

Jan. 30, 1968

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3,366,388

## ELECTRICALLY OPERATED GOLF GAME

Filed Oct. 21, 1965

5 Sheets-Sheet 1

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5 Sheets-Sheet 2

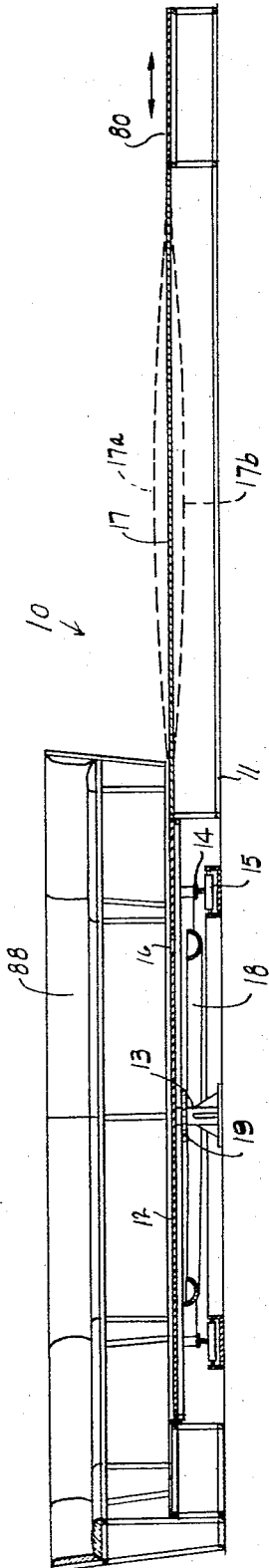


Fig. 2

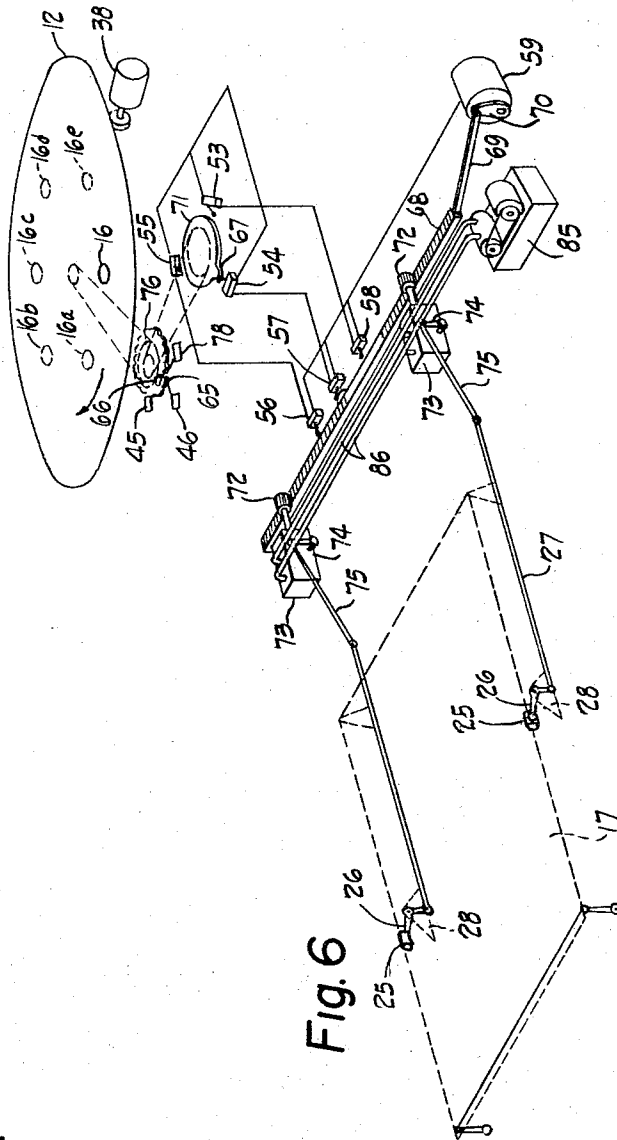


Fig. 6

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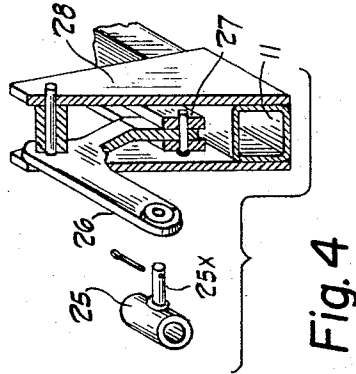
