July 29, 1941. B. W. WILLIAMS ET AL 2,251,009

GAME APPARATUS

Filed Dec. 20, 1935 3 Sheets-Sheet 1

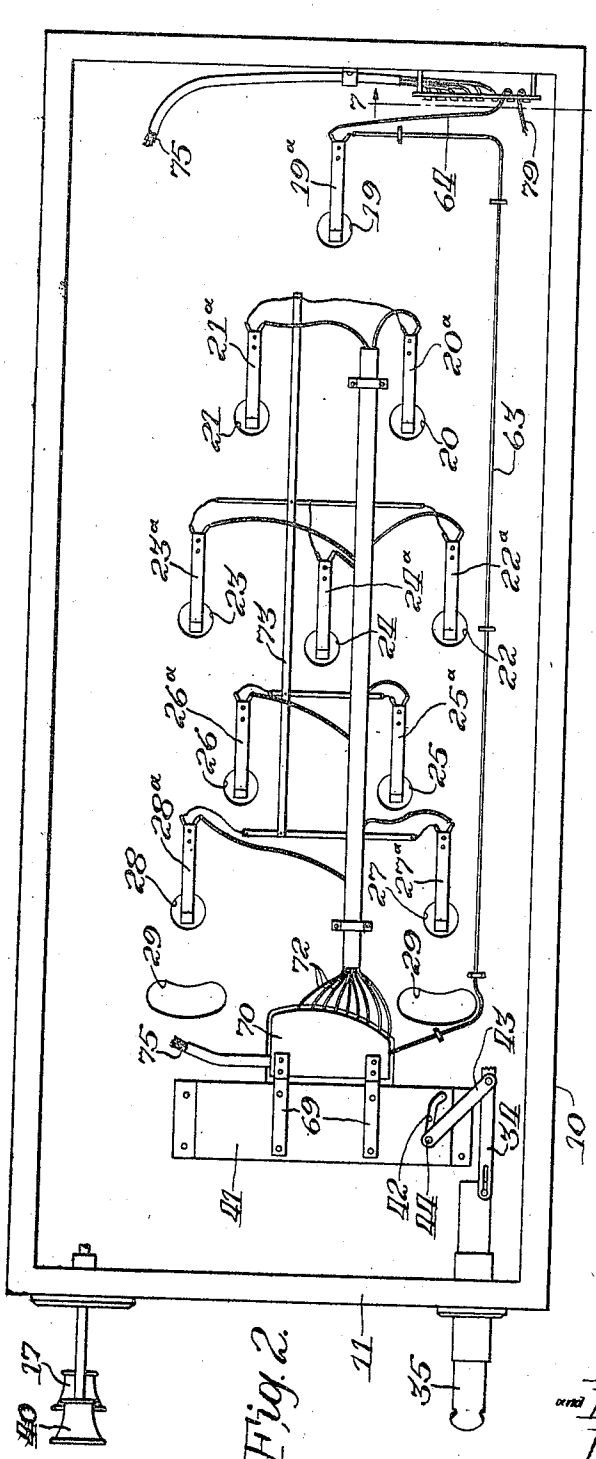

Fig. 2.

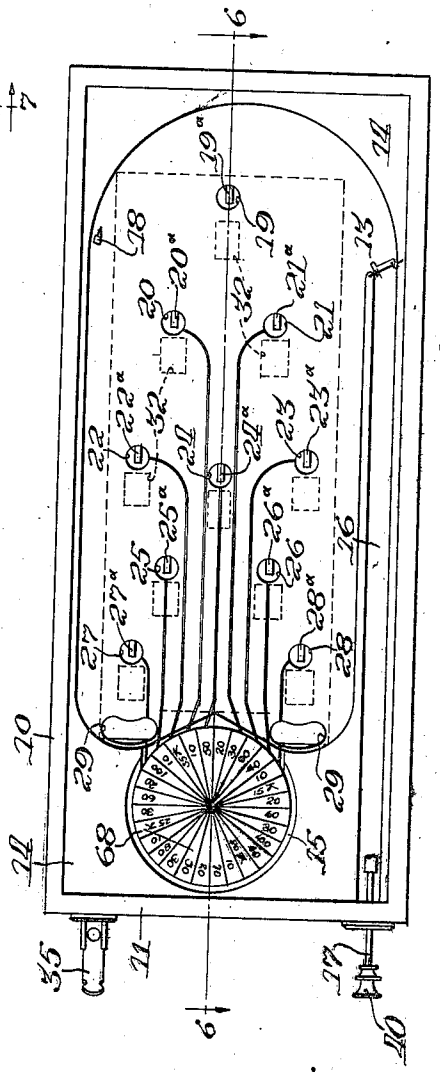

Fig. 1.

Inventors
Bradley W. Williams
and Homer S. Williams
By Paul O. Pippel
Atty.

