Sept. 13, 1938. E. EBERT 2,130,123

GAME

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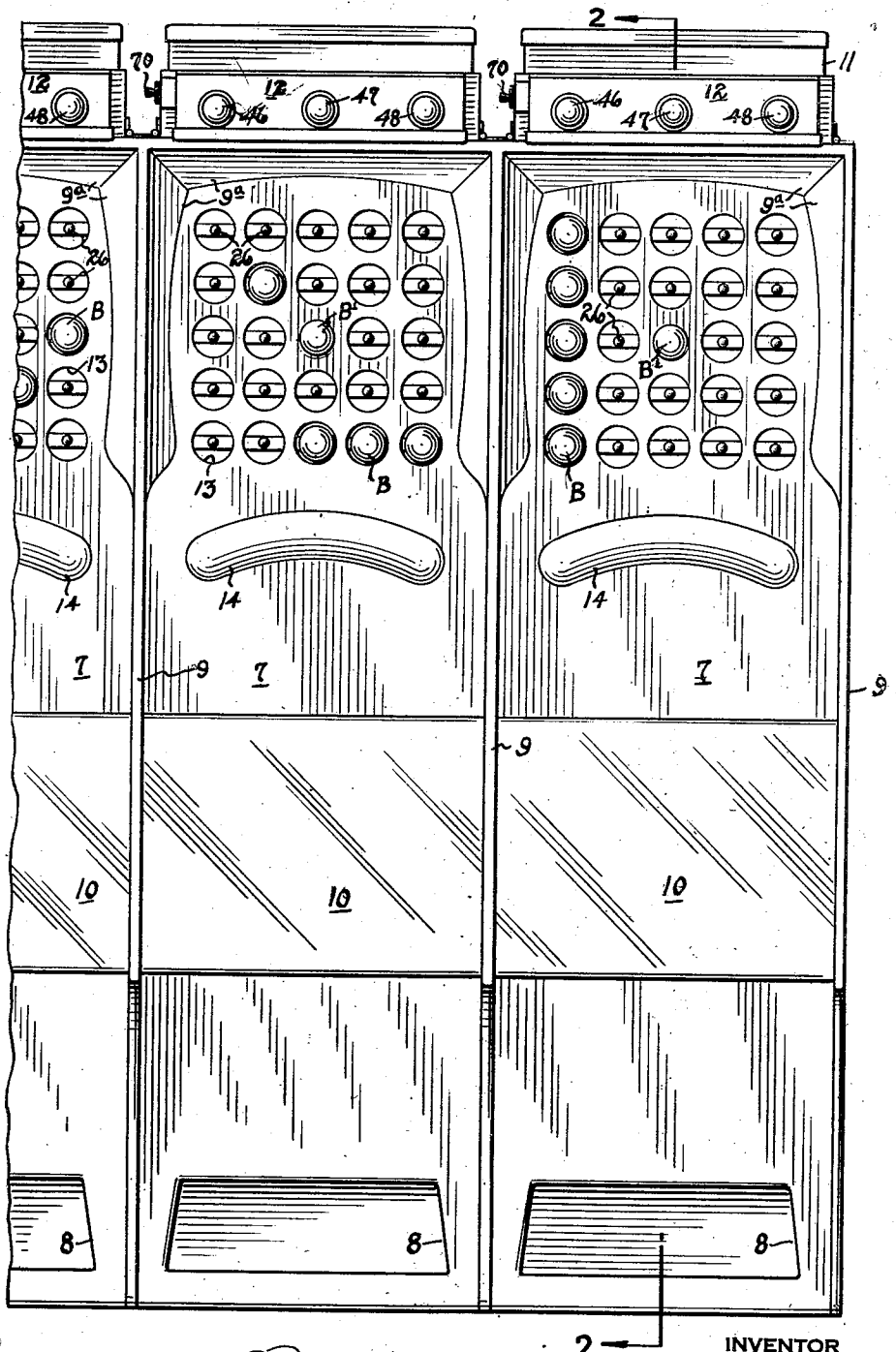


Fig. 1.

INVENTOR
Edward Ebert
BY Darby & Darby.
ATTORNEYS.