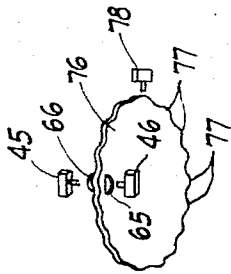
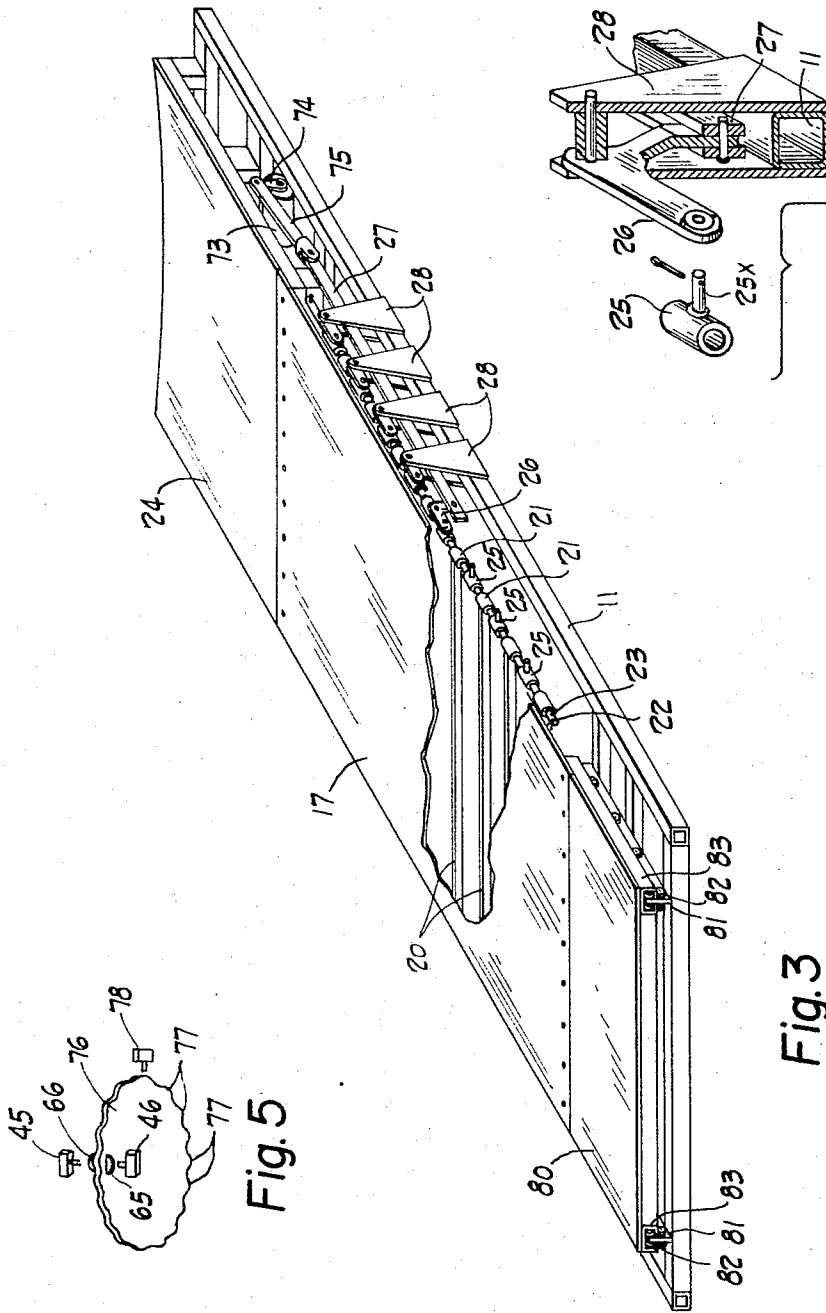
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ELECTRICALLY OPERATED GOLF GAME

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5 Sheets-Sheet 3



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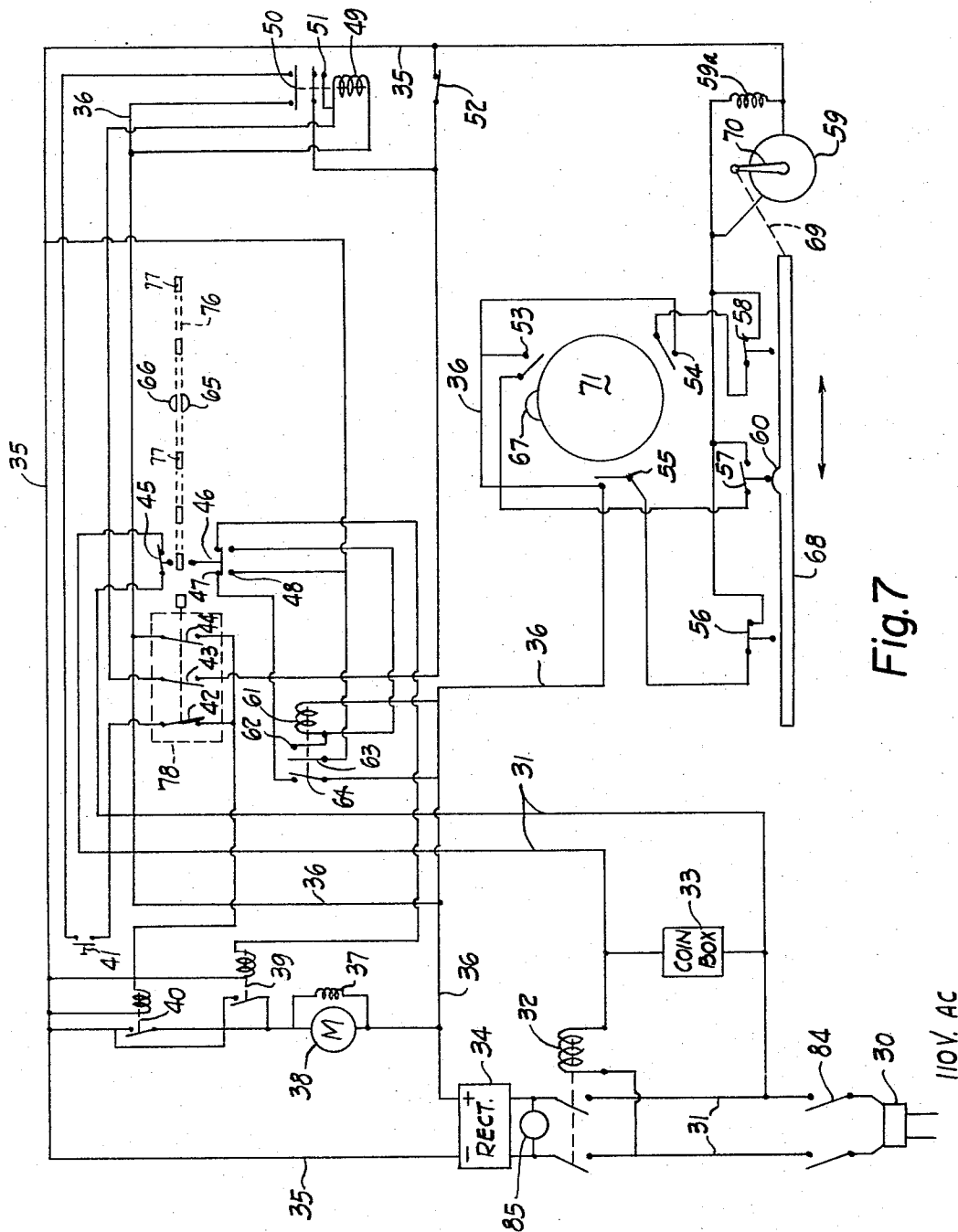
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ELECTRICALLY OPERATED GOLF GAME