July 29, 1941. B. W. WILLIAMS ET AL 2,251,009

GAME APPARATUS

Filed Dec. 20, 1935 3 Sheets-Sheet 2

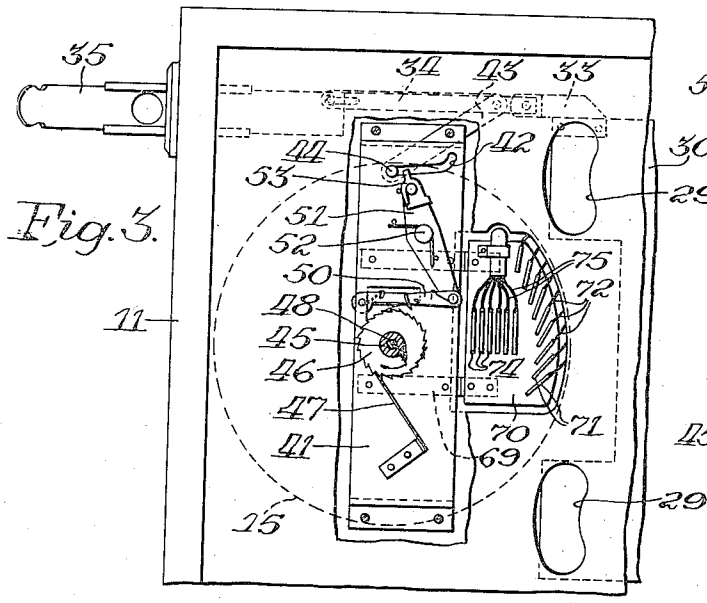

Fig. 3.

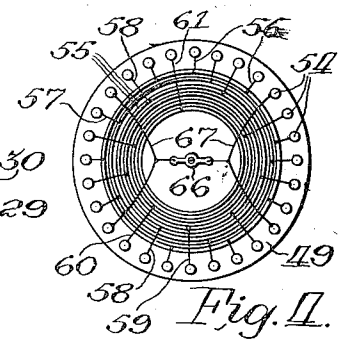

Fig. 11.

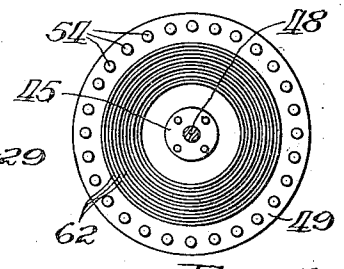

Fig. 5.

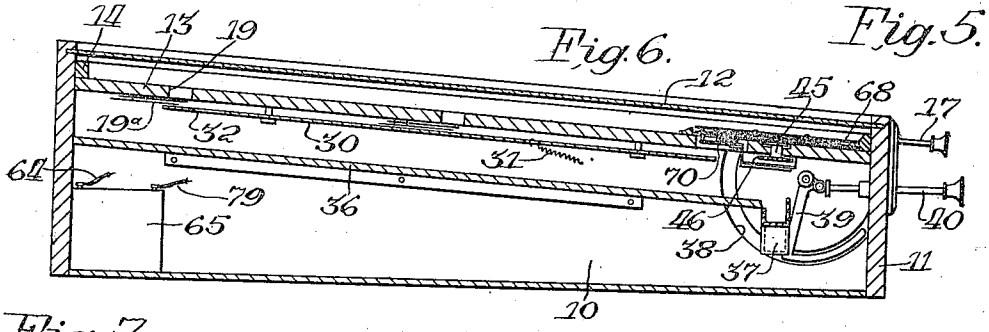

Fig. 6.

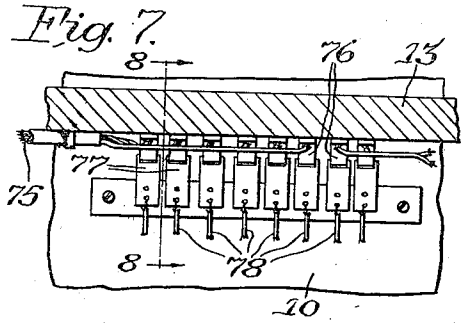

Fig. 7.

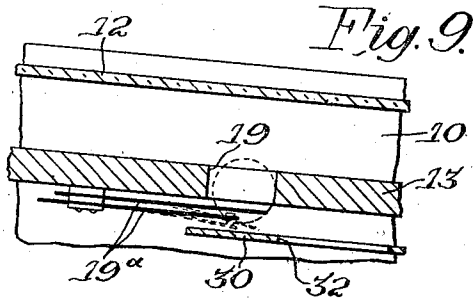

Fig. 9.

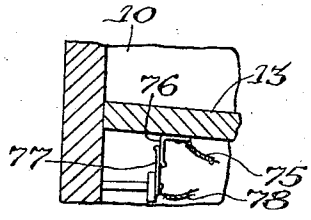

Fig. 8.

Inventors
Bradleeb. W. Williams
and Homer S. W. Williams
By Paul O. Pippel
Atty.

