

Aug. 14, 1934.

J. W. WHITLOCK

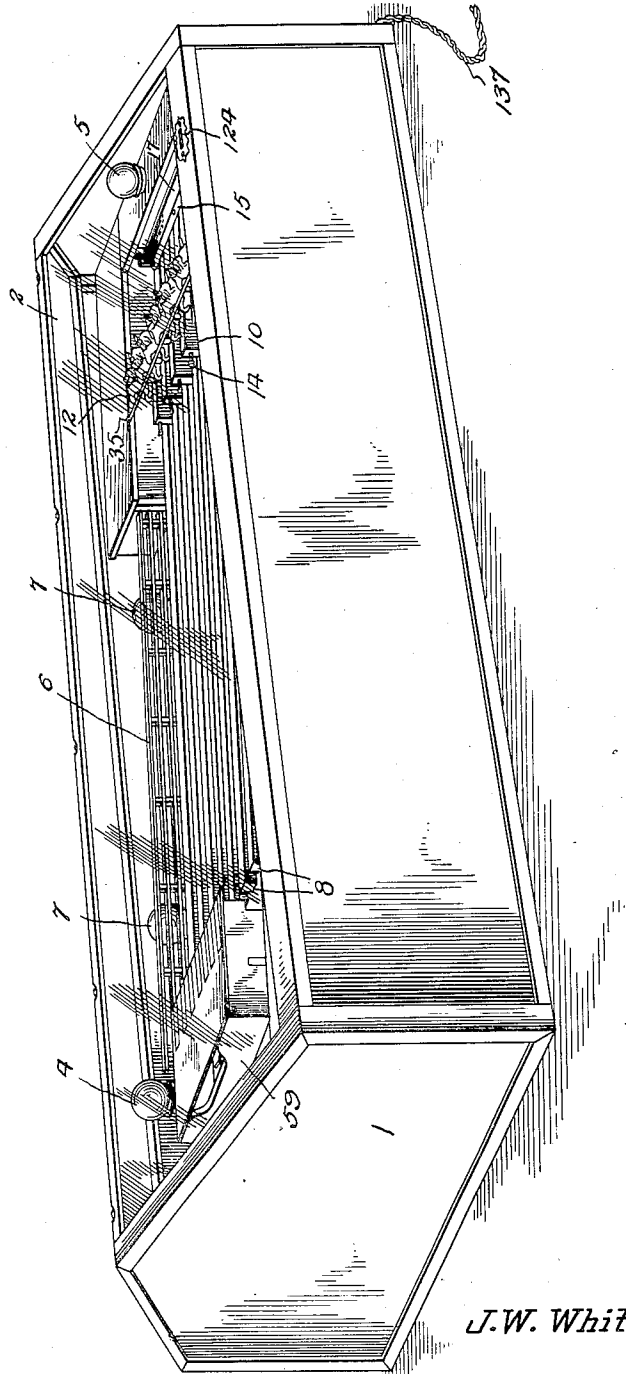
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GAME APPARATUS

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7 Sheets-Sheet 1

Fig. 1.



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Fig. 8.

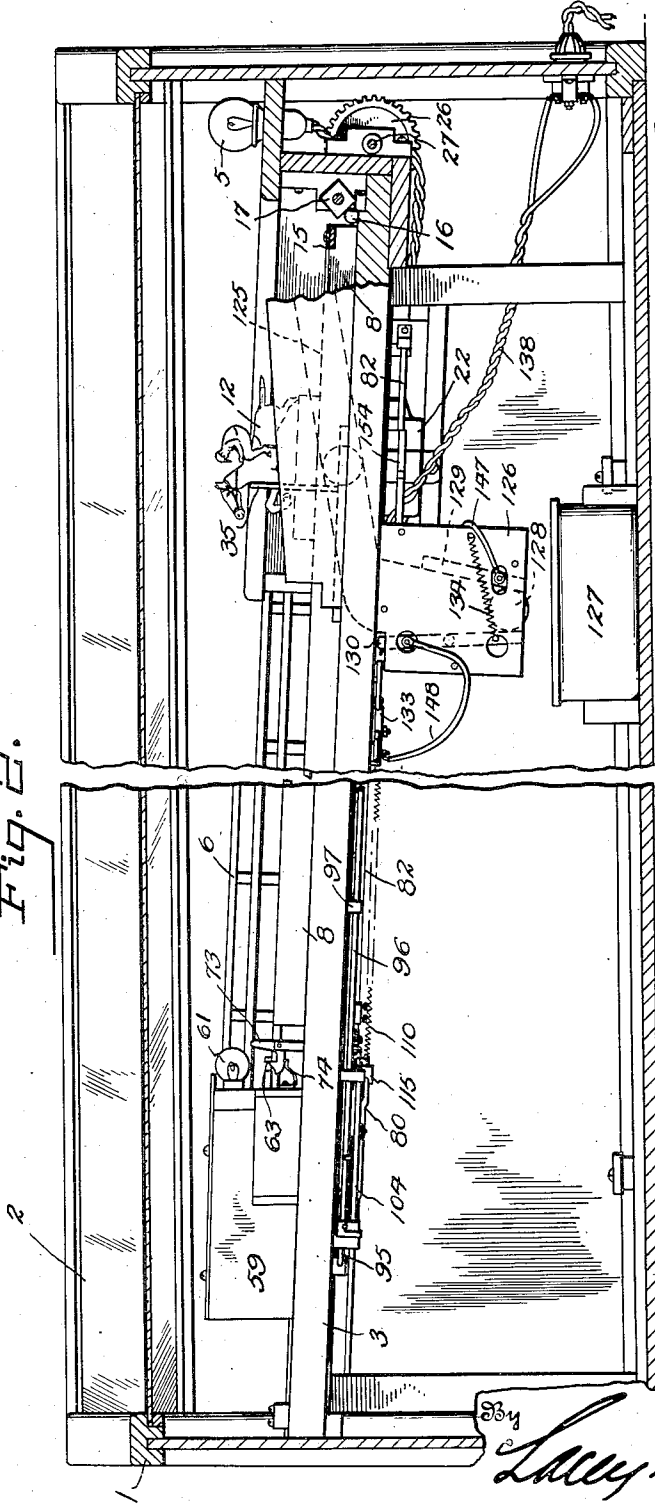
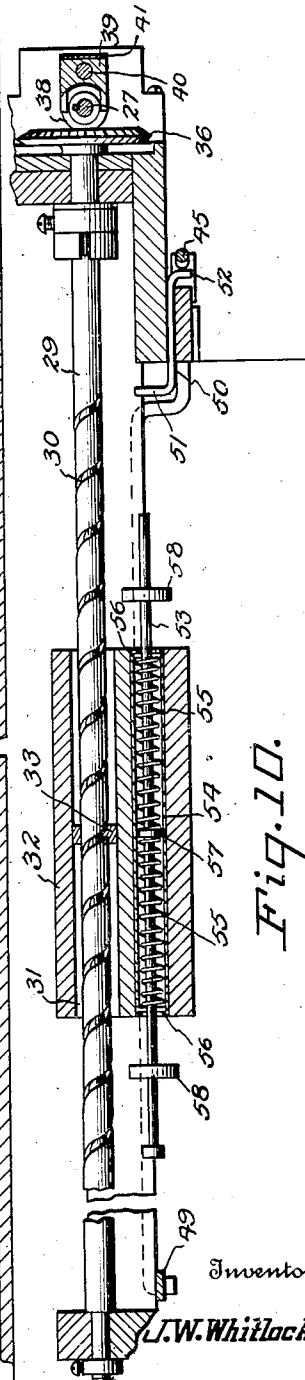


Fig. 10.



