Dec. 7, 1937. C. R. SIMPKINS 2,101,201

GAME APPARATUS

Filed May 14, 1934 2 Sheets-Sheet 1

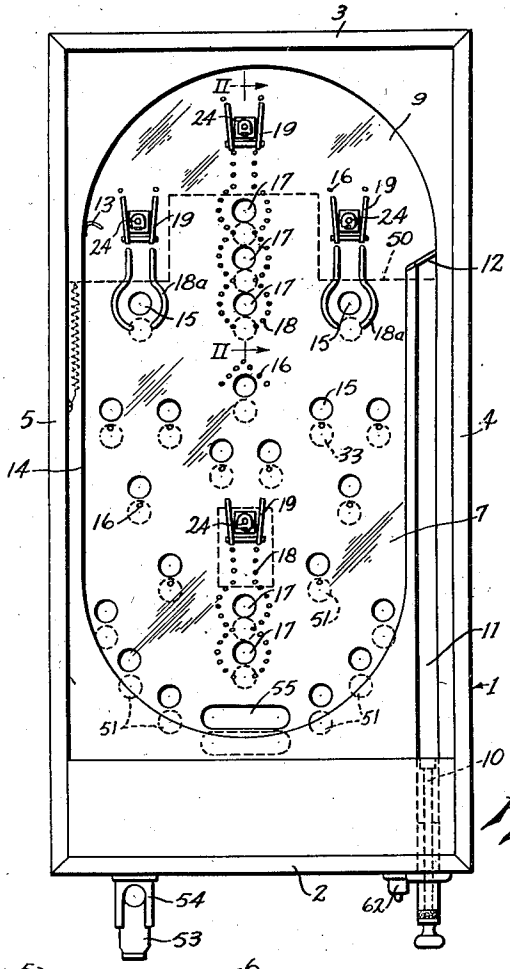


Fig. 1.

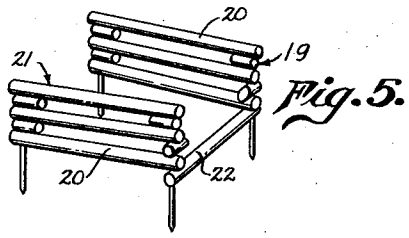


Fig. 5.

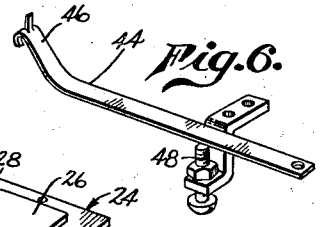


Fig. 6.

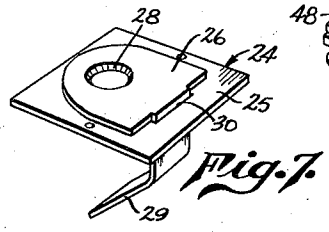


Fig. 7.

