Oct. 29, 1935. E. C. FEY 2,019,126

AMUSEMENT APPARATUS

Filed July 10, 1934

Fig. 1.

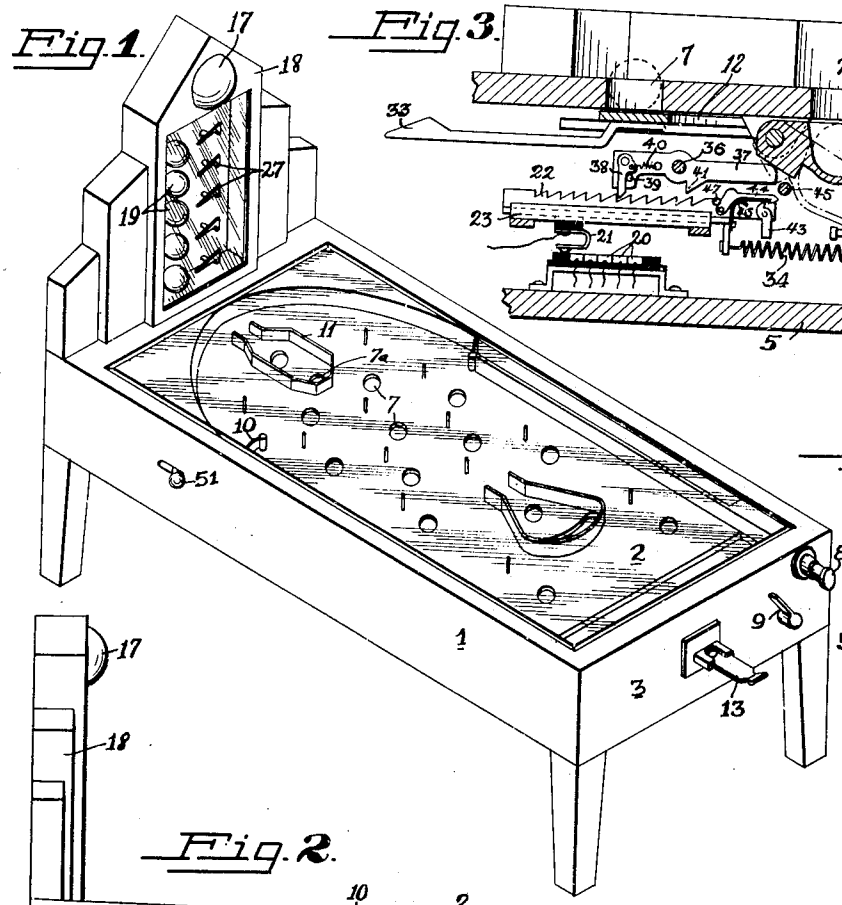


Fig. 3.

Fig. 5.

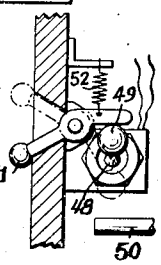


Fig. 2.

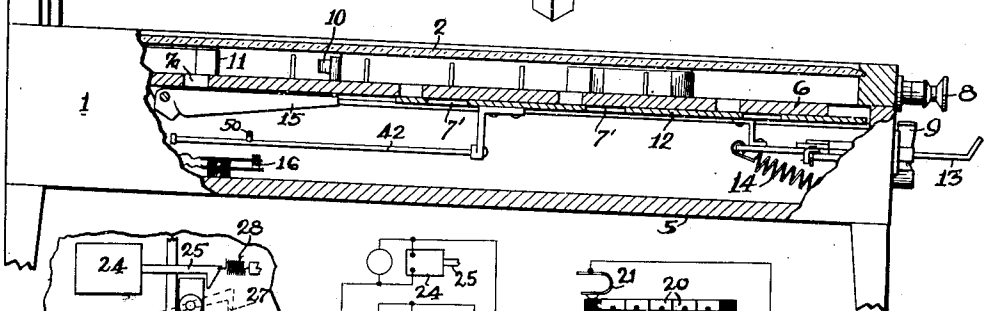


Fig. 4.