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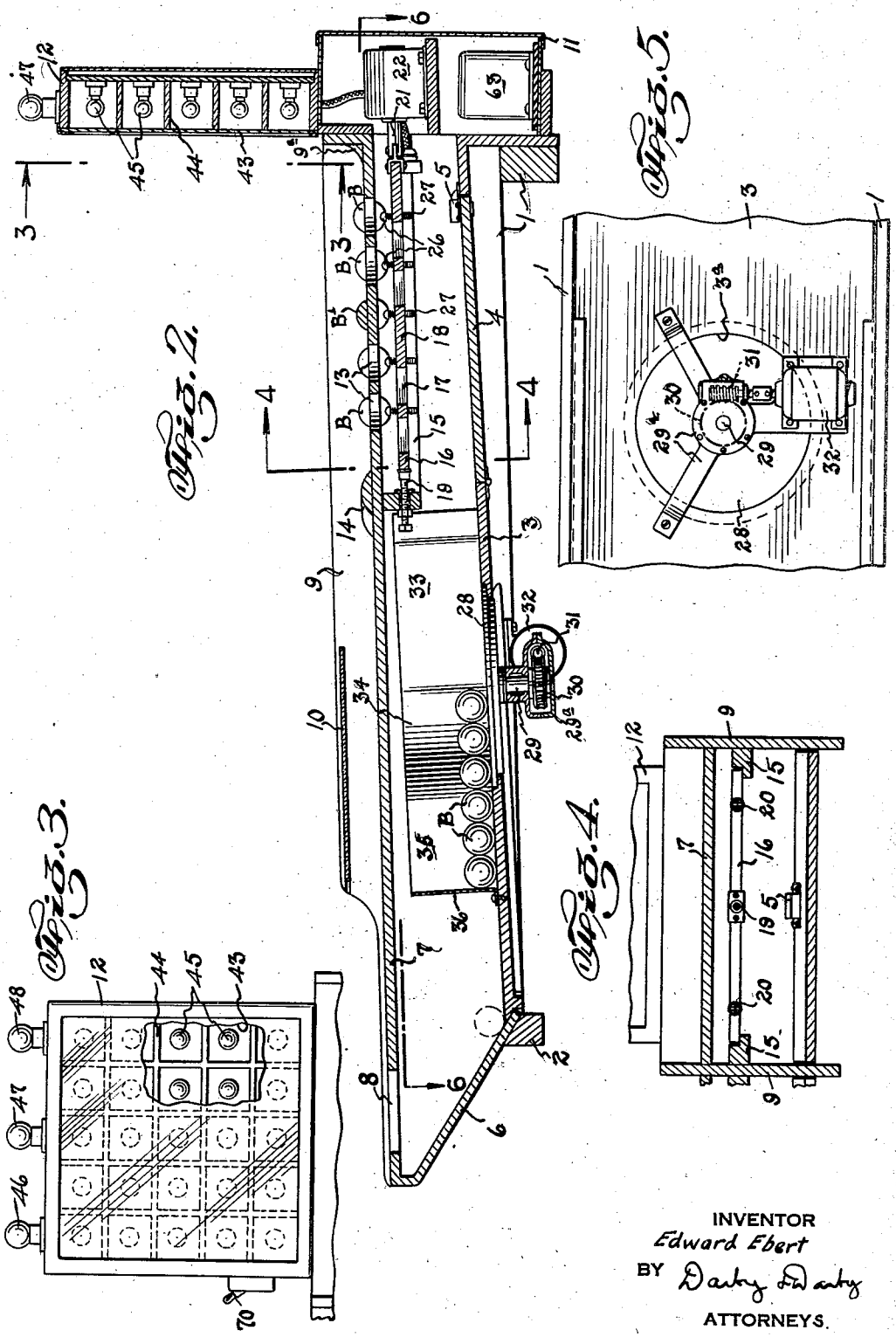


Fig. 2.

Fig. 5.

Fig. 3.

Fig. 4.

INVENTOR
Edward Ebert
BY Darby & Darby
ATTORNEYS.

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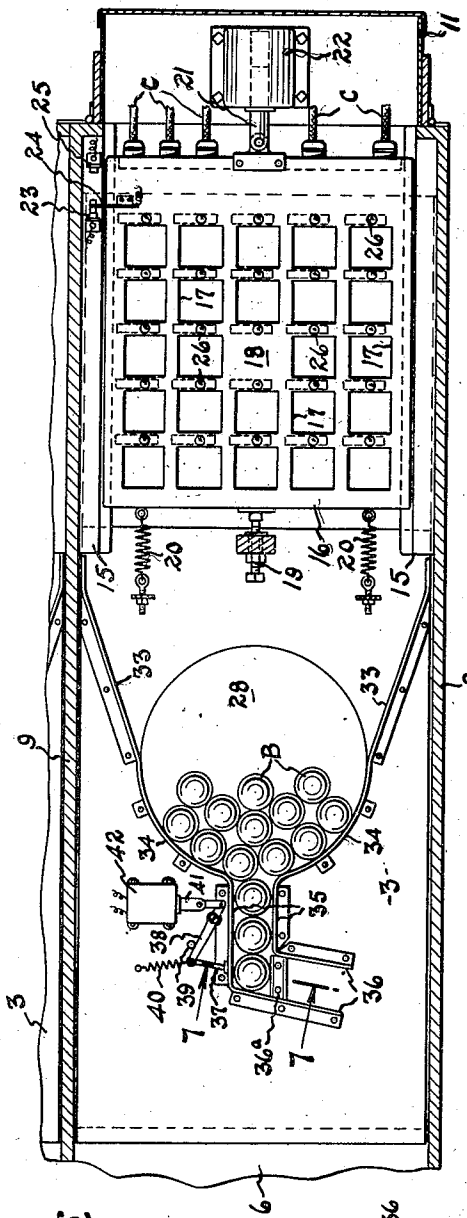