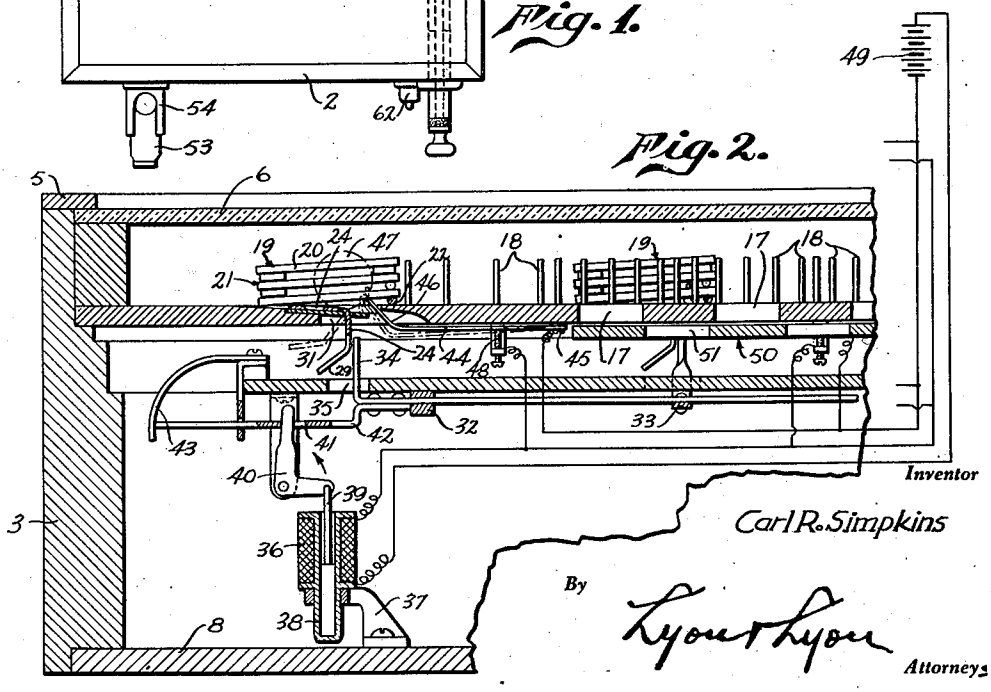


Fig. 2.

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GAME APPARATUS

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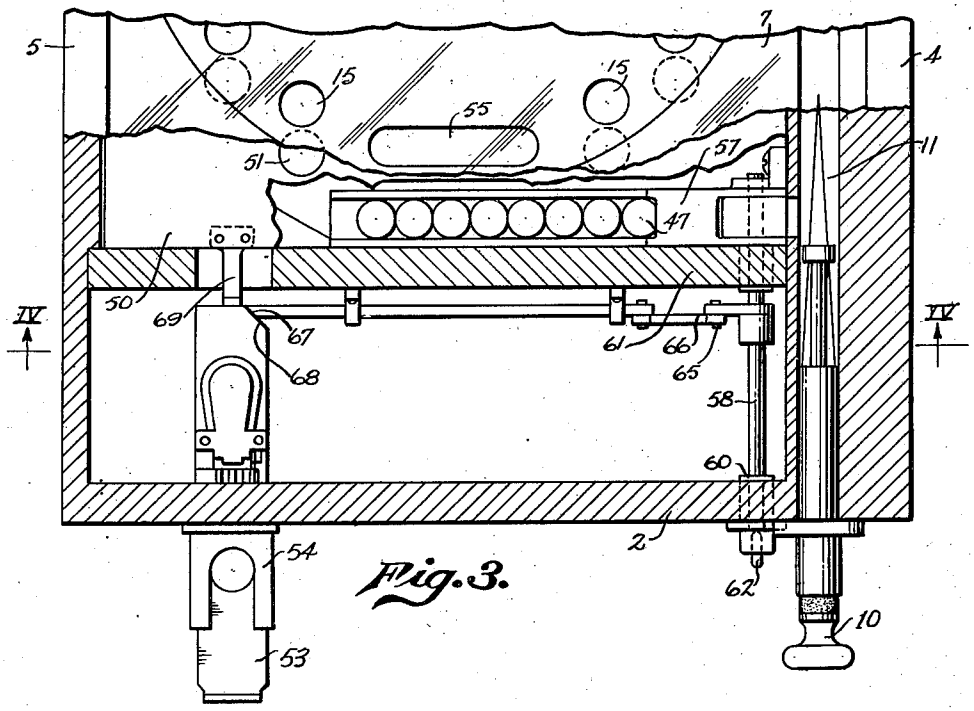


Fig. 3.

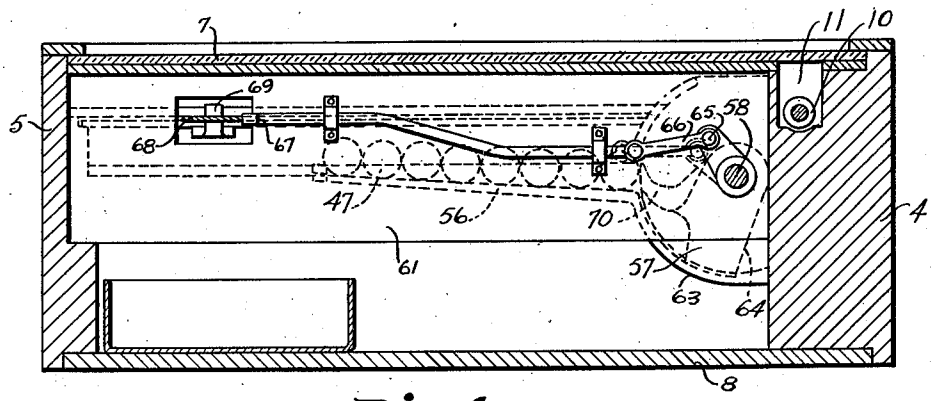


Fig. 4.

