

Feb. 23, 1937.

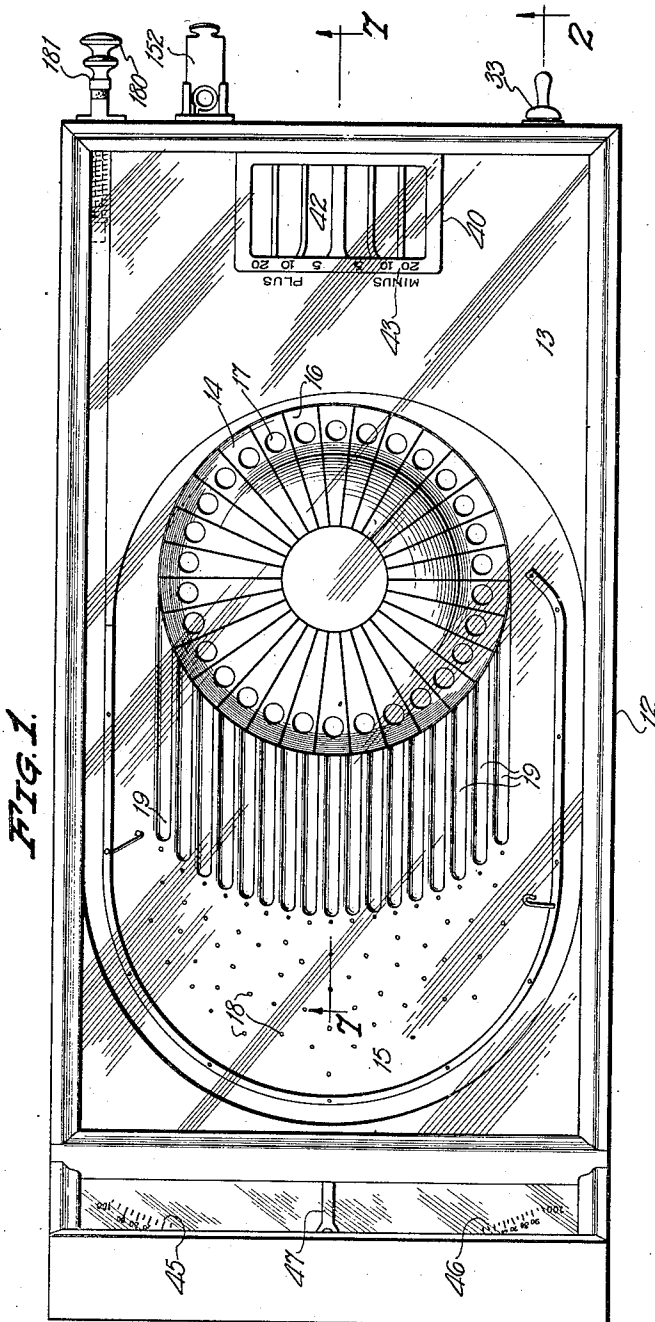
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2,071,600

GAME DEVICE

Filed Aug. 14, 1934

6 Sheets-Sheet 1



WITNESS:

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GAME DEVICE

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6 Sheets-Sheet 2

FIG. 2.

