

April 24, 1928.

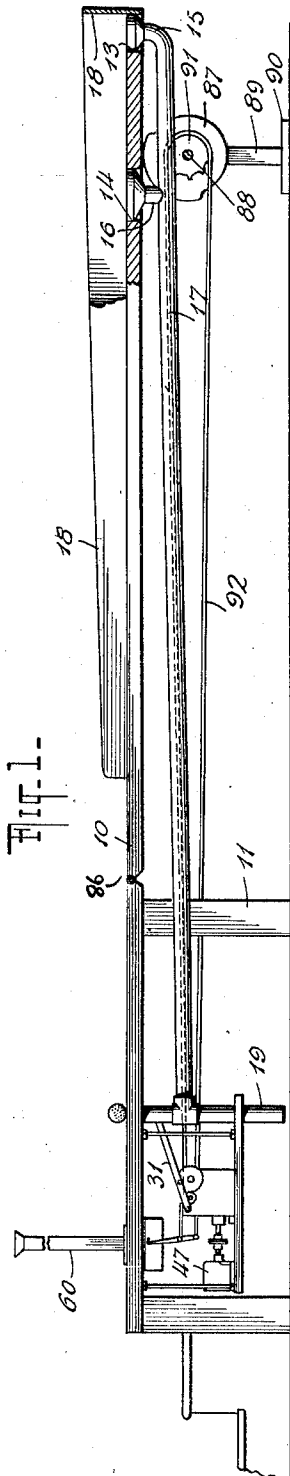
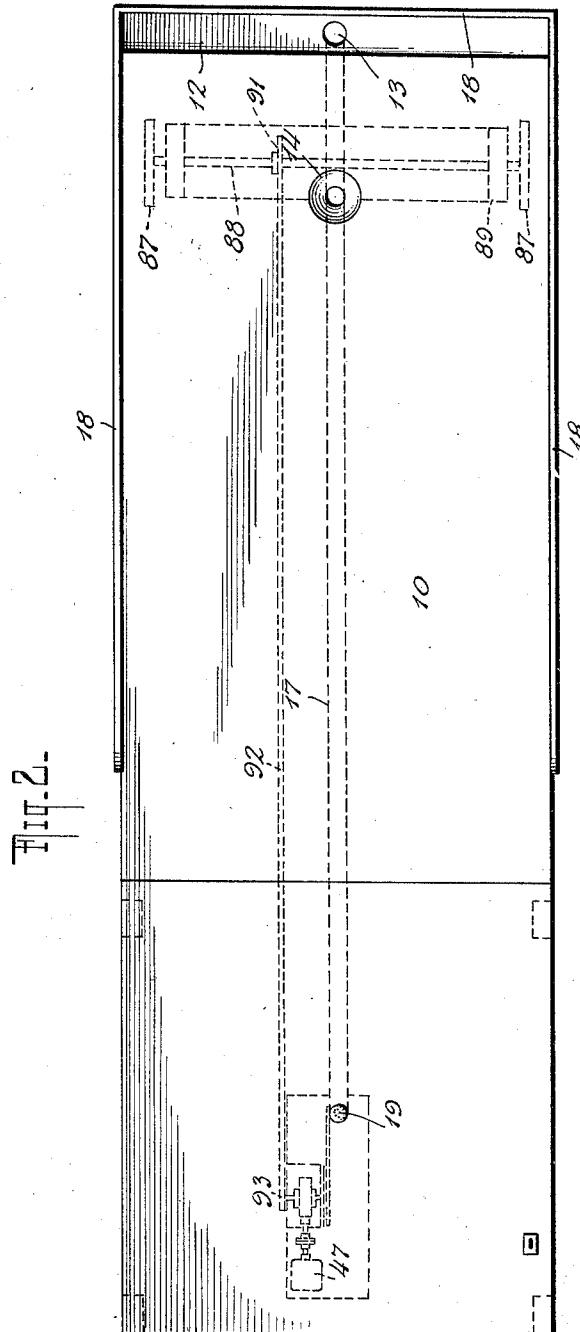
C. H. LANGE ET AL

