

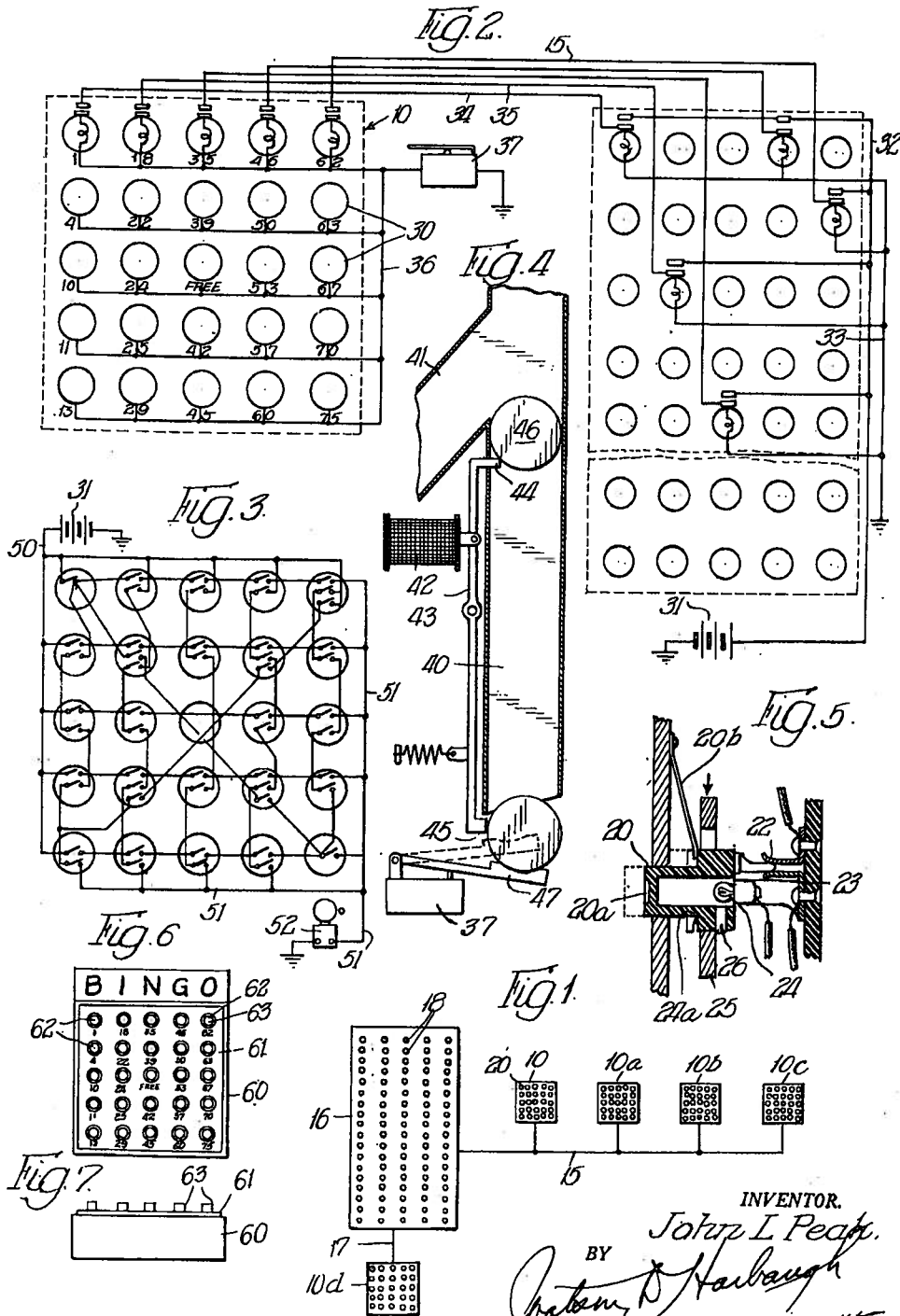
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AMUSEMENT DEVICES

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AMUSEMENT DEVICE

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This invention relates generally to games or amusement devices and more particularly to an improved electrical apparatus for playing lotto or keno type games.

During recent years the game of lotto has become quite popular in an adaptation known as Bingo, Corno, etc. The game is played by a group of players, each of whom has a numbered card before him. The numbers on the card are arranged in a square or rectangular pattern. As the game is played, numbered balls or elements are drawn by lot from a container and the numbers called out to the players. As each number is called, each player having that number on the card which he is playing places a marker, which may be a kernel of corn, over that number. The play is ended when one player has completed a straight row of numbers, either horizontally, vertically or diagonally on his card. Since the combinations and arrangements of numbers on the various cards of the set are different, there is usually only one winner in each game unless an unusually large number of players is involved.