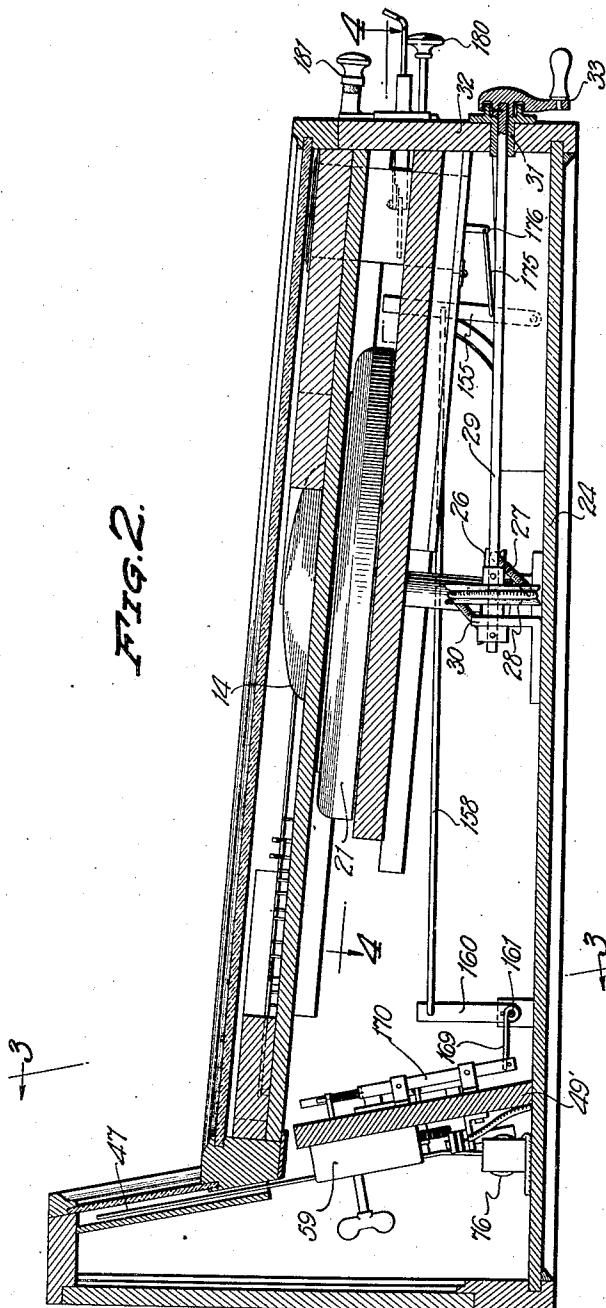
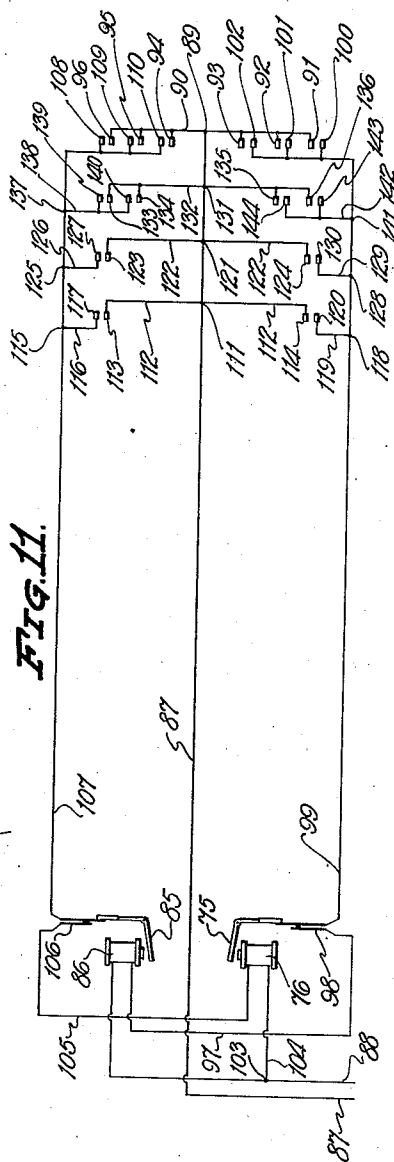


FIG. 11.



