May 16, 1933. N. PASSELL 1,909,422

GAME APPARATUS

Filed April 16, 1932 4 Sheets-Sheet 1

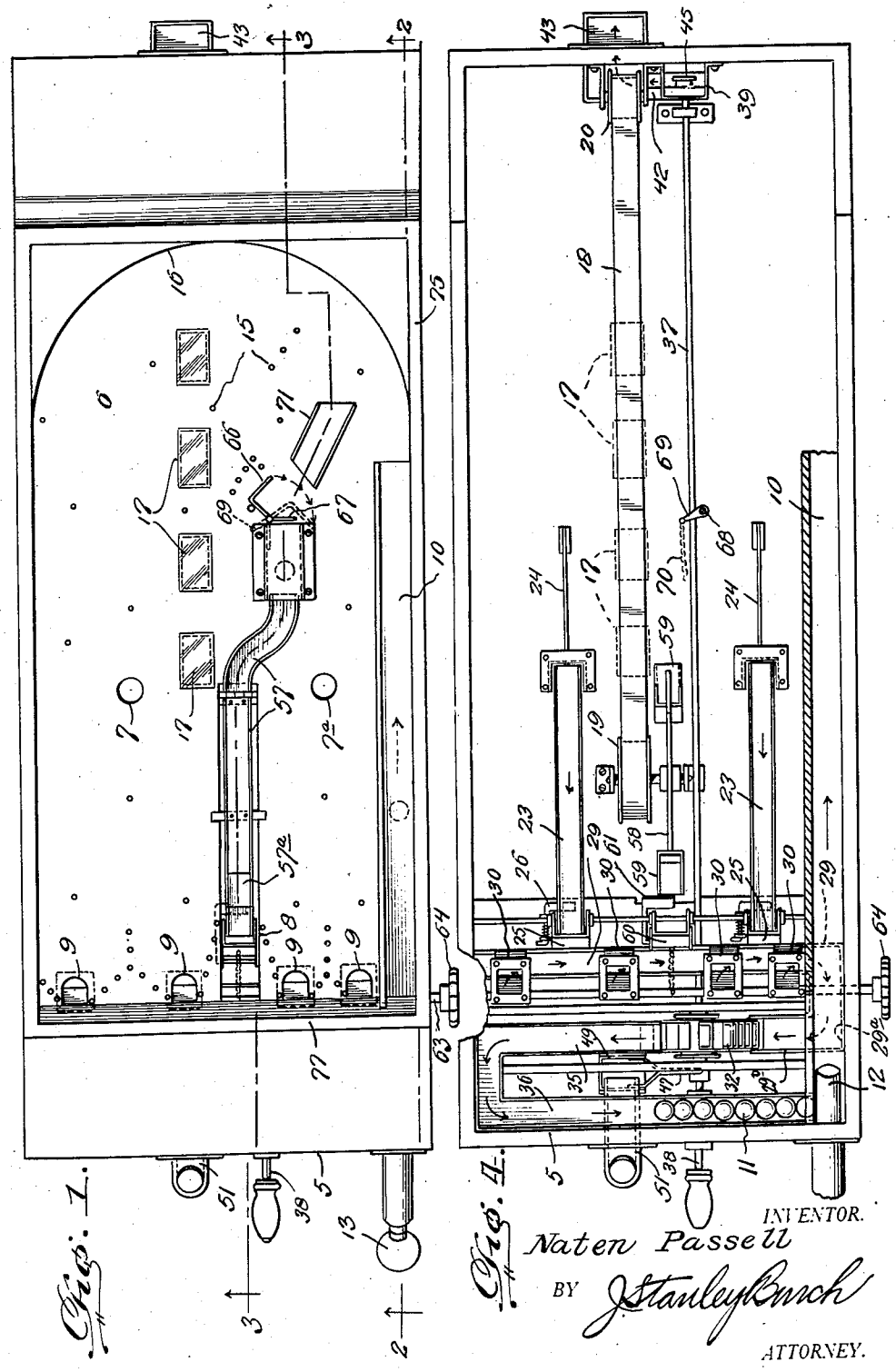


Fig. 1.

Fig. 4.

INVENTOR.
Naten Passell
BY J. Stanley Brock
ATTORNEY.