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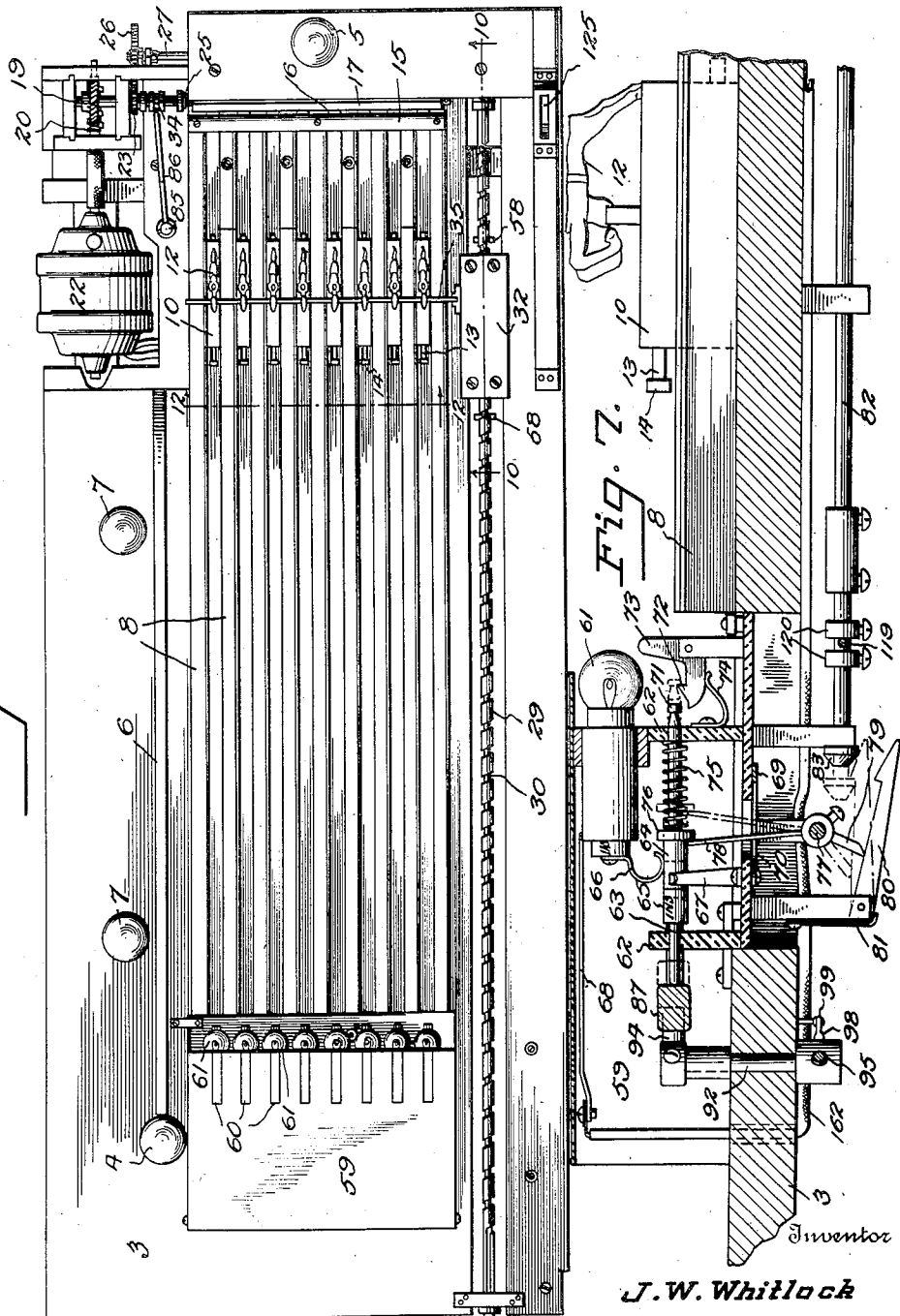
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Fig. 3.



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Fig. 9.

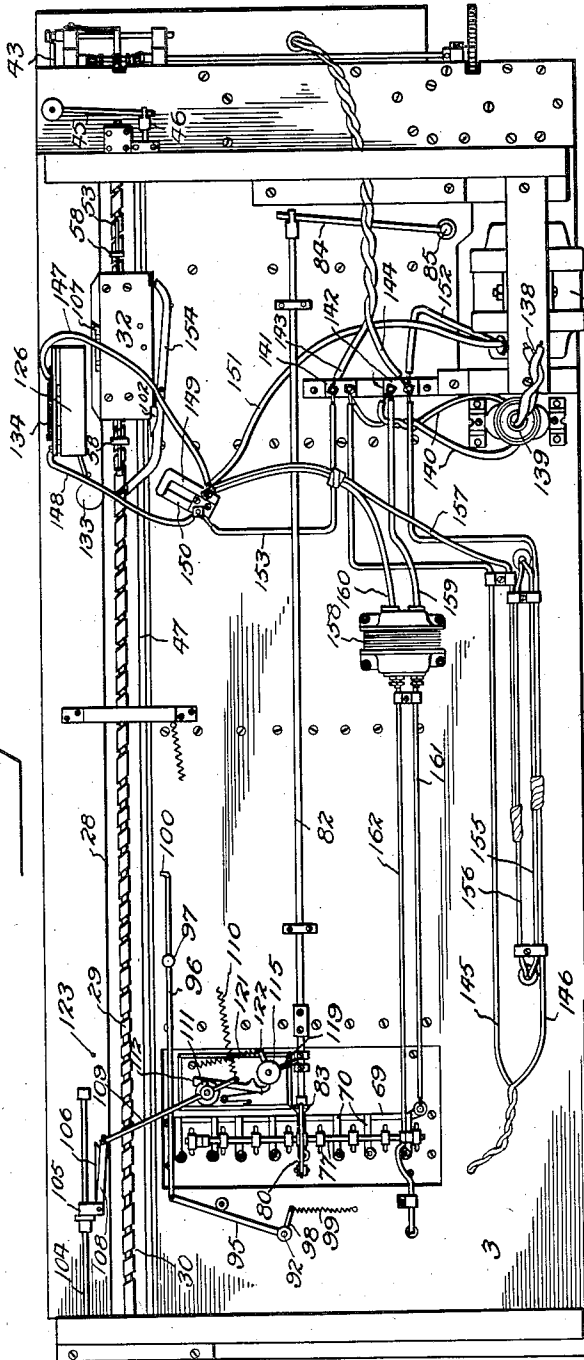


Fig. 13.

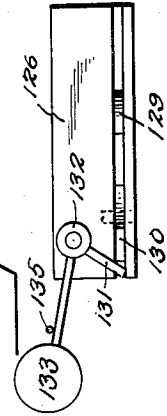
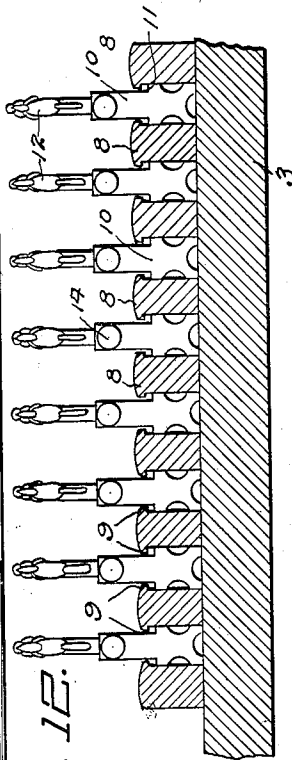


Fig. 1E.



