J. M. MacDONALD.

TEST AND PRACTICE APPARATUS FOR GOLF PLAYERS.

APPLICATION FILED NOV. 15, 1920.

1,419,636.

Patented June 13, 1922.

2 SHEETS—SHEET 1.

Fig. 1

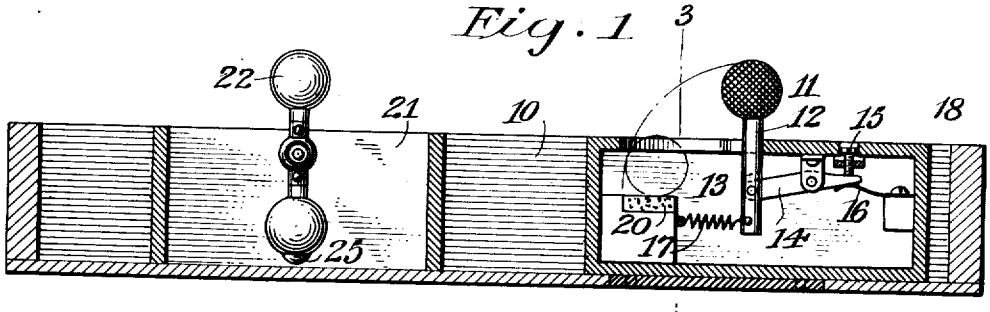


Fig. 2

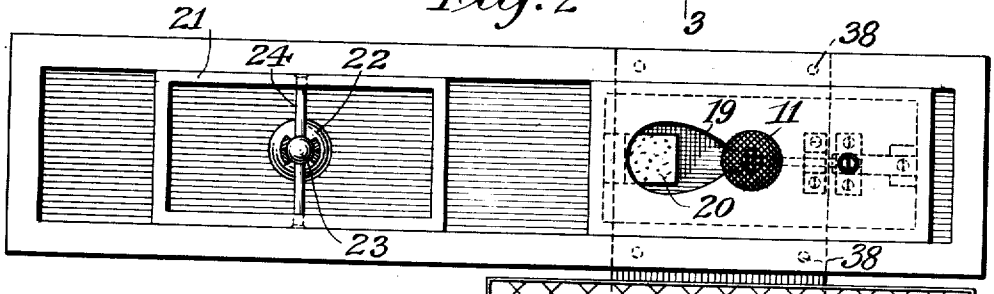
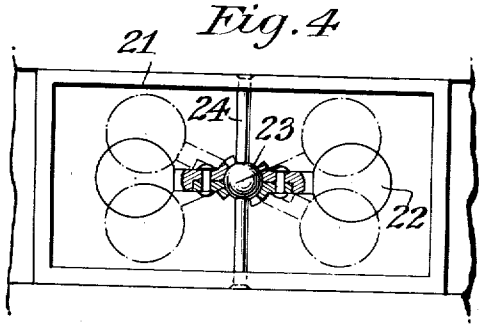
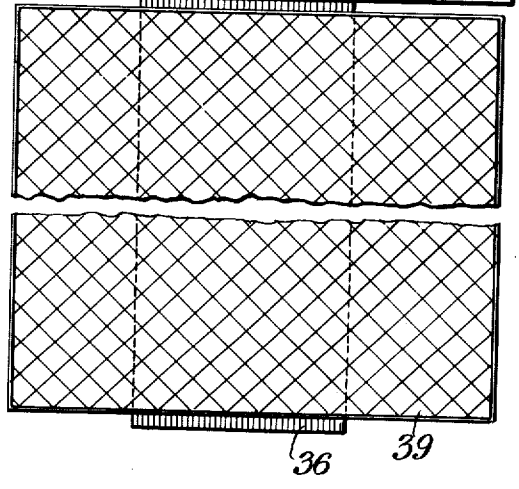


