

Feb. 22, 1938.

H. G. BREITENSTEIN

2,109,410

GAME

Original Filed Sept. 27, 1934 2 Sheets-Sheet 1

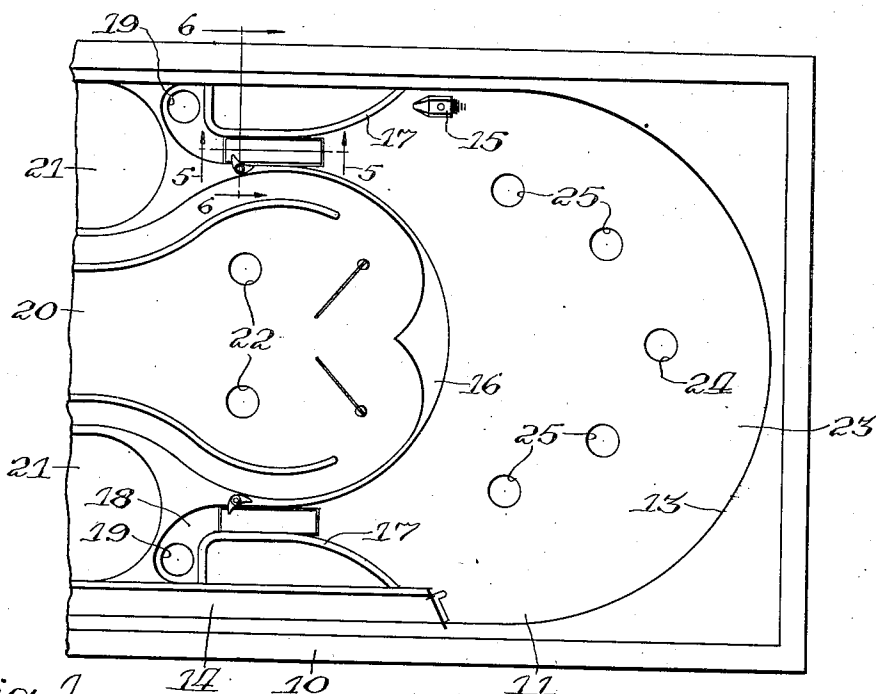


Fig. 1.

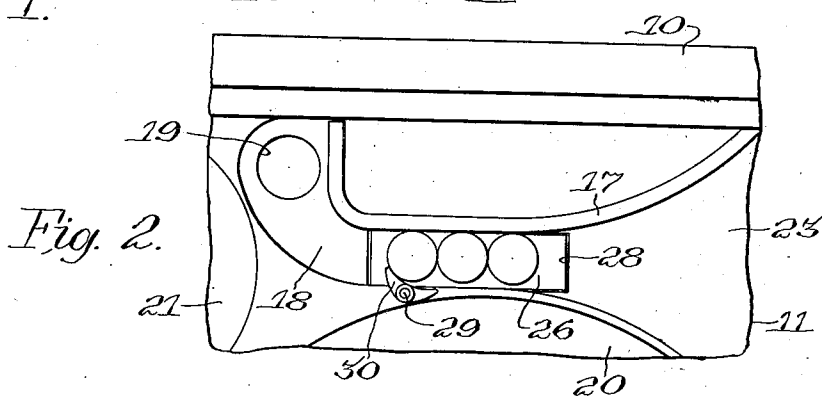


Fig. 2.

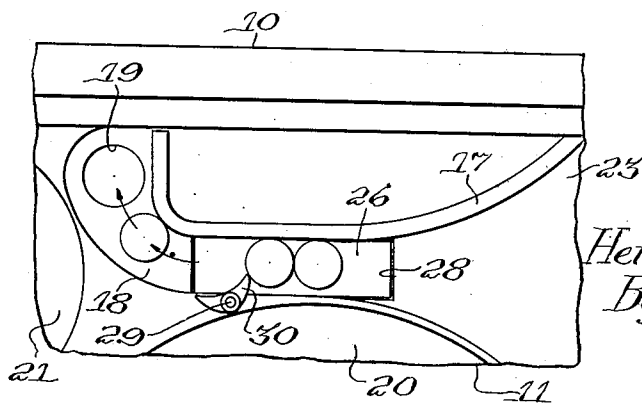


Fig. 3.

