

March 5, 1957

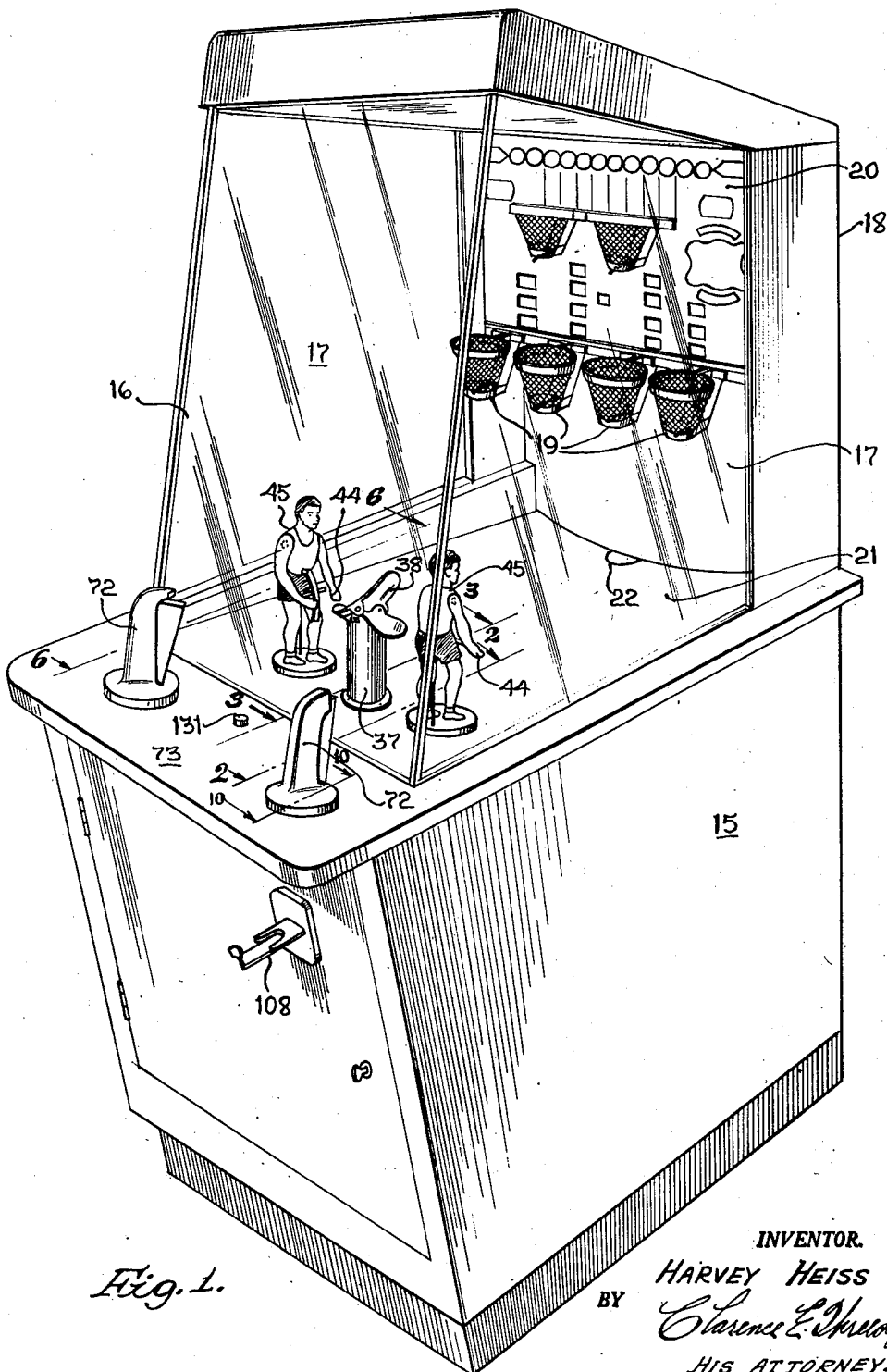
H. HEISS

2,783,754

AMUSEMENT GAME APPARATUS

Filed April 28, 1954

6 Sheets-Sheet 1



