Jan. 15, 1952 H. SMITH 2,582,290

PRACTICE PUTTING TARGET

Filed April 14, 1949

FIG. 1

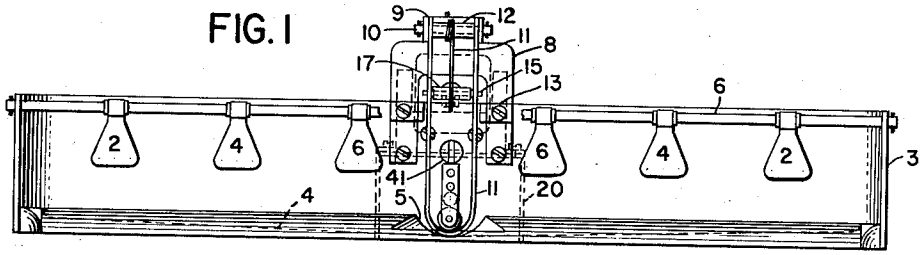
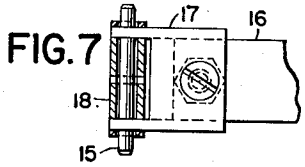


FIG. 7



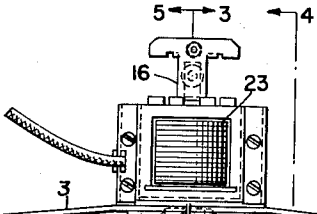


FIG. 8

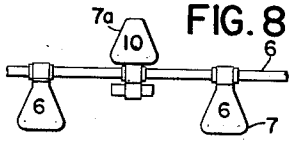


FIG. 2

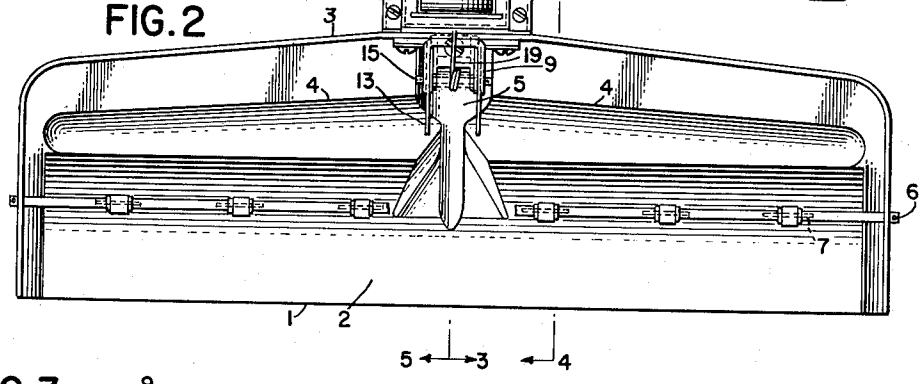
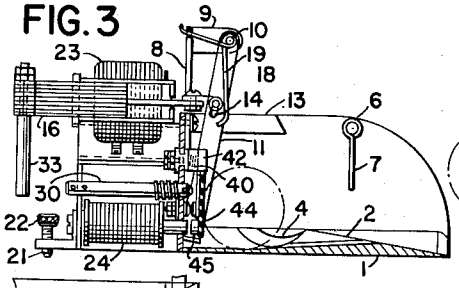