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GAME APPARATUS

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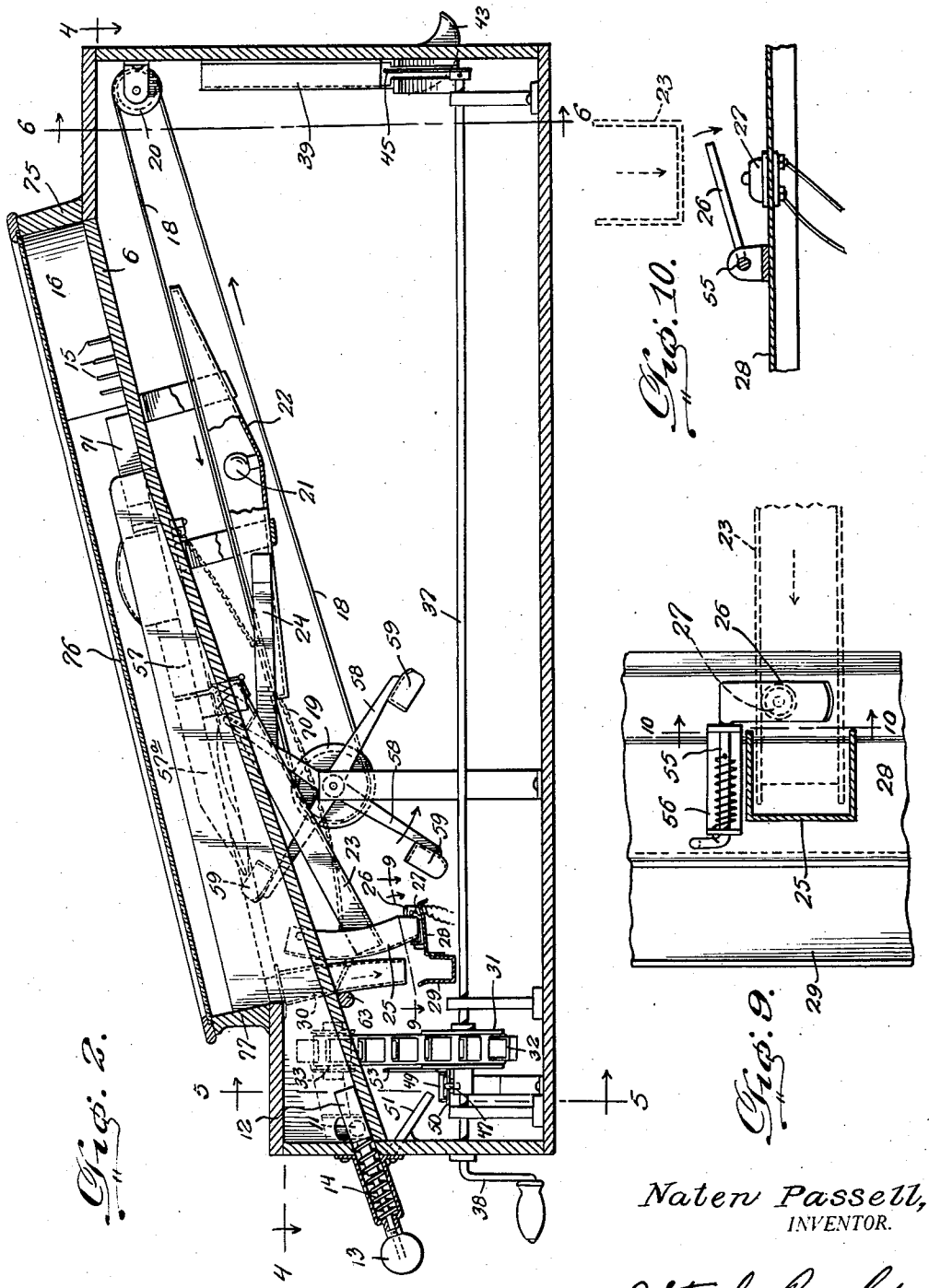


Fig. 2.

Fig. 10.

Fig. 9.

Naten Passell,
INVENTOR.

BY J. Stanley Burch

ATTORNEY.

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GAME APPARATUS

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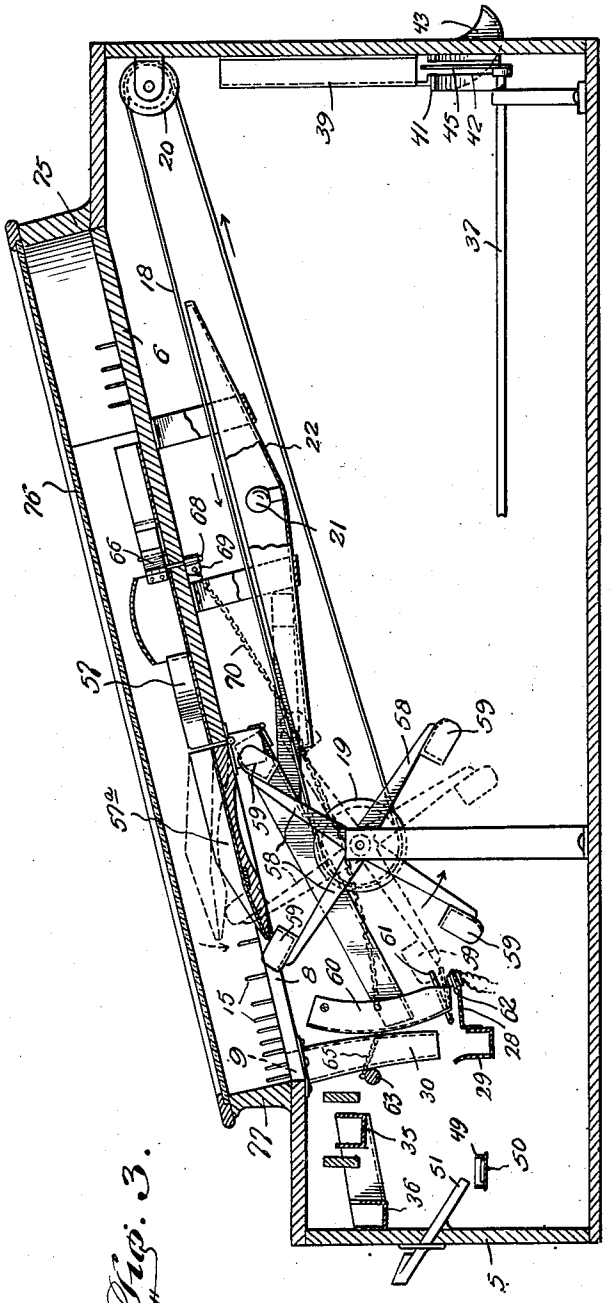