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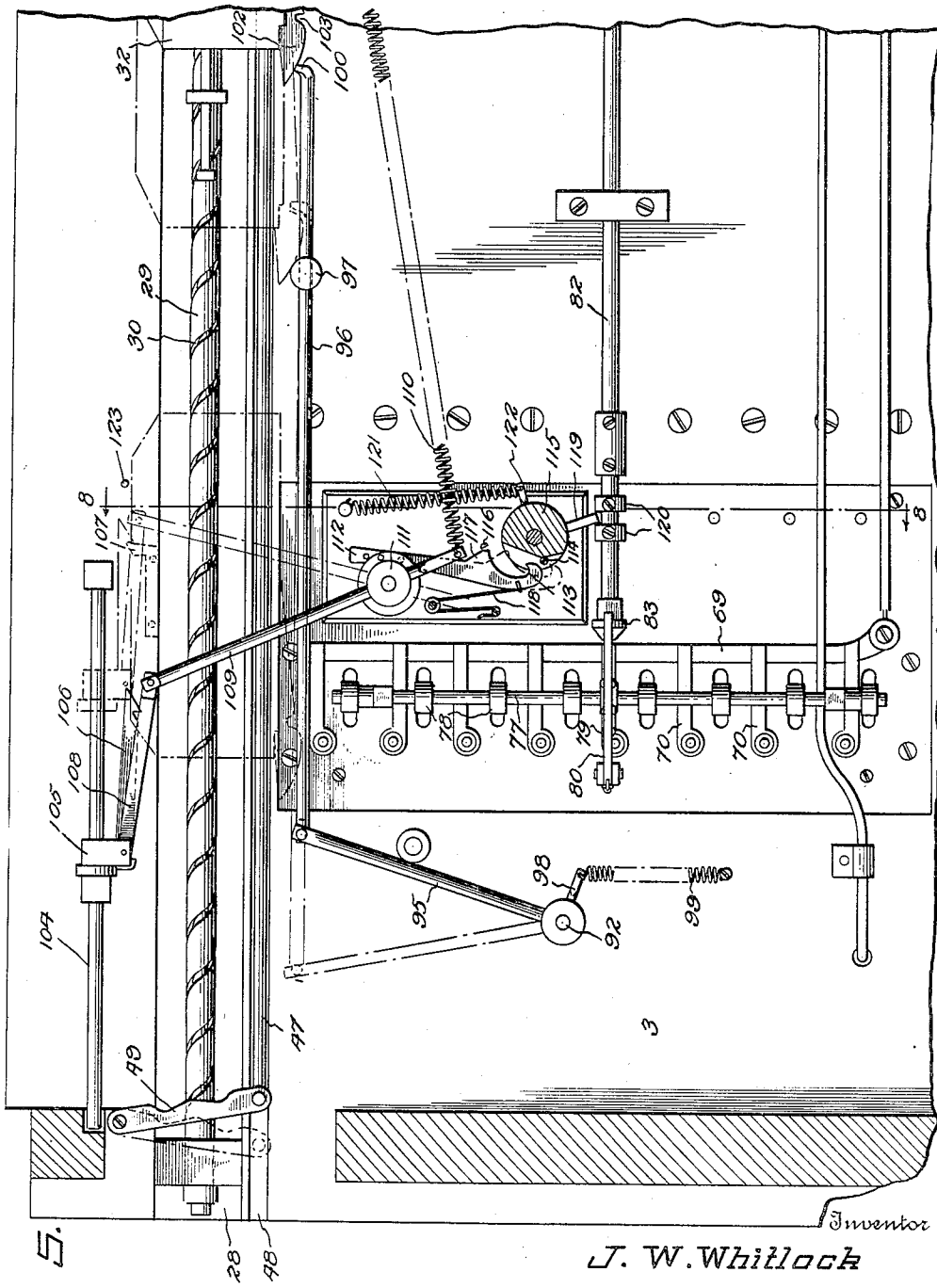
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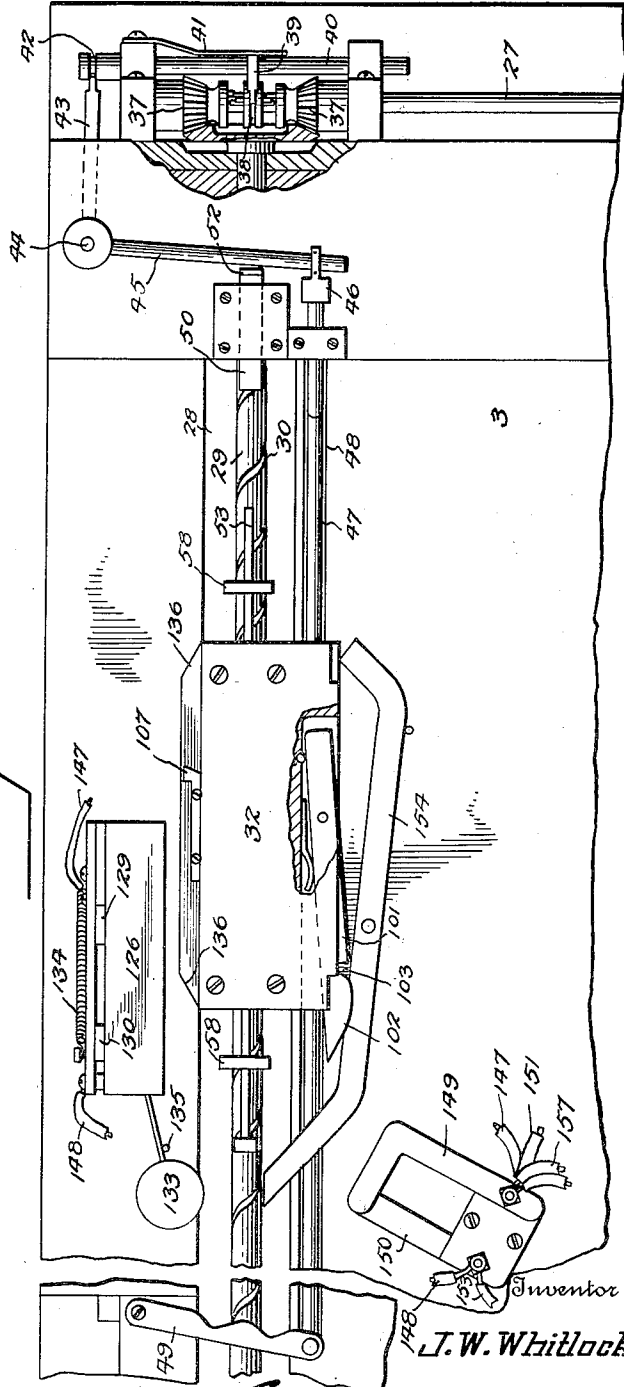
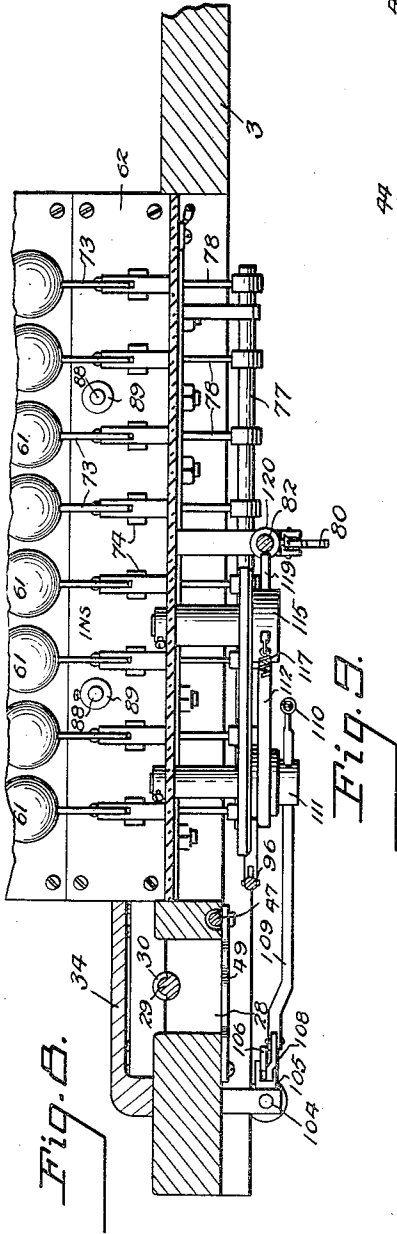
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GAME APPARATUS

