Dec. 20, 1949 D. M. BAKER 2,491,888

ELECTRIC GAME

Filed May 12, 1948 2 Sheets-Sheet 1

FIG. 1

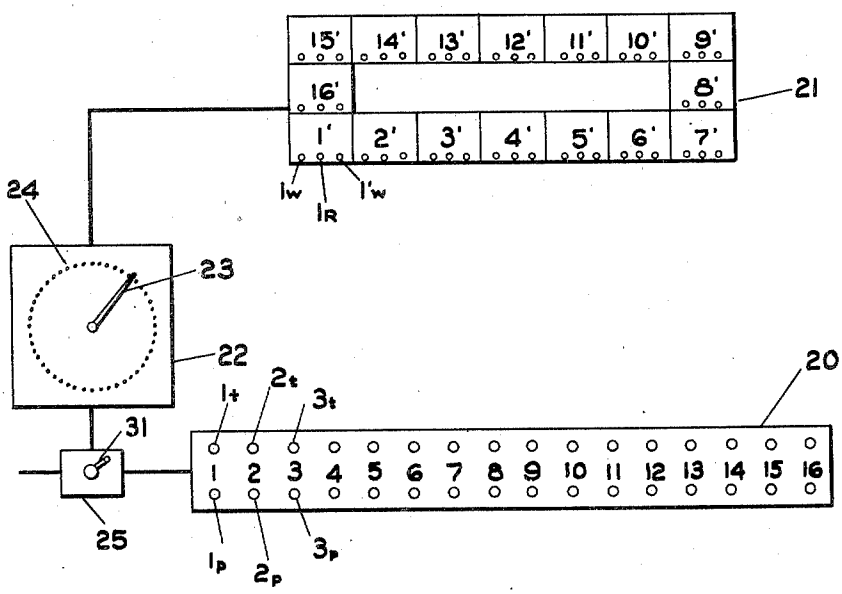
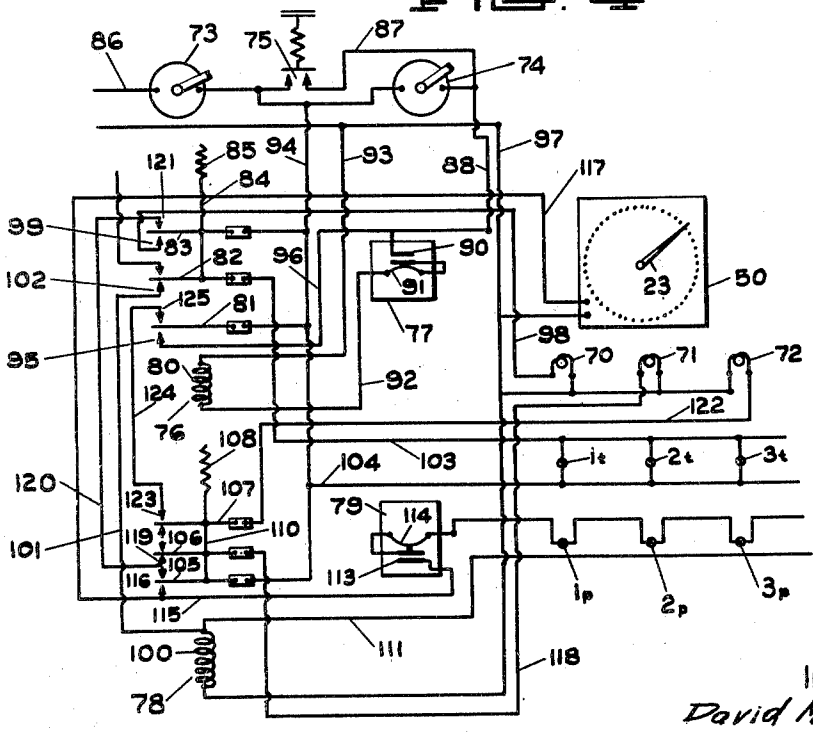