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GAME DEVICE

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6 Sheets-Sheet 4

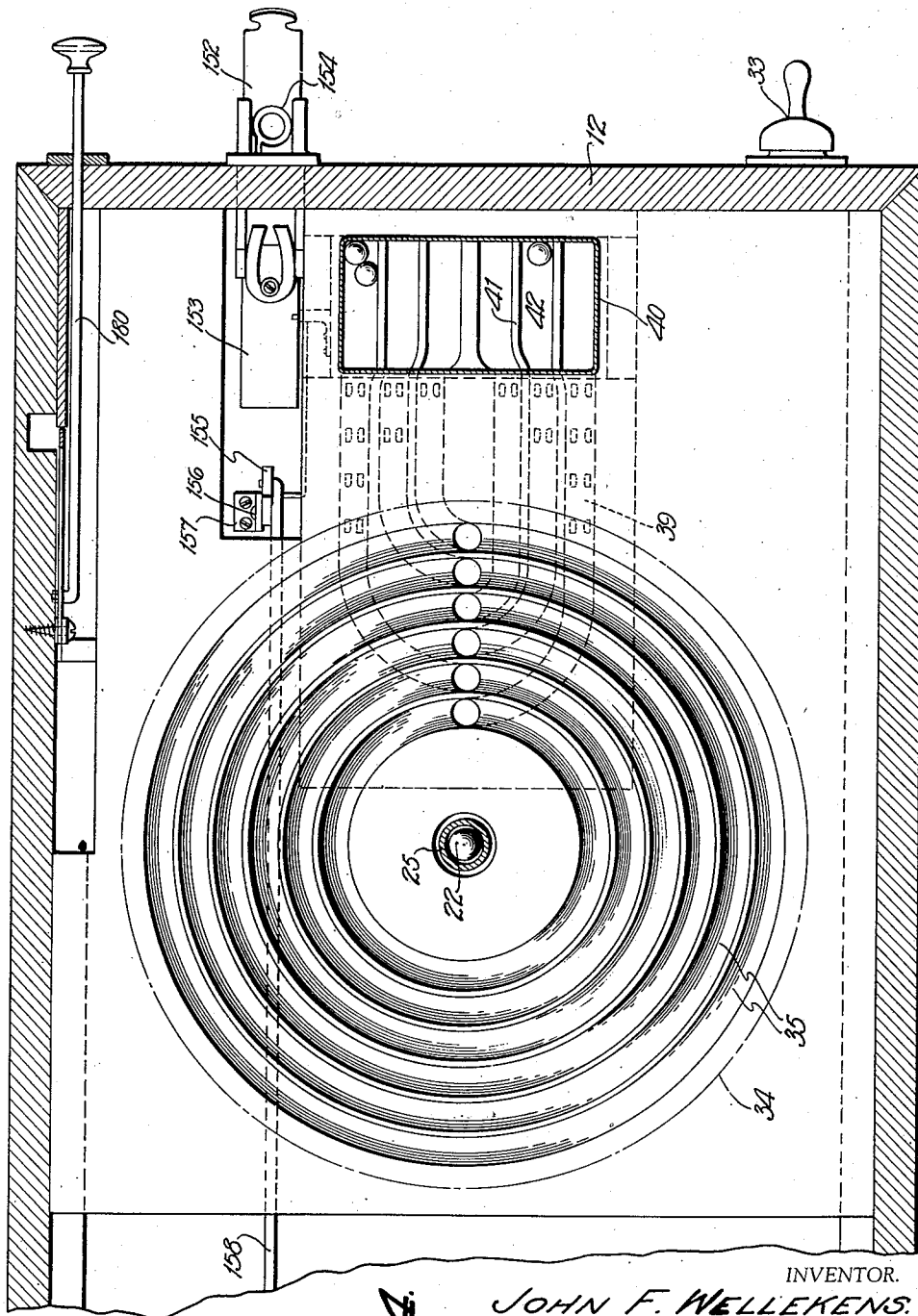


FIG. 4.

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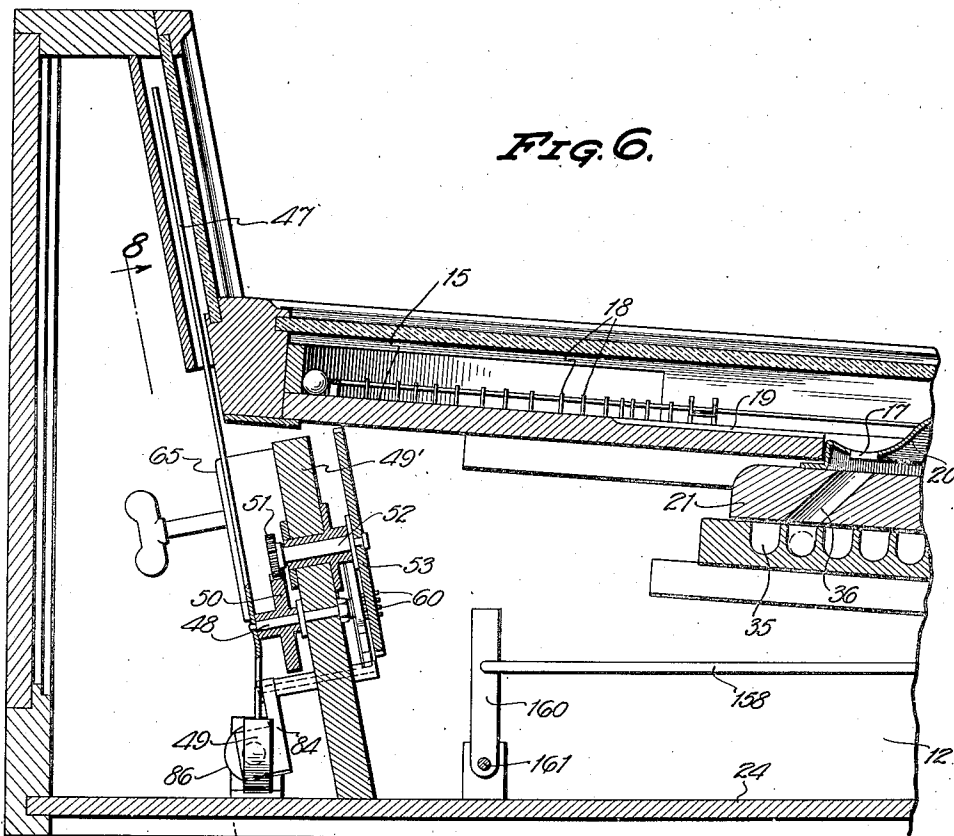
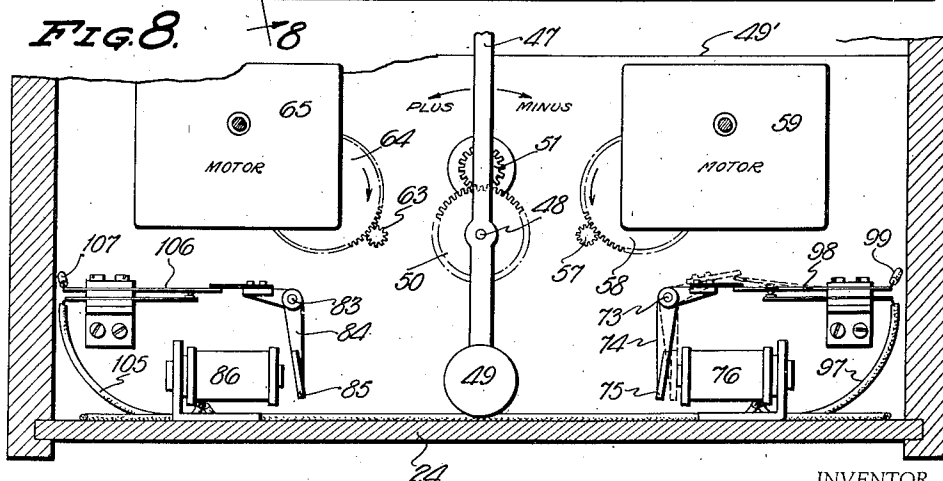
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GAME DEVICE

