

May 2, 1933.

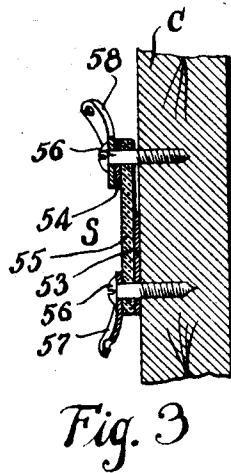
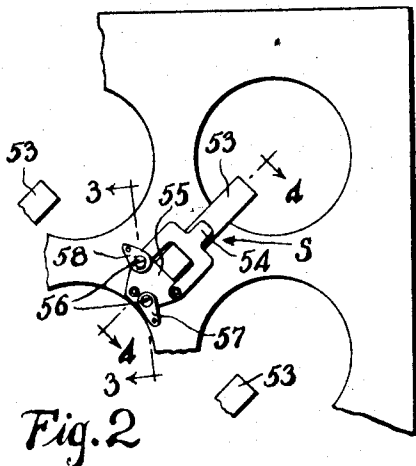
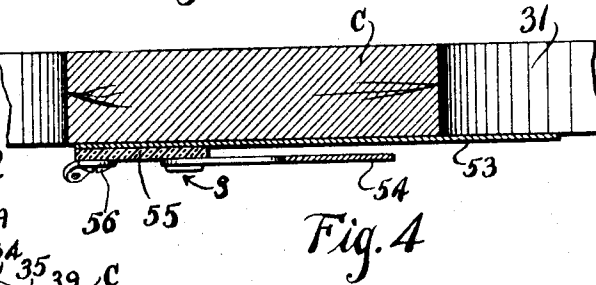
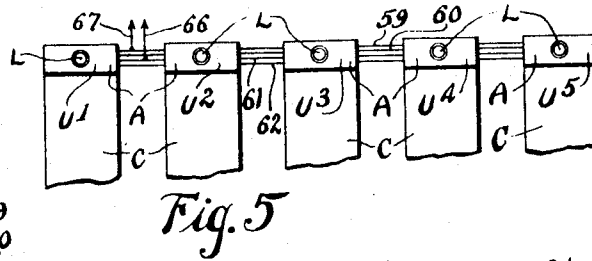
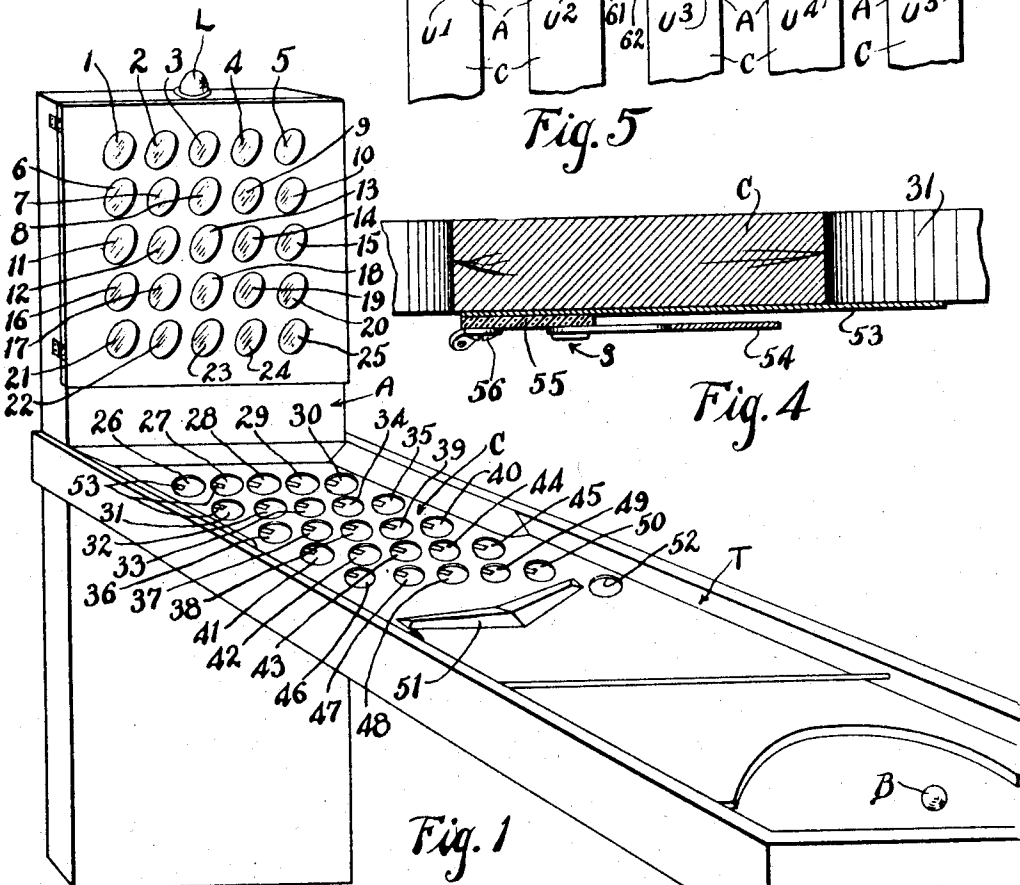
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1,906,260

