

Dec. 28, 1937.

D. C. ROCKOLA

2,103,870

GAME APPARATUS

Filed Aug. 23, 1935

3 Sheets-Sheet 1

Fig. 1.

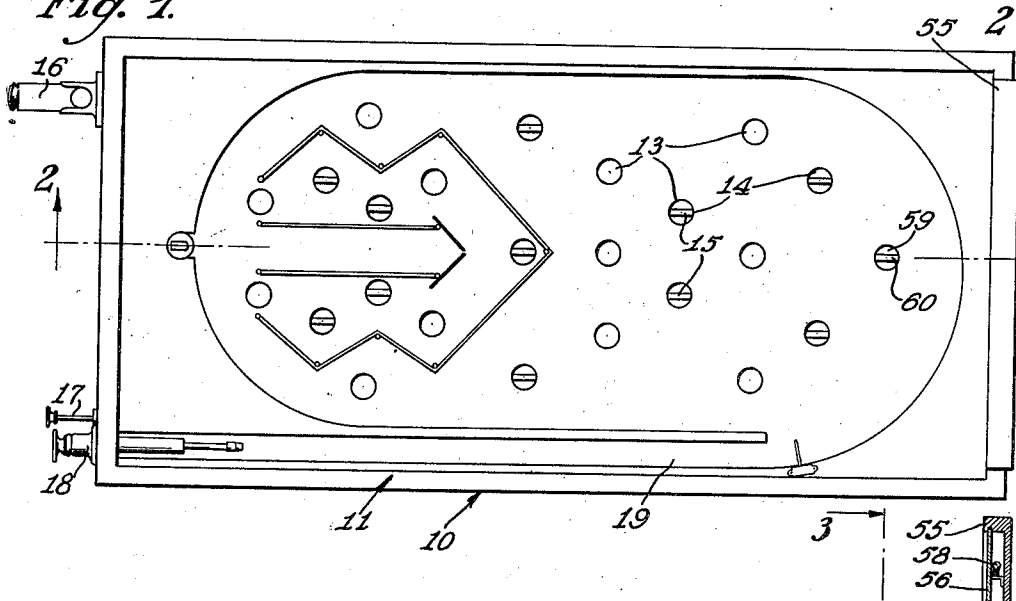


Fig. 2.

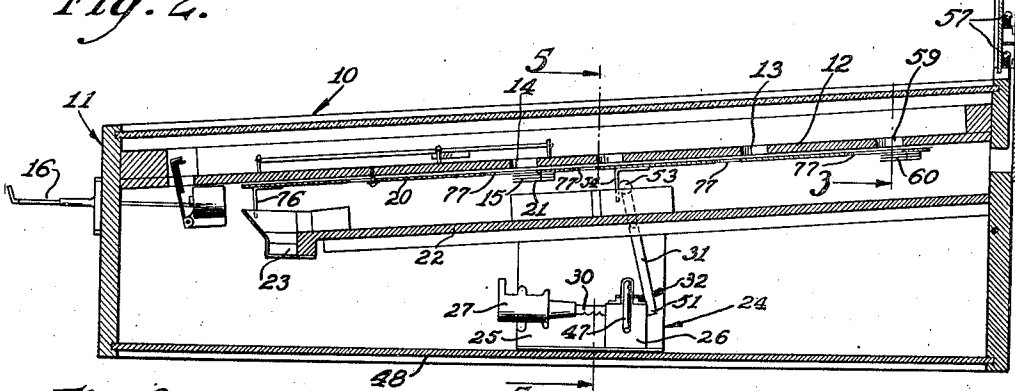


Fig. 3.

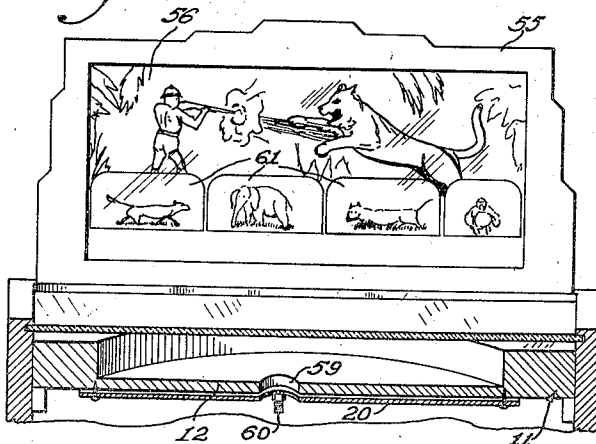
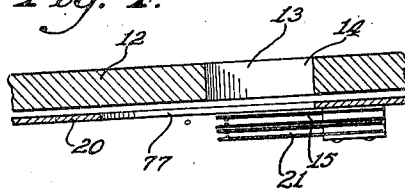


Fig. 4.