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# UNITED STATES PATENT OFFICE

1,970,069

## GAME APPARATUS

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Application November 25, 1931, Serial No. 577,343

13 Claims. (Cl. 273—86)

This invention has for its object the provision of a coin-controlled apparatus by which a race will be illustrated and the parts, after making the race will be returned to initial position, in one complete series of operations, entirely automatically. The invention provides novel means whereby, upon the deposit of a coin, a barrier will be moved to a position at one end of the track, out of the way of the racers, the racers will then be moved over the track in a haphazard manner to determine the winner, a signal lamp will be lighted by the winner, and the barrier and racers will then be returned to initial position, the coin being released by the initial movement of the barrier and the motor being stopped when the barrier returns to a point near the initial position. These stated objects, and other objects which will incidentally appear in the course of the following description, are attained in mechanism such as is illustrated in the accompanying drawings and the invention resides in certain novel features which will be particularly defined in the appended claims.

In the accompanying drawings,

Figure 1 is a perspective view of an apparatus embodying the present invention,

Fig. 2 is a side elevation, partly in section, on a larger scale,

Fig. 3 is a plan view with the casing removed,

Fig. 4 is a bottom plan view of the platform which supports the track and operating mechanism,

Fig. 5 is an enlarged bottom plan view of the platform at that end at which the race finishes,

Fig. 6 is a similar top plan view,

Fig. 7 is a longitudinal section on the line 7—7 of Fig. 6,

Fig. 8 is an enlarged transverse section on the line 8—8 of Fig. 5,

Fig. 9 is a bottom plan view of the portion of the platform at which the barrier begins its movement,

Fig. 10 is a longitudinal section on the line 10—10 of Fig. 3,

Fig. 11 is a top plan view of one corner of the platform, more particularly illustrating a portion of the operating gearing,

Fig. 12 is a transverse section on the line 12—12 of Fig. 3,

Fig. 13 is a detail plan of a portion of the coin-receiving and supporting mechanism.

In carrying out the invention, there is provided a casing or enclosing frame 1 which may be of any suitable material and of proper dimensions to entirely enclose all of the mechanism. The

top of the casing is provided with glazed openings, as indicated at 2, whereby the entire track and progress of the race may be observed. Within the casing or enclosing frame, a platform 3 is supported in any convenient manner, above the bottom thereof, and in an inclined position, as shown clearly in Fig. 2, the inclination of the platform permitting the impelling elements, which are employed to effect progress of the racers along the track, to return to their initial positions by the force of gravity. At the ends of the platform, electric lamps 4 and 5 are mounted and these lamps are lighted whenever electric current is supplied to the apparatus. Along one side of the platform is arranged a rail 6 which is erected to simulate the rail at one side of a race track and between this rail and the adjacent side, or back, of the casing, other lamps 7 are provided, these latter lamps being lighted only when a race is being run and being lighted automatically as the race starts. Upon the upper side of the platform is provided a track consisting of a series of parallel bars 8 which, as best shown in Fig. 12, are provided on their sides, along their upper edges, with flanges or ribs 9 whereby the racers may be held against upward movement and consequent detachment from the track. The bars 8 are, of course, spaced equi-distantly across the platform and provide spaces within which the racers may move, the racers comprising slides 10 which rest upon the platform between the track bars and fit closely but slidably between the bars and are provided with shoulders 11 which are disposed below the ribs 9 of the track bars, as clearly shown in Fig. 12. The drawings illustrate the slides 10 as carrying Figures 12 simulating race horses with jockeys mounted thereon, the horses and their riders being above the track bars, as clearly shown in Figs. 1 and 12. At the front end of each slide 10, there is a projection 13 having a head 14, which projection is disposed parallel with the track bars and somewhat above the same, as shown in Figs. 1 and 7, and is adapted to impinge upon a latch at the finish end of the track so as to energize a signal lamp to denote the winner, all of which will hereinafter more fully appear. The spaces between the several track bars are, of course, open at their ends and a cross bar 15 is secured upon the track bars, across the ends thereof at the lower end of the platform, so as to prevent the impelling elements 16 from escaping or jumping from the track. The impelling elements 16 are preferably in the form of steel balls of proper diameter to move easily within the spaces between the several



track bars but be retained therein by the overhanging flanges. The balls will gravitate to the lower end of the platform and, when the apparatus is not operating, will lie, as shown in Fig. 2, against the propelling shaft 17 which is mounted in suitable bearings at the lower end of the platform and is rectangular in cross section thereby providing faces which will serve as striking cams to eject the balls or impellers upwardly along the track. When the device is operating, this propeller shaft operates at high speed and the balls will be propelled along the track with considerable force and will impinge against the rear or lower ends of the respective slides 10 and thereby cause the slides to move along the track. The balls do not move with regularity but are advanced in a haphazard manner, both as to the force of their movement and to the periodicity thereof, and, consequently, the racers will be advanced over the track in an uneven manner and will thereby simulate the uncertainty of a race. The shaft 17 has a core or axis which extends to one side of the platform, as shown in Figs. 3 and 11, and upon the projecting end 18 of this core is secured a worm gear 19 which meshes with a worm 20 upon the end of a motor shaft 21 extending from a motor 22 which is a small electric motor and is illustrated in a conventional manner. A pinion 23 is mounted loosely upon the core 18 of the propeller shaft and is adapted to be locked to the core by a clutch member 24 splined upon the core and shifted along the same in a manner to be later described. The shaft also has loosely mounted thereon a clutch sleeve 25 which is adapted, at times, to be engaged by the clutch member 24 so that the sleeve will be locked to the shaft and will rotate therewith. The pinion 23 meshes with a gear 26 on one end of a shaft 27 which is journaled upon the framework at the lower end of the platform and is disposed parallel with the propeller shaft 17 and its axle 18. When the clutch sleeve 24 engages the pinion 23, the propeller shaft 17 will remain at rest and the shaft 27 will be rotated to operate the barrier and the parts associated therewith, but when the clutch sleeve is engaged with the clutch member 25, the pinion 23 will be at rest and the shaft 17 will be set in motion to project the impellers 16 along the track.