Filed Aug. 14, 1934

6 Sheets-Sheet 5



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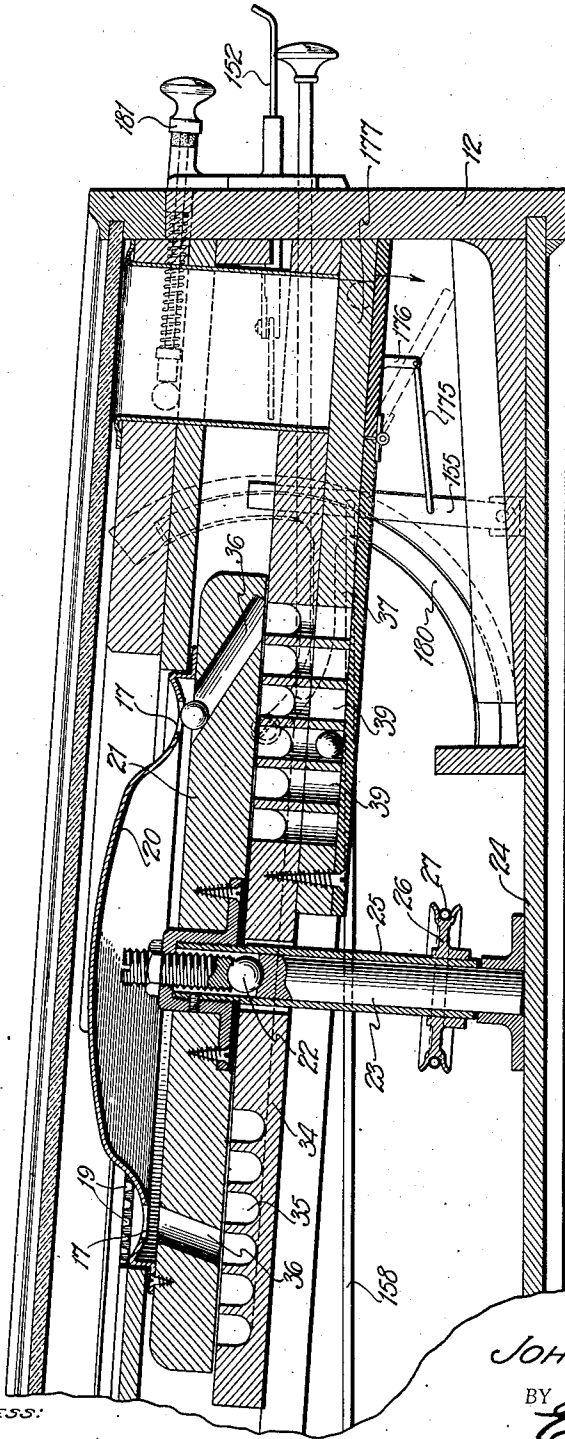
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GAME DEVICE

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FIG. 7.



WITNESS:

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FIG. 9.

