G. L. BEELER.

AUTOMATIC GAME APPARATUS.

APPLICATION FILED MAR. 17, 1919.

1,319,038.

Patented Oct. 21, 1919.

3 SHEETS—SHEET 1.

Fig. 1.

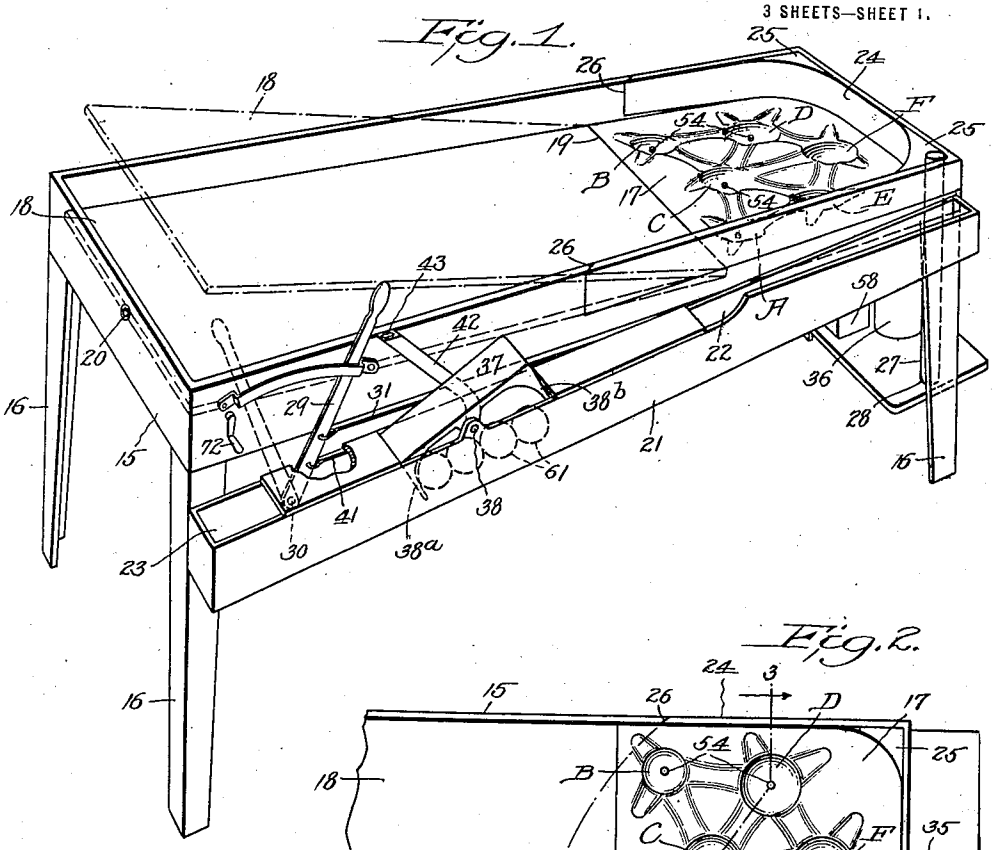


Fig. 2.

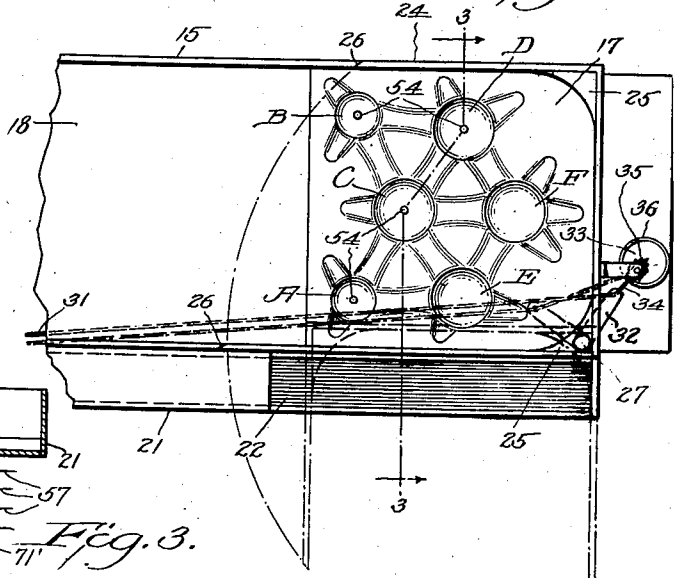
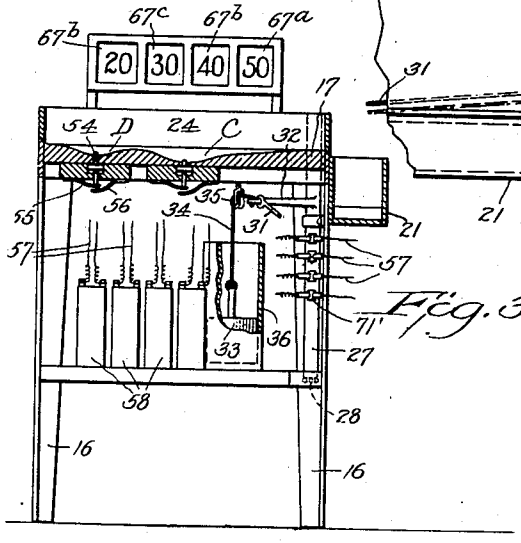


Fig. 3.



