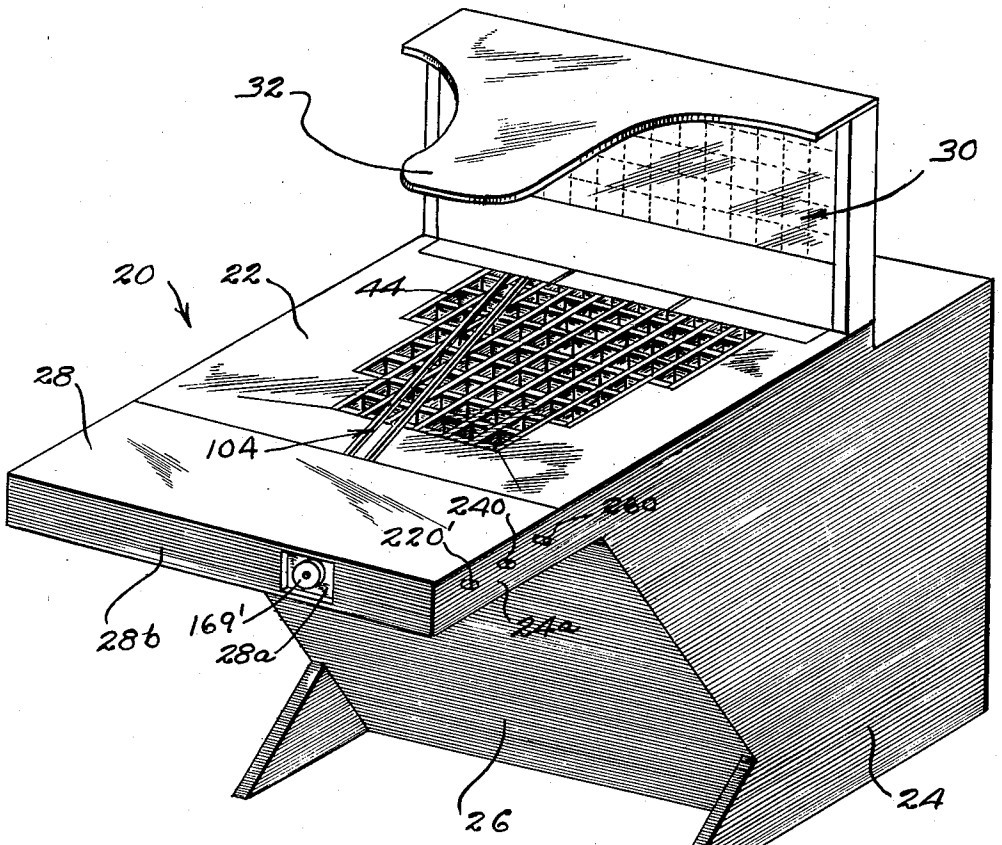
Aug. 20, 1940. L. D. DANFORTH 2,211,882

AMUSEMENT APPARATUS

Filed Nov. 16, 1938 7 Sheets-Sheet 1

Fig. 1



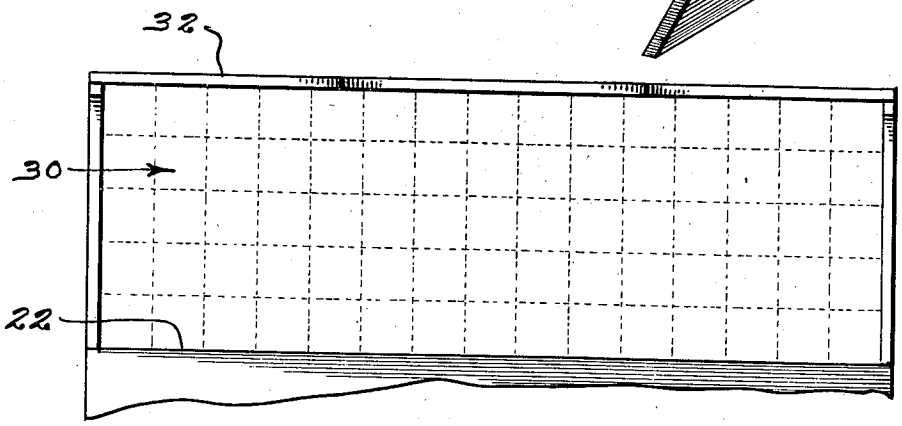


Fig. 2

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AMUSEMENT APPARATUS

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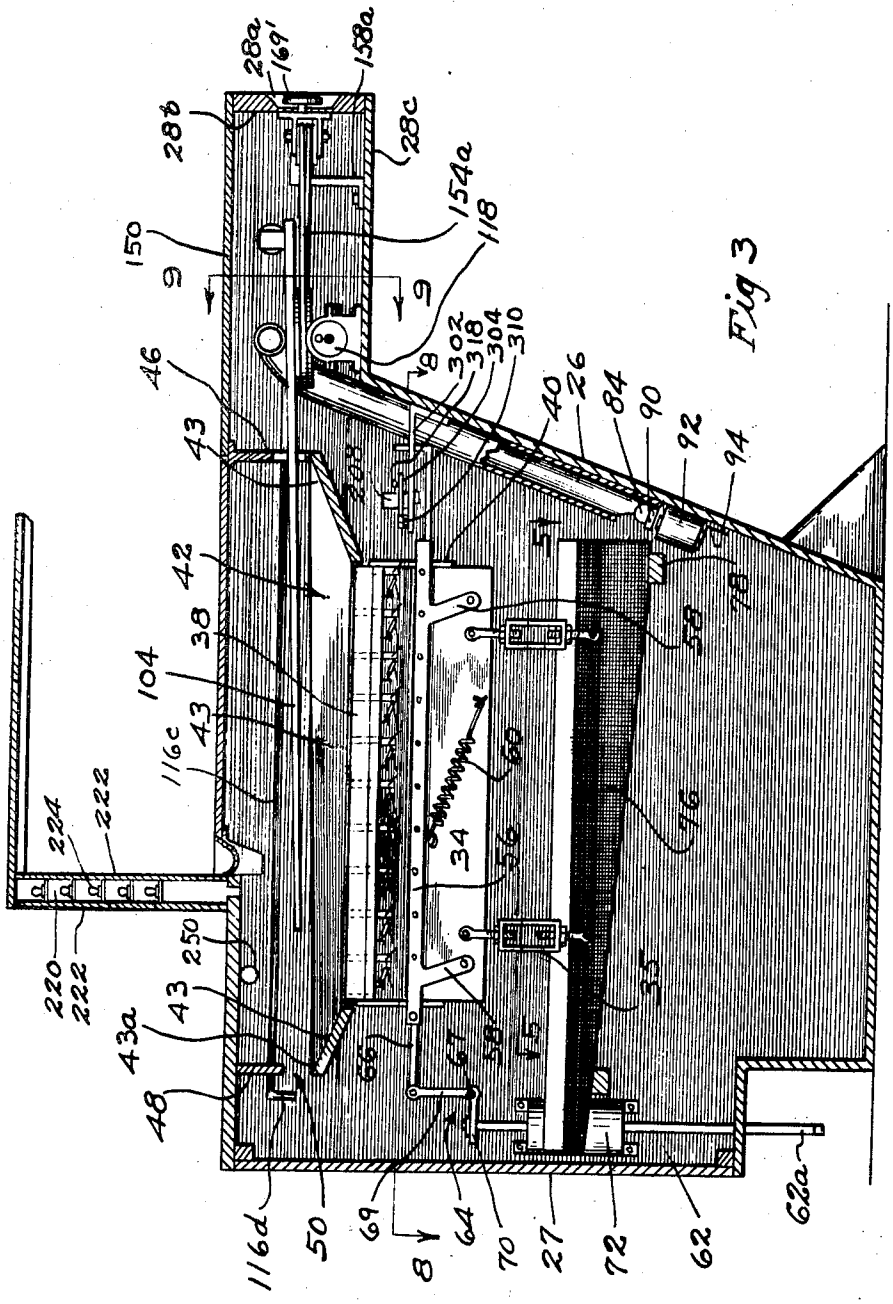


