April 6, 1937. B. W. WILLIAMS ET AL 2,076,054

RACE GAME APPARATUS

Filed Jan. 15, 1936 6 Sheets-Sheet 1

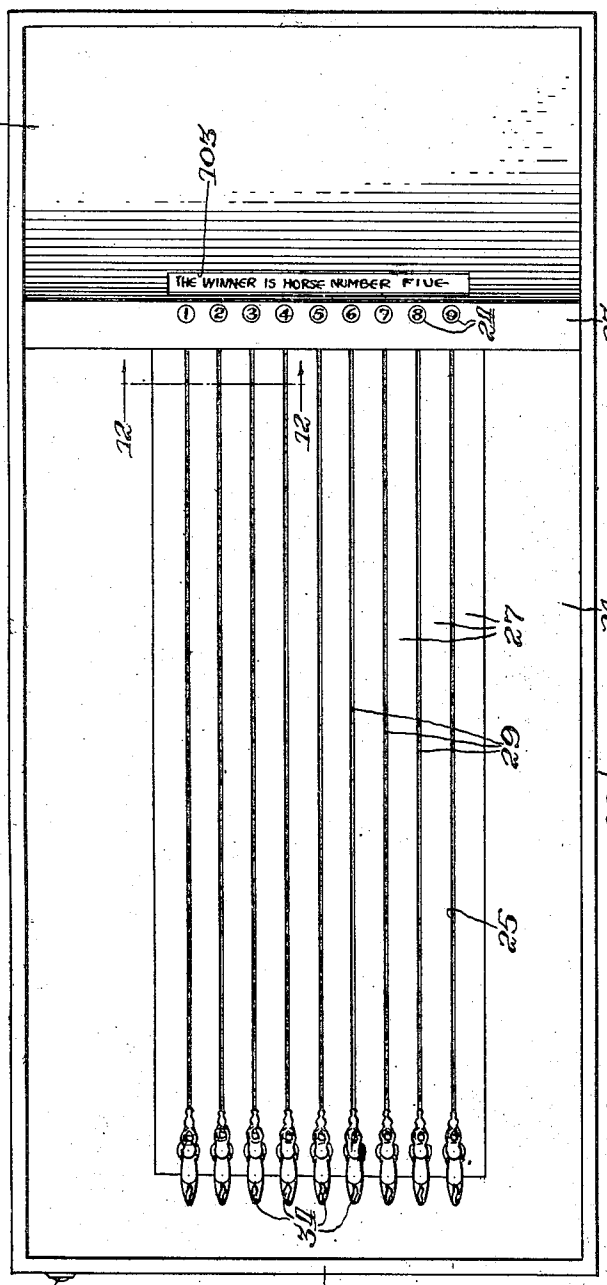


Fig. 1.

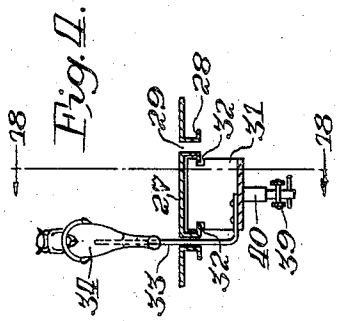


Fig. 4.

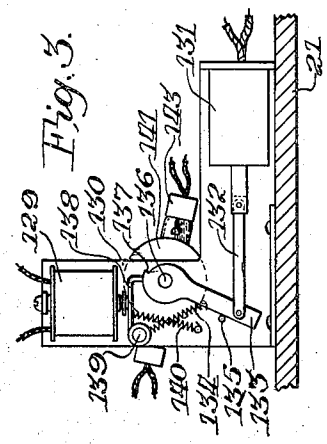


Fig. 3.

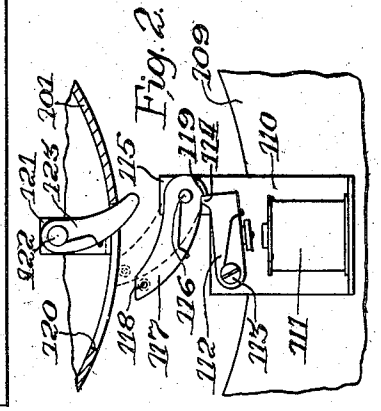


Fig. 2.