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Fig. 4.

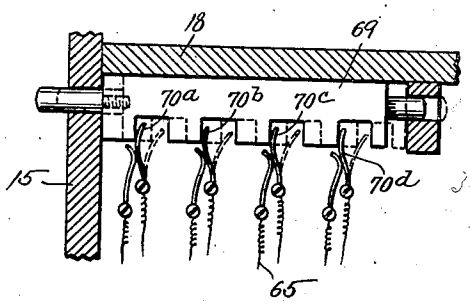


Fig. 5.

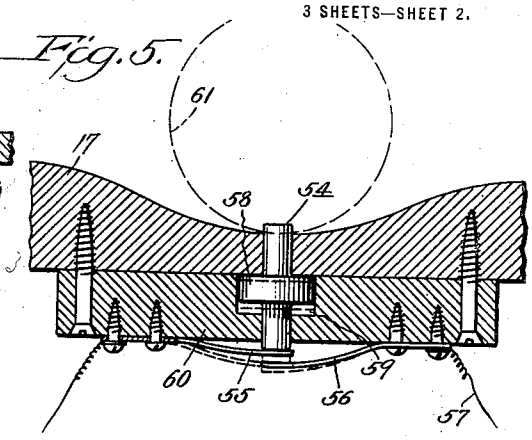


Fig. 6.

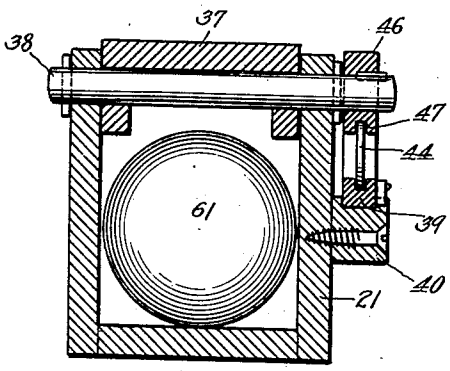


Fig. 7.

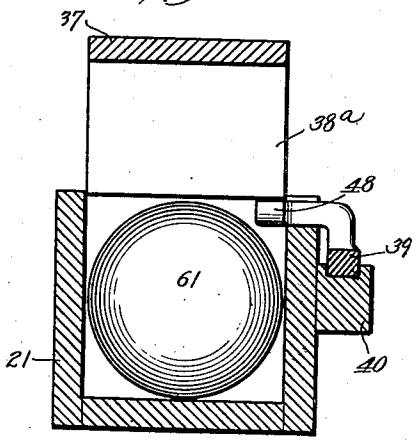


Fig. 8.

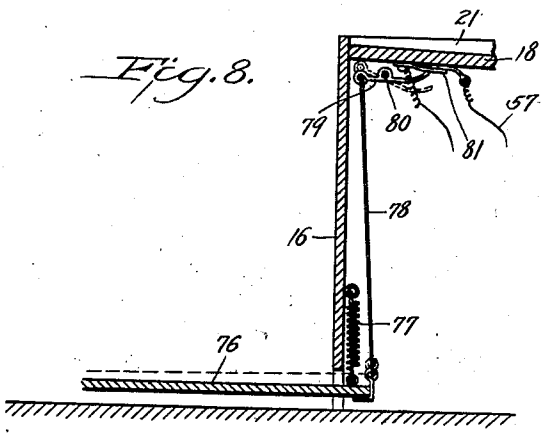
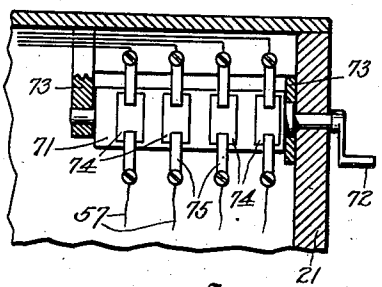


Fig. 9.



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3 SHEETS—SHEET 3.