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UNITED STATES PATENT OFFICE

2,101,201

GAME APPARATUS

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Application May 14, 1934, Serial No. 725,455

3 Claims. (Cl. 273—121)

My invention relates to game apparatus and has particular reference to a game employing a board over which a ball or marble is projected.

Games of the type known as the "pin and marble games" usually comprise a game board supported at an angle to the horizontal over which a ball may be projected to engage pins or groups of pins on the board, directing the ball in various paths over the game board, the ball being received in holes or pockets disposed at various positions over the board, each pocket or hole defining a predetermined value, depending upon the difficulty encountered in placing a ball in the particular pocket.

Games of this type may be made more amusing and more attractive if the skill of the person playing the game in directing a ball into a particular pocket, or into selected pockets, may cause a change of position of the ball from a pocket of low valuation to a pocket of high valuation.

It is, therefore, an object of my invention to provide a game board in which balls directed into predetermined positions upon the board are caused to advance from such positions to a position defining a relative high value.

Another object of the invention is to provide a game board of the character set forth in which the positioning of a ball in a predetermined position upon the board causes the ball to be bodily lifted from the board over a barrier to pass the ball to a pocket of low valuation.

Another object of the invention is to provide a game board of the character set forth in which one or more barriers are provided in advance of pockets of high valuation when the ball is accurately placed in a predetermined position upon the board.

Another object of the invention is to provide a game board in which a ball-throwing apparatus is mounted at one or more positions upon the board which when engaged by the ball will forcibly move the ball to other positions upon the board.

Another object of the invention is to provide a device of the character set forth in the preceding paragraph, in which the entry of the ball into or upon such ball-throwing apparatus causes actuation of the throwing apparatus.

Another object of the invention is to provide a plurality of ball-throwing devices disposed about the board, any one of which, when engaged by a ball, will cause all of the throwing devices to be actuated.

Another object of the invention is to provide means for collecting all of the balls at the end of the game, and providing devices which will effectively prevent the replaying of the balls until a coin-controlled apparatus has been actuated by the deposit of the coins.

Other objects and advantages will be apparent from a study of the following specifications, read in connection with the accompanying drawings, wherein

Figure 1 is a plan view of a game board constructed in accordance with my invention;

Fig. 2 is a sectional view, taken along line II—II of Fig. 1;

Fig. 3 is a detail, plan view of the lower end of the board shown in Fig. 1, the view being shown partly in section to illustrate the operation of the ball-collecting and elevating apparatus;

Fig. 4 is a sectional view, taken along line IV—IV of Fig. 3;

Fig. 5 is a detail, perspective view of one of the hurdles which may be employed with my invention;

Fig. 6 is a detail, perspective view of a contact apparatus which may be employed with my invention; and

Fig. 7 is a detail view of the ball-throwing apparatus which may be employed with my invention.

Referring to the drawings, I have illustrated a game board as comprising a suitable frame or base 1, having a front wall 2, a rear wall 3, and side walls 4 and 5 constituting a substantially rectangular cabinet, the top of which is formed of a sheet of glass 6 through which a playing board 7 may be viewed. As will be understood by those skilled in the art, the bottom 8 of the cabinet 1 may be placed upon a table or other suitable support, or may be supported upon any suitable type of stand which will hold the board at a convenient level for playing purposes. The playing field 7 is disposed at a considerable angle relative to the bottom 8 of the cabinet, the upper end of the board, near the rear wall 3, being considerably higher than the remaining portions of the board so that balls projected onto the playing field or playing board 7 will tend to roll by gravity toward the front wall 2.