Filed Oct. 21, 1965

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ELECTRICALLY OPERATED GOLF GAME

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Fig. 8

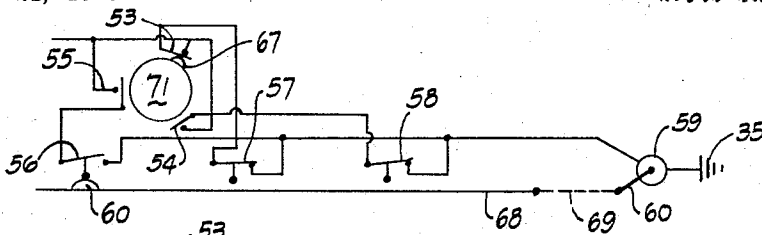


Fig. 9

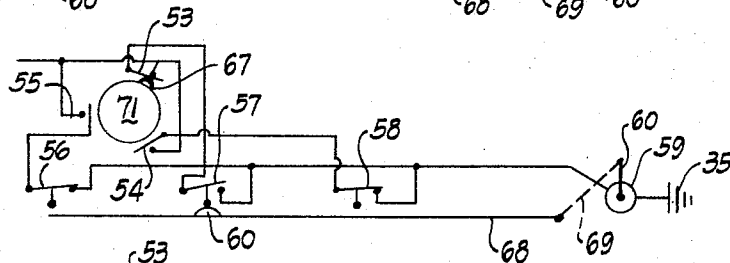


Fig. 10

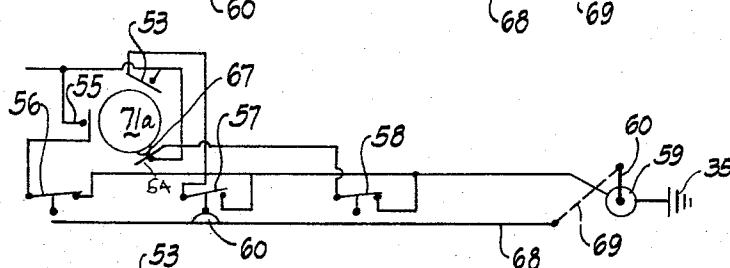


Fig. 11

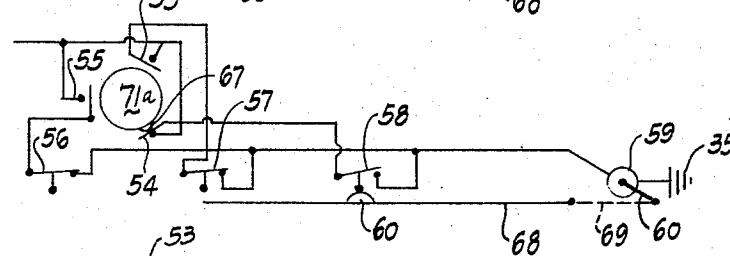


Fig. 12

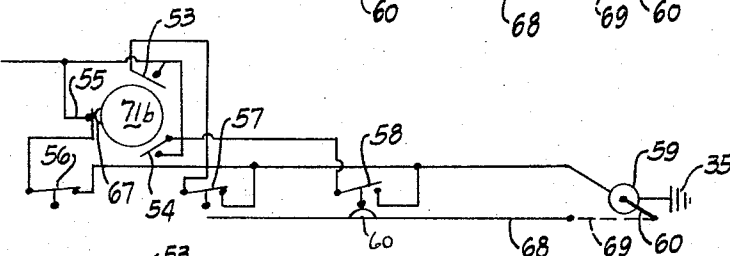
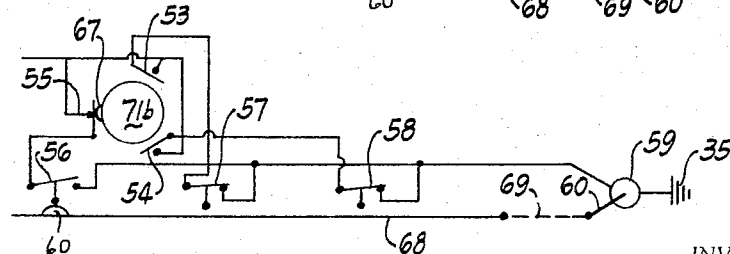


Fig. 13



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## ELECTRICALLY OPERATED GOLF GAME

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Filed Oct. 21, 1965, Ser. No. 499,280

6 Claims. (Cl. 273-176)

This invention relates to golf-game apparatus, and more particularly to a device including, in miniature, the principal requisite features of a conventional golf course, namely, a teeing platform from which the balls are played, a matted ramp extending outwardly from the platform and corresponding to a "fairway," and a level matted platform at the outer end of the ramp having a hole, or cup, for receiving the balls, corresponding to the putting green of a golf course.