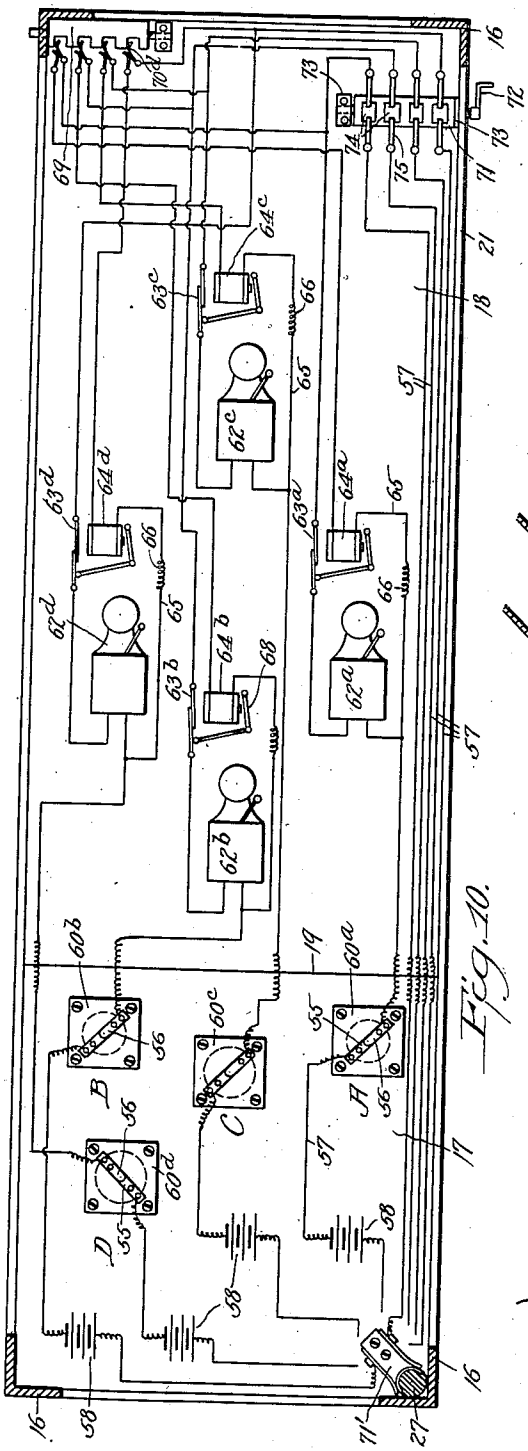


Fig. 10.

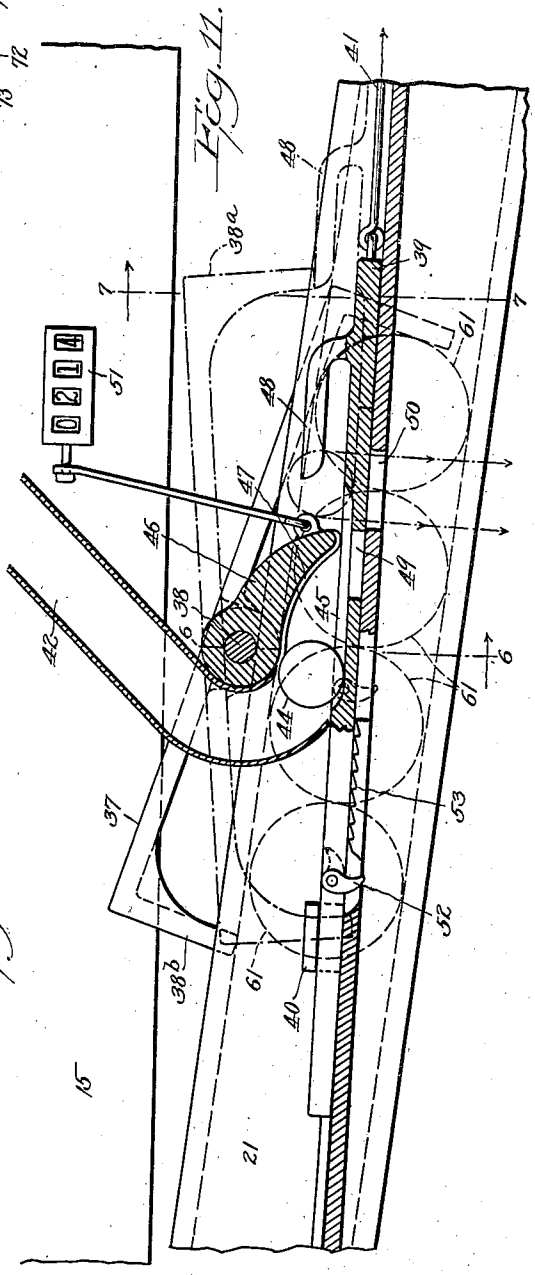


Fig. 11.

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UNITED STATES PATENT OFFICE.

GEORGE L. BEELER, OF MORRISTOWN, NEW JERSEY.

AUTOMATIC GAME APPARATUS.

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Application filed March 17, 1919. Serial No. 283,210.

To all whom it may concern:

Be it known that I, GEORGE L. BEELER, a citizen of the United States, and a resident of Morristown, in the county of Morris and State of New Jersey, have invented a new and Improved Automatic Game Apparatus, of which the following is a full, clear, and exact description.

This invention relates to amusement or game devices and has particular reference to amusement devices of an automatic or semi-automatic nature such as are employed largely in popular amusement resorts.

Among the objects of the invention is to provide an apparatus broadly of the same general nature as the well known Japanese ball game having at one end a pitted field and having a runway leading toward the same along which one or more balls are rolled or delivered from the opposite end of the apparatus, the balls being intended for coöperation with various holes or pits in the field aforesaid, but providing means of a novel and peculiar character for the rendering of signal indications as a result of the balls entering the pits or their equivalent.