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GAME

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3 Sheets-Sheet 1



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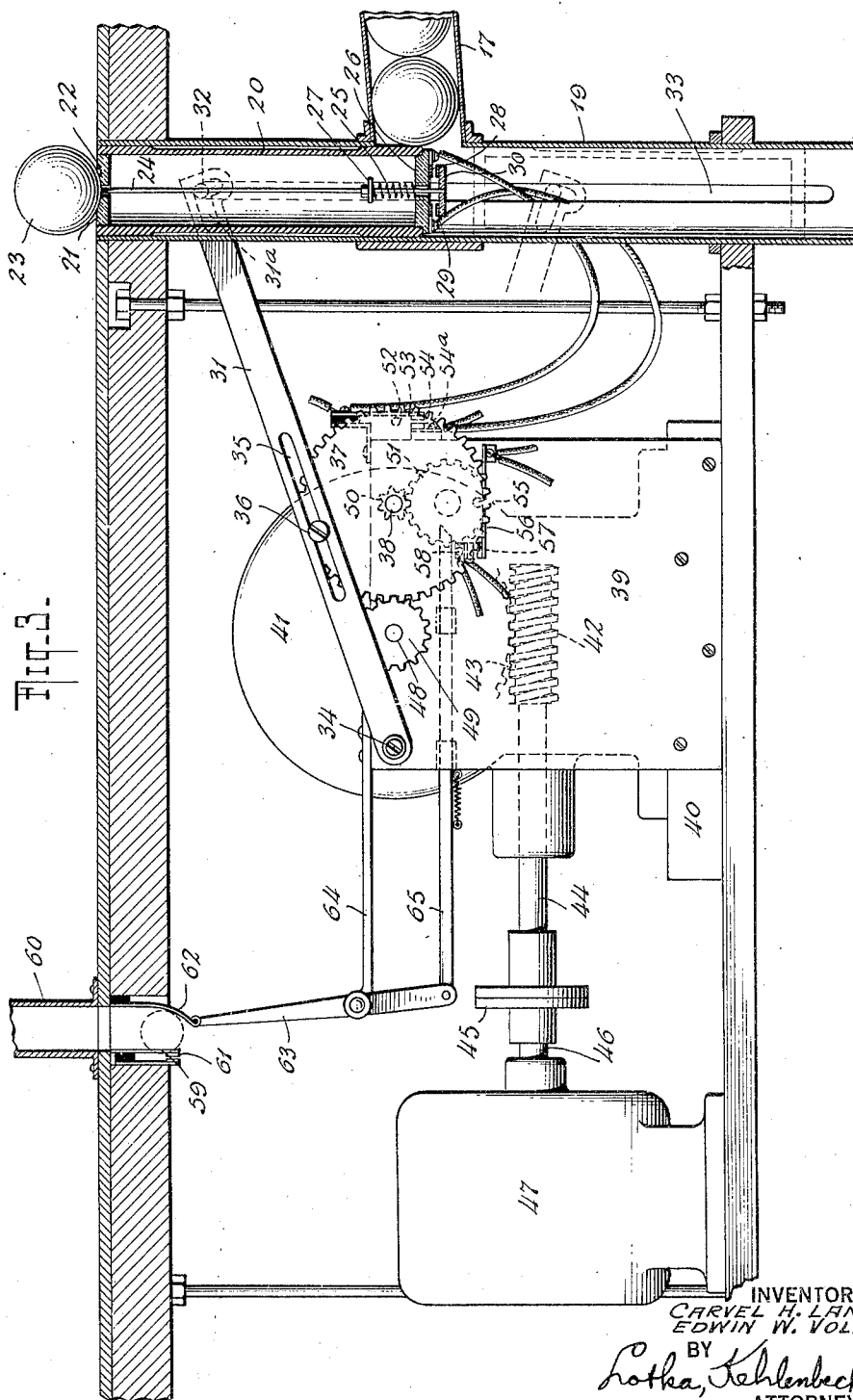
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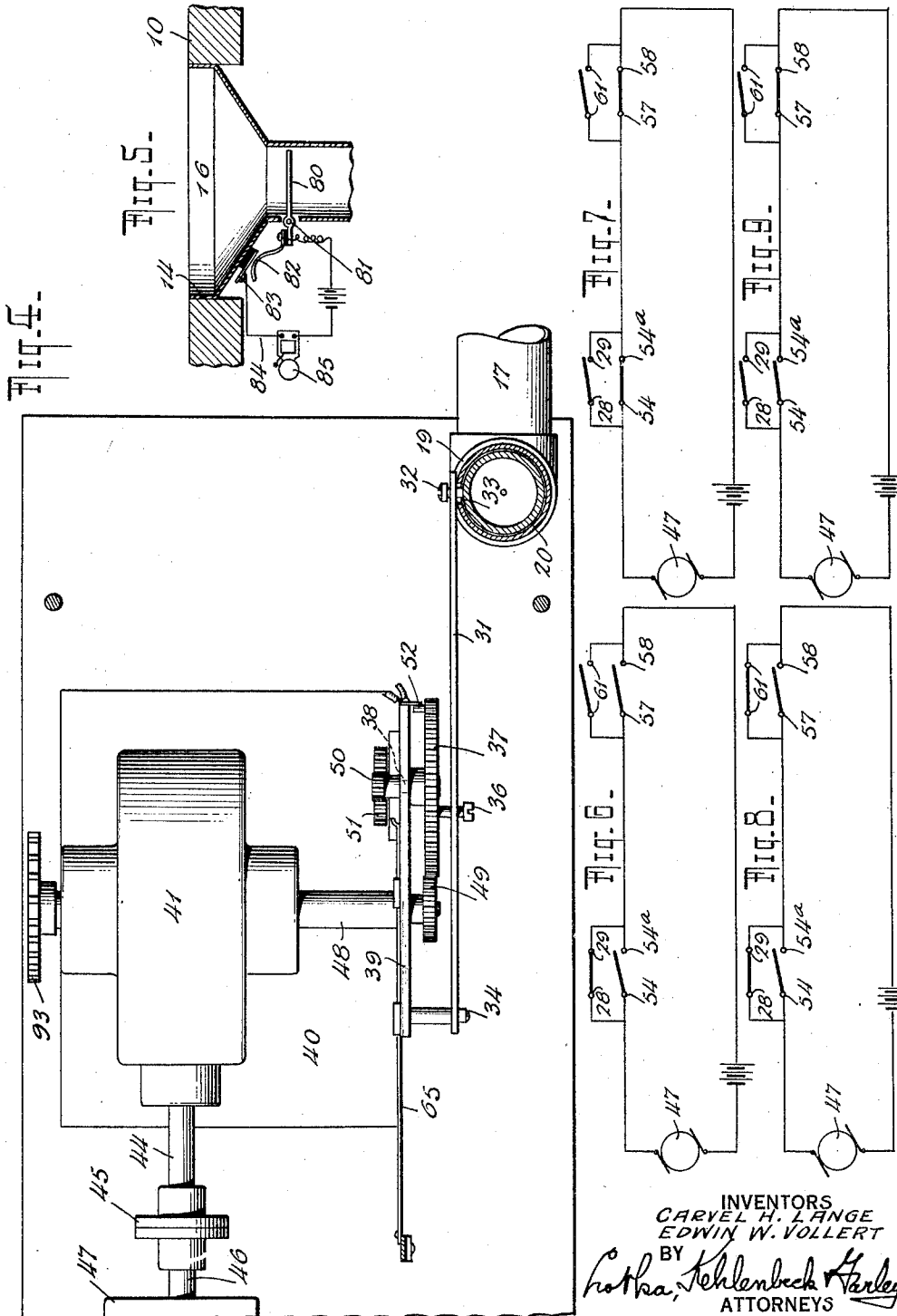
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GAME

