United States Patent

Taylor et al.

[15] **3,671,041**

[45] **June 20, 1972**

[54] ELECTRICALLY OPERATED BINGO GAME APPARATUS

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[21] Appl. No.: **7,203**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 654,736, July 20, 1967, abandoned.

[52] **U.S. Cl.** .....**273/135 A,** 273/135 B
[51] **Int. Cl.** **A63f 3/06**
[58] **Field of Search** 273/135

[56] **References Cited**

UNITED STATES PATENTS

2,760,619	8/1956	Peak	273/135 A X

FOREIGN PATENTS OR APPLICATIONS

870,174	6/1961	Great Britain	273/135 A
1,048,454	11/1966	Great Britain	273/135 A

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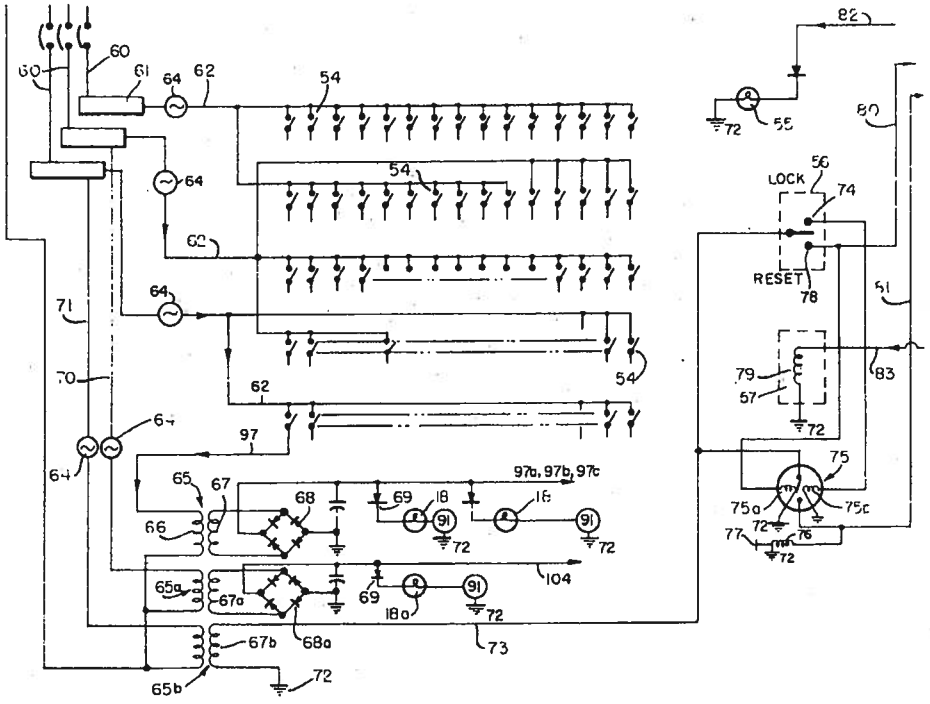
[57] **ABSTRACT**

An electrical "Bingo" game comprising a player console having a plurality of groups of playing boards, each board including a series of numbers on a translucent panel, at least some of said numbers appearing on more than one panel, a light containing compartment behind each number, all of said lights in a single group being mounted in current conducting relation to a common metallic base plate, a master control board having a switch corresponding to each number, a source of electrical energy and an electrical interconnection between each switch on the one master control board and the lights serving to illuminate the corresponding number on each of the individual playing boards, said lights in each group being connected to ground through said metallic base plate and each having a diode which prevents the flow of current from the direction of ground, whereby a possible feedback causing a false lighting of one or more numbers is prevented. Coin actuated switches are provided for energizing selected groups of boards, as are coin return means and lock means precluding energization of a board after play has started. Visual and audible "Bingo" signals are provided for the player console.

13 Claims, 13 Drawing Figures



EXHIBIT
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FIG. 1.