March 5, 1957

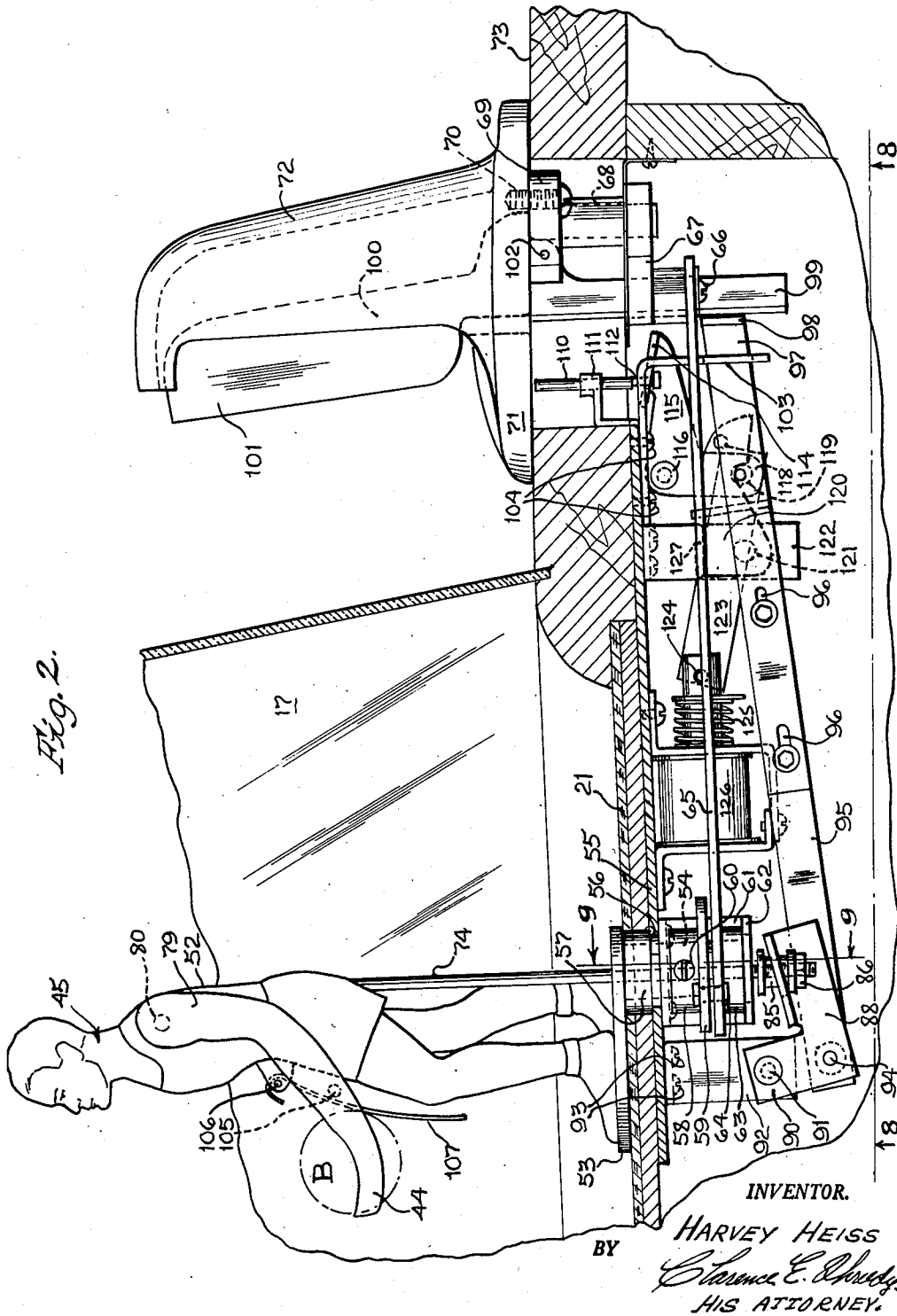
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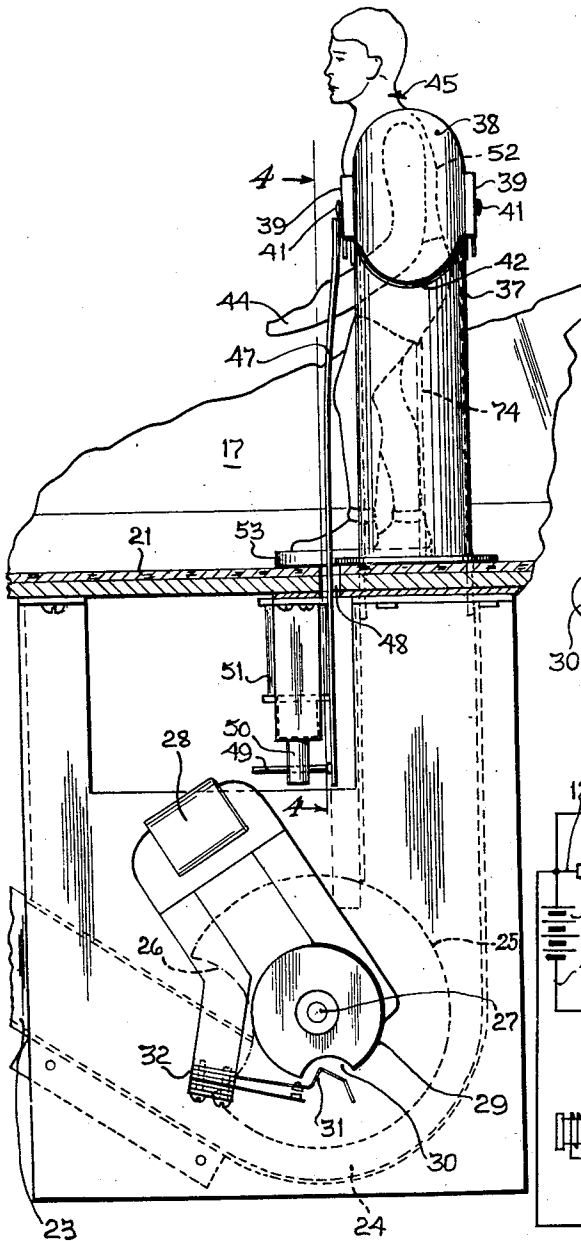


