Jan. 1, 1935. T. W. LOARING 1,986,152

AMUSEMENT DEVICE

Filed May 29, 1933 3 Sheets-Sheet 1

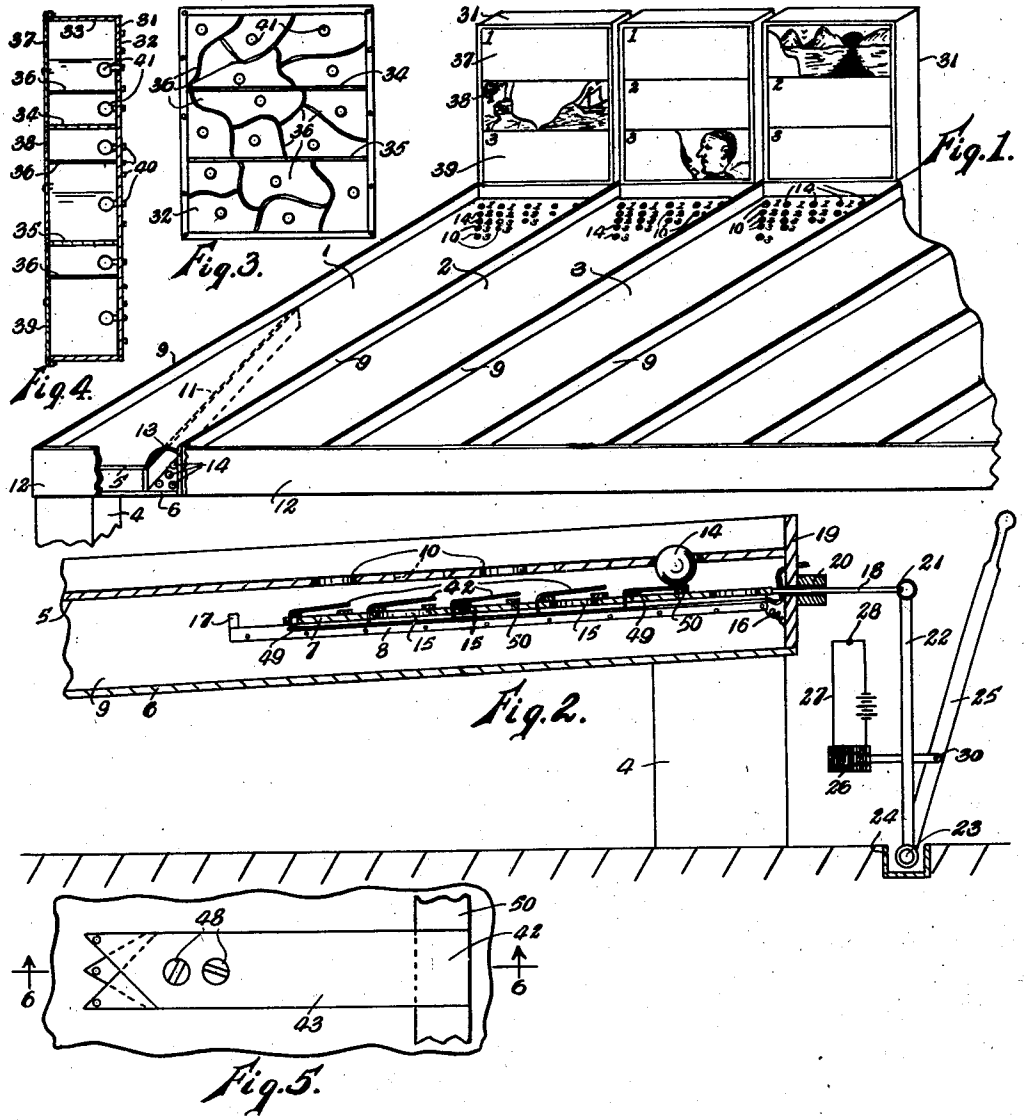


Fig. 1.

Fig. 3.

Fig. 4.

Fig. 2.

Fig. 5.