Fig 3

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AMUSEMENT APPARATUS

Filed Nov. 16, 1938 7 Sheets-Sheet 3

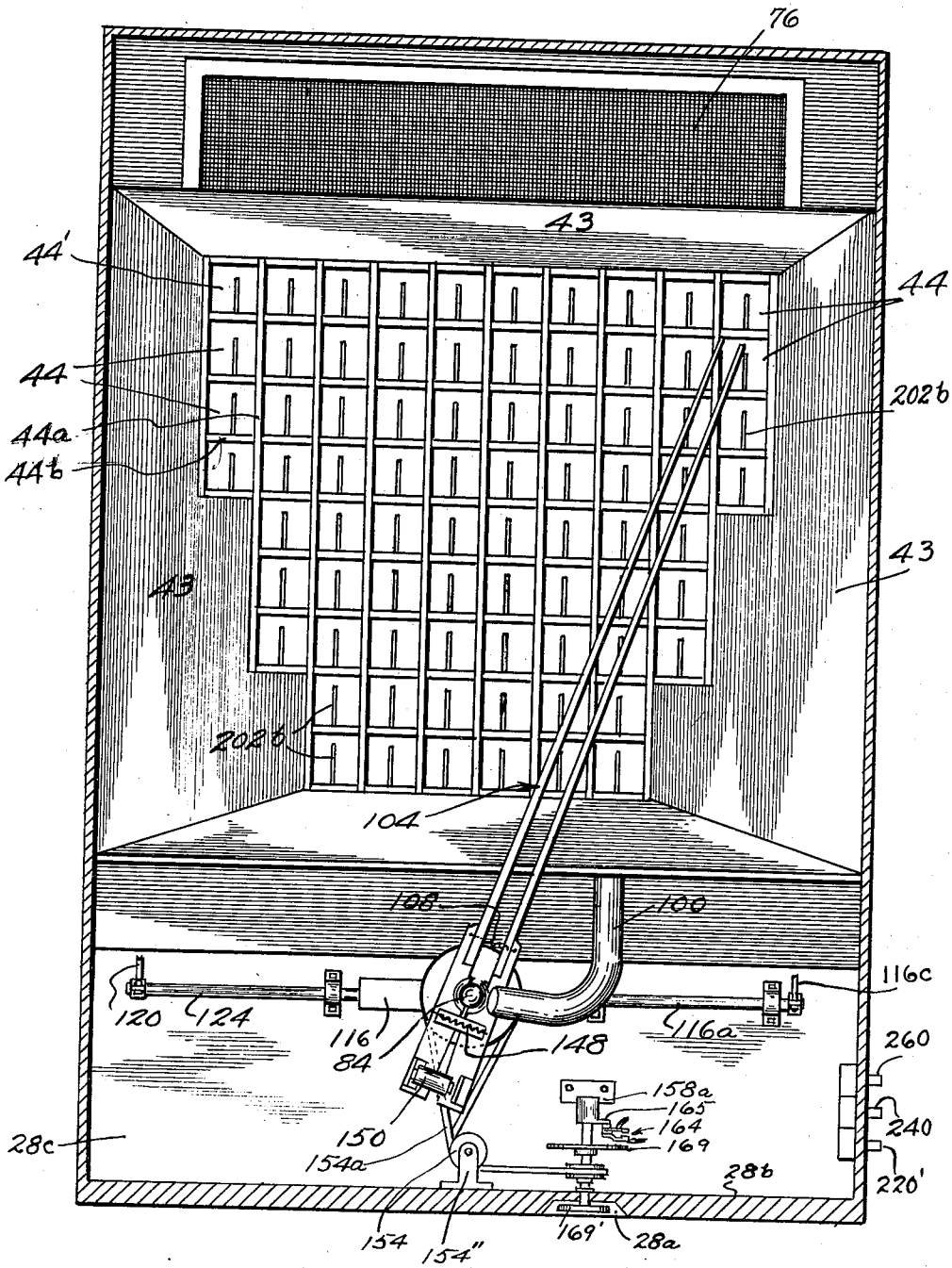


Fig. 4

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AMUSEMENT APPARATUS

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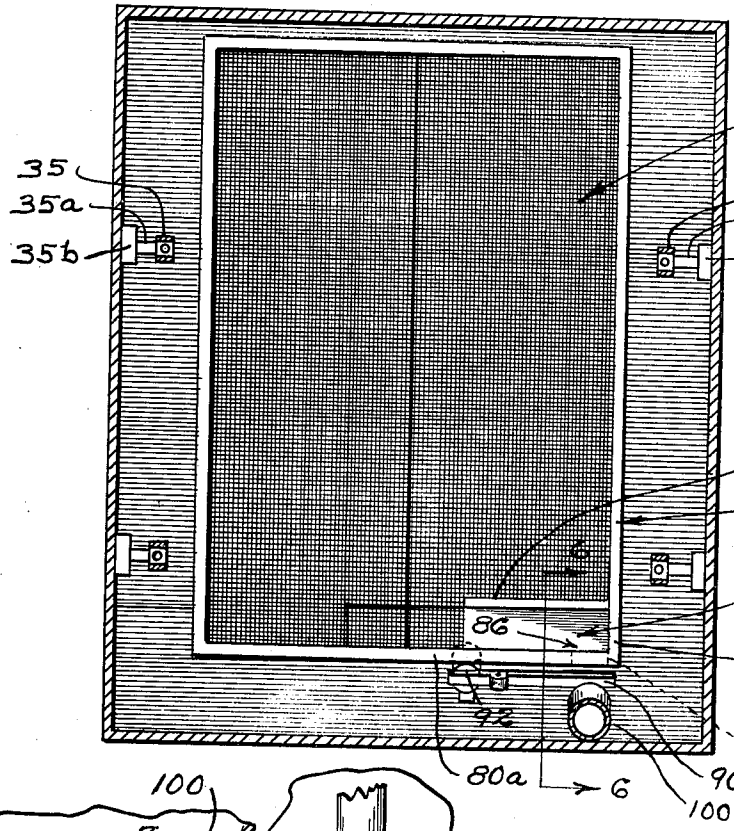