Fig. 3.

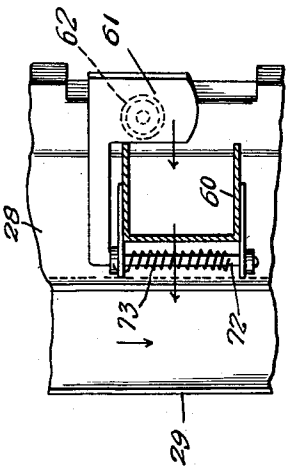


Fig. 8

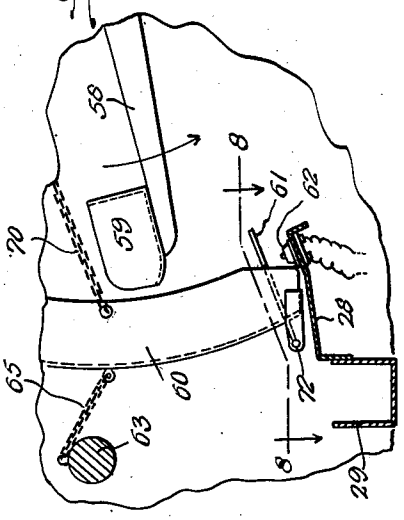


Fig. 7.

Naten Passell
INVENTOR.

BY J. Stanley Bunch
ATTORNEY.

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GAME APPARATUS

Filed April 16, 1932 4 Sheets-Sheet 4

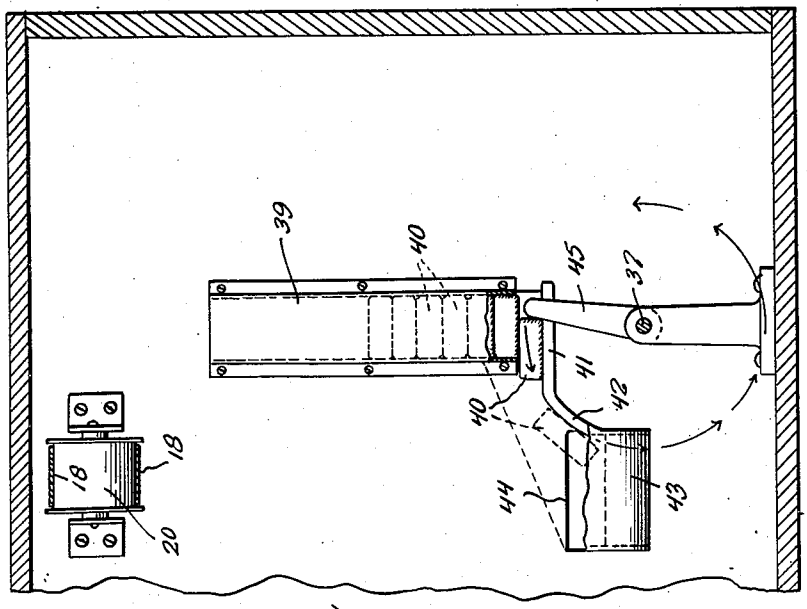


Fig. 6.