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RACE GAME APPARATUS

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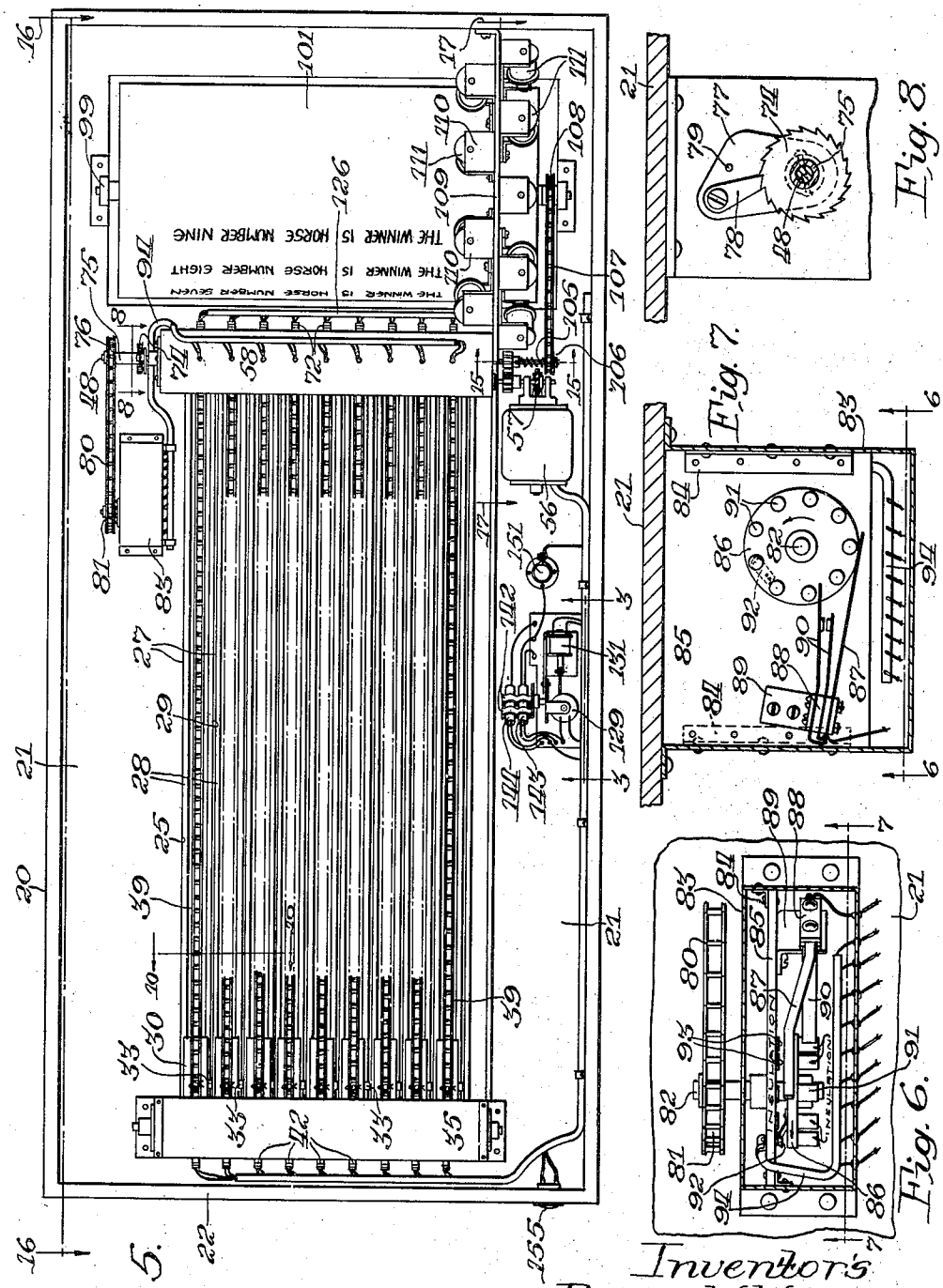


Fig. 5.