FIG. 3



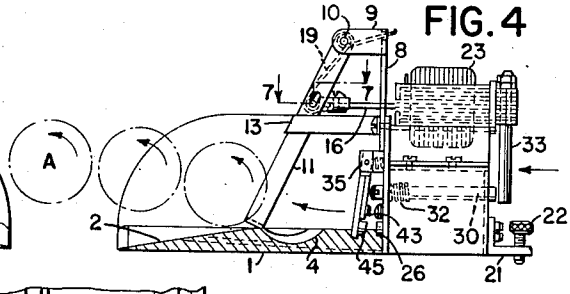


FIG. 4

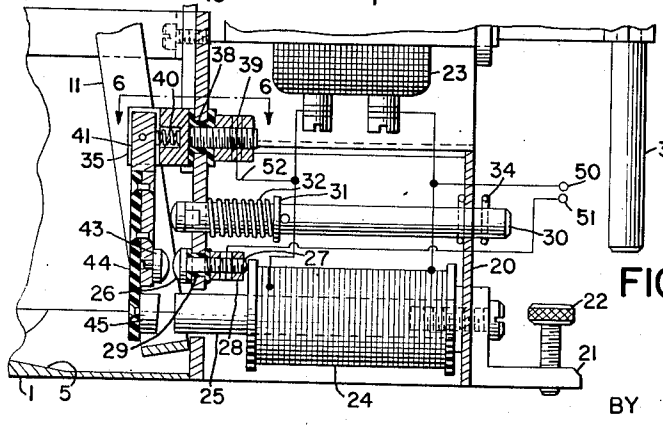


FIG. 5

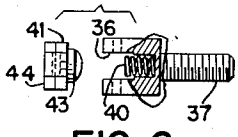


FIG. 6

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PRACTICE PUTTING TARGET

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6 Claims. (Cl. 273—36)

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This invention relates to improvements in practice putting targets. It is an object of the invention to provide a practice putting target so constructed that balls which roll onto it are automatically returned, thereby permitting a player to remain at normal putting distance since each ball is returned to him.

Another object of the invention is to provide a practice putting target including a relatively wide base so constructed that balls which arrive thereon to one side or the other of the center of the device are guided to a central ejection station, and, when there close a circuit which operates a mechanism by which each ball in turn is returned to playing position. Moreover accurately putted balls are immediately returned whereas balls which go to one side or the other of the center pass down a lateral guideway before reaching the ejection station.

Another object of the invention is to provide such a practice putting target including scoring discs suspended over the base, the numbers on which are graduated according to the lateral distance of the discs from the center of the base, so that competing players may score according to their accuracy in reaching the transverse center of the device.

A further object of the invention is to provide such a practice putting target wherein the front of the base is upwardly and rearwardly inclined so that a ball must reach the device with sufficient velocity to climb that incline; moreover the incline is such that a ball which travels up it would otherwise roll about six inches past the target, and have sufficient momentum to reach and drop into a cup.

Yet another object of the invention is to provide a practice putting target including a pivoted propelling member so constructed and arranged that it imparts an overspin to the ball, so that even if the device is being utilized on a relatively heavy carpet the balls will travel back to a player located a reasonable putting distance from the device.

Having thus broadly stated some of the objects and advantages of the invention I will now describe it in detail with the aid of the accompanying drawing, in which:

Figure 1 is a front view of the invention, and Figure 2 is a plan view thereof.

Figure 3 is a section on the line 3—3 of Figure 2, with the propelling member retracted.

Figure 4 is a section on the line 4—4 of Figure 2, with the propelling member advanced.

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Figure 5 is an enlarged partial section on the line 5—5 of Figure 2.

Figure 6 is a detail showing the post for pivotally supporting the contact arm, taken on the line 6—6 of Figure 5, and a section through the arm disassembled from the post.

Figure 7 is a section on the line 7—7 of Figure 4, and

Figure 8 is a detail showing the central portion of the rod on which the score plates are suspended, and some of the latter.