FIG. 4



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ELECTRIC GAME

Filed May 12, 1948 2 Sheets-Sheet 2

FIG. 2

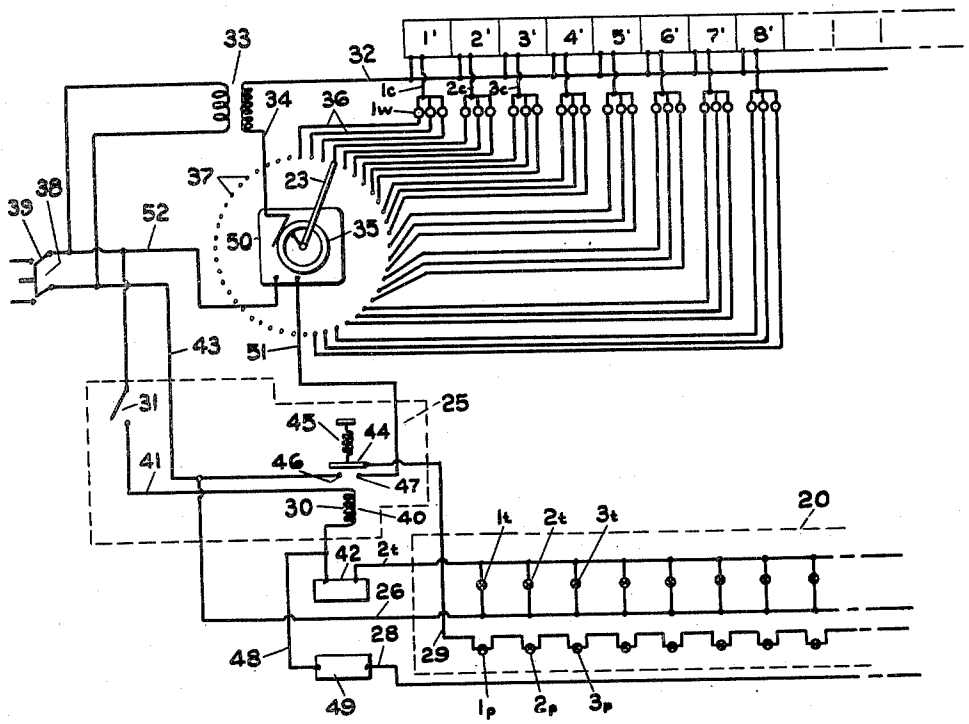
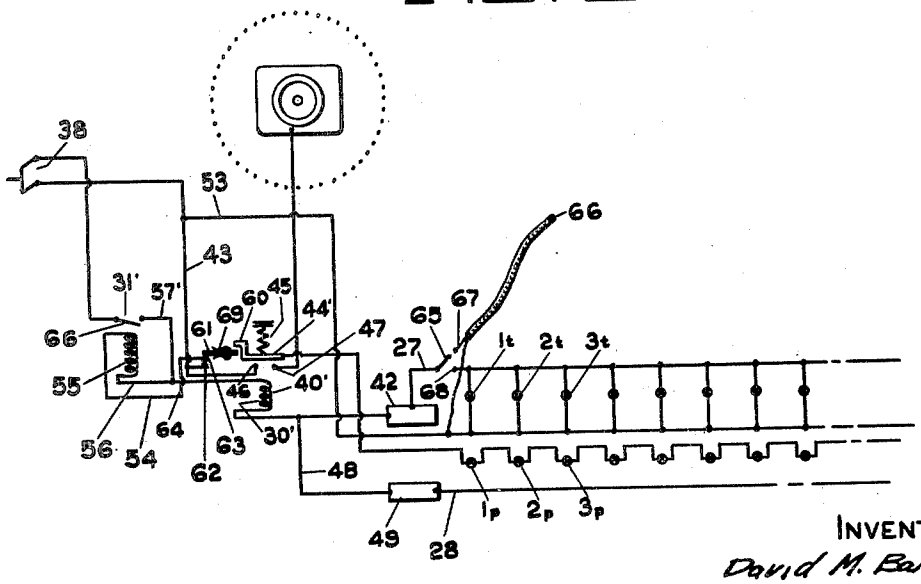


FIG. 3



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UNITED STATES PATENT OFFICE

2,491,888

ELECTRIC GAME

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Application May 12, 1948, Serial No. 26,579

8 Claims. (Cl. 177—384)

1

The present invention relates to a game or amusement device in which a few or a considerable number of individuals might participate. The game involves a certain amount of skill, but where a number of players are involved, the skill is not wholly dominant in the playing of the game. In brief, the game employs a rotating selector switch driven by a motor for operating a group of indicators successively and one or more of corresponding switches for both starting and stopping the selector arm and indicating the winner of the game. The novelty in the present invention resides in the arrangement and groups of the elements of the system forming the amusement game device and in the operation of the same. The game provides excitement though its uncertainty and suspense and yet a very definite skill may be acquired in the playing of the game.