Fig. 5

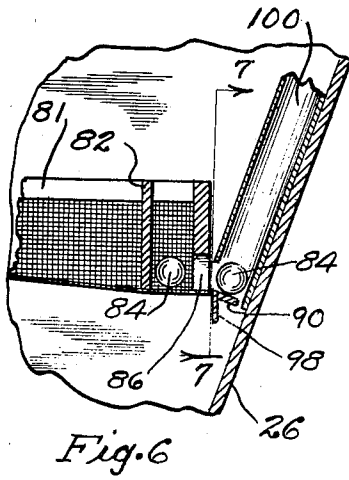


Fig. 6

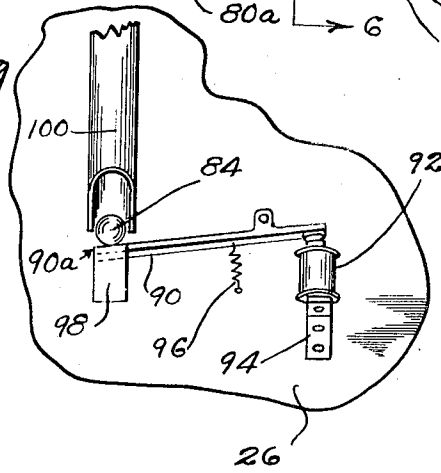


Fig. 7

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AMUSEMENT APPARATUS

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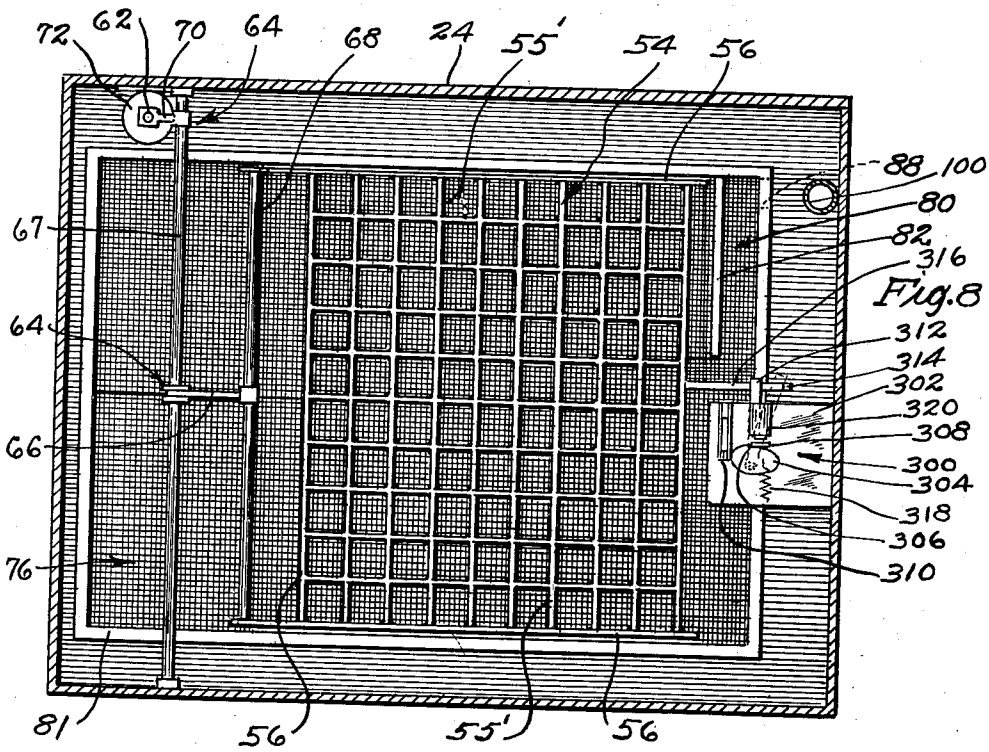