Another object of the invention is to provide means under the direct control of the operator or player of the game for removing any ball or balls from the pitted field for subsequent use by either the same or any subsequent player.

Another object of the invention is to provide a game apparatus having a runway and a pitted field at the remote end thereof for coöperation with one or more balls delivered along the runway and having means for sweeping any ball or balls from the pitted field into a return gutter for subsequent use by the same or another player.

Another object of the invention is to provide a game apparatus having peculiarly arranged signal means adapted to be set into operation by a ball entering a pit and also including means to automatically neutralize the signal means if the ball remains in the pit.

Another object of the invention is to provide a game apparatus having a pitted field and a runway along which a number of balls may be rolled toward the pitted field, there being provided independent signaling means for a plurality of pits whereby balls entering such pits will actuate the signaling means in succession, other means being provided to neutralize the action of the signaling means immediately thereafter, and other means being employed to neutralize the last mentioned means and so cause the actuation of all of the signaling means at the same time, when desired.

Another object of the invention is to provide a game apparatus including a pitted field with signaling means coöperating with a plurality of the pits and a runway along which a plurality of balls may be delivered toward the pitted field for coöperation with the several pits, the signaling means being so designed as to be actuated whenever a ball rolls into a pit provided therewith, means also being provided at the end of the game to sweep all of the balls from the pitted field, and means also serving to neutralize the signaling means co-incidentally with the movement of the sweeping means to prevent the actuation of any signal incident to the rolling of a ball into or through any pit in its path.

With the foregoing and other objects in view the invention consists in the arrangement and combination of parts hereinafter described and claimed, and while the invention is not restricted to the exact details of construction disclosed or suggested herein, still for the purpose of illustrating a practical embodiment thereof reference is had to the accompanying drawings, in which like reference characters designate the same parts in the several views, and in which—

Figure 1 is a perspective view of one embodiment of my invention.

Fig. 2 is a plan view of the field end thereof.

Fig. 3 is a vertical transverse section of the same on the line 3—3, but indicating an auxiliary signal means.

Fig. 4 is a detail view of the master switch for the opening of all of the magnet circuits simultaneously.

Fig. 5 is a detail view of one of the pit switches.

Figs. 6 and 7 are vertical transverse sections on the lines 6—6 and 7—7 of Fig. 11.

Fig. 8 is a detail view of the automatic circuit breaking platform.

Fig. 9 is a detail view of one of the master switches for making or breaking all of the main circuits simultaneously.

Fig. 10 is a bottom plan view of the field and runway portions of the device giving a diagrammatic representation of the electrical connections; and

Fig. 11 is a longitudinal section through the coin controlled devices and the relation thereof to the ball trap shown in side elevation.

Without restricting myself in any manner to any special size, form, construction or materials employed in the manufacture or assemblage of this apparatus, I indicate for the purpose of this specification an apparatus embodying a substantially horizontal rectangular frame 15 supported rigidly at any convenient elevation as upon legs or corner posts 16. The pitted field aforesaid is shown at 17 at the rear end of the frame and sufficiently far below the top thereof to provide an effective guard rail therearound. The field 17 generally speaking is level but with a gentle slope or inclination inward from the guard rail and being provided on its upper surface with any suitable number, size or grouping of goals such as pits, shown in this case as six in number and identified by the letters A, B, C, D, E and F.

The runway leading from the front end of the apparatus is shown at 18 and coincides substantially with all of the remainder of the frame. For convenience of access to the electrical features for installation, inspection or adjustment thereof, the runway 18 is hinged to the pitted field along the transverse line 19 so that when unlocked at 20 said runway may be lifted and swung upward and rearward to or beyond a vertical position exposing all or practically all of the electrical devices to direct view for the purposes set forth. Obviously when the game is being played the runway is locked down as shown in full lines in Fig. 1 but preferably with a slight rearward inclination toward the field of goals or pits insuring that any ball or balls in play will be sure to come to rest at some point on the field and most likely in one of the goals.

21 indicates a trough or gutter on one side of the apparatus extending practically all the way from the rear end thereof downward and forward to the front end. The trough is open at 22 and 23, the rear opening 22 being for the reception of the balls delivered from the pitted field by any suitable means so that they will roll downward and forward toward the front end of the gutter from which they may be removed by the next player through the opening 23.

For home or private use of the apparatus the gutter may be open at its top throughout its length and the balls may be free to roll from one end to the other so that any player stationed at the front end of the apparatus may play any number of balls, and being provided with means for sweeping the balls from the pitted field whenever desired, said balls will move forward again for subsequent use.

