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MARBLE GAME APPARATUS

Filed Oct. 12, 1935

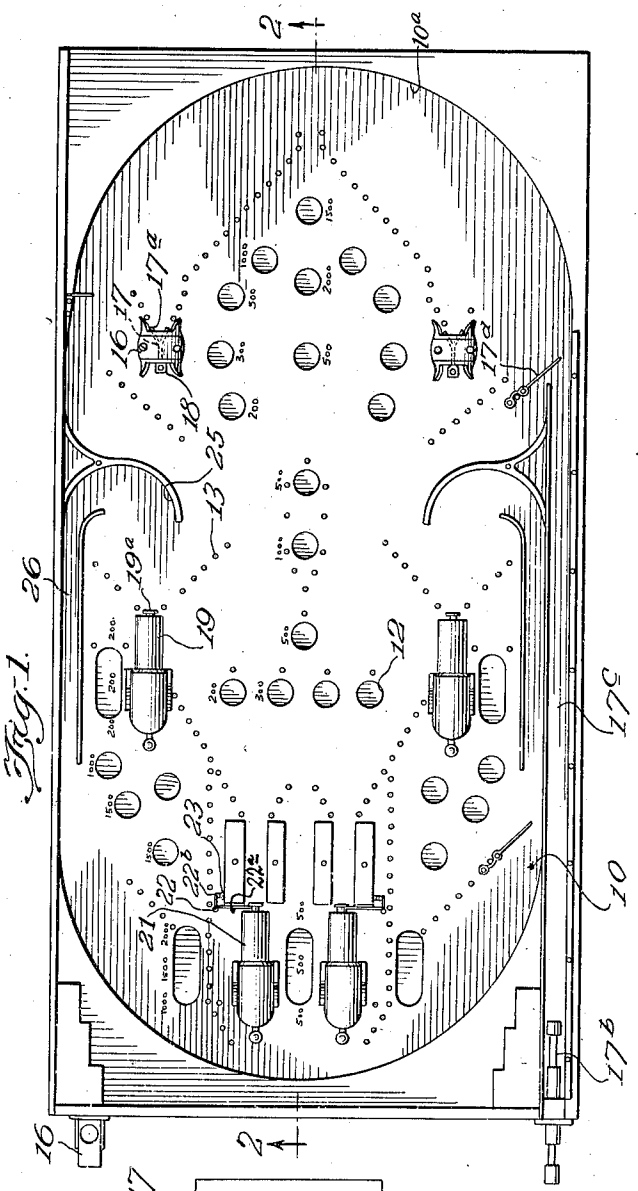


Fig. 1.

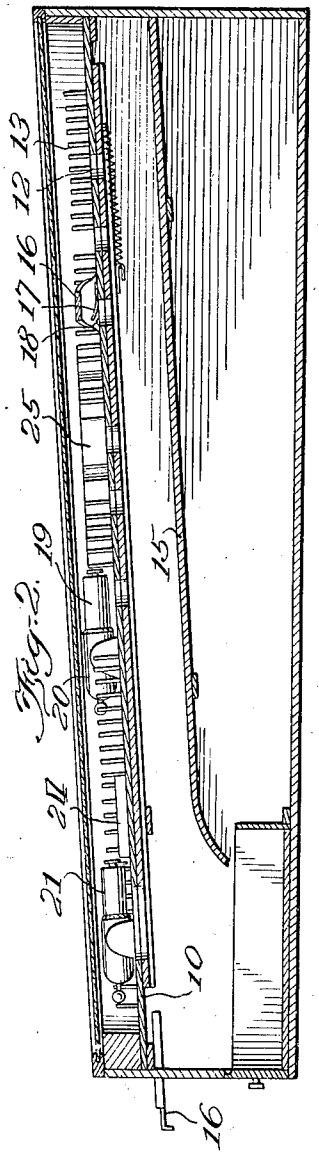


Fig. 2.

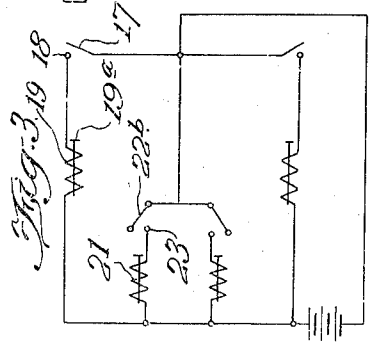


Fig. 3.