The playing board of field 7 is illustrated as having a curved upper end, indicated at 9, which curve is preferably formed by a suitably curved plate or board constituting a filler between the upper end of the playing field and the rear wall 3 of the cabinet. A ball-projecting device 10,

such as is commonly employed in a board of this character, may be provided upon the right-hand side of the cabinet to receive and project balls through an alleyway 11 and through a gate 12 toward the upper end of the playing field where the ball will engage the curved surface 9 and be directed around the curved surface to a suitable resilient spring buffer 13 preferably secured at the point at which the curve 9 meets the straight side 14 of the playing field so that the ball will engage the spring buffer and will rebound toward the right-hand side of the playing field.

As will be understood by those skilled in the art, the force exerted by the projector 10 may be controlled by the operator so that the path described by the ball on its rebound from the spring buffer may be controlled to direct the ball into any one of a number of paths down the face of the playing field.

The playing field is provided with a plurality of holes or pockets 15, such pockets being preferably formed by boring a suitable hole directly through the board 7, the holes being of such size that a ball may readily pass therethrough. The number and location of the holes or pockets 15 is a matter of individual selection in the particular board, though it is to be understood that a relatively large number of such holes or pockets will be distributed throughout the board.

The board is also provided with a plurality of upstanding pins 16 arranged in any suitably selected pattern to constitute a resilient striking member against which the ball will strike in its path down the playing field, and thus will cause the ball to be directed in various paths dependent upon the angle with which the ball strikes the pins and also dependent upon the direction of movement of the ball relative to the pin at the time such contact is made.

Each of the balls or pockets is usually given a valuation determined by the difficulty encountered in placing a ball in the individual pockets.

Near the upper end of the playing field and preferably in alignment with the center of the board 7, I provide a series of pockets 17 arranged in alignment with each other and I surround these pockets with a fence 18 formed of a plurality of pins similar to or identical with the pins 16 to define a path of movement of the ball toward and over the pockets 17. At the mouth of the path so formed by the pins 18, I provide an additional barrier 19, preferably constructed as shown in Fig. 5, as a miniature representation of a hurdle such as is employed in steeplechase races, the barrier 19 being formed with relatively high sides 20, an open mouth 21, and a relatively low front 22. The front 22 of the barrier, however, must be sufficiently high and extend sufficiently above the board 7 to constitute a barrier insuring that a ball will stop before passing over the front 22.

Located within the side walls of the hurdle 19, I provide a ball-receiving and throwing apparatus 24, more particularly illustrated in Fig. 7, consisting essentially of a baseplate 25 on which is mounted a throwing-plate 26, preferably having a depression or hole 28 therein to engage and hold a ball upon the throwing-plate 26. The throwing-plate 26 is preferably provided with a downwardly extending tongue 29 which extends through a suitable slot 30 in the baseplate 25 and, as will be understood from an inspection of Fig. 2, the tongue 29 also extends down through a suitable opening 31 in the board 27, the lower end of the tongue 29 being disposed a considerable distance below the board 7.

By referring particularly to Fig. 2, it will be observed that a floor 32 is provided extending substantially parallel to the playing field 7 but spaced a considerable distance below the playing field 7 to receive the balls which pass through the pockets 15 and 17, as will be hereinafter described. The floor 32 constitutes a convenient mounting for an actuator for the ball-throwing mechanism, comprising essentially a long metallic strip 33, the ends of which are bent upwardly as indicated at 34 to pass through a suitable opening 35 in the floor 32 to a position immediately in front of the downwardly extending tongue 29 on the ball-throwing plate 26. Movement of the bar 33 toward the rear wall 3 of the cabinet will therefore cause the upstanding ends 34 to engage the tongue 29 and tip the ball-throwing plate 26 to the position shown in dotted lines on Fig. 2.