David C. Rockola
INVENTOR.

BY Thredy and Cannon.

HIS ATTORNEYS.

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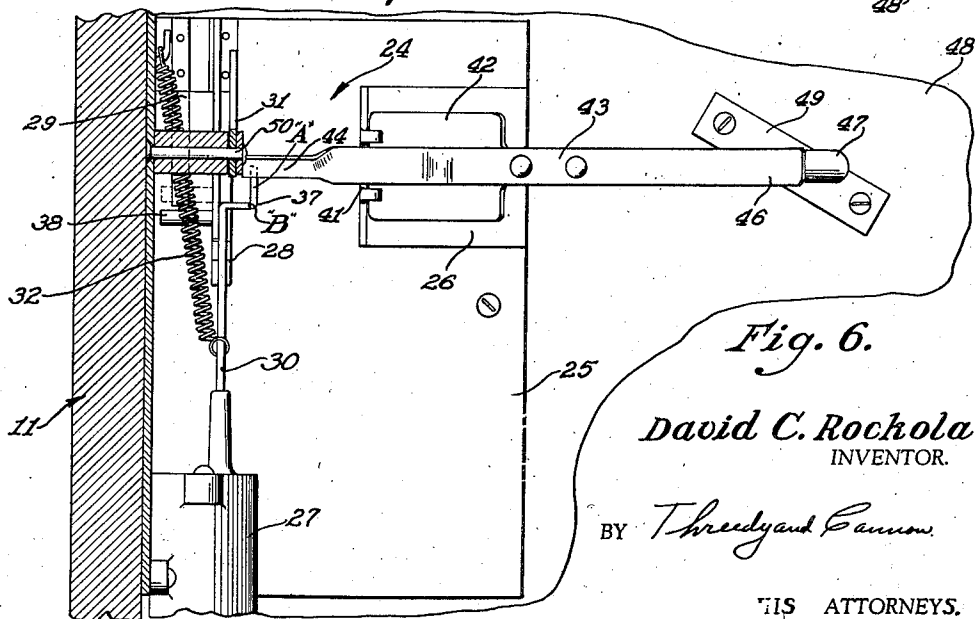
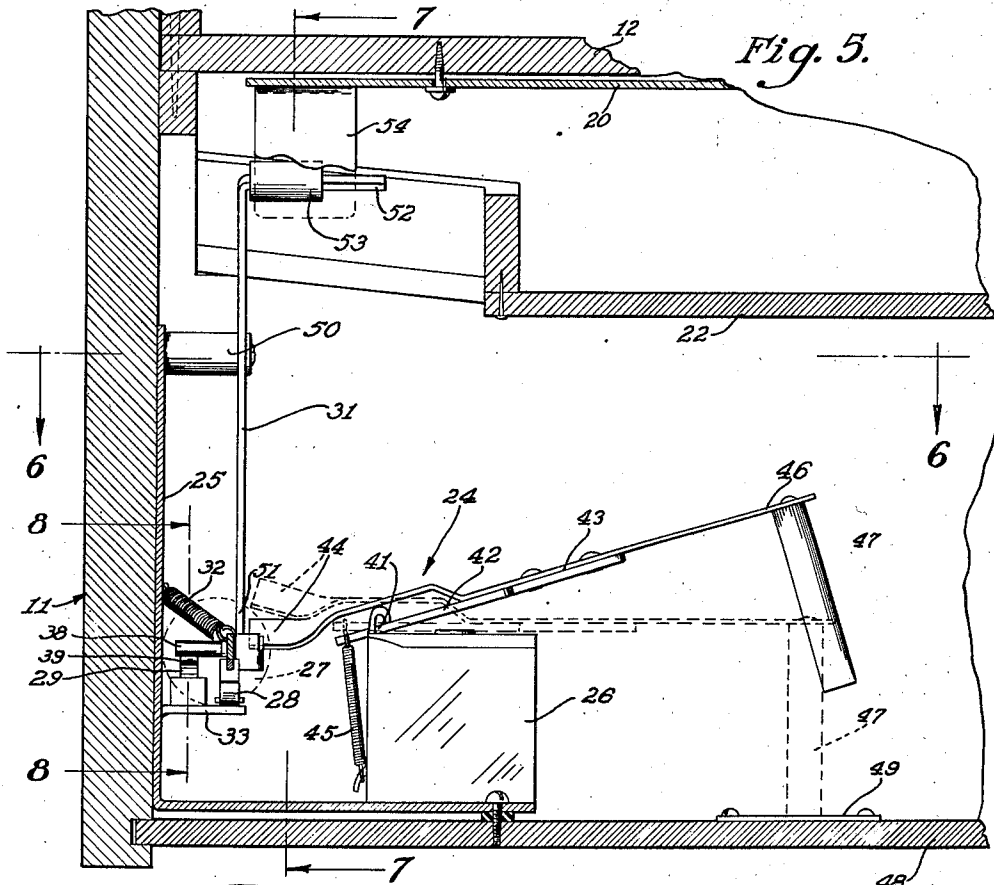
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Fig. 7.