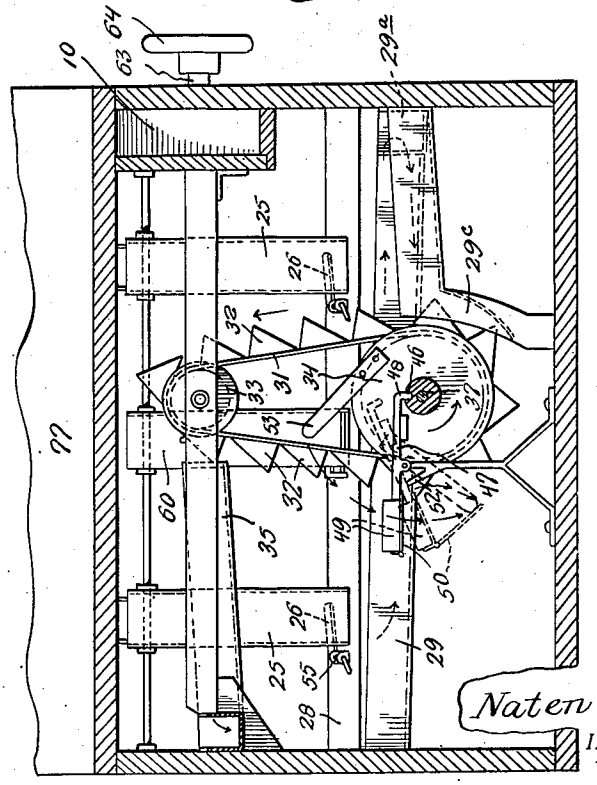


Fig. 5.

Naten Passell,
INVENTOR.

BY J. Stanley Bunch

ATTORNEY.

Patented May 16, 1933 1,909,422

UNITED STATES PATENT OFFICE

NATEN PASSELL, OF YOUNGSTOWN, OHIO

GAME APPARATUS

Application filed April 16, 1932. Serial No. 605,758.

This invention relates to improvements in game apparatus of the type embodying an inclined game board down which balls may roll by gravity and in which openings are provided through which the balls are adapted to pass, a manually operable device for projecting the balls onto the surface of the board at its higher end, and means to return the balls to the projecting device after they pass through said openings.

An object of the present invention is to provide a game apparatus of the above kind having an amusement device operable by the balls when passing through certain of the openings in the game board, thus requiring the exercise of skill in actuation of the projecting device for effective operation of the amusement device.

A further object of the present invention is to provide the amusement device in the nature of an exhibitor for displaying scores, or educational, historical, or other interesting pictures or matter to the player of the apparatus whenever he succeeds in projecting a ball onto the game board so that it passes through one of certain openings in the latter.

Another object is to provide means actuated by a ball passing through a certain opening in the game board for changing the matter to be displayed through subsequent operation of the exhibitor by said ball.

Other objects and features of the invention will become apparent as the nature of the same is better understood, and the invention consists in the novel form, combination and arrangement of parts hereinafter more fully described, shown in the accompanying drawings, and claimed.

In the drawings:

Figure 1 is a top plan view of a game apparatus embodying the present invention.

Figure 2 is a vertical longitudinal section on line 2—2 of Figure 1.

Figure 3 is a view similar to Figure 2 on line 3—3 of Figure 1.

Figure 4 is a horizontal section on line 4—4 of Figure 2.

Figure 5 is an enlarged fragmentary vertical transverse section on line 5—5 of Figure 2.

Figure 6 is an enlarged fragmentary section taken substantially on line 6—6 of Figure 2.

Figure 7 is a fragmentary detail view showing the switch actuated by a ball for closing the circuit of the illuminating lamp of the exhibitor after actuation of the exhibit changing means thereby.

Figure 8 is an enlarged horizontal section on line 8—8 of Figure 7.

Figure 9 is a fragmentary horizontal section on line 9—9 of Figure 2; and

Figure 10 is a vertical section on line 10—10 of Figure 9.

Referring more in detail to the drawings, the present game apparatus includes a horizontally elongated casing 5 having a top wall member 6 forming a forwardly inclined game board provided intermediate its ends with openings 7 and 7*a*, a further opening at 8 adjacent its lower end and intermediate the sides of the same, and a number of still further openings 9 at its lower end. An inclined runway 10 extends along one side of the board 6, leading from a point below and forwardly of the lower end of the board 6 within the forward end of the casing 5 to a point at the adjacent side of the board 6 near its higher rear end. A suitable manually operable projecting device is arranged at the lower end of the runway 10 for successively projecting suitable balls 11 upwardly along said runway onto the surface of the board 6 at its higher end, for subsequently rolling by gravity down said board 6 and ultimately passing through one of the openings 7, 7*a*, 8 or 9. As shown, the projecting device includes a plunger 12 arranged on the lower end of the runway 10 within the casing 5 and having a stem projecting through the front wall of said casing and provided with a suitable knob or handle 13 exteriorly of the latter, the stem of the plunger 12 being encircled by a spring 14 adapted to be placed under compression so that upon subsequent release of the plunger, a ball positioned in advance of the latter will be projected upwardly along the runway in a generally well known man-

ner. The board 6 has a number of upstanding pins or other suitable obstacles 15 at numerous points thereon into contact with which the balls will roll when projected onto and rolling down the board 6, thus causing the course of the balls to be changed so that chance and skill are both involved in successfully projecting a ball into a desired one of the openings in the game board. The usual curved wall 16 is provided at the higher end of the board 6 to divert the balls laterally away from the outlet end of runway 10 when projected onto the game board.

