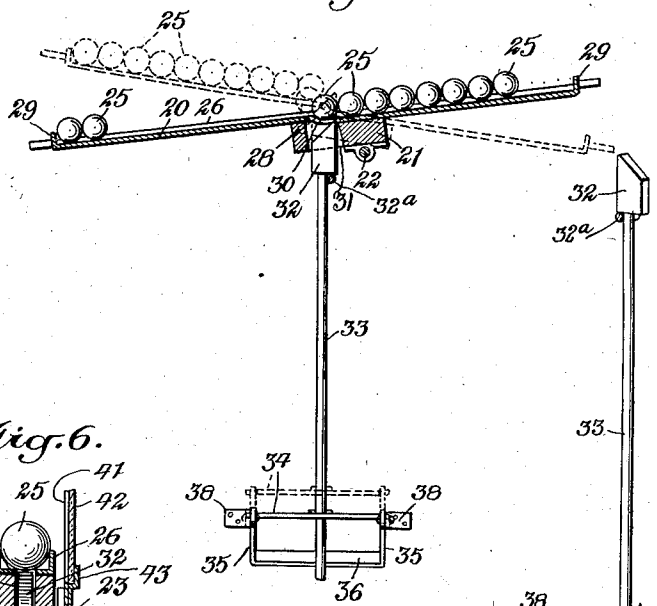


Fig. 6.

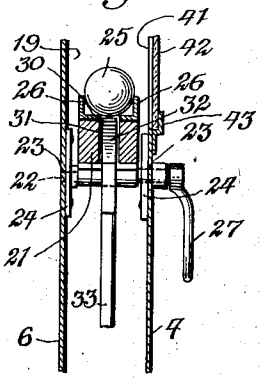
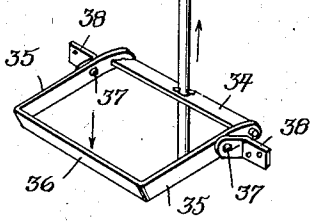


Fig. 7.



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EXERCISING APPARATUS

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Application May 27, 1933, Serial No. 673,276

5 Claims. (Cl. 273—103)

The present invention relates to exercising apparatus and more particularly to such an apparatus intended to afford a means to stimulate the interest of those using the apparatus.

An object of the invention is to provide an exercising apparatus adapted to receive and discharge a thrown ball, with means acting on the ball as it passes through the apparatus to erratically direct the movement of the ball to render uncertain its path of movement as it rolls toward the user, thus compelling alertness and change of movement in order to retrieve the ball to be again thrown towards the apparatus, also to combine with such an apparatus a visible indicator arranged to be operated at times by the ball as it passes through the apparatus, whereby the operator will be induced to continue the exercise, in the effort to operate the indicator.

A further object is to so construct the apparatus that the ball will not with certainty travel in any particular line or be discharged and projected toward the operator in any definite course, and to produce an uncertain and uncontrolled erratic operation of the indicator, so that regardless of how the operator delivers the ball to the apparatus there will be no certainty that the ball will be returned to the operator in any definite line; also to so construct the indicator that the movements of the elements comprising it shall also be uncertain and erratic, both of these operations being entirely beyond the control of the operator, the only certainty so far as the operator is concerned being that a ball delivered to the apparatus through a receiving opening will be discharged therefrom and roll towards the operator from a discharge opening, and will at times operate the indicator.

With the above objects in view the invention may be said to consist of a casing having a ball receiving opening and a ball discharge opening in one face, spaced apart from each other, with a guide within the casing connecting these openings, and means within the guide to interrupt and deflect the line of travel of the ball from the receiving towards the discharge opening.

It further consists of such an apparatus provided with a visible counter or indicator operated by the passage of the ball and comprising a group of freely movable objects with mechanism arranged to separate and move these objects one at a time in regular order.

It further consists of the devices and combinations of devices which will be hereinafter described and claimed.

The present invention is shown in the accompanying drawings in which

Figure 1 shows a perspective view of the apparatus in use with the user positioned in front thereof;

Figure 2 shows a front view very much enlarged as compared with Figure 1, although obviously of a very much reduced size as compared to the apparatus itself;

Figure 3 is a vertical sectional view taken on the line 3—3 in Figure 2;

Figure 4 is a horizontal sectional view taken on the line 4—4 in Figure 2;

Figure 5 is a front elevation, parts being shown in section, of the indicator removed from the apparatus;

Figure 6 is a sectional view taken on the line 6—6 in Figure 4, somewhat enlarged as compared with Figure 4;

Figure 7 is a perspective view of the operating mechanism for the indicator.

Similar reference characters will be employed throughout the specification and drawings to designate corresponding parts.