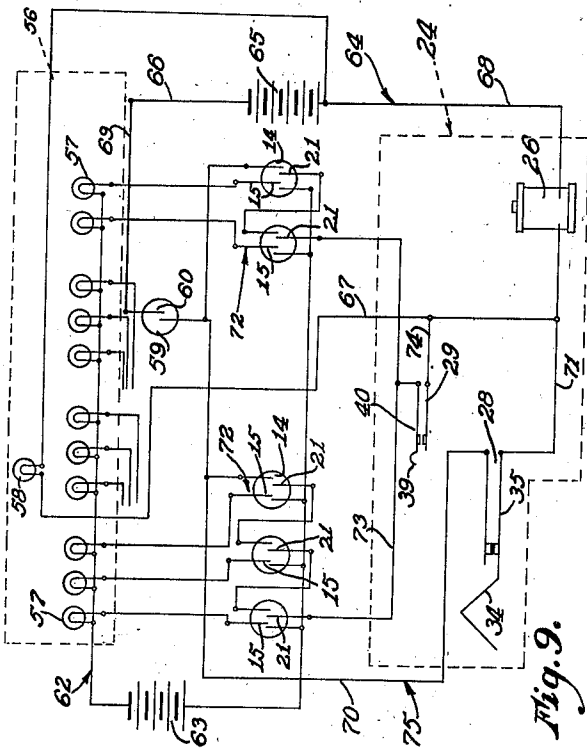
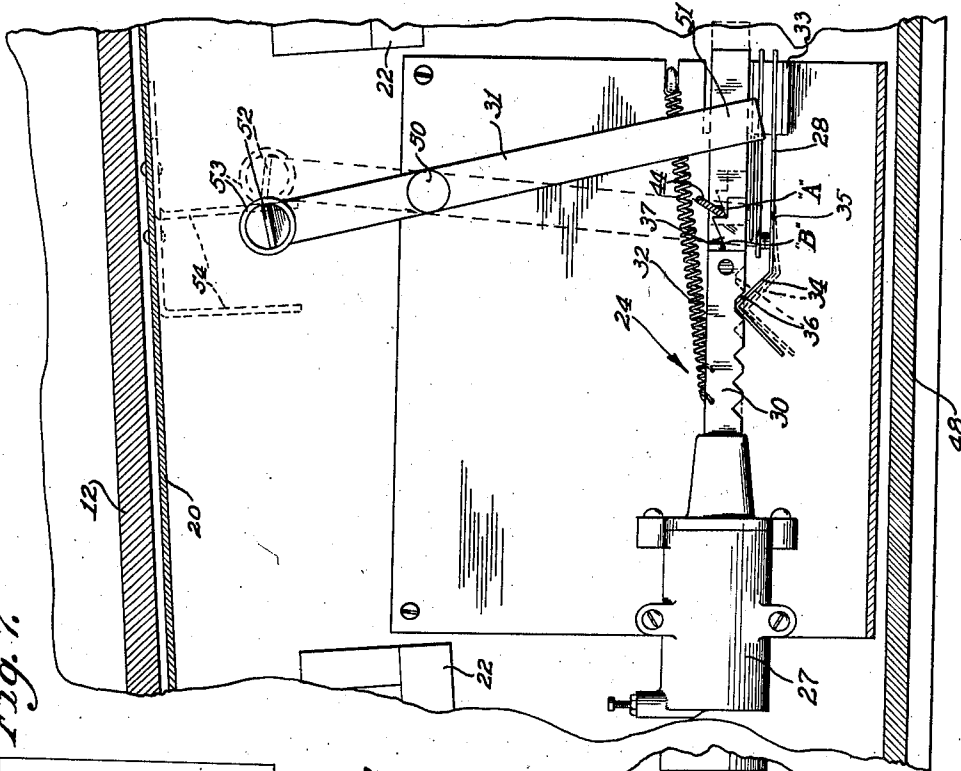
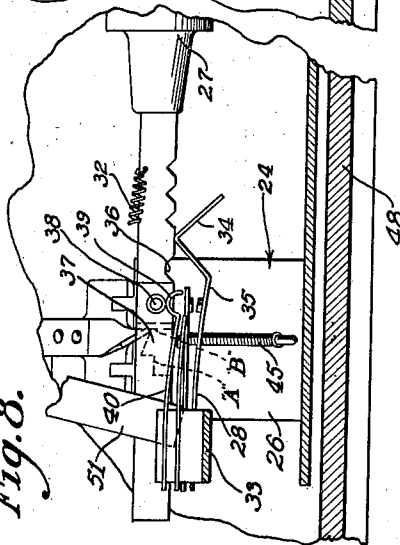