As shown clearly in Figures 1 and 4, the game board 6 is provided with a number of alined glass covered sight openings at 17, and arranged beneath these sight openings is a member 18 bearing educational, historical or other interesting pictures or matter adapted to be readily viewed and seen by the player of the apparatus through the sight openings at 17 when illuminated. The member 17 preferably consists of a transparent or translucent endless belt forming part of a changeable exhibitor and passing around pulleys 19 and 20 suitably journaled within the casing 5 directly beneath the board 6 and respectively adjacent the forward end of board 6 and the back of the casing 5. The belt 18 is thus arranged at an incline or parallel with and below the board 6. The means for illuminating the matter carried by the belt 18 may consist of a suitable electric lamp 21 associated with a suitable reflector 22 and arranged between the strands of the belt 18 as shown clearly in Figures 2 and 3.

Hinged at its rear upper end to the underside of the board 6 beneath each of the openings 7 and 7*a* is a longitudinally disposed forwardly inclined chute 23 having a rearwardly extending weighted arm 24 by which it is caused to normally assume the position of Figure 2, with its forward lower end positioned within a depending hinged chute 25, intermediate the ends of the latter, and spaced above the operating lever 26 of a circuit closer 27 for the lamp 21. This circuit closer is disposed beneath the operating lever 26 which is adapted to be actuated by the chute 23 when the latter is swung downwardly, the lever 26 being disposed beneath and in the path of the lower end portion of chute 23, as shown. It will thus be seen that when a ball passes through either of the openings 7 or 7*a* it will roll down a chute 23 to a point within the lower end of the latter and within the associated chute 25, thereby overcoming the weight of the arm 24 and causing the chute 23 to lower and bring lever 26 into engagement with circuit closer 27 for lighting the lamp 21 and displaying the matter on belt 18 registered with the sight openings at 17. The contacts of circuit closer 27, and lamp 21 may be suitably included in series in a circuit including a suitable source of electricity, such as a battery, not shown, that may be housed within the casing 5. By thus displaying to the player of the apparatus suitable scores, or educational, historical or other interesting matter, whenever the player succeeds in causing a ball to pass through one of the openings 7 or 7*a*, interest in playing the game is aroused and considerable amusement afforded. At the same time, the player is prompted with a desire to skillfully actuate the projector so as to succeed in causing a ball to pass through one of these openings.

As shown, the circuit closer 27 is carried by an inclined platform 28 disposed directly beneath the lower end of the pivoted chute 25 and carried by one side of a transverse runway 29. The chute 25 is of lesser weight than the balls used in the apparatus so that when one of the balls lowers the chute 23 it will roll onto the platform 28 and then toward and into the runway 29, swinging the chute 25 forwardly so that the latter causes the ball to drop surely into the runway 29. As soon as this takes place, the chute 23 is relieved of the weight of the ball so that it again swings upwardly to its normal position on Figure 2. When the ball leaves the chute 25 and drops into the runway 29, said chute 25 swings backwardly by gravity to its normal position of Figure 2. At the same time, when the chute 23 rises again the lever 26 is released so that it returns to its normal raised position out of engagement with the circuit closer 27, thereby opening the circuit of the lamp 21. A display of the matter on the belt 18 is thus automatically effected for a sufficient period of time to be satisfactorily and clearly viewed through the sight openings 17 each time a ball is caused to fall through one of the openings 7 or 7*a*.

Tubes 30 may depend from the board 6 for conveying the balls to the runway or trough 29 that pass through the openings 9 provided in the board 6 along its lower edge. As shown, the trough or runway 29 is inclined laterally toward the right hand side of the apparatus, after which it extends forwardly and then laterally inwardly as respectively indicated at 29*a* and 29*b*, to one side of a ball elevator near the bottom of the latter as clearly illustrated in Figures 4 and 5. This ball elevator preferably embodies an endless belt 31 carrying a series of buckets 32 and passing around upper and lower pulleys 33 and 34 suitably journaled in the forward end of the casing 5 between the sides of the latter. The discharge end portion 29*b* of trough 29 has a depending end extension 29*c* upwardly through which the buckets 32 of the ball elevator are adapted to successfully pass as they move around the lower pulley 34. Thus, the balls will be delivered from the