Fig. 4





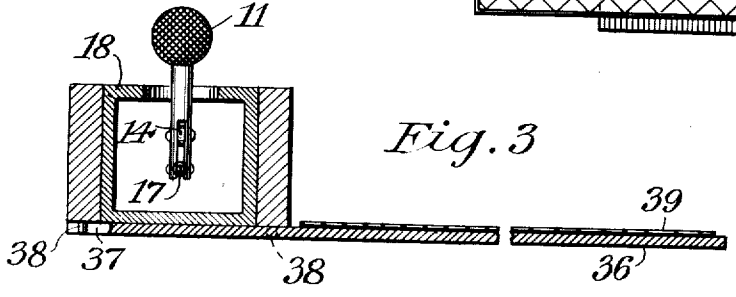


Fig. 3

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2 SHEETS—SHEET 2.

Fig. 5

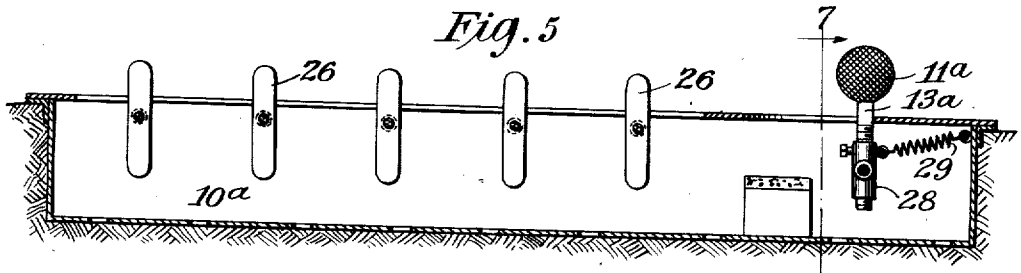


Fig. 6

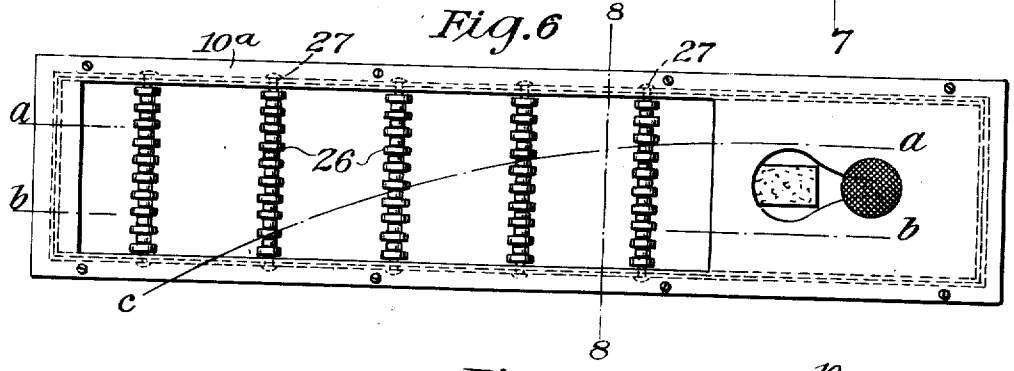


Fig. 9

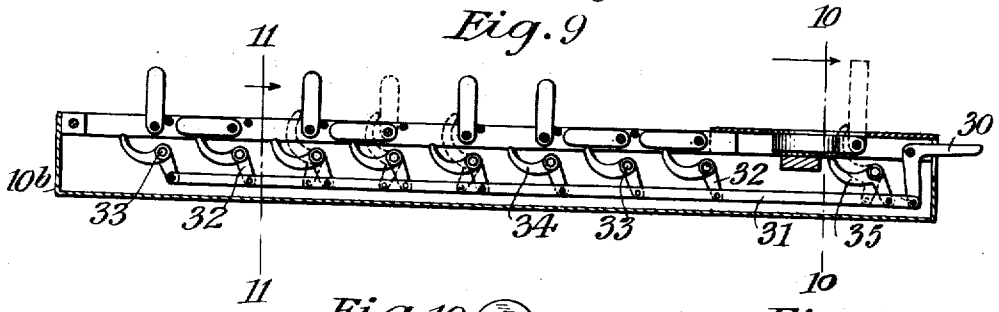


Fig. 10

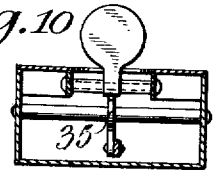


Fig. 11

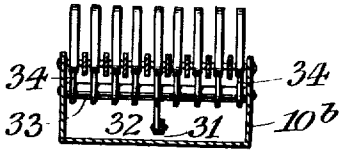
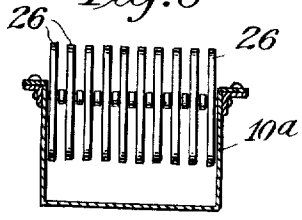


Fig. 8



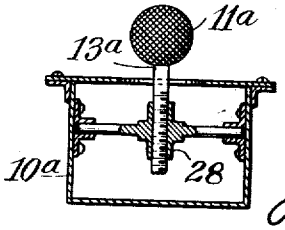


Fig. 7

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TEST AND PRACTICE APPARATUS FOR GOLF PLAYERS.

1,419,636. Specification of Letters Patent. Patented June 13, 1922.

Application filed November 15, 1920. Serial No. 424,070.

To all whom it may concern:

Be it known that I, JAMES M. MacDONALD, a citizen of the United States of America, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Test and Practice Apparatus for Golf Players, of which the following is a full, clear, and exact description.

As is well understood among golf players, successful driving involves not only good distance but also accurate direction, for a long drive which lands the ball in the rough is often less conducive to a good score than a short drive in the fairway. It is also well understood that the longest distance in driving is seldom if ever obtained, unless the player "follows through" with his club, and that "pulling" and "slicing" are usually fatal to accurate direction. Heretofore various devices have been proposed for giving a golf player practice, indoors or outdoors, by the use of a captive ball or other target. Some of these devices have included means for registering the force of the blow upon the target, but so far as I am aware none of them has provided means which will record, register or otherwise indicate the amount of "follow-through," if any, or indicate whether the player indulges in such faults as pulling or slicing, and if so to what extent. It is accordingly the object of my present invention to provide an apparatus which can be conveniently used for practising various strokes other than putting, and which will at the same time indicate, with some approach to exactness, the amount of follow-through and the amount and direction of pulling or slicing. A further object is to provide for this purpose an apparatus of simple and inexpensive character which can be used with equal success indoors or out. To these and other ends the invention consists in the novel features and combinations hereinafter described.