Fig. 8.



David C. Rockola
INVENTOR.

BY *Threedy and Cannon.*

HIS ATTORNEYS.

UNITED STATES PATENT OFFICE

2,103,870

GAME APPARATUS

David C. Rockola, Chicago, Ill., assignor, by
mesne assignments, to Rock-Ola Manufacturing
Corporation, Chicago, Ill., a corporation
of Delaware

Application August 23, 1935, Serial No. 37,423

4 Claims. (Cl. 273—118)

This invention relates to game apparatus.

It is an object of this invention to provide an improved game apparatus which is relatively simple and inexpensive in construction and efficient in use.

Another object of the present invention is to provide a device for use in conjunction with game apparatus of the so-called pin and marble game type and by means of which an audible signal and a visible signal may be simultaneously actuated by a played ball in such a manner as to represent or simulate a hunter shooting game, that is, the visible signal represents the light which is incidental to the discharge of a gun and the audible signal represents the report or sound made by the discharge of the gun.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will best be understood by reference to the accompanying drawings showing the preferred form of construction, and in which:

Fig. 1 is a top plan view of a game apparatus embodying a preferred form of the present invention;

Fig. 2 is a vertical longitudinal sectional view, on line 2—2 in Fig. 1;

Fig. 3 is a view on line 3—3 in Fig. 2, partly in side elevation and partly in section;

Fig. 4 is a sectional detail view of one of the ball-receiving pockets and associated switches embodied in the invention;

Fig. 5 is an enlarged vertical sectional view, on line 5—5 in Fig. 2;

Fig. 6 is a view on line 6—6 in Fig. 5, partly in top plan and partly in section;

Fig. 7 is a sectional view on line 7—7 in Fig. 5;

Fig. 8 is a sectional view on line 8—8 in Fig. 5; and

Fig. 9 is a schematic diagram of an electrical circuit embodied in the invention.

A game apparatus embodying a preferred form of the present invention as shown in the drawings, is therein generally indicated at 10, and comprises a cabinet 11 which includes an inclined playing board 12 which is provided with pockets or openings 13 of which there are a percentage of score openings 14. The front wall of the cabinet 11 supports a coin slide 16, a ball elevating plunger 17 and a ball projecting plunger 18. The plunger 18 is adapted to project balls along an inclined runway 19 into the upper end of the inclined playing board 12 for gravitation thereover.