Fig. 3.

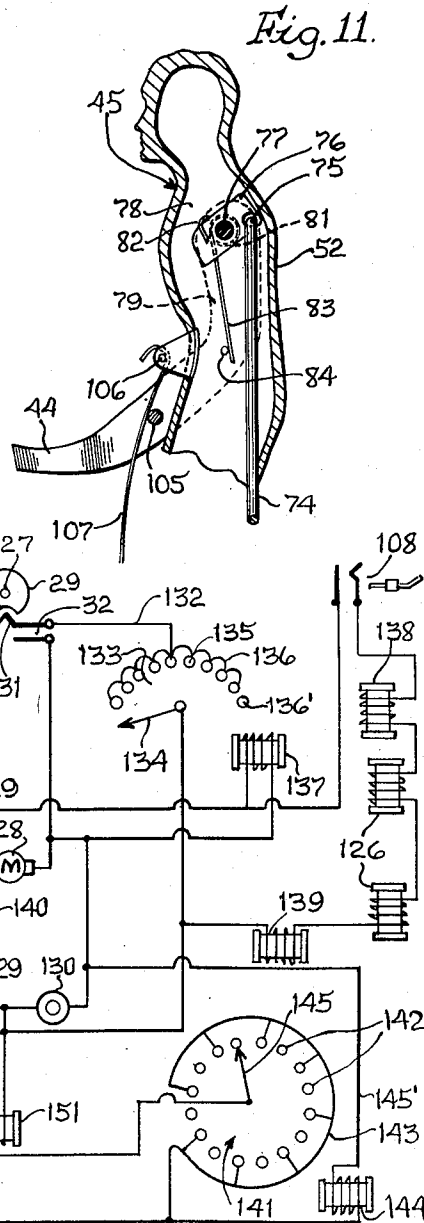


Fig. 12.

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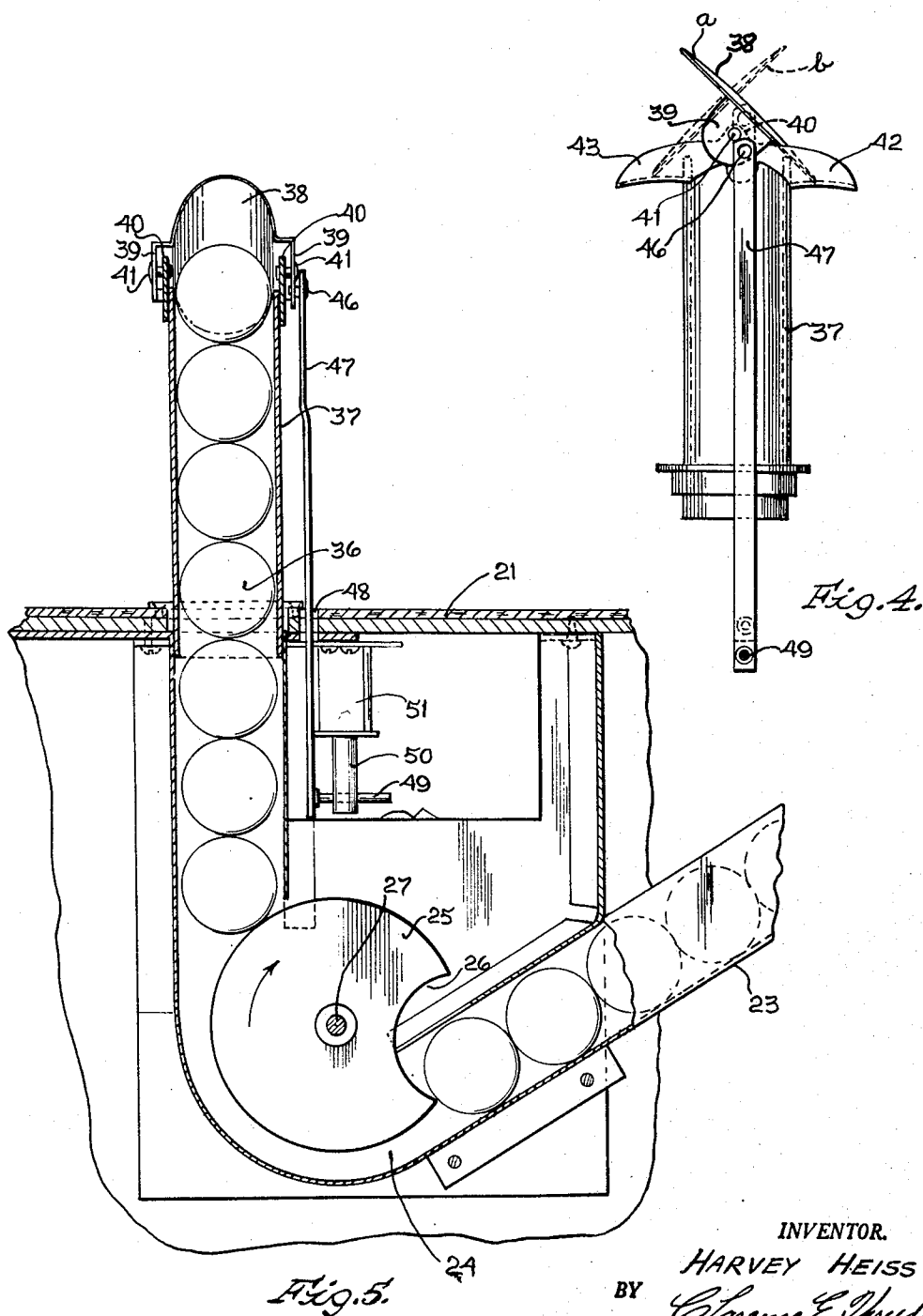
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2,783,754