In carrying out my invention in the preferred manner I provide an elongated receptacle or box, in one end of which is arranged a captive target, to be struck by the driver or other club. The target may be an actual golf ball mounted on the upper end of a pivoted vertical stem, and means may be provided for arranging the target slightly above the box or on a level with the top thereof to simulate a teed or a ground ball, as will be readily understood. For such purpose the target may be removable, so that another target of different height may be substituted, or the pivot on which the target is mounted may be adjustable vertically. Beyond the target, in the general direction of the movement of the club, I provide a secondary target constituting an indicating device which will show, first, how far the player is following through, if at all; and second, whether he is pulling or slicing. In the preferred embodiment of the invention the indicating device is a member having the general form of a dumb-bell pivoted between its ends in such manner that it may revolve on a horizontal axis exactly transverse or perpendicular to the center-line of the apparatus, or upon axes at various angles to such line. If, then, the blow is straight ahead from the target, the club will meet the indicating device in such manner that it will spin in the central longitudinal plane of the apparatus, whereas if the blow is not properly directed, or if the club is pulled, it will strike the indicating device in such manner as to cause the latter to revolve or spin in a vertical plane at an angle to the center-line, thereby indicating the direction in which the player is pulling and, to a certain extent, the amount of the pull or slice. The indicating device in the preferred embodiment is also adjustable toward and from the target. If, then, the player finds that in order for his club to strike the indicating device the latter must be placed close to the target, he knows that his stroke has not enough follow-through, and can practice with that idea in mind; moving the indicating device farther from the target as his skill increases.