At one side of the platform, which, for convenience, will be designated as the front side, there is a longitudinal space 28 at the ends of which are provided suitable bearings for the support of a shaft 29 having a spiral groove 30 extending from end to end thereof and this spirally grooved shaft passes through a longitudinal passage 31 in a sliding carriage 32 and engages a nut 33 secured in said passage midway the ends of the slide, as clearly shown in Fig. 10, so that, when the shaft is rotated, the slide will be caused to move longitudinally of the platform in one or the other direction according to the direction of rotation of the shaft. A covering strip 34 is secured upon the platform in such position as to extend from end to end of the open space 28 and above the platform to hide the grooved shaft from view and also to prevent possible damage to the shaft by objects dropping thereon. Secured to the inner or rear side of the carriage 32, and rising therefrom past the rear or inner edge of the cover strip 34, is a barrier consisting of a stiff light rod 35 having its upper portion bent so as to extend horizontally above and across the track, as clearly shown in Fig. 1, and this barrier is adapted to bear against all of the racers and

bring them into alinement transversely of the platform and track before a race starts, as will be understood upon reference to Fig. 2.

Coupled to the lower end of the shaft 29 is a beveled gear 36 which is arranged with its face adjacent and parallel with the shaft 27. Loosely mounted upon the shaft 27 are opposed beveled pinions 37, and splined upon the shaft, between said pinions, is a clutch sleeve 38 having an annular external groove which is engaged by a fork or finger 39 secured upon a shifting rod 40 slidably supported adjacent the shaft, as shown clearly in Fig. 9. This shifting rod is held toward the shaft so as to maintain the engagement between the clutch sleeve 38 and the shifting fork 39 by a leaf spring 41 secured upon one of the guides for the rod and bearing upon the fork, as shown. The shifting rod 40 is provided with an annular groove 42, adjacent one end, which is engaged by the end of an arm 43 which constitutes one member of a bell crank, the fulcrum or pivot 44 of the bell crank being mounted vertically within the supporting frame and the second arm 45 of the bell crank being disposed below the platform and extending under the same approximately at a right angle to the arm 43, as shown in Fig. 9. Engaged with the free end of the arm 45 is a bracket or loop 46 on the rear end of a controlling rod 47 which is slidably mounted and supported in a groove 48 in the underside of the platform, said rod extending to the opposite end of the platform where its end is pivoted to a shifting lever 49 which is disposed transversely to and in the path of the carriage 32, as shown in Figs. 9 and 10. When the carriage 32 reaches the limit of its movement in one direction, it actuates the lever 49 to exert a pull upon the controlling rod 47 and thereby rock the bell crank so that the shifting rod 40 will be slid endwise and, consequently, the clutch sleeve 38 will be caused to release the engaged pinion 37 and engage the opposite pinion 37 so that the direction of rotation of the shaft 29 will be reversed. A pusher 50 is slidably mounted in the platform supporting frame, below the shaft 29, and consists of a short metallic strap or flat bar having one end 51 turned up to project into the path of the carriage 32 and its opposite end 52 turned downwardly in position to impinge against the side of the bell crank arm 45. When the slide reaches the limit of its movement toward the lower end of the platform, the pusher will be shoved against the arm 45 so as to swing it in the direction opposite that in which it is moved by the rod 47 and the clutch sleeve will be then shifted so as to again reverse the direction of rotation of the shaft 29. As shown clearly in Fig. 10, the carriage 32 is provided with strikers consisting of a rod 53 slidably mounted within the lower portion of the carriage and projecting from the ends of the same, one end of the rod being adapted to impinge upon the shifting lever 49 and the other end being arranged to impinge against the upturned end of the pusher 50. The rod 53 is mounted slidably within a bushing or sleeve 54 fitted within the carriage and springs 55 are provided between abutments 56 at the ends of the bushing and an abutment 57 at the center of the rod whereby the impact of the rod against the engaged member will be cushioned and possible bending or breaking of the parts will be avoided. Upon the rod, adjacent each end thereof, and beyond the ends of the carriage, are stop disks or shoulders 58 which are adapted to limit the movement of the rod by engaging against

the respective end of the carriage and thereby causing the rod to positively actuate the engaged member while the shock of the engagement is absorbed.

5 At the upper end of the track is provided a box 59 on the top, or cover, of which and in alignment with the respective spaces between the track bars are labels 60 which display the names of well known race horses so as to further the  
10 resemblance to an actual horse race. Supported within the box 59, at the inner side of the same, are a plurality of electric lamps 61, one of said lamps being disposed over the end of each track space, and associated with these lamps is con-  
15 trolling mechanism whereby, when any racer reaches the limit of the track, the projecting striker upon the slide carrying said racer will release a circuit closer so that the circuit through the corresponding lamp will be closed and the  
20 lamp energized to visually announce the winner of the race. Each lamp is supported upon frame members of insulation, indicated at 62, and slidably mounted in said frame members, below each lamp, is a circuit closer consisting of a rod 63  
25 having a metal sleeve 64 fixed thereon and also provided with a collar of insulation 65 immediately adjacent the outer end of said metal sleeve, a contact finger 66 being secured to one terminal  
30 of the lamp filament and bearing constantly upon the metallic member 64 and another spring contact finger 67 being supported below the slidable circuit closer and normally bearing against the side of the insulated collar 65. A conductor  
35 strip 68 extends across and is electrically connected with the ring terminals of the several lamp filaments so as to constitute a common conductor therefor, and a conducting strip 69 is  
40 secured upon the insulated supporting members and is connected with the respective contact fingers 67 by branch conducting strips 70, as will be understood upon reference to Figs. 5 and 7. The inner end of each circuit-closing rod 63 is  
45 formed with a head 71 behind which is normally engaged the hook 72 of a latch 73 in the form of an angle lever which has one arm extending upwardly and is pivoted, at its angle, in alignment with the respective rod 63, as will be understood. A spring 74 bears upon the underside  
50 of the hook member 73 so as to hold it to the sliding rod to maintain the engagement with the head thereof, as will be understood upon reference to Fig. 7. An expansion spring 75 is coiled about the sliding rod 63, between the inner supporting insulated member 62 and a shoulder 76  
55 on the rod, and acts on the rod in opposition to the latch so that, when a racer has reached the end of the track, the striker 13 will impinge upon the latch 73 and rock the same against the spring 74 whereupon the rod 63 will be released and  
60 will be at once moved outwardly by the spring 75, the metallic portion 64 being thereby moved into engagement with the contact finger 67 so that the circuit through the corresponding lamp will be closed. Disposed below the platform and extending transversely of the entire series of  
65 lamps and slidable circuit closers is a rock shaft 77 upon which are secured a plurality of levers or cranks 78 extending upwardly therefrom and arranged in the vertical planes of the respective  
70 rods 63 and bearing against the outer sides of the shoulders 76 thereof, as shown in Fig. 7, so that, when any one circuit-closing rod has been released by the cooperating latch 73, the crank or lever 78 associated with said rod will be moved  
75 outwardly and the shaft 77 rocked. At the cen-

ter of the rock shaft 77 is secured a short crank 79 which bears upon a latch 80 which is constantly pressed upwardly by a leaf spring 81 secured upon its support and bearing upon the  
80 pivoted end of the latch, as shown in Fig. 7. Slidably supported upon the underside of the platform, in alignment with the hook or latch 80, is a controlling rod 82 which is provided at one  
85 end with a tapered head 83 adapted to be engaged by the hooked end of the latch 80 and having its opposite end operatively connected with the free end of an arm 84 disposed below the  
90 platform and constituting one member of a bell crank, the fulcrum 85 of said bell crank being journaled in and extending vertically through the platform, and the opposite arm 86 of said bell crank extending from the fulcrum to engage the clutch sleeve 24, as shown most clearly  
95 in Fig. 11. This controlling rod 82, through the connections described, effects the shifting of the clutch sleeve 24 so that the movement of the carriage 32 will be arrested and the propelling shaft 17 will be operated to effect movement of the racers along the track, and the propeller shaft will then be released and the  
100 travel of the carriage re-established.