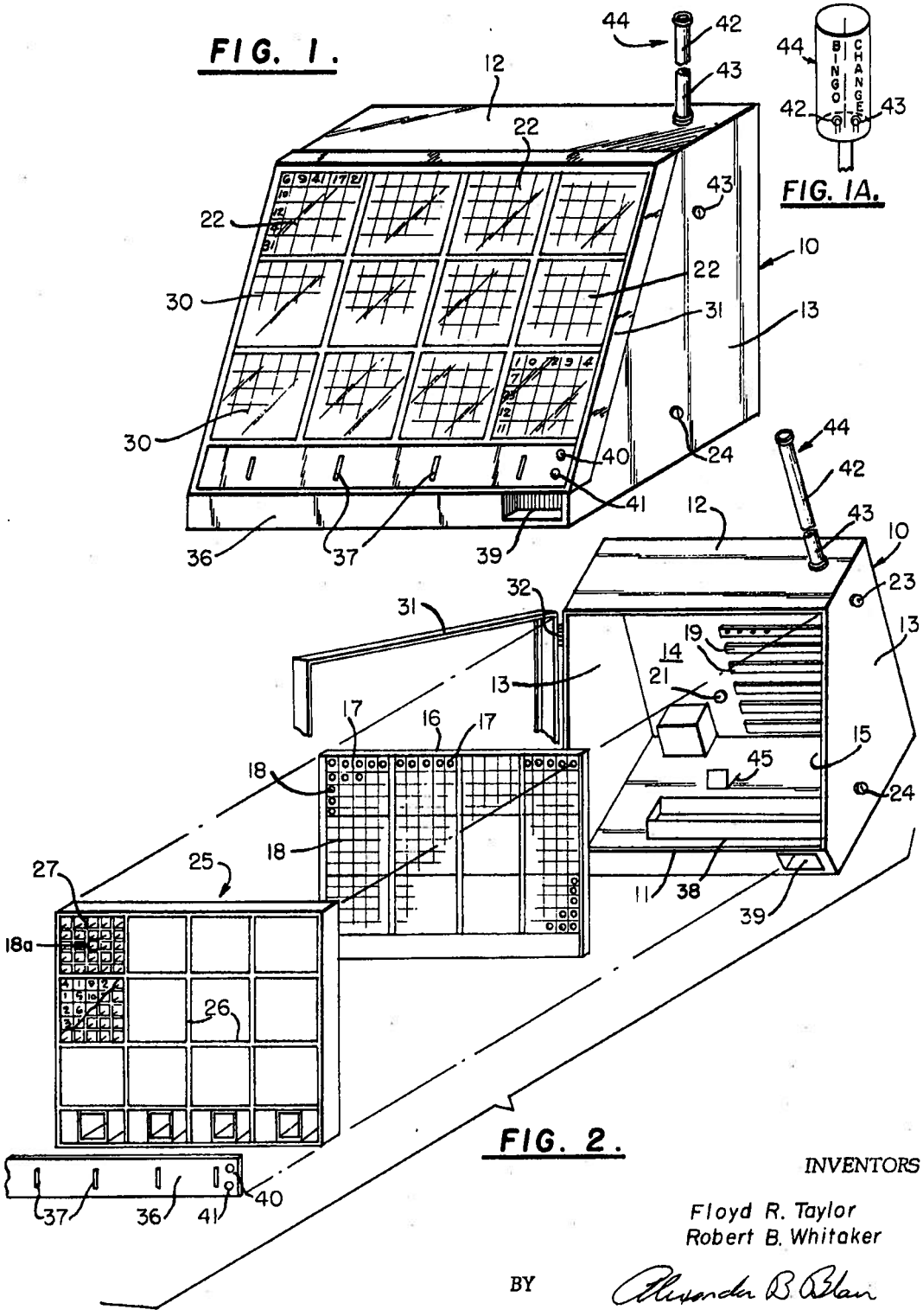

FIG. 1A.

FIG. 2.

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FIG. 3.

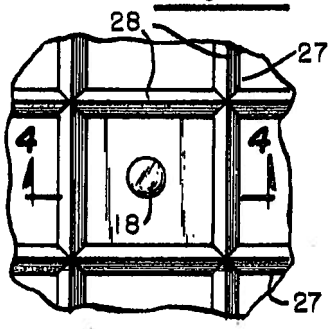


FIG. 4.

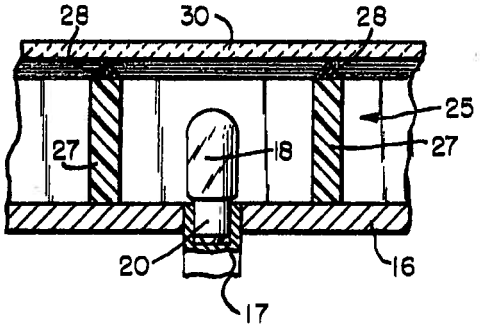
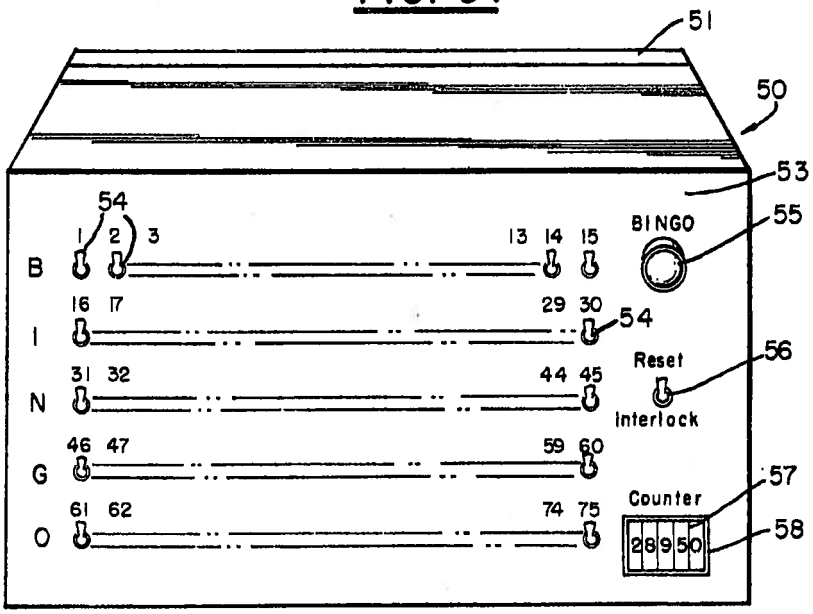


FIG. 5.