In another form of the invention I provide in advance of the target a plurality of pivoted indicators or indicating devices, through which the club mows a path, as it were, after striking the target, thereby indicating the amount and direction of the follow-through and the amount of pull or slice.

In the case of a swinging indicator, or indicators which do not spin or revolve when struck by the club but are merely thrown over from a vertical position, means may be provided for restoring to vertical

position simultaneously, all of the indicators that have been knocked over.

The embodiments outlined above are illustrated in the accompanying drawings, in which—

Fig. 1 is a vertical longitudinal section of the preferred form.

Fig. 2 is a plan view of the apparatus illustrated in Fig. 1.

Fig. 3 is a cross section on line 3—3 of Fig. 1.

Fig. 4 is a sectional plan view of the indicating device illustrated in Fig. 1, showing how it can revolve on axes at various inclinations to the center-line of the apparatus.

Fig. 5 is a longitudinal section of an embodiment of the invention in which a plurality of revolving indicating devices are employed.

Fig. 6 is a plan view of the apparatus illustrated in Fig. 5.

Figs. 7 and 8 are cross sections on lines 7—7 and 8—8 of Figs. 5 and 6, respectively.

Fig. 9 is a longitudinal section of an embodiment in which the indicating devices do not revolve but are simply thrown out of their vertical positions when struck by the club.

Figs. 10 and 11 are cross sections on lines 10—10 and 11—11 of Fig. 9.

The apparatus illustrated in Figs. 1 to 4, inclusive, comprises an elongated open-topped box 10 of rectangular form, in one end of which is a captive target consisting of a golf ball 11 securely fixed on the upper end of a vertical stem 12. The latter is pivoted at 13 on the end of a pivoted arm or lever 14 which can be shifted on its pivot by means of a screw 15 so that the ball 11 can be arranged with its bottom surface flush with the top of the box 10, to simulate a ground ball, or can be raised above the top of the box to simulate a teed ball. A stout spring 16 serves to hold the stem firmly in adjusted position, and a helical spring 17 is provided to return the target to its upper or normal position after the blow. In the device illustrated the stem 12 and the associated parts are mounted inside of a box 18, fixed or adjustable longitudinally inside of the box 10, and having in its top an opening 19 through which the target ball passes when struck by the club. When so struck, the target is received by a resilient cushion 20 of soft rubber or other suitable yielding material arranged in its path.

Beyond the target 11 is an open-topped receptacle or box 21, adapted for adjustment toward or from the target by sliding it in the box 10. The secondary target or indicating device 22 is roughly in the form of a dumb-bell with its stem or "handle" mounted on a ball 23 at the center of a transverse rod or shaft 24 suitably fixed in the side walls of the frame 21. The mounting of the indicating device is in the nature of a ball and socket joint, permitting, as shown in Fig. 4, the device to revolve in various vertical planes, coincident with or at an angle to the central vertical plane of the apparatus. To insure that the indicating device when at rest will stand with one of its end members above the frame 21 in position to be struck by the club, the device may be pivoted above its center so as to make one end heavier than the other, or one end may be provided with a weight for the same purpose, as indicated at 25.

In using the apparatus, the player stands alongside the target, adjusted to the desired height, and strikes it with the selected club, driver, brassie or iron. If the indicator is not struck by the club after passing the target, he knows that he is not following through, and proceeds to shift the indicator toward the target. With further practice he finds that the indicator is set in motion and he then moves it farther from the target, increasing his distance from the latter as he improves in skill. If the indicator revolves substantially in the central plane of the apparatus, he knows that his stroke has little or no pull or slice. On the other hand, if the indicator revolves in any other plane, he is informed that he is pulling or slicing and can correct his stroke accordingly.

