June 18, 1935. J. B. FIRESTONE 2,004,981

GAME APPARATUS

Filed Dec. 24, 1934

Fig. 1.

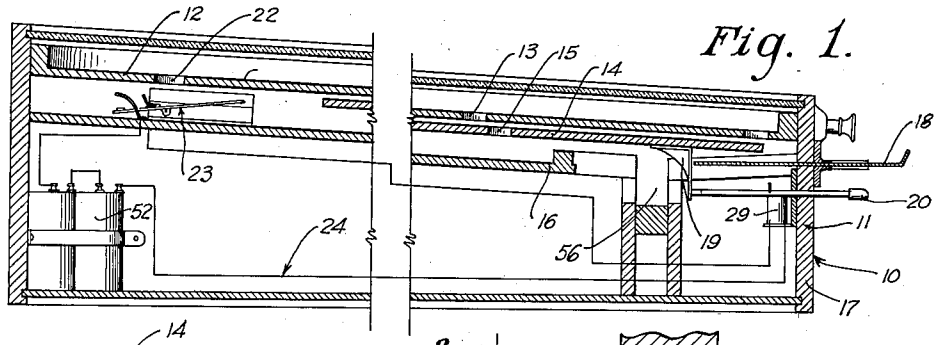


Fig. 2.

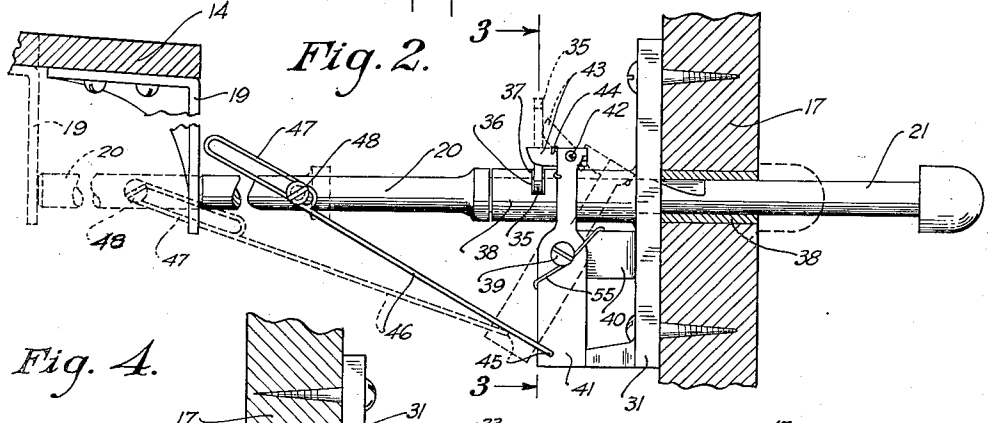


Fig. 4.

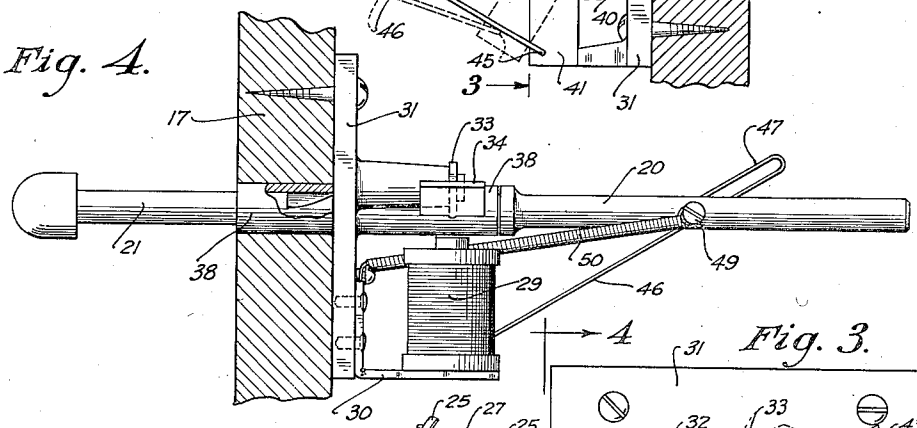


Fig. 3.