GAME

Filed Feb. 16, 1931

4 Sheets-Sheet 1



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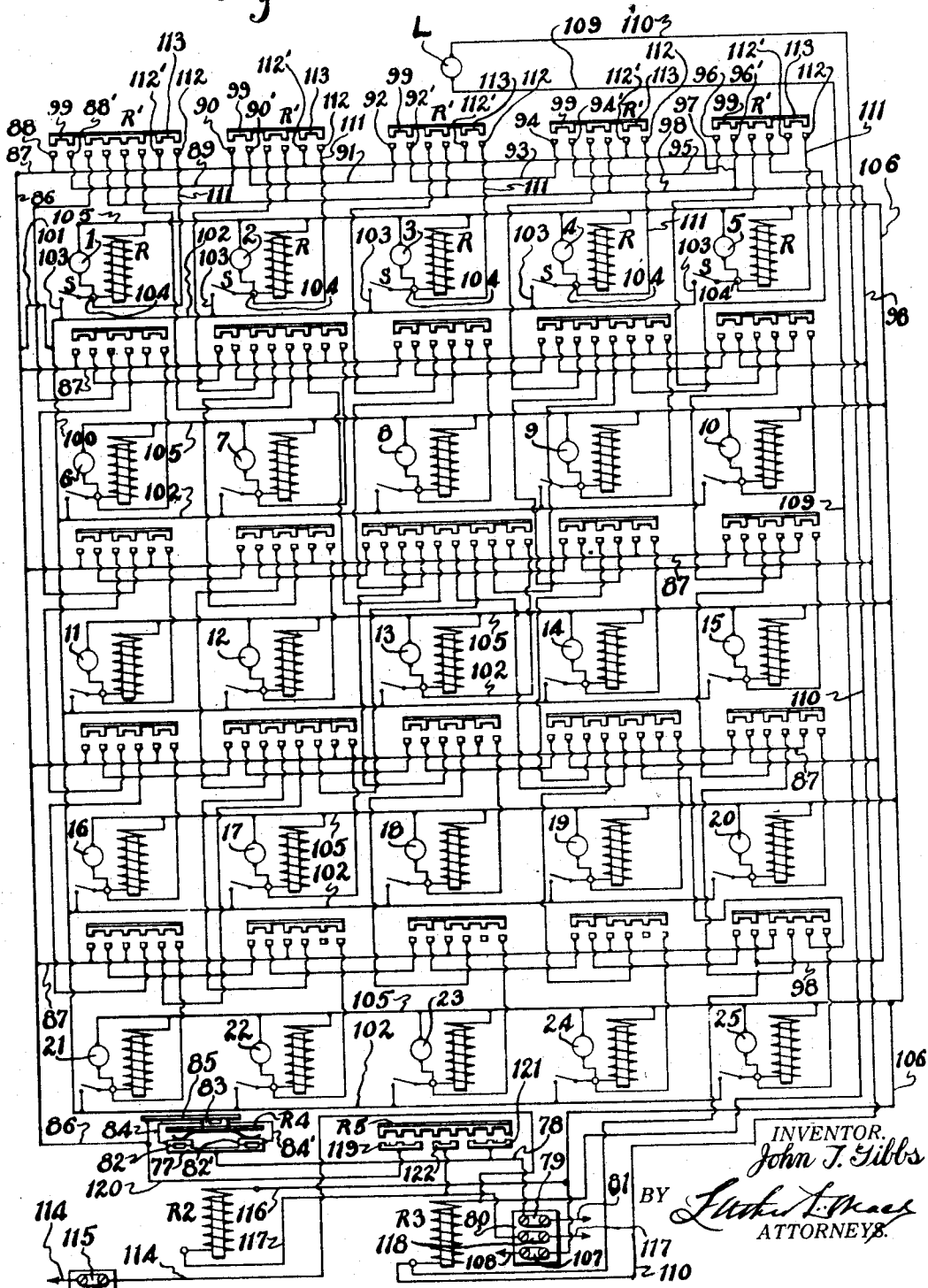
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Fig. 6



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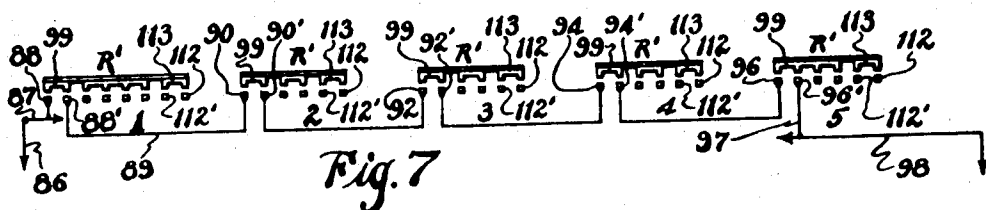