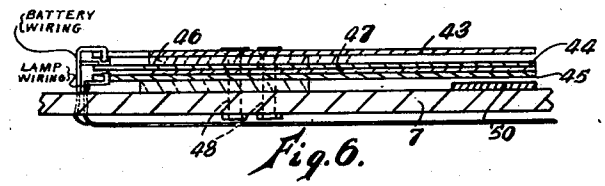


Fig. 6.

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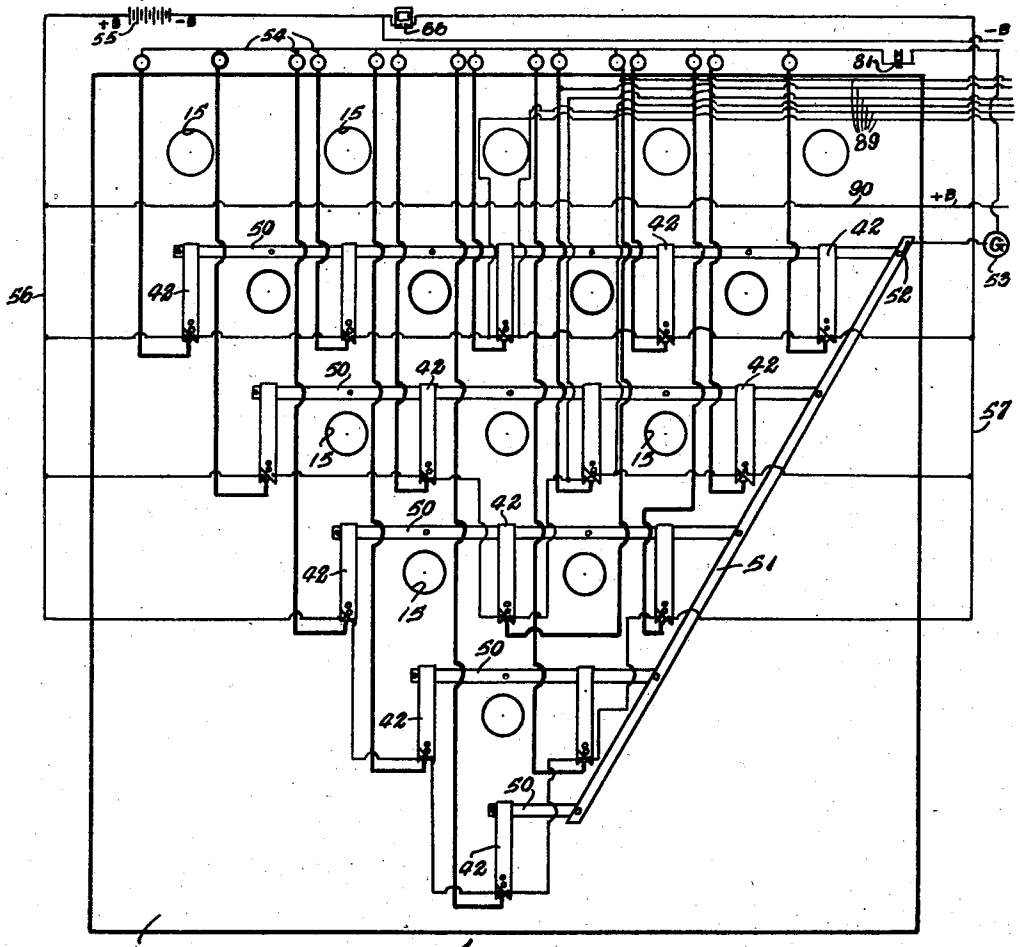
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Fig. 7.