The apparatus comprises a casing 1 approximately twice the height of its width ond comprising the sides 2, a back 3, and a front 4. This casing 1 may be made of any suitable material but as shown in the drawings is made of sheet metal. It will be of sufficient depth from back to front to provide a space between the back and the front large enough to receive a guide formed of the plates 5 and 6 and side plates 51 and 61 (see Fig. 4) enclosing a passageway 7 leading from an opening 8 to an opening 9, the opening 8 being the receiving opening and located at or near the top in the front 4 and the opening 9 being the discharge opening located at or near the bottom as shown clearly in Figures 1, 2 and 3. The plate 5 is curved outwardly at its upper and lower ends as indicated at 10 and 11, and secured to the front 4 as at 12, forming the upper edge of the opening 8 and at its lower end secured at 13, forming the lower edge of the opening 9. The other wall of the passageway 7 is formed by the plate 6 the upper and lower ends of which are bent at an angle and secured to a flange 15 forming the lower edge of the opening 8 and to a flange 16 which forms the upper edge of the opening 9. The guide thus formed receives through the opening 8 a rubber elastic ball 17 which as indicated in Figure 3 drops by gravity through the passageway 7 and will be discharged from the opening 9. It will of course be understood that the curved portions 10 and 11 of the

plate 5 deflect the ball and guide it as it is received and delivered. Within the passageway 7 are a plurality of rows of what might be termed "obstacles" 18, they being rows of short cylindrical bars arranged parallel to each other and in parallel rows as indicated in Figures 2 and 3. The ends of these bars are supported by the plates 5 and 6 and extend from the front to the back wall of the passageway 7. Preferably the obstacles 18 will be spaced apart a sufficient distance to permit the passage of the ball 17 but the bars 18 in one row will be staggered with relation to the bars 18 in the next adjacent row. The object of this arrangement is to cause the ball when it strikes one of the obstacles to rebound until it finally passes between two of the bars 18 and in dropping it will strike one of the bars 18 in the next row and will be deflected from side to side of the casing until finally it passes out of the delivery opening 9 where it will roll along the floor towards the operator. The sides of the passageway 7 at the lower end may be inclined towards each other as indicated in dotted lines in Figure 4.

The indicator is positioned in a chamber 19 located between the plate 6 and the front 4 of the casing. It comprises a track or runway 20 mounted on a block 21, the latter being fixed to and rocking with a rock shaft 22 mounted to rock in bearings 23 formed in the plates 24 fixedly secured to the inner face of the plate 6 and the inner face of the front 4. The track or runway 20 supports a plurality of rolling spherical markers 25 held in position thereon by the side flanges 26 (see Figure 6). The end of the shaft 22 passes through the front 4 of the casing and is provided with a crank 27 whereby the pivoted block 21 may be rocked to raise and lower the opposite ends of the track or runway as indicated in Figure 5.

At an intermediate point along the track or runway, preferably at the left of the pivot 22, there is formed a rounded shoulder 28 forming a stop to hold the line of markers in the righthand end of the track or runway even though that end be elevated as shown in full lines in Figure 5, and until the markers are cut out one by one and permitted to roll by gravity towards the depressed end of the track or runway, the said track or runway being provided at its opposite ends with upwardly extending flanges or plates 29, to prevent the markers from falling off at the ends.

At a point adjacent the shoulder 28 and to the left of the pivot 22 the track or runway is provided with an opening 30 immediately over an opening 31 formed in the pivoted block 21. Through the openings 28 and 31 a cutout or separator in the form of a beveled block 32 carried by a rod 33 is positioned, in such a way that the beveled end of the block 32 will separate and cut out the leading marker 25 in the line, raising it over the shoulder 28 and permitting it to roll down and along the track or runway 20. The marker thus cut out rolls towards the left, while the beveled block 32 holds back the line of markers until it is lowered, whereupon such of the markers as remain will come to rest against and be checked by the shoulder 28.

The rod 33 which carries the block 32 is connected at its lower end to a cross bar 34 carried by a pivoted yoke comprising the forward ends of the side bars 35 and a bar 36. This yoke is pivotally mounted at 37 to brackets 38 fixedly secured to the plate 6 adjacent the opening 39 formed in said plate. The rear ends of the side bars 35 and the bar 36 will extend into and partially obstruct the passage 7 between brackets or guides 40, the brackets or guides 40 being in vertical alinement with two of the bars 18 in the lowermost row and preferably spaced apart from each other an equal distance on opposite sides of an intermediate bar 18. The guides 40 therefore define a passageway for the ball which will cause it to strike the cross bar 36 thus elevating the rod 33 and the cut-out 32, the ball passing through the yoke formed by the side bars 35 and the cross bars 34 and 36 and from thence out of the discharge opening 9. Unless the ball 17 passes between the bars 18 immediately above the upper ends of the guides 40 it will not operate the cut-out 32 or the indicator, and of course it will frequently pass through the spaces between the rods 18 at opposite sides of the guides 40. To hold the block 32 in proper position a stop 32^a is arranged to engage its lower end (see Figures 2, 3 and 5).