Without further describing the merits and advantages of the present invention, the invention will now be described in the specification below when taken in connection with the drawings illustrating an embodiment thereof in which:

Figure 1 shows somewhat schematically the system and elements comprising the game or amusement device.

Figure 2 shows a schematic wiring diagram of the device of Figure 1.

Figure 3 shows a modification of a portion of the system shown in Figure 2, and,

Figure 4 shows a further modification.

In the arrangement shown in the drawings, 20 indicates a switchboard in which stations 1 to 16 are shown. Each one of these stations may be occupied by a player, or if it is desired, the game may be played with more or less stations, dependent only upon how extensive or how many people it is desired to have play the game. The switchboard of 20 provides for each station with a "start" and "stop" button, although if the starting is done by an elected player only one start button is needed, as will be seen in Figure 3. The start and stop buttons are indicated by 1T, 1P, 2T, 2P, etc, respectively. There is also provided an indicator board, 21, with indicator stations 1' to 16' inclusive, the numbers corresponding to the same operating stations 1 to 16 inclusive so that the player at No. 1 operates the indicator at No. 1'. The indicator at 1' and at each of the rest of the numbers may consist of a light to illuminate the face of the station and, in addition thereto, lights 1W, 1R, 1'W which may successively be illuminated while the face of the indicator 1' remains illuminated. The lights 1W, 1R, and 1'W may be white, red and white lights

2

respectively and may be illuminated successively with a simultaneous illumination of the indicator 1' before indicator No. 2' becomes illuminated. A suitable figure such as a racing dog or a horse may be painted on the face of the indicators to simulate a race with the lighting progressively advancing around the indicators from 1' to 16'. This progressive lighting of the indicators may continue for one or more revolutions, depending on how long the game is played.

The element 22 indicates a turntable in which there is a driving motor and on which is an electrical selector arm, 23, which selectively and progressively makes contacts with the contacting points 24, one after the other. A suitable control switch, 25, controls the operation of the system so that the system will not function until the person in control permits the start of the play.

The schematic wiring diagram of Figure 2 corresponds to the layout shown in Figure 1. In this case the switchboard, 20, has its group of starting switches 1T, 2T, 3T, etc., which are connected in parallel across the lines 26 and 27. The "stop" buttons 1P, 2P, 3P, etc. form a series circuit in the lines 28 and 29. The "start" buttons are normally in open position and the "stop" buttons are normally in a closed circuit position. These buttons control the operation of the relay 30, which may be positioned in the control box 25 which may also include a control switch 31 for controlling the operation of the whole system.

The indicator lights 1', 2', 3', etc., on one side are connected by the line 32 to one side of the secondary of the transformer 33, while the other side of the secondary of the transformer has a lead 34, which connects to a slip ring 35, to which the selector arm 23, is at all times connected. The other side of the indicators, 1', 2', 3' etc. each have conductors 1c, 2c, 3c, etc. which connect to the lights 1W, 1R, 1'W, 2W, 2R, 2'W, in groups of three each respectively. Each of these lights 1W, 1R, 1'W, 2W, 2R, 2'W, etc. have separate leads, 36, connected with individual contacts 37 on their turntable on which the arm 23 bears as it rotates about the turntable. It will be seen from this description that as far as energizing the indicators is concerned, the circuit is completed without regard to the operation of the start and stop mechanism. To follow through the indicator's circuit, for example, it will be noted that the connections are traced as follows; from the secondary transformer 33, over the line 32 to any one of the indicators 1', 2', 3', etc; from these indicators over the lines 1c, 2c, 3c, etc. to any one of the groups of three lights, 1W, 1R,

1W' etc., to a particular contact 37 on the turntable through the connecting leads 36, and through the switch arm 23, which lies on one of the contacts, to the slip ring 35 and the return lead 34. The primary of the transformer 33, which may be a one-to-two ratio, connects across the main supply 38 through a two-pole, single throw switch 39. When the switch 39 is closed the indicator system will light up and the light shown is the one corresponding to the contact connection where the arm 23 happens to bear.