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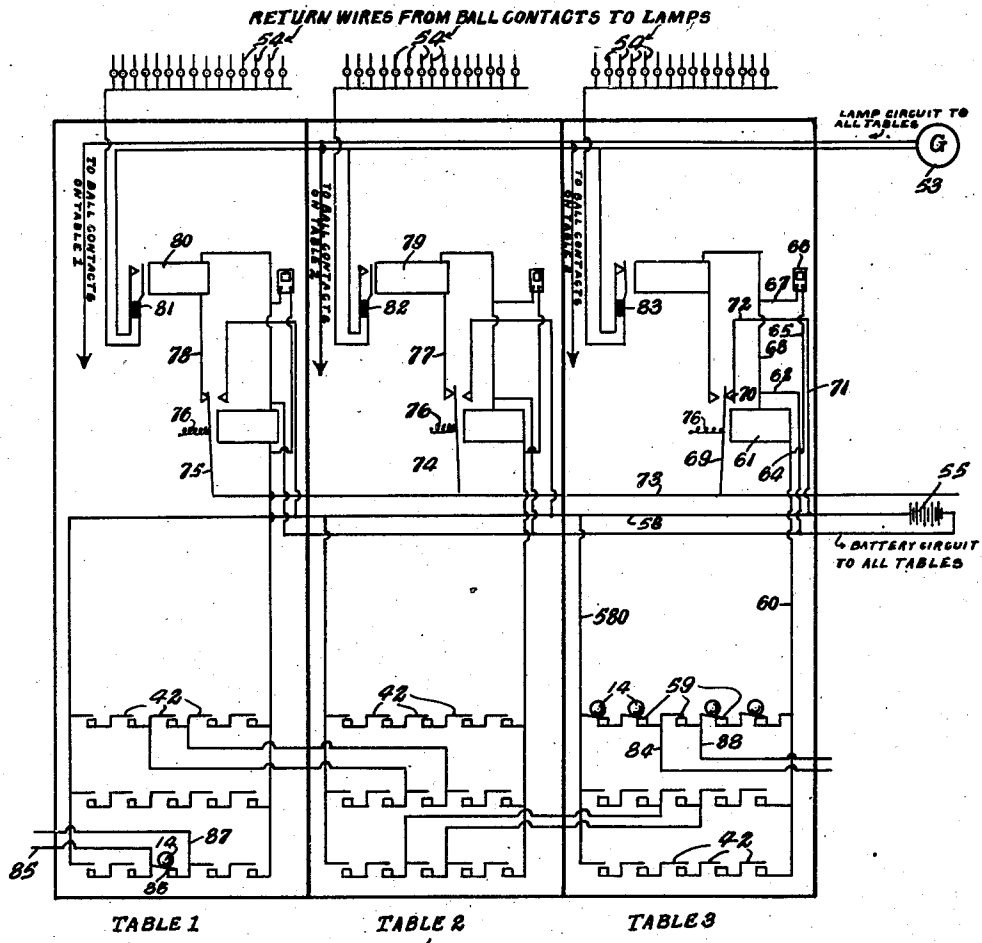


Fig. 8.

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Patented Jan. 1, 1935 1,986,152

UNITED STATES PATENT OFFICE

1,986,152

AMUSEMENT DEVICE

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Application May 29, 1933, Serial No. 673,408

12 Claims. (Cl. 273—123)

This invention relates to roll-ball amusement devices to be called "Jigsaw puzzalite" or "Roll-a-jig" games and played by rolling balls into "pockets" or apertures on a table surface for closing electrical contacts positioned therein whereby certain novel effects, forming the features of the game, may be brought about.

An object of the invention is to provide a game of skill wherein the pocketing of balls results in successively rendering visible by illumination, various irregular areas of a picture associated with each device, until such picture is complete, whereby the working out of the popular jig saw puzzle may be simulated in a novel manner.

Another object is to provide for simultaneous and competitive playing of a number of the games of this invention by use of a novel electrical relay system energized through a circuit distinct from the puzzle lighting circuit whereby, upon the completion of a picture by one player, the lights at the adversaries' tables are extinguished and an audible signal further announces a winner.

Another object is to introduce an element of chance into the game described by a novel system of cross wiring whereby one or more of the contacts at one table energize not only their directly associated electric lamps but also one or more lamps at adjacent tables whereby a player may inadvertently assist an opponent in the completion of his picture.

Another object is the provision of novel means for releasing played balls from their "pockets" and equally novel means for operating the releases individually or collectively.

Another object is to produce means of the character described in an efficient and practicable manner.

These and other objects are attained by the means described herein and illustrated in the accompanying drawings in which:

Fig. 1 is a perspective view, with parts broken away, of a number of the amusement devices of the present invention with portions of the associated pictures shown as they might appear in the playing of the games.