AMUSEMENT GAME APPARATUS

Filed April 28, 1954

6 Sheets-Sheet 4



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AMUSEMENT GAME APPARATUS

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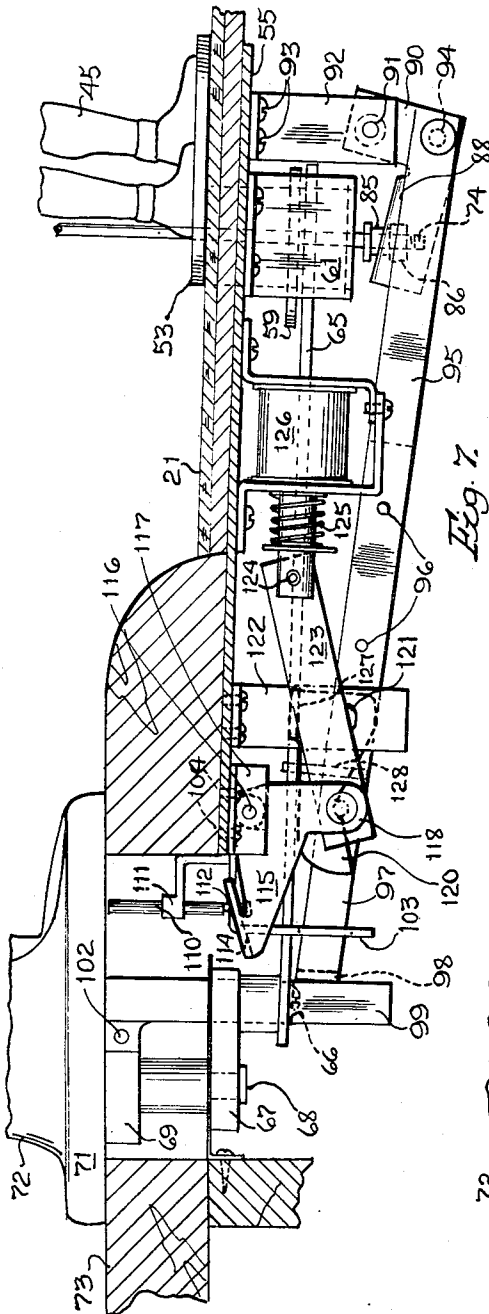