Fig. 6.

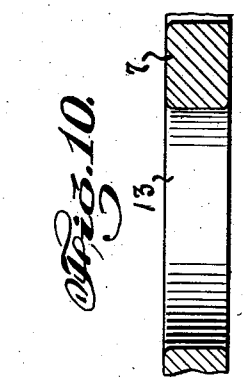
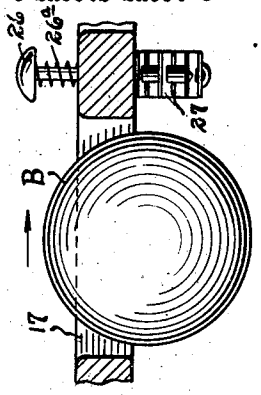


Fig. 10.



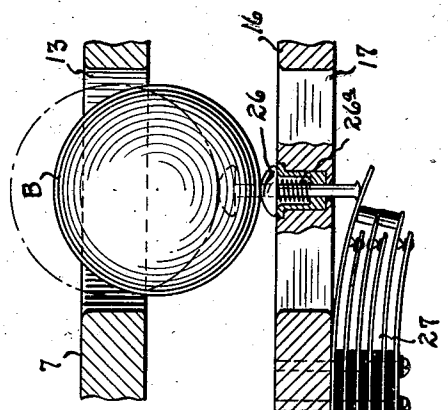


Fig. 9.

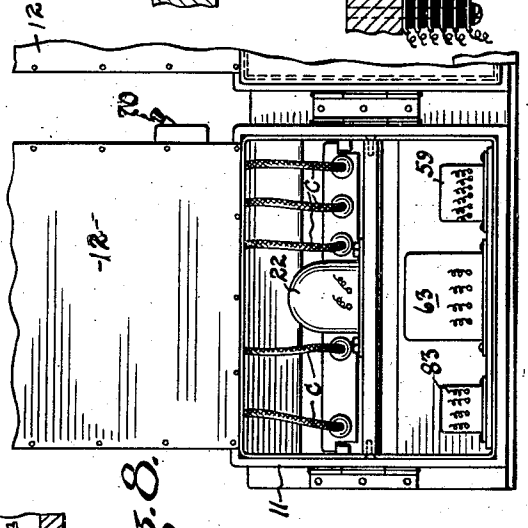


Fig. 8.

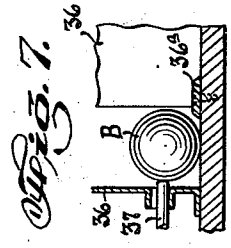


Fig. 7.

INVENTOR
Edward Ebert
BY Darby & Darby
ATTORNEYS.