Fig. 2 is a cross sectional view taken longitudinally of one of the playing tables, showing also the operating means for the ball release and support means, certain parts being shown conventionally.

Fig. 3 is a front elevational view of the lamp casing for illuminating the jig saw puzzle panels, the latter being removed from the casing.

Fig. 4 is a longitudinal cross sectional view through the lamp casing showing the picture panels in position.

Fig. 5 is a plan view of the electrical ball contacts, the contact or support board being shown fragmentally.

Fig. 6 is a cross sectional view taken on line 6—6 of Fig. 5.

Fig. 7 is a plan view of the electrical contact board, the electric circuits associated therewith being indicated diagrammatically.

Fig. 8 is a wiring diagram illustrating the working of the electrical relay and other means as operative at the completion of a game.

With reference to the drawings: the amusement means comprise a plurality of preferably elongated tables, as many as desirable, three being shown herein as in operation, and indicated at 1, 2 an 3. The tables are provided with suitable under supports 4, and are each formed with a top 5, a bottom 6, which serves as part of the ball return structure, and a contact board 7, slidably positioned between said top and bottom on lateral guides 8 attached to the inner faces of the side panels 9 of the tables. It will be seen that the tables are disposed at a slight forwardly slanting angle to effect return of the playing balls 14 to the front or players' ends of the tables, and likewise because such angle for the playing surface has been found effective.

The table tops 5, adjacent their rear ends are provided with ball receiving apertures or "pockets" 10 which may be disposed according to a suitable plan, for example, the triangular formation shown. The side panels 9 extend above tops 5 to preclude removal of the balls from their tables.

The bottom 6, which may be co-extensive with the tops, receives the balls passing into apertures 10, the latter being then carried by gravity toward the front of the table. In order to concentrate and render the balls accessible for the player, a guide strip 11 may be positioned edgewise between the table top and bottom, extending angularly from a panel 9 on one side of a table to a point adjacent the front corner of the opposite side of the table, into which corner the released balls are guided to abut the front panel 12 of the table. An arm hole 13 is provided in the top 5 at this corner, through which a player reaches to procure the balls 14 as they are played.

The contact board 7, which likewise serves as a ball support and release member, is of a size to extend above and below the area covered by the ball receiving apertures 10, and is provided with a plurality of openings 15 (Fig. 2) registrable

with the apertures 10 to permit passage of balls into the ball return means. During play, however, non-apertured portions of said board are disposed beneath the ball "pockets". A spring 16 urges and normally retains the contact board in the playing position just mentioned. Suitable stops 17, associated with guides 8, limit forward movement of boards 7.

The means for shifting the board 7 to and from release position may comprise a handle 18 (Fig. 2) attached to the rear end of the board and projecting outwardly of the table through an aperture in the rear panel 19, and through a suitable guide block 20. It is obvious that the contact boards associated with a group of tables may be individually shifted by means of the handles 18. It is desirable however, to move them simultaneously and for this purpose, each handle 18 at its outer end has a swivel connection as at 21 with the upper end of an arm 22. The latter has its lower end fixed to an elongated bar 23 extending along the rear ends of a group of tables and preferably disposed below the ground surface in a suitable trough 24. Bar 23 is adapted to be turned on its longitudinal axis whereby the contact boards 7 are shifted through the medium of handle 18 and arm 22. For turning the bar, a lever 25 may be provided, adapted to be operated manually or by use of a solenoid 26 energized by a suitable electric circuit 27 and switch 28. The arm 29 of the solenoid has one end pivotally connected to the lever 25, as at 30.

Associated with each table, adjacent the inner end thereof, is an upright opaque casing 31 (Figs. 3 and 4) having a rear wall 32 and edge walls 33. The interior of the casing is divided into three sections by the opaque main partitions 34 and 35, and in each of said sections a number of irregular opaque partitions 36 extend from front to rear of the casing and divide said sections into a number of irregular small compartments, there being an equal number of the latter in each of the three main compartments. Glass panels 37, 38 and 39 are provided, one each for covering one of said casing sections, the panels lying against the outer edges of the partitions described. The rear wall 32 of the casing has electric light sockets therein and suitable contacts 40 on its rear. Said sockets are adapted to hold an electric lamp 41 in each of the small casing compartments. The glass panels 37, 38 and 39 are each provided with a normally invisible picture adapted to be rendered visible, one irregular area at a time, by lighting of the lamps in their compartments.