The cabinet 11 likewise includes a slide panel 20 which is slidably mounted adjacent, and parallel to the lower surface of the inclined play board 12 mounted upon the slide panel 20. Below the score openings 14, are score and link switches 15 and 21 respectively, both of which are constructed so that normally their resilient fingers are separated or ineffective, and both of which, when a ball is seated in their corresponding pocket 14 are in connected or effective position for reasons to be described presently. The coin slide 16 is engageable with an angle 16 depending from the slide panel 20 so as to urge the latter from left to right (Fig. 2) upon the insertion of the coin slide.

Forwardly of the out openings 13, score openings 14 and the master opening 59, upon the same longitudinal axis with the latter, (Fig. 2) are corresponding openings 77 in the slide panel 20.

An inclined ball return runway 22 is also included in the cabinet 11 and has at its lower end a transverse runway 23 which directs the balls to a ball elevator (not shown) which lifts the balls into the inclined ball runway 19 at the lower end thereof adjacent the plunger 18.

Likewise included in the cabinet 11 is a control unit, generally indicated as 24. This control unit 24 among other things consists of a supporting frame 25, an electromagnet 26, a dash pot 27, a supervisory switch 28 and a master control switch 29, a serrated laterally slidable arm 30 and a resetting lever 31.

The supporting frame 25 of the control unit 24 is mounted upon a vertical wall of the cabinet 11 and is spaced from the lower wall 48 of the cabinet 11 for reasons to be described presently.

The dash pot 27 is mounted upon a vertical wall of the supporting frame 25, and mounted in the dash pot 27, for slidable movement there-to, is the serrated laterally slidable arm 30, which is urged away from the dash pot 27 by a tension spring 32 that has one end thereof attached to the slidable arm 30 and the other end anchored into the supporting frame 25.

The switches 28 and 29 are mounted upon a laterally extending portion 33 of the supporting frame 25. The switch 28 being positioned so that the angled end portion 34 of the resilient lower finger 35 is disposed in engagement with the serrated lower edge of the laterally slidable arm 30. When in normal or reset position as shown in Figs. 6 and 7, the angled end portion 34 of the resilient finger 35 is at rest in the notch 36 of the slidable arm 30 in which position the switch

28 is effective relative to the electrical circuit 75 shown in Fig. 9.

The laterally slidable arm 30 which has one end thereof slidably mounted in the push-pot 27 has an end portion 37 which extends laterally relative to the long axis thereof—and which is offset from the latter for parallel movement thereto. This end portion 37 consists of a pair of notches indicated as "A" and "B" for a reason to be hereinafter explained.

Mounted adjacent the end portion 37, upon the serrated slidable arm 30, and extending laterally therefrom, is a roller 38. Engageable with the roller 38, upon horizontal movement thereof, is a curved end portion 39 of a resilient finger 40 of the switch 29. The switch 29 is normally disposed in ineffective position as shown in the schematic diagram (Fig. 9) with the curved end portion 39 of the resilient finger 40 out of engagement with the laterally extending roller 38.

Pivotaly mounted upon the magnet 26 as at 41 is an armature 42 and mounted between its ends upon the armature 42, for pivotal movement therewith is an arm 43 normally having one end portion 44 disposed to latchingly engage the notch A in the laterally extending end portion 37 of the slidable arm 30. The armature is normally urged into the position shown in Figs. 5, 6, 7 and 8 by a tensioned spring 45. The opposite end portion 46 of the arm 43 has a solid element 47 depending therefrom which is engageable with a strike plate 49 mounted upon the lower wall 48 of the cabinet 11.

The resetting lever 31 is pivotally mounted between its ends as at 50 and has an end portion 51 which is engageable with the lateral offset of the end portion 37 which forms the end of the laterally slidable member 30. The other end portion 52 (upper end Figs. 5 and 7) is bent at a right angle and carries a tubular member 53 which forms a bearing for, and is engageable with, an angle 54 which depends from the slide panel 20 for movement therewith.

Mounted upon the back wall of the cabinet 11 is a so-called "light-up board" 55 which comprises a transparent member 56 behind which are mounted light bulbs 57. In the present invention there is depicted upon the transparent member 56 an animal charging a hunter with a gun in firing position. Directly behind the end of the muzzle of the gun, depicted upon the transparent member 56, is a bulb 58 for a reason to be hereinafter explained. Likewise upon the transparent member 56 are score indicating areas 61 depicting other animals and behind each of these areas are groups of light bulbs 57 for reasons to be hereinafter explained.