Fig. 8

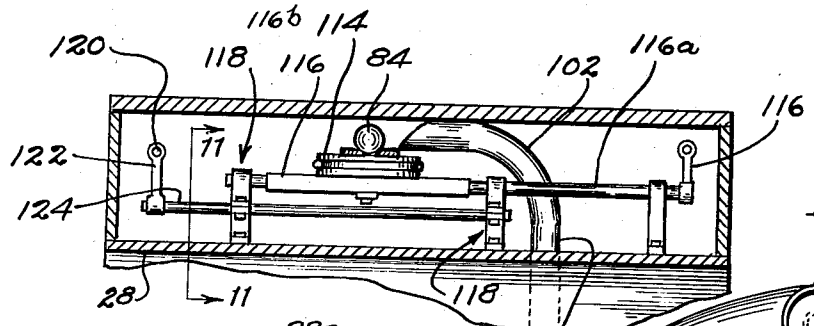


Fig. 9

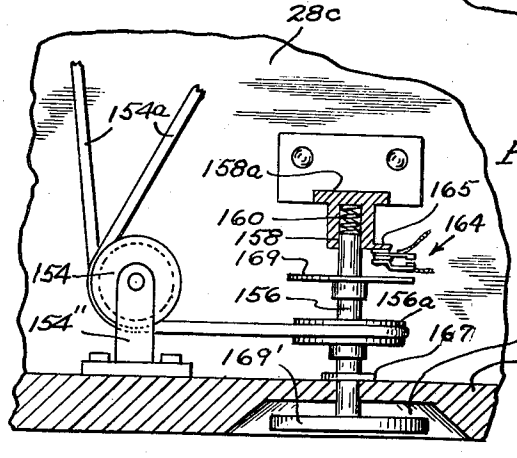


Fig. 10

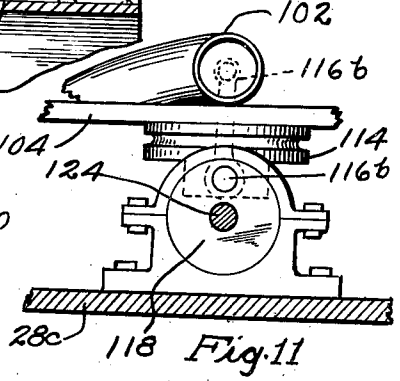


Fig. 11

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AMUSEMENT APPARATUS

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Fig. 12

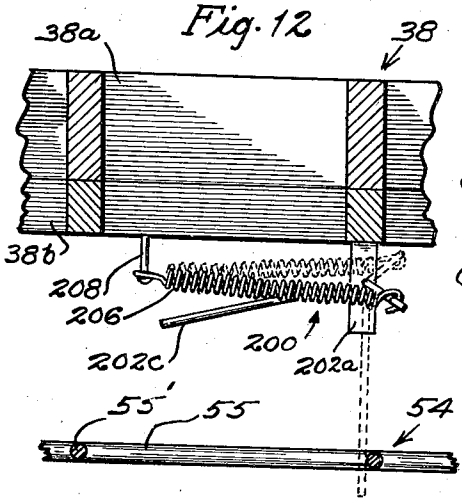


Fig. 13

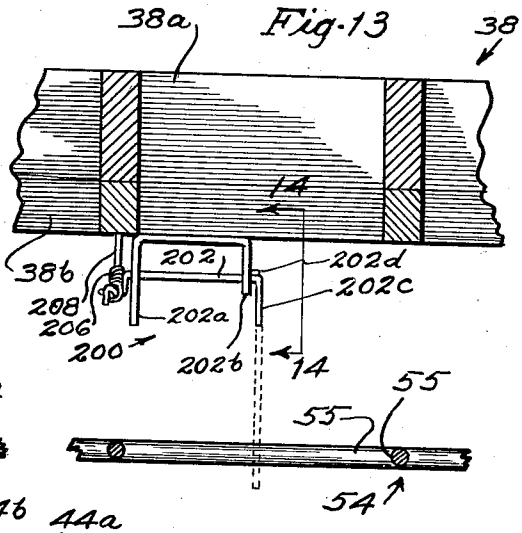


Fig. 14

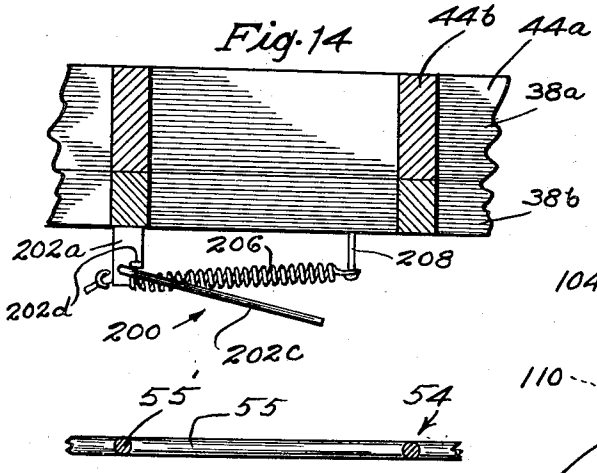


Fig. 15

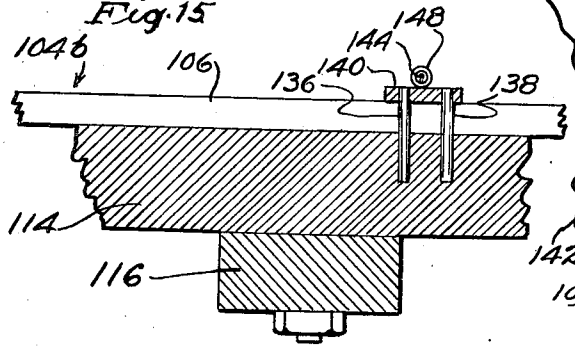
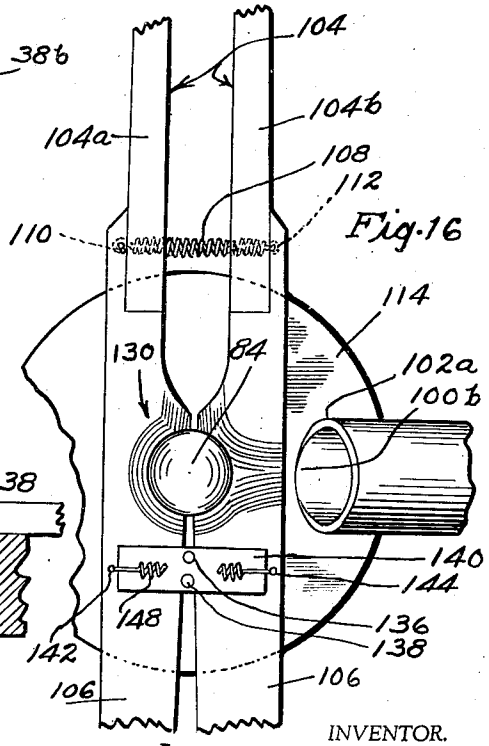


Fig. 16



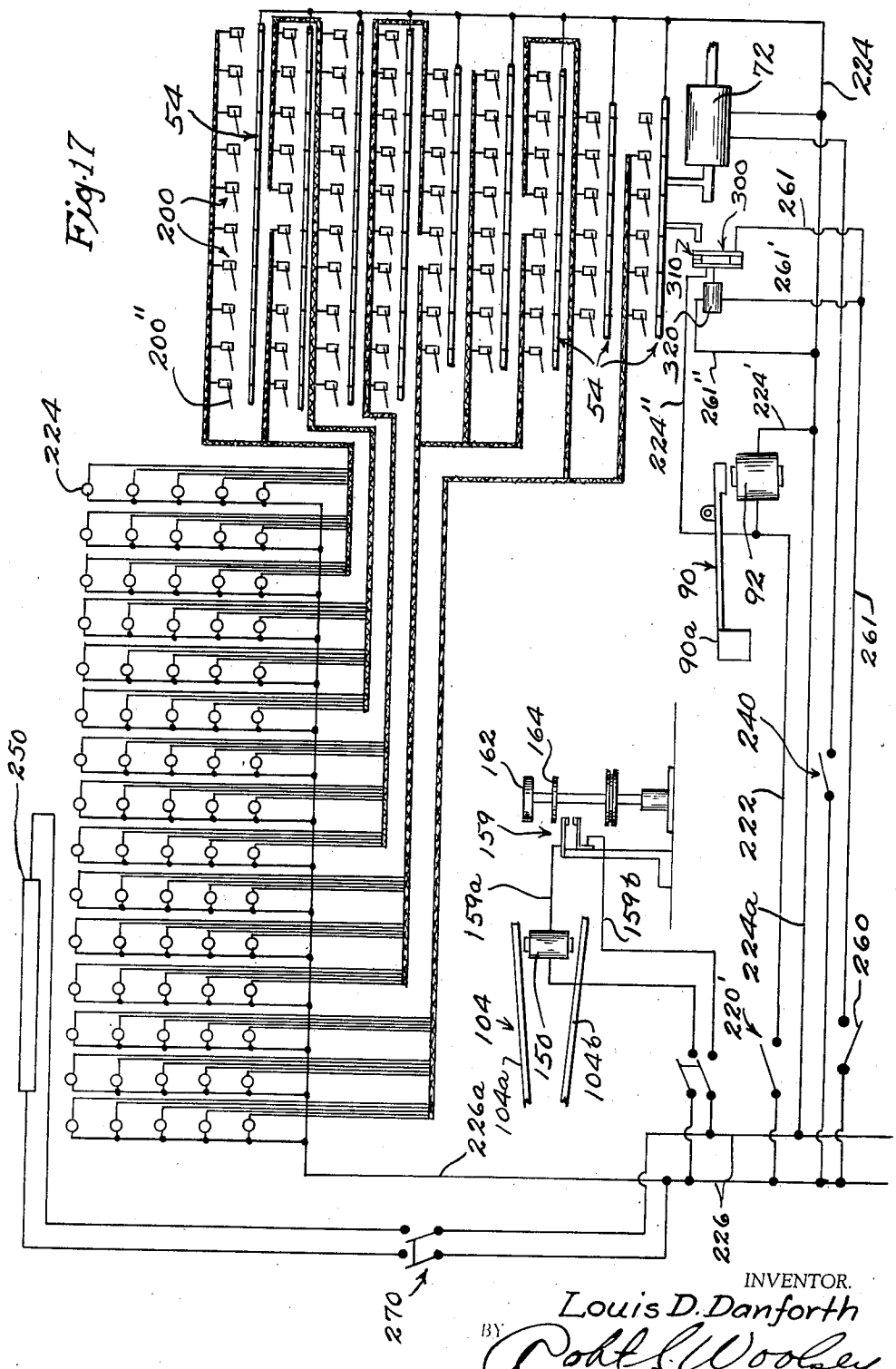
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AMUSEMENT APPARATUS