Sept. 13, 1938. E. EBERT 2,130,123

GAME

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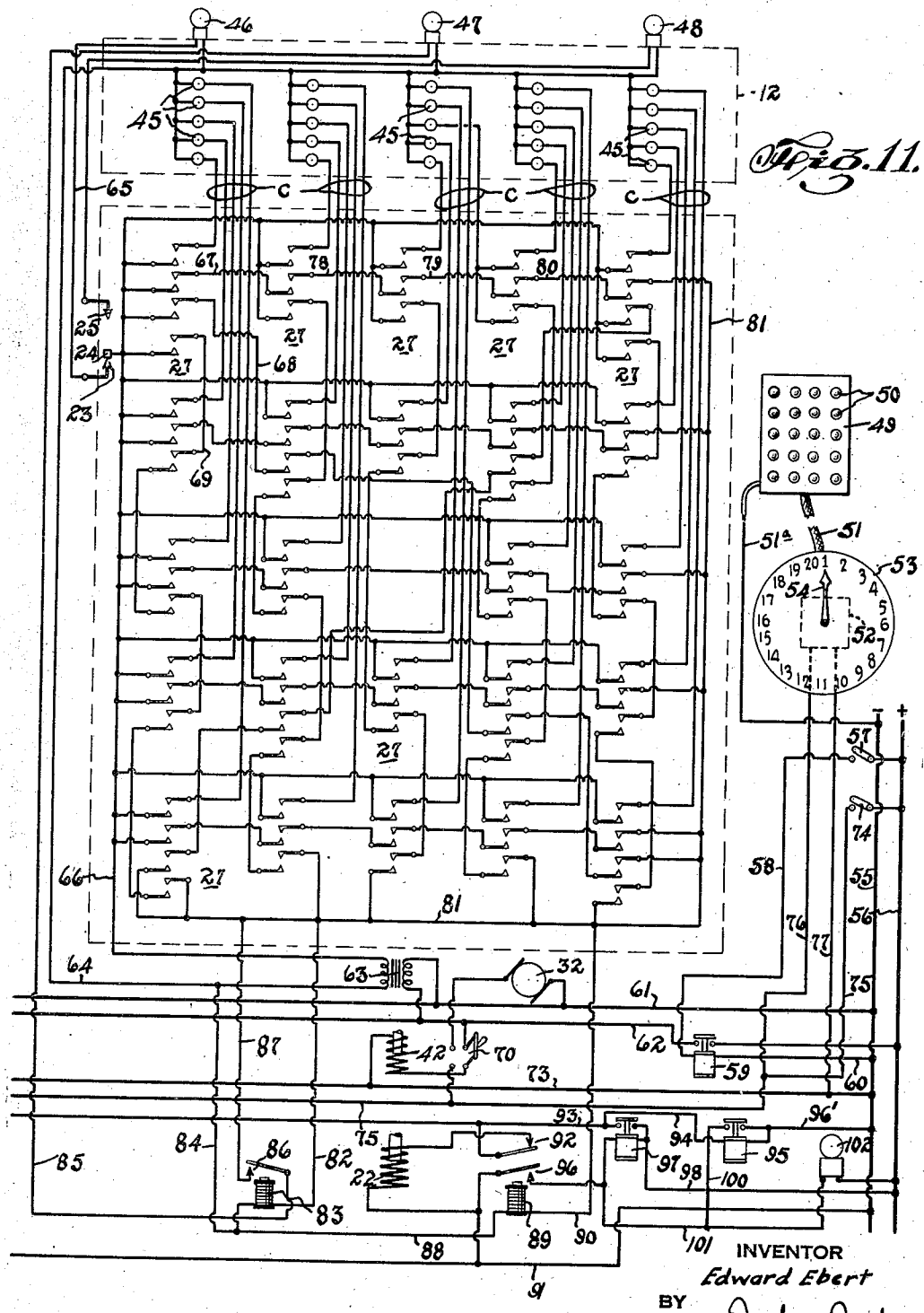


Fig. 11.

INVENTOR
Edward Ebert
BY
Darby & Darby
ATTORNEYS.

Patented Sept. 13, 1938

2,130,123

UNITED STATES PATENT OFFICE

2,130,123

GAME

Edward Ebert, Brooklyn, N. Y.

Application January 16, 1937, Serial No. 120,899

8 Claims. (Cl. 273—123)

This invention relates to improvements in game mechanism by means of which players may exercise their skill in competition with each other.

An object of this invention is to provide a ball rolling game to be played by two or more players in competition under the control of an operator to ensure equally fair competitive conditions.

Another object of the invention is to provide a ball rolling game comprising a board having pockets or receptacles for a plurality of balls and contact devices associated respectively with the pockets or receptacles so that when the first player has directed a ball into a predetermined series of pockets or receptacles he becomes the winner, the pockets or receptacles of the boards of all of the other players being cleared of the balls while those of the winner are maintained in played position until cleared by the operator. In addition, signal and indicating devices are associated with the mechanism to give additional visible and audible signals as to the winner and the series of pockets or receptacles in which the balls rest.

These and many subsidiary objects as will be apparent from the following disclosure are secured by means of this invention.

This invention resides substantially in the combination, construction, arrangement and relative location of parts, all as will be described in greater detail in the following specification.

In the accompanying drawings,

Figure 1 is a top plan view of two of the devices of this invention and a portion of another;

Figure 2 is a cross-sectional view on the line 2—2 of Figure 1;

Figure 3 is a front elevational view from the plane 3—3 of Figure 2 of the lamp board associated with each device;

Figure 4 is a cross-sectional view taken on the line 4—4 of Figure 2;

Figure 5 is an underside view of the machine showing the rotatable turntable;

Figure 6 is a cross-sectional view taken on the line 6—6 of Figure 2;

Figure 7 is a cross-sectional view taken on the line 7—7 of Figure 6;

Figure 8 is a rear end elevational view of one of the devices and a portion of another with a part of the top of the lamp box cut away;

Figure 9 is an enlarged cross-sectional view showing one of the switch or contact devices controlled by a ball when in a pocket;

Figure 10 is a similar view showing the ball drop board shifted with respect to the top board to permit the ball to fall through; and

Figure 11 is a diagrammatic circuit layout of one of the devices with the common control mechanism for all the other devices associated therewith.