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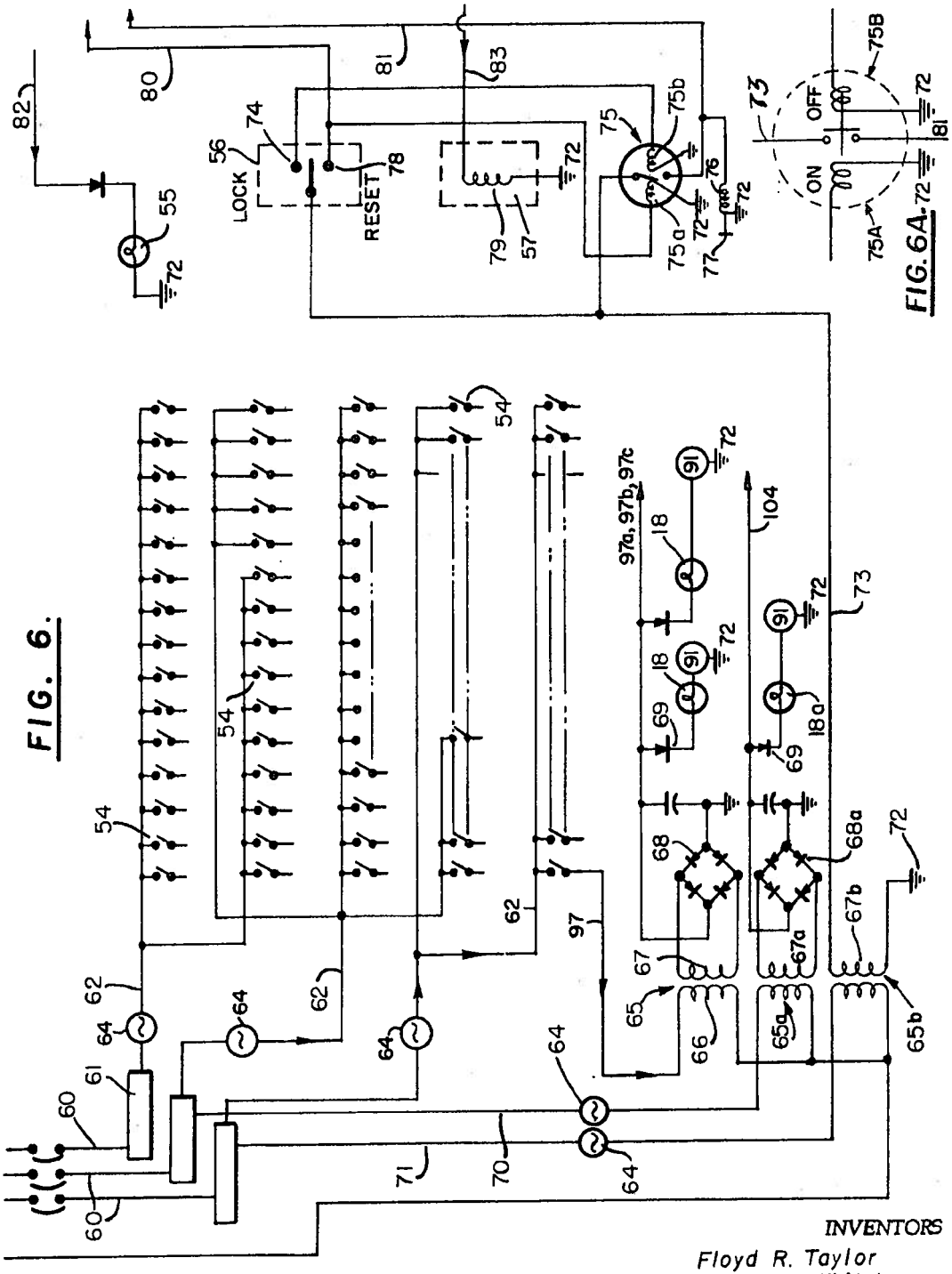

FIG. 6A.

FIG. 6.