Fig. 7

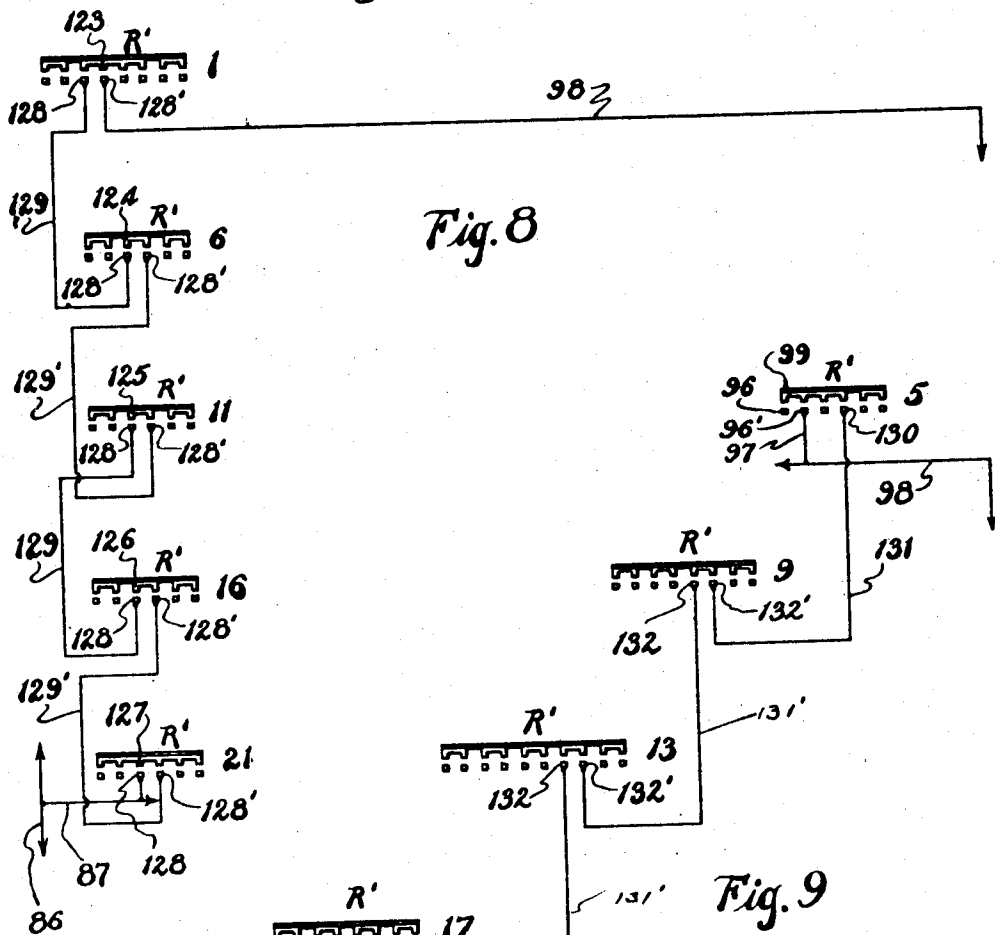


Fig. 8

Fig. 9

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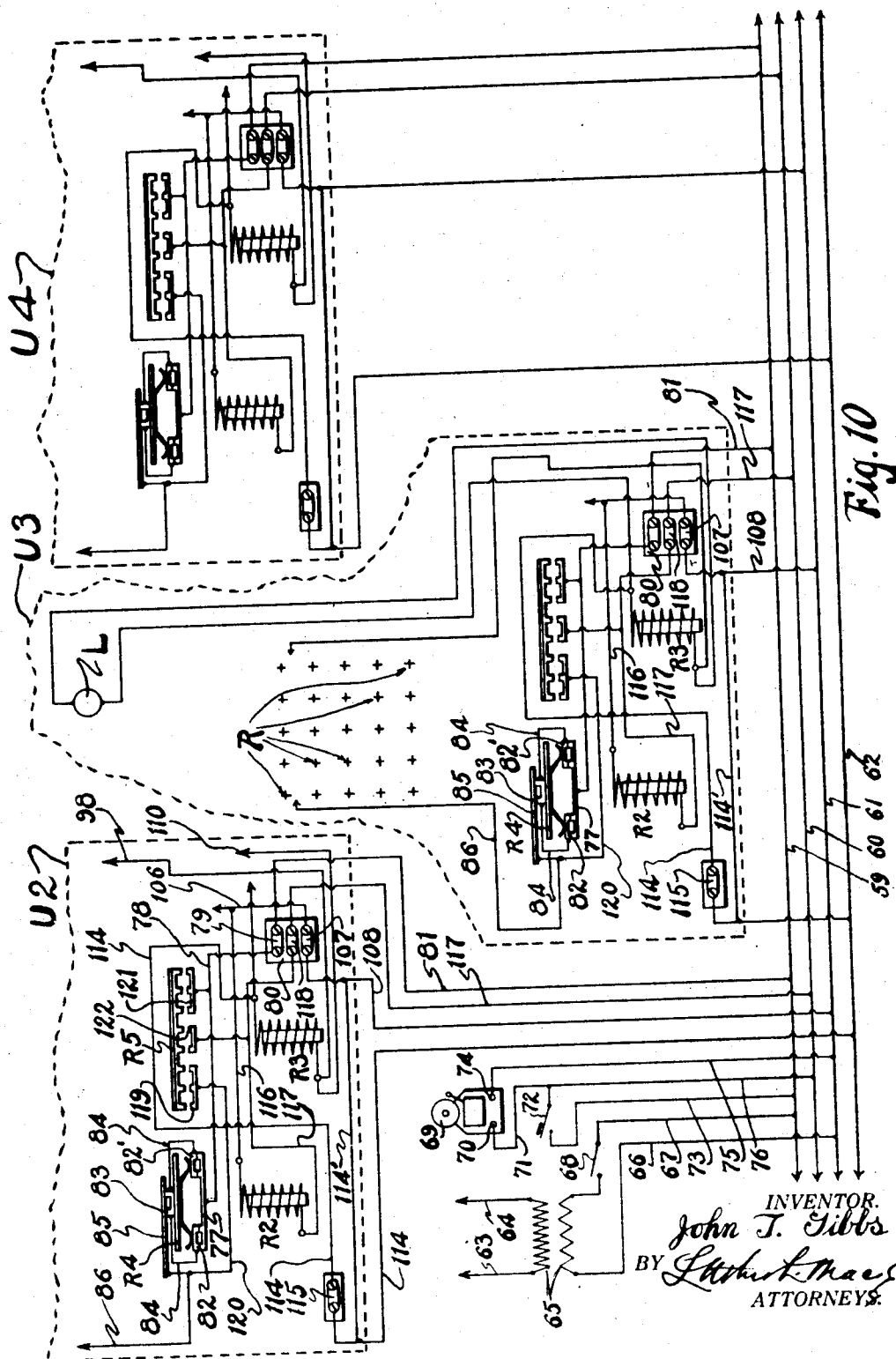
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GAME