Fig. 7

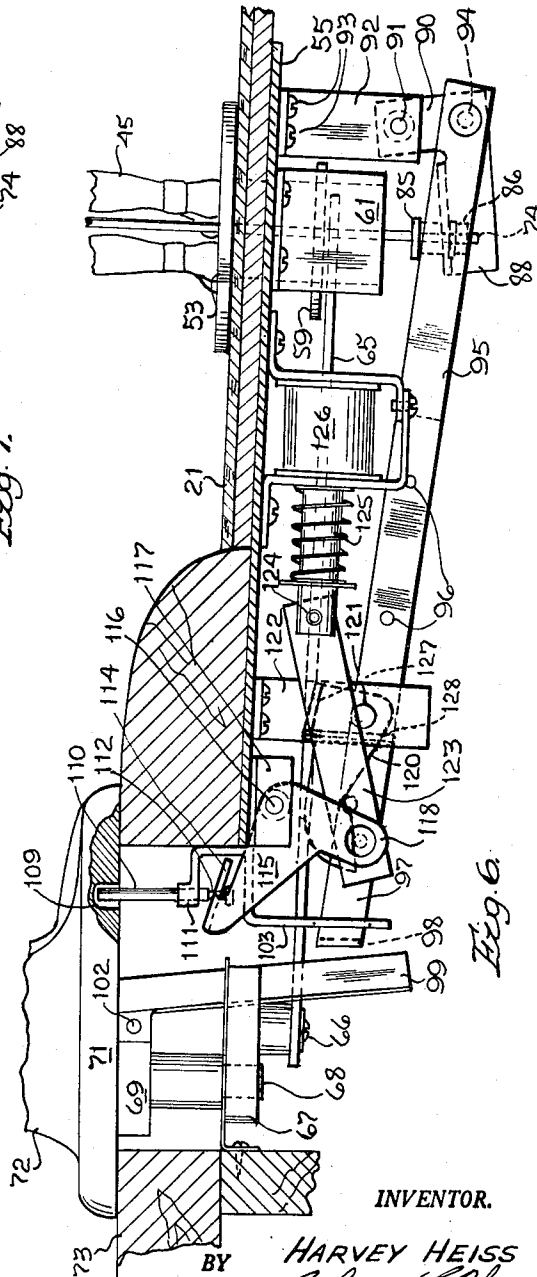


Fig. 6

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2,783,754

AMUSEMENT GAME APPARATUS

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Application April 28, 1954, Serial No. 426,147

2 Claims. (Cl. 124—1)

This invention relates to certain new and useful improvements in an amusement game apparatus in which a ball or other missile is projected in the direction of a target and has for its principal object the provision of an improved construction which will afford the maximum degree of amusement.

A principal object of the invention is to provide an amusement game simulating, though not limited to, a basketball game. In such game it is proposed that a ball delivered automatically to the manikin controlled by the player may be projected by such manikin toward a target from whence the ball returns to a ball elevating means for return to the manikin for reprojected toward the target.

A further object of this invention is an amusement game apparatus which in the playing of the game, requires the skill of the player.

A still further and equally important object of the invention is the provision of an amusement game of the class hereinafter described which may be played by two competing players or by a single player.

Another object of the invention of equal importance resides in the novel construction of the automatic ball return.

A still further object of the invention resides in the novel construction for imparting motion to the manikins and for controlling their operation.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings showing the preferred form of construction, and in which:

Fig. 1 is a perspective view of the game apparatus embodying my invention;

Fig. 2 is a fragmentary detail view taken substantially on line 2—2 of Fig. 1;

Fig. 3 is a fragmentary sectional detail view taken substantially on line 3—3 of Fig. 1;

Fig. 4 is a fragmentary detail view taken substantially on line 4—4 of Fig. 3;

Fig. 5 is a sectional detail view of the ball elevating structure embodied in the invention;

Fig. 6 is a fragmentary sectional detail view taken substantially on line 6—6 of Fig. 1;

Fig. 7 is a fragmentary sectional detail view similar to Fig. 6 but showing the parts thereof in different positions;

Fig. 8 is a fragmentary sectional detail view taken substantially on line 8—8 of Fig. 2;

Fig. 9 is a fragmentary sectional detail view taken substantially on line 9—9 of Fig. 2;

Fig. 10 is a fragmentary sectional detail view taken on line 10—10 of Fig. 1;

Fig. 11 is a fragmentary sectional detail view through the upper portion of a manikin embodied in the invention; and

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Fig. 12 is an electric circuit embodied in the invention.

The several objects of my invention are accomplished by the preferred form of construction shown in the accompanying drawings.

The amusement game apparatus embodying my invention comprises a cabinet having a base portion 15 and a top enclosure 16, the front and side walls 17 of which are transparent. The back wall 18 supports within the enclosure 16 a plurality of targets 19 which in the present instance are in the form of baskets having open bottoms. The back wall 18 provides a score panel 20 by means of which a score may be registered by illumination or otherwise. This scoring mechanism constitutes no part of the present invention. Balls passing through the baskets 19 drop upon a return floor 21 which is inclined toward the long axis thereof and rearwardly so as to direct the balls to an exit opening 22.