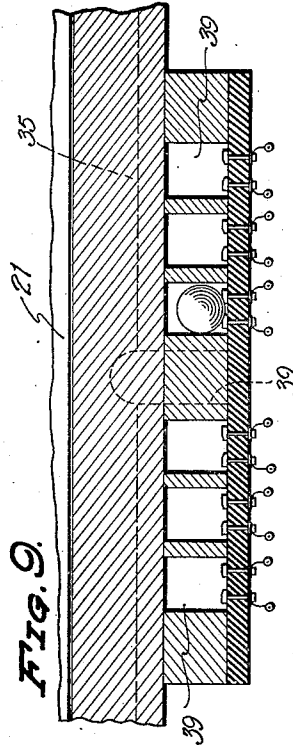
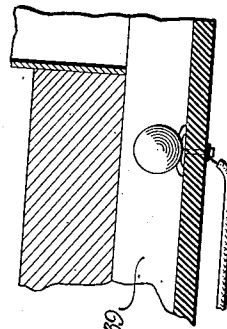


FIG. 10.



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UNITED STATES PATENT OFFICE

2,071,600

GAME DEVICE

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Application August 14, 1934, Serial No. 739,762

3 Claims. (Cl. 273-121)

The present invention relates to new and useful improvements in game devices and more particularly it pertains to such devices as are commonly known as of the bagatelle type.

It is one object of the present invention to provide a new and improved game apparatus which combines the element of chance with the element of skill of the players.

It is a further object of the invention to provide a new and improved mechanism whereby the total score of an individual player is at all times visible to the players.

In connection with the present device, it is intended that the score be computed by addition and subtraction of predetermined or arbitrary amounts or values depending upon the play of an individual and it is a further object of the invention to provide a novel mechanism whereby the addition and subtraction as the several plays determine, will be automatically computed.

Other objects of the invention reside in a new and novel combination and arrangement of parts and will become apparent as the nature of the invention is better understood.

For a further understanding of the invention reference will be had to the following specification and the accompanying drawings, in which,

Figure 1 is a top plan view of a game apparatus constructed in accordance with the present invention,

Figure 2 is a longitudinal vertical sectional view taken substantially on the line 2-2 of Figure 1,

Figure 3 is a vertical transverse sectional view taken substantially on the line 3-3 of Figure 2,

Figure 4 is a horizontal fragmentary sectional view taken substantially on the line 4-4 of Figure 2,

Figure 5 is a detail horizontal sectional view taken substantially on the line 5-5 of Figure 3,

Figure 6 is an enlarged detail longitudinal sectional view taken substantially on the line 6-6 of Figure 3,

Figure 7 is an enlarged detail vertical sectional view taken substantially on the line 7-7 of Figure 1,

Figure 8 is a detail vertical sectional view taken substantially on the line 8-8 of Figure 6.

Figures 9 and 10 are detail sectional views showing the manner in which the several circuits are completed by one of the elements of the game, and;

Figure 11 is a diagrammatic view illustrating the various circuits employed in the apparatus.

Referring particularly to Figure 1 of the draw-

ings, the game apparatus comprises a housing or casing 12 which has a horizontal partition 13 arranged near its upper end. The partition is cut away to form a playing field and this playing field is divided into two sections 14 and 15. The section 14 is movable and preferably consists of a rotating table 16 having a circularly arranged series of openings 17 which form traps for a ball or balls rolled over the playing field. The stationary portion 15 of the playing field is provided with a plurality of pins or other suitable baffles for directing the movement of a ball over the playing field. There are a plurality of these pins 18 in the upper portion of the playing field, it being understood that the playing field is inclined, and extending from the zone in which these several pins 18 are positioned there is a plurality of grooves or channels 19 which receive the balls from the upper portion of the playing field and convey them to the movable portion 14 of the playing field and the traps 17 thereof.

As heretofore stated, the portion 14 of the playing field is movable and by reference to Figure 7 it will be apparent that this portion 14 comprises a dome-like member 20 in which the openings or traps 17 are formed. This dome-like member 20 is carried by a table 21 which has a bearing 22 for supporting the rotating table upon the upper end of a shaft 23 mounted on the bottom wall 24 of the housing 12. This shaft 23 carries a sleeve 25 rigidly connected thereto, and rigidly connected to the sleeve there is a pulley 26 around which passes a driving element 27 herein illustrated as a coil spring. This driving element 27 passes around a pulley 28 carried by a shaft 29, which latter is mounted in a bracket 30 at one end and in a bearing 31 in the front wall 32 of the housing at the other end. Externally of the housing this shaft is provided with a crank 33 by which it may be rotated and it will be obvious that upon operation of the crank 33, through the medium of the mechanism just described, the table 21 will be rotated. By this construction and arrangement of parts, one of the traps 17 may be positioned in line with any one of the channels or grooves 19 to receive a ball therefrom. The traps 17 being of different values, and being movable with respect to the channels 19, affords a player the opportunity of trying to trap a ball in one of the traps of highest value merely by an operation of the crank 33.