One of the openings 13 in the inclined play board 12 is a so called "master opening" 59 which, similar to the score openings 14, has a master ball switch 60 associated therewith which in turn is mounted upon the slide panel 20.

Referring to Fig. 9 in which a schematic diagram of an electrical circuit 75 is illustrated, 62 indicates a circuit which consists of a source of energy 63, in the form of a battery of dry cells, the switches 21 arranged below the score openings 14 and the corresponding lights 57, arranged in the light up board 55 behind the transparent member 56 in the latter.

The electrical circuit 75 also consists of a circuit 64 which includes a source of energy 65, in the form of a battery of dry cells, which is connected to one end of a conductor 66, the opposite end of which is connected to the light 58.

The light 58 in turn is connected to one side of the electromagnet 26 by a conductor 67 and the opposite side of the electromagnet 26 is connected to the opposite side of the source of energy 65 by a conductor 68. The switch 60 has one side thereof connected to the conductor 66 by a conductor 69, and the opposite side thereof connected to one side of the switch 28 by a conductor 70. The opposite side 35—34 of the switch 28 is connected to the side of the electromagnet 26, where the conductor 67 enters the latter, by a conductor 71.

Each of the group of switches 21, corresponding to the group of switches 15 and lights 57 which in turn correspond with the area 61 depicted on the transparent member 56, are connected in series 72, one side of which is connected to the switch 60 by the conductor 70 and the opposite side of which is connected to the resilient finger 40 of the switch 29 by a conductor 73. The opposite side of the switch 29 being connected to the end of the conductor 67 which is connected to the one side of the electromagnet 26 by a conductor 74.

Operation

The following example will describe, more clearly, the operation of the game apparatus, but it is to be understood that the game operates successfully several ways, and that the invention is not confined within one example.

Upon projecting a ball up the inclined runway 19 to be gravitated along the play board 12 it is to be assumed that the ball has come to rest within the master opening 59, upon the master ball switch 60 disposed therebelow. The switch 60 will thereby become effective to close the circuit 64, whereupon current will flow from the source of energy 65 through the conductors 66 and 69 into the switch 60, thence through the conductor 70 into the supervisory switch 28 which has the angled end portion 34 of the resilient finger 35 normally disposed in the notch 36 of the serrated slidable arm 30, in which position the switch 28 is effective, whereupon current will flow through the conductors 71 and 67 into the one side of the electromagnet 26, and from the opposite side of the latter through the conductor 68 back into the source of energy 65.

The foregoing flow of current will thereupon set up magnetism in the electromagnet 26 at which time the latter will be in circuit with the light 58, positioned behind the gun muzzle which is depicted on the transparent member 56. The electromagnet 26 will thereupon attract the moving element or armature 42 and the arm 43 mounted thereon from full to dotted line position (Fig. 5) forcing the solid element 47 mounted at the end 46 thereof against the strike plate 49 which is fastened to the bottom wall 48 of the cabinet 11. The bottom wall 48 being a form of a sound board, will thereby set up an audible alarm simulating the report of a gun. The pivoting of the armature 42 and the arm 43 from full to dotted line, at 41 (Fig. 5) will likewise disengage the end portion 44 of the arm 43 from latching engagement with the notch "A" in the laterally offset end portion 37 of the slidable arm 30. Whereupon the slidable arm 30 will be urged from left to right (Fig. 7) by the spring 32 causing the angled end 34 of the resilient finger 35 to ride out of the notch 36 (from full to dotted line) thereby rendering the switch 28 in an ineffective position, and breaking the circuit 64.

The magnetic attraction of the electromagnet 26 to the armature 42 will thereupon be terminated and the circuit to the light 58 will be broken. Whereupon the resetting spring 45 will return the armature 42 and the arm 43 to initial position (from dotted to full line, Fig. 5) so that the end portion 44 of the arm 43 will latchingly engage the slidable member 30 against the action of the spring 32, by entering into the notch "B" in the laterally offset end portion 37 of the slidable member 30. It being understood that the foregoing example will be enacted as quickly as the electrical current can pass through the circuit 64, and that the flash of the light 58 is simultaneous to the audible alarm caused by the solid element 47 striking the plate 49 thereby creating the effect of a firing of the gun depicted on the transparent member 56.