Filed Nov. 16, 1938 7 Sheets-Sheet 7

Fig. 17



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Patented Aug. 20, 1940 2,211,882

UNITED STATES PATENT OFFICE

2,211,882

AMUSEMENT APPARATUS

Louis D. Danforth, Los Angeles, Calif.

Application November 16, 1938, Serial No. 240,697

5 Claims. (Cl. 273—95)

The present invention relates to game apparatus for amusement, and which apparatus has a field of play having a plural number of openings through which a playing piece must pass, and has for its principal object the provision of mechanical means to deposit said playing piece in a given position or opening, the attainment of which placement is visually recorded to form one unit of value or pattern of a total unit value or pattern to be made.

A further object of the invention is to provide in a game apparatus having a field of play which is principally composed of openings through which a ball is adapted to pass, of means to control the placement of a ball from a position removed from personal contact with the said ball.

A still further object of the invention is to provide in a game apparatus having a field of play which is principally composed of openings through which a ball is adapted to pass, of a pair of fingers positioned to swivel over said field, and being adapted to convey and release a ball for placement within a given one of said openings in said field.

Another object of the invention is to provide a game apparatus having a field of play which is principally composed of openings through which a ball is adapted to pass, of means to record the passage of a ball through a given one of any of said openings whereby attainment of a predetermined score may be visually recorded pending the playing of a subsequent game.

An additional object of the invention is to provide in a game apparatus having a field of play which is principally composed of a grid having openings through which a ball is adapted to pass, of a pair of variably inclined fingers positioned to swivel over said field and being adapted to convey a ball to a given point in medial vertical alignment with a given one of said openings, and then being responsive to force whereby said ball may drop through an opening in said field, the passage of said ball being visually recorded to form one unit of value or pattern of a total unit value or pattern to be attained.

A still further object of the invention is to provide a game apparatus which is relatively simple in operation, a game apparatus which is reasonably reliable in function, and a game which is well adapted to develop a high degree of self control, accuracy of preception, and co-ordination of sight and muscular reaction to attain that degree of balanced reaction and co-ordination which is a pre-requisite of modern life.

Other objects, features, and advantages of the invention may be observed from the accompanying drawings, the specification, and the subjoined claims.

In the drawings of which there are seven sheets:

Figure 1 is a semi-perspective view showing the exterior appearance of the body or housing of the game of this invention, also showing certain of the features thereof which are brought into active use in playing the game.

Figure 2 is a front elevation of the score totalization board, the same being preferably positioned upon the top of the housing of the apparatus, a fragment of which is shown.

Figure 3 is a longitudinal sectional elevation taken through the housing of the game apparatus to show interior construction thereof.

Figure 4 is a view substantially in plan showing the spreadable fingers over which a ball may be delivered to a scoring point in the grid or field of play, the view also shows the tube through which a ball is delivered to the spreadable fingers, and shows without detail, the means used to spread the fingers and to swing the same over the field of play.

Figure 5 is a view in plan showing the hopper into which the played ball falls, and from which it moves to be subsequently used for replaying.

Figure 6 is a detail taken on line 6—6, in Figure 5, showing a ball in position to be lifted for playing, the view shows in detail the relationship between the hopper and the ball lifting device or kicker.

Figure 7 is a view in elevation showing a portion of the tube through which the ball passes to its delivery point, also showing the electro-magnetically operated kicker to initially throw the ball upwardly through the tube.

Figure 8 is a view in plan being taken substantially on line 8—8, in Figure 3, showing the grid used as a means to reset electrical switches used as a component part of the game apparatus, and showing the means used to actuate the grid for the purpose of resetting the aforementioned switches, the ball receiving hopper is also shown in position beneath the ball resetting grid.

Figure 9 is a view taken on line 9—9, in Figure 3, showing one means of varying the angle of inclination of the base upon which the spreadable ball delivery fingers rest, also showing in end elevation, one means of raising and lowering the above mentioned base with respect to the playing field or grid through which the balls are intended to pass.

Figure 10 is a view showing one form of means

used to swing the aforementioned fingers over the field of play, also showing an electric switch adapted to be closed, by the said finger swinging means, to electrically energize magnetic means to spread the fingers at any moment selected by the player or operator of the game.

Figure 11 is a detail showing a cam designed to raise and lower the fingers with respect to the field of play.

Figure 12 is a side elevation of one of the electric switches employed in the apparatus of this invention, dotted lines show the position of the switch when in closed position in contact with a shiftable grid which forms the second pole of the switch, and which is used to open any one of, or all of the switches simultaneously.

Figure 13 is a further view of the switch shown in Figure 12.

Figure 14 is an additional view of the switch, the view being substantially that taken on line 14—14, in Figure 13.

Figure 15 is a detail showing a support for the swingable and spreadable fingers previously mentioned.

Figure 16 is a detail showing the relationship between the mouth of the ball delivery tube and the base or heel portion of the spreadable fingers, one of the springs associated therewith being broken away to more clearly show the position of pins upon which the individual fingers rock when moved to spreaded position.

Figure 17 is a wiring diagram showing the electrical circuits employed in the apparatus of this invention, certain of the operating features thereof being illustrated in diagrammatic form only.

Reference will now be made to the drawings, wherein the game apparatus of the present invention is illustrated in sufficient detail to clearly set forth matters of invention.

In Figure 1 the reference character **20** indicates in general, a housing or cabinet used to support and enclose the several operating elements of the game.

The cabinet **20** is formed with a top surface **22** principally formed of plate glass, although the end portions of the top may be formed of wood or other suitable material. Side panels **24**, and front and end pieces **26** and **27** complete the enclosure of the cabinet, while an arm rest **28** projects from the front of the cabinet to form a convenient point from which the game may be operated.

A rectangular frame **34** is adjustably positioned within the cabinet by means of turn-buckles **35**, the one end of which are suitably secured upon pins **35***a* projecting from blocks **35***b* secured to the side panels **24**. This construction, while variable in detail, is desirable as one means of changing the position of the head-frame with respect to the spreadable fingers as will be hereinafter set forth.