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UNITED STATES PATENT OFFICE

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GAME

Application filed February 16, 1931. Serial No. 515,951.

This invention relates in general to games, and more particularly to a form of game which embodies a plurality of electrically connected units arranged in such a manner that successive plays made by the players on their respective units will be indicated visibly or audibly, and the winning play made by any one of the players on a particular unit will operate to give an additional signal of such winning play, and at the same time discontinue the signals of the successive plays made on the other units.

It is a further object to provide a game embodying the elements and possessing the characteristics set forth in the following brief description.

Each of the units, of which there may be any number, includes a game board preferably disposed horizontally on the top of or forming the top of a table, and an annunciator. The game board of each unit is provided with a plurality of pockets or orifices into or thru which a ball or missile, when tossed or rolled over the board by a player, may drop or fall.

Each of the pockets or orifices has disposed in or at the bottom thereof a set of contacts which are capable of being operated by and when the ball is dropped into the pockets or thru the orifices.

The annunciator includes a plurality of indicators on the face thereof which may be of visible or audible character, and which correspond in number and arrangement with pockets or orifices on the board and are electrically connected with the contacts at such pockets or orifices. Thus the closing of the contacts in any of the pockets or orifices is designed to energize or actuate the corresponding signal on the annunciator.

Each of the tables is provided with an inclined bottom spaced from the game board so that when the ball drops thru any of the pockets or orifices it will roll by gravity downwardly to the front end of the table where it is accessible for another play.

In order to make the game more interesting and difficult, suitable obstacles or hazards may be provided on the boards so as to deflect the ball when it is rolled thereover, and

sometimes prevent the dropping of the ball into a pocket. The game board is also slightly inclined, however, and the obstacles are so arranged that under all conditions the ball will be returned to starting position after each play is made.

The pockets on the board and the indicators on the annunciator are correspondingly arranged in groups or sets, and a winning play is made when a player has dropped the ball into all of the pockets of any one of the group or sets, regardless of the number of plays which may have been necessary to accomplish this result. A substantial number of units are electrically connected, and when the first player has dropped a ball into all of the pockets of any one of the several groups or sets on his particular unit, supplementary audible and visible signals will indicate the winning play, and simultaneous therewith all of the indicators on the other units will be de-energized and only the indicators on the winning unit will remain energized.

At the beginning of the game the number of points to be awarded to the winner in each round or play is determined, and each time a player makes a winning play he is awarded the predetermined number of points. A game may consist of a predetermined number of points and the first player to win such number of points will win the game, or, prizes may be offered with values for certain and different numbers of points, and the players winning the required number of points will be awarded the prize or prizes corresponding to such numbers.

It is an object of this invention, therefore, to provide a comprehensive game of the character described, together with means for electrically connecting the several units in a compact and convenient arrangement of said units and the several elements of each of the units for facilitating the plays and for accommodating a maximum number of units in a limited amount of space.

Still other objects may appear as the description progresses.

In the accompanying drawings I have shown a preferred form of invention, subject to modification within the scope of the

appended claims without departing from the spirit thereof. In said drawings,

Fig. 1 is a perspective view of one of the units hereinabove described.

Fig. 2 is a fragmentary enlarged bottom plan view of the game board showing the arrangement and disposition of the electrical contacts associated with the pockets in the board.

Fig. 3 is a section of the same on line 3—3 of Fig. 2.

Fig. 4 is a section of the same on line 4—4 of Fig. 2.

Fig. 5 is a diagram showing a battery of units electrically connected together.

Fig. 6 is a circuit diagram of one of the units.

Figs. 7, 8 and 9 are typical circuit diagrams of one of the units showing the arrangement of the indicators in groups or sets.