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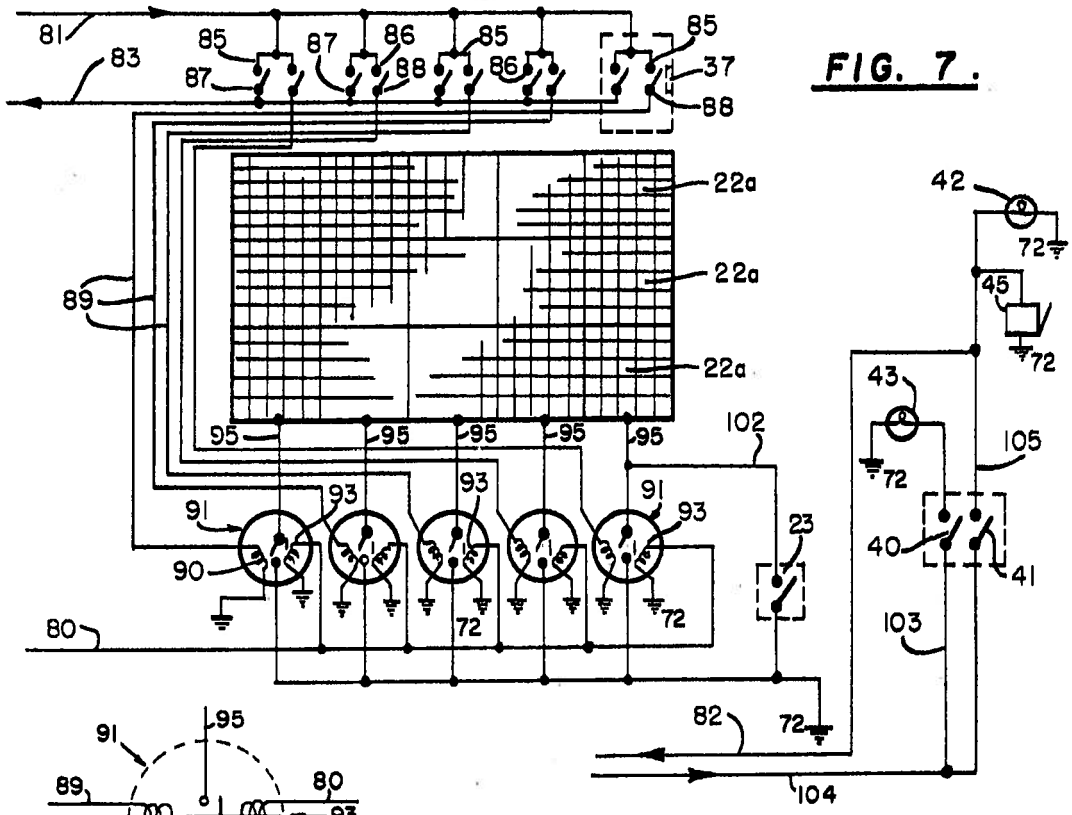


FIG. 7.

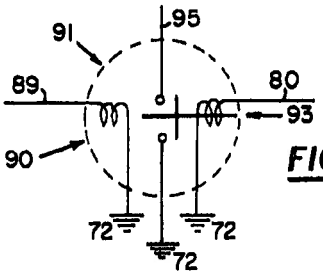


FIG. 7A

FIG. 8.

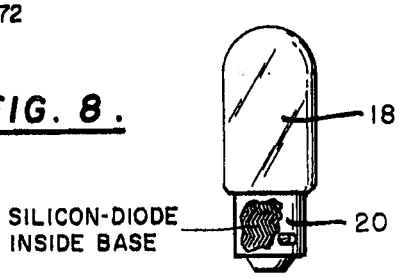
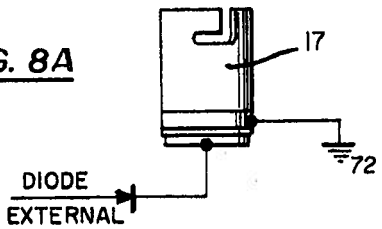