The primary object of the invention is to provide such a structure having electrically operated and sequentially actuated means for varying the angular disposition of the ball cup with reference to the tee-off point, as well as means for varying the contour of the "fairway" ramp to simulate conditions which the golfer may face on an actual golf course.

Another object is to provide such a device that will automatically, and in proper sequence, set up 18 different hole situations upon the activation of a single electric push button, thereby providing an 18 hole golf game, no two holes of which are alike.

A further object is to provide such a device which may be used by two persons, or more, in a competitive manner as a game.

Another object is to provide a device that does not require an extension space for its use and which may be used either indoors or out of doors.

Still other objects are to provide a device, as aforesaid, whose electric operating circuits are coin triggered; that is sturdily constructed; fool-proof in operation, and which may be readily used by skilled or unskilled golfers with a minimum of instruction.

These and other objects of the invention will become apparent from a reading of the following specification and claims, together with the accompanying drawing, wherein like parts are referred to and indicated by the like reference numerals and wherein:

FIGURE 1 is a top plan view, with portions broken away, of the electrically operated golf game that is the subject of this invention;

FIGURE 2 is a vertical sectional view, taken along the line and in the direction of arrows 2-2 of FIGURE 1;

FIGURE 3 is a perspective view of the deformable ramp and tee-off platform, with portions broken away to reveal their supporting structure and actuating means;

FIGURE 4 is an exploded view of one of the ramp supporting bell-cranks and its interconnecting means;

FIGURE 5 is a perspective view of the turntable rotating control cam and its associated micro-switches;

FIGURE 6 is a schematic view showing the manner of interconnection between the mechanical elements of the device and the electric switches which control the relative movements between said elements;

FIGURE 7 is a schematic layout of all the electric circuits and their controlling switches; and,

FIGURES 8 thru 13 are schematic layouts of the electric circuit and its associated cam, which controls the ramp configuration changing mechanism, showing it in progressively different phases as the ramp is made to sequentially assume a level, concave, or convex configuration.

Referring more particularly to the drawing, there is seen in FIGURES 1 and 2 the electrically operated golf

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game that is the subject of this invention, broadly indicated by reference numeral 10.

The device comprises a base frame 11 upon which is mounted an approach ramp 17 leading up to a turntable 12 having a single, golf ball receiving cup opening 16. In the form shown, the over-all length of the approach "fairway," which includes the ramp 17, stationary platform 24 and tee-off platform 80, is approximately 18 feet.

The base frame 11 may be made for permanent installation or may be portable in character, for positioning on a pre-existing surface, such as a concrete floor; in which case it is provided with suitable leveling devices, not shown in detail, to overcome any irregularities or deviation of the floor surface from a horizontal plane.

The turntable 12, which is approximately 12 feet in diameter, is journaled on a vertically extending stationary center shaft 13, and supported proximate its peripheral edge by a dependent circular track 14 which rides on a series of circularly disposed rollers 15 affixed to the base frame 11, as seen in FIGURES 1 and 2.

Reference numeral 87 indicates an 18" wide walk running down both sides of the ramp 17 and around the periphery of the turntable 12, as is seen most clearly in FIGURE 1. The walk 87 rises slightly above the plane of the turntable 12, to prevent balls from rolling off the turntable.

That portion of the walk 87 surrounding the turntable 12 is bounded by a continuous spectator seat 88.

A circular, golf ball return, channel 18, is positioned on the frame 11 immediately below the travel path of cup 16, and is suitably inclined and connected to a conduit through which a ball sunk in the cup 16 may be automatically returned to a ball container 18x located near the tee-off platform 80, for the convenience of the player.

Rotation of the turntable 12 is effected through an electric motor 38 positioned proximate the peripheral edge thereof and engaged therewith through a friction drive wheel 38x. The motor 38 is equipped with an electrically operated clutch brake 37, as seen in the wiring diagram in FIGURE 7, which effects immediate braking action when the current to the motor is cut off. Rotation of the turntable by motor 38 effects movement of the ball cup 16 in a 360° circular path wherein it may be stopped at pre-determined positions relative to the projected longitudinal center line of the ramp 17, by means of novel interlocking mechanical and electrical components, to be described in detail hereinafter.

As is seen most clearly in FIGURE 3, a stationary platform 24 is mounted on the frame 11 immediately adjacent the turntable 12. The abutting edge of the platform 24 is shaped to fit closely against the turntable edge, leaving only enough clearance therebetween for free rotation of the turntable. The top surfaces of the platform 24 and turntable 12 are exactly aligned, so that the course of a golf ball rolling therebetween will not be affected.

A second platform 80 is slidably mounted at the far end of the frame through parallel channel tracks 83 which engage rollers 82 mounted on upright, spaced and parallel rails 81 mounted on the frame 11.

A deformable ramp 17, made of a length of flexible 1/8" thick spring steel, approximately 12 1/2 feet long, is anchored at one end to the fixed platform 24, with its free end secured to the movable platform 80. Vertical flexion of the plate 17, between configurations wherein the plate is made to assume a level, concave, or convex shape, will cause the movable platform 80 to glide along the rails 81 with the free end of the plate 17, toward or away from the stationary platform 24.