A head-frame **38** is held in fixed spaced relation to the frame **34**, and horizontal thereto, by means of straps **40**, while a collar **42** having inwardly sloped sides **43** forms not only a finish for the head-frame, but by reason of being patterned to snugly fit over and to surround the head-frame ensures that all balls which enter the area of the playing field will of necessity enter some one or other of the openings **44** in the head-frame. The outer dimensions of the collar are sufficiently great to be either in contact with the side panels **24** on the one hand, and to be in substantial edge alignment with a barrier strip **46** and an end baffle plate **48** on the other hand.

The baffle plate **48** is spaced from the upper edge **43***a* of the collar, to provide a transverse slot **50**, the purpose of which will be hereinafter set forth.

The frame **34** provides a support for a grid **54** formed of heavy wire or equivalent material. The wires **55'** extend over an area bounded by metal straps **56**, forming a checkered pattern which coincides with the checkered pattern of the head-frame **38**. The several wires **55'** are soldered or otherwise connected for the purpose of forming one pole of a switch or of switches as will be subsequently set forth.

Lugs **58** fixedly secured to certain of the straps **56**, are hingedly positioned upon the sides of the frame **34** thereby enabling the metal grid, above mentioned, to rock through a given stroke to open any of the above mentioned switches which may have been closed.

An extensile spring **60** secured to certain of the straps **56** and to the side-walls of the frame **34**, yieldably holds the grid in a normal non-functioning position, while a rod **62** which may be either manually or electrically actuated is adapted to rock the grid a predetermined distance to open the aforementioned switches. The rod **62** is provided with a stirrup **62***a* at its free end, and extends upwardly to join one of the lugs **70** of a bell-crank **64**. The lug **70** is secured upon a rod **67** which is journalled in the side panels **24**, and is provided with a second lug **69** in spaced relation to the lug **70**. A link **66** connected with the lug **69** and a cross-member **68** secured in the side straps **56**, completes the linkage between the stirrup and the grid **54**, whereby the same may be rocked to open any or all of the aforementioned switches.

A solenoid **72**, the application of which will be readily understood, may be secured to a side panel **24** and acting upon the rod **62**, is adapted to electrically move the same to rock the grid **54** aforementioned.

A hopper **76** supported upon cross members **78**, is positioned beneath the frame **34** and is adapted to receive any balls which pass through the head-frame **38** and to conduct them by gravity, due to an inclined slope given the bottom of the hopper **76**, to a point of exit as will be understood by reference to Figures 5 to 7.

The hopper is provided with a bottom screen having a slightly V shaped configuration, as well as a general slope to the forward end **76***a* thereof. A channel **80** formed by an end portion **80***a* and a side portion **80***b* of the hopper frame **81**, and a short wall member **82**, is adapted to conduct balls **84** to a point of exit **86** indicated in dotted lines at **88** in Figure 5, through which the ball may individually pass to rest upon the free end of an arm **90** which is fulcrumed upon the inner side of the end piece **26** in such manner as to cause the arm **90** to be quickly oscillated when the electromagnet **92** is energized. The magnet **92** may be conveniently supported upon a bracket **94**, while a spring **96** or other suitable means may be employed to normally hold the free end **90***a* of the arm **90** in lowered position to receive a next subsequent ball to be lifted. A small plate **98** secured to the free end of the arm **90**, is adapted to follow movement of the arm and to momentarily cover the opening in the hopper indicated by the reference character **88**.

From the arm **90** the balls are upwardly pro-

jected through a tube 100, to a point of delivery upon the spaced and slightly converging arms 104 over which the ball 84 may roll by gravity to a predetermined point of release by a player.

The individual fingers or arms 104a and 104b are preferably formed of a light weight metal, and are suitably secured upon the inner ends of extensions 106 of the arms 104a and 104b. A spring 108 secured upon pins 110 and 112 located upon the under and inner ends of the extensions 106 is adapted to yieldably hold the arms in converging position.

The arm 104 is adapted to lie across and swing with a circular member 114 which is oscillatably mounted upon a rocker 116 whereby the arms may be swung through an angle of inclination to vary the speed of a ball rolling downwardly over the same, also, the rocker 116 is provided shafts 116a and 116b which are journalled in cams 118 whereby the rocker plate 116 may in the broader sense of the word, be raised and lowered, thereby raising and lowering the arm 104 with respect to the head-frame 38.

While it is true that the use of a cam will also cause a forward and rearward movement of the arms coincidental with being raised or lowered, nevertheless such motion is purely incidental and serves no practical function in the operation of the game. The cam being merely shown as one means of raising and lowering the arm 104. A rod 120 operating in connection with lever 122 upon shaft 124 may be used to partially rotate the cams 118 to raise or lower the rocker plate 116. The rod 120 may have its free end in threaded engagement with the baffle plate 48 to afford a firmly controlled means of oscillating the cams for the purpose intended and then holding the same in any given position of partial rotation.

The circular member 114 is provided with pins 136 and 138 which extend upwardly from the top surface thereof, and are adapted to form fixed spacers for the extensions 106 of the arms 104a and 104b, and also form fulcrum points around which the extensions may rock when required to do so.

A metal plate 140 extends across the top surfaces of the extensions 106 and is held in such position by reason of being secured to the pins 136 and 138 by such means as peening.

Small pins 142 and 144 are secured in the extensions 106 and are adapted to form points of attachment for a spring 148 (broken for illustration of adjacent structure) which is always under a degree of tension, thereby holding the extensions 106 in firm although yieldable contact with pins 136 and 138.

Rearwardly of the plate 140 and upon one of the extensions 106, I mount a small electromagnet 150 as shown in Figures 3 and 4, while on the other of the extensions I place a suitably sized iron mass 152 which is drawn to the magnet 150 when energized, which action causes the arms 104a and 104b to fulcrum upon the pins 136 and 138 to be spread a sufficient distance to permit a ball 84 to drop therebetween and to enter one of the openings 44, or to enter some portion of the area delineated by the collar 42 from which the ball may by chance, bounce or otherwise pass through the slot 50, or as above mentioned may as is more likely, pass through one of the openings 44.

In order that the arm 104 may be swung over the field of play, means must be provided to move the arms through an arcuate course over the head-frame 38. This I accomplish fashioning the member 114 into a pulley to receive a belt 154a. Rearwardly of the member 114 I position an idler pulley 154 mounted by means of a bracket 154'' upon the inner side of the end wall 28b of the arm rest 28. A spindle 156 having one end extending through the wall 28b and having its opposite end journalled in a socket 158 formed in a bracket 158a, is adapted to carry a pulley 156a which forms the driving means through the belt 154a to rotate the member 114 and hence to swing the arm 104.