The cards employed usually are square and have five numbers on a side, making a total of twenty-five. In many cases the center number is marked "Free," no number appearing thereon. This makes it easier to get a winning row of numbers on either diagonal or on the center vertical column or center horizontal row, for only four numbers need be called to complete a line of five such rows.

The total number of numbers used in the game may vary, but usually is between 75 and 100 for cards having 25 numbered spaces thereon. The numbers may be employed in a simple sequence arrangement of numbers in which the numbers from 1 to 15 usually appear on the cards in the first column, numbers 16 to 30 in the second column, 30 to 45 in the third column, etc. A variation is to head the vertical columns with the letters B I N G O and label the numbers B-6, N-10, G-2, etc.

On completion of the game, particularly where a participation fee is charged and a prize is awarded to the winner, it is desirable to check the card of the person who has proclaimed himself to be a winner. To do this, an assistant repeats back to the operator the numbers which have been covered on the player's board to determine whether or not the winning combination or line is present. These numbers are checked as called against the numbered balls which have been drawn from the container to verify the accuracy or sometimes the honesty of the player.

This checking period entails time, suspends the play and is particularly unpleasant to the other players who, not having won, are usually anxious to proceed with the play of the next game. Furthermore, when the alleged winner has erroneously placed his markers and is not in fact the winner the enthusiasm of the other players is lowered, especially if they have removed the markers from their cards and cannot play out that game.

Accordingly, one object of this invention is to provide an apparatus for playing the game which positively

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prevents erroneous or dishonest playing on the part of a player and eliminates the time consuming check-back to authenticate the winner.

Another object is to provide an apparatus in which the numbers on the playing boards or cards as well as on a master control panel are illuminated after they have been drawn and called, and the player can either participate in illuminating the numbers or sit back and watch his board operate automatically.

A converse object is to provide an apparatus in which the numbers cannot be illuminated unless they have been drawn, thereby enabling a check-up without calling back the numbers.

A further object is to provide an apparatus in which the player does not have to watch or exert himself to play a board to be assured of winning if in fact the board before him comes up with a winning combination.

A further object is to provide an arrangement whereby a visual and/or audible signal automatically indicates that a player has won.

A further object is to provide an apparatus which may be coin actuated, if desired, to speed the game, and which is positively foolproof so that a person may not join the game after it has started should he perceive that he has an idle winning board before him.

A further object is to provide an apparatus in which the playing boards are provided with replaceable cards so that a player may have a different card, if he desires, without the necessity of changing seats or boards.

Other objects and advantages of the apparatus of this invention will present themselves to those familiar with the art on reading the following specification in conjunction with the drawing and the appended claims:

In the drawing,
Fig. 1 is a schematic drawing of a preferred embodiment of the apparatus;

Fig. 2 is a wiring diagram showing the preferred electrical circuit for use with the apparatus of this invention;

Fig. 3 is a wiring diagram of the winner indicating circuit;

Fig. 4 is a sketch showing the coin collecting chute;

Fig. 5 is a vertical section showing a preferred construction of illuminated switch;

Fig. 6 is a plan view of another modified embodiment; and

Fig. 7 is a front elevation thereof.

A fundamental concept of this invention is to provide a playing board for each player having electric lamps arranged in rows and columns thereon with or without participation switches thereon to control them. The lamps are connected by cabled conductors to a master control panel in series with switches corresponding to each number and a power supply.

The various elements of the apparatus are shown in Fig. 1. The playing boards 10, 10a, 10b, 10c and 10d may be connected to a common cable 15 extending from the control panel 16 or may have individual cables such as the cable 17 extending from the panel 16 to the playing board 10d. I prefer to provide a common cable having spaced multiple sockets wired therein into which mating plugs on short individual cables extending from the boards are received.