discharge end of chute 29 singly into the successive buckets 32 of the ball elevator. A further runway or trough 35 extends laterally from the left hand side of the ball elevator near the top of the latter. This trough 35 is arranged to receive the balls from the successive pockets or buckets of the ball elevator after being elevated by the latter, and is inclined toward the left hand side of the apparatus as shown clearly in Figure 5 so as to convey the balls laterally from the ball elevator and then forwardly to an oppositely inclined transverse magazine trough 36 leading to the inner side of the runway 10 and the inner side of the plunger 12 of the ball projector. The lower end of the side wall of runway 10 has an opening through which the balls 11 may pass one by one to a position in front of the plunger 12 when the latter is retracted preparatory to projecting the ball. Thus, the balls are kept in circulation without requiring handling thereof by the player, one ball being allowed to roll from the trough 36 into projecting position upon each retraction of the plunger 12 of the projecting device. The lower pulley 34 of the ball elevator is secured upon a longitudinal shaft 37 journaled in the casing 5 and projecting through the front wall of the latter where it is provided with a handle 38 to facilitate convenient manual actuation thereof. Carried by the rear wall of the casing 5 is a vertical article magazine adapted to receive in vertically stacked relation a series of articles of merchandise 40, such as candy, chewing gum or the like. These articles are adapted to automatically lower by gravity so that the lowermost article will rest upon a platform 41 disposed beneath the magazine 39 and so spaced from the lower end of the latter as to admit one article between said lower end of magazine 39 and the platform 41. A chute 42 leads laterally from the platform 41 to a receiving tray 43 mounted in and projecting through an opening 44 in the back wall of the casing 5. The parts 41, 42 and 43 are slotted to admit passage of an arm 45 secured on and projecting laterally from the rear end of shaft 37, the arm 45 upon each revolution of shaft 37 being adapted to engage the lowermost article from the magazine 39 and discharge the same laterally from the platform 41 onto the chute 42 so that it will fall by gravity into the receiving tray 43. Thus, a suitable article of merchandise is dispensed or delivered to the player of the apparatus upon each actuation of shaft 37.

The invention contemplates the provision of coin-released means for normally locking the shaft 37 against rotation, whereby persons are required to deposit a coin in the apparatus for each operation of the game and each dispensing of an article of merchandise from the magazine 39. For this purpose, I provide the lower pulley 34 of the ball elevator with a peripheral recess 46 as clearly shown in Figure 5, and pivoted intermediate its ends adjacent the pulleys 34 is a locking lever 47 having a hooked end 48 arranged to engage in the recess 46 to normally hold the shaft 37 against turning. The lever 47 is normally weighted to engage the end 48 in the recess 46 when registered with the latter, and carried by the other or outer end of lever 47 is a coin-receiving tray 49 having a spring-closed hinged bottom 50. A coin tube 51 is mounted in a slot in the front wall of casing 5 and inclines inwardly toward the tray 49 so as to discharge a coin inserted in the tube 51 into said tray 49. The arrangement is such that when a coin drops from the tube 51 into the tray 49, the lever 47 is tilted as shown by dotted lines in Figure 5 to release its hooked end 48 from the recess 46 so that the shaft 37 may be manually turned by means of the handle 38. Swinging of lever 47 for its release is properly limited by a suitable stop 52, and the hinged bottom 50 of tray 49 has a projecting portion arranged in the path of an arm 53 rigid with and carried by the lower pulley 34 of the ball elevator. Thus, when the lever 47 is released and shaft 37 is rotated in a counterclockwise direction, the arm 53 will engage the hinged bottom 50 of tray 49 so as to swing the same to the dotted line open position of Figure 5, thereby discharging the coin from the tray 49 into a suitable collection box disposed therebeneath, not shown. The rotation of shaft 37 may continue until the recess 46 again registers with the hooked end 48 of lever 47, whereupon said lever, relieved of the weight of the coin, will automatically swing to engage its hooked end 48 in said recess 46 and prevent further rotation of shaft 37. During the complete rotation of shaft 37, a number of the buckets 32 will have passed the discharge portion 29c of trough 29, thus elevating the balls in said portion of the trough and discharging them into the upper trough 35 for delivery to the ball magazine trough 36. In view of this explanation, it will be seen that a certain number of balls will be delivered in position for successive projection by the plunger 14, and one article of merchandise will be delivered into the receiving tray 43 to be taken by the depositor of the coin, upon the deposit of each coin in the apparatus. As shown in Figures 9 and 10, the lever 26 may consist of a laterally projecting arm carried by a shaft 55 journaled beside the associated chute 25, said shaft 55 being encircled by a spring 56 by means of which it is normally turned to hold the lever 26 in its normal elevated circuit opening position.