It is important to note that a complete installation of devices in accordance with this invention consists of two or more of the devices or machines in cooperative association in order that a competitive game may be carried on between the players respectively assigned to each machine. In an ordinary installation there may be as many as fifty of these machines operatively interconnected.

Each device or machine comprises a suitable supporting framework 1 and 2 supporting a box-like structure comprising a bottom wall 3, a top wall 7, side walls 9, and an inclined front end wall 6. The rear end wall is in part comprised of a hingedly mounted casing 11 in which parts of the equipment are housed. The bottom wall 3 is provided with a hingedly mounted door 4 which is normally held in the plane of the bottom wall by means of a latch 5. Through the opening closed by this door access may be had to the mechanism. The top wall 7 is provided with an enlarged opening 8 at the front of the device through which the player may reach to secure each ball as delivered to him. At 10 is a wall preferably of transparent material, such as glass, extending between the side walls 9 and forming a table for any desired purpose, such as the deposit of the fee for playing the game. Mounted at the rear of the machine so as to be clearly visible to all players is a lamp box 12.

As is clear from Figure 1, the top wall 7 is provided at its rear end with a series of openings 13. The preferable number is twenty-four, arranged in vertical and horizontal rows of five each with the exception of the central row which has no opening at the center but is provided with a semi-circular member B' permanently secured in place. It is apparent that the number of rows and the number of openings 13 therein may be varied if desired. At 14 is a semi-circular ridge secured to the top wall in the position shown so that the player must roll a ball to the openings 13 over it. A suitably shaped and transversely curved cushion 9a surrounds the openings as shown to direct the ball towards the openings. The guide member 14 serves also to direct a ball when it does not go into an opening back to the player so that he may continue to roll it until it is dropped into one of the openings.

Slidably mounted below the top wall 7 under the openings 13 is a ball releasing or drop frame,

guided in its movement by the guide members 15 attached to the side walls 9. A pair of springs 20 are attached between the forward edge of the frame 16 and suitable fixed stops so as to hold the frame in a forward position against the adjustable stop 19. The frame 16 is provided with a series of openings 17 corresponding in number to the openings 13 and provided with a solid space 18 at the area below the projection B'. At the rear edge of the frame 16 is a pivotally mounted plunger 21 which cooperates with the solenoid coil 22. Supported adjacent the frame and fixed with respect thereto are a pair of contacts 23 and 25 positioned to be alternately engaged by means of a contact 24 mounted on the frame. Mounted on the undersurface of the frame are a plurality of multiple switches 27, each arranged to be engaged by a plunger 26 positioned to be engaged and depressed against the action of spring 26a by a ball when it drops through an opening 13 and the frame 16 is in its forward position as shown in Figures 2 and 6.

In a circular opening 3a in the bottom wall 3 is rotatably mounted a turntable 28 mounted upon a shaft 29 to which is secured a wormwheel 30. Upon the shaft of a motor 32 is mounted a worm 31 meshing with the wormwheel 30. These parts are all enclosed within a housing and spider 29a which is secured to the bottom wall and supports the turntable in the opening.

Secured to the upper side of the bottom wall 3, as is clear from Figure 6, are guide walls comprising the converging portions 33, the arcuate portions 34, the radially extending portions 35, and the terminal portions 36 extending at an angle thereto. These guide walls act as a sort of chute and receive all of the balls when released or dropped so that they rest upon the slowly revolving turntable 28 with the exception of those that move in to the chute portion 35 where the foremost ball is prevented from rolling out of the chute by the upwardly projecting strip 36a. An ejecting pin 37 lies in an opening in one of the walls 35 so that when projected through the wall the foremost ball is released by pushing it over the strip 36a. This pin is pivotally mounted on a lever 38 which in turn is pivotally supported intermediate its ends and pivotally connected to a plunger 41 controlled by a solenoid 42. A spring 40 holds the lever 38 against a fixed stop 39 to retract the pin 37 when the solenoid 42 is deenergized.

The lamp box 12 is provided with a transparent or translucent window 43, in back of which is a cell-forming grill 44. In each of the cells is an electric lamp 45, one for each of and corresponding to each of the openings 13. The lamp in the central cell not being controlled by one of the switches 27 may be connected permanently in circuit in an obvious manner or the lamp can be omitted and the cell remain dark. Mounted upon the top of the lamp box are three lamps 46, 47 and 48 which may be termed the "go" light, the "win" light, and the "stop" light, respectively. Mounted on the side of the lamp box is a switch 70 to be referred to later.