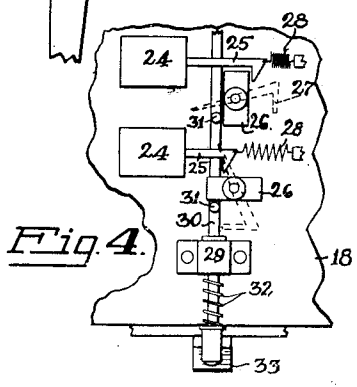
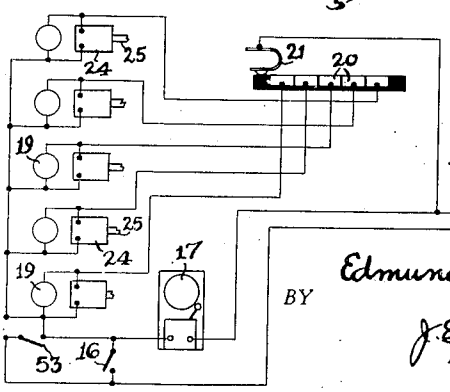


Fig. 6.



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AMUSEMENT APPARATUS

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6 Claims. (Cl. 273—121)

This invention relates to improvements in amusement apparatus.

An object of my invention is to provide an improved amusement device of the type employing a tilted game board with holes therein and a plurality of playing pieces which are capable of being directed in accordance with the skill of the operator into the holes.

Another object of my invention is to provide an improved amusement device of the type characterized having novel means for automatically signalling the successful movement of a playing piece into a certain goal in the playing board.

A further object of my invention is to provide an improved amusement device of the type characterized embodying novel signal and indicator means for automatically indicating the successful directing of one or more playing pieces into a certain goal in the playing board.

Other objects more or less apparent will present themselves or will be specifically pointed out in the description of my invention which is to follow.

In the accompanying drawing:

Fig. 1 is a perspective view of amusement apparatus embodying my invention;

Fig. 2 is a partly sectional elevation of the apparatus;

Fig. 3 is an enlarged longitudinal and vertical section, showing the indicator and signal control mechanism in elevation;

Fig. 4 is a rear view of a part of the indicator mechanism;

Fig. 5 is horizontal section taken through the side wall of the casing, showing in plan the master switch;

Fig. 6 is a wiring diagram forming a part of my invention.

Referring to the drawing the numerals 1—1 designate the sides of a suitably shaped casing having a transparent glass plate 2 enclosing the top thereof, a front panel 3 upon which the various operating members are mounted, a rear wall, and a bottom 5. Extending from the rear wall of the casing to a point near the front panel 3 is a forwardly sloping game board 6 which is provided with a plurality of prearranged holes or goals 7. Suitable mechanism within the casing for elevating the playing pieces to a point where they may be struck by a spring actuated plunger 8, is controlled by a handle 9. The elevating mechanism for raising the individual playing pieces and the spring actuated plunger 8 for striking the said playing pieces and thereby sending them around the side of the game board 6 to a spring buffer 10, is of the kind now commonly employed in games of this type. The spring buffer is ordinarily positioned to intercept the playing pieces after they have proceeded around the top edge of the game board 6, and to thereafter direct them rearwardly toward the open side of a barrier 11 which projects upwardly from the game board and surrounds one or more of the holes therein. Slidably supported at the sides 1—1 of the casing is a board 12 which underlies the game board 6 and normally supports the playing pieces entering the holes or goals 7. The board 12 is provided with corresponding holes 7' which are adapted to be brought into registry with the holes 7 when the said board 12 is actuated by a coin slide member 13 in a rearward direction. A spring 14 attached to the coin slide member and the front panel 3 or bottom 5 serves to normally maintain the said board 12 in a position wherein the holes 7' are not in registry with the holes 7 of the game board 6, thereby affording means for normally supporting the playing pieces falling into the holes 7. The coin slide member is so associated with the mechanism for elevating the playing pieces that a coin placed on the slide and moved inside the casing will permit the said mechanism to be operated by the handle 9 so as to successively elevate a certain number of playing pieces to a point where they may be struck by the plunger 8.