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MARBLE GAME APPARATUS

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3 Claims. (Cl. 273—122)

The invention relates to a game apparatus, and more particularly to that classed as pin and marble game boards, and it has for its main object the provision of an apparatus of this kind which introduces a fascinating development in the projection of the marbles.

Another object of the invention is to materialize the special development in the form of cannon-like units which will be adapted for reprojecting such of the marbles as become located in front of the units, this action being without the aid of the player, but by means of an electrical control actuated by the marbles.

A further object of the invention is to provide in a device of the character described reprojecting means for the propulsion of such marbles as have been projected onto the game board by the player, whereby to create more or less hazardous scoring possibilities for the marbles.

A still further object of the invention is to provide automatic reprojecting means of the type mentioned above, and electrical controls therefor so arranged that a given marble located in front of one of said reprojecting units will be sent forward by the latter on a further trip up the board by the effect of another marble upon the control.

A still further object of this invention is to provide in a game apparatus of the character described electrically operated means controlled by a ball projected onto the board for back rolling a previously played ball, so that it rolls up the board.

A still further object of this invention is to provide a game apparatus of the character described which will be simple in construction, assembly and operation, which may be constructed along lines convenient for low cost manufacture and which will be highly efficient for carrying out the purposes for which it is designed.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists in certain novel features of construction, arrangement and combination of parts hereinafter fully described, illustrated in the accompanying drawing, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportion, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

For the purpose of facilitating an understanding of my invention, I have illustrated in the accompanying drawing, a preferred embodiment thereof, from an inspection of which when considered in connection with the following description, my invention, its mode of construction, assembly and operation, and many of its advantages should be readily understood and appreciated.

Referring to the drawings in which the same characters of reference are employed to indicate corresponding or similar parts throughout the several figures of the drawing:

Figure 1 is a top plan view of a game board embodying my invention;

Fig. 2 is a longitudinal sectional view through the same taken substantially on line 2—2 of Fig. 1; and

Fig. 3 is a diagrammatic view of an electrical circuit employed in the apparatus.

In the development of the many pin games now on the market, the ball or marble deposited by the player usually follows a course determined by its speed, the inclination of the board and the obstacles or guides located thereon. In other words, the marble proceeds on its course without any new aid or impetus except for a possible rebound from the obstacle. This, however, adds little, if any, force to keep that marble going, and its progress again becomes dependent on an inclination of the board. In fact, this inclination forces by gravity the marble towards lower and lower levels with the more frequent chance for it to drop into an out-hole or become lost. In the development of the present apparatus, it has been the intent to renew and prolong the activity of each marble, thereby greatly enhancing its scoring possibilities.

In accordance with the foregoing, the apparatus of the present embodiment includes the usual inclined board 10 provided with a suitable playing surface, which board is disposed within a suitable casing having a glass top whereby access may not be had to the playing surface. The board 10 is provided with a plurality of score holes or pockets 12 and an arrangement of pins or studs 13 consistent with the layout of the game.

The board has the usual perforated slide 14 disposed below the same, which slide is shown in its clearing position in Fig. 2, whereby the marbles disposed on the playing field may be permitted to drop into a return chute 15. The apparatus has associated with it a suitable coin chute of conventional construction designated generally by the reference character 16 as well as a projecting plunger designated by the reference character 17b. Associated with the device is also a suitable elevating means of suitable and conventional construction (not shown) for the purpose of elevating the marbles or balls in position for actuation by the plunger 17b.

With the game board inclined as shown, a marble at the upper end may roll into either of two arch ornaments 16. The floor under each arch receives a spring blade 17 having rear branches 17a secured to the board of screws or other fastening means. The fore part of the

blade is slightly elevated and is disposed directly above a contact post 18 securely lodged in the board. It follows that the passage of the marble through the arch 16 causes the blade 17 to become depressed and bear on the contacting post 18 thereby closing a switch in an electrical circuit employed with the game apparatus.

The switch just described has the effect of actuating a solenoid 19 encased in a miniature cannon structure 20, said solenoid having its plunger at 19a disposed in position to be projected from the solenoid with a rapid stroke approximately one inch in length. The plunger 19a is returned to its inactive position by a spring arranged within the solenoid casing (not shown), this occurring as soon as the marble has rolled off the switch 17.