Referring now to Figure 11, there is shown at 49 an additional lamp box having a plurality of targets or bull's-eyes 50 behind each of which is an electric lamp. At 53 is a visible number indicator having a movable pointer 54 actuated by any suitable form of electromagnetic step by step mechanism 52, which in addition to operating the pointer 54 operates a switch in an obvious manner to progressively light the lights behind the bull's-eyes 50 through connectors in the cable 51 and the common lead 51a. At 55 and 56 are the main power supply circuit wires. Wire 56 is connected by a switch 57, which may be termed the "go" switch, which connects the relay 59 in circuit through the wires 58 and 60. A wire 61 connects wire 55 with one terminal of the primary of transformer 63 for each machine. Wire 62 connects the other terminal with wire 56 through contacts on the relay 59. It is emphasized that the wires 61 and 62 extend to all of the machines so that all of the transformers 63 are simultaneously energized. One terminal of the secondary of this transformer, which may be called the common lead, as shown at 64 extends to one terminal of each of the lamps 46, 47 and 48 and to one terminal of each of the lamps 45 in the cable C and to each of the top row of switches 27 through one of the lamps. This common lead is also connected through the next lamp to each of the switches 27 of the next lower group and so on through the five lamps in each bank, as is clear from the drawing. The other terminal of lamp 46 is connected by wire 65 to the fixed contact 23. The other terminal of lamp 48 is connected to contact 25. The movable contact 24 is connected by a wire 66 to the other terminal of transformer and to certain of the contacts of the switches 27, as is clear from Figure 11.

Each switch 27 is interconnected with the adjacent switches. Thus, the upper left hand switch 27 has one contact connected by wire 67 to one contact of the switch 27 to the right, one contact connected by wire 68 to the diagonally adjacent switch 27, and one contact connected by wire 69 to one contact of the switch directly below it. In a similar way, each switch 27 is respectively connected to the switches 27 adjacent thereto so that when five balls are in pockets horizontally or vertically, or four balls are in pockets diagonally in either direction, a circuit may be traced through all of the switches 27 closed by those five balls to provide a circuit to the "win" light magnet 83. For example, all of the switches 27 in the topmost horizontal row will complete a circuit through them when balls are in the five receptacles associated with them. As stated above, one contact of the uppermost left hand switch 27 is connected by wire 67 to one contact of the switch to the right of it, one contact of this switch is connected by wire 78 to one contact of the switch to the right of it, one contact of this switch is connected by wire 79 to one contact of the switch to the right of it, and one contact of this switch is connected by wire 80 to the last switch, that is, to the one to the right of it. In the same way, it will be seen that these switches are connectible either horizontally, vertically, or diagonally, throughout the entire row. It is hardly necessary to note that all of the switches 27 are normally open when there is no ball in the associated receptacle. The wire 81 provides the terminal or return lead from each row of switches for either horizontal, vertical or diagonal rows. Wire 81 is connected by wire 82, to the "win" light magnet 83, which in turn is connected by wire 84 to wire 64 and by wire 88 to the magnet 89, which in turn is connected by wire 90 to wire 81. Magnet 83 controls a switch 86 in circuit with wire 87 from wire 81 and wire 85 back to the other terminal of the "win" light 47.

Switch 70 is closed when the associated table goes into play. This is normally open, and closed by the assistant to the operator who collects the

fee from the player and who closes the switch 70 to put the table into condition for operation. The closing of this switch completes a circuit from wire 55 through wire 61 to motor 32, one leg of switch 70, back to wire 62, through the relay 59 to wire 56. This starts the turntable 28 revolving. The function of this slowly turning table is to ensure that the balls will not become bridged across the chute but ensures that the chute formed by the walls 35 will always contain balls. Switch 70 also partially completes a circuit to the ball ejector solenoid 42 from wire 55 through wire 73, solenoid 42, one pole of switch 70, wire 75 and switch 74 back to wire 56. A circuit to the actuator 52 for pointer 54 is also completed from switch 74 through wire 76. The magnet 89 controls a pair of switches 92 and 96 which are shown in the normal positions for all machines. Wire 91 connects wire 55 with one terminal of switch 96 and with one terminal of the ball drop solenoid 22 which shifts the frame 16. The other terminal of this winding is connected through the normally closed switch 92 to wire 93. It may here be noted that wires 73, 75, 91 and 93 extend to all of the machines. Each machine, as has been in part noted, includes a motor 32, a transformer 63, an ejector solenoid magnet 42, a ball drop solenoid magnet 22, a "win" light magnet 83, and a magnet 89. Wire 98 extends from wire 56 to magnet 97. Wire 100 connects wire 101, through the switch of magnet 95 and wire 96, to the other side of the line. Wires 100 and 96' form a holding circuit for the magnet 97 and wire 101. Wire 96' is connected by wire 94 to wire 93. Magnet 97 is connected by wire 101 to the bell or signal device 102 which is connected to wire 56.