Communicating with this exit opening 22 is a ball return trough 23 inclined to gravitate the balls to a pick-up chamber 24. In the chamber 24 is arranged a flat disc 25 having a ball pocket 26. Into this ball pocket 26 the balls are successively received from the trough 23. This disc 25 is rotatably mounted upon a shaft 27 (Fig. 5). The shaft 27 constitutes the armature of an electric motor 28. On this shaft 27 is a disc 29 having a cam slot 30 cooperating with a spring leaf 31 of a switch unit 32. This switch unit may be arranged in an electric circuit suitable for the intended purpose. Such a circuit is shown in Fig. 12.

The ball received in the pocket 26 is rotated to a position beneath a stack of balls 36 arranged in a tube 37. This tube 37 projects upwardly above the return floor 21 and at its outer end portion has an arrangement for directing the balls alternately to the right and to the left. This mechanism comprises a deflector plate 38 slightly concaved in cross section and pivotally mounted at the upper end of the tube 37 for oscillatory movement. The deflector plate 38 has lateral ears 39 which are pivotally connected to lugs 40, by means of pins 41.

The lugs 40 are connected in any suitable manner such as spot welding or the like to the upper end portion of the tube 37. Extending from opposite corresponding sides of the tube 37 are runways 42 and 43 which are adapted to guide a ball to a supporting position between the hands 44 of a manikin 45.

One of the ears 39 has pivotally secured thereto as at 46, at a point eccentric with respect to the adjacent pintle 41, the upper end portion of an actuating rod 47. This rod 47 extends upwardly along one side of the tube 37 and through an opening 48 formed in the return floor. The lower end portion of this rod 47 carries a lateral pin 49 which has connection to the plunger 50 of an electro-solenoid 51. This solenoid is arranged in an electric circuit shown in Fig. 12.

As the solenoid 51 is energized, the plunger 50 will be moved upwardly. As the plunger 50 moves upwardly, it in turn moves the rod 47 in an upward direction to pivot the deflector plate 38 from its full-line position (a) to its dotted line position (b) whereby to direct a ball to the runway 42 for gravitation into supporting position upon and between the arms of the adjacent manikin.

As indicated, the balls as successively delivered from the tube 37 are projected by means of manually controlled manikins toward the target baskets 19. There are preferably employed at least two manikins of similar construction, one on each side of the delivery tube 37, as shown particularly in Fig. 1. Each of these manikins includes a body 52 preferably of hollow construction. The body 52 is mounted upon a disc 53. This disc 53 is substantially secured to a hollow shaft 54. The disc 53 is parallel with the floor 21. Beneath the floor 21 is secured a relatively flat mounting plate 55. This plate 55 has an opening 56

formed therein. Substantially secured in this opening is a collar 57. The shaft 54 projects through this collar and terminates at a short distance below the floor 21.

Secured to the shaft 54 and located beneath the floor 21 is a collar 58 having a lateral flange 59 formed integral therewith. This collar 58 is fixedly secured to the shaft 54 by a set screw 60.

Secured to the mounting plate 55 is a bracket 61, Fig. 2. Such bracket has a horizontally extending leg portion 62 carrying a fixed bushing 63 through which the shaft 54 projects. This bracket 61 cooperates with the collar 57 to provide a bearing structure for the shaft 54. Pivotaly secured as at 64 to the flange 59, eccentrically with respect to the long axis of the shaft 54 is an operating link 65. This operating link 65 has its opposite end portion pivotally connected as at 66 to an arm 67 in turn fixedly connected to a stud 68 formed as an integral part of a plate 69 secured by means of screws 70 to the base 71 of a gripping post 72.

The gripping post 72 is mounted exterior of the enclosure 16 upon the top panel 73 of the cabinet base 15 and is adapted to be manually rotated about a vertical axis. Such rotation of the gripping post 72 effects rotation of the manikin controlled thereby also about a vertical axis, this being accomplished by the connection between the gripping post 72 and the shaft 54 just previously described.

By means of this gripping post, the manikin can be rotated to such position as the player of the game judges to be proper for projection of the ball to a selected target basket 19. The projection of the ball from the hands of the manikin to the target basket is accomplished by the following preferred form of construction.

Such construction includes a rod 74 which has its upper end portion connected as at 75, Fig. 11, to a block 76 secured to a shaft 77 journaled in opposite wall portions 78 of the manikin body 52. The arms 79 of the manikin are connected as at 80 to the opposite ends of the shaft 77. The arms 79 of the manikin are spring held in the position shown in Fig. 11 by means of a coil spring 81 carried by the shaft 77 and having one end portion 82 secured to the block 76 and their opposite end portion 83 bearing against a pin 84 carried by the manikin body 52.

The rod 74 extends down through the shaft 54 (Figs. 2 and 9). On the lower end portion of the rod is threaded a flange bearing sleeve 85 locked in a predetermined position upon the rod 74 by a nut 86.