Mounted below the rotating table 21 there is a stationary table or platform 34. This stationary table or platform 34 is formed with a plurality 55

of concentric channels 35. Passages 36 lead through the rotating table 21 and by reference to Figure 7 it will be noted that the angles of these passages 36 vary with relation to each other in order that their lower or discharge end will occupy positions in registration with the various concentric channels 35 of the member 34. For example, in Figure 7, the left hand passage 36 registers with the channel 35 which is the third innermost channel, while the passage 36 at the right hand end of said figure registers with the outermost channel 35.

Mounted beneath the table 34 there is a distributing device 37 and this distributing device is formed with a plurality of channels 39 which, as best illustrated in Figure 4, lead to a ball receiving compartment or receptacle 40 which is divided by partitions 41 into compartments 42 which register with the channels 39, heretofore mentioned.

From the foregoing it will be apparent then, that as a ball is received in a trap 17 it passes through the trap into the corresponding passage 36 and is delivered to the corresponding channel 35 from which it is delivered to the corresponding channel 39 which conveys it to the proper compartment 42 of the ball receiving compartment or receptacle 40. The several compartments 42 are given values which correspond with the values of the traps so that by merely glancing at the compartment or receptacle 40, the score of any number of balls played may be determined by a simple process of addition and subtraction.

In the present embodiment of the game it is contemplated that certain of the traps will have a plus value and other traps will have a minus value so that, for instance, if the first ball played were received in a trap having a plus 10 value, the scoring being done in units of 10, and the second ball played were received in a trap of minus 10 value, simply by glancing into the ball receiving receptacle or compartment 40, it could be ascertained that the score would be zero.

As best illustrated in Figure 1, the values of the several compartments may be designated along the upper or inner edge of the ball receiving compartment or receptacle 40, as indicated at 43 in said Figure 1.

Means is employed to provide a visual indication of the total score at any time during the play. By reference to Figure 3 it will be noted that this means includes a series of calibrations of plus value designated 45, and a series of calibrations of minus value designated 46, and that these calibrations extend in opposite directions from a zero point designated 44.

Movable over these calibrations there is a pointer or indicator 47 which is mounted upon a shaft 48 carried by a partition 49 which extends transversely of the housing 12. The lower end of this pointer 47 is provided with a counter weight 49 which tends normally to hold the pointer 47 in registration with the zero position and which serves to return the pointer to this position when it is not otherwise held. Mounted on the shaft 48 in such a manner as to drive the pointer 47 there is a gear 50. This gear 50 meshes with a small gear 51 mounted upon a shaft 52, upon which a large gear 53 is also mounted in such a manner that movement of the gear 53 will drive the shaft 52 and the gear 51 to drive the gear 50 and the shaft 48, thereby to drive the indicator 47 in the desired direction.

The gear 53 is driven in the clockwise direction by the engagement with the teeth thereof, of

pins 54 carried by a rotating member 55, which in turn is driven by a shaft 56 which in turn is operated by a gear 57 meshing with a gear 58, the gear 58 being driven by a suitable spring motor 59. The gear 53 is driven in a counter-clockwise direction by engagement of pins 60, the pins 60 being carried by a rotating member 61 driven by a shaft 62 through the medium of a gear 63 which meshes with a gear 64 driven by a spring motor 65.

A holding pawl 66 is mounted in yielding engagement with the teeth of the gear 53 by means of a spring 67. This pawl, however, will not lock the gear 53 against rotation by either of the spring motors 59 or 65 but will hold the same against accidental movement.

The members 55 and 61 are of similar construction except that they operate in opposite directions and each is controlled by an escapement mechanism which will now be described. The member 55 has a plurality of equi-distantly spaced peripheral projections 68 which are adapted to be engaged by the hooked ends 69 and 70 of a bell crank lever 71 which is mounted in one position by means of a spring 72. Extending from the shaft 73 upon which the bell crank 71 is mounted there is an arm 74 which carries an armature 75 adapted to be attracted by an electromagnet 76.

The member 61 has a plurality of equi-distantly spaced peripheral projections 77 adapted to be engaged by the hooked ends 78 and 79 of a bell crank lever 80 which is operated in one direction by means of a coil spring 82. Mounted upon the shaft 83 upon which the bell crank lever 80 is mounted, there is an arm 84 which carries an armature 85 adapted to be attracted by an electromagnet 86. In the normal position of the parts the pointer 47 will occupy the position as shown in Figure 3. If now, the escapement of the member 55 be released, the pointer will be driven to the left in Figure 3 and indicate a minus score. If, on the other hand, the escapement of the member 61 be released the pointer will be driven to the right in Figure 3 and indicate a plus score.