Between the outer ends of the several sliding rods 63 and the adjacent end of the casing is a transverse resetting bar 87 which is supported by rods 88 extending therefrom and slidably sup-  
105 ported in the frame members 62, stop collars 89 being secured upon said rods at the inner side of the inner member 62 and adapted to bear against the same to limit the movement of the  
110 resetting bar in one direction and an expansion spring 90 being provided around the rod, between said member 62 and a stop collar 91 on the rod, so that the rod is normally projected outwardly and held in spaced relation to the ends of the several rods 63. When, however, one  
115 of the rods 63 is actuated by a racer, as has been described, the end of said rod will be caused to abut the resetting bar 87, as shown in Figs. 6 and 7. If the bar 87 be pushed toward the adjacent frame member 62, obviously the rod 63 will  
120 be returned to its initial position and will be automatically re-engaged by the corresponding latch 73. The resetting bar is automatically operated to return the rod 63 to its initial position by the carriage 32 acting upon intermediate  
125 parts. A rock shaft 92 is journaled vertically in and extends through the platform at the outer side of the resetting bar 87, and a short crank 93 on said rock shaft engages against a stud 94 on the bar, as shown in Fig. 6. To the lower end  
130 of the rock shaft 92 there is secured a lever 95 which extends in a direction opposite to the crank 93 and the outer end of this lever 95 is pivoted to one end of a shifting rod 96 which is slidably supported in a post 97 on the underside  
135 of the platform. A pin or stud 98 is provided on the lower portion of the rock shaft 92 and a contractile spring 99 has one end attached to said pin or stud and its opposite end anchored upon the platform, as shown most clearly in Fig.  
140 5. This spring 99 serves to hold the parts in the position shown in full lines in Figs. 5 and 6, permitting the resetting bar 87 to normally remain in spaced relation to the ends of the several rods 63. The guide post 97 has a circular con-  
145 tour, as shown in Fig. 5, and the free end of the rod 96 is formed into a tooth 100. The carriage 32 carries, in its lower portion, a lever 101 which is pivoted in the carriage and disposed at that  
150 side thereof which is presented to the rod 96.

The end of the lever 101 is tapered, as shown at 102, to define a spear head, and, at the base of said head, the lever is provided with a notch 103. Now, referring particularly to Fig. 5, it will be noted that as the carriage travels toward the upper end of the platform the spear head 102 will ride past the tooth 100 of the rod 96 and said tooth will be engaged by the notch 103, the lever being spring-pressed outwardly so as to effect such engagement. As the carriage continues its movement, the rod 96 will be caused to move endwise, as shown by dotted lines in Fig. 5, until the head 102 encounters the post 97 whereupon the head will be deflected as it rides over the post and the rod will be released and will be returned to its initial position under the influence of the spring 99. As the rod 96 moves toward the end of the casing, as indicated by the dotted lines in Fig. 5, the rock shaft 92 will be rocked and the resetting bar 87 will be thereby pushed inwardly to reset the circuit closing rod 63, as has been described.

Slidably supported on the underside of the platform, at the upper end thereof and at the front side of the shaft 29 is a rod 104 to which is secured a collar 105 and to said collar is pivoted a hook-shaped latch 106 which extends inwardly and is spring-pressed into the path of a catch 107 on the underside of the carriage 32 adjacent the front thereof. A link 108 is also pivoted at one end to the collar 105 and at its opposite end is pivoted to a rocking arm 109 which is fulcrumed between its ends on the underside of the platform and is disposed adjacent but at the inner side of the rock shaft 77. To the inner end of the rocking arm 109 is attached one end of a retractile spring 110 which has its opposite end anchored upon the platform so that it tends constantly to hold the parts in the position shown in full lines in Fig. 5. At its fulcrum, the rocking arm 109 is provided with a crank disk 111 which is pivotally connected to a drawbar 112 having its rear end formed into a hook 113 adapted to engage a pin or stud 114 on a crank disk 115 which is pivotally supported on the underside of the platform, adjacent the controlling rod 82. A deflecting stud 116 is provided on the underside of the platform to be engaged by a cam projection 117 formed on the edge of the drawbar 112 and the draw bar is yieldably held toward said pin and the crank disk 115 by a spring 118 in an obvious manner. A crank pin 119 extending from the disk 115 engages between collars 120 secured on the rod 82 and a retractile spring 121 is attached at one end to a projection 122 on said disk 115 and is anchored at its opposite end upon the platform, this spring 121 serving to yieldably hold the rod 82 in its position resting upon the end of the latch 80 and out of engagement with the hook shoulder thereon. When the carriage 32 moves toward the upper end of the track and platform and engages and operates the rod 96, as has been just described, it continues its travel after the rod 96 is released, as will be understood upon reference to the dotted lines in Fig. 5, and this movement is continued until it impinges against and actuates the shifting lever 49 to reverse the rotation of the shaft 29, as has been previously described, whereupon reverse movement is imparted to the carriage. Upon the reverse movement, the catch 107, on the carriage, engages the hook latch 106 so that the rod 104 will then travel with the carriage, as will be understood. This travel of the rod 104 will rock the rocking arm 109 and

the drawbar 112 will then be pushed inwardly, as indicated by the dotted lines in Fig. 5, so that the hooked end thereof will engage the pin 114 on the crank disk 115. A stop pin 123 is disposed in the path of the latch 106 and, when the rearward travel of the carriage has brought the end of the latch into engagement with said pin, the latch will be shifted out of engagement with the catch 107 so that the rod 105 will be released and it will be at once returned to its initial position under the influence of the spring 110. This spring 110 is stronger than the spring 121 so that the return movement of the rocking arm 109 will be imparted to the drawbar 112 which will, during such movement, rock the crank disk 115 to swing the pin or arm 119 toward the end of the casing and, consequently, shift the rod 82 in the same direction against the influence of the spring 121 so that the head 83 will ride into engagement with the shoulder of the hook latch 80 and the rod 82 will be thereby held in the shifted position. The shifting of this rod 82 shifts the clutch 24 so that the pinion 23 will be released and the propelling shaft 17 will be actuated, and this condition will continue until one of the racers has released a latch 73 whereupon the hook 80 will be pressed downward by the crank 79 to release the head 83 and the rod 82 will be shifted to its initial position under the influence of the spring 121 exerted through the crank disk 115 and the pin 119. The shaft 29 will then be again set in motion so that the carriage 32 will be caused to travel toward the lower end of the platform. Inasmuch as the barrier 35 is carried by the carriage, it will be brought into engagement with the several racers and they will be pushed to the lower end of the platform. It will be noted, at this time, that when the carriage makes its initial movement to the upper end of the platform or track, the barrier will be carried out of the way of the racers and, when the travel of the carriage is stopped, the barrier will be over the box 59 and immediately adjacent the inner side of the same.