As shown more clearly in Figures 1 and 3, the opening 8 consists of a longitudinal elon-

gated slot in the lower end portion of the board 6 intermediate the sides of the latter. Arranged upon the board 6 and leading to the opening 8 is a suitable runway 57 having a lower end section 57*a* hinged in the rear portion of the opening or slot 8 for vertical swinging movement. Carried by the shaft of the lower or forward pulley 19 of the changeable exhibitor is a bucket wheel 58 whose buckets 59 are adapted to be successively brought into position beneath the opening 8 at the discharge end of the lower section 57*a* of runway 57 as shown in Figure 3, which buckets, in passing to this position are adapted to successively ride against the underside of the runway section 57*a* for raising the latter and then permitting it to lower. The arrangement is such that when a ball passes from the discharge section 57*a* of runway 57 into the bucket 59 of bucket wheel 58 disposed at the discharge end of said runway section 57*a*, the weight of the ball will cause the bucket wheel to rotate in a counterclockwise direction. As the ball and the bucket in which it is disposed moves downwardly, the next succeeding bucket of the bucket wheel passes under and raises the runway section 57*a* so that the parts are positioned as indicated by dotted lines in Figure 3. It will be noted that in this position the bucket holding the runway section 57*a* raised has moved forwardly past the axis of the bucket wheel, for a purpose which will presently become apparent. Hinged above the platform 28 is another depending chute 60 into the lower portion of which the ball is adapted to roll from the bucket 59 which has received the same, when said bucket reaches the dotted line position of Figure 3 adjacent the lower end of said chute 60. The bucket wheel, in thus being turned by a ball, causes travel of the belt 18 so as to bring new matter into position beneath the sight openings at 17, whereby the matter to be subsequently displayed by lighting of lamp 21, is changed. The chute 60 is frictionally mounted upon its pivot so as to remain in its normal position over the platform 28 after the ball is delivered from a bucket of the bucket wheel 58 into the lower end of said chute. The operating lever 61 of a circuit closer 62 for lamp 21 is carried by chute 60 and arranged in the path of the buckets of wheel 58 when the chute 60 is in its normal position of Figures 3 and 7. Also, when the parts are in this position, the lever 61 is arranged to engage the circuit closer 62 when depressed or lowered. Thus, when a ball lowers a bucket 59 to the dotted line position of Figure 3 and rolls into the lower end of chute 60, said bucket engages and depresses lever 61 into engagement with circuit closer 62 and closes the circuit of lamp 21 so that the latter is lighted for exhibiting the matter on belt 18 registered with sight openings at 17. The lamp 21 will thus stay lighted for displaying this matter on belt 18 until chute 60 is manually swung forwardly to move lever 61 out of the path of the adjacent bucket 59. As soon as this is done, the bucket wheel is released so that the runway section 57*a* may lower by gravity and turn the bucket wheel a little further from the dotted line position of Figure 3 to the full line position of Figure 3, wherein the next succeeding bucket is brought into position to receive a ball from the discharge end of runway section 57*a*. In swinging the chute 60 forwardly to release the bucket wheel, the lever 61 is released so that it moves upwardly to its normal position out of engagement with circuit closer 62, thus extinguishing lamp 21. At the same time, the lower end of chute 60 is brought into position over the trough 29 so that the ball is discharged into the latter for returning to the elevator. The means for manually swinging the chute 60 forwardly to release the bucket wheel and open the circuit of lamp 21 may consist of a transverse shaft 63 journaled in the casing forwardly of chute 60 and having one end projecting through a side of the casing 5 where it is provided with a suitable handle or knob 64 to facilitate manual turning of the same, a chain 65 or other suitable operative connection being provided between shaft 63 and chute 60.

Means is provided for preventing another ball passing into runway 57 while one ball is in chute 60, and for permitting said other ball to pass into runway 57 after said one ball has been discharged from chute 60 into runway 29. As seen clearly in Figures 1 and 3, a swinging gate 66 is mounted on the board 6 adjacent the entrance of runway 57, and this gate has a lateral arm 67 arranged to extend across said entrance when the gate is open, so that a ball, in entering the runway 57 will engage arm 67 and swing the gate 66 to a closed position as indicated by dotted lines. The gate 66 is carried on the upper end of a vertical shaft 68 journaled in the board 6 and having a lateral arm 69 on its lower end beneath the board 6 as shown clearly in Figures 3 and 4. A chain or other suitable operative connection is provided at 70 between the arm 69 and chute 60 so that when shaft 63 is operated for swinging chute 60 forwardly to discharge the ball and release the bucket wheel, a pull will be exerted on chain 70 to swing the gate 66 to an open position. When the ball swings the gate 66 to closed position, slack will of course be taken up in the chain 70 so that the subsequent operation of chute 60 will cause the opening of gate 66 as described. In view of the above, it will be apparent that a ball entering runway 57 will actuate the bucket wheel to change the matter to be displayed, and the operation of said bucket wheel will subsequently cause the closing of the circuit of lamp 21 to display the matter brought into position beneath the

sight openings at 17 by operation of said bucket wheel. It will also be noted that the matter will be displayed as long as chute 60 is allowed to remain in its normal position or until shaft 63 is operated to release the bucket wheel, open the circuit of lamp 21, and to open gate 66. It will further be seen that the gate 66 will remain closed until the circuit of lamp 21 is thus opened, thus preventing further balls from entering runway 57 until the circuit of lamp 21 is thus opened.