The member 55 is released by energization of the electromagnet 76 which draws the armature 75 to the left in Figure 3, disengaging the hook 70 with the projection 68, thus permitting the member 55 to rotate to the direction of the arrow under the influence of its spring. It is allowed to rotate, however, but one step since disengagement of the hooked end 70 with a projection will move the hooked end 69 in the path of another projection which, as long as the magnet 76 is energized, will prevent further rotation of the member 55.

Rotation of the member 61 under the influence of its spring is obtained by energization of the magnet 86 and attraction of the armature to the right in Figure 3 to disengage the hook 78 with a projection 77, and moving the hook 78 into the path of the succeeding projections 77.

Immediately either of the energized electromagnets 76 or 86 is de-energized, the spring 72 or the spring 81, as the case may be, will engage a projection of its respective member 55 or 61, to hold these members 55 or 61 against further rotation under the influence of their driving spring.

The magnets 76 and 86 are in electric circuits which are designated diagrammatically in Figure 11. In said Figure 11, the source of power is

designated 87 and 88. The conductor 87 is connected as at 89 to a conductor 90 which has contacts 91, 92, 93, 94, 95, and 96. The conductor 88 leads through the electromagnets 86 and by means of a conductor 97 is connected to one terminal of a switch 98. Leading from the other terminal of the switch 98 there is a conductor 99 which has a plurality of contacts 100, 101, and 102. Leading from the conductor 98 as at 103 there is a conductor 104 which leads through the electro magnet 76, and extending from the electromagnet 76 there is a conductor 105 which is connected to one terminal 106 of an electric switch. Leading from the other terminal of the electric switch 106 there is a conductor 107 which has a plurality of contacts 108, 109, and 110. Connected to the conductor 87 as at 111 there is a conductor 112 which has two contacts 113 and 114. Connected to the conductor 107 as at 115 there is a conductor 116 having a contact 117 closely adjacent the contact 113, and connected to the conductor 99 as at 118 there is a conductor 119 having a contact 120 closely adjacent the contact 114.

Connected to the conductor 87 as at 121 there is a conductor 122 and this conductor 122 has two contacts 123 and 124. Connected as at 125 to the conductor 107 there is a conductor 126 which has a contact 127 closely adjacent the contact 123. Connected to the conductor 99 as at 128 there is a conductor 129 which has a contact 130 closely adjacent the contact 124. Connected to the conductor 87 as at 131 there is a conductor 132, and this conductor 132 has four contacts 133, 134, 135, and 136. Connected to the conductor 107 as at 137 there is a conductor 138. This conductor 138 has a contact 139 closely adjacent the contact 133 and a contact 140 closely adjacent the contact 134. Connected to the conductor 99 as at 141 is a conductor 142 which has a contact 143 closely adjacent the contact 136 and contact 144 closely adjacent the contact 135.

These several contacts are arranged in the channels 39 heretofore mentioned and are adapted to be bridged to complete the circuit in the conductors of which they are a part by the balls as they pass through said channels.

It will be remembered that the channels 39 have different values and therefore, the circuits will be so arranged in the channels that the channels of higher values will carry the greater number of contacts, for instance, the contacts 114 and 120; 124 and 130; 136 and 143; and 91 and 100 would all be in one channel so that a ball rolled through said channel would complete first, the circuit of conductors 112 and 119, second of conductors 122 and 129, third of conductors 132 and 142, and fourth of conductors 99 and 90.

By reference to Figure 11 it will be noted that the circuits are in duplicate. One of these duplicate circuits will operate the electromagnet which will release the mechanism to drive the pointer 47 in the plus direction and the other circuit will be operated to operate the electro magnet to release the operating mechanism to drive the pointer 47 in the minus direction. Thus, if a ball were received in the channel carrying the four sets of contacts above described, there would be a four step operation of the pointer in either the plus or minus direction depending upon the track in which the ball is trapped and the channel to which it is delivered. Assuming that the ball is trapped and delivered to the channel carrying

the four sets of contacts and the operating mechanism is released to move the pointer 47 in the plus direction. There would, under these circumstances, be a movement of the pointer 47 to the right in Figure 3 to the calibration 40. If now, the next ball played were to be delivered to the channel carrying two sets of contacts on the minus side, the operating mechanism which drives the pointer 47 in the minus direction will be operated to drive the pointer in a counter-clock direction or to the left in Figure 3 two steps showing a total score of 40 less 20, or 20. However, by glancing at the ball receiving compartment or receptacle 40 it will be apparent that one ball played gave a score of plus 40 and that the other ball played gave a score of minus 20, and that the total score is, therefore, plus 20.