The operation of the mechanism will now be described. It will be assumed that a plurality of tables or machines are to be operated by players. The assistant operator collects a fee from each of the prospective players and as he collects the fee he closes the switch 70 for the machine to be used by that player. It should be noted that the frame 16, in the position shown in Figure 2, is in the position in which it is returned by the springs 20 after dropping all of the balls B which then rest between the guide walls on the turntable. The foremost ball is in a position to be ejected by the pin 37. When all the players are ready, the operator closes switch 57. This completes the circuit through the relay 59 which closes to complete the circuit to transformer 63 in an obvious manner. The energization of transformer 63 energizes the circuit to the "go" light 46 through the contacts 23 and 24. The closing of relay 59 also completes the circuit to motor 32 through switch 70 so that the turntables of the machines in use slowly revolve. The operator then momentarily closes the ball ejector switch 74. This completes a circuit from wire 56 through wire 75 and switch 70 to the ejector solenoid 42, the return circuit being through wire 73. The ejector pushes the ball over the stop 36a and it rolls down so that it may be picked up through the opening 8 by the player. He then rolls it up the table in an attempt to deposit it in one of the openings 13. If the ball fails to drop into an opening it returns to the player and he rolls it over again until it does deposit in an opening. As each ball deposits in an opening the associated switch 27 is closed, completing a circuit for the lamp 45 associated therewith. This gives a visible indication to all of the other players and to the operator. The closing of switch 27, as noted above, also completes the circuits to the immediately adjacent switches 27.

At the same time that switch 74 is closed, an impulse is sent to the device 52 for actuating the indicator 57 to progressively indicate how many balls have been ejected. At the same time, lights are progressively energized behind the bull's-eyes 50 to give an additional indication. As soon as all of the players have deposited the first ball supplied to them respectively, which is indicated to the operator by the fact that one light 45 is lit for each machine, he again momentarily closes switch 74 to energize the ejector solenoid 42 releasing the second ball to each of the players. At the same time the indicator 54 and the bull's-eyes 50 indicate that the second ball has been released. The players roll this ball until each has deposited it in the opening 13 of his machine. At this time another light 45 on each of the machines lights as the balls are deposited and current is supplied to the adjacent switches 27. As soon as the lamp boards 12 indicate that all players have been successful in depositing the second ball in a receptacle, switch 74 is again momentarily closed. This is continued until one of the players has deposited five balls consecutively in either a vertical or a horizontal row or four balls in either diagonal row. At the time the fifth ball in the first instance, or the fourth ball in the second instance, drops into the opening and closes its associated switch 27, a circuit is completed from wire 81 to wire 82, "win" light magnet 83, and wire 84, back to the common lead 64. The energization of magnet 83 closes switch 86 which completes a circuit through wire 85 to the "win" light 47 of his board which signals the winner. At the same time a circuit is completed through magnet 89 by way of wire 90 from wire 91, wire 88, and wire 84, back to wire 64. This causes closed switch 92 to open, and open switch 96 to close, on the machine of the winner but the corresponding switches of all of the other machines remain in the position shown in Figure 11. The opening of switch 92 breaks the circuit to the ball drop solenoid 22 on the machine of the winner but the corresponding circuits for all of the other ball drop solenoids 22 remain closed at switch 92. Switch 96 closes a circuit from wire 91 and wire 98 through the bell or other signal device 102 to give an additional and preferably an audible signal to all of the players that one of them has won. The closing of switch 96 also completes a circuit through the ball drop control magnet 97 through wire 98 to connect wire 93 to wire 98. The ball drop solenoids 22 on the machines of all of the losers are then energized from wire 93. These solenoids 22 cause frames 16 to shift to the position indicated in Figure 10 so that the balls may fall through the openings 17 and return to the turntable. However, on the winner's machine, the ball drop solenoid 22 is not energized because switch 92 is open. The closing of relay 97 completes a circuit to the magnet 95 by way of wires 94 and 96' from wire 93. The switch of magnet 95 completes a holding circuit for magnets 95 and 97 keeping wire 93 energized so that the ball drop solenoid 22 of the winner's machine can be energized when desired. The shifting of the frames 16 breaks the "go" light circuits at contact 23 and completes the "stop" light circuits at contact 25.

