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BALL ROLLING GAME

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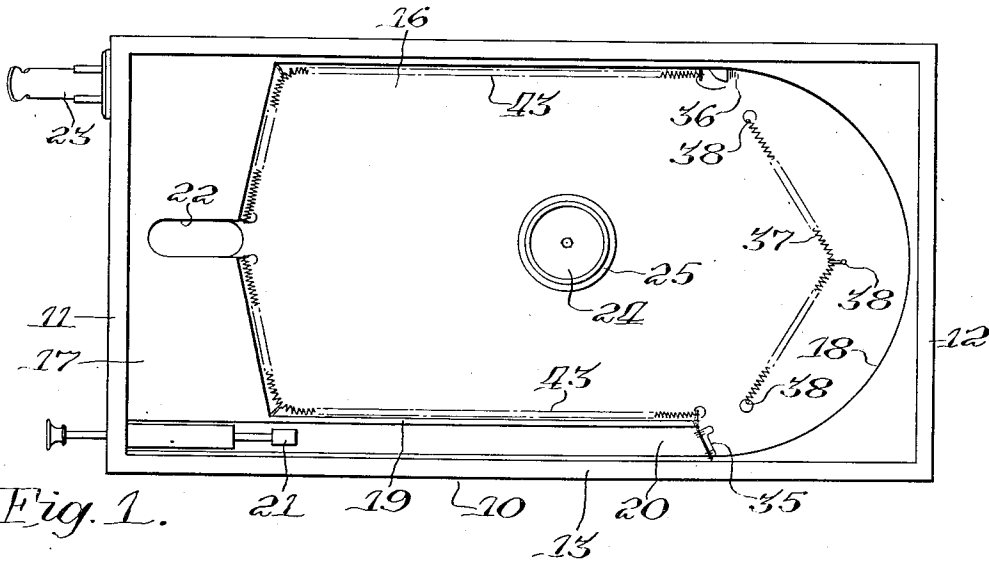


Fig. 1.