This last is accomplished by the persons playing the games, and for this purpose the contact board 7 has fastened thereon a plurality of electrical spring contacts 42, one corresponding with each of said compartment-lighting lamps 41. Contacts 42, as shown in Fig. 7, are disposed, each one forwardly of one of the ball release openings, so that when the contact board is in its normal rearwardly drawn position, the balls falling into table top apertures 10, rest upon and close said contacts, and when the contact board is shifted forwardly after playing of a game, openings 15 are brought into registration with apertures 10 for releasing the balls, as previously described.

The contacts 42 and associated wiring are shown rather conventionally in Fig. 2, but in Figs. 5 and 6 said contacts are detailed and are shown as made up of a top metal strip 43, an intermediate metal strip 44, and a bottom metal strip 45. The first two are spaced by a short piece of insulation 46 permitting contact of the two strips by pressure on the upper strip. Bottom strip 45 is completely insulated from strip 44 by insulation 47. At one end, all the metal strips may be cut to provide diversely projecting points to which wiring may be conveniently attached.

The spring contacts are secured, adjacent their pointed ends, to the contact board 7 by means of screws 48, and are held clear of said board by spacing strips 49 (Fig. 2) through which said screws pass. The free resilient ends of the contacts are adapted to be pressed down against transverse bus bars 50, one of the latter being fixed to board 7 along each row of contacts and all connected at one end to an angularly extending bus bar 51. The latter is connected, as at 52 (Fig. 7) with a suitable electrical source 53. The bottom strip 45 of each contact 42 is electrically connected with one of the electric lamps 41 in the picture casing from which lamps suitable return wiring 54, connected with source 53, completes the lamp circuit except for a subsidiary switch associated with the relay system to be later described. In Fig. 7, the wiring from contacts 42 to the associated lamps is represented in heavy lines. From the foregoing it will be clear that when a ball is rolled into one of the pockets, the contact, that is, strip 45 thereof, will be pressed against the adjacent bus bar to complete a circuit, light the associated lamp in the picture casing, and illuminate a portion of one of the picture panels 37, 38, or 39.

In this connection it might here be noted that fifteen "pockets" would usually be provided on each table with each five thereof corresponding to one of the said pictures, and suitably correlated therewith by indicia (Fig. 1). For example, as shown, the rearmost row of "pockets" marked "1", relates to the top picture which may be similarly marked. The second-last row of "pockets", and one in the third-last row, all marked "2", relate to the second picture, and the remainder of the "pockets" relate to the bottom picture. Usually the completion, by illumination, of one of said pictures, would constitute a game.

The first of a group of players to complete a picture would be adjudged the winner and in order to effectively terminate a game a second electrical circuit and a system of electrical relays, conditioning the light circuits described, are utilized.

This second circuit may have a six volt battery 55 (Figs. 7 and 8) as a source. The contact members 43 and 44 of each of said groups of contacts comprising five each, are connected in series as shown by the short lines connecting said contacts in Fig. 7. These "five" group circuits are each completed, through wires 56 and 57, when all five contacts of one group have been closed by balls rolled thereonto. The player first closing such group would be the winner and in order that his picture may remain illuminated and all others rendered invisible, the relay system in Fig. 8 is utilized.

For the present purpose, it will be considered that the topmost "five" group of contacts at table 3, has been closed, the variance there occurring to be explained shortly hereafter. Current will now flow from battery 55, through wires 58 and 580 through the group 59 of closed contacts, through wire 60, into and energizing a relay 61, associated with the table in question. From thence, current may return through wire 62 to the return wire 63. Simultaneously a shunt connection at 64 carries current through wire 65 to ener-

gize a bell or buzzer 66, returning thence through wires 67, 68 and 62 into return wire 63.