A coin slot 124 is formed in the top of the casing 1, at one end of the same and at the front side thereof, and this coin slot forms the outer terminal of a coin-way, indicated at 125, which is provided in any convenient manner at the front side of the platform and leads into a coin holder 126, a coin box 127 being disposed below said holder to receive the discharged coins. The deposited coin, indicated at 128, comes to rest between a fixed metallic plate 129 and a pivoted bar or plate 130 disposed within the holder 126, the coin bridging the lower ends of said plates or bars so as to close an electric circuit therethrough. The upper end of the bar 130, which is pivoted between its ends, bears against a pin 131 forming one arm of an angle lever pivoted at 132 upon the top of the coin holder 126, the other arm of the angle lever being provided at its free end with a circular disk 133 disposed within the path of the carriage 32, as shown in Fig. 9. A spring 134, acting upon the bar 130 below its fulcrum, maintains the upper end of the bar in engagement with the arm 131, and a stop pin 135, disposed in the path of the other arm of said lever, limits the movement of the lever under the influence of said spring. Upon referring to Fig. 9, it will be noted that the carriage 32 is provided with beveled end surfaces 136 so that it may ride easily against the disk 133 and actuate the same, whereupon the bar 130 will be rocked against the influence of the spring 134 and the coin will be released. The rocking of the

angle lever and the bar 130 will occur upon travel of the carriage 32 in both directions, but upon return movement of the carriage, of course, there is no resulting movement of any of the other parts, the bar 130 simply rocking idly.

The electric current is brought into the machine from the house current and a cable 137 is provided in order to plug into the house current. This cable 137 may be engaged in a plugging in socket provided in the end of the casing, and from said socket a similar cable 138 extends up to, and is fitted in, a box 139 on the underside of the platform. From this box 139, which is permanently attached to the platform, conductors 140 extend to metallic plates 141 and 142 secured upon and insulated from the platform. These plates 141 and 142 constitute distributor plates for the several circuits, the lamp 5 being connected directly with said plates through conductors 143 and 144 so that whenever current is supplied to the machine, said lamp will be energized. The lamp 4 is likewise connected directly with the distributor plates 141 and 142 through conductors 145 and 146 so that said lamp will also be energized whenever current is being supplied to the machine. From the coin-supporting plates 129 and 130, conductors 147 and 148 lead, respectively, to contact plates 149 and 150 which are secured upon the underside of the platform with their ends disposed in vertically spaced relation and normally out of contact. A conductor 151 leads from the plate 149 to one side of the motor 22 and a conductor 152 leads from the opposite side of the motor to the distributor plate 142, while the distributor plate 141 is connected by a conductor 153 with the plate 150. Consequently, when the coin comes to rest upon the ends of the coin-holding bars 129 and 130, the motor circuit will be closed through the coin, the current flowing from the plate 141 through the lines 153, 148, bar 130, the coin, the bar 129, conductor 147, conductor 151, the motor, conductor 152, and plate 142. The motor will, consequently, at once begin to operate but the coin will not be immediately discharged. When the carriage 32 comes to rest, it is a very short distance from the lower end of the platform and, therefore, when it is again set in motion, it will travel slightly toward the lower end of the track and the pusher 50 will, consequently, be actuated to reverse the rotation of the shaft 29, whereupon the carriage will again travel toward the upper end of the track. This slight movement of the carriage toward the lower end of the track will carry the barrier 35 against the racers so that any possible slight non-alinement thereof will be eliminated. Pivoted upon the platform, adjacent the contact plates 149 and 150, is a circuit closing switch arm 154 which has its ends angularly disposed so as to project into the path of the carriage 32, as will be understood upon reference to Fig. 4. When the carriage moves toward the upper end of the track, the end of the carriage will impinge against the upper end of the switch arm 154 and will rock the same into a position between the ends of the plates 149 and 150 so that it will bridge said plates and will complete a circuit therethrough, the motor circuit being then closed through said plates instead of through the coin. Immediately after the circuit is closed through the plates 149 and 150, and practically simultaneously therewith, the end of the carriage rides against the disk 133 and rocks the same so that the bar 130 will be rocked to release the coin which will thereupon drop into the recepta-

cle 127, the circuit being then broken through the members 129 and 130, as will be understood. Until the switch arm 154 has been engaged with the switch terminals 149 and 150, the lamps 7 will not be energized and it will not be possible to energize any of the signal lamps 61 inasmuch as the circuits for said lamps are dependent upon the terminal 149 being brought into circuit. The lamps 7 are in series upon conductors 155 and 156, the conductor 146 leading to the lamp 4 having the conductor 155 tapped thereinto. The conductor 156 is tapped into a conductor 157 which extends to the plate 149 and has its end secured thereto. A reducer 158 is connected, on its high side, with the distributor plate 142 through a conductor 159 and, on the same side, is connected with the terminal 149 through a conductor 160. A conductor 161 leads from the low side of the reducer to the conductor strip 69 and a conductor 162 leads from the same side of the reducer to the conductor strip 68 so that the circuits for the signal lamps will be formed through the low side of the reducer.

From the foregoing description, taken in connection with the accompanying drawings, it will be seen that I have provided a very compact and efficient mechanism whereby a realistic imitation of a race may be had whenever desired by the deposit of a suitable coin. The operating parts are all completely enclosed so that, unless the electric circuit is closed by the deposit of a coin, the mechanism will not operate. The lamps 4 and 5 serve as pilot lights to indicate whether or not the machine is receiving current and is, therefore, to be considered operative, while the lamps 7 are not energized until the race starts so that they serve to give notice that the race is starting. The impelling balls will strike the slides of the racing elements with various degrees of force and at irregular intervals so that the racers will be propelled along the track unevenly and it is entirely a matter of chance as to which one will first reach and actuate a signal lamp. When a signal light is energized, at the end of the race, the operating gearing is automatically set to return the carriage to the lower end of the track and this movement, of course, brings the barrier against the racers so that they will be returned approximately to the starting position. The signal light may continue to burn until another race is started by the deposits of a coin, whereupon the carriage will move to the upper end of the track and will extinguish the light and set the mechanism to cause the racers to move along the track. The mechanism operates very easily and smoothly, and the simulation of a race is very fascinating.

Having thus described the invention, I claim:

1. In a game apparatus for simulating a race, the combination of a straight track, a plurality of racers mounted for independent movement along the track, a barrier disposed across the track and adapted to engage against the racers for aligning them transversely at the starting point of the track, means for moving the barrier from the racers to a position beyond and adjacent the finish point of the track and holding it as said position, means for moving the racers along the track independently and at various speeds from the starting point to the finish point of the track, and means whereby the barrier-moving means will be actuated to re-engage the barrier with the racers and return the barrier and the racers to the starting point.