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3 Sheets-Sheet 3



UNITED STATES PATENT OFFICE.

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GAME.

Application filed December 17, 1926. Serial No. 155,359.

This invention relates to game devices and has for its principal object to provide a new and improved construction for such a device, particularly adapted for use as a practicing apparatus of relatively small dimensions, capable of being employed by golfers for practicing various golf strokes.

In its essential details, the device consists of a platform upon which a player may stand while addressing and striking a golf ball, said platform being provided with a suitable locating device to maintain the ball in a stationary position while it is being addressed, but permitting the free movement of the ball from such position when it is struck. For the purpose of enabling the player to test the accuracy and skill of his shots, the device further includes an objective or target into, or against, which the ball is intended to be propelled. The device further includes an instrumentality for bringing a ball from a supply thereof to the aforementioned stationary position, and also means for returning the ball, after it has been played, to said supply.

For the purposes of the present application, the invention has been illustrated by way of example as embodied in a simulation of a putting green, in which the target above referred to is in the form of the conventional cup. As hereinafter more fully disclosed, the embodiment selected for illustration herein is particularly adapted for use at amusement parks, fairs or the like, and such embodiment includes automatically actuated means for delivering a certain predetermined number of balls, one after another, to the player, after a coin controlled or a manually operated device is actuated.

Other objects of the invention, such as relative simplicity, and therefore low cost of construction, durability and attractiveness of appearance, will appear more fully from the following more detailed description, and by reference to the accompanying drawings forming a part hereof, wherein Fig. 1 is a longitudinal vertical section through a constructional example of a device embodying the principles of our invention; Fig. 2 is a plan view of the structure shown in Fig. 1; Fig. 3 is an enlarged vertical section of the means for moving the balls to the striking position; Fig. 4 is a plan view of the structure shown in Fig. 3; Fig. 5 is an enlarged detail; Figs. 6 to 9

inclusive, are diagrams of the electric wiring used in connection with the means illustrated in Figs. 3 and 4, and showing the manner in which the various electrical switches complete the electrical circuits.

As shown in Figs. 1 and 2 of the drawing, the invention has been illustrated as applied to a practice putting green. A platform 10, constructed of any suitable, sufficiently plane, strong material, such for example, as three or five ply laminated wood, is mounted upon supports 11, so as to raise the platform to the desired height. The platform 10 preferably slopes slightly from one end towards the other end thereof. At the latter end, a grooved channel or runway 12 is provided, having at the longitudinal center a through hole 13. A short distance inwardly of the platform from the hole 13 a second aperture 14 is provided. Fitted into the apertures 13 and 14 are the upwardly projecting spouts 15 and 16 respectively, each of which communicates at its lower end with a return pipe or trough 17. The trough 17 slopes in the opposite direction to the platform 10 and serves to return balls which have been played to a feeding apparatus located adjacent to and below the front end of the platform 10. Secured to the two sides of the platform and to the rear end thereof, is an upwardly projecting wall 18, which serves to keep the balls from being propelled entirely off the playing surface of the device.

The front end of the pipe 17 communicates with a vertical pipe or tube 19, shown more clearly in Fig. 3. Slidably mounted within said tube 19 is a ball feeding member, which, in the constructional example disclosed, is in the form of a hollow cylinder 20, having its upper end closed by a plate 21 of any suitable material. This plate is provided with a small central depression 22, in which a golf ball 23 is adapted to be seated, said depression serving to hold the ball in a stationary position while it is being addressed and struck by a golf club grasped in the hands of the player. A small rod 24 passes through the center of the cylinder 20 and is normally held, by means of a spring 25 confined between the base plate 26 of said cylinder and a stop 27 secured to said rod, with the upper end of said rod projected a slight distance above the surface of the depression 22 above referred to.

The base plate 26 of the cylinder 20 is preferably constructed of electric insulating material and has secured thereto a pair of spaced electrical contacts 28, adapted to be bridged by a switch plate 29, secured to a block of insulating material 30, the latter being fixedly mounted upon the lower end of the rod 24 which, as clearly shown in Fig. 3, projects through the base plate 26. These members 28—29 form an electric switch, hereinafter called the ball switch, the purpose and operation of which will hereinafter be more fully described.

An operating lever 31 is provided at one end thereof with an elongated slot 31^a through which a screw 32 passes, said screw being secured within the side walls of the cylinder 20 and projecting through a slot 33, extending longitudinally of the tube 19. The other end of the lever 31 is pivoted by means of the screw 34 upon any suitable stationary support. Between its ends the lever 31 is provided with a second elongated slot 35, into which projects a crank pin 36. The crank pin 36 extends laterally from the side of a gear 37, secured to one end of a jack shaft 38, the latter being journaled in a standard 39 secured to, or formed integral with, a base 40. The base 40 has secured thereto a gear reduction box 41, which contains a reduction gear, preferably a worm reduction consisting of the worm 42 and worm wheel 43. The worm 42 is mounted upon a shaft 44 driven through a coupling 45 from the armature shaft 46 of a small electric motor 47. The worm wheel 43 is mounted upon a shaft 48; one end of which projects from the gear reduction box 41 and has secured thereto a pinion 49, which meshes with the gear 37, above referred to. Mounted upon the other end of the jack shaft 38 is a pinion 50 which meshes with a spur gear 51.