The laterally slidable arm 30 being thus latched with the end portion 44 of the arm 43 in engagement with the notch "B" in the laterally offset end portion 37 thereof, (as shown in Fig. 8), will cause the roller 38 extending therefrom to engage the curved end portion 39 of the resilient finger 40, whereupon the latter will be urged into engagement with the opposite finger of the master control switch 29 thereby rendering the switch 29 effective.

With the parts of the device in a position with the roller 38 holding the switch 29 in effective position, it becomes the object of the person playing the game to project balls along the inclined runway 19 onto the upper end of the inclined play board 12 and skillfully cause a ball to be entrapped in each of the score openings 14 which constitute a particular group corresponding to the light bulbs 57 associated with one of the areas 61 depicted upon the transparent member 56. Upon skillfully projecting a ball into each of the said score openings 14 the corresponding score and link switches 15 and 21 will become effective, whereupon the light associated with each of the switches 15 will complete a circuit from the source of energy 63. However, the series 72 of switches 21 will not become effective until each of the link switches 21 are held in effective position by a ball resting in each of the corresponding score openings 14 to open the circuit 64, whereupon current will flow from the source of energy 65 into the conductors 66 and 69 through the switch (already having a ball resting thereon) into the conductor 70 and through the series 72 of switches 21, into the conductor 73 which directs the current into the resilient finger 40 of the control switch 29 (which is at this time in effective position), thence through the conductors 74-67 into one side of the electromagnet 26 and from the opposite side thereof through the conductor 68 back into the source of energy 65. Whereupon light 58 is illuminated and the electromagnet will again attract the armature 42 and the arm 43 carried thereby to pivot at 41 from full to dotted line position (Fig. 5) and cause the solid element 47 to strike the plate 49 and create an audible alarm as before. Likewise the end portion 44 of the arm 43 will move from full to dotted line position (Fig. 5) disengaging the portion 44 from latching engagement in the notch "B" in the laterally offset end portion 37 of the laterally slidable arm 30. Whereupon the spring 32 will urge the laterally slidable arm 30 from right to left (Fig. 8) during which movement the roller 38 will pass to the left of the curved end portion

39 of the resilient finger 40, and allow the latter to assume its natural or initial position.

With the finger 40 in its initial position the master control switch 29 is rendered ineffective and the current will cease flowing. The electromagnet 26 will release the armature 42 and the spring 45 will move the latter into full line position.

The end portion 37 of the laterally slidable arm 30 will be to the right (Fig. 7) of the end portion 44 of the arm 43 and will not be latched against the action of the spring 32.

The angled end portion 34 of the resilient finger 35 will thereupon move into engagement with one of the notches in the serrated edge of the slidable member 30, whereupon the switch 28 will become effective and cause current to flow through the circuit 64 from the source of energy 65 into the conductors 66 and 69, through the switch 60, thence into the conductor 70, through the switch 28 into the conductors 71 and 67, thence through the electromagnet 26 and the conductor 68 back into the source of energy 65. The foregoing flow of current will light the light 58 and cause the electromagnet 26 to attract the armature 42 into dotted line position (Fig. 5) to urge the solid element 47 into engagement with the strike plate 49. The spring 32, however, continues to urge the laterally slidable arm 30 from left to right (Fig. 7) causing the angled end portion 34 to move successively into and out of engagement with each of the notches in the serrated edge of the laterally slidable arm 30, thereby rendering the switch 28 intermittently effective and causing current to flow through the circuit 64 to induce magnetism in the electromagnet 26, and the light 58 will correspondingly flash on and off and the solid element 47 associated with the electromagnet 26 will move into and out of engagement with the strike plate 49 in a corresponding intermittent motion.

The lateral projection of the slidable arm 30 will thereupon engage the lower end portion 51 of the resetting lever 31, and stop the slidable arm from further horizontal movement (to the right, Fig. 7).

It is to be noted that the laterally slidable arm 30 is mounted in the dash pot 27, which is of a conventional structure, and which may be adjusted for timing the stroke of the slidable arm 30 from left to right (Fig. 7).