2. A game apparatus for simulating a race comprising a track, racers arranged on the track, a carriage disposed at one side of the track for movement in a path parallel therewith, a barrier extending from the carriage in front of the racers to align the racers transversely of the track at the starting point, means for moving the racers along the track independently and at various speeds, a signal at the finish point of the track to be activated by the winning racer, means for effecting travel of the carriage in opposite directions longitudinally of the track, and means actuated by the carriage for setting the signal for operation.
3. A game apparatus for simulating a race comprising a track, racers arranged on the track, a carriage disposed at one side of the track for movement in a path parallel therewith, a barrier extending from the track in front of the racers to align the racers transversely of the track at the starting point, means for moving the racers along the track independently and at various speeds, a signal at the finish point of the track to be activated by the winning racer, means for effecting travel of the carriage in opposite directions longitudinally of the track, means actuated by the carriage for setting the signal for operation, and means actuated by the carriage at the finish point of the track for rendering active the means for moving the racers along the track.
4. In a game apparatus for simulating a race, the combination of a track, racers for movement along the track, a carriage arranged at one side of the track, a barrier extending from the carriage to engage the racers and align them transversely of the track at the starting point, means for moving the carriage longitudinally of the track, means for moving the racers along the track independently and at varying speeds, a motor common to both said means, clutch means for connecting the motor with the means for moving the racers or the means for moving the carriage, and means actuated by the carriage at the finish point of the track whereby the carriage will be held stationary at the finish point of the track, the racers will then be moved from the starting point to the finish point and the carriage will then be returned to the starting point to cause the barrier to engage the racers and return them to the starting point.
5. In a game apparatus, a track, a plurality of racers on the track, pilot lights arranged adjacent the opposite ends of the track, other lights disposed at one side of the track, means for constantly illuminating the pilot lights, means for automatically moving the racers along the track from the starting point to the finish point and returning them to the starting point, and means for simultaneously energizing the second-mentioned lights as the racers leave the starting point.
6. In a game apparatus for simulating a race, the combination of a track, racers on the track, a plurality of signal lamps arranged adjacent the finish point of the track, means for moving the racers along the track independently and at various speeds, means whereby a racer first to reach the finish point will energize one of the signal lamps, a carriage, means for moving the carriage longitudinally of the track at one side of the same, and means controlled by the travel of the carriage whereby the energized signal lamp will be de-energized and set for a second operation and the racers will be returned to the starting point.
7. In a game apparatus for simulating a race, the combination of a track, racers on the track, means for moving the racers along the track independently and at various speeds, a plurality of signal lamps adjacent the finish point of the track, circuit closers slidably mounted adjacent the respective signal lamps and normally in circuit-breaking position, a plurality of latches engaging the respective circuit closers and disposed in the paths of the racers whereby any racer first to reach the finish point will engage a latch and release the same from the engaged circuit closer, means for shifting the released circuit closer into the circuit closing position whereby to energize the associated signal lamp, a carriage disposed at the side of the track, means for moving the carriage longitudinally of the track, a barrier extending from the carriage to align the racers at the starting point and to return them to the starting point upon reverse travel of the carriage, and means adjacent the finish point for returning the released circuit closer to normal position and activating the means for moving the racers along the track.
8. In a game apparatus for simulating a race, the combination of a track, racers mounted on the track, means for moving the racers from the starting point of the track to the finish point thereof independently and at various speeds, a plurality of signal lamps adjacent the finish point of the track, a plurality of circuit closers arranged adjacent the respective lamps and controlling the illumination thereof, a series of latches arranged to engage the respective circuit closers and hold them normally in position to maintain the lamp circuits broken, yieldable means for moving the circuit closers into circuit closing position, and means actuated by the carriage at the finishing point for returning the circuit closers to broken circuit position.
9. In a game apparatus for simulating a race, the combination of a track, racers mounted on the track for movement along the same, means for moving the racers independently and at various speeds from the starting point of the track to the finish point thereof, a plurality of signal lamps arranged at the finish point, a plurality of circuit closers slidably mounted adjacent the circuit lamps and controlling the illumination thereof, spring elements acting upon the respective circuit closers to move them to circuit closing position, latches arranged adjacent the respective circuit closers and normally holding them in broken circuit position, said latches being aligned with the racers to be actuated thereby, a re-setting bar slidably supported at one side of the signal lamps and the circuit closers, means for yieldably holding the re-setting bar in normal position, and means for actuating said re-setting bar whereby to return an activated circuit closer to broken circuit position.
10. In a game apparatus for simulating a race, the combination of a track, racers arranged on the track, a plurality of signal lamps, means whereby a racer first to reach the finish point of the track will effect illumination of the respective lamp, means for moving the racers independently and at various speeds along the track from the starting point to the finish point, a carriage mounted at one side of the track, means for moving the carriage longitudinally of the track in a path parallel therewith in opposite directions, a barrier extending from the carriage in

position to impinge against the racers whereby to align them transversely of the track at the finish point and to return them simultaneously from the finish point to the starting point, a controlling rod slidably mounted below the track, operative connections between said rod and the operating means whereby the means for moving the racers from the starting point of the track and the means for moving the carriage will be alternately actuated, means actuated by the carriage for extinguishing an illuminated signal lamp, and means actuated by the carriage at the finish point of the track whereby the shifting rod will be moved to arrest the operation of the means for moving the carriage and set in motion the means for moving the racers to the finish point and then arrest the last-mentioned means and cause the carriage-moving means to operate whereby to return the carriage, the barrier and the racers to the starting point.

11. In a game apparatus for simulating a race, the combination of a track, racers on the track, means for moving the racers independently and at various speeds from the starting point to the finishing point, a plurality of signal lamps at the finishing point, means whereby one of said lamps will be illuminated by the racer first to reach the finishing point, said means including a slidably mounted circuit closer and yieldable means for moving said circuit closer into circuit closing position, a re-setting bar disposed at one side of the series of circuit closers in position to be engaged by the actuated circuit closer, a rock shaft arranged adjacent said re-setting bar, means whereby the rock shaft may shift the bar to re-set the circuit closer in broken circuit position, a carriage arranged at one side of the track, a barrier extending from the carriage to engage the racers whereby the racers may be returned from the finish point to the starting point, means for moving said carriage longitudinally of the track in opposite directions, a lever extending from said rock shaft, yieldable means for holding said rock shaft in normal position, a shifting rod pivoted to said lever and slidably mounted below the track, an arm pivoted on the carriage and arranged to engage said shifting rod whereby the rock shaft will be rocked to move the re-setting bar as the carriage reaches the finishing point of the track, and means for releasing said arm from the shifting rod.

12. In a game apparatus for simulating a race, the combination of a track, a plurality of racers mounted on the track, means for moving the racers independently and at various speeds along the track from the starting point to the finishing point, a carriage disposed at one side of the track, means for moving the carriage longitudinally of the track in opposite directions, a barrier extending from the carriage to engage the racers and align them transversely of the track at the starting point and to reengage them at the finishing point for returning them simultaneously to

the starting point, a shifting rod slidably mounted below the platform, means controlled by said rod whereby the means for moving the carriage and the means for moving the racers independently will be alternately operated, a latch slidably mounted near the finish point of the track, a catch on the carriage adapted to engage said latch as the carriage reaches the finishing point, a rocking arm mounted below the platform and having one end connected with said latch, means actuated by the carriage for reversing the travel of the same whereby the catch on the carriage will ride into engagement with the latch and will then be moved in the opposite direction to shift the latch, means for releasing the latch at the limit of said reverse travel, and means actuated by said rocking arm whereby said shifting rod will be moved to arrest the travel of the carriage and cause the means for moving the racers to operate.

13. In a game apparatus for simulating a race, the combination of a track, a plurality of racers mounted on the track, means for moving the racers independently and at various speeds along the track from the starting point to the finishing point, a carriage disposed at one side of the track, means for moving the carriage longitudinally of the track in opposite directions, a barrier extending from the carriage to engage the racers and align them transversely of the track at the starting point and to re-engage them at the finishing point for returning them simultaneously to the starting point, a shifting rod slidably mounted below the platform, means controlled by said rod whereby the means for moving the carriage and the means for moving the racers independently will be alternately operated, a latch slidably mounted near the finish point of the track, a catch on the carriage adapted to engage said latch as the carriage reaches the finishing point, a rocking arm mounted below the platform and having one end connected with said latch, means actuated by the carriage for reversing the travel of the same whereby the catch on the carriage will ride into engagement with the latch and will then be moved in the opposite direction to shift the latch, means for releasing the latch at the limit of said reverse travel, means actuated by said rocking arm whereby said shifting rod will be moved to arrest the travel of the carriage and cause the means for moving the racers to operate, a drawbar connected with said rocking arm, a crank engaged with said shifting rod, said crank being engaged by the drawbar in one direction of movement, means for releasing the drawbar from said crank, yieldable means for holding the crank and rocking arm in normal position, a latch engaged by said shifting rod to hold the rod normally in the position in which the carriage will operate, and means for releasing said latch whereby the rod will reverse the operating means.

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