Fig. 10 is a circuit diagram of corresponding portions of three of the units electrically connected together.

Referring particularly to Fig. 1, it will be observed that each of the units includes a vertically disposed annunciator A, a horizontally disposed table T and a game board C which may be attached to the annunciator A and disposed in a slightly inclined position over and forming the top of table T. The annunciator A is arranged with a plurality of indicators which are designated on the drawings by reference characters 1 to 25 inclusive. Each of said indicators preferably includes a lamp mounted in the annunciator housing behind a glass covered aperture. The board C includes a plurality of pockets or apertures designated by reference characters 26 to 50 inclusive, and corresponding in number and arrangement to the indicators 1 to 25 inclusive. The pockets or orifices are large enough to freely receive a ball B which is adapted to be rolled rearwardly over the board C so that it will fall thru any one of the pockets and will be returned to the front end of the table after each play by gravity.

Board C may be provided with hazards such as a raised rib or obstacle 51, or one or more apertures 52, thru which the ball may fall before or after traversing the rear end of the board containing the pockets 26 to 50 inclusive.

Beneath each of the pockets I provide a switch S which includes a pair of spring contacts 53 and 54 mounted on opposite sides of an insulating block 55 and secured to the bottom of the board C by means of screws as at 56. As shown in Fig. 4, the contacts are normally spaced apart and are flexible so that when the ball B is dropped thru the orifice, as at 31, the weight of the ball will be sufficient to flex the upper contact 53 downwardly into engagement with the lower contact 54, and if necessary thereafter flex both of said contacts together until the ball has

cleared the pocket and the contact 53 and drops onto the bottom of table T. It will be noted that the upper contact 53 is substantially longer than the lower contact 54, and said upper contact projects substantially over the bottom of the pocket 31. This structure is typical of each of the pockets 26 to 50 inclusive.

Terminal clips 57 and 58 are provided on the block 55 by means of which electrical conductors may be connected with the contacts 53 and 54, as hereinafter explained.

Each of the units is also provided with a supplementary indicator lamp L, which is adapted to be energized only when the circuit of any one of the groups of contacts S has been closed by dropping the ball B thru the several pockets of such groups. By means hereinafter described, the switches S associated with the pockets 26 to 50 inclusive are electrically connected with the indicators 1 to 25 inclusive of the annunciator, respectively.

By reference to Fig. 6, it will be observed that each of the indicators 1 to 25 inclusive is associated with a relay R having an armature R', and the switches S of the pockets 26 to 50 inclusive are likewise connected in the circuits of said relays and said indicators in such a manner that the closing of contacts 53 and 54 of the pockets 26 to 50 inclusive will close the circuit energizing the corresponding relay and its associated indicator. Each of the units is provided with a feeder relay R2 and a holding relay R3 having armatures R4 and R5 respectively, for purposes hereinafter described.

The indicators and pockets may be of any suitable number and arranged in any suitable form, but in the drawings I have shown the indicators and pockets arranged in right angularly and diagonally disposed rows or groups. For instance, the indicators 1 to 5 inclusive, 6 to 10 inclusive, 11 to 15 inclusive, 16 to 20 inclusive and 21 to 25 inclusive, constitute separate inter-connected groups or sets disposed horizontally of the annunciator. The indicators 1, 6, 11, 16 and 21; 2, 7, 12, 17 and 22; 3, 8, 13, 18 and 23; 4, 9, 14, 19 and 24; and 5, 10, 15, 20 and 25, form separate inter-connected groups which are disposed vertically of the annunciator. Likewise there are two diagonal groups composed of the indicators 1, 7, 13, 19 and 25, and the indicators 5, 9, 13, 17 and 21. All of said groups of indicators are commonly connected with a source of electric current thru the feeder relay R2 as hereinafter described.

In the consideration of this invention it is deemed unnecessary to describe all of the group circuits shown in Fig. 6, of which there are twelve, but three typical circuits are illustrated in Figs. 7, 8 and 9. The circuit of Fig. 7 includes the armatures of the upper horizontal group of indicators 1 to 5

inclusive, the circuit of Fig. 8 includes the armatures of the left hand vertical group of indicators 1, 6, 11, 16 and 21, and Fig. 9 includes the diagonal group of armatures of indicators 5, 9, 13, 17 and 21. As shown in Fig. 6, the armatures R' of the relays R are provided with a plurality of contacts arranged in pairs or multiples of pairs, depending upon the number and arrangement of contacts necessary to properly connect any one of the indicators with the indicators of another and other groups. The armature R' of indicator 1, for instance, has three sets of contacts, the central contact having four points and the outer contacts each having two points, while the armatures of indicators 2, 3 and 4 each have three sets of double contacts and the armature of indicator 5 has one four point contact and one two point contact.

Referring to Fig. 10, it will be observed that the several units shown in Fig. 5 and indicated by the characters U1, U2, U3, U4 and U5 are connected in multiple with a quadruple line consisting of conductors 59, 60, 61 and 62. Current from a source of supply is directed thru leads 63 and 64 to a transformer 65, and conductors 66 and 67 lead from the transformer to the feed wires 59 and 61, and a main switch 68 is interposed in one of the leads from the transformer, as for instance the conductor 67.