The relay 30 is provided with a holding contact so that the start buttons need only be momentarily closed. When any one of the start buttons is closed connection is made from the line 27 to the line 26, and the coil 40 is energized through the switch 31, the line 41, the coil 40, the time delay switch 42, the line 27, the particular start button momentarily closed, the line 26 and the line 43 returning to the main supply. The momentary energization of the coil 40 draws down the switch contactor 44 against the action of the spring 45, bridging the contacts 46 and 47 and thereby completing a holding circuit which may be traced as follows:

From the lead 41 through the coil 40, the line 48, the time delay switch 49, the lead 28, through the normally closed stop buttons, the line 29, the connector relay arm 44, and the return lead to the power supply 43. The initial drawing down of the arm 44 completes the circuit to the driving motor 50 of the turn table and, therefore, as soon as the start button is pressed, the motor begins to rotate turning arm 23 and causing the light indication to move successively from one number indicator to the next number indicator around in cyclic rotation. The motor circuit is completed through the line 43, contact 46, contact bar 44, contact 47, motor lead 51, motor 50 and return motor lead 52.

From the above description it will be noted that when the motor is rotating and the selector arm traveling over the contacts the operation of any one of the stop switches will release the relay arm 44 by de-energizing the coil 40, permitting the spring 45 to retract the armature 44.

The arrangement in Figure 3 operates similar to that shown in Figure 2 with the additional feature that when once the stop switches 1P, 2P, 3P, etc. are operated, the control switch 31' is automatically opened to shut down the system and it will not thereafter again run until the individual controlling the game, the "Game starter," permits the game to be played.

This is accomplished by having the armature 44' operate by means of a projecting arm 60, a pivoted lever 61. As the armature 44' is drawn downward, when the motor is initially operated, the lever 61 is flipped upward at the opposite end from where the armature 44' is and nothing happens. When, however, the armature 44' is released, as when the stop buttons are operated deenergizing the solenoid 40' the left end of the lever 61, as seen in Figure 3, operates to bring together the contacts 62 and 63, and completes the circuit through the relay coil 55, which pulls down the arm 66 of the switch 31' and opens the circuit to the solenoid coil 40'.

In the closed position of the switch 31' the circuit through the coil 55 may be traced as follows:

From one side of the line through the switch 31' over the line 57', through the coil 55, the line 54, the line 64, the contact switch 63—62 when this is closed, and the return through the

line 43. The lever arm 61 may be maintained in a horizontal position tensioned by a spring, 69. The arm will only energize the coil 55 after the coil 40' is de-energized so that when once the stop button is pressed the motor cannot again be started until the game starter closes the switch 31'. This prevents anyone starting the motor after a stop button is pressed. The game then will remain dead, since even if the start buttons are closed, no current will pass through the relay 40' until the switch 31' has first been closed. When the switch 31' has been closed, the game can, of course, be commenced by pressing any one of the start buttons, 1T, 2T, 3T, etc. If desired, a single pole, double throw switch 65 may be provided in the line 27 so that instead of operating the start of the game from any of the start positions, the game may be started from a portable switch button 66, which is at the end of a double wire cord and may be moved to any one of the stations in the game. In order to operate from the button 66 it would simply be necessary to throw the switch 65 to the contact 67 instead of to the contact 68. If the players, therefore, desire one of their own group to start the game, or some other selected individual, this can readily be done.

The winner of the game is the one who succeeds in making the light stay on at his station. This comprises making the plate 1', or any station, light up and one of the corresponding lights 1W, 1R, or 1'W. There may be a bigger prize for the middle light 1R which may be of different color than the end lights.