July 29, 1941. B. W. WILLIAMS ET AL 2,251,009

GAME APPARATUS

Filed Dec. 20, 1935 3 Sheets-Sheet 3

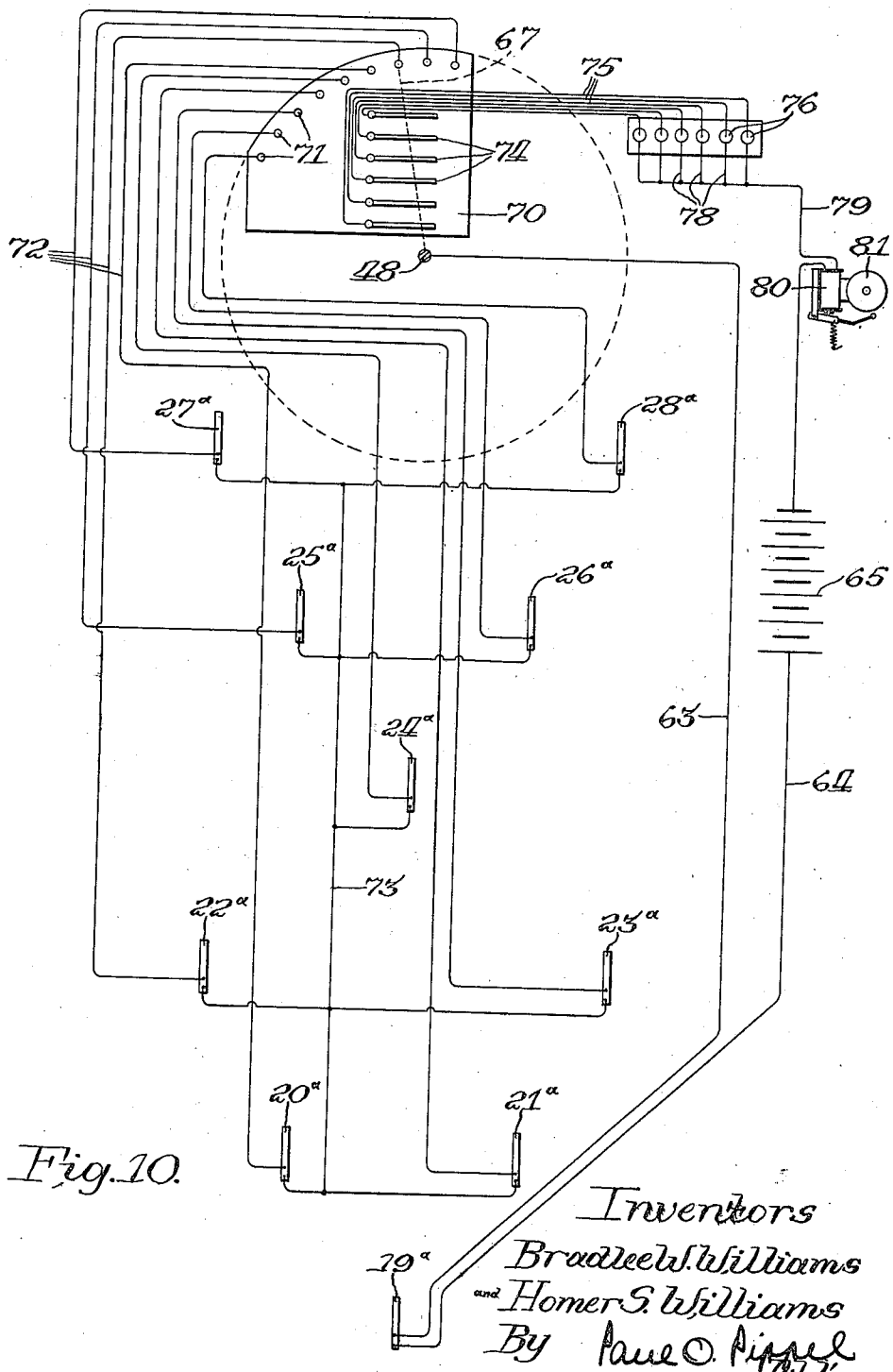

Fig. 10.

Inventors
Braddock W. Williams
and Homer S. Williams
By Paul O. Pippel
Attorney.

Patented July 29, 1941 2,251,009

UNITED STATES PATENT OFFICE

2,251,009

GAME APPARATUS

Bradlee W. Williams and Homer S. Williams, Chicago, Ill., assignors to Bally Manufacturing Co., Chicago, Ill., a corporation of Illinois

Application December 20, 1935, Serial No. 55,324

15 Claims. (Cl. 273—121)

The invention relates to a game apparatus for amusement purposes, which may be of the type in which a substantially horizontal table is provided, having formed therein pockets or holes to which balls are rolled over the table and thereinto if sufficient skill in rolling the balls is displayed by the player.

More particularly the present game is of the electrical type in which the pockets contain normally open ball closed switches for closing circuits to cause electrical operation of some auxiliary means such as an electromagnetic motor device which in turn may operate a bell or a dispenser for example, to give a skill indication.

The main object of the invention is to provide a novel arrangement of the circuits to bring about an interesting game action which will test the player's skill in playing the game.

Another object is to provide a game having a table formed with a number of ball receiving holes in which one hole is provided with a ball closed master switch, while certain of the other holes are provided with similar switches, one of which will be temporarily designated as a so-called "key" switch, whereby the circuits between the "keyhole" switch and any one of the remaining hole switches, and the master hole switch, may be varied to result in pairing of a designated "keyhole" switch and another hole switch, which pair must both be ball closed to cause operation of the auxiliary electromagnetic motor device to give a skill achievement designation or indication.

Another object of the invention is to provide a novel form of rotatable switch or "keyhole" circuit changer which may be spun from one position to another for the purpose of altering the circuit combinations so that a different pairing of a "keyhole" switch with one of the other hole switches and the master switch will result for every play of the game.

Still another object is to provide such a spinner circuit changer, which is operable in a chance manner, so that the combination of circuits to be established is out of the control of the player, there being provided however, an indication to the player when the circuits have been established, so that he will definitely know what "keyhole" he must attempt to score a ball in to achieve a skill designation by the auxiliary electromagnetic device.

Another important object is to provide such a spinner in a visible position and having score number value segments alinable, when the spinner is in a stationary position, with lines painted or otherwise provided on the game board and radiating to the several holes so that for every game played the scoring value of the holes will be changed, and an indication be given of which hole is to represent a "keyhole" for the ensuing game cycle to be played.