A signal bell 69 has one of its terminals 70 connected by means of a wire 71 with a switch 72 which is interposed in a conductor 73 leading to feed wire 59. The other terminal 74 of said bell is connected by means of a wire 75 with feed wire 61. The wire 71 from the bell also connects with the conductor 60 by means of a wire 76 for purposes hereinafter explained.

It will be understood at this point that the feed wires 59 and 61 are commonly connected with the circuits of the several units for feeding current to the relays and indicators of such units, while the wires 60 and 62, parallel with the wires 59 and 61, are employed as a means of interconnection between the several units, for purposes hereinafter explained.

The current in each of the indicators 1 to 25 inclusive and the relays R of the indicators is supplied thru the armature R4 of the feed relay R2. It will be noted that said armature is associated with a contact bar 77 which is connected by means of a wire 78 with a terminal 79 on a block 80, and that said terminal is connected by means of a wire 81 with the feed wire 59. The bar 77 always engages a pair of double pointed contacts 82 and 82' which are connected, respectively, with a double-pointed contact 83 fixed to the armature R4, by means of conductors 84 and 84'. The contact 83 normally engages a bar 85 which is electrically connected with a

conductor 86 which is common to all of the indicators and relays of each of the units, as shown in Fig. 6, and to that end has parallel branch leads 87, 87 etc., which are connected in multiple with corresponding fixed contacts of the several groups or rows of indicators. For instance, as indicated in Fig. 7, the branch 87 connects with the fixed contact 88 of armature R' of indicator 1.

A companion contact 88' connects by means of a wire 89 with the fixed contact 90 of indicator 2. A fixed contact 90' of indicator 2 connects by means of a wire 91 with a fixed contact 92 of indicator 3. The fixed contact 92' connects by means of a wire 93 with the fixed contact 94 of indicator 4. Similarly the fixed contact 94' of indicator 4 connects by means of a wire 95 with the fixed contact 96 of indicator 5; the fixed contact 96' connects by means of a wire 97 with a conductor 98, which is common to all of the indicators 1 to 5 inclusive. Conductor 98 is likewise common to the other groups of indicators, as shown in Fig. 6.

It will be observed that the armatures R' of the units 1 to 5 inclusive normally hold the circuit open, there being five gaps in the line which must be closed before the current can flow from wire 86 to wire 98. These gaps are between contacts 88 and 88', 90 and 90', 92 and 92', 94 and 94', and 96 and 96', referring particularly to the horizontal group of indicators 1 to 5 inclusive, as shown in Fig. 7. Said gaps are adapted to be closed by double-pointed contacts 99 mounted on the armatures R' and adapted to bridge the paired contacts.

Other similar fixed contacts, also arranged in pairs, and multiple pointed contacts for bridging the pairs of fixed contacts are provided on the armatures R' of the several indicators for closing the gaps in the circuits of the different groups or sets of indicators.

The description of the circuit shown in Fig. 7 is typical of all of the horizontal groups of indicators shown in Fig. 6. By reference to Fig. 6 it will be noted that the current from the wire 86 is divided so as to provide a duplex circuit, one portion of which is thru the switches S, and the other portion of which is thru the armatures R' and their associated groups of contact.

It will be noted that current is supplied from the feed wire 86 to a conductor 100 by means of a connection 101, and branches 102, 102 etc., lead from the conductor 100 horizontally across the annunciator for connection with the several groups of relays R, R etc., and indicator associated therewith. The indicators 1 to 5 inclusive are thus supplied with power from the branch 102 as follows: The switches S, S etc., each of which includes the pair of contacts 53 and 54 disposed below the pockets in the table, are connected by means of wires 103 with the branches 102, and also with terminals 104 as shown. The

relays R, R etc., and the indicators 1 to 5 inclusive are connected in multiple with the wire 102 at the terminal 104 and with the parallel line 105 in the same manner in each case.

The conductors 105 are commonly connected with a wire 106 which leads to terminal 107 of the terminal block 80 and connects with the main feed wire 61 by means of a wire 108. Thus, for instance, as the circuit of any of the relays R is closed by the engagement of the ball B with the switch S, said switch will be operated and the circuit of the corresponding relay and indicator, as at 1 for instance, will be closed, current flowing from the feed relay thru the wires 86, 101, 102 and 103 to the relay and indicator, and from such elements thru the wires 105, 106 and 108. Thus current is delivered to the relay and indicator from the feed wires 59 and 61. The energization of the relay R of indicator 1, for instance, will attract the armature R' and close the first gap in the circuit of the group of indicators 1 to 5 inclusive. The other indicators of this set or group are similarly operated either in succession or otherwise, but a winning play cannot be indicated until the circuit thru the armatures is completed by the closing of all of the gaps thru the contacts 99 on the armatures R'.