A further modification of the invention is shown in Figure 4. In this modification, separate light indicators are provided, 70 to indicate when the players are to start the game, 71, when the players may stop the game, and 72, indicating the winner of the game. In this arrangement the game is controlled by an on-off switch 73, which the operator may turn on at any time and leave it on during the period while he is present. A second switch 74 may be used to start the game but this switch must be turned on at the beginning of each game and off at the end of the game. Shunting this on-off switch is a momentary start switch 75 which the operator can use in place of the switch 74 and which is pressed momentarily for the start of each game.

In this arrangement there is provided a relay 76 which operates in conjunction with a time delay switch element 77 and a second relay 78 which operates in conjunction with a second time delay switch element 79. These various elements will be explained in conjunction with the operation of the system.

When the switch 75 is momentarily pressed by the operator, the relay coil 80 of the relay 76 is energized and this closes the circuit through the pivoted arms 81, 82, and 83 which are all spring tensioned through the non-conducting connecting rod 84 and the spring 85. The closing of the switch 75 energizes the circuits in the following manner; the coil 80 is energized from the supply source 86 over the line 87, the line 88, the normally closed switch 90 of the delay switch element, the bi-metallic delay element 91, the connecting line 92, the coil 80 and the line 93 to the other side of the supply source. This momentary energization of the coil 80 closes the holding circuit through the line 94, the pole 81, the contact 95, the line 96, the switch 90, thermostat elements 91, the line 92, the coil 80

and the line 93 to the other side of the line, so that even though the switch 75 is released, the coil 80 will still hold the switch poles 81, 82, 83 in the downward position. If no other switch is pressed within the limit set by the time delay element, the opening of the contacts 90 will restore the circuit to its original operative position. While however the coil 80 is energized the start light will light up. This circuit may be traced as follows; from the supply source 86 over the common line 97, to the start light 70, over the line 98 to the contact 99 through the switch pole 83 to the line 94. The players therefore have an indication that the game is to be started. Any one of the starting switch buttons 1t, 2t, etc., may therefore be pressed. By pressing the start switch the relay 78 is energized as well as the time delay element and switch 79 and also the turn table motor 50. The circuit is completed through the relay coil 100 of the relay 78 in the following manner; through the common line 97, the relay coil 100, the line 101, the contact 102, the arm 82, the line 103, any one of the start switches 1t, 2t, etc., the line 104 and the line 94 to the other side of the supply source. This energization of the coil 100 draws downward the switch arms 105, 106 and 107 of the relay 78 which is tensioned by means of the spring 109 and the connecting rod 110 which is insulated from the poles and also completes a holding circuit for the relay 100 since the start switches are only momentarily closed and since the coil 80 will also be deenergized when the contact 90 of the time delay element opens. The holding circuit of the coil 100 is closed in the following manner; through the common line 97, the coil 100, the line 111, all the stop switches 1p, 2p, etc., the line 112, the bi-metallic thermostat element 114, the normally closed switch contact 113 of the time delay element, the line 115, the contact 116, the switch arm 105 and the line 94. It will be seen that even with the start switch open and the relay 76 released, the circuit will still hold. It should also be noted that this operation energizes the turn table motor 50 in the following manner; over the common line 97, the turn table motor 50, the line 117, the contact 116, the arm 105 and the line 94. If nothing else is done to this circuit, it will normally deenergize when the contact 113 of the time delay element is open. However in its closed position, the stop light 71 will come on as soon as the relay 80 has been de-energized. This circuit is traced through in the following manner; over the common line 97, the stop switch 71, the line 113, the switch element 106, the contact 119, the line 120, the contact 121 and since now the switch arm 83 is in the upper position over the switch arm 83 and the line 94 to the supply source. When therefore the coil 80 has been de-energized, the stop light will go on and the players will then know that any time thereafter the stop switch may be pressed. When the stop switch is pressed, the coil 100 will be de-energized since this circuit is open and the relay 78 will be released thus breaking the holding circuit for the turn table motor and stopping the operation of the turn table arm 23. In this position the winner light 72 will light up indicating that the game is over and the winner will of course be indicated by the light on the board to which the turn table arm is connected in its stop position. The winner light circuit may be traced as follows; over the common line 97, the winner light 72, the line 122, the arm 107, which is now in the upper position, the contact 123, the line 124, the contact 125, the arm 81, which is also in the upper position, and the line 94 to the supply source. The winning light will then remain on until the new game is started by pressing of the switch 75. When this occurs, the relay coil 80 will again be energized indicating that the game may be started through the illumination of the start light 70.