FIG. 8A



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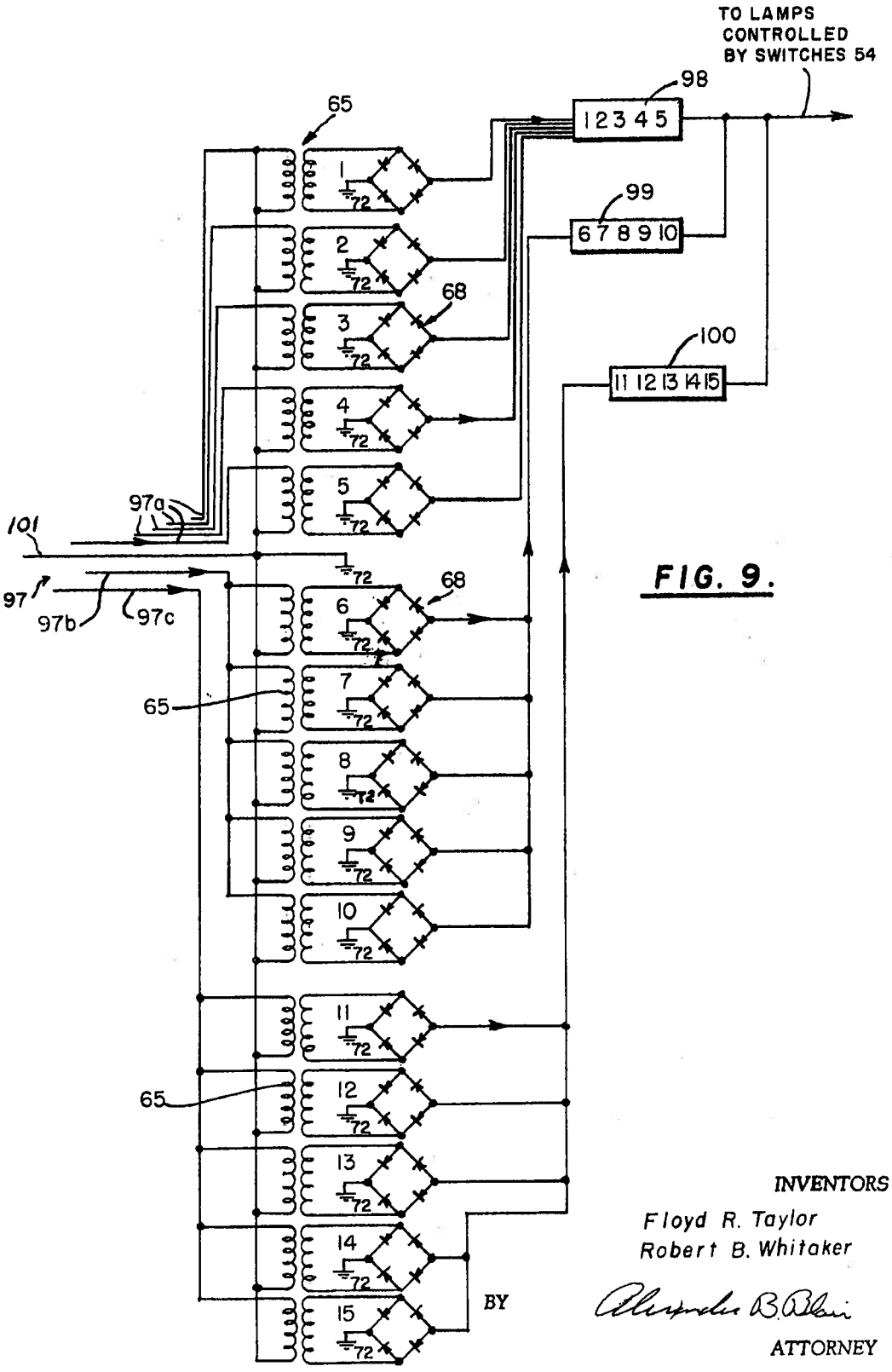

FIG. 9.

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ELECTRICALLY OPERATED BINGO GAME APPARATUS

RELATED APPLICATION

This application is a continuation-in-part of application Ser. No. 654,736, filed July 20, 1967, for ELECTRICALLY OPERATED BINGO GAME, now abandoned.

1. Field of Invention

"Bingo" is a widely played game which has heretofore generally been played by the distribution of a series of cards each containing 25 numbered spaces in vertical and horizontal rows of five. After a number has been randomly selected by an operator, who calls the number aloud, each player then places a marker on the space containing that number if it is present on his playing board. The first player who achieves five markers, aligned either vertically, horizontally or diagonally, calls "Bingo" and is considered the winner. Much time is consumed in distributing and collecting the cards, checking the winner's card against the called numbers, and generally overseeing the play.

2. Description of the Prior Art

Heretofore attempts have been made to overcome the time consuming factors, and obviate normal human error, and electrical "Bingo" games have been developed, as for example those shown in U.S. Pat. Nos. 2,760,619, 2,594,434, and 2,591,869. However, in none of these attempts has there been provided a game which includes all of the elements of chance, suspense and combinations of boards and plays, free games, and free numbers and the like which are inherent in the game as manually played as well as the elimination of time consuming checking and confusion related to unwanted lamps being lit due to uncontrolled feedback circuits occurring when a plurality of lamps are simultaneously connected to, the unwanted lamps representing bingo numbers which have not yet been called or which are on bingo cards not being played.

SUMMARY OF THE INVENTION

The instant invention has as its primary object the provision of a game embodying electrical interconnection between a master control board and a large number of playing boards which will provide all possible plays and/or series of plays and situations obtained in conventional "Bingo," and at the same time reduce materially the time required to play a game, obviate the distribution and collection of cards, preclude the possibility of electronic error by the provision of a specific diode arrangement shown in FIG. 6 for elimination of feedback circuits, such error being either honest or with fraudulent intent, on the part of the bingo parlor and the individual player, and provide for a rapid and accurate verification of winners.

A further object of the invention is the provision of a game of this nature which will, due to its simplicity, attract those who would normally play other games such as slot machines, and be attractive to those who have difficulty in hearing, and those normally too impatient to condone the long delay incident to manually played "Bingo."

Still another object of the invention is the provision of an electrical game which is comprised of a minimum number of relatively simple and inexpensive electrical components, which is sturdy and durable in construction, requiring a minimum amount of upkeep, maintenance and replacement of parts, and which is reliable and efficient in operation.