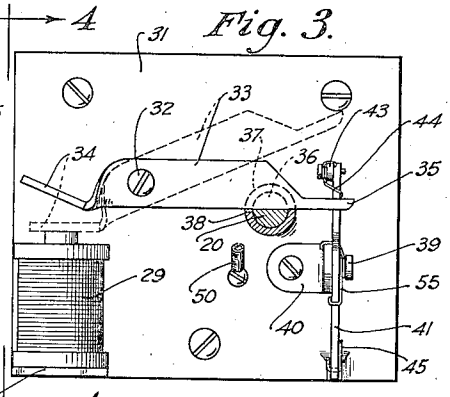
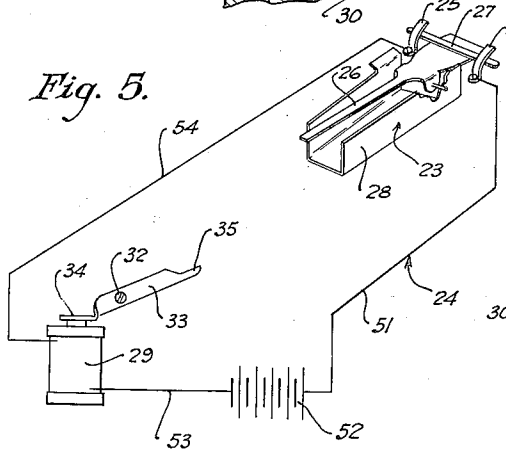


Fig. 5.



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GAME APPARATUS

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9 Claims. (Cl. 273—121)

This invention relates to a 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.

The present invention pertains particularly to that particular type of amusement game apparatus known as "pin" games or "pin and marble" games, and another object of the present invention is to provide in a game apparatus of the character hereinafter referred to, a novel so-called "free game" device for permitting operation of the ball-releasing member without requiring operation of the coin slide, in the event that the player succeeds in playing a ball into a preselected ball exit or scoring opening in the playing surface.

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 drawing, showing the preferred form of construction and in which:

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

Fig. 2 is an enlarged view, principally in side elevation but partly in section, showing a preferred form of the new so-called "free game" unit which forms the subject matter of the present invention;

Fig. 3 is a sectional view on line 3—3 in Fig. 2;

Fig. 4 is a side elevational view partly in section, on line 4—4 in Fig. 3; and

Fig. 5 is a perspective view showing, diagrammatically, an electromagnetic circuit embodied in the invention.

The present invention is principally designed for use in conjunction with game apparatus of the so-called "pin" game, or "pin and marble" game type, and such a game apparatus is shown in the drawing, is therein generally indicated at 10, and comprises a cabinet 11. After the usual manner of constructing a game apparatus of the character referred to, the same includes an inclined playing board 12 in which are formed ball exit or scoring openings 13 and slidably arranged in the cabinet 11, below the inclined playing board 12, is a ball-releasing member 14 which is provided with ball-releasing openings 15 and these openings 15 are adapted to be moved into registration with the exit openings 13 in the inclined playing board 12 by movement of the ball-releasing member 14, so as to discharge the spent balls onto an inclined runway 16 by means of which the spent balls are conducted to a transverse runway or magazine 56 by which in turn, the spent balls are conducted to a point adjacent the propelling means (not shown).

Mounted in the lower end wall 17 of the cabinet 11 is a coin chute which includes a coin controlled member or coin slide 18 and this coin slide 18 is engageable, at its inner end, with a bracket 19 which is carried by and depends from the ball-releasing member 14.

Also slidably mounted in the lower end wall 17 of the cabinet 11 is a member 20 which, like the coin slide 18, is engageable at its inner end with the bracket 19, this member 20 having a handle portion 21 which projects exteriorly of the cabinet 11. The slide 20—21 is slidably projected through a cylindrical guide 38 (Figs. 2 and 3) which is attached to the mounting 31.

Provided in the inclined playing board 14 is a "free game" ball exit opening 22 and arranged upon the inclined ball return runway 16 below the ball exit opening 22 is a circuit-closing device, generally indicated at 23 (Figs. 1 and 5). This circuit-closing device 23 is embodied in an electromagnetic circuit 24 (Fig. 5) and includes a pair of relatively stationary contact posts 25 and a relatively movable contact 26, the movable contact 26 including a transverse arm or bar 27 which is adapted to engage and close circuit between the stationary contacts 25.

The movable contact or circuit-closing element 26—27 is pivotally mounted, between its ends, upon a trough-shaped support 28 which in turn is mounted upon the runway 16 below the ball exit opening 22.

The electromagnetic circuit 24 includes an electromagnet 29. This electromagnet 29 is supported upon a bracket 30 which is attached to a mounting 31 and the latter is, in turn, attached to the lower end wall 17 of the cabinet 11.

Pivotally mounted between its ends, as at 32, upon the mounting 31 is a latch member 33. This latch member 33 has an end portion 34 which projects over, and is attractable by, the electromagnet 29 when the latter is energized, and the latch member 33 also has an unbalanced or counterweighted end portion 35 which is adapted to engage in a transverse slot 36 which is formed in the slidable member 20; this slot 36 being coincidental with a corresponding slot 37 which is formed in the housing or guide 38 for the slidable member 20, when the slide 21

is in its normal or initial position (as in full lines, Fig. 2).