The purpose of the arrangement in Figure 4, is first to enable the operator to control the beginning of the play and to make it impossible for either the start or stop switches to activate any part of the system. Secondly the arrangement in Figure 4 provides a definite sequence and a time element between each sequence of operation. After the operator start switch has been pressed, the player start switch can be pressed at any time but the stop switch will not be operated until the stop light has first come on which occurs when the 76 has been de-energized. If no one presses the stop switch within the time limit permitted, then the relay 78 will become de-energized and the operator must again press the switch 75 before the game can be played. If the start switch has not been pressed within the certain time interval, then the game will also be stopped and must be played again. If the stop switch is not pressed the time delay element 79 will operate after a time interval and release the relay 78 in which case the game must also be played again or a winner will be indicated without the operation of any of the stop switches since the stop circuit is opened by the opening of the switch 113.

Having now described my invention, I claim:

1. A game to be played by two or more players comprising a plurality of electrically illuminated indicators each distinctively marked for a player, means adapted to be operated for supplying electrical energy for illumination of said indicators momentarily successively in some sequence, an electric motor for operating said means, relay means for closing the circuit to said motor, means for operating said relay means, said relay means including circuit means for maintaining said relay means operative independent of the means for operating the relay, stop switch means including a switch provided for each player in series in said maintaining circuit of the relay means which keeps said electric motor rotating whereby when said stop switch means is operated, the successive progress of momentary illumination of said indicator will stop with the last illuminated indicator remaining illuminated indicating the winner of the game.

2. A game to be played by two or more players comprising a plurality of electrically illuminated indicators each distinctively marked for a player, means adapted to be operated for supplying electrical energy for illumination of said indicators momentarily successively in some sequence, an electric motor for operating said means, relay means for closing the circuit to said motor, means for operating said relay means, said relay means including circuit means for maintaining said relay means operative independent of the means for operating the relay, a plurality of stop switches, one for each player, appropriately identified therefor corresponding to a player, all connected in series in said maintaining circuit of the relay means which keeps said electric motor rotating whereby when any one of said stop switches is operated, the successive progress of momentary illumination of said indicators will

stop with the last illuminated indicator remaining illuminated, indicating the winner of the game.

3. A game to be played by two or more players comprising a plurality of electrically illuminated indicators each distinctively marked for a player, means adapted to be operated for supplying electrical energy for illumination of said indicators momentarily successively in some sequence, an electric motor for operating said means, relay means for closing the circuit to said motor, means for operating said relay means including a plurality of switches operated by the players and connected together in shunt with said relay means, said relay means including circuit means for maintaining said relay means operative independent of the means for operating the relay, a plurality of stop switches, one for each player, appropriately identified therefor corresponding to a player, all connected in series in said maintaining circuit of the relay means which keeps said electric motor rotating whereby when any one of said stop switches is operated, the successive progress of momentary illumination of said indicators will stop with the last illuminated indicator remaining illuminated, indicating the winner of the game.

4. A game to be played by two or more players, comprising a plurality of electrically illuminated indicators, each distinctively marked for a player, a rotatable selector switch for completing an electric circuit to said indicators successively in some sequence momentarily illuminating the same, an electric motor for turning said selector switch, relay means for closing the circuit to said motor, a start switch button for operating said relay means for completing the electrical circuit for operating said motor, said relay means including circuit means for maintaining said relay means operative independent of the means for operating the relay, a plurality of stop switches, one for each player, appropriately identified therefor corresponding to a player, all said stop switches being connected in series in said maintaining circuit of the relay means which keeps said electric motor rotating whereby when any one of said stop switches is operated, the successive progress of momentary illumination of said indicators will stop with the last illuminated indicator remaining illuminated indicating the winner of the game.