If the construction illustrated in Figs. 5, 6, 7 and 8, a plurality of indicating devices are provided consisting of blades or bars 26 pivoted off-center, so that they will all normally assume vertical positions, as shown in Fig. 5. These indicators are arranged to revolve freely on transverse shafts 27 suitably fixed in the sides of the receptacle or box 10^a. The target 11^a is fixed on the upper end of a vertical stem 13^a which is threaded in a tubular carrier 28, so that it may be screwed in or out of the latter to vary the height of the target. A spring 29 is provided to hold the target normally in upright or exposed position. In this form of the invention, if the path of the club is straight ahead from the target, without pull or slice, some or all of the indicators between lines *a*—*a* and *b*—*b*, for example, will be struck by the club and set to spinning. On the other hand, if the player is pulling or slicing, other indicators will be struck, as for example those within the area bounded by the curved line *c*, which of course indicates a very bad stroke.

In the construction shown in Figs. 9, 10 and 11, the indicators are arranged in the same general way as in Fig. 6, but they are not adapted to revolve. Instead, they are simply thrown to a horizontal position by the impact of the club, and remain in such position after the club has passed. To restore the indicators to vertical position the

player presses with his foot on the bell crank lever 30, which advances the link 31. The latter is connected to arms 32, depending from the shafts 33, on which is fixed a plurality of fingers 34. When the link 31 is advanced as described, the fingers mentioned are rocked to the dotted line positions shown in Fig. 9, thereby engaging the horizontal indicators and raising them to their normal positions. When the foot is removed from the pedal 30, the weight of the fingers 33 returns them and the connected parts to the normal position shown in Fig. 9.

Figs. 9 and 10 also illustrate the use of a flat target instead of a spherical one. This flat type may of course be used with the other embodiments illustrated. If the target is not returned to vertical position by a spring, as in Figs. 1 or 5 for example, it may be restored by hand or by the means illustrated in Fig. 9, comprising a finger 35 actuated by the pedal 30 through the instrumentality of the link 31. It is, in general, preferable to have the top of the receptacle, 10, 10^a, or 10^b, flush with the surface on which the player stands; and of course this is easily accomplished outdoors by sinking the box into the ground as indicated, for example, in Fig. 5. Sinking the box in the ground also prevents accidental displacement of the apparatus. To prevent such displacement in other situations, a flat plate 36, Figs. 2 and 3, may be provided, fitting into a recess 37 in the underside of the box, and provided with suitable openings to receive studs 38. This plate may be broad enough for the player to stand upon, or it may be narrower, in which case a mat, as 39, may be placed over it. The weight of the player standing on the mat then holds the plate with sufficient firmness to prevent movement of the box. The plate is removable to permit the box to be sunk in the ground when desired, and may be attached to and extend from the box on either side to accommodate both right-handed and left-handed players. If the apparatus is to be used indoors or elsewhere without being sunk, the receptacle or box should be as shallow as possible and a thick mat should be used so that the surface on which the player stands will be practically flush with the top of the box. For this reason I prefer the shallow type of apparatus illustrated in Fig. 9 for indoor use.

It is to be understood that the invention is not limited to the structures herein specifically illustrated and described, but can be embodied in a variety of other forms without departure from its spirit.

What I claim is—

1. In a test and practice apparatus for golf players, a support, a target mounted thereon in position to be struck by a club, a secondary target in position to be struck by the club after passing the first target, and a pivotal mounting for the secondary target on said support.

2. In a test and practice apparatus for golf players, a support, a target mounted thereon in position to be struck by a club, a secondary target carried by said support in position to be struck by the club after passing the first target, and a pivot on which the secondary target is revolubly mounted.

3. In a test and practice apparatus for golf players, a support, a target mounted thereon in position to be struck by a club, a secondary target mounted on said support and adapted to be adjusted toward and from the first target and arranged in position to be struck by the club after passing said first target.

4. A test and practice apparatus for golf players, comprising a support, a target mounted thereon in position to be struck by a club, and means carried by said support in advance of said target and in position to be actuated by the club to indicate the direction of movement of the club.