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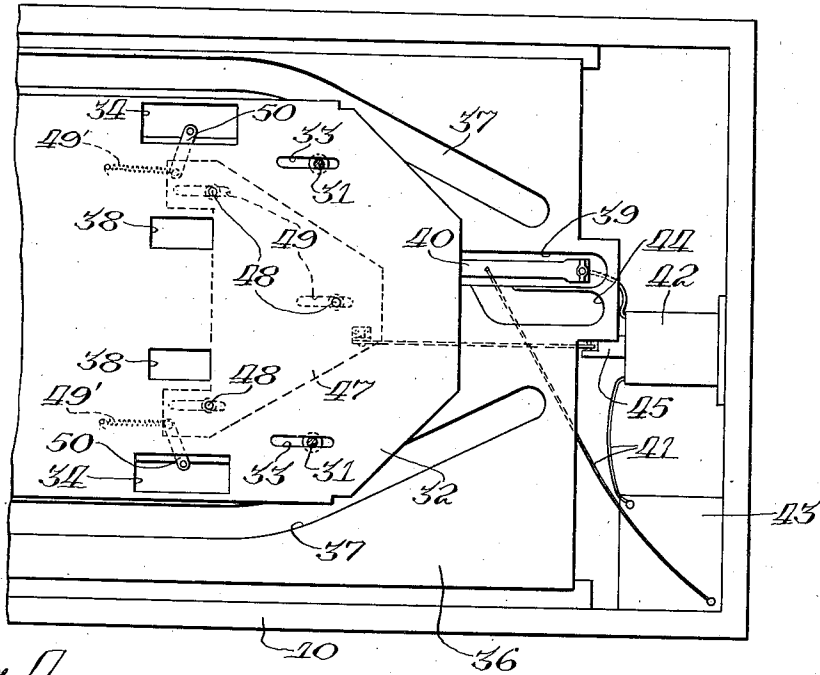


Fig. 4.

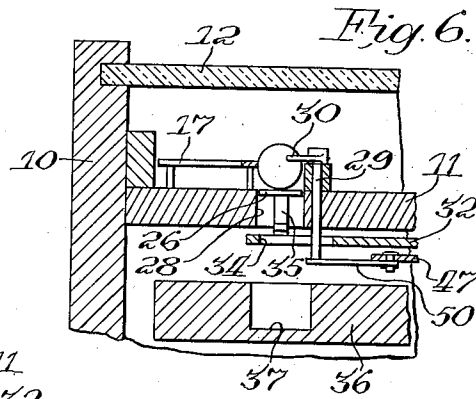
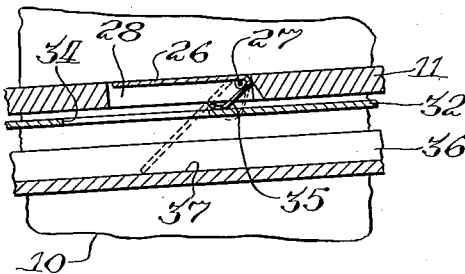


Fig. 6.

Fig. 5.



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UNITED STATES PATENT OFFICE

2,109,410

GAME

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Original application September 27, 1934, Serial
No. 745,745, now Patent No. 2,088,258, dated
July 27, 1937. Divided and this application
March 24, 1937, Serial No. 132,790

10 Claims. (Cl. 273—121)

The invention relates to improvements in a game of the ball rolling and trapping type, and the present application is a divisional application of my copending application, Serial No. 745,745, filed September 27, 1934, for a Game, patented July 27, 1937, Number 2,088,258.

Such games comprise a board inclined from the horizontal and having ball receiving holes therein for game scoring purposes. A number of balls are projected one at a time by a manually operable projector from the lower to the upper end of the game board. When the force imparted to each ball in so projecting it has been spent, the balls move by gravity down the board, and if skillfully projected become trapped by holes or pockets of various kinds having numbered score values.

The main object of the present invention is to provide improvements in such games which will create unusual ball routing and trapping action to enhance player interest and enthusiasm, thus affording the maximum player amusement.

It is also an object to provide a ball passage on the board closed by a switch device to prevent movement of a ball through the passage, said switch being controlled by a subsequently played ball to permit movement of the first ball through the passage.