A plurality of spaced and parallel supporting cross-bars, or channels 20 are mounted on the underside of the ramp 17, the length thereof. Each cross-bar 20 has

a bushing 21 at the ends thereof whose bores are aligned with those of its neighbors for the purpose of receiving a flexible steel rod 22, which passes through all the aligned bushings, the length of the plate 17. An anchor pin 23 at both ends of the rod 22 holds it in place.

Reference numeral 25 indicates a plurality of bell-crank arm engaging bushings slidably mounted on the rods 22 between the cross-bar bushings 21. Each bushing 25 has a stud 25x which is engaged by the upper arm of a bell-crank 26, pivotally mounted on frame brackets 28, as seen in FIGURES 3 and 4.

The lower arm of each bell-crank is connected to a push-pull rod 27, which is in turn connected at one end to the actuating arm 74 of a hydraulic power booster unit 73 through a link 75, as is seen most clearly in FIGURE 6. The hydraulic power booster unit 73 is of the conventional type used in the power steering system of automobiles.

Reference numeral 85 indicates a motor driven hydraulic pump which supplies the necessary pressurized fluid to the unit 73 through lines 86.

Again referring to FIGURE 6, movement of arms 74 of the power units 73 is controlled by the operating shaft gears 72, of each power unit, which engage a toothed rack 68 mounted for reciprocal movement relative to the two gears 72, at 90° to their axes of rotation.

Reciprocating motion of rack 68 is obtained by employing an actuator motor unit 59, including a speed reduction gear system, whose rotating arm 70 is connected to the rack 68 through a link bar 69. The motor 59 also has an electrically operated clutch brake 59a, as seen in the wiring diagram of FIGURE 7. The arm 70 always rotates in the same direction, preferably clockwise, and imparts reciprocating movement to the rack, with each 180° travel thereof, with consequent push-pull action of the arms 74 due to the alternate directional rotation of the gears 72 effected by the alternate directional movement of the rack 68.

When the bell-crank arms engaged by the bushing studs 25x are in the horizontal position, illustrated in FIGURE 3, the flexible ramp plate 17 has a level configuration. When the bell-cranks 26 are tilted downward by "pulling" action of the rod 27, the flexible rods 22 to which they and the ramp cross-bar bushings 21 are attached act to pull the ramp 17 downward to assume the concave configuration, indicated by reference numeral 17b, in FIGURE 2.

When the bell-cranks are tilted upward, by "pushing" action of the rods 27, the ramp 17 is made to assume the convex configuration indicated by reference numeral 17a.

Since it is apparent that there is a greater deviation from the horizontal plane at the center of the ramp 17 than there is at the extreme ends thereof when the ramp is made to assume a concave or convex configuration, the length of the bell-crank arms, or their points of attachment to the bushings 25, relative to their centers of rotation, must be varied accordingly, which is a procedure readily appreciated by those skilled in the art.

It will be further apparent that the structure just described provides for sliding movement of both sets of bushings 21 and 25 along the flexible rods 22, relative to each other, so the arcuate path taken by the bell-crank arms attached thereto is translated into straight-line vertical motion, with no jamming or wedging of the inter-acting elements. Therefore, the so supported ramp 17 is securely held in a concave, flat, or convex configuration, depending upon the angular inclination of the bell-cranks.

The so assembled turntable 12, ramp 17 and platforms 24 and 80 are covered with a mat of simulated grass to give the illusion of an actual fairway and putting green capable of supporting the weight of players walking thereon. In the preferred form shown the overall length of the structure is approximately 35 feet and its overall width approximately 20 feet.

Reference numeral 76 indicates a turntable control cam disc having 18 lobes 77 formed in the peripheral edge thereof, as is most clearly seen in FIGURE 5. The cam disc 76 is rotated by means of a chain belt through a sprocket wheel 19 centered on the underside of turntable 12, as seen in FIGURES 1 and 6. The cam disc 76 is so connected that it will make one revolution for each three revolutions of turntable 12.

Reference numeral 71 indicates a ramp-configuration control cam disc having a single lobe 67 in the peripheral edge thereof. This cam is connected to rotate in phase with cam disc 76, and also makes one revolution while the turntable 12 is making three revolutions.

A micro-switch 78, having three separate switch contacts 42, 43 and 44, is mounted adjacent the edge of the cam disc 76 with its operating plunger riding against the face of the lobes 77, thereof. When the plunger is in a first position, wherein it engages the peak of each lobe 77, switch contacts 43 and 44 are open and contact 42 is closed. When the plunger is in a second position, wherein it rides in the valley between adjacent lobes, switch contact 42 is open and contacts 43 and 44 are closed.

As stated hereinabove, each rotation of the turntable is calculated to move the ball cup 16 between 6 shooting positions, indicated by reference numerals 16, 16a, 16b, 16c, 16d and 16e, as seen in FIGURE 1. Therefore, in order to play an 18 hole game, the turntable will have to pass thru 3 revolutions. Each lobe 77 of cam 76 represents a particular position of the cup 16 in an 18 hole game. With this in mind, and again referring to FIGURE 5, an upstanding, game terminating, lobe 66 is positioned on the upper face of the cam disc 76 in alignment with the No. 18 lobe; and a dependent, game clearing, lobe 65 is positioned on the lower face of the disc, also in alignment with the No. 18 hole lobe.

Reference numerals 45 and 46 indicate two micro-switches positioned to be engaged by lobes 66 and 65, respectively, when the cam disc 76 is positioned for playing the No. 18 hole.

Reference numerals 53, 54 and 55 indicate three micro-switches, spaced 120° apart, and adapted to be sequentially activated by the lobe 67 of cam disc 71.