An additional object of this invention is the provision of a device of this character which is comparatively inexpensive to install and which will repay its initial investment in a relatively short time by the reduction of the number of salaried attendants required for operation.

Other objects will in part be obvious, and in part be pointed out hereinafter and disclosed in the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of an individual console or cabinet having a plurality of individual coin actuated playing boards associated therewith;

FIG. 1A is an enlarged fragmentary elevational view of a signal light means employed on each player console;

FIG. 2 is an exploded perspective view, certain parts, including the electrical wiring, being omitted for the sake of clarity, of the console of FIG. 1;

FIG. 3 is a top plan view of an individual lamp compartment, and its associated partitions;

FIG. 4 is an enlarged sectional view taken substantially along the line 4—4 of FIG. 3 as viewed in the direction indicated by the arrows;

FIG. 5 is a front perspective view of the master control board illustrating the several control switches;

FIG. 6 is a schematic wiring diagram showing an illustrative minimum of individual lamps and attendant interlocking circuits; the transformers included in FIG. 6 for ease of illustration are not actually a physical part of the master console or control board;

FIG. 6A is an enlarged view of the relay 75 shown in FIG. 6;

FIG. 7 is a wiring diagram showing the individual circuits to a console having 15 playing boards associated therewith individual connections for five groups of three boards each being disclosed;

FIG. 7A is an enlarged view of one of the relays 91 shown in FIG. 7.

FIG. 8 is a view showing one of the lamps, having an interior diode in its base;

FIG. 8A is a view showing an external diode connected to a lamp socket;

FIG. 9 is a schematic wiring diagram showing the connection of the power supply through individual transformers to the individual lights.

Similar reference characters refer to similar parts throughout the several views of the drawings.

DESCRIPTION OF A PREFERRED EMBODIMENT

Having reference now to the drawings in detail, and more particularly to FIGS. 1 and 2, there is generally indicated at 10 a console or cabinet which includes a base 11, a top wall 12, side walls 13 and a rear wall 14. The front of console 10 is open as at 15 and has removably seated therein a metallic lamp panel 16 for each group of game boards, each panel containing a plurality of sockets 17, in each of which is positioned the base 20 of an individual lamp 18. The interior of rear wall 14 carries a series of terminal blocks 19 containing individual terminals which are interconnected with the individual sockets in a manner to be more fully described hereinafter. A cable or conduit 21 extends through a suitable opening in rear wall 14 to supply power to terminal blocks 19. A key operated switch 23 actuates a free game selector, and a lock 24 secures the console in closed position.

A grid 25 comprised of a series of partitions 26 defining individual game boards 22, subdivided by a lesser series of individual partitions 27 defining individual numbered squares, is seated over metallic lamp panel 16, so that each light or lamp 18 is contained in an individual compartment. As best shown in FIGS. 3 and 4, each partition 26 and 27 is preferably formed of plastic, and is provided along its outer edge with a strip 28 of compressible material, such as sponge rubber, of triangular cross section, so that when a translucent panel 30 containing individual numbers is positioned thereover and locked in position, the light from each lamp is restricted to the area containing the specific number to be illuminated.

A cover 31 hinged as at 32 to the side of the open front holds the components in related assembly and is secured by lock 24.

Positioned below the game boards is a plain panel 36 which is provided with, illustratively, four coin slots 37, one coin slot for each group of three "Bingo" cards or boards, each of which communicates with a coin receptacle 38 within which is a coin actuated switch, by means of which the game boards immediately thereabove are energized.

A coin return opening 39 is shown, and a pair of push buttons 40 and 41 actuate respectively a change light 43, and "Bingo" indicating signal 42.

Lights 42 and 43 are located in a tube 44 which extends upwardly from the top wall, and controlled by push buttons 40 and 41. Illumination of a signal light 42 also energizes an audible signal 45 in console 10, and illuminates a corresponding light 55 on the master control console 50 in a manner to be more fully described hereinafter.

FIG. 5 discloses the master control board, which consists of a box or receptacle generally indicated at 50 provided with a rear access door 51 and containing circuitry to be described more fully hereinafter. A front panel 53 is provided with a plurality of switches 54, each of which corresponds to a specific number in a specific lettered row. Closure of any switch energizes all the lamps in all of the playing boards having a corresponding number which have been energized by a coin operated switch 85. A "Bingo" light 55 on the master control console or panel is provided which is also illuminated when any player closes his "Bingo" switch 41 on player's console 10. Similarly a single pole, double throw normally off switch 56 actuates when in one position a reset circuit which extinguishes all the lights on all playing boards in anticipation of the start of a new game, and when in its other position closes circuitry which precludes the energization of any playing board by the insertion of a coin after the game has started. An automatic coin counter 57 is provided, and its numerical indicia is visible through an opening 58 in panel 53. The circuitry and mechanism for accomplishing all of the above functions will be described hereinafter.

Counter 57 is resettable in any desired conventional manner and is designed to count the coins collected on each individual game in order to compute the amount due a winning player.