Another object is to provide a novel circuit changing rotatable switch or control member, for the general purposes stated.

Other important objects will be apparent to those skilled in this art as the disclosure is more fully made.

These desirable objects are briefly achieved in the pin ball type of game herein illustrated by way of example, wherein the game cabinet carries a substantially horizontal game board sloped slightly from the horizontal so that balls projected by the player to the high end thereof may gravitate theredown in the direction of a plurality of ball receiving holes formed in scattered relation through the board.

Each of these holes preferably has carried therebelow a normally open switch to receive a ball deposited in the holes for closing the switches and for retaining the balls in supported position within the holes. A sector plate carrying a predetermined number of contact points is provided below the board, said plate carrying as many spaced contact points as there are hole switches. A rotatable spinner, preferably mounted in a visible position on the board has a covering which is divided into numbered segments, nine adjoining ones of which will always respectively correspond with the nine contact points on the sector plate. Lines are painted on the board from these points of registration to indicate the score value of each hole. Every time the spinner is rotated and comes to a chance position of rest the score values of the holes will be changed to create continued player interest. This spinner also functions as a rotatable switch or circuit changer, since it serves as a connector for delivering energy from a battery, or the like, when the master hole switch is ball closed, to a certain hole designated by a line on the board and a letter "K" on a score segment of the spinner.

Thereafter, when a ball is deposited in the "key" hole designated by said letter, the energy is further transferred to a main wire, common to all hole switches, so that thereafter when any other hole switch is ball closed a circuit is completed to the auxiliary electromagnetic motor device to cause its operation for any desired purpose.

While the game to be disclosed is preferably of the pin ball type, the use of pins, it is to be understood, is optional, and they may in fact be eliminated, if desired, or other forms of obstacle devices may be used on the board in place of the pins.

In the accompanying sheets of drawings illustrating a practicable form of the invention:

Figure 1 is a general plan view, on a reduced scale, of the ball rolling game incorporating the improvements of this invention;

Figure 2 is a bottom view of the game on a somewhat enlarged scale, showing the underside of the game board;

Figure 3 is an enlarged detail, plan view of a fragment of the game, showing the spinner operating mechanism and the contact sector plate;

Figure 4 is a detail plan view of the spinner disk switch per se with the hole score value designating cover sheet removed to show the wiring thereon;

Figure 5 is a plan view of the obverse, or bottom face of the spinner disk;

Figure 6 is a longitudinal, central, sectional view through the game, on a reduced scale, taken along the line 6—6 of Figure 1, looking in the direction of the arrows;

Figure 7 is a detail, elevational view, partly in section, of a bank of circuit making clips, taken along the line 7—7 of Figure 2, looking in the indicated direction;

Figure 8 is an end sectional view of the structure shown in Figure 7, taken along the line 8—8 in that figure, and looking in the indicated direction;

Figure 9 is a longitudinal, central, sectional view through a ball hole switch device taken along the line 6—6 of Figure 1, heretofore mentioned; and,

Figure 10 is a wiring diagram for the game structure.

The game shown may be of the standard pin ball type embodying an elongated, rectangular cabinet 10, having a front wall 11 and a glass enclosed top 12. The cabinet, below said top, carries a game board 13, sloped slightly from the horizontal with its low end adjacent the front wall 11, said board providing in the usual way, a ball rolling surface bounded by a marginal piece 14 to guide balls at the edges of the surface. The lower or front end of the piece 14 is relatively wide as shown in Figure 1, and is provided with a large circular cut out opening or pocket 15 for a purpose later to appear.

The right hand side edge of the piece 14 provides the usual ball projection passage 16, at the front end of which is disposed a projector plunger 17, carried in the front wall 11. The upper, opposite side of the board 13 carries a rebound or bumper spring 18 from which balls rebound when rolled from the projector 17, through the passage 16, and onto the upper end of the game board 13.

Such played balls eventually lose the force which impelled them and consequently they roll gravitationally down the board toward the front wall 11. The board is provided with ball pocketing holes arranged in desired positions thereon, in the present instance, for sake of illustration, there being provided ten ball receiving holes. These holes as appears in Figures 1 and 2 are numbered 19, 20, 21, 22, 23, 24, 25, 26, 27 and 28. Balls missing these pockets, or holes, gravitate to the lower end of the board which on opposite sides is formed with so called "out" pockets 29 to receive the said spent balls. Painted or otherwise formed on the board 13 to lead from each hole, except the holes 19 and 29, are indicated lines as shown in Figure 1, which terminate in suitably spaced relationship at points along the arc of the opening 15 adjacent the play surface, or between the out pockets 29. The hole 19 serves as a master hole as will later appear.

In the present game it is desirable that a ball entering any of the holes in the board 13 does not drop through the board, but will be retained therein. Accordingly, as seen best in Figure 9, the underside of the board 13 adjacent each of the holes 19 to 28 inclusive, carries a suitable insulated support for a pair of normally spaced flat spring switch members such as at 19^a with the front end of each switch extending under a respective hole so that when a ball enters the hole, it is lodged on the switch to close the same and prevent falling through of the ball, and when these switch devices, of which there are ten, respectively numbered 19^a, 20^a, 21^a, 22^a, 23^a, 24^a, 25^a, 26^a, 27^a and 28^a for the several holes are weighted down and closed by a ball during normal play, they are supported by a shuffle board 30.