In the embodiment illustrated, the panel 16 is provided with seventy-five illuminated push-button switches indicated at 18. The switches may be any conventional type and need not be illuminated, but I prefer to use the type of switch shown in Fig. 5 having a push button 20 of translucent plastic which may be pressed inwardly to close two electric contacts 22 and 23. A leaf spring 20b fastened at one end to the front panel and fitting into a groove 24a in the button urges the button outwardly to normally hold the switch open. A lamp bulb

24 is mounted behind the button element 20 and is connected so as to be energized only when the button 20 is held down. To replace the lamp bulb 24 the front panel which is removable is merely moved away when all the buttons 20 are raised to expose the lamps 24. A conventional apertured locking plate 25 is provided which cooperates with detent elements 26 on each of the buttons 20 to hold the buttons down once they have been pressed. The locking plate 25 is shiftable with respect to the buttons 20 as indicated by the arrow and may be moved away from the detents 26 to release all of the buttons simultaneously at the end of the game in order to open the switches and reset the panel quickly for the next game. The end of each button 20 is painted or embossed with a number corresponding to its location on the panel as indicated at 20a.

Thus when each button 20 is pressed, its switch contacts 22 and 23 are closed to light the lamp 24 disposed behind it and the button 20 is held down until the end of the play so that the illuminated buttons on the panel indicate the numbers which have been drawn up to that time, for as the numbers are drawn and called out the corresponding button is pressed.

The switches 30 on the playing boards 10 are preferably of the same type as those used on the control panel 16 but other kinds may be used, if desired. The preferred wiring diagram is shown in Fig. 2. The power supply 31, shown as a battery, may be any source of low voltage alternating or direct current. To simplify the drawing, the battery 31, as well as certain conductors in the play boards 10 and panel 16, are shown connected to ground. Actually a ground wire is preferred connecting all conductors where indicated as grounded. To further simplify the drawing, only one play board 10 is shown. The others, however, are wired in the same fashion.

In Fig. 2 the wiring of only one row of illuminated switches 30 on the playing board 10 is shown. The other switches 30 on that board and on each of the other boards are wired in exactly the same manner so as to be controlled by the switch bearing the corresponding number on the control panel 16. On examination of Fig. 2 it will be seen that a conductor 32 extends from the power supply 31 to one terminal of each of the switches on the panel 16. Another conductor 33 connects each of the lamps 24 to ground, and the other side of each lamp 24 is connected to its corresponding switch. Thus when a switch is closed, its lamp 24 is energized.

The terminal of each switch which is connected to the lamp 24 is also connected to a conductor in the cable 15 which extends to each of the playing boards 10, the individual conductor being connected only to those boards on which the corresponding number appears. Thus a conductor 34 extends from switch 1 on the panel 16 to switch labeled 1 on the board 10. Similarly a conductor 35 connects the switch 18 on the panel 16 with the switch 18 on the playing board 10. The other terminal of each switch 30 on the playing board 10 is connected through the corresponding lamp 24 to ground by a common conductor 36. This ground circuit, however, includes a coin actuated switch 37 whose function will be described later.

From the foregoing it will be apparent that when the switch labeled 1 on the panel is closed, one contact of the corresponding switch on the board 10 will be energized. Thus when the player hears the number one called, he may illuminate the upper right-hand switch by merely pressing the button 20 to complete the circuit to ground through the lamp 24. If the player should press the button 24 of a switch on a playing board 10 prematurely before the corresponding switch on the control panel 16 is closed, the circuit will not be completed and the board switch will not light up even though it is held closed by the detent 26. A lazy player may, if he desires, press all the switches 30 on this board to play a completely automatic game, for the switches

30 will be lighted automatically as the corresponding numbers are drawn and the switches of the panel 16 are closed.

The operation of the apparatus is probably apparent from the foregoing description but a résumé may prove helpful.

To start the game, the player deposits a coin to close the switch 37. When all players have done this, the operator of the game proceeds to draw the numbered balls one at a time. As each ball is drawn, he calls out its number and closes the corresponding switch on the control panel 16.

Assuming the first number drawn is 18—when the switch numbered 18 on the panel 16 is closed its lamp will be energized as will the conductor 35 leading to the switch 18 on the playing board 10. The player on hearing the number called will press the switch button to illuminate his switch 18, or if he is playing the "lazy" game with all switches closed, the lamp will light as soon as the switch on the panel 16 is closed. As the play progresses and other numbers are called, the player will close the corresponding switches to light the numbers called which appear on his board. If as the play progresses the numbers 1, 18, 35, 46 and 62 are called, the player of the board 10 will find that all the switches in the top row have been illuminated, and he will call out "bingo" or make some other signal that he has won. The operator of the game then has merely to walk over to the board, and a quick look at the top row of illuminated switches 30 will confirm the player's statement, and the prize can then and there be delivered. This quick check is all that is required, for the switches of that row could not have been lit had the numbers not been drawn and the corresponding switches on the control panel closed. No repeating back of the numbers or other time consuming procedure is required. In fact, with the present invention it takes no more time than a glance to check and deliver the prize than it has taken heretofore for the operator to walk to a board merely to deliver the prize.