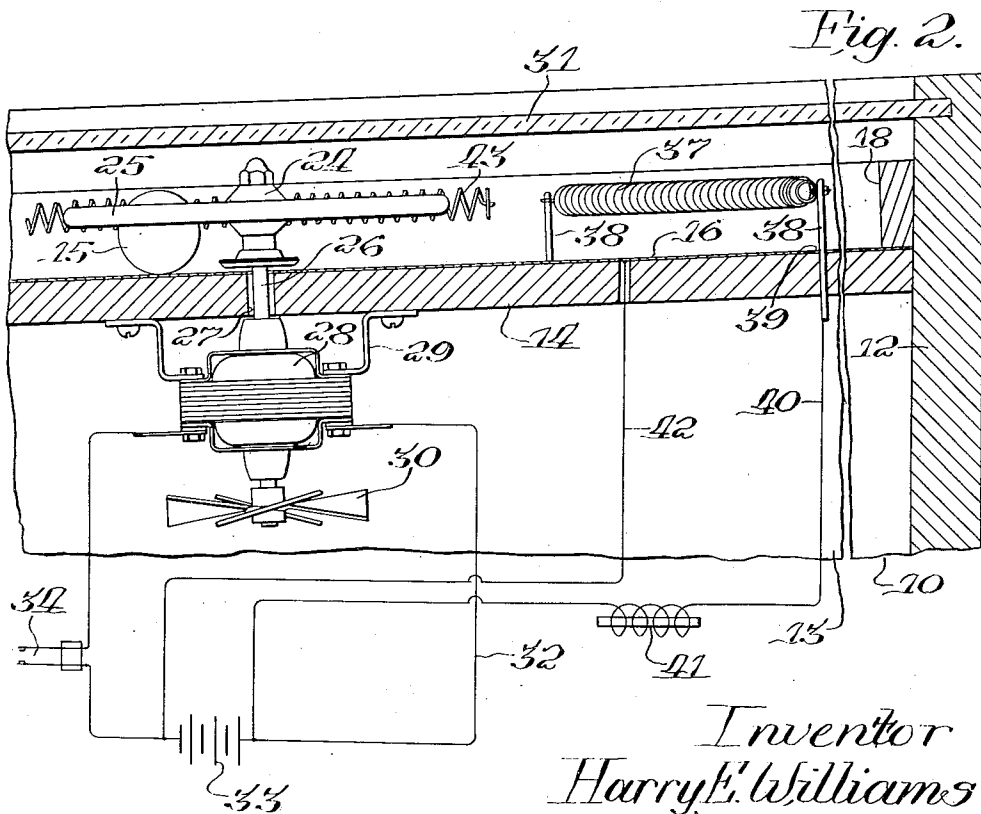


Fig. 2.

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BALL ROLLING GAME

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2 Claims. (Cl. 273—118)

The invention relates to a ball rolling game and particularly to novel means for accelerating the ball rolling action by providing improved ball propelling and rebound means, with additional novel means to register "hits" of the ball with the rebound means.

The primary object of the invention is to provide an improved ball rolling game.

Another object is to provide an improved rebound means for the ball to increase or accelerate the ball rolling action.

Still another object is to provide a ball rolling game having a ball rolling surface bounded by resilient spring elements from which a ball may rebound in a lively manner.

Also it is an object to provide such ball rolling surface carrying a rotary ball propeller to propel the balls to said resilient spring elements for rebounding action.

Still further it is an object of the invention to provide a play surface of conductor material along with a ball also of conductor material, so that when the ball "hits" the resilient spring bumper a circuit is established to energize an electromagnetic device which in turn may operate a score register or other desired auxiliary means.

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

Briefly, the improved game of this invention may in one practicable form, comprise a cabinet containing a board providing a ball rolling surface inclined slightly from the horizontal, said surface being of conductor material, such as tin foil and being delineated at its boundary edges by resilient spring members. Substantially centrally disposed on said surface is a rotary spinner obstacle element which is positioned to be impinged by a ball gravitating down the board and thus cause the ball which is also of conductor material, to be forcefully repropelled over the board, possibly to roll it against a boundary spring from which it rebounds. When the ball "hits" such spring an electric circuit through the ball rolling surface, ball, and boundary spring is established to energize, momentarily, an electromagnetic relay device for operating a "hit" register or other appropriate game auxiliary.

In the drawing:

Figure 1 is a general plan view of the improved ball rolling game; and

Figure 2 is a fragmentary, longitudinal central, side sectional view through the game.

The game comprises a suitable rectangular

cabinet 10, having a front wall 11, rear wall 12, and opposite side walls 13. These walls carry a board or table 14, disposed at a slight inclination from the horizontal to cause a ball 15 thereon to gravitate to the lower end thereof, said table or board provides a play surface of conductor material, such as a tin foil sheet 16, said surface at its lower end being delineated by a ball guide portion 17, at its upper end by an arch portion 18, at one side by a wall 13, and at the opposite side by an extension 19 forming with the adjacent wall 13, from which it is spaced, a ball projection passageway 20. At the front end of the passageway is a ball projecting plunger 21 carried in the usual way in the front wall 11. The guide portion 17 is formed with a pocket 22 to trap balls gravitating to the low end of the play surface. By means of the usual coin release slide 23 a shuffle board not shown, is moved to drop the balls from the pocket 22 to a point and means below the board from whence they may be raised, one at a time, in a manner common in the art, to the passageway 20, for projection onto the upper end of the play surface for gravitation theredown.

Positioned centrally on the play surface is a relatively large spinner disk 24 having a rubber or equivalent friction and yieldable bumper edge 25 carried on a vertical shaft 26 passed down through an opening 27 in the board 14 and conductor covering 16, to a point below the board. The lower end of the shaft 26 is turnable by an appropriate electric motor 28 carried in a hanger bracket 29 secured to the underside of the board 14. Below the motor, the shaft 26 carries and drives a fan 30 to ventilate the motor. When the motor 28 operates, the shaft 26 turns the fan 30 and spinner disk 24, the latter being at a level higher than the center of the ball 15, which is preferably of steel. Consequently the ball when it hits the spinner is propelled forcibly over the surface 16 but without lifting the ball off the surface 16 and damaging the glass cover 31 which encloses the top of the cabinet in the well known manner.