The bracket 158a may be secured upon the structural member 28c of the arm rest 28, thereby forming a fixed bearing for the horizontally disposed spindle 156. As shown in Figure 10 the spindle does not occupy all of the area of the socket 158, provision being made to insert a small spring 160 between the end of the spindle and the end wall of the socket, thereby providing a yieldable means to normally thrust the spindle outwardly until the same is in normal non-use position as determined by the collar 167 in abutment with the inner face of wall 28b.

A boss 165 formed upon the bracket 158a, and extending a short distance laterally therefrom, forms a means or base of attachment for a pair of electrical contact points which form a switch in normal open position to electrically energize a circuit for functional purposes of the game as will be hereinafter set forth. A dielectric disc 169 is fixedly secured upon the spindle 156 and is adapted to force the contact points 164 to closed position when the spindle is forced inwardly against the spring 160 by reason of pressure being applied upon the manually operable knob 169' located adjacent the exterior face of the wall member 28b.

The head-frame 38 is formed with a plural number of openings 44 which are created by the intersection of longitudinally extending and transversely positioned ribs 44a and 44b. The head-frame 38 is preferably formed with an upper section 38a and a lower section 38b, of which the lower section is permanently secured to the frame 34 while the upper section 38a is removable or may be removed for the purpose of facilitating the placing of scoring indicia upon the transverse ribs 44b if such indicia should be desirable in providing variations in the score sought in playing the game.

Each of the openings 44 is provided with an electric switch 200 which is positioned upon the rib 44b of the lower section 38b of the head-frame, and is formed with a body portion shaped in the form of an inverted U having legs 202a and 202b of unequal length. Each of the stated legs are drilled to provide bearing-ways for a swingable element 202c formed of wire and which is the equivalent of a standard switch blade in function. The swingable element 202c is oscillatable in the aforementioned bearing-ways as shown in Figures 12 to 14, and is provided with a portion bent at right-angles to the portion within the bearing-ways, and which bent portion extends forwardly and slightly downwardly across the opening 44 with which the switch is associated, while the opposite end of the swingable element is provided with a downwardly and reversely directed second bent in substantial simulation of a crank which is adapted to receive one end of an extensile spring 206. The opposite end of the spring may be secured to a fixed point such as pin 208 in rib 44a.

A tongue 202d struck from leg 202b during

formation thereof, forms a convenient means to limit and hold the swingable element 202c in substantially the position shown in Figure 14.

This construction provides a simple and practical switch which is spring held in open position as shown in full lines in Figures 12 to 14, yet a switch is equally well held in closed position as shown in dotted lines in the same figures of the drawings. The bars 55' form stops or switch terminals and are in common with all of the individual switches, however the bars 55' serve a function additional to forming a common terminal for each of the switches, that is, the bars form a means to open any of the switches, which may have been closed, when the grid 54 is rocked in the manner previously set forth.

A score or totalization board 30 is positioned across the cabinet 20 adjacent the rear portion thereof provides a convenient and practical means to register scores made, that is, to register and visually record which of the openings 44 a ball 84 has passed through, thereby closing a particular one of the switches 200.

The board 30 is formed with a plural number of pockets 220 arranged in rows which are in horizontal and vertical. A ground glass plate 222 covers both the front and rear sides of the board 30, thereby concealing the pockets 220 and lamps 224 in each of the pockets. An electrical circuit joins one of the lamps with one of the switches 200 so that when one of the switches is closed one of the lamps 224 is lighted thereby forming a luminous pattern showing the order of closure of switches 200. Indicia in correspondence with like indicia upon the ribs 44b may also be placed within the pockets 220 and are of course visible when such scoring indicia is used and obtained in playing the game.

The circuits used to electrically operate the several parts of the game will be set forth in the following description of operation. All circuits employed in this game apparatus are schematically shown in Figure 17, no other detailed illustration of the circuits being shown for the reason that their inclusion with the other figures would only tend to create confusion in the drawings rather being an aid in understanding the same.

The game of this invention is played in the following manner which is merely illustrative of one version thereof, modifications and changes thereof being entirely within the purview of the player.

Assuming that a number of balls 84 are in the hopper 76 and that the player is seated in front of the apparatus, it is only necessary for the switch 220' to be closed which energizes the electro-magnet 92, through leads 222' and 224a which are connected with a source of energy coming in over leads 226, which throws the end 90a of arm 90 upwardly, and throwing a ball 84 upwardly through the tube 100, from which it rolls to the head 130 of the groove or space formed by the spaced arms 104a—104b. The ball 84 is now free to roll by gravity down the length of the arms aforementioned, which arms form spaced although gradually converging tracks, the inclination of which may be varied by movement of the rocker 116, in cams 118, by means of shaft 116a, lever 116b and rod 116c which extends rearwardly, being in threaded engagement with baffle plate 48 for micrometric adjustment and positive control, while a crank 116d provides facile means to rotate the shaft or rod 116c.

The ball 84 as above mentioned is now free to roll by gravity down the length of the arms 104 to a preselected opening 44 in the head-frame 38, and may be swung over the entire area of the head-frame by simply turning the hand-grip 169' which turns spindle 156, pulley 156a and through belt 154a turns the member 114 and associated parts including the arm 104 until the arm is positioned above the opening 44 into which it is intended that the ball shall drop, which latter act is accomplished by merely pressing inwardly upon the hand-grip 162, thereby carrying the disc 169 into contact with the switch 164, thereby closing an electric circuit through leads 159a and 159b in connection with the prime circuit 226 to energize magnet 150 and spread arms 104a and 104b.

Depending upon the judgment and coordination of the senses of the player, the ball will drop into his preselected pocket 44, and if the particular pocket should be 44', such action will force the switch 200'' associated with such pocket, into closed position to illuminate a particular lamp 224 in circuit with the switch 200''.

Since lead 226a is common to all of the lamps 224, and since individual leads run from each of the lamps 224 to paired switches 200'', all that is necessary to illuminate any particular lamp is to cause the portion 202b of any of the switches 200 to swing downwardly and snap by reason of the pressure of spring 206 into contact with the bars 55' of the grid 54 which is in connection with lead 224 and 226b.

Numerical values may be given to each of the openings 44, and each such value may be different, hence high score may be attained with a given number of balls played by placing balls in the openings 44 which have the greatest numerical value, and if the balls are placed properly such value will be reflected in the totalization board 30, or any value less than the desired score will be recorded for each of the openings 44 are wired to a particular lamp, hence a score made which either operates for or against a player is also recorded on the board 30.

Instead of numerical value to be attained, it may be desired to place a ball in each of the openings 44 in any given row, or any other pattern may be followed for attainment, and if the balls are placed in the proper pocket, such proper playing will be recorded by illumination of associated lamps in the correct pattern.

If more than one ball 84 is placed in the hopper 76, all of the balls except the one being lifted by the arm 90 are excluded from entering the play by reason of the fact that the plate 98 is carried upward with the arm 90 and covers the opening 88 through which the balls move from the hopper to the arm 90. Continued play will call for utilization of each of the balls in their order of position in the channel 80.