After he has received his prize, the player may actuate a lever (not shown) to move the switch locking plate 25 and release all the switches to reset the board 10 for the next game. The losing players, of course, will also reset their boards. Similarly, the operator will reciprocate the locking plate 25 on the control panel to reset it for the next game.

In the embodiment illustrated, the switch at the center of the board 10 labeled "FREE" is different from the others in that it is wired directly to the power supply 31 so as to be illuminated at all times during the play of the game. Its ground conductor, however, is connected through the coin actuated switch 37 so that the light is on only when a coin has been deposited. Thus this light serves as a convenient indicator that the player has deposited a coin and that his board is in play when the game commences.

A preferred form of coin receiving mechanism is shown schematically in Fig. 4. A bifurcated chute 40 is provided with a coin receiving opening and slug detector (not shown) at its upper end. One leg 41 extends off to one side to a coin return receptacle (not shown) while the other leg extends downwardly to the till. The coin actuated switch 37 is located at the lower end of the chute 40.

To prevent a player from following the play mentally and joining the game after it has started if he perceives that his chances of winning are good, a solenoid 42 and lever 43 are provided. The lever 43 is pivotally mounted at its center and normally rests in the position illustrated. Both ends of the lever are bent at right angles so that they may project into the chute a short distance, but the lower end of the lever 43 normally lies just outside the chute so as not to interfere with coins therein. The function of the upper end 44 of the lever 43 is to retain a coin in the chute 40 just below the junction of the leg

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41 until such time as the solenoid 42 is energized. The other end 45 of the lever 43 serves to roll a coin off the switch arm 47 when the solenoid is actuated, allowing the switch 37 to open.

The arrangement functions as follows: The coin the player deposits is first retained on the projecting end 44 as indicated at 46. Should he then deposit a second coin it will strike the coin 46 and be deflected down the return leg 41 to the return coin receptacle which is accessible to the player. Just before the game is about to begin the operator momentarily closes a switch (not shown) which energizes the solenoid 42 at each board 10. This moves the lever 43 slightly in a counterclockwise direction and withdraws the projecting end 44 from the chute 40, permitting the coin 46 to drop to the bottom of the chute 40 where it comes to rest on the switch arm 47, its weight closing the switch 37 and energizing the board 10.

The next time the solenoid 42 is energized, the lower projecting end 45 moves inwardly to roll or push the coin off the arm 47, allowing the switch 37 to open. In the event that the solenoid 42 is energized longer than momentarily, the coin 46 will be released as the end 44 is withdrawn from the chute 40 and will drop to a position just above the projecting end 45, being retained thereon above the switch arm 47. As soon as the solenoid 42 is deenergized, however, the end 45 will spring outwardly and permit the coin to drop onto the arm 47 to close the switch 37.

In Fig. 3 the wiring diagram of a modified embodiment in which the winner is automatically indicated is illustrated. Actually there are three sub-modifications illustrated by Fig. 3, but the identical indicator circuit is used in all three.

To convert the preferred embodiment to the first modified winner indicating type either relays or additional switches are provided, preferably switches which are actuated when the illuminated switches 30 are closed. I prefer to employ additional pairs of switch contacts which are mechanically closed when the buttons are depressed. The number of additional switches required varies from one to three, depending on the location of the button on the board.

In Fig. 3 the switch buttons are indicated by large circles, while the additional switches actuated thereby are represented by small switches within the circles. The conductors are represented by solid lines. A conductor 50 connects the power supply to one side of one of the additional switches at each button in the top column and the right-hand row. The other side of each of these switches is connected by a short conductor to the adjacent switch in that column or row. The other side of that switch is in turn connected to the next button and so on until the opposite edge of the board 10 is reached. Similarly conductors having switches therein extend diagonally across the two diagonals on the board.

On the bottom and left-hand side of the board a conductor 51 connects one switch contact at each button in the corresponding column and row through an electric bell to ground. On study of the drawing it will be apparent that current may flow between the conductor 50 and the conductor 51 whenever all of the switches in a horizontal row, a vertical column, or either one of the two diagonals are closed and not at any other time. Since these switches are actuated by the numbered buttons, current can flow to the bell 52 only when a winning combination of button switches 30 have been closed. If desired, a lamp to provide a visual signal may be substituted for the bell 52.