The gear 37 is provided with a pin 52, adapted, when said gear is in the position shown in Fig. 3, to engage with a flat spring 53, having one end thereof secured to the standard 39. The other end of the spring 53 is free and has secured thereto an electric contact 54, adapted to be held in engagement when the pin 52 is in the position shown in Fig. 3 with a co-operating fixed contact 54^a. These two contacts 54—54^a form a switch which will hereinafter be designated the auxiliary switch. The gear 51 also carries a pin 55, adapted to operate a similar spring member 56, which carries a contact 57, adapted to co-operate with a fixed contact 58, thus forming a switch, hereinafter to be called the primary switch. The auxiliary switch formed by the contacts 54—54^a, the primary switch formed by the contacts 57—58, and the ball switch formed by the members 28—29 are interposed in the electric circuit to the motor 47, as indicated

in the diagrams of Figs. 6 to 9 inclusive. These switches are adapted to be automatically actuated, in the manner presently to be described, to cause the ball feeding apparatus to perform a certain cycle of operations, after a main actuating device has been thrown in operation. The main actuating device may take the form of a manually operated switch or a coin controlled switch. For the purpose of the present application, the said device has been illustrated as a coin controlled switch, consisting of a spring switch lever 59, adapted to be operated by the weight of a coin dropped in a coin slot or chute 60, the said slot being located at any convenient point near the front end of the platform 10. The weight of the coin upon the switch lever 59 will cause the switch contacts 61 to be closed in a manner which will be readily understood. In order that the switch comprising the contacts 61 will remain closed for a sufficient period of time to insure the movement of the pins 52 and 55 out of engagement with the spring arms 53, 56, and therefore the closing of the primary and auxiliary switches, any suitable stop means are provided for momentarily holding the coin in engagement with the lever 59. As shown, these stop means may comprise a leaf spring 62, having one end secured to the upper end of a lever 63. The other end of the spring 62 is free and presses against any suitable abutment, such as a portion of the table 10 to hold the lever 63 normally in the position shown in Fig. 3. The lever 63 is pivoted between its ends on any suitable fixed support, such as the bracket 64, secured to standard 39. Pivotaly connected with the lower end of the lever 63 is one end of a trip rod 65, the other end of which projects into the path of movement of the pin 55 in a position to be engaged by said pin as the gear 51 rotates approximately a quarter revolution from the position shown in Fig. 3. When the pin 55 engages the rod 65, it will push said rod to the left (Fig. 3), thus causing the upper end of lever 63 to be moved to the right, thereby to release the coin which may drop into any suitable receptacle (not shown).

When the device is constructed particularly for use as an amusement park attraction, we prefer to associate with the spout 16 leading to the cup aperture 14 some form of a signal device, such as an alarm bell, siren or other audible signal, or a lamp, or other visual signal, which will be actuated by the dropping of the ball through the said spout, thereby thus indicating that the player has, for example, sunk a putt. The device associated with the spout 16 may be of any suitable construction. As an example, we have shown in Fig. 5 of the drawing, a small shutter or lever 80, pivoted, as at 61, to the side wall of the spout 16 and having

one end thereof projecting well into the interior of the spout. The other end of the lever 80 is provided with an electric contact 82, adapted, when the inner end of the lever is moved downwardly by the weight of the ball, to engage a second electric contact 83, which completes a circuit 84, having included therein any suitable form of signal device 85.