As soon as all players are satisfied as to who is the winner, the operator opens switch 57 which stops the motor 32 and deenergizes transformer

63 taking the current off of all circuits connected thereto. The result is that magnet 89 is deenergized so that switch 96 opens and switch 92 closes on the winner's table energizing the solenoid 22 of his machine. It will be remembered that wire 93 is held energized by relay 97. This ensures that the winner's machine will be cleared by dropping the balls and returning them to the turntable. The operator then resets relay 95 by hand, although it is obvious that this can be done by breaking the circuit to it, thereby opening the holding circuit for magnet 97 and de-energizing the remaining circuits including all the ball drop solenoids 22. Thereupon, the springs 20 return all the frames 16 extinguishing all the "stop" lights 48. The assistant operator opens all switches 70 and is then ready to collect the fees for a new game.

From the above description it will be apparent to those skilled in the art that this invention involves certain principles of construction and operation which may be carried out in other ways without departure from the true scope thereof. I do not, therefore, desire to be strictly limited to the disclosure as given for purposes of illustration but rather to the scope of the appended claims.

What I seek to secure by Letters Patent is:

1. In a game mechanism as described, the combination comprising a plurality of playing tables each having a series of receptacles into which the players deposit balls, a plurality of interconnected contact devices respectively positioned under said receptacles, one each associated with each of the receptacles, and means controlled by said contact devices when all of the receptacles of a predetermined series on one of said tables contain balls for releasing the deposited balls from the receptacles of all the other tables.

2. In a game mechanism as described, the combination comprising a plurality of playing tables each having a series of receptacles into which the players deposit balls, a plurality of interconnected contact devices respectively positioned under said receptacles, one each associated with each of the receptacles, signalling means controlled by said contact devices when all of the receptacles of a predetermined series on one of said tables contain balls to signal that condition, means also controlled by said series of contact devices for simultaneously discharging all of the balls from the receptacles of the other tables, and means controlled by an operator for discharging the balls from the receptacles of the remaining tables.

3. In a game mechanism as described, the combination comprising a plurality of playing tables each having a series of receptacles into which the players deposit balls, a plurality of interconnected contact devices respectively positioned under said receptacles, one each associated with each of the receptacles, means controlled by said contact devices when all of the receptacles of a predetermined series on the winner's table contain balls to indicate that condition, means for simultaneously discharging all of the balls from the receptacles of the other tables, and means controlled by said contact devices for preventing the discharge of the balls from the receptacles of the winner's table.

4. A game mechanism comprising a plurality of individual machines each having a plurality of ball receiving receptacles, a contact device respectively positioned below each receptacle, circuits controlled by the contact devices for each machine completed when a predetermined series of receptacles for a machine contain balls, and means controlled by the first completed circuit for indicating this condition and releasing the balls from all the receptacles of the other machines.

5. A game mechanism comprising a plurality of individual machines each having a plurality of ball receiving receptacles, a contact device positioned at each receptacle, circuits controlled by the contact devices for each machine completed when a predetermined series of receptacles for a machine contain balls, means controlled by the first completed circuit for indicating this condition, and a plurality of means respectively connected to the circuits of each machine for automatically discharging the balls from the receptacles of all of the other machines.

6. A game mechanism comprising a plurality of individual machines each having a plurality of ball receiving receptacles, a contact device positioned below each receptacle, circuits controlled by the contact devices for each machine completed when a predetermined series of receptacles for a machine contain balls, means controlled by the first completed circuit for indicating this condition, a plurality of means respectively connected to the circuits of each machine for automatically discharging the balls from the receptacles of all of the other machines, and a plurality of means each respectively connected to the circuits of each machine for rendering the discharging means for that machine ineffective.

7. A game mechanism comprising a plurality of individual machines each having a plurality of ball receiving receptacles, a contact device positioned below each receptacle, circuits controlled by the contact devices for each machine completed when a predetermined series of receptacles for a machine contain balls, means controlled by the first completed circuit for indicating this condition, a plurality of means respectively connected to the circuits of each machine for automatically discharging the balls from the receptacles of all of the other machines, a plurality of means each respectively connected to the circuits of each machine for rendering the discharging means for that machine ineffective, and means for actuating said last mentioned means for discharging the balls from the receptacles of that machine when desired.

8. A game combination comprising a plurality of machines each having a plurality of ball receiving pockets, a contact device respectively positioned below each pocket, independent circuits for each machine connected to said contact devices whereby the closing of a predetermined series of contact devices by the deposit of balls in the associated pockets of one machine completes a circuit for said machine, a signal device energized upon the completion of said circuit to indicate that fact, and a plurality of devices energized upon completion of said circuit, for discharging the balls from the pockets of all of the other machines.

EDWARD EBERT.