As shown in Figures 1, 6 and 9, this board 30 is mounted in the usual way for sliding movement below the board 13, said shuffle board 30 being normally urged to a forward position by a spring 31. Thus, solid portions of the board 30 serve to support the ball carrying switches 19^a etc. as shown in Figure 9. The board 30, however, is formed with ball drop, cut out openings, one for each switch hole 19 etc., such for example as the opening indicated at 32 in Figure 9.

One front corner of the shuffle board 30 carries a bracket 33 (Figure 3), having connected thereto a link 34 movable, or pushed by a conventional coin released slide 35 carried in the wall 11. It can now be seen when the slide 35 is pushed into the cabinet to release the game for play, that the shuffle board 30 is slid rearwardly against the pull of the spring 31 to move the openings 32 under the respective ball switches 19^a etc., whereby the balls drop by gravity past the switches since the latter are very soft and flexible and through said openings 32. When the coil slide is released by the player's hand the spring 31 of course is operative to restore the temporarily displaced board 30 to its normal forward position.

A sloped ball routing panel 36, as shown in Figure 6, receives the released balls from the holes 19 etc., and the out holes 29, said panel 36 being sloped to gravitate the balls forwardly toward the wall 11. The lower end of the panel 36 carries a transverse trough 37, which receives the balls and lines them up in a row for gravitation toward an arcuate guide groove 38 formed in the right hand wall of the cabinet, in a manner well known in this art. The right hand wall of the cabinet carries a pivoted ball lifter 39 operable by the usual plunger 40 to raise the balls, one at a time, from the trough 37 and up the groove 38 into a position within the passage 16, where they can be projected by the plunger 17.

As shown in Figures 2 and 3 the under side of the board 13 in a position transversely and diametrically disposed below the opening 15 carries a depending U-shaped bracket 41 the end thereof adjacent the link 34 being formed with a slot 42. The link 34 pivotally carries another

link 43 formed at its free end with an upstanding pin 44 guidable in said slot 42.

As appears in Figures 3 and 6 there is journaled in the board 13 centrally below the circular opening or pocket in the board 14, a vertical sleeve 45 carrying at its lower end, an integral, or otherwise formed, ratchet wheel 46. A light spring 47 is carried by the bracket 41 to brake the ratchet wheel and releasably to hold it locked in position.

Turnable with the sleeve 45 and ratchet 46 is a vertical shaft 48, which at its upper end carries a horizontally disposed, circuit establishing, spinner disk 49 (see Figures 4 and 5) made of a non-conductor material, and being rotatable within the pocket opening 15. The top face of this disk is shown in Figure 4 and the bottom face is shown in Figure 5.

The ratchet wheel and disk may be spun by any suitable pawl mechanism operable from the link 43 upon actuation of the coin slide 35. For instance, a pawl 50 may be appropriately guided into and out of engagement with the teeth on the ratchet wheel to drive the latter with a snap action, which is imparted to the pawl 50 by a spring pressed lever 51 pivotally carried by a pin 52 on the bracket 41, as seen in Figure 3. The left hand end of the lever 51 carries a spring trigger element 53 engageable by the pin 44 when the link 43 is moved rearwardly to pull the lever 51 and cock it. As the pin 44 moves in the slot 42 it is guided near the end of the slot to release the spring cocked lever 51, said freed lever then snapping the pawl 50 which is caused to engage the ratchet wheel 46 and spin the same. This operating mechanism for the ratchet wheel forms no part of the invention and can take any desirable form in practice. It will be understood when the pin 44 is returned to the front end of the slot 42 the trigger 53 is permitted to pivot on the lever 51 so that the pin 44 can pass that portion of the trigger which lies across the slot and thus be restored to its lever operating position in front of the trigger 53.

The disk 49 is made of suitable insulation material and has its marginal edge formed with a circumferential series of spaced conductor buttons 54, which pass all the way through the disk so that they appear on both sides thereof. Further, in the present illustrative form of the disk, its top face carries a concentric series of six conductor rings 55 which are successively smaller from the outer edge of the disk radially inwardly. These rings are only on the surface and do not pass through the disk. Certain of the buttons 54 are connected by radial tap wires 56 on the top surface of the disk with the first or outer ring; certain buttons are connected by similar wires 57 with the next or second ring looking radially inwardly, other wires 58 connect certain buttons 54 with the third ring; other wires 59 connect certain buttons with the fourth ring; other wires 60 connect certain buttons with the fifth ring; and one wire 61 serves to connect one button with the inner or sixth ring.

Where these cross wires 56, 57, 58, 59, 60 and 61 are electrically connected with a ring there is disposed through the rings and disk a conductor rivet pin or the like for electrically connecting the rings 55 respectively with complementary, or six corresponding conductor rings 62 formed on the under or opposite face of the disk 49, as shown in Figure 5.

The shaft 48 for the disk 49, as seen in Figure 10, is in a circuit 63 with the switch 19a for the master hole 19 and when said switch 19a is ball closed, current flows to the shaft 48 from a wire 64 connected to a battery 65, or other suitable source of energy. As appears in Figure 4 this energy flows through the shaft 48 to a clip 66 on the top side of the disk 49, said clip being connected by four "key" wires 67 to four of the buttons 54 respectively. The number of these "key" wires 67 may be varied and four are herein shown merely for purposes of illustration.