Thus it will be apparent that means is provided not only to give the total score of plays but also means is provided whereby the manner in which the total score was reached may be ascertained. It will be noted that the circuits of the electromagnets 76 and 86 are so arranged that when the circuit to one of said electromagnets is energized, the circuit to the other one will be automatically opened so that the two magnets cannot be simultaneously energized. For example, if a ball completes a circuit at the contacts 114 and 120, the magnet 86 will be energized through the conductor 99, switch 98, conductor 97 and conductor 88. Energization of the magnet 86 attracts the switch armature 85 and opens the circuit of the electromagnet 76 by an opening of the circuit through the conductors 107, 105, 104 and 88. If, however, a circuit be completed by engagement of a ball with the contacts 113 and 117, the electromagnet 76 will be energized through the conductor 107, switch 106, conductor 105, conductor 104, conductor 88. Energization of the electromagnet 76 will attract the armature 75, open the switch 76 and open the circuit heretofore described as the circuit of the electromagnet 86.

The machine herein illustrated is of the coin controlled type. Machines of this type are cleared each time they are played by the insertion of a coin in a suitable coin mechanism, which upon operation, releases all of the parts and permits them to return to normal position.

In the present embodiment of the invention, this coin controlled mechanism is conventionally illustrated at 152 and includes a reciprocating member 153 having the ordinary coin receptacle 154. As the member 153 is moved inwardly, it engages a lever 155 which is pivotally mounted as at 156 in a suitable bracket 157. Extending from this lever there is an operating rod 158 which is connected as at 159 to a crank arm 168 carried by a transversely extending shaft 161. Through the medium of a crank arm 169 which is carried by the shaft 161, see Figure 2, a reciprocating member 170 mounted in brackets 171 is moved downwardly against the action of a spring 172. This member 170 has a right angular upper end 173 which engages the end 174 of the holding pawl 66 to disengage it from the teeth 53 of the gear heretofore mentioned and permit the pointer 47 to return to the zero position under the influence of its weight 49. Connected to the lever 155 heretofore mentioned, there is a link 175 which in turn is connected to an arm 176 carried by the hinged door 177 of the ball receptacle or compartment 140. Thus as the lever 155 is moved as heretofore described, the hinged bottom of the ball receptacle or com-

partment will be operated to discharge the balls therefrom and permit them to move to the position where they may be elevated to projecting position by a conventional elevating mechanism designated 180. The reference numeral 181 designates a conventional projecting device by means of which the balls are projected from starting position to the playing field.

10 From the foregoing it will be apparent that the present invention provides a new and improved scoring, computing and totalizing mechanism for games of the character set forth, and while the invention has been herein described in its preferred form it is to be understood that it is not to be limited to the construction herein shown and that it may be practiced in other forms without departing from the spirit thereof.

Having thus described the invention, what is 20 claimed as new is:

1. In a game of the class described, an inclined playing field defined by a ball runway, a plurality of baffle elements, means for projecting the ball from the ball runway into engagement with said 25 baffle elements, a plurality of parallel channels adapted to singly receive the ball from the baffle elements, rotatable means mounted in the playing field, said rotatable means having a plurality of ball receiving traps, and means for rotating said 30 rotatable member, selectively to position any one of the ball receiving traps of the rotatable member in position to receive a ball from any one of

said afore-mentioned channels in which a ball might be present.

2. In a game of the class described, an inclined playing field defined by a ball runway, a plurality of baffle elements, means for projecting the ball 5 from the ball runway into engagement with said baffle elements, a plurality of parallel channels adapted to singly receive the ball from the baffle elements, rotatable means mounted in the playing field, said rotatable means having a plurality of 10 ball receiving traps, and manually operated means for rotating said rotatable member, selectively to position any one of the ball receiving traps of the rotatable member in position to receive a ball from any one of said afore-mentioned channels 15 in which a ball might be present.

3. In a game of the class described, an inclined playing field defined by a ball runway, a plurality of baffle elements, means for projecting the ball from the ball runway into engagement with said 20 baffle elements, a plurality of parallel channels adapted to singly receive the ball from the baffle elements, rotatable means mounted in the playing field, said rotatable means having a plurality of ball receiving traps and manually operated means 25 for rotating said rotatable member in opposite directions, selectively to position any one of the ball receiving traps of the rotatable member in position to receive a ball from any one of said afore-mentioned channels in which a ball might 30 be present.

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