Referring to the drawing, 1 designates a base the upper face of which is upwardly and rearwardly inclined from its front margin for a portion of its length as shown at 2; moreover across the front margin the base is quite thin so that golf balls may readily roll thereonto from the floor or ground on which the base is resting. Provided across the back of the base 1 and along both lateral edges is a continuous vertical wall 3. Formed transversely in the base 1 intermediately of its length and extending from each lateral margin substantially to the center is a downwardly and inwardly inclined groove 4 of increasing depth toward the center of the said base. The rearwardly and upwardly inclined portion 2 of the base terminates at the front edges of grooves 4, and between the rear edges of the said grooves and the back of the base 1 the upper surface of the latter is preferably flat. Formed also in the base 1 centrally of its width and extending forwardly and upwardly from the back wall 3 is another groove 5, the bottom of which is flush with the bottoms of the grooves 4 at their point of intersection. The groove 5 extends forwardly of the grooves 4 before it merges with the upwardly and rearwardly inclined portion 2 of the said base. It will be noted that the grooves 4 and 5 are of concave section so that a golf ball will travel freely therealong. Extending transversely over the inclined portion 2 of the base and supported at its extremities by opposite sides of the vertical wall 3 is a rod 6 having a plurality of scoring discs 7 pivoted thereon and adapted to be swung about the rod by a ball passing beneath them. Also mounted, preferably pivotally, on the rod 6 centrally of its length and over the groove 5, is a central scoring disc 7a, which is usually so arranged that a ball may pass freely thereunder.

Mounted on the wall 3 centrally of the width of the base 1 and projecting upwardly therefrom is a bracket 8 having spaced, forwardly extending arms 9 on its upper extremity. These arms are parallel and in horizontal alignment with one

another and support opposite ends of a horizontal pin 10 on which the outer extremities of a U-shaped propelling member 11 are pivoted. The two extremities of the member 11 are retained in sliding engagement with the inner faces of the arms 9 by a spacer bushing 12 annularly grooved centrally of its length and mounted around the pin 10 between the said arms. Mounted also on the bracket 8, and projecting forwardly therefrom beneath the arms 9, are horizontally opposed guides 13 in contact with each of which the outer face of one side of the U-shaped member 11 is adapted to slide as the said member is moved pivotally.

Formed substantially longitudinally through opposite sides of the member 11, preferably above the guides 13, are slots 14 to receive opposite extremities of a pin 15 extending through and beyond both sides of a solenoid plunger 16, so that as the latter is moved the propelling member 11 is swung about the pin 10. The pin 15 is pressed through openings formed in horizontally opposed lugs of a bracket 17 extending from the front extremity of the solenoid plunger 16. A spacer bushing 18 annularly grooved centrally of its length is mounted on the pin 15 between the lugs of the bracket 17 and is free to revolve around the said pin. In tension contact with the annular groove in the bushing 18 is a hook-shaped extremity of a spring 19. Intermediately of its length this spring is wound around the groove in the spacer bushing 12 and its opposite extremity is secured to the bracket 8. This spring tends to retain the solenoid plunger 16 in its rearward position, and the lower, central portion of the U-shaped propelling member 11 against the back wall 3.

Mounted on the rear face of the wall 3 behind the U-shaped propelling member 11 is a housing 20 rearwardly from which, adjacent its lower extremity, a foot 21 extends. Threaded through an opening formed in the foot 21 is a vertically adjustable support 22 so that the base may be set horizontal upon the ground. Suitably mounted upon the housing 20 is a solenoid 23 in which the plunger 16 is mounted for axial movement. Mounted within the housing 20, and extending rearwardly from the wall 3 in vertical alignment with the U-shaped propelling member 11, is a coil 24 axially through which a core 25 adapted to be magnetized by energization of the said coil extends. The front extremity of the core 25 projects through an opening formed through the back wall 3 and slightly in front of the said wall. Extending forward from the wall 3 above and in vertical alignment with the core 25 is a contact disc 26 rearwardly from which a threaded shank 27 projects through the said wall and has terminal nuts 28 on its rear extremity. Both the disc 26 and the shank 27 are spaced from the wall 3 by a suitable insulating bushing 29. Supported for axial movement through the housing 20 and through the rear wall 3, and in vertical alignment with and above the contact disc 26, is a push rod 30 the front extremity of which is insulated. Mounted around the rod 30, between the rear face of the wall 3 and a collar 31 suitably held on the said rod against rearward movement, is a helical spring 32 which urges the said rod rearwardly. Projecting downwardly from the solenoid plunger 16 adjacent its rear extremity is a trip 33 so arranged that just prior to completion of the forward movement of the said plunger it strikes the push rod 30 and moves the latter forward to break an electrical contact in a manner hereinafter described.