The top face of the disk 49 is covered by a paper disk cover 68, shown best in Figure 1, said disk being marked off with segments equal in number to the number of buttons 54 and superimposed thereover in registration to correspond therewith. Each segment will bear a score number designation and it will be seen that nine of the segments will in all positions of rest of the spinner disk 49 register with the nine lines painted on the board 13, heretofore mentioned, and shown in Figure 1, leading to the respective nine holes containing the ball closed switches. Thus, there is given by the disk or spinner a score number value designation for each hole. Each segment of the cover disk 68 corresponding with the four angularly spaced wires 67 will be designated and marked by a letter "K" or the word "key" so the line on the board 13 leading from a "K" segment designates one of the holes 19 etc. as a "keyhole".

In playing the game, as will presently appear, the master hole switch 19a must first be closed; then the switch in the hole designated as a "keyhole" must be closed, and thereafter if any switch hole at all receives a ball the circuits are completed to cause operation of a bell or other suitable device to give a skill award indication. The spacing of the four "key" segments on the paper disk 68 is such that one will always register with one of the lines on the board 13 pointing to a hole. Since the score number designations on the segments are different, it follows that for every setting of the spinner the score value of the holes is different, with one of the holes additionally designated as a "keyhole" to give the player an indication of the order in which he must pocket the balls.

As shown in Figures 2 and 3 the bracket 41 carries supports 69 for a sector plate 70 made of insulation and carried in a fixed position below the spinner 49. The top face of the sector 70 carries a marginal series of nine spaced spring contact fingers 71 each of which has a wire 72 respectively led therefrom to the several ball hole switches 20a to 28a inclusive (see Figure 10). These wires 72 respectively connect only with one side of the switches, as shown. The other side of each switch 20a to 28a inclusive is connected by a branch wire, all said branch wires being in a common line 73 mounted on the under side of the board 13.

The sector plate 70 also carries six spring finger wiper switches 74 properly spaced respectively to contact the six concentric conductor rings 62 on the bottom face of the disk 49. Wires 75 respectively lead from these fingers 74 and are carried by the under side of the board 13 (see Figure 2) in any suitable manner to terminate in six clips 76 as shown in Figure 7 mounted on the under side of the board 13. When the board 13 is assembled into the cabinet 10 these clips 76 respectively contact six corresponding clips 77 appropriately supported on the rear wall of the cabinet 10.

The clips 77 are respectively connected with

six wires 78 that are tapped into a main return wire 79 leading back to the battery 65. A suitable electric motor device, such as the electromagnet 80 is connected in the wire 79 for ringing a bell 81 or operating any other desired auxiliary mechanism such for example as a dispenser. This concludes the detailed description of the structure. The operation thereof, and the manner of its use will next be described.

In starting the game it will be assumed five balls are sealed in the cabinet available for play. These balls it will further be assumed are either in one of the switch holes 19 to 28 inclusive, or in the pockets 29. The game is released for play in the usual manner upon operation of the coin slide 35, which serves to push back the shuffle board 30 to release the balls from the holes containing them, as has been heretofore described, for return by the board 36 to the trough 37 from whence they can be raised by the lifter 39 into position within the passage 16 to be rolled onto the board 13 by the projector 17. When the slide 35 is released the shuffle board returns automatically to its forward position for properly supporting the switches 19^a to 28^a when a ball is lodged thereon as appears in Figure 9. These switches are open until a ball closes them.

As the slide 35 was operated it caused operation of the link 43 to cock the lever 51 to operate the ratchet wheel 46 for spinning the disk 49 in the manner already described. Eventually the spinner comes to rest and is releasably held in a fixed position by the spring stop member 47. Nine of the score number segments on the cover disk 68 will now be in registration, or alinement with the respective nine lines shown in Figure 1, leading or pointing to the nine scoring holes 20 to 28 inclusive. The hole 19, it will be remembered, is a master hole and has no score value designated by the disk.

Due to the spacing of the "keyhole" segments on the cover disk, one of the segments marked "K" will match a line on the board 13 designating one of the holes 20 to 28 as a "keyhole." The player now knows from looking at the disk that he must deposit a ball in the master hole 19; a ball in the designated "keyhole"; and then, a ball in any one of the remaining ball switch holes to achieve a skill play, which will complete the necessary circuits to the skill indicator 89.

As shown in the set up in Figures 1 and 10 we find a segment marked "K" designates hole 22 and thus a "key" wire 67 makes a circuit from the shaft 48 and wire 63 to the wire 72 which leads to one side of the hole switch 22^a. The circuit 63, 64 from the battery 65, or other suitable source of energy, is open since the master hole switch 19^a is open. We will assume the player now skilfully rolls a ball into the master hole 19 to close the switch 19^a. Current then passes through wire 63, shaft 48, "key" wire 67 on the disk 49 to a wire 72 through a finger 71 and thence to one side of the open switch 22^a, which has been designated as a "keyhole."

When the player deposits the next ball into hole 22 the switch 22^a is closed to cause the current to pass into the main wire 73. If a third ball is now deposited into any one of the remaining ball switch holes, such for example as the hole 28, we find the switch 28^a closed and the circuit has been built up to one of the buttons 54. This button 54 leads the current to the top side of the plate 49, where a wire connects said button with a ring 55. This ring as has been described is connected by a rivet or the like to a corresponding ring 62 on the bottom of the disk and consequently the current flows through the corresponding finger 74 on the sector 70 to one of the wires 75, thence to wire 79 to operate the electric motor device 80, and back to the battery.

The structure and mode of operation thus far described makes it plain that a skill achievement has been made upon the pocketing of three balls and if only three balls were sealed in the cabinet available for play this would end the play. However, where more balls are available as in the present disclosure, a situation exists making it possible to deposit balls over and above the three so far played.