The dropping of a ball thru a pocket only momentarily closes the switch S, thus energizing the associated relay R, thereby attracting the corresponding armature R' to the fixed contact. The armature, however, will remain closed and bridges the several sets of contacts associated therewith, altho the switch S has again been opened, for the following reason:

The terminals 104 of the several relays are connected by means of wires 111 with fixed contacts 112, and paired contacts 112' are connected with the horizontal conductors 87 so that when the armatures R' are closed the contacts 112 and 112' in each case will be bridged by double-pointed contacts 113 on the armatures. Thus once a relay R is energized by the closing of a switch S the armature R' will hold the circuit of that particular relay closed until and while the other relays of that particular group or other groups have been or are being energized or a winning play has been made in some other unit. The master indicator L on each unit is connected in multiple with the holding relay in such a manner that when all of the gaps in the circuit of any one of the groups have been closed the lamp will glow to indicate a winning play. Said lamp has wires 109 and 110 leading therefrom and connected with opposite terminals of the holding relay R3. The holding relay R3 becomes operative (on the closing of the circuit of any one of the groups of armatures) for holding the circuits of such group of relays and armatures closed

while the circuits of relays in other units are thereby automatically opened.

To this end the connections consisting of the wires 60 and 62 are provided for inter-connecting all of the units so that a winning play on any one unit will discontinue the signals on all units except that on which the winning play is made. For this purpose the holding relay R3 includes a conductor 114 which leads thru a terminal block 115 on each of the units to the inter-connecting conductor 62. Conductor 114 also connects thru wires 114' and 108 to line 61 for completing the circuit from the holding relay. Also the feed relay R2 has one side 116 connected with the wire 106 which, with the block 107 and wire 108, completes the circuit to line 61, while the other side 117 of said relay is connected with a terminal 118 on block 80 and leads therethru to the wire 60. Thus, thru the energization of a holding relay, current will flow from line 60 back thru line 117 of the other units, energizing their feed relays, discontinuing the signals thereof.

The armature R5 of the holding relay of each unit has three sets of fixed contacts adapted to be bridged by the armature when the holding relay R3 is closed. Said contacts include a three-pointed contact 119 connected by means of a conductor 120 with the main feed line 86 of each unit, and also a three-pointed contact 121 connected with the wire 78 leading to the contact bar 77 of the feed relay. A double-pointed contact 122 is also provided for the armature R5 which connects with the feed relay line 117.

Thus the energization of the holding relay will energize the feed relay by means of current supplied from line 59 thru wire 81, terminal 79, wire 78, contacts 121, 122, and wire 117 to the feed relay, from which the circuit to line 61 is completed by means of wires 116, 106, terminal 107 and wire 108. Also, the wire 120 permits the current to continuously flow into wire 86 even tho the circuit has been broken between contact 83 and bar 85 by the energization of the feed relay.

Altho it is not necessary for the feed relay of the winning player's unit to be energized for any purpose of such unit, it is necessary that the current pass thru the coil of said relay ultimately to the line 61 and thence thru the wire 75 to the bell 69, the circuit being completed from the bell to line 60 by wires 71 and 76. From line 60 the current returns to line 61 via the holding relays of the other units. Thus the bell will ring, signaling the house operator who will locate the winning unit by its glowing lamp L.

After the winning unit is properly recognized, momentary opening of the switch 68 will break all the circuits, restoring all relays to open position. Switch 68 can be left open if it is desired, to prevent unauthorized persons from playing during the absence of the

house operator. After the switch 68 is closed it is desirable to signal all the players to start at one given moment.

A means is provided for this purpose in the switch button 72. Players are informed that the play starts when the bell is silenced, because no electrical contact can be made until the bell has ceased ringing, due to the current flowing thru line 60, which energizes the feed relays of all units.

It will be observed that the connections between the feed relay and the holding relay and the individual relays of each of the indicators of all of the units are substantially the same, and it is believed unnecessary to describe in detail all of the connections for the several groups of units. Three typical groups are shown, however, in Figs. 7, 8 and 9, the first of which has been hereinbefore described.

The vertical group of indicators, shown in Fig. 8, is similar to the horizontal group shown in Fig. 7, except as to the position of the contacts on the armatures, and the same is true of the diagonal group shown in Fig. 9.

The number and arrangement of the contacts on the several armatures R' are necessarily different, depending upon the number of indicators in a group, the particular arrangement of the indicators of each group, and the number of groups of indicators. Some of the armatures for the indicators are included in but two groups, while others are included in three or four groups, thus necessitating provision for a suitable number of contacts on the armatures to accommodate the multiplicity of connections.

Referring now to Fig. 8, I will describe the connections of the group of indicators 1, 6, 11, 16 and 21. The armatures R' of said left hand vertical group of indicators have, respectively, movable contacts 123, 124, 125, 126 and 127 thereon, together with sets of fixed contacts which are bridged by the movable contacts as the relays of said indicators are energized for completing the circuit of such group of indicators. The third and fourth contacts from the left on the indicators 1, 6, 11, 16 and 21 are paired for the purpose of connecting said indicators together. Each of said indicators has a pair of fixed contacts 128 and 128'. Contacts 128 of indicators 1 and 6 and the corresponding contacts of indicators 11 and 16 are connected by wires 129, while contacts 128' of indicators 6 and 11 and the corresponding contacts of indicators 16 and 21 are connected by similar wires 129'. The contact 128' of indicator 1 is connected with wire 98 while the contact 128 of indicator 21 is connected with wire 87, thus completing the electrical connections of this particular group of indicators in substantially the same manner as that described in connection with the group of indicators 1 to 5 inclusive.