The means for removing the balls from the pitted field and delivering them into the gutter as shown herein comprises a section of the rail portion of the frame which I term the sweeper 24. This sweeper comprises a rear and two side walls, the corner portions of which are connected and braced by rounded angle pieces 25 while the side wall portions constitute in effect extensions of the main side rail portions of the runway, but being beveled at 26 to limit the movement of the sweeper in its normal idle position. The sweeper is mounted upon and its action is controlled by a post 27 journaled for movement around a vertical axis in a step bearing 28 and in one of the corner portions of the pitted field. As one of the many ways in which the sweeper may be operated I provide a hand lever 29 pivoted at 30 at or adjacent to the inner side wall of the gutter below the runway and having its handle projected upward within easy reach of the operator at the front end of the machine. A wire 31, or its equivalent, is connected to the lever and extends rearward therefrom to an arm 32 fixed to and extending laterally from the post 27. The relative lengths of the lever 29 and arm 32 are so designed that when the lever is pulled forward to the dotted line position of Fig. 1, the arm 32 will swing through about 90 degrees carrying with it the sweeper from its normal position to the dotted line position of Fig. 2 causing thereby any balls on the field 17 to be swept into the rear end of the gutter. This forward pull of the lever is all that is expected of the operator to do in the actuation of the machine. When the lever is released any suitable means such as a weight 33 may be employed to return the sweeper and lever to normal position. This weight is shown provided with a cord 34 leading over a pulley 35 swiveled to swing around a vertical axis and attached to the end of the arm 32. This weight is preferably slidably fitted in a cylinder 36 constituting therewith a dashpot for two important functions: first, to prevent a too rapid pull on the lever 29 and also serving to check the return of the sweeper. This apparatus in its entirety being designed for use in public resorts, and without the continuous attention of an attendant, it is important that means be provided to prevent a mischievous player from interfering with its proper and intended operation. Thus with the dashpot shown, or its equivalent, the player cannot cause the balls to be delivered from the field with so much force as to be thrown beyond the gutter, and the cushioning action of the weight in its return movement will prevent slamming of the sweeper when it strikes the fixed portions of the side rails. The swiveling of the pulley 35 around its vertical axis will insure the proper lead of the cord 34 during the swinging movement of the arm 32.

For automatic operation of the apparatus in amusement resorts or the like I provide a coin controlled means for controlling the delivery of the balls forward along the gutter so that a player will be unable to play the game without first depositing a coin in the prescribed manner. It is desirable, however, to so correlate the actuating lever and the ball controlling means that the lever may be actuated at any time for the purpose of actuating the sweeper whether or not a coin be deposited, but the ball controlling means shall not be actuated at any time unless the required coin be deposited. That is to say assuming that a player being supplied with balls plays the same he may use his own pleasure at the end of his play as to whether or not he sweeps the balls from the field into the gutter for subsequent use by another player. If he chooses to so sweep the balls into the gutter he may do so by a simple forward draft upon the lever. If, however, such player passes on without sweeping the field the next player in turn on depositing his coin and pulling forward upon the lever will effect two results simultaneously,—the sweeping of the balls from the field into the gutter and the delivery of another set of balls already in the gutter from the ball trap for his use, and the balls last swept from the field will approach the ball trap in the gutter for subsequent use.

The ball trap includes a member 37 pivoted to oscillate in the top of the gutter around a transverse axle 38 and having a length between its front and rear end walls 38^a and 38^b respectively substantially equal to the combined diameters of that number of balls intended to be delivered at each play. The front end of the trap may be suitably weighted or otherwise caused to assume the normal closed position as in Fig. 1, but it may be tilted upward in front for the delivery of the balls and downward at the rear to check the on-coming balls by any suitable means. 39 indicates an actuating slide movable along a guideway 40 on or adjacent to the inner side wall of the gutter, said slide being connected as by a rod 41 directly to the lever 29 sufficiently far below the wire connection 31 to actuate the slide forward at the same time that the sweeper is actuated, but preferably to a shorter distance. The coin chute 42 having a slot 43 at its upper end is located preferably adjacent to the lever so that a coin may be deposited in the slot with convenience when the player is making a reach for the lever. A coin, or its equivalent, shown at 44 passes down the chute and is received upon the slide 39 in a groove 45 therein and beneath an arm 46 fixed to the trap shaft 38. The lower edge of the arm 46 has a groove 47 to receive and retain the upper edge of the coin when delivered forward beyond the same. With the coin in place as shown in Fig. 11 a forward draft upon the lever 29 will cause the slide to carry the coin forward wiping or rolling beneath the arm 46 and causing the point of the arm to be lifted to a distance equal to the diameter of the coin and causing consequently the lifting of the front end of the trap to the dotted line position of Fig. 11. To prevent the trap from closing before all of the balls within it are delivered forward I provide a finger extension 48 from the slide 39, or its equivalent, to engage beneath the front end 38^a or elsewhere to hold the same in elevated open position until the slide is returned to normal position again as a result of the deliberate action of the dashpot weight. After the coin passes forward beyond the arm 46 it is delivered downward through registering slots 49 and 50 formed in the slide and guideway respectively into any suitable receptacle to be provided therefor. A registering device 51 made of any approved nature may be provided and connected to the coin mechanism if desired to record the number of actuations thereof. I also indicate some suitable full stroke device including for example a pawl 52 pivoted upon the slide and coöperating with a rack 53 to prevent failure of the machine to properly act even though the operator may fail to give a continuous complete forward draft upon the lever.