The above described modification, however, is not absolutely foolproof for a person who erroneously presses the button switches before the switch on the control panel is closed may falsely indicate that he has won. The operator of the game still may check the winner without calling back the numbers, however, for the lamps 24

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will not be lit unless the corresponding switches on the panel 16 have been closed. To provide a fully automatic apparatus for operator control either of two courses may be followed. One way is to provide a relay connected in parallel with the lamp of each button switch 30 in the play board 10. Two of the relays may be single pole, five must be triple, and the remainder may be double pole. Since the relays can close the indicating switches only when the lamps 24 are energized, and since the lamps cannot be energized until the correspondingly numbered switch on the control panel 16 has been closed, no false winning signal can result even if the player closes all of the button switches 30.

Another way is to provide additional switches behind the control panel 16 which are mechanically closed when the push buttons are depressed. One network must be provided for each playing board 10 in the set, and a great many switches must be actuated by each button if a large number of boards is provided.

Another modification of the invention in which the indicating circuit is employed is to provide a plurality of identical playing boards 60 and a set of different numbered cards or templates 61. Each card 61 is provided with openings 62 corresponding with each switch 63 on the board so that the card 61 may be fitted over the top of the board 60. With this arrangement the switches 63 project through the openings in the cardboard, and any card 61 fits all boards 60. The boards 60 are preferably substantially identical with those of the first modification having the illuminated switches 30 as well as the winner indicating switches, but the switches 63 are not numbered. The only difference is that the conductors of the cable 15 are eliminated, the switch contact 22 at each button of each board being connected directly to a power supply, and the panel 16 may, therefore, be dispensed with, if desired.

The play with such boards 60 is not automatic, but the added feature of card interchangeability offsets this disadvantage, for any player desiring a new card has merely to lift off the old card and substitute a new one. With this embodiment, winners are indicated automatically just as in the first described modification.

From the foregoing it will be apparent that a vastly improved game apparatus has been provided which may take any one of several forms, depending on the size of the game to be played, its locale, and the desires of the operators. The apparatus is basically the same, however, in all embodiments, and unitary elements of one modification may be used in the various other embodiments.

Although several modifications have been described, it is to be understood that various other changes and modifications may be made without departing from the spirit of the invention whose scope is commensurate with the following claims.

What is claimed is:

1. A game apparatus comprising a panel having a relatively large number of switches thereon, a conductor extending from a source of electrical power to one contact of each of said switches, a lamp at each switch connected to the other contact of each of said switches so as to be lighted when the switch connected thereto is closed, a plurality of playing boards each having a substantially lesser number of switches thereon than the panel board, a separate conductor extending from each of said playing board switches to said other contact of one of the first mentioned switches, and a lamp proximate to each of said playing board switches, each of said last mentioned lamps being in series with the corresponding playing board switch in a return conductor leading back to the power supply.

2. A game apparatus comprising a panel having a relatively large number of switches thereon, a conductor extending from a source of electrical power to one contact of each of said switches, a plurality of playing boards each having a substantially lesser number of switches

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thereon than the panel, a separate conductor extending from each of said playing board switches to the other contact of one of the first mentioned switches, and a lamp mounted in close proximity to each of said playing board switches, each of said lamps being in series with the playing board switch and a conductor leading to the power supply.

3. A game apparatus comprising a panel having a relatively large number of switches thereon, a conductor extending from a source of electrical power to one contact of each of said switches, a plurality of playing boards each having a plurality of switches thereon, each of said playing boards having a lesser number of switches than said panel, a separate conductor extending from each of said playing board switches to the other contact of one of the first mentioned switches, and a lamp in series with each of said playing board switches.

4. A game apparatus comprising a panel having a number of switches thereon, a conductor extending from a source of electrical power to one contact of each of said switches, a plurality of playing boards each having a number of switches thereon, a separate conductor extending from each of said playing board switches to the other contact of one of the first mentioned switches, a lamp disposed in close proximity to each of said playing board switches, each of said lamps being connected to a playing board switch and a conductor leading to the power supply, additional switches disposed at each playing board switch arranged to be closed when the playing board switch is closed, conductors connected between various combinations of said last mentioned switches, and an indicator means at each playing board, said last mentioned conductors and switches forming several current paths between the power source and said indicator means whereby said indicator means will be actuated when such switches have been closed to form a current path to same from said power source.