Another important object is to provide a trap door in said passage to support balls thereon held back by the switch or gate device, said door being releasable to cause the retained balls to be dropped through the board by gravity to clear the trap door when desired.

Still another object of the invention is to provide a ball actuated means for operating the gate or switch device to cause another ball to move through the passage.

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

These objects are attainable in a pin ball type of ball rolling game having a board inclined slightly from the horizontal and formed at its upper or high end with a zone to which balls are projected by means of the usual ball projector. A ball entering this upper zone gravitates down the board into holes formed in said zone, or into a narrow passageway. There may be two such passageways, one at each side of the board and each includes a normally closed trap door on which balls entering the passageway may lodge and be held back thereon by a normally closed, or passage obstructing switch or gate. Thus balls in the passage cannot roll there-

through until the gate is moved to permit such passage of the balls. Preferably the gate is so constructed that the balls can escape from the passage only one at a time. When a ball passes the gate it may drop through a hole for scoring purposes or for movement to some other scoring area provided lower down on the board. The switch or gate means is operable by means controlled by the dropping of a ball through a suitable control hole, said means preferably being electromagnetically operable. Means is provided in the form of a shiftably mounted shuffleboard below the game board to open the trap doors in the passageways, when desired to clear balls therefrom.

This improved structure is shown in the accompanying sheets of drawings, wherein:

Figure 1 is a general plan view of the upper end only of a pin ball type of game illustrating the improved gate controlled ball passage structure;

Figure 2 is an enlarged, detail plan view, illustrating this passageway with the gate and trap door means therein;

Figure 3 is a view similar to Figure 3 but showing the gate in a different position;

Figure 4 is a view similar to Figure 1 but showing the game with the top board removed to illustrate the under structure;

Figure 5 is a longitudinal sectional, enlarged view through the ball passage trap door, taken along the line 5—5 of Figure 1, looking in the direction of the arrows; and,

Figure 6 is a transverse, detail, enlarged sectional view through the gate structure taken along the line 6—6 of Figure 1, looking in the direction of the arrows.

The game comprises the usual cabinet, only the rear or upper end of which is shown, said cabinet in the usual way carrying a ball rolling board 11, covered by a glass panel 12, said board having a rounded upper curved ball track 13, so that balls projected through the ball passage 14 will follow the track 13 to a bumper 15 and rebound therefrom, spending their force, and then gravitating down the board 11 in a manner well understood in this art.

A rounded wall 16 is formed on the board 11, as shown and at the sides are curved rail portions 17, thus providing at each side, a ball passageway 18, each said passage at its lower end leading to a hole 19 formed through the board. The wall structure 16 serves to provide separate ball rolling, or scoring areas, such as 20 and 21. The zone 20 may have scoring holes 22 formed

therein through the board 11, in accordance with the disclosure of the copending application previously identified. Further, the upper scoring zone, which may be numbered 23 is formed with an upper hole 24 and oppositely disposed pairs of auxiliary holes 25.

The passages 18 lead from the zone 23 to the holes 19, respectively, each said passageway including an elongated, longitudinally disposed, trap door 26, pivoted at 27 and arranged normally, respectively, to close off a hole 28 in the board, and when in hole closing position to support a number of balls entering the passageways 18.

At the inner edge of each passage 18, is journaled a vertical rock shaft 29, which is projected downwardly through the board 11, and each shaft carrying at its upper end a bell crank shaped switch, or gate member 30, normally disposed in the position shown in Figure 2 to prevent balls in the passageways 18 from rolling therethrough to the holes 19 at the lower, terminal ends thereof.

The underside of the board 11 carries a number of vertical pins 31, which as shown serve to support a sheet metal plate 32 provided with elongated slots 33 to enable the said plate 32, which is supported by heads at the lower ends of the pins 31, to be longitudinally shiftable with respect to the stationary board 11. This plate 32 is adapted to be moved by the usual coin release slide provided at the front end of the game, not herein shown, since it is well known in the art.

Under each trap door 26, the plate 32 has formed therein a slot 34, as shown in Figure 6, the rock shafts 29 passing downwardly through the slots respectively. Each trap door adjacent its hinge 27 includes a tail portion 35 normally resting on the adjacent edge of the slot 34 to hold the trap door in closing position with respect to its hole 28.