Reference numeral 60 indicates a cam lobe positioned on the rack 68 and adapted to sequentially engage and actuate three longitudinally spaced and aligned micro-switches 56, 57 and 58.

The electrical system by means of which the rotation of the turntable 12 and the configuration of the ramp plate 17 is sequentially controlled, is illustrated in FIGURE 7.

For safety reasons, the control system is designed to operate on low voltage, 24 volts, direct current, supplied by a rectifier 34 controlled by a 110 volt A.C. relay switch 32 in A.C. power circuit 31, connected to a hand operated shut-off switch 84 which is in turn connected to a power supply plug 30.

The activation of A.C. power relay 32 is controlled by a conventional coin-operated switch 33 and micro-switch 45, which takes over after the No. 1 hole of the game has been set up after insertion of a coin in the switch box 33.

Reference numerals 35 and 36 identify the negative and positive lines, respectively, of the D.C. circuit.

Reference numeral 38 indicates the motor which drives the turntable 12. Normally open, relay switches 39 and 40 control delivery of current to motor 38. The positive side 36 of relay coil 40 is connected to normally closed contact 42 and normally open contact 44 of micro-switch 78. The positive side of relay coil 39 is connected in a circuit which includes contact 47 of micro-switch 46 and normally closed contact 64 of relay switch 61. The negative side of relay coil 61 is connected to contact 48 of micro-switch 46, and also has a normally open, circuit holding contact 63 in parallel with contact 48.

The coil of relay 49 is connected to the negative line 35 through a normally closed, golf-ball operated micro-switch 52 and contact 43 of micro-switch 78 which is open when switch 78 is in its first position. Relay coil 49 also has a contact 51 in parallel with contact 43 which closes to by-pass contact 43 and hold the negative line circuit closed when the coil 49 is activated. Micro-switch 52 is located in the ball return channel 18 and is momentarily opened when a golf ball passes over it.

Reference numeral 41 indicates a normally open, push button, which, when closed, completes the positive line circuit 36 to relay 40 through contact 50 of relay switch 49, when said relay is unactivated, and contact 42 of micro-switch 78, to start motor 38, when said micro-switch is in its first position; wherein contact 44, connected in parallel with contact 42, is open.

When micro-switch 78 is in its second position closure of contact 44 by-passes, now open, contact 42 to keep the circuit to relay switch 40 closed and maintain the motor 38 in operation.

The negative side of motor 59 is permanently connected to negative line 35 and controlled on its positive side through, normally open, micro-switches 53, 54 and 55, and, normally closed, micro-switches 56, 57 and 58.

Again looking at FIGURE 7, as a whole, the wiring diagram is shown in the condition it will be in, with the main power switch 84 open, and the turntable 12 stopped at a point other than its No. 18 hole position, or short of a completed 18 hole game. If the circuits were cleared for a new game, the game-terminating lobe 66 and game-clearing lobe 65 of cam disc 76 would be positioned between micro-switches 45 and 46, in which condition contact 45 would be open, while contact 47 of micro-switch 46 would be open, with contact 48 thereof, closed.

In order to bring about this situation, ready for the start of a new game, we will assume that the main power switch 84 has again been closed.

A.C. current will flow through closed contact 45 and close main relay switch 32 to start the hydraulic pump 85 and activate the rectifier 34. Simultaneously, power will be delivered through D.C. lines 35 and 36, across closed contacts 64 and 47, to game clearing relay switch 39, which closes and completes the D.C. circuit to motor 38. Motor 38 will then operate to rotate turntable 12, and its associated cam discs 76 and 71, and continue to do so until lobe 66 engages micro-switch 45 and causes same to open. This will break the circuit to relay switch 32 causing it to open and cut off the flow of A.C. current to both the pump motor 85 and the rectifier 34. As a consequence, motor 38 will stop, holding turntable 12 at the No. 18 hole position. At the same time game clearing lobe 65 will engage micro-switch 46 to open contact 47 and close contact 48. The electric control circuits are now cleared for the start of a new game.

To start a game and set up conditions for playing the No. 1 hole, a coin must be inserted in the coin box 33. The construction of the coin box 33 is of the conventional type wherein the insertion of a coin closes an electric circuit through the box which by-passes the open A.C. contact 45 to hold the A.C. circuit closed until the contact 45 is closed by the setting up of the No. 1 hole. The main power relay 32 will now close, activating the pump motor 85 and rectifier 34.

Simultaneously with the activation of the rectifier 34, D.C. current will flow through contact 48 of micro-switch 46, activating relay switch 61 and causing contact 64, thereof, to open while closing contact 62-63. Opening of contact 64 prevents activation of relay switch 39 so that the turntable motor 38 remains stationary.

The player now presses button 41 to move the turntable and set up conditions for playing the first hole.

Pressure on button 41 completes the circuit to motor relay switch 40 through contact 50 of relay switch 49 and contact 42 of micro-switch 78. As the turntable moves, its associated cam discs 76 and 71 rotate in phase with it.

As the plunger of micro-switch 78 moves off the apex of the No. 18 hole lobe of cam 76 and down into the valley between it and the No. 1 hole lobe, micro-switch 78 will be made to assume its second position wherein contact 42 is open and contacts 44 and 43 are closed. Closing of contact 44 maintains the circuit to motor switch relay 40, thereby keeping the motor 38 running. At the same time closing of contact 43 actuates relay switch 49, causing it to open contact 50 and close contact 51. Opening of contact 50 breaks the circuit to button 41 so that continued pressure on the button by a player no longer has any effect on the operation of motor 38.