5. A game apparatus comprising a panel having a relatively large number of switches thereon, a conductor extending from a source of electrical power to one contact of each of said switches, a plurality of playing boards each having a substantially lesser number of lamps thereon than the number of switches on said panel, a separate conductor extending from each of said lamps to the other contact of one of the first mentioned switches, each of said lamps also being connected to a conductor leading back to the power supply, indicator switches disposed at each playing board lamp, additional conductors connected between various combinations of said last mentioned switches, and an indicator means near the game apparatus, said last mentioned conductors and switches forming several current paths between the power source and said indicator means whereby said indicator means will be actuated when such switches have been closed to form a current path to same from said power source.

6. A game apparatus comprising a panel having a relatively large number of switches thereon, a conductor extending from a source of electrical power to one contact of each of said switches, a plurality of playing boards each having a substantially lesser number of switches thereon than the panel, a separate conductor extending from each of said playing board switches to the other contact of one of the first mentioned switches, a lamp disposed near each of said playing board switches, each of said lamps being in series with the playing board switch and a conductor leading to the power supply, additional switches disposed at each playing board switch arranged to be closed when the playing board switch is closed, conductors connected between various combinations of said last mentioned switches, and an indicator means disposed near the game apparatus, said last mentioned conductors and switches forming several current paths between the power source and said indicator means whereby said indicator means will be actuated when such switches have been closed to form a current path to same from said power source.

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7. A game apparatus comprising a panel having a number of switches thereon, a conductor extending from a source of electrical power to one contact of each of said switches, a plurality of playing boards each having a number of switches thereon, a separate conductor extending from each of said playing board switches to the other contact of one of the first mentioned switches, a lamp disposed in close proximity to each of said playing board switches, each of said lamps being connected to a playing board switch and a conductor leading to the power supply, additional indicator switches for each playing board, means for closing said additional switches when the playing board switch is closed, conductors connected between various combinations of said last mentioned switches, and a winner indicator means near said game apparatus, said last mentioned conductors and switches forming several current paths between the power source and said indicator means.

8. In a game apparatus, a plurality of playing boards each having a number of switches thereon, a lamp connected in series with each of said switches and to a power source, each of said switches having a translucent actuator button disposed in close proximity to said lamp whereby said lamps shine through the switches when said switches have been closed, additional switches disposed at each switch arranged to be closed when the first mentioned switch is closed, conductors connected between various combinations of said last mentioned switches, and an indicator means at each of said boards, said last mentioned conductors and switches forming several current paths between the power source and said indicator means whereby said indicator means is actuated when predetermined sets of said switch buttons have been actuated to illuminate same and also close one of the current paths.

9. In a game apparatus, a playing board having a number of switches thereon disposed in rows to form a square pattern, a lamp connected in series with each of said switches and with a power source, each of said lamps being disposed so as to illuminate a single switch when said switch is closed, additional switches disposed at each switch arranged to be closed when the first mentioned switch is closed, conductors connected between various combinations of said last mentioned switches to define vertical and horizontal rows, and an indicator means disposed near said game apparatus, said last mentioned conductors and switches forming several current paths between the power source and said indicator means.

10. A game apparatus comprising a panel having a relatively large number of switches thereon, a conductor extending from a source of electrical power to one contact of each of said switches, a plurality of playing boards each having a substantially lesser number of switches thereon, a separate conductor extending from each of said playing board switches to the other contact of one of the first-mentioned switches, a lamp disposed near each of said playing board switches, each of said lamps being connected to a playing board switch and a conductor leading to the power supply, a coin-actuated switch in said last-mentioned conductor, additional switches disposed at each playing board switch arranged to be closed when the playing board switch is closed, conductors connected between various combinations of said last-mentioned switches, an indicator means near said game apparatus, said last-mentioned conductors and switches forming several current paths between the power source and said indicator means whereby said indicator means will be actuated when said switches have been closed to form a current path to same from said power source, and means for remotely controlling the passage of coins to said coin-actuated switch along a predetermined path including a lever having a projection normally urged to a position in said predetermined path interfering with the passage of a coin to a position actuating said coin-ac-

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tuated switch, an element carried by said lever normally
 out of contact with a coin in said switch actuating posi-
 tion, and a solenoid operatively connected to said lever to
 move said element into coin-ejecting position and said
 projection out of said interference position when actuated. 5

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