Now referring to Fig. 9, I will describe the connections of one of the diagonal groups of indicators including indicators 5, 9, 13, 17 and 21. The fixed contact 96' of indicator 5 is connected as hereinbefore described by means of wire 97 with the lead wire 98. The fourth contact 130 of said indicator is connected by means of a wire 131 with the contact 132' of indicator 9, which has a companion fixed contact 132. Similar contacts 132 and 132' are provided on the indicators 13 and 17, while the indicator 21 has only the contact 132'. The contacts 132 of indicators 9, 13 and 17 are connected by wires 131' with the contact 132' of indicators 13, 17 and 21. The connections of this group of contacts with the lead wires are completed thru contact 128 of indicator 21 and wire 87 to the lead wire 86.

Having thus described the electrical connections of three groups of indicators as shown in Figs. 7, 8 and 9, it will be understood that other horizontal, vertical and diagonal groups are connected in a similar manner with the lead wires 86 and 98 to the feed relay R2 and the holding relay R3 and the main power wires 59 and 61.

What I claim is:

1. A game apparatus comprising a board having a plurality of apertures, electrical contacts adjacent each of said apertures, an annunciator having a plurality of electrical indicators thereon corresponding in number with said apertures, said indicators and said apertures being subdivided into corresponding groups, means for electrically connecting said contacts with the corresponding indicators, means for supplying electric current to said indicators, a plurality of relays in the circuit of said indicators adapted to be energized when a ball is dropped thru said apertures into engagement with said contacts, and armatures associated with said relays having contact devices thereon registering with fixed contacts on said annunciator, whereby when each of said contacts has been momentarily operated by said ball, said relays and said indicators will be energized and said armature contacts will be caused to engage said fixed contacts, and subsequent to the opening of said contacts the circuit of said relays and said indicators will remain closed.

2. A game apparatus as characterized in claim 1, including a master signal connected in the circuit of said indicators and adapted to be energized when all of the indicators in any of said groups have been energized.

3. A game apparatus comprising a board having a plurality of contact devices thereon adapted to be engaged by an object moved over the board by a player, a plurality of indicators, means for electrically connecting said indicators with a source of electric current and with said contact devices, said indi-

- cators and said contact devices corresponding in number and arrangement and subdivided into corresponding groups, means for energizing said indicators as the associated contact devices are operated, an electrical circuit common to all of said groups and open until all of the indicators in one of said groups have been energized, and supplementary means for indicating a winning play when all of the indicators in one of said groups have been energized.
4. A game apparatus comprising a board having a plurality of contact devices mounted thereon, a corresponding number of indicators also mounted thereon and electrically connected with the contact devices respectively, said indicators and said contact devices being of corresponding number and subdivided into corresponding groups, a relay and an armature therefor in the circuit of each of said indicators, movable contacts on said armatures, fixed contacts normally spaced from said armature contact, and connections whereby when an object is moved by a player into engagement with said contacts said contacts will be momentarily closed for initially closing the circuit of the corresponding indicators and relays, thereby engaging the corresponding armature contacts with the associated fixed contacts for closing the circuit of said indicators and relays when said first mentioned contacts are again opened, and means for connecting the several indicators of each group for maintaining an open circuit of all of the groups until all of the indicators of one group have been successively energized.
5. A game apparatus as characterized in claim 4, including a signal connected with said groups of indicators and adapted to be energized when all of the indicators of any group have been energized.
6. A game apparatus comprising a plurality of units electrically connected together, each of said units including a plurality of contact devices and a plurality of indicators corresponding in number and subdivided into corresponding groups, means for electrically connecting the contact devices with the corresponding indicators, means for electrically connecting said units together and with a source of electric current, said indicators adapted to be operated when and as objects are moved by the players into engagement with the contact devices, and means whereby when all of the indicators in any group of any one of said units have been operated to complete a winning play, the indicators on all of the units except the winning unit will be deenergized, while the indicators at the winning unit will remain energized, for the purpose described.
7. A game apparatus as characterized in claim 6, including an independent supplementary signal at each of said units for signaling a winning play to the players.
8. A game apparatus as characterized in claim 6, including an independent supplementary signal at each of said units for signaling a winning play to the players, and means under the control of an operator for opening and closing the circuits of all of said units simultaneously at will.
9. A game apparatus comprising a plurality of electrically connected units, each including a game board with a plurality of apertures therein, and an annunciator with a plurality of indicators thereon, electrical contacts adjacent each of said apertures connected in the circuits of said indicators, said indicators and said apertures corresponding in number and subdivided into corresponding groups, whereby when objects are deposited in said apertures by the players at the several units corresponding indicators will be energized, a supplementary signal circuit on each of said units, and means for holding said signal circuit open until all of the indicators of any group on each of said units have been energized, and for closing said signal circuit when all of the indicators of any unit have been energized, and means controlled by the closing of the signal circuit of the winning unit for discontinuing the signals and opening the circuits of the indicators on all other units.
10. A game apparatus as characterized in claim 9, including an audible signal commonly connected with all of said units and adapted to be operated upon the closing of the supplementary signal circuit of any of said units.

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