Below the panel 32 the side walls of the cabinet carry a forwardly inclined ball routing board 36 formed with the desired number of ball routing alleys 37, only two of which are herein shown. Balls dropping through the holes 25 enter said alleys for delivery to the forward end of the game at a point below the board 11, while balls dropping through the holes 22 will fall through cut out openings 38 in the panel 32 for entry into other alleys, not shown, in a similar manner and for the same purpose, as in my identified copending application.

Another alley 39 is formed in the routing panel 36 which at its upper end carries a normally open spring bar contact switch 40 wired in a circuit 41 with an electromagnetic device, such as a solenoid 42 and with a battery 43, or other suitable source of energy. The balls entering the upper hole 24 drop through the board 11 into a branch alley 44 leading into the side of the switch 40 to close same by the weight of the ball.

The solenoid has a core 45 connected to pull a link 46 and an auxiliary, triangularly shaped plate 47 is carried shiftable from the underside of the plate 32 by hanger pins 48, the plate 47 being slotted as at 49 to pass the pins 48 when the plate 47 is shifted relative to the plate 32. The plate 47 is urged normally in a forward direction by pull springs 49'. Opposite forward side portions of the plate 47 pivotally carry laterally extending cranks 50 connected in turn respectively, rigidly to the lower ends of the vertical turn shafts 29. Obviously, when the plate 47 is pulled to the right as seen in Figure 4, the

cranks 50 will turn the shafts 29 and gate members 30 in a manner to permit one ball in each passageway 18 to roll forwardly to and into the hole 19. The use and operation of the mechanism will now be described.

The normal, game starting position of the various parts, is shown in Figures 1, 2 and 4. In the usual way the balls are projected, one at a time preferably, through the passage 14 and onto the upper end of the board to gravitate down the area 23. Balls entering the holes 25 are taken out of play by passing into the alleys 37 in the ball routing panel 36, in the manner described. Balls missing these holes 25 may enter either side passageway 18 by virtue of the deflecting action of the curved partition 16.

Balls entering the passages 18 lodge on the trap doors 26 as shown in Figure 2 and are held back from rolling to the holes 19 by the gates 30 held in passage closing off positions by the spring 20 pulled under plate 47.

Thereafter, when a ball enters the hole 24 it drops into passage 44 to roll onto and close momentarily the spring switch 40 in the alley 39, thus energizing the solenoid 42, so that the core 45 pulls the link 46 and plate 47 toward the right as viewed in Figure 4. Thus, the cranks 50 serve to rock the shafts 29 to move the gates 30 in such a manner that one ball can pass the gates and gravitate to and into the holes 19 as shown in Figure 3. Balls dropping through the holes 19 fall into the under alleys 37 for any desired purpose. In this manner, the balls trapped in the passages 18 may be released one at a time. With but momentary energization of the solenoid 42, the springs 49' are instantly operative to return the plate 47 and gates 30 to their normal positions. At the termination of game play, if any balls remain in the passages 18, they can be released by shifting the panel 32 to remove support for the tails 35 of the doors 26 to cause the said doors to drop as shown in dotted lines in Figure 5 whereby the balls will fall through the trap door openings 28, holes 34 and into the under alleys 37.

It is plain now, that structure has been provided which achieves the desirable objects of the invention as heretofore recited.

It is the intention to cover all changes and modifications of the example disclosed which do not depart from the spirit and scope of the invention as indicated by the following claims.

What is claimed is:

1. A game comprising a board inclined from the horizontal and having an inclined passage formed thereon, means for projecting a ball over the board to roll into said passage, a target formed in said passage at the low end thereof, a gate positioned adjacent said passage and located at a level above the board to engage and prevent a ball in the passage from gravitating to said target, and electrical means controlled by a subsequently projected ball to move the gate substantially parallel with the board to free the ball in said passage for rolling movement over the board to said target.

2. A game comprising a board inclined from the horizontal and having an inclined passage formed thereon, means for projecting a ball over the board to roll into said passage, a target formed in said passage at the low end thereof, a gate operatively associated with said passage and located in a horizontal plane above the board to prevent a ball in the passage from gravitating to said target, an electrical device positioned below the board and operated by a subsequently pro-

jected ball, and means below the board connecting said device to move the gate to allow a ball in the passage to roll therethrough over said board to said target.