Means are provided for limiting the movement of the rod 30, and consist, in the present instance, of cotter pins 34 extending through the said rod on both sides of the rear wall of the housing 20.

35 denotes a post the front of which is vertically slotted at 36 centrally of its width, and projecting rearwardly therefrom is a threaded shank 37 which passes through the wall 3 in vertical alignment with the push rod 30. Both the rear face of the post 35 and its shank 37 are spaced from the wall 3 by a suitable insulating bushing 38, and screwed on the rear of the shank 37 are terminal nuts 39. Formed in the base of the slot 36 is a recess to receive one extremity of a helical spring 40. Pivoted in the slot 36 and projecting downwardly therefrom is a contact arm 41 which is supported by a pivot pin 42 extending transversely through both sides of the post 35. The front extremity of the spring 40 bears against the back of the arm 41 and tends to retain the latter vertical and at the same time it prevents rebound of the said arm against the disc 26 when the push rod 30 is returned rearwardly thus acting as a snubber. Provided on the lower extremity of the contact arm 41 and projecting rearwardly therefrom is a contact member 43 which is adapted to make connection with the disc 26, and secured upon the front face of the said arm and projecting beneath the latter is an insulating plate 44 having a magnetic disc 45 secured upon its rear face adapted to make a connection with the core 25.

Adapted to be connected to a source of power—not shown—are two wires 50 and 51. The wire 50 is connected to one terminal of the solenoid 23 and to one end of the coil 24. The other wire 51 is connected to the shank 27 between the nuts 28. Connected to the shank 37 and held between the nuts 39 thereon is one extremity of a lead 52 which is connected both to the second terminal of the solenoid and to the other extremity of the coil 24. Consequently when the arm 41 is swung rearwardly so that the contact member 43 engages the disc 26 the circuit is closed. Then the coil 24 is magnetized and retains the disc 45 in close proximity to (but preferably not in physical contact with) the core 25 so that the arm 41 is held stationary, and the electric circuit closed, while the plunger 16 is moved forward by the solenoid 23. However just prior to the time the plunger 16 reaches its forward limit of travel the trip 33 strikes the push rod 30 and moves it forward. This rod then strikes the back of the arm 41 and moves it forward, thereby breaking the contact between the member 43 and the disc 26.

When a ball A rolls onto the base 1 it either travels directly beneath the numeral 10 and strikes the contact arm 41, or else it rolls into one of the lateral grooves 4 whence, due to the inclination of the latter and that of the groove 5, it reaches the said arm. In any case the rearward and downward inclination of the groove 5 is such that when a ball A rolls against the contact arm 41 it moves the latter into electrical engagement with the disc 26 and thereby closes the circuit. Then the propelling member 11 is swung forward to its position shown in Figure 4, whereupon the trip 33 moves the push rod 30 forward and moves the arm 41 so that the contact between the member 43 and the disc 26 is broken, thereby interrupting the circuit.

It will be noted that the pivot axis of the propelling member 11 is somewhat in front of the ball A (Figure 3) prior to commencement of the forward swing of the said member. This to-

gether with the fact that the curved U-shaped central portion of the member 11 comes in contact with the underside of the ball imparts an overspin to the latter thereby increasing the distance the ball travels. Again due to the support afforded to the member 11 by the guides 13, and by the bushings 12 and 18 and the spring 19, the member swings through the same path each time the solenoid is energized, and the balls returned by the device always come back to substantially the same spot.

While in the foregoing the preferred embodiment of the invention has been described and shown, it is understood that alterations and modifications may be made thereto provided the said alterations and modifications fall within the scope of the appended claims.