Pivotally mounted between its ends, as at **39**, upon an arm **40** of the mounting **31** is a member **41** which is normally urged into an upright or vertical position (full line, Fig. 2) by means of a spring **55**. Pivotally mounted, as at **42**, upon the upper end portion of member **41**, is a latch keeper **43** which is normally urged, by a spring **44**, into full line or horizontal position (Fig. 2), in which position the latch keeper **43** projects over the latch **35** when the latter is disposed in the transverse slots **36—37**.

Pivotally attached at one end, as at **45**, to the member **41**, is a latch-releasing member in the form of a wire rod **46**; this rod **46** having its other end portion bent back upon itself to provide a loop **47**, and projecting into this loop **47** is a headed screw **48** which is carried by, and projects laterally from, the slidable member **20**.

Having one end attached to the slidable member **20**, as at **49**, and having its other end attached to the mounting **31**, is a resetting spring **50**.

One of the stationary contacts **25** is electrically connected, in the electromagnetic circuit **24**, by way of a conductor **51** (Fig. 5) to one side of a source of electric energy, in the form of a battery of dry cells **52** which are embodied in the circuit **24** and which are arranged in the cabinet **11**. The other side of the battery **52** is electrically connected, by way of a conductor **53** to one side of the electromagnet **29**, and the other side of the electromagnet **29** is in turn electrically connected, by way of a conductor **54** to the other one of the stationary contacts **25**.

Operation

Balls played into the exit or scoring openings **13** are retained therein by the slidable panel or ball-releasing member **14** and are ordinarily prevented thereby from returning into the magazine or transverse runway **56** until such time as a coin is inserted into the coin aperture of the coin slide **18** and the latter is pushed inwardly (right to left, Fig. 1), whereupon the inner end of the coin slide **18** engages the depending arm **19** of the slidable ball-releasing member **14**, thereby shifting the latter (right to left, Fig. 1) and thus moving the openings **15** in the ball-releasing member **14** into registration with the ball exit or scoring openings **13** in the inclined playing board **12**, whereupon the spent balls fall from the exit or scoring openings **13** onto the inclined runway **16** to be returned by the latter into the transverse runway or magazine **56**.

The transverse slot **36** in the slidable member **20—21** is normally disposed in registration with the slot **37** in the housing or guide **38** and the unbalanced or counterweighted end portion **35** of the latch member **33** is normally urged by gravity into the slot **36** in the slidable member **20—21**, thus normally preventing operation of the slidable member **20—21** and the ball-releasing member **14**.

However, if and when the player succeeds in playing a ball into the "free game" ball exit opening **22** in the inclined playing board **12**, the ball thus played falls through the opening **22** onto the movable contact or circuit-closing member **26** and in so doing engages the transverse bar **27** carried thereby with the stationary contacts **25**, thus closing the electromagnetic circuit **24**. This closing of the electromagnetic circuit **24** energizes the electromagnet **29** which then attracts to itself the end portion **34** of the latch member **33**, thereby pivoting the latch member **33** (counterclockwise, from full to dotted line position, Fig. 3), thus raising the unbalanced or counterweighted latching end portion **35** of the latch member **33** up into engagement with the pivoted latch keeper element **43**, thereby pivoting the latter (clockwise, from full to dotted line position, Fig. 2), against the action of its resetting spring **44**. In this manner, the latching end portion **35** of the latch member **33** is raised up out of the transverse slots **36—37** and is thereby moved out of latching engagement with the slide rod **20—21**, whereupon the said latching end portion **35** of the latch member **33** falls by gravity onto the upper edge of the latch keeper **43**. This frees the slide rod **20—21** for operation, whereupon the player may, by moving the slide rod **20—21** (from right to left, Figs. 1 and 2), engage the inner end of the same with the depending arm **19** of the ball-releasing member **14**, whereupon the latter is shifted (right to left, Figs. 1 and 2). This movement of the ball-releasing member **14** registers the openings **15** formed therein with the ball exit openings **13** in the inclined playing board **12** whereupon the spent balls fall upon ball exit openings **13**, through the openings **15** in the ball-releasing member **14**, onto the inclined runway **16** and are returned by the latter to a point adjacent the propelling device (not shown) for replay. In this manner, the player is permitted to play a "free" game, without inserting a coin into the coin aperture of the coin slide **18**, and without operating the coin slide **18**, every time he succeeds in playing a ball into the "free" game openings **22** in the inclined playing board **12**.