Having reference now to FIG. 6, there is schematically illustrated the interconnection of the 75 switches 54 with individual lights located in a console, and each corresponding to the number of a switch. A minimum number of the latter are shown for clarity of illustration. Conventional 110V AC lines 60 lead from a source of power (not shown) to terminal blocks 61, from which lines 62 lead to individual switches 54. Closure of any switch 54 closes a circuit through an individual line 62 containing a fuse 64 through conductor cable 97, which is a 75-wire cable, and through a step-down transformer 65 including a primary 66 and a secondary 67. Current from the secondary 67 passes through a full wave rectifier 68 and diodes 69 to the associated lights or lamps 18.

It may here be pointed out that each diode 69 is preferably contained integrally within the base 20 of a lamp 18 as illustrated schematically in FIG. 8, although if desired, separate lamps and diodes may be used (see FIG. 8A).

Although only one line 97 is shown as leading to transformer 65, one of 75 it should be evident that a separate line from each switch 54 leads to a separate transformer connected to all lamps on all game boards corresponding to the specific number of the switch. The circuit is controlled by one of the switches 54, there being 75 such switches.

An additional line 70 leads through a fuse 64, transformer 65A and rectifier 68A to a single "free" lamp 18A on each playing board, through relay 91 to ground 72 while still another line 71 extends to a transformer 65B the secondary 67B of which is grounded at 72, while from the other side of the secondary a 24-volt AC line 73 extends to lock and reset switch 56. When switch 56 is moved to lock position closing contact 74, an on-off type relay 75 is energized to de-activate a solenoid 76 connected to a spring loaded coin return plunger 77 which serves to return any coins inserted after a game has started to coin return opening 39. Relay 75, as well as other relays to be described hereinafter, is of that type which closes a pair of contacts upon energization of the "on" coil, the contacts remaining closed even though the relay is de-energized. Similarly, when the "off" coil is energized, the above mentioned contacts will open and remain so until the "on" coil is re-energized. Movement of switch 56 to reset position energizes the "on" coil 75A of relay 75 to energize line 81, which extends to the console 10. The switch 56 is a single pole double throw switch which is spring biased to return automatically to the off position.

Thus coins continue to be rejected until switch 56 is moved to reset position engaging contact 78. A coin counter coil 79 is connected by a line 83 to individual console 10 to activate coin counter 57.

A line 80 extends from reset contact 78 to relays 91 of console 10, while a line extends through relay 75 to coin return 76 of console 10 as will be described in connection with FIG. 7. "Bingo" light 55 is illuminated through line 82 from the individual console 10.

Having reference now to FIG. 7, there is shown schematically a console having five groups of three playing boards 22 each, each group being activated by a coin inserted in a coin slot 37. Associated with each coin slot 37 is a double pole single throw coin actuated switch 85, the fixed contacts 86 of which are connected to line 81. One movable contact 87 of each switch is connected to line 83 to activate coin counter coil 79.

The other movable contact 88 is connected to a line 89 which extends to the "on" coil of relay 91, a relay similar to relay 75. The other end of the "on" coil is grounded at 72. The "off" coil 93 of each relay 91 is energized by reset switch contact 78 through line 80.

First, when the "on" coil of relay 75 has been activated by the operator by closing switch 56 to the "reset" position, ending one game and beginning another, the player activates relay 91 by inserting a coin in switch 85, FIG. 7, illuminating all "free lamps" 18A associated with that particular coin switch. The game boards are ready for play.

At this time, the operator announces aloud "The game is to be started"; after a brief pause, the operator closes switch 56 to the lock position, rejecting all coins inserted after that time, and starts the game. The additional lamps 18 of each board in play are capable of energization upon the closure of an associated switch 54 due to the fact that the "on" coil of relay 91 activates the lamps of all of the game boards associated with that relay through a single line or conductor 95 connected between relay 91 and the corresponding metallic panel 16. FIG. 6 discloses schematically a conduit 97 containing individual wires extending from each switch 54 to an associated transformer 65 which is connected through a full wave rectifier 68 and diode 69 to an individual lamp 18 of the type shown in FIG. 8 or FIG. 8A (see FIG. 6).

FIG. 9 discloses schematically blocks 98, 99 and 100 corresponding to numbers 1 to 5, 6 to 10, and 11 to 15, respectively, which are supplied respectively through conduits 97*a*, 97*b*, and 97*c* extending from line 97. A ground wire is indicated at 101. It is to be understood that similar connections are provided for numbers 16 to 75, and that a transformer and rectifier are also provided for each number, it being noted that numbers are duplicated on many game boards, although the position may be different.

Referring back to FIG. 7, provision is made for awarding a free game or games to a player as a reward or incentive. This is achieved by activating a key operated switch 23, which is positioned in a bypass line 102, to activate certain game boards, one of which is indicated at 22a, without the activation of its associated relay 91 through its coin actuated switch 85. FIG. 7 also shows schematically switch 40 positioned in a line 103 connected to a power line 104 to activate "change" light 43, and switch 41 positioned in a line 105 also connected to power line 104 to actuate "Bingo" light 42 and audible signal 45 and "Bingo" light 55 on master console 50.