The turntable continues to turn until its ball cup 16 is positioned correctly for the playing of the No. 1 hole, at which point the plunger of micro-switch 78 will ride on the apex of the No. 1 hole cam lobe 77. At this point the micro-switch 78 will be back in its first position, with contact 42 closed and contacts 43 and 44 open. Opening of contact 44 immediately cuts off current to relay switch 40 and motor 38, which is instantly stopped by the operation of its electric clutch brake 37. At the same time, closed contact 51 of relay switch 49 keeps the circuit of its relay coil closed even though contact 43 of micro-switch 78 is now open. Contact 50 is thus maintained open, so that pressure on button will no longer activate relay switch 40, even though contact 42 of micro-switch 78 is closed.

At the same time turntable 12 was being moved into its No. 1 hole position, rotation of cam disc 71 had caused its lobe 67 to engage and close micro-switch 53, as seen most clearly in FIGURE 8. Closure of switch 53 causes completion of the circuit to ramp control motor 59 through closed micro-switch 57.

Activation of motor 59 causes its arm 70 to rotate in a clock-wise direction to pull the toothed rack 68 to the right, as seen in FIGURE 9, until the rack lobe 60 engages and opens micro-switch 57, breaking the motor circuit and holding the rack at a position wherein the ramp 17 has a flat configuration, created by the inter-action of the rack and the bell-cranks controlled thereby, as described hereinbefore.

The player now has a flat ramp approach to the No. 1 hole, 16, of the game. The player steps on the tee-off platform 80, places a golf ball thereon and proceeds to address the ball with a conventional golf club. If the first stroke does not sink the ball in the cup 16 the player walks down the simulated fairway and putting green to the ball, as in the case in an actual golf game, and plays the ball from whatever position it may have taken.

When the ball is sunk in cup 16 it drops into the ball return channel 18 and travels to the ball box 18x, at a point convenient to the tee-off platform 80. As the ball rolls down the return conduit it passes over, and momentarily opens, micro-switch 52 which breaks the circuit to relay switch 49, deactivating it, and again closing contact 50 and opening contact 51.

This restores the circuit to push button 41. It will be noted that until each hole is played and the ball returned thru the conduit 18, pressure on the button 41 will not effect change to the next hole. However, after playing each hole it is only necessary to press button 41 to initiate automatic change to the next succeeding hole.

In an alternate form, push button 41 may have a magnetic latch associated therewith, which will hold the button depressed, after being initially pushed, during the entire game, whereby the entire game cycle is automatically controlled by the tripping of micro-switch 52, as each hole is played, by the passage of the ball thereover on its way back to the ball box 18x. If two or more players are involved, switch 52 is so constructed that it will not trip until passage of balls equal in number to the number of players who have deposited coins in the coin box 33 at the start of the game.

With the ramp 17 remaining in its flat condition the turntable 12 is rotated to provide cup positions identified



by reference numerals 16a, 16b, 16c, 16d and 16e, thus providing six different positions of cup 16 in combination with a flat approach.

As the turntable 12 is rotated from its No. 6 hole to its No. 7 hole position the ramp configuration control cam 71 will have turned 120° to take the position identified by reference numeral 71a in FIGURES 10 and 11. In this position cam lobe 67 engages and closes micro-switch 54, thereby completing the circuit to motor 59 through closed micro-switch 58. Activated motor 59 starts and continues to rotate its arm 70 in a clockwise direction, pulling the rack farther to the right until its cam lobe 60 engages and opens micro-switch 58, breaking the circuit to and stopping motor 59. In this position the inter-action of the rack and bell-cranks has swung the bell-cranks downward to cause the ramp 17 to assume the concave configuration seen at 17b in FIGURE 2.

Holes Nos. 7, 8, 9, 10, 11 and 12 are now played with a concave ramp approach.

Again, as the turntable 12 is rotated from its No. 12 hole position to its No. 13 hole position, the cam 71 will have turned another 120° to take the position identified by reference numeral 71b in FIGURES 12 and 13. In this position cam lobe 67 engages and closes micro-switch 55, thereby completing the circuit to motor 59 through closed micro-switch 56. Activated motor 59 starts and continues to rotate its arm 70 in a clockwise direction, thereby pushing the rack 68 back to the left until cam lobe 60 engages and opens micro-switch 56. In this position, the interaction of the rack and bell-cranks has swung the bell-cranks upward to cause the ramp 17 to assume the convex configuration seen at 17a in FIGURE 2. Holes Nos. 13, 14, 15, 16, 17, 18 are now played with a convex ramp approach.

At the point at which the No. 18 hole condition is set up, turntable control cam 76 will have made one revolution and returned to the point at which cam lobe 66 engages micro-switch 45, and cam lobe 65 engages micro-switch 46. The engagement of micro-switch 45 by lobe 66 causes the switch 45 to open, thereby breaking the A.C. circuit 31 to relay switch 32, de-activating the relay coil and opening the main power switch. All power is cut off, and while the player is free to play hole No. 18, another game cannot be started until a coin is deposited in the coin box 33.

At the same time, engagement of lobe 65 with micro-switch 46 opens contact 47 and holds contact 48 closed, even though the cutting off of power has de-activated relay switch 61.

With the game so, properly, concluded the turning on of the A.C. power again will not cause activation of motor relay switch 39, as is the case when the main power supply is cut off and then restored, before proper conclusion of the game cycle.