While the platform 10 has been described as sloping towards the cup or aperture 14, it may be found desirable where the device forms part of the equipment of a golf practicing school, to maintain the entire playing surface or field normally horizontal. In this case, if desired, the use of the grooved channel or runway 12 may be dispensed with, as the player would ordinarily continue playing until the putt is sunk. If it is desired to have the playing field as nearly horizontal as possible during the time the ball is traveling towards the cup, but also to provide means for clearing the field of the ball; the platform may be made in two sections hinged together as at 86. In this case, any suitable means, either manually or automatically operated, may be employed for dropping one end of the platform. As an example of an automatic means, we have shown adjacent to the rear end a pair of cams 87, secured upon a cam shaft 88, journaled in a pair of standards 89, the latter preferably being formed integrally with a base plate 90. Secured to the cam shaft 88 is a sprocket or pulley 91 about which is trained a chain or belt 92 driven by a sprocket or pulley 93, connected to the ball feeding mechanism so that when the latter is actuated, the cam shaft 87 will be rotated to bring the throw of the cams to their lowermost position and thereby allow the rear end of the platform to drop after a ball has been played, while when the cylinder 20 is in its uppermost position with the ball feeding mechanism stopped, the cam throws will be in their uppermost position to maintain the platform level.

When the device is constructed in simulation of a putting green as illustrated by way of example in this application, the platform 10 is preferably covered with a relatively hard nap carpet or other suitable covering material.

The manner in which the device is used and the operation of the parts is as follows: Assuming that the device is constructed for use as an amusement park attraction the player mounts the platform 10, inserting a coin in the coin box and thereby energizing the main actuating switch lever 59. It will be assumed that the ball feeding apparatus is in the position shown in Fig. 3, with the exception that no ball 23 is seated within the ball positioning recess 22. Therefore, the rod 24 will be in its uppermost position

with the contacts 28—29 in engagement. Before the switch lever 59 is actuated by the weight of the coin, the electric circuit to the motor 47 is as indicated in Fig. 6 of the drawing, from which it will be seen that the ball switch 28—29 is closed and the primary and auxiliary switches 54—55, 57—58 and 59 are open. When the main switch 59 is actuated by the coin, the circuit is as shown in Fig. 7; the ball switch 28—29 and the main switch 59 are closed thereby to permit the current to flow to the motor 47, while the auxiliary and primary switches 54—55 and 57—58, which as shown in the diagrams, are shunted about the ball switch and main switch, respectively, are open. The motor 47 being energized, the gear trains shown in Figs. 3 and 4 of the drawing will start rotating, thereby moving the cylinder 20, through the action of the lever 31, from the uppermost position shown in full lines of Fig. 3, to the lowermost dotted line position. As the gears 37, 51 start rotating, the pins 52, 55, provided on the respective gears, move out of engagement with their respective co-operating spring arms 53, 56, thus permitting the primary and auxiliary switches to be closed. Shortly after the gears have moved far enough to permit the last mentioned switches to close, the lever 63 is actuated to release the coin, which drops into a suitable receptacle, such as is usually provided in devices of this kind. As will be seen from the dotted line showing of the cylinder 20 at the bottom of Fig. 3, the extent of travel of said cylinder is sufficient to fully uncover the rear end of the pipe 17, thereby permitting the ball at the exit of said conduit to roll onto the top plate 21 of said cylinder. The movement of the cylinder is sufficiently slow and the distance the top plate 21 moves below the exit of said pipe 17 is sufficient to allow enough time for the ball to roll onto the top plate 21, without necessitating the use of any stop or dwell in the gearing which actuates said cylinder. After the ball has moved onto the plate 21 and has depressed the rod 24 against the action of the spring 25, thereby moving the switch plate 29 out of engagement with the contacts 28, the circuit will be as shown in Fig. 8, from which it will be seen that the ball and main switches are open, while the primary and auxiliary switches are closed, the latter switches having been closed as a result of the movement of the pins 52, 55 out of contact with the spring arms 53, 56, as above described. The cylinder 20 will now move upwardly until the top plate 21 comes into registry with the top of the platform 10. When this occurs, the parts are in the position shown in Fig. 3, with the exception that the pin 55 is out of engagement with its spring arm 56. The pin 52, however, has again moved into engagement with the

spring arm 53 to open the auxiliary switch 54—55, thus stopping the apparatus with the parts in the position shown. No further movement will occur until the ball has been moved from the locating position within the recess 22.