5 3. A game comprising a board inclined from the horizontal and having an inclined passage formed thereon, means for projecting balls over the board, said balls adapted to enter the passage, a gate positioned for movement in a horizontal
10 plane above and adjacent the passage to hold back the balls from passing therethrough, said board having a hole therethrough, and means controlled automatically by another ball projected onto the board and entering said hole for
15 moving the gate and allowing one of the balls held by the gate to move over the board through the passage.

4. A game comprising a board inclined from the horizontal and having an inclined passage
20 formed thereon, means for projecting balls over the board, said balls adapted to enter the passage, a bell crank switch mounted for horizontal turning movement above the board and adjacent the passage to hold back the balls from passing there-
25 through, said board having a hole therethrough adapted to permit a subsequently projected ball to fall therethrough, and a device under the board actuated by the ball dropping through said hole, said device having connections for moving the
30 switch to allow a ball to pass the switch to roll through the passage.

5. A game comprising a board inclined from the horizontal and having an inclined passage formed thereon, means for projecting balls over
35 the board, said balls adapted to enter the passage, a movably mounted bell crank switch operatively associated with the passage to hold back the balls from passing therethrough, said board having a hole therethrough adapted to permit a subse-
40 quently projected ball to fall therethrough, a plate shiftably carried below the board, means operated by a ball dropping through said hole to shift the plate, and means connecting the switch with the plate to move the switch when the plate
45 shifts to allow a ball to pass through said passage.

6. A game comprising a board inclined from the horizontal and having an inclined passage formed thereon, means for projecting balls over
50 the board, said balls adapted to enter the passage, a movably mounted bell crank switch operatively associated with the passage to hold back the balls from passing therethrough, said board having a hole therethrough adapted to permit a subsequently projected ball to fall
55 therethrough, a member shiftably carried below the board, electrical means operated by a ball dropping through said hole to shift the member, and means connecting the switch with the member to move the switch when the member
60 shifts to permit a ball to pass through said passage.

7. A game comprising a board inclined from the horizontal and having an inclined passage formed thereon between two ball rolling areas formed on the board, a trap door in said passage to support balls entering the same from one area,
5 a turnably mounted gate carried on a vertical shaft journaled in the board, said gate serving to prevent balls in the passage and on the door from rolling to the other area, a ball actuated means for turning the gate and shaft to allow a ball
10 to be freed for rolling into the last mentioned area, and means for releasing the trap door to permit balls thereon to drop through the board.

8. A game comprising a board inclined from the horizontal and having an inclined passage formed thereon between two ball rolling areas formed on the board, a trap door in said passage to support balls entering the same from one area, a turnably mounted angularly shaped gate carried for movement horizontally over the pas-
20 sage on a vertical axis, said gate serving to prevent balls in the passage from rolling to the other area, ball actuated means for turning the gate to allow the balls to be freed for rolling into the last mentioned area, and means for releasing the
25 trap door to permit balls thereon to drop through the board.

9. A game comprising a board inclined from the horizontal and having an inclined passage formed thereon between two ball rolling areas
30 formed on the board, a swingable trap door located in said passage and covering an opening in the board to support balls entering the passage from one area, a turnably mounted gate normally held in position to obstruct the pas-
35 sage, the gate serving to prevent balls from rolling into the other area through said passage, ball actuated means located beneath the board for releasing the gate to permit a ball on the trap door to roll through the passage into the
40 last mentioned area, and means whereby the trap door may swing downwardly to release any balls thereon for gravitation through the opening in said board.

10. In combination, a ball rolling game com-
45 prising a board or the like inclined slightly from the horizontal and providing a surface over which a ball may roll, means on said board, providing a passage lying in the plane of said surface and adapted to receive a ball to roll there-
50 through, a turnably mounted shaft positioned adjacent said passage, a gate positioned at a level above the passage and board and operable by the shaft, said gate being normally positioned to en-
55 gage a ball in the passage at a point above the board to restrain the ball from rolling through the passage, and means controlled by another ball in play on the board to cause operation of the shaft and move the gate to permit the ball
60 to roll through said passage.

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