If desired, a short runway 71 may be disposed on the board 6 above the runway 57 and leading to the entrance of the latter. The lever 61 may consist of an angular arm carried by one end of a shaft 72 journaled on the chute 60 and encircled by a spring 73 by means of which the lever 61 is normally raised to its circuit-opening position, the free end portion of the arm 61 extending across the rear side of chute 60 in the path of the bucket 59, as shown. A suitable enclosure 75 may be provided over the board 6 to prevent access to the latter and the balls, said enclosure having a glass top 76 through which the plays of the game and the matter displayed may be clearly seen. The enclosure 75 also embodies a transverse lower or forward wall 77 arranged directly across and in front of the openings 9 to form a stop for causing such balls to fall through said openings 9 that do not enter runway 57 or openings 7 and 7*a*.

From the foregoing description, it will be seen that I have provided a comparatively simple game apparatus of attractive appearance, and one which may be played without requiring experience or previous knowledge. It will be further seen that operation of the game apparatus involves to a most desirable degree the elements of skill and chance in causing the operation of the amusement device or exhibitor, thus prompting the same person to repeatedly operate the apparatus with ever increasing interest and reasonable uncertainty of results. Further, the apparatus is of such a character as to conflict in no way with existing laws respecting coin-controlled machines, and which is suitable for installation in stores, amusement parks, and other places where persons assemble.

It is obvious that various modifications may be made in the details of construction herein shown and described, without departing from the spirit of the invention as claimed.

What I claim as new is:

1. In a game apparatus, an inclined board having openings through which balls may pass, a device for projecting balls onto the board, a changeable exhibitor, means operable by balls passing through one of the openings for actuating said exhibitor to effect a change in the matter to be displayed thereby, and means operable by balls passing through certain of said openings for effecting illumination of such matter.

2. In a game apparatus, an inclined board provided with openings through which balls may pass, a device for projecting balls onto the board, a runway on the surface of the board leading to one of the openings and into which the balls may pass, a changeable exhibitor, a bucket wheel operable by a ball passing through the opening associated with said runway for effecting a change in the matter to be displayed by said exhibitor, means operable by the ball after actuation of said bucket wheel for effecting illumination of the matter to be displayed, and manually operable means for extinguishing said illuminating means including a member operable to release the ball for return to the projecting device.

3. In a game apparatus, an inclined board provided with openings through which balls may pass, a device for projecting balls onto the board, a runway on the surface of the board leading to one of the openings and into which the balls may pass, a changeable exhibitor, a bucket wheel operable by a ball passing through the opening associated with said runway for effecting a change in the matter to be displayed by said exhibitor, means operable by the ball after actuation of said bucket wheel for effecting illumination of the matter to be displayed, manually operable means for extinguishing said illuminating means including a member operable to release the ball for return to the projecting device, a gate operable by a ball entering said runway to close the entrance to the latter, and a connection between said manually operable means and said gate for opening the latter when the illuminating means is extinguished.

4. In a game apparatus, an inclined board having openings through which balls may pass, a device for projecting balls onto the board, means including a coin-controlled elevator for returning the balls to the projecting device after passage through the openings in the board, a runway on the board leading to one of said openings, a gate operable by a ball entering said runway to close the entrance to the latter, and manually operable means for opening said gate.

5. In a game apparatus, an inclined board having openings through which balls may pass, a device for projecting balls onto the board, means including a coin-controlled elevator for returning the balls to the projecting device after passage through the openings in the board, a runway on the board leading to one of said openings, a gate operable by a ball entering said runway to close the entrance to the latter, manually operable means for opening said gate, a changeable exhibitor, means operable by a ball passing through the opening associated with said runway for actuating the exhibitor to effect

a change in the matter to be displayed thereby and to then effect illumination of such matter, a member to receive the ball from said last-named means and to arrest the movement of the latter until manually released, means to cause further slight movement of said exhibitor actuating means after its manual release, said manually operable means being connected to said ball-receiving means to actuate the latter and effect release of the ball and the exhibitor actuating means.

6. In a game apparatus, an inclined board having openings through which balls may pass, and provided with glass covered sight openings, a changeable exhibitor beneath the board including a member movable past and beneath the sight openings and carrying the matter to be displayed, means actuated by a ball passing through one of the openings in the board for effecting a change in the matter to be displayed beneath the sight openings, and means operable by the last-named means for effecting illumination of said matter.

7. In a game apparatus, an inclined board having openings through which balls may pass, a device for projecting balls onto the board, an inclined trough to receive the balls after passing through the openings in the board, a trough to receive the balls and feed the same one at a time into position for actuation by the projecting device, a coin-controlled elevator for receiving the balls from the first-named trough and for delivering them into the second-named trough, said elevator comprising an endless member provided with buckets to receive the respective balls, and a manually operable shaft for driving said endless member.

In testimony whereof I affix my signature.

NATEN PASSELL.