5. A test and practice apparatus for golf players, comprising a support, a target mounted thereon in position to be struck by a club, and means carried by said support in advance of said target and in position to be actuated by the club to indicate the direction of the horizontal and vertical movement of the club in at least a part of its path adjacent to the target.

6. A test and practice apparatus for golf players, comprising a support, a target mounted thereon in position to be struck by a club, and pivoted means carried by said support in advance of said target and in position to be actuated by the club to indicate the direction of movement of the club.

7. A test and practice apparatus for golf players, comprising a support, a target mounted thereon in position to be struck by a club, and revolving means carried by said support in advance of said target and in position to be actuated by the club to indicate the direction of movement of the club.

8. A test and practice apparatus for golf players, comprising a support, a target mounted thereon in position to be struck by a club, and means carried by said support to indicate the direction of movement of the club, said means being adapted to be struck by the club and adjustable on said support toward and from the target.

9. A test and practice apparatus for golf players, comprising a support, a target mounted thereon in position to be struck by a club, and a revoluble indicator carried by said support in position to be struck by the club after the latter has passed said target and adapted to revolve on an axis varying with the direction of movement of the club.

10. A test and practice apparatus for golf

players, comprising a target in position to be struck by a club, and an indicator in position to be struck by the club and adapted to revolve on an axis varying with the direction of movement of the club, said indicator being adjustable toward and from the target.

11. A test and practice apparatus for golf players, comprising a support, a target mounted thereon in position to be struck by a club, an indicator mounted on said support and arranged to be struck by the club after passing said target, and a ball pivot for the indicator, permitting the latter to revolve on an axis varying with the direction of movement of the club.

12. A test and practice apparatus for golf players, comprising a support, a target mounted thereon in position to be struck by a club; and a dumb-bell shaped indicating device, pivoted between its ends on said support to revolve on an axis transverse to the general direction of the movement of the club.

13. In a test and practice apparatus for golf players, an elongated receptacle, a target mounted in one end of the receptacle in position to be struck by a club; and means in the other end of the receptacle in position for actuation by the club after passing said target to indicate the direction of movement of the club.

14. In a test and practice apparatus for golf players, an elongated receptacle, a target mounted in one end of the receptacle in position to be struck by a club, and means in the other end of the receptacle for actuation by the club to indicate the direction of movement of the club, said means being adjustable in the receptacle toward and from the target.

15. In a test and practice apparatus for golf players, an elongated receptacle, a target mounted in one end of the receptacle in position to be struck by a club, a frame fitted in the receptacle and adjustable toward and from the target, and means carried by said frame in position for actuation by the club to indicate the direction of movement of the club.

16. In a test and practice apparatus for golf players, an elongated receptacle, a target mounted in one end of the receptacle in position to be struck by a club, means in the other end of the receptacle and in position for actuation by the club to indicate the direction of movement of the club, and means for holding the receptacle against accidental displacement.

17. In a test and practice apparatus for golf players, an elongated receptacle, a target mounted in one end of the receptacle in position to be struck by a club, means in the other end of the receptacle and in position for actuation by the club to indicate the direction of movement of the club, and means upon which the player may stand to hold the receptacle against accidental displacement.

18. In a test and practice apparatus for golf players, an elongated receptacle, a target mounted in one end of the receptacle in position to be struck by a club, means in the other end of the receptacle and in position for actuation by the club to indicate the direction of movement of the club, and a removable holding plate extending laterally from the receptacle.

In testimony whereof I hereto affix my signature.

JAMES M. MacDONALD.

Certificate of Correction.

It is hereby certified that in Letters Patent No. 1,419,636, granted June 13, 1922, upon the application of James M. MacDonald, of East Orange, New Jersey, for an improvement in "Test and Practice Apparatus for Golf Players," errors appear in the printed specification requiring correction as follows: Page 2, line 98, for the word "If" read *In;* page 3, line 79, claim 3, after the word "adjusted" insert the word *thereon;* and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 11th day of July, A. D., 1922.

[SEAL.]

KARL FENNING,

Acting Commissioner of Patents.