In the playing of a game with this apparatus added interest and amusement are afforded by some sort of indicating means associated with some or all of the pits or goals in the field 17, and such indicating devices may partake of either visible or audible means or both of any suitable description and located at any desired place either on or away from the main portion of the apparatus. For example I show the first four pits as of the character indicated in detail in Fig. 5 in the bottom of which is a switch 54 in the form of a plunger held normally elevated by a spring contact 55 and spaced normally from a companion contact 56 located in a main circuit 57 in which is located a battery 58 or any other suitable source of electrical energy. The plunger 54 is provided with a collar 57 located within a depression 59 in a switch block 60 secured to the under surface of the field 17. In the diagram of Fig. 10 the several switch blocks are represented by distinguishing characters 60^a, 60^b, 60^c and 60^d, but a specific description of any one of them will be understood as being applicable to all or any number. While I show a separate battery 58 for each signal system this is to be understood as being merely a matter of wiring and under some assemblages a single source of energy may be employed for any number of switch circuits. In the playing of this game any num-

ber of balls 61 may be employed, the radius of which is preferably materially less than the radius of curvature of the pits and materially greater than the depth of the pits so that any ball may roll freely into and out of any pit or from one pit to another repeatedly before coming to rest in one of the pits. Consequently as will be appreciated from Fig. 5 every time a ball rolls into a pit or across the center thereof or comes to rest in a pit having a switch 54 such switch will be depressed, the weight of the ball being superior to the strength of the contact spring 55, thereby closing the normally open switch at the contacts 55 and 56 and thereby closing the circuit through the battery or other source of energy 58.

Any suitable signal devices, either audible, visible or otherwise, may be provided in or related to the several circuits aforesaid which will be made operative or perceptible the instant that the ball depresses the switch plunger 54, or subsequently thereto. For example I show in Fig. 10 an audible signal in the nature of an electric bell 62, one bell for each circuit, and the several bells being distinguished by the literal characters corresponding to the pit switches. In each of the circuits beyond the bell is a normally closed switch 63, the several switches being distinguished by the same literal characters. Adjacent to these normally closed switches are a like number of electromagnets 64^a, 64^b, 64^c and 64^d respectively, and each magnet is connected in parallel in the same circuit by virtue of a branch circuit 65 which may be composed of wire of high resistance or may have interposed therein any suitable resistance coil 66 for the purpose of retarding the action of the magnet slightly over that of the bell. The magnets may or may not be used according to the character of signal employed or the length of the operation or manifestation of the signal means. I may employ a visible signal in the nature of an ordinary annunciator having in the form suggested in Fig. 3 a plurality of compartments 67^a, 67^b 67^c and 67^d. Whenever any ball rolls over or rests upon any plunger 54 closing the circuit pertaining thereto the bell 62 will ring or the visible signal 67 will be displayed or both if both are used in the same circuit and but for the magnet or some other means for automatically breaking the circuit through the signal means such manifestation will continue as long as the pit switch remains closed. Consequently any bell caused to ring by the closing of such switch will continue to ring if the ball comes to rest thereupon, unless the signal circuit be broken. Since the peculiar attractiveness of this game is dependent upon the repeated rolling in and out of a ball through a pit or a plurality of pits it is obvious that there is a momentary ring of an audible signal every time a ball depresses a plunger 54, but the pleasure of the game is dependent furthermore upon the stopping of the sounding of the audible signal when a ball comes to rest upon a plunger 54 so that attention will be directed rather toward the behavior of subsequent balls in the other pits, or the driving of a previously located ball. One of the objects therefore of the magnets 64 is to automatically stop the sounding of the audible signals. Since the audible signal and its companion magnet are located in parallel circuits and energized from the closing of the same pit switch, they both operate about the same time though the magnet is retarded slightly to insure that the signal bell will give at least one distinct click before the magnet 64 becomes functional causing the movable armature 68 thereof to push open the normally closed switch 63 by means of a link or finger or its equivalent. The magnet remaining energized while the pit switch is held closed, except as noted below, will insure the breaking of the circuit through the audible or other signal.

At 69 (see Figs. 4 and 10) I provide a switch opener adapted to be pushed by the operator's finger or thumb from the outside of the frame 21. This switch opener is actuated against the combined force of a series of movable switch blades 70^a, 70^b, 70^c and 70^d arranged in the several magnet circuits 65 respectively. All of the magnet circuits will be broken simultaneously as shown in dotted lines in Fig. 4, but when the switch opener is released they will all automatically close as shown in full lines, the normal position thereof. Consequently in the arrangement just referred to when any number of the pit switches are held closed by balls in the pits the opening of the switches 70 breaking the magnet circuits will, of course, deënergize the magnets and thereby the main audible signal circuits will again be closed automatically at the switches 63 causing thereby all of the signal means to become perceptible simultaneously and continue so to be so long as the switch opener 69 is held open. In my practice furthermore I have provided four of the audible signal bells, the same having a musical significance and preferably with the relative qualities "do" "mi" "sol" "do" representing the octave and thirds, whereby any plurality of these bells sounded simultaneously by reason of the opening of the magnet switches will always produce a pleasing chord.