Operating between the flanges of the sleeve 85 is one end portion of a bell crank 88, the said bell crank 88 being bifurcated as at 89 to receive the sleeve 85 (Fig. 8). The opposite arm 90 of the bell crank 88 is pivotally secured as at 91 to a bracket 92 secured as at 93 to the mounting plate 55.

Pivotaly secured as at 94 to the bell crank 88 is an actuating bar 95 comprising two sections having slot and bolt connection 96 whereby the sections may be adjusted longitudinally with respect to each other.

The opposite end portion of the bar 95, indicated at 97, has an angled end portion 98 extending in a horizontal plane and adapted to engage the depending leg portion 99 of a hand operated plate 100. This hand operated plate 100 operates within the gripping post 72 and has its hand engaging portion 101 exposed therefrom so that the plate 100 may be engaged by the fingers of the hand of the player when such hand grasps the post 72. The plate 100 is pivotally connected as at 102 to the plate 69.

The arrangement is such that when the gripping post 72 is grasped by the hand of the player and the pressure of the fingers of the hand applied to the plate 100, such plate will pivot in a clockwise direction, as viewed in Fig. 2, to bear the leg portion 99 against the angled end portion 98 and move the bar 95 in the direction of its length to the left, as viewed in Fig. 2, to impart a pivotal movement to the bell crank 88 in a clockwise direction as viewed in Fig. 2. The pivotal movement of the bell crank 88 in

such direction will cause the rod 74 to move downwardly in the direction of its length thereby to pivot the arm 79 of the manikin in throwing direction.

The bar 95 at its end portion 97 is supported by a slotted plate 103 secured as at 104 to the mounting plate 55.

To speed the ball in its movement from the hands 44 of the manikin toward the target baskets 19, one of the arms of each manikin is provided with an elongated pin 105, which extends between the arms in a horizontal plane, as seen in Fig. 2. Pivotaly connected as at 106 to the body portion 52 of the manikin is a depending bat 107 which engages the ball B when the same is seated between the hands 44 of the manikin 45. By this arrangement, when the arms 79 of the manikin are swung in ball throwing position, the pin 105 will strike against the bat 107 which in turn will strike the ball B and eject the same from between the hands of the manikin for travel in the direction of a particular target basket 19.

The amusement game apparatus is adapted to be placed in playing condition through a conventional and well known coin mechanism 108. To prevent operation of either of the gripping posts 72 prior to the conditioning of the game by the coin mechanism, I provide in the base 71 of the gripping posts a socket 109 (Fig. 10). A latch pin 110 is slidably carried by a suitable bracket 111. The lower end of this pin 110 is reduced to provide a reduced shank 112. This shank 112 is received in the slotted end portion 113 (Fig. 8) of a plate 114 carried by an L-shaped arm 115.

The arm 115 is pivotally connected as at 116 (Figs. 6 and 7) to a bracket 117 carried by the mounting plate 55. One of the arms indicated at 118 of the L-shaped arm 115 carries a lateral pin 119 which is adapted to have latched engagement with a latching plate 120 (Figs. 2 and 8) pivotally carried as at 121 by a bracket 122 in turn secured to the plate 55.

The pin 119 projects through an opening formed in the end portion of a link 123. This link 123 is pivotally connected at 124 to the plunger 125 of a solenoid 126. The arrangement is such that as long as the plunger 125 is in projected position the pin 110 will be projected into the socket 109 and thereby latch the gripping post 72 against rotation. Upon energization of the solenoid 126, the L-shaped arm 115 will be pivoted in a direction to withdraw the pin 110 from the socket 109 thereby to release the gripping post 72 for rotation, and to dispose the pin 119 in latched engagement with the latch plate 120. The latch plate 120 carries a laterally extending lug 127 disposed in the path of an upwardly extending arm 128 (Fig. 8) carried by the bar 95. The arrangement is such that as long as the solenoid 126 is energized the spring projection plunger thereof will retain the plate 114 in a position with the pin 110 disposed from engagement in the socket 109 thereby permitting the gripping post 72 to be rotated. Upon the energization of the solenoid 126 and upon engagement of the lug 127 by the upwardly extending arm 128, the latch plate 120 will be pivoted from engagement with the pin 119 thereby to effect pivotal movement of the plate 115 under the action of the spring-urged plunger 125, in a direction to project the pin 110 into the socket 109, thus latching the post 72 against rotation.

The electric circuit for controlling the operation of the game may take various forms. A suitable circuit for the intended purpose is shown in Fig. 12.

This circuit includes a starting circuit 129 in which the motor 28 is arranged and which circuit has a starting switch 130 in the form of a conventional push button, the plunger 131 of which is arranged upon the top wall of the base 15 exterior of the enclosure 16. The switch 32 is incorporated in a holding circuit 132 functioning to maintain the motor energized for one complete revolution of rotation. In this holding circuit 132 is arranged

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a step-up switch 133 comprising a rotatable contact arm 134 and contact buttons 135 adapted to be successively engaged by the arm 134. There are preferably ten of such buttons 135, nine of which are connected in series by a conductor 136.