What I claim is:

1. A putting target including a base onto which a ball is adapted to be putted, a ramp leading to the base, a shallow channel in the base extending across the back of the ramp, the channel sloping to a ball receiving pocket, a propelling member mounted at the back of the pocket for movement over the base, an electric circuit including a solenoid having a plunger therein connected for moving said member so that the latter strikes the ball, a fixed contact in the circuit, a movable contact in the circuit, and means for causing the ball to roll against the movable contact and bring the latter into electrical engagement with the fixed contact to close the circuit, said movable contact being so located back of the ball-receiving pocket that when the ball is resting against it said ball is in position to be struck by the propelling member.

2. A putting target including a base onto which a ball is adapted to be putted, a ramp leading to the base, a shallow channel in the base extending across the back of the ramp, the channel sloping to a ball-receiving pocket, the pocket forming a recess sloping back from the channel, a propelling member mounted at the back of the pocket recess for movement across the channel, the propelling member comprising vertical arms spaced side by side to nest a ball thereagainst, an electrical circuit including a solenoid having a plunger therein connected for moving said member so that the latter strikes the ball, a fixed contact in the circuit, a movable contact in the circuit located at the back of the pocket recess, the pocket recess sloping back causing the ball to roll against the movable contact and bring the latter into electrical engagement with the fixed contact to close the circuit, said movable contact being so located that when the ball is resting against it said ball is in position to be struck by the propelling member, and means tending to bias the movable contact spaced from the fixed contact.

3. A putting target including a base onto which a ball is adapted to be putted, a ramp leading to the base, a shallow channel in the base extending across the back of the ramp, the channel sloping to a ball-receiving pocket, the pocket forming a recess sloping back from the channel a propelling member mounted at the back of the pocket recess

for movement across the channel, the propelling member comprising vertical arms spaced side by side to nest a ball thereagainst, an electric circuit including a solenoid having a plunger therein connected for moving the member so that the latter strikes the ball, a fixed contact in the circuit, a movable contact in the circuit located at the back of the pocket recess, the pocket recess sloping back causing the ball to roll against the movable contact to close the circuit, said movable contact being so located that when the ball is resting against it said ball is in position to be struck by the propelling member, and means for causing the propelling arms to prolong application of power to the ball comprising means for retaining the circuit closed after the ball is moved away from the movable contact.

4. A putting target including a base onto which a ball is adapted to roll, a U-shaped propelling member pivoted about a horizontal axis over the base, a fixed contact substantially in vertical alignment with the member, a movable contact adapted to be moved against the fixed contact by a rearwardly rolling ball, the folded U-shaped extremity of the member being adapted to strike opposite sides of the ball adjacent the ground and impart an overspin thereto, an electric circuit including electrically operated means for moving the member to strike the ball, said circuit including both contacts, and spring means for urging the member to its initial position.

5. A putting target comprising a base, a ramp leading up to the base, a shallow channel in the base extending across the back of the ramp, the channel sloping from its ends to form a central ball-receiving pocket, a pocket sloping to the rear across the channel, a U-shaped ball-propelling arm swingably mounted above the pocket and extending into the pocket to sweep a ball therein forward across the channel, an electric circuit comprising a solenoid connected to swing the propelling means out from the pocket and a switch adapted to be closed by a ball in the pocket, whereby a ball in the pocket closing the solenoid circuit is propelled across the channel by the U-shaped means, a delayed opening switch in the solenoid circuit adapted to break the circuit as the U-arm approaches the end of its forward swing, whereby power application to the ball is prolonged, and means to return the propelling arm and the solenoid to initial position.

6. A putting target as claimed in claim 5, wherein the U-shaped propelling arm is mounted forwardly of the pocket, whereby overspin on the returning ball is prolonged.

HARRY SMITH.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,222,403	Chouinard	Nov. 19, 1940
2,443,759	Anderson	June 22, 1948
2,470,325	Stillman	May 17, 1949