At 71 I indicate a rotary master switch opener having a detachable handle 72 projecting laterally through the opposite side of the frame 21 from the switch opener 69. This rotary switch opener is journaled in bearings 73 on the under side of the runway 18. This rotary switch naturally by friction in its bearings and the other parts associated

therewith will always remain either open or closed until manually actuated. The body of the switch opener 71 is made of wood or other insulation and has fitted thereto a series of plates 74 with which corresponding pairs of contact springs 75 coöperate and which are bridged simultaneously as shown in Figs. 9 and 10. These several switch elements are arranged respectively in the main circuits 57, and as indicated in the diagram the magnet circuits 65 are connected to the main circuits between the two master switches 69 and 71. In the ordinary playing of the game the rotary switch 71 is turned to close all of the circuits and is held in such position by friction as aforesaid with the result that the signal means will be operated in the manner previously described and controlled by the automatic circuit breakers 64. If for any reason the signal means are not to be sounded or manifested the operation of the circuits may be prevented simply by turning the rotary switch breaker 71 far enough for one set of the contacts 75 to pass from the metal plates 74. In some instances it may be desirable for the balls to enter the pits and close the pit switches without causing instant manifestation of the signal means, leaving for subsequent action the simultaneous functioning of such signal means as have their pit switches so closed. One of the ways this result may be accomplished is for the master switch 71 to be left open while the balls are being played, and after the last ball has come to rest the closing of this master switch will produce such simultaneous functioning of the several closed circuits. Thus the bells or lamps of these closed circuits will be manifested either momentarily or continuously according to whether the master switch 69 is left closed or is opened, respectively.

In the playing of the game and assuming that the main master switch 71 is closed it is not ordinarily desirable for the signal means whether audible or otherwise to be perceptible during the operation of the sweeper 24. Consequently I provide on or in connection with the upright shaft 27 an additional master switch 71′ which is of substantially the same character as the switch 71 and normally closed when the sweeper is in normal playing position. The moment, however, that the operator draws the lever 29 to sweep the balls into the gutter the rotation of the shaft 27 will cause automatically the breaking of all of the main circuits so that if any ball should roll into or through a pit having a switch no signal indication will be given.

Referring again to the patronage of this invention by the general public it is desirable to provide means whereby the main circuits will be broken automatically whenever a player leaves the apparatus, it being understood that no member of the public may be depended upon to turn the main switch 71 if it be employed in a public machine. Consequently in order to avoid the danger or loss of current under such circumstances I provide means such as indicated in Fig. 8 or its equivalent to insure that when no one is present to play the game all of the circuits will be automatically broken. To this end I employ a platform 76 on which the operator stands while playing the game but which when unoccupied will be held elevated by means of a spring 77 located in or adjacent to one or both of the front legs 16 of the apparatus. From the rear end or corner of the platform 76 a connection 78 leads to a lever 79 pivoted at 80 beneath the runway 18 and adapted to actuate and close a master switch 81 arranged in the main circuits. When, however, the player leaves the platform the master switch 81 will be broken. Unconsciously, therefore, the operator will control the making or breaking of the main circuits. Obviously the master switches 69, 71, 71′ and 81 may all be used in the same assemblage or any number less than all of them.

I claim:

1. In game apparatus, the combination of a field, having a pit, a movable projectile adapted to enter the pit and come to rest therein, signal means, and devices to cause the signal means to be perceptible when the projectile enters the pit and thereafter to become imperceptible when the projectile comes to rest in the pit.

2. In game apparatus, the combination of a field having a goal, a ball adapted to roll into said goal, signal means, and devices acting upon the signal means to cause the signal means to become perceptible when the ball rolls into the goal and immediately thereafter to become imperceptible.

3. In automatic game apparatus, the combination of a field having a pit, a ball adapted to roll over the field and into said pit, signal means, devices to cause the signal means to become perceptible when the ball rolls into the pit, and means to cause the signal means to automatically become imperceptible when the ball stops in the pit.

4. In automatic game apparatus, the combination with a field having a plurality of goals and a ball adapted to roll over the field and from one goal to another, of automatic signal means set into action every time the ball rolls into a goal.

5. In automatic game apparatus, the combination with a field having a plurality of pits and a ball adapted to roll from one pit to another and back and forth through any pit, of signal means set into action automatically every time the ball rolls into or through a pit.

6. In automatic game apparatus, the com-

bination with a field having a plurality of pits and a plurality of balls adapted to be rolled over the field and into various pits thereof, of signal means associated with some of the pits and means to cause the signal means to become perceptible each time a ball rolls into or through one of the signal associated pits and immediately thereafter to become imperceptible, and means to cause all of the signal means to become perceptible simultaneously after all or any desired number of the balls have been played.