The operation of the ball-throwing plate 26 will cause the ball to be elevated and forcibly thrown over the barrier formed by the front 22 of the hurdle 20. The bar 33 is arranged to be moved rapidly toward the rear of the cabinet by means of a solenoid 36 which may be secured in any suitable manner, as by a bracket 37, to the bottom 8 of the cabinet. The solenoid 36 is provided with an armature 38 connected by means of a link 39 to a bellcrank 40 which extends through a slot 41 in an extension 42 of the bar 33 so that when electric current is applied to the solenoid 36 the bellcrank will project the bar 33 toward the rear of the cabinet with a substantially rapid motion. A spring 43 may be provided to engage the end of the extension bar 42 to insure the return of the bar 33 to the position shown in Fig. 2 as soon as the circuit controlling the solenoid 36 is again opened.

The solenoid 36 may be controlled by any suitable switch mechanism which will be closed when the ball arrives in a position upon the ball-throwing mechanism. For this purpose, I have illustrated a switch comprising elongated relatively thin spring contact member 44 preferably secured to the underneath side of the playing board 7, as indicated by the screw 45. The opposite end of the spring contact 44 is bent upwardly as indicated at 46 to project through the opening 31 in the playing board 7 to a position above the level of the board 7 where it can be engaged by a ball indicated in dotted lines at 47, when such ball moves into the ball-throwing mechanism.

As indicated in dotted lines in Fig. 2, a ball striking the upstanding end 46 of the spring contact 44 will depress the spring contact into engagement with a stationary contact 48 which may likewise be secured to the underneath side of the playing board 7 and is preferably formed of a screw, permitting adjustment thereof to determine the amount of movement of the spring contact 44 which will be required to complete the circuit for the solenoid.

While I have illustrated four ball-throwing mechanisms disposed about the board, it will be understood that any number of these ball-throwing mechanisms may be employed, and I prefer that all of the switches formed by the contacts 44 and 48 shall be connected in parallel relation so that any one of them will cause actuation of the solenoid 36.

It will be understood by those skilled in the art that each of the ball-throwing mechanisms may be provided with its own separate solenoid con-

trolled by its own separate switch. I also prefer to make my game apparatus self-contained, as by employing small dry cells 49 as a source of current for operating the solenoid 36, though again it will be understood that if desired suitable connections to any electric power supply may be substituted for the battery 49. Any number of hurdles or barriers 19 may be provided, four being shown upon the board, those disposed in the center line of the playing field leading into the fences 18 disposed about aligned holes 17, while, near the upper end of the board, I have shown a pair of such hurdles 19 as disposed on opposite sides of the board with wire fences 18a leading to single holes 15.

As will be understood by those skilled in the art, a slide 50 is mounted immediately below the playing board 7 and is provided with suitable holes 51 corresponding in pattern with the pattern of the holes 15 in the board 7. The slide 50 is normally urged toward the front wall 2 of the cabinet by means of suitable springs 52 in which position the holes 51 will be out of alignment with their corresponding holes 15 and 17 so that when a ball is moved into a position above any one of the holes 15 or 17, it will pass through this hole until it comes to rest upon the slide 50 and will remain in this position until the slide 50 has been moved toward the rear wall 3 of the cabinet to align the holes 51 with the holes 15 and 17, at which time the balls will be permitted to pass through the slide 50 to fall upon the floor 32.

The slide 50 may be moved toward the rear wall of the cabinet by means of a coin-actuated plunger 53, which I prefer to construct in the form of the well-known coin-collecting units in which the plunger 53 is locked against movement in its frame 54 until a coin has been deposited in the slide or plunger 53.

Thus the game may be played until all of the balls have been projected over the playing field and have come to rest in the various pockets 15 and 17 or have collected in a large pocket 55 at the lower end of the playing field 7 and then to replay the game it is necessary to deposit a coin in the plunger 53 to move the slide 50 to release the balls from the playing field and permit them to be replayed.