The player, upon mounting the platform, is handed a golf club by the attendant, and taking his stance adjacent to the ball, addresses the ball and putts towards the cup aperture 14. If the putt is sunk, the ball will drop through the spout 16, thereby causing the signal 85 to be actuated. Should the player fail to sink the putt, the downward slope of the platform 10 will cause the ball to roll into the trough or groove 12, which, as will be readily understood, is inclined downwardly from the sides of the platform towards the central aperture 13. In either event, the ball will fall to the pipe 17 and will roll through said pipe under the influence of gravity, due to the downward slope of the pipe, towards the rear end of the apparatus.

After the ball is propelled from its position within the recess 22, the rod 24 is actuated upwardly by the spring 25, thus causing the switch plate 29 to bridge across the contacts 28 and again complete the circuit to the motor 47. The circuit will now be as shown in Fig. 9, from which it will be seen that the ball switch 28—29 and the primary switch 57—58 are closed, while the auxiliary switch 54—55 and the main switch or coin switch 59 are open. The primary switch 57—58 remains closed at this time, because of the gear reduction provided by the gears 50, 51. This gear reduction, as shown in the illustrated example, is in the ratio of three to one, so that three revolutions of the gear 37 will occur for one revolution of the gear 51. The cylinder 20 will therefore again be moved downwardly to receive another ball, and will be returned carrying the ball to the uppermost position in registry with the top of the table 10. After the second ball is driven from its position within the recess, the motor will again be actuated to return the cylinder 20 to its lowermost position to receive a third ball and to bring it to the top of the platform. When the feeding apparatus has completed three reciprocations to bring the third ball to the top of the platform, the gear 51 will have completed a full revolution, thereby bringing its pin 55 again in engagement with the spring arm 56, thereby opening the primary switch 57—58. After the third ball is driven off the plate 21, no further movement of the parts will occur, until a coin is dropped into the coin box, because until a coin is dropped in said box, both switches 57—58 and 59 are open.

It will be understood that a sufficient sup-

ply of golf balls will be provided, so that there will always be a ball at the exit end of the pipe 17 in position to roll upon the plate 21, when the cylinder reaches its lowermost position.

It will also be understood that the principles of the invention are not limited to the specific constructional example herein disclosed, as many variations and modifications may be resorted to without departing from said principles. Obviously, any equivalent structure, such as cams or the like, may be employed for the gears shown for actuating the feeding mechanism. Likewise, the number of balls fed successively may be varied as desired. It will also be obvious that although I have illustrated the feeding apparatus as controlled by a plurality of electrical contacts, that equivalent mechanical devices could be used to perform the same functions. Likewise, the invention is not limited to a coin control for actuating the main actuating switch. The employment of the coin control, while desirable if the device is to be used as an amusement park attraction, would be dispensed with, if the device is constructed for use as part of the apparatus of a golf instruction school. Furthermore, the invention is not limited to the simulation of a putting green, but obviously could be used equally as well for the practice of other club shots, in which case the nature and location of the targets would be appropriately designed and positioned for the particular class of club shots for which the device is intended to be used.

It will further be understood that when the ball feeding apparatus is electrically operated and installed in places where the amperage of the current leading to the motor is so high as to make it inadvisable to permit the full strength of the current to pass through the switches, suitable well known and common electrical devices and circuits may be employed for bringing about the desired reduction of the current flowing through said switches.

The term "platform" as used herein is not to be construed in the narrower sense as limited to a structure which is raised or elevated, but as meaning any approximately horizontal plane supporting surface whether raised, depressed or level with the ground, floor or other adjacent main supporting member.

We claim:

1. A device of the character described, comprising a platform upon which a player is adapted to stand, said platform having associated therewith a positioning member adapted to hold a golf ball in a stationary position to be struck by a golf club in the hands of the player, said platform further including a playing field and a target to-

wards which the ball is adapted to be driven and means to return the ball to the playing position, said means including a feeding member for engaging the ball, moving it to a predetermined definite position relatively to said platform and maintaining it in said position until said ball is propelled therefrom by the player.

2. A device of the character set forth, comprising a ball feeding member adapted to be associated with a playing field for bringing a golf ball from a supply thereof to a position approximately in horizontal alignment with said field, and within a certain definite area of said field, and means to actuate said member, including a device actuated by the weight of a ball upon said member for automatically causing said member to be moved from said position to the supply of balls and back to said position.