After all of the markers 25 have been cut out and permitted to roll to the lower end of the track or runway 20 then by means of the crank 37 the runway may be rocked to the position shown in dotted lines in Figure 5, thus permitting all of the markers 25 to roll towards the righthand end and the track or runway returned to the position shown in full lines in Figure 5 to reset the indicator for another operation.

Not only is there an uncertain and erratic operation of the indicator—in other words, there will be no displacement of any of the markers unless the thrown ball 17 passes through the space between the guides 40—but there is also an erratic and uncontrolled movement of the ball 17 through the apparatus from the receiving opening 8 to the discharge opening 9. Even though an attempt should be made to control the point at which the ball 17 will be discharged from the opening 9 and thereby control its direction of movement towards the user, such attempt would be ineffective because the ball 17 in passing the bars 18 will be deflected from one bar to another in the various rows of bars and from one side of the passageway 7 to the other, all of which means that the user must be alert and ready to instantly pick up the ball as it passes out of the apparatus and throw it again into the receiving opening 8. This means not only that the user must bend down to pick up the ball but he will also be compelled to bend sideways, assuming that the ball should come out at one or the other end of the discharge opening.

The front 4 of the casing is provided with an opening 41 of sufficient length and width to expose the indicator and this opening is covered by a transparent panel 42 held in place by a frame 43 secured to the front 4 of the apparatus. By this arrangement the user can watch the movement of the markers 25 and ascertain when all of them have been moved from the righthand to the lefthand end, indicating that a particular round of exercises with the apparatus has been completed.

The operation of the apparatus has been fully described in connection with the foregoing description of its construction. The user stands in front of the apparatus as shown in Figure 1 and throws the ball 17 into the opening 8 and of course must be ready to pick up the ball from the floor as it rolls forward from the discharge opening 9.

I claim:

1. An exercising apparatus comprising a casing,

a vertical guide located therein and connecting receiving and discharge openings for a thrown ball, an indicator comprising an inclined runway and a plurality of markers supported thereon and arranged to be released one at a time so as to pass from one end of the runway to the other, means for releasing the markers one at a time, said means comprising an operating element projecting into the guide to be at times struck by the ball passing therethrough, and means in the guide to erratically control the direction of movement of the ball and its operation of the indicator on its passage from the receiving to the discharge opening.

2. An exercising apparatus comprising a casing, receiving and discharge openings in the front thereof, and a connecting guide arranged to receive a thrown ball at one end of the guide and to deliver it at the other end, an indicator located between the receiving and discharge openings, a transparent panel in the front of the casing through which the indicator may be observed, said indicator comprising a pivotally mounted block and a trough or runway mounted thereon, a plurality of spherical markers supported on said trough or runway, means to release said markers one at a time permitting them to roll from one end of the runway to the other, and means projecting through the front of the casing whereby said runway may be inclined to return the markers to their original position on the runway and to reset the indicator.

3. An exercising apparatus comprising a casing, a receiving opening at the top and a discharge opening at the bottom in one wall thereof, a guide located within the casing leading from the receiving opening to the discharge opening, a visible indicator located between the front wall of the casing and the guide and intermediate the receiving and discharge openings, a trip mechanism for said indicator projecting into the guide and occupying a restricted area relative to the lateral width of the guide in position to be struck by a ball at times in its passage from the receiving to the discharge opening to operate the idicator, means to erratically direct the travel of the ball through the guide and guides bounding the restricted area occupied by the trip mechanism to guide the ball so that it will at times strike the trip mechanism and operate the indicator.

4. An exercising apparatus comprising a casing having parallel vertically disposed front and back members spaced apart from each other, a receiving opening in the front member at or near the top thereof, and a discharge opening at or near the bottom thereof, a guide within the casing with its opposite ends bounding the openings and leading from the receiving opening to the discharge opening whereby a ball thrown into the receiving opening will emerge from the discharge opening, a plurality of bars arranged in rows within the guide and extending transversely thereof, and connected at their ends to the front and back walls thereof and spaced apart from each other a sufficient distance to permit the passage of the ball while at the same time interfering therewith and erratically directing its movement between the receiving and discharge openings, an indicator supported within the casing between the guide and the front member of the casing, a trip mechanism for said indicator including an element located within a restricted area of the guide in position to be struck by the falling ball to operate the trip mechanism of the indicator.

5. An exercising apparatus comprising a casing, a receiving opening at the top and a discharge opening at the bottom in one face of the casing, a guide within the casing leading from the receiving to the discharge opening, a visible indicator within the casing between the receiving and discharge openings, a trip mechanism for the indicator projecting into the passageway in the guide to be struck by a ball passing from the receiving to the discharge opening to operate the indicator, and means within the guide to erratically direct the travel of the ball through the guide to at times operate the indicator.

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