Due to the angular position of the floor 32, all of the balls which are dropped through the holes 15, 17, and 51, will move downwardly on the floor 32 toward the front wall of the cabinet where they will come to rest in a ball chute 56 extending transversely of the cabinet. As is indicated in Fig. 4 the ball chute 56 also extends at an angle to the horizontal tending to pass the balls toward the right-hand wall 4 of the cabinet. Disposed immediately adjacent the right-hand wall of the cabinet, I provide a ball elevator 57 which preferably comprises a crank-like member rigidly secured to a shaft 58 which shaft is mounted in suitable bearings 59 and 60 in a front partition wall 61, and the front wall 2 of the cabinet. The shaft 58 is provided upon the exterior of the front wall of the cabinet with a suitable crank or handle 62, by which the shaft 58 and the elevator 57 may be partially rotated to lift the balls from the ball chute 56 to the alleyway 11 ready to be projected by the projector 10.

It will be observed from an inspection of Fig. 4 that the upper surface of the elevator 57 is provided with a cup-like depression 63 into which the balls may drop one at a time so that upon rotation of the elevator 57 the first ball to enter the depression is picked up, carried over to, and is dropped into, the alleyway 11.

It will also be observed that normally the elevator 57 is in a position with its right-hand edge 64 abutting the side of the side wall 4 so that the outer lip of the cup-like depression 63 is approximately level with the bottom of the ball chute 56 or may be disposed slightly below the bottom of the ball chute. Thus with the balls in the ball chute successive operation of the elevator will lift the balls one at a time and place them ready for ejection by the projector 10.

However, after all the balls have been projected onto the playing field and have come to rest in various positions thereon, it is necessary to operate the slide 50 to drop the ball onto the floor 32 and back into the ball chute 56. It is further necessary that when the slide has been so operated that the balls should not be permitted to move into the elevator or be permitted to be elevated until the coin-actuated plunger 53 has been withdrawn into locked position, requiring the deposit of another coin before the slide can again be operated.

To prevent a person from operating the slide and then replaying the balls without relocking the coin plunger 53, I provide means for slightly elevating the ball elevator 57 and holding the same elevated until the plunger 53 has been withdrawn to completely locked position. For this purpose I have provided the shaft 58 with a crank 65 connected to a suitable link 66 extending across the partition 61, the outer end of the link 66 being baffled as indicated at 67 to engage a baffle surface 68 upon the inner end of the plunger 53. Thus when the plunger 53 is pressed inwardly to engage with a striking bracket 69 on the slide 50, to thus press the slide 50 rearwardly, the baffled surface 68 on the plunger 53 will ride upon the baffle surface 67 of the link 66 and will cause the elevator 57 to be partially rotated to the position indicated at 70 in Fig. 4. With the elevator in this position, it will be observed that the outer lip of the depression 63 will be above the level of the ball chute 56 and the ball will thus be prevented from entering the elevator until the plunger 53 is entirely retracted.

While I have shown and described the preferred embodiment of my invention, I do not desire to be limited to any of the details of construction shown herein, except as defined in the appended claims.

I claim:

1. In a ball game, a playing field, means disposing said playing field at an angle to the horizontal whereby balls placed thereon will move by gravity over said field, means for projecting balls onto said playing field, means disposed on said playing field forming barriers in the path of movement of balls over said field, ball-throwing means disposed on said field in advance of said barriers for receiving balls and for throwing balls so received over said barrier, means disposed between said barrier and said ball-throwing means engageable by balls moving toward said barrier for actuating said ball-throwing means.

2. In a ball game, a playing field, means disposing said playing field at an angle to the horizontal whereby balls placed thereon will move by gravity over said field, means for projecting balls onto said playing field, means disposed on said playing field forming barriers in the path of movement of balls over said field, ball-throwing means disposed on said field in advance of said barriers for receiving balls and for throwing balls

so received over said barrier, switch means disposed between said barrier and said ball-throwing means and engageable by balls moving toward said barrier for actuating said ball-throwing means.

3. In a ball game, a playing field, means disposing said playing field at an angle to the horizontal, whereby balls placed thereon will move by gravity over said field, means for projecting balls onto said playing field, a plurality of barriers disposed about said playing field against which balls may strike to hold said balls against further movement on said field, ball-throwing means disposed in advance of each of said barriers, means common to all of said ball-throwing means for actuating said ball-throwing means to lift a ball from said barrier and to throw the same over said barrier, and means disposed between each of said barriers and the associated ball-throwing means to be engaged by a ball moving toward said barrier for operating said common moving means.

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