If any of the remaining balls over three are played in scoring holes, and it is desirable to cause additional actuations of the electric motor device 80, it will be necessary to provide any well known timer or regulating device driven by the member 89 to open its circuit every time it has operated so that additional operations thereof will be possible when subsequently deposited balls again close the motor circuit by dropping into any one of the ball switch holes not yet occupied by a ball as will be obvious from an inspection of Figure 10. Such regulating devices as are well known in the art and need not be described as they per se form no part of the present invention.

It can now be seen that the spinner is operatively associated in the game structure to vary the combinations of circuits to be established. Further, it serves to change the "keyholes" as well as to change the scoring value of the holes for each play cycle. Thus, the amusement value of the game is materially enhanced.

While the improved rotatable spinner has herein been shown for ball rolling games, the same, it is to be understood, is obviously also useable in other types of games in which movable pieces are to reach certain goals or objectives and when reaching the same serve to close circuits to cause operation of some electrical device such as a motor for driving any kind of auxiliary apparatus, providing the spinner upon release of the game has set the "key" wire to line up with the playing piece reaching the goal or objective switch.

It is the intention to cover herein all such changes and modifications of the illustrative example of the game herein shown, which do not depart from the spirit and scope of the invention as hereinafter claimed.

What is claimed is:

1. A game having a substantially horizontally disposed table over which balls are rollable into pockets formed therein, a spinner device included in the game and rotatably carried in a visible position with respect to the table and having score value markings formed thereon, indicator lines formed on the table to lead from the edge of the spinner and the markings respectively to the pockets whereby the spinner in a stationary position serves through the lines to indicate scoring values for the pockets; and means for rotating the spinner to alter the relative positioning of markings and lines to vary the score values of the pockets.

2. A game having a substantially horizontally disposed table over which balls are rollable into pockets formed therein, means for so rolling balls included in the game, a shiftable member mounted below the table to retain balls lodged in said pockets, a spinner device included in the game and rotatably carried in a visible position with respect to the table and having score value por-

tions formed thereon, indicator lines marked on the table to lead from the edge of the spinner respectively to the pockets whereby the spinner in a stationary position serves through the lines to indicate scoring values for the pockets, and a common member for moving the shiftable member to release the balls from the pockets and for causing rotation of the spinner to alter the relative position of the score value portions thereof and the indicator lines.

3. A control means for a ball rolling game having a substantially horizontally disposed table formed with pockets to receive balls rolled over the table thereto, said means comprising a rotatably mounted spinner device included in the game and carried in a visible position with respect to the table and having its surface marked with one or more "key" markings, normally open switches disposed respectively in the pockets and included in circuits with an operable electrical device and a source of energy, lines formed on the table leading from the edge of the spinner to the respective pockets, and means for spinning the spinner whereby when it comes to a position of rest a "key" marking on the spinner will register with one of the lines on the table to indicate the pocket so designated as a "key" pocket in which a ball must be deposited to close the switch therein for building up the circuit to the electrical device.

4. A control means for a ball rolling game having a substantially horizontally disposed table formed with pockets to receive balls rolled over the table thereto, one of said pockets serving as a master pocket, said means comprising a rotatably mounted spinner device included in the game and carried in a visible position with respect to the table and having a "key" marking on its surface, normally open switches disposed respectively in the pockets and included in circuits with an operable electrical device and a source of energy, lines formed on the table leading from the edge of the spinner to the respective pockets, and means for spinning the spinner whereby when it comes to a position of rest the "key" marking will register with one of the lines to indicate the pocket so designated as a "key" pocket, in which pocket and the master pocket balls must be deposited to close the switches therein for building up the circuit to the electrical device.

5. A control means for a ball rolling game having a substantially horizontal game board over which balls are rollable to pockets formed in scattered relation therein, the pockets having respectively located therein a normally open switch wired in an electric circuit with a source of energy and an operable electrical device included in the game, said control means comprising a manually operable rotatable spinner disk carried adjacent the board and including conductor means for passing the energy from certain pocket switches when closed by balls lodged individually in the pockets to the electrical device to cause its operation, and means to spin the disk for varying the manner of connecting the switches with the disk conductor means when the disk comes to a rest position.

6. A control means for a ball rolling game having a substantially horizontal game board over which balls are rollable to pockets formed in scattered relation therein, the pockets having respectively located therein a normally open switch wired in an electric circuit with a source of energy and an operable electrical device included in the game, said control means comprising a manually operable rotatable spinner disk carried adjacent the board, said disk being of non-conductor material and including a marginal series of spaced conductor buttons, a stationary sector plate carried adjacent the disk and having formed thereon a series of contacts equal in number to the pocket switches and corresponding to an arc of buttons on the disk, the operable electrical device included in the game in circuit with a source of energy and the pocket switches, wires leading from the sector contacts to the electrical device, a series of conductor rings on the disk each in circuit with one of the buttons, brushes on the sector plate to lead current from an energized ring on the disk to one of the contacts on the sector for energizing the electrical device to cause its operation, and means for turning the disk relative to the sector for varying the circuit combinations between the pockets and the electrical device.