The adjustment of the timing being necessary to synchronize the latching of end portion 44 with the notch "B", and to assure an intermittent action of the light 58 and the sound creating elements (47, 49 and 48).

The game having thus been played, it becomes necessary to reset the various parts of the device and to liberate the balls resting in the out openings 13, score openings 14 and the master opening 59, as follows:

By inserting a proper coin into the coin chute 16 the latter may be moved from left to right (Fig. 2) to engage the depending angle 76 of the slide panel 20, whereupon the latter will likewise move from left to right (Figs. 2, 4 and 7) so that the openings 77 in the slide panel 20 will be in vertical alignment with its corresponding out openings 13, 14 or 59. The balls will thereupon drop onto the return runway 22 and be directed to the elevating device not shown.

The same motion of the slide panel 20 (from left to right Figs. 2 and 7) shifts the angle 54 depending therefrom (full to dotted line position,

Fig. 7) which in turn will engage the bearing 53 mounted upon the angled end portion of the resetting lever 31 to pivot the latter at 50 from full to dotted line position (Fig. 7). Whereupon lateral offset portion of the slidable arm 30 which is stopped by the end portion 51 of the resetting lever 31 will be urged from right to left (Fig. 7) against the action of the spring 32 until the end portion 44 of the arm 43 is latchingly engaged with the offset end portion 37 of the slidable arm 30, in the notch "A" thereof.

While I have given one example of operation it is to be understood that the procedure may vary as, for example, the person playing the game may choose to complete a group of score openings 14 previous to playing a ball into the master opening so that the series 72 is completed before the opening of the switch 60 and thereby cause the unit 24 to be spent in a continuous succession of operations.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modifications, without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

1. Indicating mechanism for use with game apparatus including a ball-playing board having thereon score and link switches jointly operable by a ball, and a master-ball switch, said mechanism comprising a plurality of electrically operable visual signals and an audible signal including a moving element, some of said visual signals being in circuit with said ball-operated score switches and one of the visual signals being in circuit with said master ball switch and with said audible signal such that the operation of the master switch will cause said one visual signal and said audible signal to be operated together, a normally closed supervisory switch also in circuit with said audible signal, and means for opening the supervisory switch and including a switch-operating arm, spring means normally urging said arm into switch-operating movement, means on said moving element normally latching said arm against operating movement but operable to release said arm when said audible signal is actuated by the master switch, and a master control switch operable by said arm during its initial movement to connect one of said link switches with a source of power, said link switches being connected in a series of switches and the last one of said series being connected

to said audible signal whereby the latter may be operated after first having been operated by said master ball switch and after said link switches have been operated in predetermined order.

2. A control device comprising switch means including a pair of switch arms, a switch-operating arm, means normally urging said arm into operative engagement with said switch means, said arm having serrations for engagement with one of said switch arms to position the same in operated condition, and said arm having a part engageable with the other switch arm of said pair to urge the same into circuit closing condition when said operating arm is initially moved for operative engagement with said switch means, an electro-magnetic device including a moving element and switch means operable to energize said device, means on said moving element engageable with said operating arm to latch the same against switch-operating movement but effective to release said arm when said electro-magnetic device is energized.

3. Signal mechanism for use with game devices having a game switch operated by an instrumentality used in the playing of the game, said mechanism including: an audible signal having a movable element and operable by operation of said game switch, a visual signal switch and visual signal operable thereby, and visual signal switch-operating means in the form of a reciprocable arm movable in one direction to operate said visual signal switch, spring means urging said arm in the direction of operating movement, manual means for restoring said arm back to initial position and tensioning said spring means, and latch mechanism normally latching said arm against switch operating movement and released by said moving element of the audible signal when the latter is actuated, whereby said visual signal may be operated once for each operation of said audible signal.

4. Signal mechanism for game apparatus having a ball-operated switch, said mechanism including an audible signal having a movable sound producing arm and electrical operating means therefor and operable by said ball-operated switch, an electrically operable signal and operating means therefor including a signal switch, an operating arm movable for engagement with said switch to operate the same transiently in steps, manually tensioned spring means urging said arm in switch-operating movement, and means including a part on said sound producing arm and engageable with said operating arm to latch the latter against operating movement, said part being movable out of latching engagement when said audible signal is actuated.

DAVID C. ROCKOLA.