5. A game to be played by two or more players, comprising a plurality of electrically illuminated indicators, each distinctively marked for a player, a rotatable selector switch for completing an electric circuit to said indicators successively in some sequence momentarily illuminating the same, an electric motor for turning said selector switch, relay means for closing the circuit to said motor, a plurality of player stations having appropriate markings identifying each station with its corresponding indicator, each station having start switches and stop switches, the start switches having means completing the circuit for operating said relay means, said relay means including circuit means for maintaining said relay operative independent of the means for operating the relay with said stop switches in series in said maintaining circuit of the relay means which keeps said electric motor rotating whereby when any of said stop switches is operated, the successive progress of momentary illumination of said indicators will stop with the last illuminated indicator remaining illuminated, indicating the winner of the game.

6. A game to be played by two or more players comprising a plurality of electrically illuminated indicators, each distinctively marked for a player, a rotatable selector switch for completing an electric circuit to said indicators successively in some sequence momentarily illuminating the same, an electric motor for turning said selector switch, relay means for closing the circuit to said motor, a start switch button for operating said relay means for completing the electrical circuit for operating said motor, said relay means including circuit means for maintaining said relay means operative independent of the means for operating the relay, a plurality of stop switches, one for each player, appropriately identified therefor corresponding to a player, all said stop switches being connected in series in said maintaining circuit of the relay means which keeps said electric motor rotating a second relay means having a switch manually closed connected in series in said maintaining circuit and switch means operative by the release of said first relay when said maintaining circuit is deenergized for momentarily energizing said second relay to open said last manually closed switch, whereby when any one of said stop switches is operated, the successive progress of momentary illumination of said indicators will stop with the last illuminated indicator remaining illuminated, indicating the winner of the game, and whereby the game may not be operated until the closing of said manually operated switch has been effected.

7. A game to be played by two or more players comprising a plurality of electrically illuminated indicators, each distinctively marked for a player, a rotatable selector switch for completing an electric circuit to said indicators successively in some sequence, momentarily illuminating the same, an electric motor for turning said selector switch, an operator's switch controllable for supplying electric power for operating the game, a plurality of player stations, each having appropriate markings identifying each station with its corresponding indicator and each having a stop switch, a player start switch, a start indicator, a first relay means operable by the operator's start switch for illuminating said start indicator, a second relay means, operable by the player's start switch, including means for completing the electrical circuit for operating said electric motor, said second relay means including circuit means for maintaining said second relay means operative independent of the means for operating said second relay, a plurality of stop switches, one for each of the players appropriately identified therefor corresponding to a player, all said stop switches being connected in series in said maintaining circuit of said second relay which keeps said electric motor rotating, means operative upon the release of said first relay while said second relay is operative for producing an indication to the player when said stop switches are to be operated, whereby when anyone of said stop switches is operated, the successive progress of momentary illumination of said indicators will stop with the last illuminated indicator remaining illuminated indicating the winner of the game.

8. A game to be played by two or more players comprising a plurality of electrically illuminated indicators, each distinctively marked for a player, a rotatable selector switch for completing an electric circuit to said indicators successively in some sequence, momentarily illuminating the same, an electric motor for turning said selector switch, an operator's switch controllable for sup-

plying electric power for operating the game, a plurality of player stations, each having appropriate markings identifying each station with its corresponding indicator and each having a stop switch, a player start switch, a start indicator, a first relay means operable by the operator's start switch for illuminating said start indicator, a second relay means, operable by the player's start switch, including means for completing the electrical circuit for operating said electric motor, said second relay means including circuit means for maintaining said second relay means operative independent of the means for operating said second relay, a plurality of stop switches, one for each of the players appropriately identified therefor corresponding to a player, all said stop switches being connected in series in said maintaining circuit of said second relay which keeps said electric motor rotating, means operative upon the release of said first relay while said second relay is operative for producing an indication to the player when said stop switches are

to be operated, whereby when anyone of said stop switches is operated, the successive progress of momentary illumination of said indicators will stop with the last illuminated indicator remaining illuminated indicating the winner of the game, and winner indicator means operative upon the release of said second relay through the releasing position of said first relay for actuating the winner indicating means.

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