As the slide rod **20—21** is moved inwardly (right to left, Figs. 1 and 2) the projecting element **48** moves to the left hand end of the loop **47** (as seen in Fig. 2) and in so doing pivots the rod **46** from full to dotted line position (Fig. 2), and this movement of the member **46** in turn pivots the latch member **41** (clockwise from full to dotted line position, Fig. 2) against the action of its resetting spring **55**. During this movement of the member **41** and its latch keeper element **43** the latching end portion **35** of the latch member **33** rides up off the latch keeper element **43**, whereupon the unbalanced or counterweighted latching end portion **35** of the latch member **33** pivots or drops by gravity (clockwise, from dotted to full line position, Fig. 3) into the transverse slot **37** which is formed in the guide **38** and the latching end portion **35** of the latch member **33** remains in the slot **37** and rides upon the peripheral surface of the slide **20—21** until, upon the return stroke of the slide **20—21**, the slot **36** in the slide **20—21** is brought into coincidental relationship or registration with the slot **37** in the guide **38** by the return movement of the slide rod **20—21** which is effected by the resetting spring **50**, whereupon the latching end portion **35** of the latch **33** drops into the slot **36**, in the slide **20**, thus preventing further operation of the slide rod **20** and the ball-releasing member **14** until another ball is played into the "free game" opening **22** and the foregoing cycle of operations is repeated. During the return stroke of the slide **20—21**, which is effected by the resetting spring **50**, the resetting spring **55** returns the member **41** and the latch keeper **43** carried thereby, into upright or effective position, (full line position, Fig. 2).

It will be noted that the circuit **24** remains closed, by the action of a ball falling through the "free game" opening **22** onto the circuit-closing member **26—27**, only momentarily, and as soon as the ball runs off the circuit-closing member **26**, the counterbalanced latching end portion **35** of the latch member **33** tends to drop back into the slots **36—37** but is prevented from so doing by the keeper **43** which retains the latching end portion **35** of the latch member **33** out of engagement with the slots **36—37** until the player has completed a full operative stroke of the slide **20—21**.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification, 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. In a game apparatus, the combination of: a cabinet including an inclined playing board having ball exit openings formed therein; means for propelling balls one at a time onto the upper portion of said inclined playing board so that they may gravitate thereover and enter into the said ball exit openings; an inclined runway arranged below said inclined playing board and in communication with said exit openings for conducting spent balls from said exit openings to a point adjacent to but below said propelling means; a member slidably mounted in said cabinet between the said inclined playing board and the said runway for temporarily retaining therein balls which enter into certain of said exit openings; a handle member slidably mounted in a wall of said cabinet for moving said first named member into ball-releasing position; means normally latching said handle member against operation; and means including a device actuated by a ball passing through a preselected one of said exit openings for moving said latching means out of latching engagement with said handle member so as to permit operation of the latter.

2. In a game apparatus, the combination of: a cabinet including an inclined playing board having ball exit openings formed therein; means for propelling balls one at a time onto the upper portion of said inclined playing board so that they may gravitate thereover and enter into the said ball exit openings; an inclined runway arranged below said inclined playing board and in communication with said exit openings for conducting spent balls from said exit openings to a point adjacent to but below said propelling means; a member slidably mounted in said cabinet between said inclined playing board and said runway for temporarily retaining therein balls which enter into certain of said exit openings; a handle member slidably mounted in a wall of said cabinet for moving said first named member into ball-releasing position; means normally latching said handle member against operation; and means including an electromagnetic device actuated by a ball passing through a preselected one of said exit openings for moving said latching means out of latching engagement with said handle member so as to permit operation of the latter.

3. In a game apparatus, the combination of: a cabinet including an inclined playing board having ball exit or scoring openings formed therein; means for propelling balls one at a time onto the upper portion of said inclined playing board so that they may gravitate thereover and enter into the said ball exit openings; an inclined runway arranged below said inclined playing board and in communication with said exit openings for conducting spent balls from said exit openings to a point adjacent to but below said propelling means; a member slidably mounted in said cabinet between said inclined playing board and said runway for temporarily retaining therein balls which enter into certain of said exit openings; a handle member slidably mounted in a wall of said cabinet for moving said first named member into ball-releasing position; means normally latching said handle member against operation; means including a device actuated by a ball passing through a preselected one of said exit openings for moving said latching means out of latching engagement with said second-named slidable member so as to permit operation of the latter; means for retaining said latching means out of latching engagement with said handle member during a full stroke of the same or movement thereof from its initial position into effective or ball-releasing position and back into its initial position; and means for releasing said latching means from said retaining means for movement into latching engagement with said handle member upon return of the latter from its effective or ball-releasing position into its initial position.