7. In automatic game apparatus, the combination with a field having a plurality of pits therein and balls adapted to roll into and through the same, of signal means associated with the pits including normally open switches in the pits adapted severally to be closed when the balls roll into or through the pits causing a signal device to become perceptible at such instant, electric means to automatically stop the action of the signal means when a ball comes to rest in a switch supplied pit, and means to cause all of the signal means previously actuated to become perceptible simultaneously after a number of balls have been rolled into the pits.

8. In automatic game apparatus, the combination with a field having goals and a plurality of balls to be rolled thereover and into or through any of the goals, of signal means including electric circuits and normally open switches at the goals adapted to be closed by a ball rolling into or through the same and held closed when the ball comes to rest therein, each closing of such switch serving to cause the signal means to become perceptible, and means to automatically break the circuits and prevent the action of the signal means when the player leaves the apparatus.

9. In automatic game apparatus, the combination with a field of goals and a ball adapted to be rolled thereover and into and through any of the goals, of means under the control of the operator from a distance remote from the field to cause the ball to be removed from the field and returned to him.

10. In game apparatus, the combination with a runway, a field at one end of the runway and a plurality of balls adapted to be rolled along the runway and come to rest upon the field, of means actuatable from the end of the runway remote from the field to cause the removal of all of the balls simultaneously from the field and their return to the player.

11. In automatic game apparatus, the combination with a runway, a field at one end of the runway and one or more balls to be projected along the runway to come to rest upon the field, of a manually controlled member within reach of the operator remote from the field, and means operated from the manually controlled member to cause the removal of all of the balls simultaneously from the field and their return to the operator.

12. In automatic game apparatus, the combination with a runway, a field associated therewith and one or more balls to be projected along the runway to come to rest upon the field, of a manually controlled member within reach of the operator remote from the field, a return gutter for the balls along the runway, a sweeper movable over the field to cause the balls to be swept from the field into the gutter for automatic return to the operator, and connections between the manually controlled member and the sweeper.

13. In automatic game apparatus, the combination with a runway, a pitted field at one end thereof and one or more balls adapted to roll into the pits, of signal means adapted to be made perceptible when a ball rolls into a pit, means under the control of the operator remote from the field to remove the balls therefrom for automatic return to him, and means to prevent the perceptibility of the signal means automatically while the ball removing means are in operation.

14. In automatic game apparatus, the combination with a frame, a field with goals at one end of the frame, a runway within the frame leading toward the field and along which one or more balls may be projected toward the field, of signal means adapted to be actuated as a result of one or more balls rolling into the field goals, certain of said signal means being carried on the under surface of the runway, and means providing for the lifting of the runway with respect to the frame for easy accessibility to the signal means carried thereby.

15. In automatic game apparatus, the combination with a field having a plurality of goals and a plurality of balls adapted to be rolled over the field and into various goals thereof, of audible signal means associated severally with some of the goals, said several signal means being different in character, and means to cause the signal means to be sounded each time a ball rolls into or through one of the signal associated goals and immediately thereafter to become silent.

16. In automatic game apparatus, the combination with a field having a plurality of goals and a plurality of balls adapted to be rolled over the field and into various goals thereof, of a plurality of bells having musical qualities and of different characters associated with some of the goals, means to cause the bells to be sounded in succession each time a ball rolls into or through the goals with which they are severally associated, means to cause the several bells to become silent immediately after they have been sounded, and means to cause all of the

bells associated with goals having balls therein to be sounded simultaneously to produce a musical chord.

17. In game apparatus, the combination with a runway, a field at one portion of the runway, a plurality of balls adapted to be rolled along the runway and come to rest upon the field, and signal means associated with said field and adapted to be caused to become perceptible by the action of the balls, of means actuatable from a portion of the apparatus remote from the field to cause the removal of all of the balls simultaneously from the field and their return to the player, and means to prevent the perceptibility of the signal means while the ball removing means are in operation.

18. In game apparatus, the combination with a runway, a field at one end of the runway, a plurality of balls adapted to be rolled along the runway and come to rest upon the field, a return gutter to convey the balls from the field end of the runway toward the player, a trap coöperating with the gutter, and means actuatable from the end of the runway remote from the field to cause the removal of all of the balls from the field and their return toward the player and into the trap.

19. In automatic game apparatus, the combination with a runway, a field associated therewith, and one or more balls to be projected along the runway to come to rest upon the field, of a hand lever within reach of the operator remote from the field, a return gutter for the balls along the runway, a sweeper movable over the field to cause the balls to be swept therefrom into the gutter for automatic return to the operator, connections between the lever and the sweeper, and means to automatically return the sweeper and lever to normal position after the lever is released.

20. In automatic game apparatus, the combination with a runway, a field associated therewith, and one or more balls to be projected along the runway to come to rest upon the field, of a return gutter leading from the field toward the player, a ball trap therein, a manually controlled member adjacent to the trap, means to remove all of the balls simultaneously from the field into the gutter for automatic return into the trap, connections between the manually controlled member and the ball removing means, and coin controlled connections between the manually controlled member and the trap for the delivery of balls from the trap when the manually controlled member is actuated to remove balls from the field.

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