The solenoids 19 are in a pair near the sides of the board and along the center of the board and near its lower end is arranged another pair of solenoids designated by the reference character 21, said last mentioned solenoid being constructed substantially identical as the previous pair, but as shown in Fig. 1, are spaced more closely in lateral relation. The switches for actuating the solenoids 21 are arranged so that they will be actuated by the marble approaching the solenoid for reprojecting the said marble. In the embodiment illustrated, each switch consists of an angle lever which is pivoted at 22 in the corner of its angle and presents one arm 22a in front of the solenoid 21 in a position below the plunger thereof, and the other arm 22b of the switch lever terminates opposite the fixed contact post 23. Thus, when the arm 22a is moved towards the solenoid, the arm 22b will make an electrical contact with the post 23 energizing the solenoid.

When the player starts a marble on its way by imparting desired momentum thereto by means of the plunger 17b, the marble proceeds along the usual runway 17c at the side of the board, traveling past a return check 17d and rounding the curve 10a at the upper end of the board. If the marble stops in the center it may proceed downwardly and roll into any of the score pockets located in the center field of the board and rated in points as marked.

On the other hand, should the marble take a lateral course, it will run through one of the arches 16 and then into the center of the board. Here it may find a score pocket or proceed downwardly on the playing field to be deposited between a pair of guide strips 24 leading to one of the solenoids 21. In approaching the latter, the marble will first meet and impinge upon the plunger of the solenoid, which plunger will in turn engage the arm 22a thereby closing the contact between the arm 22b and post 23 with the result that the solenoid associated with the particular switch just closed will be energized and will immediately impart a quick stroke to its plunger. This actuation of the plunger will reproject the marble with more or less speed into the field of score pockets for a new chance to score.

In actual play, it will often happen that a marble may in its original or re-impelled course roll laterally and come to a stop in front of one of the solenoids 19. Ordinarily, such a marble will be considered as dropped at this point in the field, but the provision of the switch 17 enables the player to get the marble out of the trap and into useful motion. This may be accomplished by projecting a second marble by means of the plunger 17b onto the playing field with the object of causing the said second projected marble to roll through the arches 16, thereby actuating the switch 17 for energizing the solenoid 19 to cause the same to reproject the marble disposed in front of the same. This, of course, would reproject the trapped marble against the curved guides 25, which guides would be effective for directing the marble through the runway 27 into a field of score pockets arranged at the bottom of the playing board, together with cumulative elongated pockets disposed alongside the solenoids 21.

In case the player's marble supply is exhausted before he has been able to release or actuate the marbles trapped in front of the solenoids 19, the said trapped marbles will be held there until the next game. By reason of the above arrangement it will be apparent that high scores may be obtained by the player first "loading" the miniature cannons 19 by placing in front of them marbles and then bringing about the reprojection of said trapped marbles by causing later projected marbles to actuate the switches 17.

The electrical diagram of Fig. 3 is self-explanatory, and it will be seen that I have provided an apparatus which introduces the fascinating element of the automatic miniature cannons which permit a trapped marble to be reprojected into the field of scoring pockets by the proper and skillful manipulation of later projected marbles.

It is believed that my invention, its mode of construction, and assembly, and many of its advantages should be readily understood from the foregoing without further description, and it should also be manifest that while a preferred embodiment of the invention has been shown and described for illustrative purposes, the structural details are nevertheless capable of wide variation within the purview of my invention as defined in the appended claims.

What I claim and desire to secure by Letters Patent of the United States is:

1. In a game of the character described, the combination of an elongated, longitudinally inclined playing board having means associated therewith forming a longitudinal series of ball retaining object holes, means for projecting a group of balls, one at a time, to the upper end of the board for gravitation down the board and electrically operated means controlled by a ball projected onto the board for back rolling a previously played ball so that it rolls up the board.

2. In a game of the character described, the combination of an elongated, longitudinally inclined playing board formed with a longitudinal series of marble retaining pockets, means for projecting a group of marbles, one at a time, to the upper end of the board for gravitation down the latter, a control on the board and adapted to be actuated by a descending marble, and means energized by said control to impel a previously played marble so that it rolls up the board.

3. The structure of claim 2, an electrical circuit, said second mentioned means being the plunger of a solenoid in the circuit, and said control being a switch which is closed by the rolling of the first mentioned marble over it while in the course of descent.

FRANK KOEHLER.