Located inside the barrier 11 in a position which is capable of being reached by a playing piece only when the player exercises the utmost skill in operating the plunger 8, is a hole or goal 7a. Underlying the goad 7a is a channel member 15 which is pivotally mounted at its rear end on a pin secured to lugs extending downwardly from the underneath side of the game board 6. A playing piece entering the goal 7a falls upon the channel member 15 and by reason of its added weight causes the said member to move downwardly about its pivot to a position (shown by the dotted lines of Fig. 3) whereby a normally open spring switch 16 is encountered and closed. The switch 16 is connected in an electrical circuit leading from a source of electric power to a bell or other signal giving device 17 which is preferably mounted on an upright support or panel 18 located above the rear wall of the casing. As soon as the weight of the playing piece has lowered the channel member 15 to a point whereby its front end is lower than its rear end, the said playing piece rolls off the said front end, thereby allowing the said channel member, by

reason of its proper balance or through suitable spring means associated therewith, to again move upwardly to resume its normal position underlying the goal 7a. As soon as the channel member 15 moves upwardly out of engagement with the switch 16, the latter automatically opens the circuit to the bell 17.

Mounted in vertical alignment on the upright support 18 are a number of electric globes or lamps 19 which are connected in the electric circuit leading to the source of power. Also connected in the circuit leading to the lamps 19 are a plurality of contact points 20 which are each connected individually to one of the lamps. A contact member 21, connected to that side of the circuit leading to the source of electrical energy and to the lamps, is carried by a ratchet bar 22 slidably mounted in guides 23 supported within the casing. The forward movement of the ratchet bar carries the contact member 21 into successive engagement with the contact points 20 thereby causing the circuits to the individual lamps to be successively closed. So as to cause the lamps 19 to become successively lighted commencing from the bottom and proceeding upwardly, the said lamps are connected with the contact points 20 in such a manner that the lower of the lamps is individually connected to the particular contact point located farthest to the rear, and the next higher lamp is individually connected to that contact point located just in front of the rear contact point, and so on. Also connected in series with the lamp are electro-magnets 24 which are energized successively along with the lamps as the contact member 21 moves forwardly over the contact points 20, as will be later described. The armature 25 of each of the electro-magnets is provided with a hooked end which is positioned to encounter in its initial movement a side edge of a block 26 which is pivotally mounted on the rear support 18. When the magnets are energized upon the circuits to the lamps being closed as previously described, their armatures are moved in a direction which causes the blocks 26 to become engaged and turned about their pivots. The magnets and blocks are preferably mounted on the rear side of the support 18, and the pivot of each block extends through the said support and is secured to an irregularly shaped indicator 27. Each associated pivot, block and indicator is rigid with one another, and they move in unison as their associated armature 25 turns the block about its pivot, thereby causing the said indicator to assume an upright position which is at right angles to its original and normal position. Thus when the circuit to each horizontal row or set of lamps and magnets is closed, the lamp in the closed circuit is lighted and the indicator alongside of the latter assumes a position different than it formerly had. The indicators 27 are shaped to simulate a part of a streak of lightning. When the circuits to all of the magnets 24 are closed and the indicators have been moved to positions in which their ends are contiguous, their appearance will simulate the common representation of a streak of lightning. Spiral springs 28 serve to return the armatures 25 to outwardly disposed positions, where their hooked ends are again capable of engaging with the blocks 26. Mounted in one or more suitable bearings 29 on the rear support 18, is an upright rod 30 having a number of outwardly disposed projections 31 thereon which are adapted to engage with the blocks 26 to bring them back to their normal positions, when the said rod is moved in an upward direction. A spiral spring 32, encircling the rod with one end engaging a flange on the said rod and its other end engaging a bearing 29, serves to actuate the rod in a downward direction after it has been raised upwardly. So as to raise the rod 30 and cause the indicators 27 to become positioned in their normal positions, I have secured a rearwardly projecting cam member 33 to the board 12. The cam member 33 is so positioned that when the coin slide member 13 and the board 12 are moved rearwardly, the rear end of the said cam member engages with the lower end of the upright rod 30 and causes the latter to be moved upwardly.