While the game has been described as providing for 6 positions of the cup 16 and 3 different configurations of the approach ramp 17, in combination with said cup positions, it is to be understood that by varying the number of lobes 77 on the cam disc 76 and varying the number and spacing of the micro-switches associated with the cam disc 71 and the rack cam 60, the positioning of the cup 16 and the configuration changes in the ramp 17 could be varied to provide an infinite number of playing situations.

It will now be clear that there is provided a device which accomplishes the objectives heretofore set forth.

While the invention has been disclosed in its preferred form, it is to be understood that the specific embodiment thereof, as described and illustrated herein, is not to be considered in a limited sense as there may be other forms or modifications of the invention which should also be construed to come within the scope of the appended claims.

I claim:

1. An electrically operated golf game device, com-

prising in combination, an elongated base; a turntable, defining a putting green, mounted for rotation at one end of the base, having a single ball receiving cup spaced radially of its center of rotation and rotatable therewith in a circular path between predetermined positions; electric circuit control camming means mounted on the base for movement in phase with the rotation of the turntable; a flexible ramp, defining an approach green, mounted on the base and extending lengthwise thereof, from the turntable; ramp flexing means mounted on the base, engaged with the ramp, operable to flex the ramp in a vertical plane and cause it to sequentially assume predetermined flat, concave, or convex configurations; first and second electric drive motors mounted on the base and connected to the turntable and ramp flexing means, respectively; an electric power supply, including a coin-actuated switch; circuit means electrically connecting said first and second motors and power supply; said circuit means including a plurality of switches engageable in a predetermined sequence by the cam means as they move in phase with the turntable, to make or break the first motor circuit and move the ball cup through a predetermined series of positions relative to the longitudinal axis of the ramp, and to simultaneously make or break the second motor circuit, to actuate the ramp flexing means, to cause the ramp to assume and hold predetermined, flat, concave, or convex configurations, responsive to a particular station in the ball cup positioning cycle of the turntable; and, a pushbutton control in the first motor circuit for initially applying voltage to said motor at the start of each ball cup changing phase of the game cycle.

2. A device, as defined in claim 1, wherein the ramp flexing means comprises, a plurality of spaced and parallel support bars, mounted cross-wise of the underside of the ramp, having bored bushings at both ends thereof aligned with those of adjacent bars, the length of each side of the ramp; a flexible rod slidably mounted lengthwise of each side of the ramp through the aligned support bar bushing bores; a plurality of bell-crank engaging bushings slidably mounted on the flexible rods between the support bar bushings, for limited longitudinal movement; a plurality of bell-cranks pivotally mounted on the base, through upstanding brackets extending along either side of the ramp, the upper arm of each bell-crank being pivotally attached to its associated flexible rod bushing, the lower arm of each bell-crank being pivotally attached to a single push-pull rod extending along the base at either side of the ramp; and crank means connected to the push-pull rod, actuated by the second motor, to impart push-pull action to said rod, whereby all the upper arms of the bell-cranks are simultaneously tilted between positions wherein they are inclined upwardly, level, or downwardly relative to the horizontal, to flex and hold the ramp in a convex, level, or concave configuration, respectively.

3. A device as defined in claim 1, wherein, the base has a circular channel mounted immediately below the turntable in the path of the golf ball cup, said channel being tilted toward a low point; and a golf ball return conduit connected to the channel, at its low point, adapted to receive a golf ball sunk in said cup, from the channel, and return same to a point at the end of the ramp farthest from the turntable.

4. A device as defined in claim 3, wherein the golf ball return conduit has a, normally closed, micro-switch mounted therein which forms a part of the push-button control circuit of the first motor, and which is momentarily opened by the passage of the golf ball to reactivate said push-button control circuit.

5. A device as defined in claim 1, wherein, the electric circuit control means comprises, a turntable rotation control cam disc and a ramp flexing control cam disc mounted for rotation, in phase, by the turntable at a rate of one revolution of the paired cam discs for every three revolu-

tions of the turntable; the turntable control cam disc having 18 equi-spaced lobes in the peripheral edge thereof, one for each predetermined ball cup position in an 18 hole game; the ramp flexing control cam disc having a single lobe on its peripheral edge which rotates in phase with the No. 1 lobe of the turntable control cam; the electric circuit of the first drive motor having a switch mounted with its actuating plunger riding on the turntable control cam disc lobes, operable to break said circuit, when riding on the apex of the lobes, and to make and hold said circuit, when riding in the valley between adjacent cam lobes as the turntable is rotated between predetermined ball cup hole positions; the electric circuit of the second drive motor having three, normally open, switches mounted with their operating plungers in the path of the lobe of the ramp flexing control cam disc at positions 120° apart and in phase with the No. 1, 7 and 13 hole stations in the turntable ball cup cycle; each of said, normally open, switches being in series with a normally closed limit switch positioned with its actuating plunger at a predetermined point in the travel path of the ramp flexing means; said normally open switches being operable, when engaged by the lobe of the ramp flexing control cam, to close the circuit of the second motor through its associated limit switch, to actuate the ramp flexing means, to cause the ramp to be flexed to a predetermined configuration in phase with a particular station in the ball cup cycle, at which point the flexing means engages said limit switch plunger, to open

same and break the second motor circuit, and hold the ramp at the pre-determined configuration.

6. A golf game device, comprising in combination,  
(a) a base;

5 (b) a turntable, defining a putting green, mounted for rotation on the base and having a golf ball receiving cup spaced radially of its center of rotation;

10 (c) a flexible ramp, defining an approach green, mounted on the base, at the turntable edge, and extending outwardly therefrom; and,

(d) means, for sequentially rotating the turntable relative to the ramp and flexing the ramp, relative to the plane of the turntable, between adjusted positions.

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