It will be observed that energizing of relay 61 has drawn an arm 69 over against a contact 70. Hence, the low voltage current, entering on wire 58, flows along wires 71, 72 and contact 70, into said arm 69, and so into a bus wire 73. Along the latter, the current is carried to similar arms 74 and 75, at the other tables. It will be seen that these arms are normally held by a spring 76, in contact against contact arms 77 and 78, respectively, which control relays 79 and 80. These relays control subsidiary switches heretofore mentioned. These switches 81 and 82, are normally in the "on" position as illustrated by the switch 83 at winning table No. 3, and through said switches the electric lamp circuit normally flows. But the energizing of relays 79 and 80, opens these switches so that the lamps at all tables except table 3, and at which the jig saw pictures have not been completed, are turned off.

Thus, by the means just described, a buzzer sounding, and the rendering invisible of all but the completed picture, announce a winner and terminate a game.

An element of chance is introduced into the competition by the "variance" previously referred to and illustrated at table 3, Fig. 8. The battery current flowing into the contact group 59 is interrupted by a wire 84 which continues over into wire 85 at table 1. The associated contact 86 has been closed by the player at this table and hence the current continues back along wire 87 into wire 88 at table 1, and thence through the circuit heretofore described. Thus, inadvertently, the player at table 1 has lit a lamp for his opponent at table 3. The analogous wiring represented in Fig. 8 is for the similar purposes, and, as will be readily understood, such wiring may be modified a great number of ways, one typical example being deemed sufficient for the purpose of explanation.

In Fig. 7, the wiring group represented at 89 extends to other tables for effecting the "inadvertent" lighting above described. It will be noted in this figure, that the wire 90 is shown as carrying the battery circuit to other tables of a group.

Various modifications which suggest themselves upon consideration of the means herein described are believed to be comprised within the spirit and scope of the invention.

What is claimed is:

1. A roll ball amusement device comprising a table with a top having a plurality of apertures adjacent one end, a plurality of electric normally open spring contacts disposed one each immediately beneath one of said apertures, a casing associated with the table, an uninterrupted and completely translucent front on the casing and provided with a normally invisible picture, a plurality of irregular partitions in the casing extending from front to rear thereof and having their forward edges in contact against the inner face of said translucent front, said partitions dividing the interior of the casing into compartments, an electric lamp in each compartment and electrically connected one each with one of said contacts, an electrical circuit embracing said lamps and contacts, and a plurality of balls adapted to be rolled into said apertures and to close said contacts whereby said compartments are successively lighted, such illumination causing irregular portions of said picture corresponding to the irregular partition edges therebehind to appear in the semblance of jig saw puzzle segments until the whole picture is completed.

2. A roll ball amusement device comprising a table with a top having a plurality of apertures adjacent one end, a plurality of electric normally open spring contacts disposed one each immediately beneath one of said apertures, a casing associated with the table, an uninterrupted and completely translucent front on the casing and provided with a normally invisible picture, a plurality of irregular partitions in the casing extending from front to rear thereof and having their forward edges in contact against the inner face of said translucent front, said partitions dividing the interior of the casing into compartments, an electric lamp in each compartment and electrically connected one each with one of said contacts, an electrical circuit embracing said lamps and contacts, a plurality of balls adapted to be rolled into said apertures and to close said contacts whereby said compartments are successively lighted, such illumination causing irregular portions of said picture corresponding to the irregular partition edges therebehind to appear in the semblance of jig saw puzzle segments until the whole picture is completed, and means for displacing the balls from the contacts and for returning them to the opposite end of the table.

3. A roll-ball amusement device comprising a table with a top having therein a plurality of ball-receiving apertures adjacent one end, a ball return member disposed beneath the table top, a board positioned between the table top and return member and underneath said apertures, a plurality of electrical normally open spring contacts on said board and normally disposed one each immediately beneath one of said apertures, a casing adjacent the table, a completely illuminable and uninterrupted glass front on the casing and provided with a normally invisible picture, a plurality of irregular partitions in the casing extending from front to rear thereof and having their forward edges in contact against the inner face of said translucent front, said partitions dividing the interior of the casing into a plurality of compartments, an electric lamp in each compartment, electrical connection between each one of said lamps and one of the contacts on said board, a suitable electrical source and circuit embracing said lamps and board contacts, a plurality of balls adapted to be rolled into said apertures and to close the electrical contacts associated therewith whereby said compartments may be successively lighted and segments of said picture corresponding to the irregular partition edges therebehind made successively to appear until the whole is illuminated, said electrical contact board being provided with a plurality of apertures registrable with said ball apertures and normally out of alignment therewith, and means for the shifting of said contact board to effect registration of said sets of apertures and passage of the balls into said ball return members.