A distended spiral spring 34, connected at one end to a projection carried by the ratchet bar 22 and at its opposite end to a stationary rod 35 supported by the sides of the casing, tends to pull the said ratchet bar in a forward direction. Pivotally mounted near its mid-section on a pin 36, is a bar 37 having its forward end in engagement with the inclined lower side of the channel member 15. Each downward movement of the channel member will cause the forward end of the bar 37 to be depressed and its rear end elevated. Pivotally mounted on the rear end of the bar 37 is a pawl 38 which is normally held in a forwardly pulled vertical position against a projection 39 by a spring 40. The lower end of the pawl 38 engages with the teeth of the ratchet bar, thereby normally preventing the latter from being pulled in a forward direction by the spiral spring 34. Each time a playing piece drops through the goal 7a onto the channel member 15, the latter is moved downwardly about its pivot, thereby causing the bar 37 to be moved so the pawl 38 is freed from the particular tooth of the ratchet bar 22 with which it at that time engages. The spring 34 thereupon moves the ratchet bar forwardly until a downwardly disposed projection 41 on the bar 37 is carried into engagement with a tooth of the said ratchet bar to prevent its further forward movement. The purpose of the projection 41 on the bar 37 is to prevent the ratchet bar 22 from being moved any farther in a forward direction than is necessary to carry the contact member 21 from one contact point to another. Thus each time a playing piece enters the goal 7a, the channel member 15 is actuated so as to allow the contact member 21 to be moved from one contact point 20 onto another contact point located directly in front of the same. As each contact point is successively engaged by the contact member the circuits to the sets of magnets 24 and lamps 19 are successively closed. Every time the player succeeds in directing a playing piece into the goal 7a the bar 22 is allowed to be moved in a forward direction sufficiently to cause the contact member 21 to close the circuit to the next highest lamp and electromagnet.

So as to permit the movement of the ratchet bar 22 and the contact member 21 in a rearward direction after their extreme forward position has been reached, I have rigidly secured a rearwardly disposed rod 42 to the board 12. When the coin slide member 13 and the board 12 are moved rearwardly the said rod 42 is also carried with him in the same direction. The rearward movement of the rod 42 brings its ends into engagement with a pawl 43 pivoted to the forward end of the ratchet bar 22. Also pivoted to the ratchet bar is a hooked member 44 which is pressed downwardly by reason of its engagement

with a stationary rod 45 extending across the interior of the casing. The hooked member 44 engages with the rod 45 only when the ratchet bar 22 is in its extreme forward position, and it is at this particular time that the upper end of the pawl 43 is able to engage with the hooked end of the said member 44. At other positions the pawl 43 will merely rotate on its pivot when engaged by the rod 42, without its upper end engaging with the member 44. The hooked member 44 is pressed upwardly by a spring 46, and at times when the rod 45 does not engage therewith, the hooked end is held in a position free of the upper end of the pawl 43. A pin 47 prevents the spring 46 from moving the hooked member beyond a certain position. When the ratchet bar 22 is in its extreme forward position and the pawl 43 is engaged by the hooked end of the member 44, the end of the rod 42 moving rearwardly will cause the ratchet bar 22 and all the parts supported thereon to be carried in a rearward direction to again position the contact member 21 at a point behind the rear contact point 20.