OPERATION OF THE SYSTEM

From the foregoing the operation of this electrical game should be readily understandable. A player seats himself before a console, it being understood that the number of consoles need be limited only by available space and expense, and

further that, if desired, more than one player may use a single console, or one player may use more than one console, and inserts a coin or coins in slots **37** according to the number of games he wishes to play. Closure of the associated switch **85** energizes the selected game boards **22** and the number of coins inserted are indicated on counter **57**.

The operator seated at control console **50** has previously moved switch **56** to reset, thus clearing all the boards as previously described.

After a suitable warning period, during which time a change girl may supply change to any players who have pushed **40** to illuminate "change" light **43**, the operator moves switch **56** to "lock" position, de-energizing the circuit to solenoid **76**, so that any coins subsequently inserted in slots **37** are returned to the player in opening or receptacle **39**.

The free games may be awarded by key switches **23** which bypass relays **91**.

A number is then selected in any conventional manner, as by drawing from a cage containing numbered balls, and the operator throws the switch **54** corresponding to the selected number.

As soon as one player achieves five numbers in vertical, horizontal, or diagonal alignment, he presses "Bingo" button **41** which illuminates his "Bingo" light **42** as well as "Bingo" light **55** on control panel **53**, and actuates audio buzzer **45**, indicating the end of the game. After the winner's game board is checked, switch **56** is returned to reset, extinguishing all of lights **18** and **18A**,and a new game may be started.

While the preferred embodiment of this invention has been illustrated and described, it will be understood by those skilled in the art that changes and modifications may be resorted to without departing from the spirit and scope of the invention.

We claim:

1. A game apparatus comprising:
a. a master control panel having a plurality of switches thereon,
b. a plurality of groups of playing boards, each group having a separate, common metallic base,
c. a plurality of lamps mounted on said base in current conducting relation thereto,
d. means providing a DC source of power and connecting each of said master control panel switches to a predetermined number of said lamps representing a single bingo number on a plurality of said playing boards,
e. a plurality of power return means each individually connected to one of said metallic bases,
f. each of said return means being selectively operable to connect its associated playing board lamps to ground, and
g. each said lamp including a uni-directional conductive element positioned to prevent the passage of current coming from the direction of ground through the lamp.

2. An electrical "Bingo" game comprising:
a. at least one player console,
b. each console having a plurality of groups of translucent game boards each having numbered squares on its face,
c. a grid defining compartments underlying the numbered squares,
d. a metallic base common to all grids in a group of boards,
e. a light in each compartment including a socket element mounted in conductive relationship to said metallic base,
f. a master control panel,
g. individual switches on said panel,
h. first means operatively connecting each switch and an associated number of lights representing a single bingo number on a plurality of said game boards, whereby closure of a selected switch conditions corresponding lights beneath numbered squares on said game boards,
i. second means providing a DC source of power to each said conditioned light,
k. a plurality of power return means each individually connected to one of said metallic bases for selectively connecting its associated game board compartment lights to ground, and
1. a diode positioned in relation with each said light to prevent the passage of current coming from the direction of ground through the light.

3. A game apparatus as in claim **1** further including:
a. a plurality of coin operated switches, and
b. each of said coin switches individually associated with one of said return means for selectively operating the same.

4. A game apparatus as in claim **3** further including:
a. interlock means connected to said panel for selectively disabling all of said power return means.

5. A game apparatus as in claim **1** wherein:
a. said playing boards include a plurality of individual game playing panels,

6. A game apparatus as in claim **3** further including:
a. counter means,
b. said counter means being connected to said plurality of coin operated switches for counting coins deposited.

7. A game apparatus as in claim **1** further including:
a. means associated with said playing boards for signalling said panel.

8. A game apparatus as in claim **7** wherein said signalling means include:
a. an audible alarm and a visual alarm.

9. The structure of claim **2** wherein said power return means includes:
a. a coin actuated switch for each group of game boards, and
b. electrical means interconnected with said first and second means to render said means inoperable unless said coin actuated switch is closed.

10. The structure of claim **2** including:
a. A "Bingo" light on each console,
b. a source of power therefor,
c. a manual operating switch for said "Bingo" light,
d. a corresponding "Bingo" light on said control panel,
e. and means interconnecting said first and second "Bingo" lights for simultaneous illumination.

11. The structure of claim **10** wherein said control panel includes:
a. a reset switch,
b. and means interconnecting said reset switch with said first and second means simultaneously to de-energize all of said lights.

12. The structure of claim **11** including:
a. a coin reject mechanism,
b. a switch means on said panel for energizing said reject mechanism;
c. and means interconnecting said reset switch and said reject mechanism to preclude simultaneous activation thereof.

13. The structure of claim **2** wherein:
a. each grid comprises a series of plastic partitions, and
b. each partition is topped with a compressible strip bearing against the translucent game board to render said compartments lighttight.

* * * * *