In the starting circuit 129 is a step-up coil 137 of the step-up switch 133 which actuates the arm 134 each time the starting switch 130 is closed. This switch 133 is of a construction similar to that shown in United States Patent Number 2,281,262.

The coin switch 108 controls a reset coil 138 which is connected with the power source 140 in the starting circuit 129. This reset coil controls the reset movement of the arm 134. The coin switch 108 also controls the energization of the solenoid coil 126 of each of the manikin latching mechanisms.

Also connected with the power source 140 is the solenoid coil 51. The energization of the coil 51 is controlled by a step-up switch 141. This step-up switch includes a series of contact buttons 142 with every other button connected in series as at 143. A step-up coil 144 for the arm 145 of the step-up switch 141 is in a circuit 145' controlled by the operation of the starting switch 130.

As hereinbefore stated, each of the manikins is latched against movement until a coin has been deposited to operate the coin switch 108. When this switch is closed each coil 126 will be energized to withdraw the latch pin 110 to release the manikin for rotation. The closing of this switch 108 also energizes the reset coils 138 and 139 to reset the arms 134 and 145 back to starting position.

The game is now ready for play. The operator closes the switch 130. The closing of this switch 130 completes the starting circuit which energizes the motor 28. As the cam disc 29 of this motor rotates, it closes the switch 32 with the result that the holding circuit 132 is energized to hold the motor 28 operative until it has completed one revolution of rotation. During this one revolution of rotation of the motor 28, a ball will be transferred from the trough 23 to the tube 37. As the ball is thus transferred, the balls in the tube 37 are raised by the transferred ball so as to push the uppermost ball in the tube 37 for gravitation through one of the runways 42 and 43.

Each time that the switch 130 is closed the coil 137 will be energized to advance the arm 134 for successive contact with the contacts 135. When the contact arm 134 has been advanced to the last contact 136' of the contacts 135, the holding circuit to the motor 28 will be deenergized and the game rendered inoperative, as this contact 136' is a dead contact.

When the switch 130 is closed to start the motor 28, the coil 51 will be energized to advance the arm 145. If the arm 145 is in contact with one of the contacts 142 which are connected in series, the coil 51 will be energized to tilt the deflector plate 38 from the full-line position shown in Fig. 4 to the dotted-line position whereby to deflect the ball coming out of the tube 37 to the right, as viewed in Fig. 4. This coil 51 will remain energized until the arm 145 is moved to the next succeeding contact button.

By this arrangement, the deflector plate 38 is alternately tilted from right to left to alternately direct the balls to the manikins.

From the foregoing description, it will be seen that I provide an amusement game apparatus which may be

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played competitively or by a single player, and one which requires skill when played.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

1. An amusement game comprising a ball delivery means including a vertically extending stacking tube for guiding balls vertically therethrough to a point of delivery at one end thereof, rotatable ball receiving and projecting means on opposite corresponding sides of said tube, a manually rotatable gripping post having operative connection with said receiving and projecting means for rotating the same into and out of ball receiving position with respect to said tube, a hand operated plate carried by said gripping post and having operative connection to said ball receiving and projecting means for projecting a received ball therefrom, ball guides on the delivery end of said tube extending laterally therefrom and in the direction of said ball receiving and projecting means, a ball deflector plate carried by said tube and alternately engaging one of said guides for deflecting a ball therefrom and onto the other of said guides for delivery to one of said receiving and projecting means, an electrically operated actuating arm for pivoting said deflector alternately from engagement with one guide to the other guide, and a releasable latch carried by said gripping post for preventing rotation of said ball receiving and projecting means into a ball receiving and projection position with respect to said tube.

2. An amusement game comprising a ball delivery means including a vertically extending stacking tube for guiding balls vertically therethrough to a point of delivery at one end thereof, rotatable ball receiving and projecting manikins on opposite corresponding sides of said tube and having movable arms for receiving a ball from said tube, hand gripping posts having link connections to said manikins for rotating the same into ball receiving position with respect to said tube, hand operated plates carried by said posts and having a link connection to said arms for projecting a received ball therefrom, ball guides on the delivery end of said tube extending laterally therefrom and in the direction of said manikins, a ball deflector plate carried by said tube and alternately engaging one of said guides for deflecting a ball onto the other of said guides for delivery thereof to one of said manikins, an electrically operated actuating arm for pivoting said deflector plate alternately from engagement with one guide to engagement with the other guide, and a releasable latch carried by said gripping posts for preventing rotation of said manikins into ball receiving position with respect to said tube.

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