After one game has been played in the manner previously set forth or in such variation thereof as may suit the player, and it is desired to reset the game for further play, all that need be done is to press downwardly upon the stirrup 62a which forces rod 62 downwardly to oscillate the bell-crank 64 and pull link 66, cross-member 68 and grid 54 in a rearward direction, thereby causing the swingable element 202b of each of the switches 200 to be forced through their dead-center position after which the springs 206 hold the elements 202c in open position pending being next forced to closed position by passage of a ball 84 through one of the openings 44, or the switches 200 may be reset by actuation of the

solenoid 72 which may be energized by closing switch 240 conveniently located upon the side 24a of the arm rest 28. Figure 17 shows the simple wiring arrangement needed to operate the solenoid 72.

A lamp 250 may be installed to illuminate the apparatus and controlled in any suitable manner by means of simple switch 270.

To make scoring easier or more difficult it is only necessary to manipulate the several adjustments previously mentioned, that is, the angle of inclination of the arm 104 may be increased or decreased by turning the crank 116d which through its associated linkage tilts the rocker plate 116 and the arm 104, hence acceleration of the ball 84 is directly effected and this action increases or decreases the time interval in which a player must release the ball for placement in any given opening 44. Likewise if rod 120 is manipulated in the manner just described to tilt the rockable plate 116, then the distance between the arm 104 and the head-frame 38 may be varied and accordingly scoring is made easier or more difficult. The linkage associated with rod 120 although not shown in complete detail because of the manner in which Figure 3 is drawn, is identical with the linkage associated with crank 116d, and is operable through lever 122 to oscillate the cams 118.

Also, the frame 34 including the head-frame 38 may be raised and lowered to vary the distance between the arm 104 and the field of play by manipulating the turn-buckles 35 as a group or in pairs, which latter action will of course tilt the head-frame, so that the head-frame may be readily raised or lowered and given any angle of inclination to further increase or decrease the facility with which the game is played.

A further variation of playing the game may be set forth as follows to give the player a degree of self exercised skill in placing the ball 84 in such opening 44 as the player my deem pertinent to more quickly finish his game.

Ordinarily the game of this invention is played with an associate whose sole duty resides in delivering the ball 84 singly to the player, however to add further interest to the game and to permit the player to exercise complete control of delivery of at least one ball during the game in the placement of which the player may exercise complete control and skill, the following described electrical circuit and accessories are included in the game apparatus.

A switch 300 suitably mounted as upon bracket 302 is adapted to be closed upon each movement of the grid 54, and as shown in Figures 3 and 8, comprises a cam 304 formed with a notch 306 which is adapted to receive a freely hinged latch 308 which may be pivoted upon the bracket 302. A pair of electrical contact points 310 are mounted upon the bracket but are insulated therefrom, and are adapted to be forced into closed position when the cam is partially rotated by means of an arm 312 when engaged by an upturned extension 314 upon a bar 316 formed as an extension of the grid 54. A spring 318 attached to the cam and to the bracket 302 is adapted to partially rotate the cam 304 or to return it to the point of beginning when the latch 308 is withdrawn from the notch 306 by energization of the magnet 320.

The just described switch is included in the electrical circuit employed to bring the game apparatus within at least partial control of the player in the manner set forth in the first paragraph of this page.

In further description of one mode of playing the game apparatus of the present invention, it will be assumed that the player has attained such a score as to bring him within completion of the game upon placement of one additional ball in a predeterminedly necessary opening 44. With the score at hand bearing some such relation to the total available score as above set forth, it is only necessary for the player to close switch 260, thereby energizing the magnet 92 through leads 261, 224'' and 224' which circuit includes the switch 300 which was closed at the beginning of the game by the forward motion of the grid 54 in resetting each of the switches 200 closed in the previous game.

Upon energization of the magnet 92 a ball 84 is delivered to the player in the same manner as previously set forth, and the player is now free to release the ball into any one of the pockets 44 that may be necessary depending only upon the capabilities of the player. It may be also stated that upon energizing the circuit leads 261, 224'', 224' including the switch 300, that the magnet 320 is also energized through leads 261, 261', 261'', and lead 224a thereby releasing the latch 308 from notch 306 and permitting the spring 318 to partially rotate the cam and to release the contact points 310, thereby opening the just described circuit until the game has been finished and the switch is reset by the forward motion of the grid 54 as aforementioned.

It is believed the foregoing description of the game apparatus of this invention is complete and adequate, however, I recognize that it is conceivable that various changes and modifications and variations may be made in practicing the invention in departure from the particular showing of the drawing and description as given, without however departing from the true spirit of the invention as defined by the scope of the appended claims.

I claim:

1. In a game apparatus including a housing therefor and having a head-frame formed with a plural number of openings therein, through which a ball may pass to a receiver, swingable fingers, said fingers being formed of substantially parallel and downwardly inclined shafts in normal constant spaced relation, means to vary the inclination of said fingers, means to swing said fingers through an arcuate course over said head-frame, means to spread said fingers whereby a ball may be dropped therefrom to enter a particular opening in said head-frame.

2. A game apparatus including a field of play provided with a plural number of openings therein, said openings being adapted to receive and permit passage of a playing object therethrough, an arm having component parts forming a groove within which said playing object may roll, manual means for moving said arm over said field of play, and manually operated electrical means for separating the component parts of said arm to permit said playing object to drop through one of the openings in said field of play, in combination with means actuated by said playing object to indicate the opening through which said playing object has passed in said field of play.

3. A game apparatus including a field of play provided with a plural number of openings therein, said openings being adapted to receive and permit passage of a playing object therethrough, an arm having component spreadable parts form-

ing a groove within which said playing object may roll, means to position a playing object between said component arm parts, the arm being in a position relative to said field of play to permit the playing object to roll toward said field of play under the influence of gravity; manual means for moving said arm over said field of play, and manually operated electrical means for spreading the component parts of said arm to permit said playing object to drop through one of the openings in said field of play, in combination with means actuated by said playing object to indicate the opening through which said playing object has passed.

4. A game apparatus including a field of play provided with a plural number of openings therein, said openings being adapted to receive and permit passage of a playing object therethrough, an arm having component spreadable parts forming a groove within which said playing object may roll, said arm being in a position relative to said field of play to permit the playing object to roll toward said field of play under the influence of gravity; manual means for moving said arm over said field of play, and manually operated electrical means for spreading the component parts of said arm to permit said playing object to drop through one of the openings in said field of play, and means to position said playing object between the component parts of said arm, in combination with means actuated by said playing object to record the opening through which said playing object has passed prior to playing a subsequent game with said apparatus.

5. In a game apparatus employing projected balls to effect operation of a predeterminedly selected play indicia means from a plurality thereof in a field of play, the combination of means to project a single ball over a field of play, said means comprising arms in substantially parallel, spaced and inclined relation one to the other, said arms being swivelly mounted to swing over substantially the whole of said field of play, manually controlled electro-magnetic means to hingedly spread said arms whereby a ball may be released to drop between said arms to selected indicia operating means, means to return the arms to normal position after having been spread, and means to deliver successive balls to said arms for subsequent release.

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