7. A control means for a ball rolling game having a substantially horizontal game board over which balls are rollable to pockets formed in scattered relation therein, said pockets including respectively a normally open ball closed switch therein, which switches are in circuit with a source of energy and an operable electric device included in the game apparatus, said control means comprising a rotatable circuit changer included in the game apparatus movable from one position of rest to another and interposed in circuits between the switches and source of energy when in a position of rest, a cooperable stationary distributor for leading energy from the rotatable circuit changer to the electric device to operate same, means to transfer energy from the rotatable circuit changer to the stationary distributor, and means for varying the relative positions of the rotatable circuit changer and stationary distributor to vary the combinations of circuits from the ball closed switches causing operation of the electric device.

8. A control means for a ball rolling game having a substantially horizontal game board over which balls are rollable to pockets formed in scattered relation therein, said pockets including respectively a normally open ball closed switch therein, which switches are in circuit with a source of energy and an operable electric device included in the game, the control means comprising a rotatable circuit changer included in the game and movable from one position of rest to another and interposed in circuits between the switches and source of energy when in a position of rest, said rotatable circuit changer including a "key" wire to establish a circuit with one of the hole switches when in a position of rest, a stationary distributor member positioned adjacent the rotatable circuit changer and having means for conducting current from the rotatable circuit changer when the "key" hole switch and a pair of the other hole switches are ball closed, wires leading from the stationary distributor to the electric device to cause operation of the latter when the aforementioned circuits are established, and means for changing the relative position of the circuit changer and distributor whereby the "key" wire is placed in circuit with another hole switch to vary the combination of circuits causing operation of the electric device.

9. A control means for an electrical game apparatus embodying means providing a play surface over which pieces are movable to any one of a number of objectives located on the surface, normally open switches respectively located at

the objectives and being closable when the pieces reach the objectives, said switches being disposed in circuits with a source of energy and an operable electrical device, said control means comprising an insulated circular member carried for rotation and included in the apparatus, said member being turnable from one position of rest to another and provided with a peripheral series of spaced conductor buttons and a series of concentric conductor rings on its face, means when the disk is at rest for carrying current from the source of energy to a wire carried on the member, and means for distributing current from said wire to one of the buttons and one of the rings and thence to the electrical device when an objective switch has been closed by a playing piece.

10. A control means for an electrical game apparatus embodying means providing a play surface over which pieces are movable to any one of a number of objectives located on the surface, normally open switches respectively located at the objectives and being closable when the pieces reach the objectives, said switches being disposed in circuits with a source of energy and an operable electrical device, said control means comprising an insulated circular member carried for rotation and included in the apparatus, said member being turnable from one position of rest to another and provided with a peripheral series of spaced conductor buttons and a series of concentric conductor rings on its face, means when the disk is at rest for carrying current from the source of energy to a wire carried on the member, means for distributing current from said wire to one of the buttons and one of the rings, and a stationary plate positioned in the apparatus adjacent the circular member, said plate having electrical connection with the electrical device and including means to take current from the disk to cause operation of the electrical device.

11. A control means for an electrical game apparatus embodying means providing a play surface over which pieces are movable to any one of a number of objectives located on the surface, normally open switches respectively located at the objectives and being closable when the pieces reach the objectives, said switches being disposed in circuits with a source of energy and an operable electrical device, the control means comprising an insulated circular member carried for rotation and included in the apparatus, said member being turnable from one position of rest to another and provided with a peripheral series of spaced conductor buttons and a series of concentric conductor rings on its face, a key wire on the circular member operable when the member is in a stationary position to connect electrically with one of the objective switches, means on the member to place the key wire in circuit with the source of energy, and means for building up a complete circuit causing operation of the electric device when a playing piece closes the circuit.

12. A control device for an amusement apparatus of the type including a cabinet having a table providing a ball playing surface formed with ball receiving pockets each of which has a normally open ball closed switch for establishing electrical circuits adapted for energizing an auxiliary electrical device, the control device comprising a stationary distributor including stationary contacts respectively for the circuits, a rotary circuit changer including contacts adapted to cooperate with the stationary contacts on the distributor when rotated from one position to another to establish different circuits between the pocket switches and auxiliary electrical device by altering the relative positions of the rotary circuit changer and stationary distributor by chance, and means for spinning the rotary circuit changer from one position of rest to another position of rest.

13. A control device for an amusement apparatus of the type which includes a cabinet having a member providing a ball playing surface provided with ball obstacles, said control device comprising a motor device, a plurality of electrical circuits for operating said device and each of said circuits including a switch closed by the action of a ball reaching one of said obstacles, each of said circuits also including a stationary contact and a movable contact and the latter being movable successively into engagement with said stationary contacts, and means for moving the said movable contacts successively into engagement with the stationary contacts to change, by chance, the relative positions between the said stationary and movable contacts.

14. In an amusement apparatus including an operative device to be electrically operated, control means for the device embodying a plurality of circuits for operating said device and each of said circuits including a switch adapted to be closed in the playing of the amusement apparatus, each of said circuits also including a stationary contact and a movable contact, and means to move the latter successively into engagement with the stationary contacts to change by chance the relative positions between the stationary and movable contacts.

15. In an amusement apparatus including an operative device to be electrically operated, control means for the device embodying a plurality of circuits for operating said device and each of said circuits including a switch adapted to be closed in the playing of the amusement apparatus, each of said circuits also including a stationary contact and a movable contact, rotatable means carrying the movable contacts, and means to rotate the rotatable means to move the contacts thereon successively into engagement with the stationary contacts to change by chance the relative positions between the stationary and movable contacts.

BRADLEE W. WILLIAMS.
HOMER S. WILLIAMS.