4. A competitive roll ball game comprising a plurality of tables each formed with a top having adjacent one end a plurality of ball receiving apertures, a ball return member disposed beneath the table top, a board positioned between the table top and return member and underneath said apertures, a plurality of electrical normally open spring contacts on said board and normally disposed one each beneath one of said apertures, each of said contacts comprising two pairs of contact members, a plurality of electric lamps associated with each table and electrically con-

nected one each with one of said pairs of contact members, an electric house circuit embracing said lamps and the associated contact members, a battery and a circuit embracing said other pairs of contact members, the latter being connected in series, an audible signal embraced in said last circuit, a plurality of balls adapted to be rolled into said apertures and to rest upon and close said contacts whereby the lamps may be successively lighted, closing of all the contacts resulting in energizing of the audible signal, cross wiring from one or more of the lamp contacts on one table to one or more of the lamp contacts at other tables whereby one pair of said contacts may light its associated lamp and lamps at such other tables, an electrical relay system energized by said battery circuit and conditioning the lamp circuits whereby the lighting of all lamps at one table results in de-energizing of the lamps at the other tables, each of said contacts boards being provided with a plurality of apertures registrable with said ball apertures and normally out of alignment therewith, and means for the shifting individually and collectively of said contact boards to effect registration of said sets of apertures and passage of the balls into the ball return member.

5. A competitive roll ball game comprising a plurality of tables, each table being formed with a top having therein a plurality of ball receiving apertures adjacent one end, a ball return member disposed beneath the table top, a board positioned between the table top and return member and underneath said apertures, a plurality of electrical normally open spring contacts on said board and normally disposed one each beneath one of said apertures, each of said contacts comprising two pairs of contact members, a casing associated with the table, a glass front on the casing and provided with a normally invisible picture, a plurality of partitions in the casing extending from front to rear thereof and dividing the interior of the casing into a plurality of compartments, an electric lamp in each compartment, each one of said lamps being electrically connected with one of said pairs of contact members, an electric house circuit embracing said lamps and the associated pairs of contact members, a battery and a circuit embracing said other pairs of contact members, the latter being connected in series, an audible signal embraced in said last circuit, a plurality of balls adapted to be rolled into said apertures and to rest upon and close said spring contacts whereby said compartments may be successively illuminated, closing of all the contacts resulting in energizing of said audible signal, cross wiring from one or more of the lamp contacts on one table to one or more of the lamp contacts on adjacent tables whereby one pair of lamp contacts may light its associated lamp and lamps at other tables, an electrical relay system energized by said battery circuit and conditioning the lamp circuits whereby the completion of one of said pictures by lighting of the associated lamps results in de-energizing of the lamps at the other tables, each of said contact boards being provided with a plurality of apertures registrable with said ball apertures and normally out of alignment therewith, and means for the shifting individually and collectively of said contact boards to effect registration of said sets of apertures and passage of the balls into said ball return members.

6. A roll ball game of competition and chance and comprising a plurality of tables each formed with a top having a plurality of ball receiving apertures adjacent one end, a plurality of electrical normally open contacts disposed one beneath each of said apertures, a plurality of electric lamps associated with the table and electrically connected one each with one of said contacts, an electric circuit embracing said lamps and contacts, a plurality of balls adapted to be rolled into said apertures and to close said contacts whereby said lamps may be successively illuminated, and wiring means associated with the various tables whereby a player at one table by closing a contact at his table inadvertently illuminates one of the lamps at an adversary's table for introducing an element of chance into the game.