3. A device of the character set forth, comprising a ball feeding member adapted to be associated with a playing field for bringing a golf ball from a supply thereof to a position approximately in horizontal alignment with said field, and within a certain definite area of said field, and means to actuate said member, including a device actuated by the weight of a ball upon said member for automatically causing said member to be moved from said position to the supply of balls and back to said position, and means to cause a predetermined number of such movements of said member to be made in succession.

4. A device of the character set forth, comprising a ball feeding member adapted to be associated with a playing field for bringing a golf ball from a supply thereof to a position approximately in horizontal alignment with said field, and within a certain definite area of said field, and means to actuate said member, said means including a motor device, means driven thereby to move said member and a controlling member to stop the operation of said motor upon the completion of one full movement of said member from and to said position.

5. A device of the character set forth, comprising a ball feeding member adapted to be associated with a playing field for bringing a golf ball from a supply thereof to a position approximately in horizontal alignment with said field, and within a certain definite area of said field, and means to actuate said member, said means including a motor device, means driven thereby to move said ball feeding member, a controlling member to stop the operation of said motor upon the completion of one full movement of said ball feeding member from and to said position, and a second controlling member for again starting the operation of said motor device.

6. A device as set forth in claim 5, in which the operation of the second controlling member is governed by the weight of a ball upon said ball feeding member.

7. A device of the character set forth, comprising a ball feeding member adapted to be associated with a playing field for bringing a golf ball from a supply thereof to a position approximately in horizontal alignment with said field, and within a certain definite area of said field, and means to actuate said member, said means including a motor device, a main controlling member to cause the operation of said motor device initially to actuate said ball feeding member, a primary controlling member to stop the operation of said ball feeding member after a predetermined number of complete movements thereof, an auxiliary controlling member for stopping the operation of said ball feeding member after one complete movement thereof, and an additional controlling member to start the operation of said ball feeding member after it has been stopped by said auxiliary controlling member.

8. A device as set forth in claim 7, in which the operation of the additional controlling member is governed by the weight of a ball upon said ball feeding member.

9. A device as set forth in claim 7, in which the additional controlling member is associated with said ball feeding member and is provided with means adapted to be held inoperative by the weight of a ball upon said ball feeding member and means to cause it to be held normally in operative position when no ball is on said ball feeding member.

10. A device of the character set forth, comprising a ball feeding member adapted to be associated with a playing field for bringing a golf ball from a supply thereof to a position approximately in horizontal alignment with said field, and within a certain definite area of said field, and means to actuate said member, said means including a motor, driving means connecting said motor with said ball feeding member, a main switch for initially starting said motor, a primary switch for stopping said motor after a predetermined number of movements of said member, an auxiliary switch for stopping said motor after one complete movement of said member and a ball controlled switch for starting said motor after it has been stopped by said auxiliary switch.

11. A device of the character described, comprising a platform upon which a player is adapted to stand, said platform including a playing field, a target associated with said platform, a positioning member for moving a golf ball from a supply thereof to a defi-

nite predetermined position with respect to said platform, said member being movable relatively to said platform from and to said definite predetermined position to and from
5 a position adjacent to a supply of balls, and means to return the ball from the playing field to a position adjacent to said positioning member.

12. A device of the character described,
10 comprising a platform upon which a player is adapted to stand, said platform having associated therewith a positioning member adapted to hold a golf ball in a stationary position to be struck by a golf club in the
15 hands of the player, said platform further including a playing field, a target towards which the ball is adapted to be driven, means to return the ball to the playing position, including cams for normally holding said
20 platform substantially level and for drop-

ping one end thereof to cause the ball to roll towards said end.

13. A device of the character described, comprising a platform, including a playing field and target, a positioning member 25 adapted to hold a golf ball in position on said platform, means for returning played balls to a place of supply, an actuating device adapted to cause said positioning member to travel to said place of supply and
30 return to playing position, and a coin device comprising means for starting said actuating device and controlling same so as to cause said positioning member to so convey a predetermined number of balls. 35

In testimony whereof we have hereunto set our hands.

CARVEL H. LANGE.
EDWIN W. VOLLERT.