4. In a game apparatus, the combination of: a cabinet including an inclined playing board having ball exit openings formed therein; means for propelling balls one at a time onto the upper portion of said inclined playing board so that they may gravitate thereover and enter into the said ball exit openings; an inclined runway arranged below said inclined playing board and in communication with said exit openings for conducting spent balls from said exit openings to a point adjacent to but below said propelling means; a member slidably mounted in said cabinet between said inclined playing board and said runway for temporarily retaining therein balls which enter into certain of said exit openings; a handle member slidably mounted in a wall of said cabinet for moving said first named member into ball-releasing position; means normally latching said handle member against operation; means including an electromagnetic device actuated by a ball passing through a preselected one of said exit openings for moving said latching means out of latching engagement with said handle member so as to permit operation of the latter; means for retaining said latching means out of latching engagement with said handle member during a full stroke of the same or movement thereof from its initial position into ball-releasing or effective position and back to its initial position; and means for releasing said latching means from latching engagement with said retaining means so that said latching means may return into its initial position.

5. In a game apparatus, the combination of: a cabinet including a member providing a playing surface having ball exit openings therein; means for propelling balls one at a time over said playing surface so that they enter into said exit

openings; a runway for conducting spent balls from said exit openings to a point adjacent to but below said propelling means; means in said cabinet below said playing surface for temporarily stopping spent balls at a point between said exit openings and a point adjacent to but below said propelling means; means for moving said second-named or ball-stopping means into position to release balls stopped thereby for return to a point adjacent to but below said propelling means; means normally latching said third-named or moving means against operation; and means actuated by a spent ball for moving said latching means out of latching engagement with said third-named or moving means so as to permit operation of the latter.

6. In a game apparatus, the combination of: a cabinet including a member providing a playing surface having ball exit openings therein; means for propelling balls one at a time over said playing surface so that they enter into said exit openings; a runway for conducting spent balls from said exit openings to a point adjacent to but below said propelling means; means in said cabinet below said playing surface for temporarily stopping spent balls at a point adjacent to but below said propelling means; means for moving said second-named or ball-stopping means into position to release balls stopped thereby for return to a point adjacent to but below said propelling means; means normally latching said third-named or moving means against operation; and means including an electromagnetic device actuated by a spent ball for moving said latching means out of latching engagement with said third-named or moving means so as to permit operation of the latter.

7. In a game apparatus, the combination of: a cabinet including a member providing a ball playing surface having a ball receiving pocket; a member movably mounted in said cabinet below said playing surface for temporarily retaining therein balls which enter into said pocket; a main operating member movably mounted in a wall of said cabinet for moving said ball-retaining member into ball-releasing position; an auxiliary operating member movably mounted in a wall of said cabinet for moving said ball-retaining member into ball-releasing position independently of said main operating member; means normally latching said auxiliary operating member against operation; and means operatively associated with said ball receiving pocket for releasing said latching means from latching engagement with said auxiliary operating member so as to permit operation of the latter independently of said main operating member.

8. In a game apparatus, the combination of: a cabinet including a member providing a ball playing surface having a ball exit opening or pocket provided therein and having another ball exit opening therein, independent of the said first-named ball exit opening or pocket; a member movably mounted in said cabinet below said playing surface for temporarily retaining therein balls which enter into said second-named exit opening; a main operating member movably mounted in a wall of said cabinet for moving said ball-retaining member into ball-releasing position; an auxiliary operating member movably mounted in a wall of said cabinet for moving said ball-retaining member into ball-releasing position independently of said main operating member; means normally latching said auxiliary operating member against operation; and means including a device actuated by a ball entering said first-named exit opening or pocket for releasing said latching means from latching engagement with said auxiliary operating member so as to permit operation of the latter and of said ball-retaining member independently of said main operating member.

9. In a game apparatus, the combination of: a cabinet including a member providing a ball playing surface having a ball exit opening or pocket provided therein and having another ball exit opening therein independent of the said first-named ball exit opening; a member movably mounted in said cabinet below said playing surface for temporarily retaining therein balls which enter into said second-named exit opening; a main operating member movably mounted in a wall of said cabinet for moving said ball-retaining member into ball-releasing position; an auxiliary operating member movably mounted in a wall of said cabinet for moving said ball-retaining member into ball-releasing position independently of said main operating member; means normally latching said auxiliary operating member against operation; and means including an electromagnetic device actuated by a ball entering said first-named ball exit opening or pocket for releasing said latching means from latching engagement with said auxiliary operating member so as to permit operation of the latter and of said ball-retaining member independently of said main operating member.

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