7. A competitive roll ball game comprising a plurality of tables each formed with a top having a plurality of ball receiving apertures adjacent one end, a plurality of electrical normally open contacts positioned one beneath each of said apertures, each contact comprising two pairs of contact members, a plurality of electric lamps associated with the table and electrically connected one each with one of said pairs of contact members, an electric circuit embracing said lamps and their associated pairs of contact members, a plurality of balls adapted to be rolled into said apertures and to close said contacts whereby the associated lamps may be successively illuminated, a second electrical circuit embracing the other pairs of said contact members at all the tables, and an electrical relay system energized by said second circuit and conditioning the lamp circuits at all tables whereby the lighting of all lamps at one table results in de-energizing of the lamps at the other tables for indicating a winner and terminating the game.

8. A competitive roll ball game comprising a plurality of tables each formed with a top having a plurality of ball receiving apertures adjacent one end, a plurality of electrical normally open contacts positioned one beneath each of said apertures, each contact comprising two pairs of contact members, a plurality of electric lamps associated with the table and electrically connected one each with one of said pairs of contact members, an electric circuit embracing said lamps and their associated pairs of contact members, a plurality of balls adapted to be rolled into said apertures and to close said contacts whereby the associated lamps may be successively illuminated, a second electrical circuit embracing the other pairs of said contact members at all the tables, an audible electric signal embraced in said second circuit, and an electrical relay system energized by said second circuit and conditioning the lamp circuits at all tables whereby lighting of all lamps at one table results in de-energizing of the lamps at the other tables, and simultaneously in energizing of the signal at said one table, for indicating a winner and terminating a game.

9. In combination, a plurality of roll ball tables each having a top with ball receiving apertures adjacent one end, a ball return member disposed beneath said top, a board positioned slidably beneath said apertures and between the top and return member and movable to positions wherein the board alternately supports balls in said apertures and releases them to the return member, handle members attached one each to one of said boards and projecting rearwardly of the tables, a bar positioned along the rear ends of

the tables, arms each fixed at one end to said bar and at the other end having a swivel connection with one of said handle members, and means for turning said bar on its longitudinal axis for moving said slidable boards to ball supporting and release positions.

10. An amusement or game device comprising a supporting structure, a plurality of normally open electrical contacts attached to and exposed on the supporting structure at a distance from a player's position, means adapted when properly directed by a player to bear against and close said contacts, an uninterrupted and completely translucent member associated with the table and having thereon a normally invisible picture, electric lamps disposed adjacent said translucent member and electrically connected one each with one of said contacts, an electric circuit embracing said lamps and contacts, and means adapted to concentrate the light of each lamp against a different restricted irregular area of said translucent member to render visible the picture and simulate the development thereof after the manner of a jig saw puzzle as said contacts are successively closed by a player.

11. Competitive game means comprising a plurality of supporting structures, a plurality of normally open electrical contacts attached to and exposed on each of said structures at a distance from the players' positions, means adapted when properly directed by a player to bear against and close said contacts, an uninterrupted and completely translucent member associated with each table and having thereon a normally invisible picture, electric lamps disposed adjacent said translucent member and electrically connected one each with one of said contacts, an electric circuit embracing said lamps and contacts, means adapted to concentrate the light of each lamp against a different restricted irregular area of the associated translucent member to render visible the picture thereon and to simulate the development of the picture after the manner of a jig saw puzzle as said contacts are successively closed by a player, and means conditioning the lamp circuits whereby upon completion of one of said pictures the lamps of the incompleted pictures are extinguished for terminating a game.

12. Competitive game means comprising a plurality of supporting structures, a plurality of normally open electrical contacts attached to and exposed on each of said structures at a distance from the players' positions, means adapted when properly directed by a player to bear against and close said contacts, an uninterrupted and completely translucent member associated with each table and having thereon a normally invisible picture, electric lamps disposed adjacent said translucent member and electrically connected one each with one of said contacts, an electric circuit embracing said lamps and contacts, means adapted to concentrate the light of each lamp against a different restricted irregular area of the associated translucent member to render visible the picture thereon and to simulate the development of the picture after the manner of a jig saw puzzle as said contacts are successively closed by a player, means whereby a contact on one game structure additionally controls a lamp at another game structure for inserting an element of chance into the game, and means conditioning the lamp circuits whereby upon completion of one of said pictures the lamps of the incompleted pictures are extinguished for terminating a game.

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