Connected in the circuit leading to the source of electrical power and located at the side of the casing, is a master switch 48, the operating knob 49 of which is positioned in the path of a projecting member 50 carried by the rod 42. So as to permit the electrical current entering the casing from the source of electrical power to be discontinued at any desired time, a lever member 51 is pivoted to the side of the casing with one end projecting outwardly through a slot in the said side and its other end held in engagement with the operating knob 49 of the master switch by a spring 52. The pressing in a rearward direction of the outwardly projecting end of the lever member 51 causes the knob 49 to be moved so as to open the switch 48. The movement in the opposite direction of the lever member by the spring 52 does not turn the switch to an "on" position, but this result is accomplished by the projecting member 50 engaging with and actuating the knob 49 when the coin slide member 13 and the board 12 are moved in a rearward direction. So as to permit the circuits to the lamps and electro-magnets to be momentarily closed and opened with the closing and opening of the switch 16, I have provided a switch 53 in the line leading from the source of electric energy to the lamps and magnets. If the switch 53 is open (at the option of the operator) the particular lamp and magnet in the circuit which is closed by the engagement of the contact member 21 with its associated contact point, will only momentarily become energized along with the bell 17. If the switch 53 is closed, then the maintaining of any circuit in a closed position by the engagement of the contact member 21 with its associated contact point 20, will cause the consequent continued energizing of the electromagnet and lamp associated with that circuit. Ordinarily at the termination of the play one of the circuits to its associated lamp 19 and magnet 24 is closed, so in order to discontinue the flow of electricity through this or other of the circuits the master switch is manually turned to an off position.

It is understood that my invention is susceptible of numerous changes with respect to form, shape and minor details of construction. It is therefore to be understood that the appended claims shall determine the limits my invention may assume rather than the exact disclosures herein made.

Having described my invention what I claim is:

1. Amusement apparatus comprising a game board having a goal thereon, a plurality of electrically operated devices each having a separate circuit with a contact point in the circuit, a movable contact member adapted to engage successively with the contact points, whereby the circuits to the said devices may be successively closed, and means actuated by playing pieces entering the goal for causing the movable contact member to move from one contact point to another.

2. Amusement apparatus comprising a game board having a goal therein, a plurality of electrically operated devices each having a separate circuit with a contact point in the circuit, a movable contact member adapted to successively contact with the contact points, whereby the circuits to the said devices may be successively closed, and means positioned beneath the goal and adapted to receive a playing piece dropping from the goal and adapted to be actuated by the weight of the playing piece for causing the movable contact member to move from one contact to another.

3. In amusement apparatus, a game board having a goal therein, an electrically operated device connected in a circuit, a switch in the circuit, mechanism actuated by a playing piece entering the goal for closing the switch, a plurality of electrically operated indicators each connected in a separate circuit, a separate switch in each of the last named circuits, and switch closing means actuated by the said mechanism for successively closing the switches in the last named circuits.

4. In amusement apparatus, a game board having therein a goal through which a playing piece is adapted to pass, an electrically operated device connected in a circuit having a switch also connected therein, pivoted means adapted to be actuated by a playing piece passing through the goal for closing the switch, a plurality of individual electrically operated indicators each connected in a separate circuit having a contact point therein, a movable contact member adapted to successively engage with the contact points, whereby the circuits to the said indicators may be successively closed, spring actuated means for moving the contact member, and mechanism releasably holding the said spring actuated means against movement by its spring, the said mechanism being capable of being moved to a releasing position by the pivoted means, whereby the contact member may be moved from one contact point to another.

5. In amusement apparatus, a game board having a hole therein, a plurality of individual electrically operated devices each connected in a separate circuit having a contact point therein, a movable contact member adapted to successively engage with the contact points, whereby the circuits to the said devices may be successively closed, spring actuated means for moving the contact member, mechanism releasably holding the said spring actuated means against movement by its spring, and a pivoted member adapted to be moved by a playing piece passing through the hole in the game board and engaging with the pivoted member for releasing the said mechanism from the spring actuated means, whereby the contact member may be moved from one contact point to another.

6. In amusement apparatus, a game board having a goal associated therewith, a plurality of indicators adapted to indicate the successful directing of a playing device into the goal, an electro-magnet operating means for each indicator, each said electro-magnet being connected in a separate circuit having a contact point connected therein, a contact member adapted to be moved into successive engagement with the contact points, whereby the circuits to the electro-magnets may be successively closed, and mechanism actuated by playing pieces entering the goal for moving the contact member.

EDMUND C. FEY.