The motor 28 is in a circuit 32 with a source of electrical energy, such as the battery 33, the circuit including a switch 34 which may be closed in any desirable manner when releasing the game for play. Thus, when the game is released for play the motor operates to turn the spinner ball propeller 25.

When a ball is projected by the shooter 21 through passageway 20, the ball emerges therefrom past a one-way gate 35 and around the arch

18 to impinge and rebound from a cushion 36 as is common in pin ball types of games. The ball rebounding from the cushion 36 is now free to gravitate toward the lower end of the surface 16. A resilient coil spring 37 is disposed in the form of a V at the top end of the field 16 to deflect a ball to either side for emergence at the opposite ends of the spring 37 for further gravitation down the surface 16. This spring 37 is carried by conductor pins 38 above the field 16 at about the same level as the bumper edge 25 of the disk 24. The pins 38 pass downwardly through the wooden board 14 and spaced from the conductor 16 by a hole 39 therein, with the lower end of the pins 38 in circuit by a wire 40, with relay 41, and a battery 33. The conductor surface 16 is in circuit with the battery 33 by a wire 42, as shown. Thus, when the conductor ball 15 hits the spring 37 a circuit is established momentarily through the ball to energize the electromagnetic device 41, which in turn can be operatively associated with any standard form of "hit" register or analogous auxiliary means. A similar, resilient coil spring 43 is disposed along the one wall 13, and another along the extension 19, said springs following the marginal contour of the portion 17 but with their adjacent inner ends gapped apart to leave an entrance to the pocket 22. Both springs may be connected in the circuit 40 for the same purpose described in connection with the spring 37.

In playing the game the motor 28 starts when the switch 34 is closed, and spins the disk 24 continuously. A ball 15 now projected by the projector 21 rolls onto the board surface 16 and is deflected to one side or the other by the V-spring 37, which when contacted by the ball, records a "hit" through the conductor means and circuit described by energizing the device 41. Each engagement of the ball with the spring 37 will energize the device 41. Eventually the ball passes the ends of the spring 37 and emerges onto the field below the spring 37 whereupon the ball may impinge the spinner 25 and be forcibly repropelled in any direction to hit any of the rebound springs 37 or 43 and thereby cause additional energization of the device 41 in a manner readily understood.

In practice the spring 37 can be in an electrical circuit and the springs 43 along the side edges need not be, or vice versa.

From the description given it will be apparent that an improved game structure has been provided to achieve the objects of the invention.

It is the intention to cover herein all changes and modifications of the example of the invention shown and described which do not in material respects constitute departures from the spirit and scope of the invention.

What is claimed is:

1. In a ball rolling game having a board inclined slightly from the horizontal, said board being of non-conductor material, a sheet of conductor material substantially covering the board and providing a surface over which a ball of conductor material may be rolled, a conductor support pin disposed over and out of metallic connection with the sheet, a second conductor support pin carried by the table and out of metallic contact with the sheet, said two support pins being spaced apart a substantial distance, an elongated coil spring conductor element having its ends respectively metallically connected to said two conductor support pins, said spring element being disposed above and clear of the ball rolling surface in substantial parallelism thereto, and an electrical circuit including the sheet, support pins and spring element, which circuit is normally open but closable when the conductor ball on the sheet contacts the spring element.

2. In a ball rolling game having a board inclined slightly from the horizontal, said board being of non-conductor material, a sheet of conductor material substantially covering the board and providing a surface over which a ball of conductor material may be rolled, a pair of widely spaced conductor support pins disposed over and out of metallic connection with the sheet, an intermediate conductor support pin carried by the table between the aforesaid pins and out of metallic contact with the sheet, said support pins carrying elongated bumper spring elements in metallic connection and arranged in V formation, said elements being disposed above and clear of the ball rolling surface in substantial parallelism thereto, and an electrical circuit including the sheet, support pins and spring elements, which circuit is normally open but closable when the conductor ball on the sheet contacts one of the spring elements.

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