Fig. 8

Fig. 7.

Fig. 6.

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RACE GAME APPARATUS

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Fig. 9.

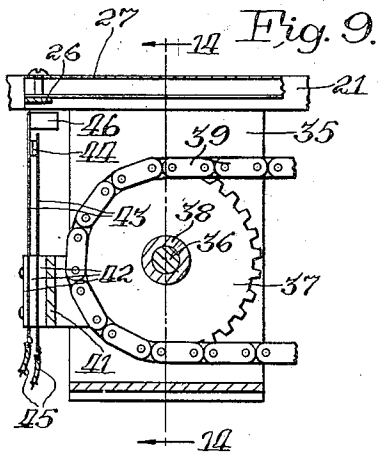


Fig. 10.

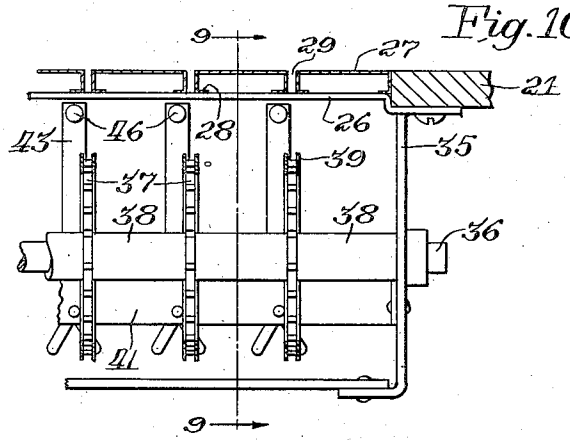


Fig. 11.

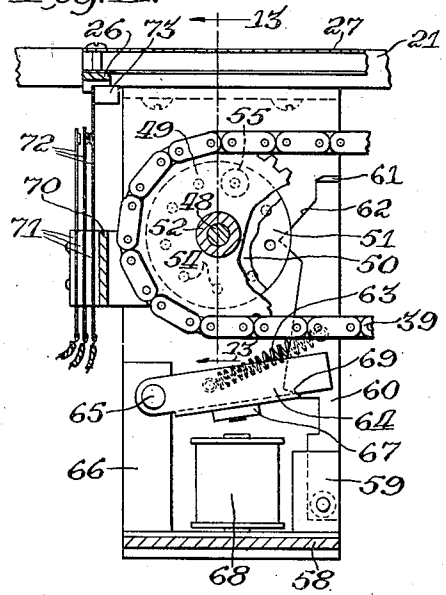
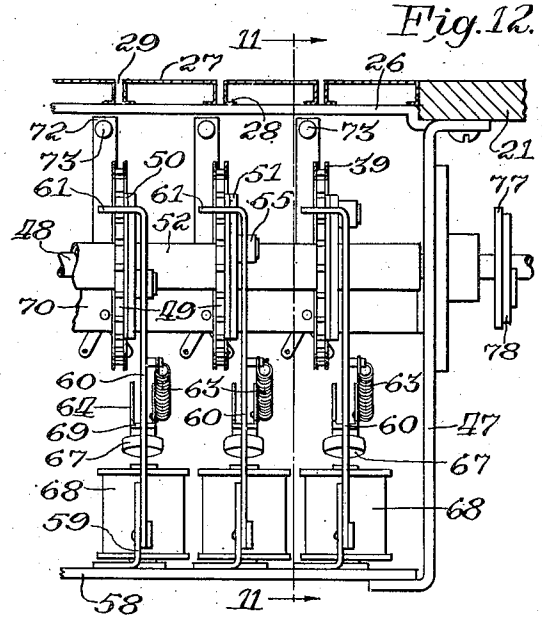


Fig. 12.



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RACE GAME APPARATUS

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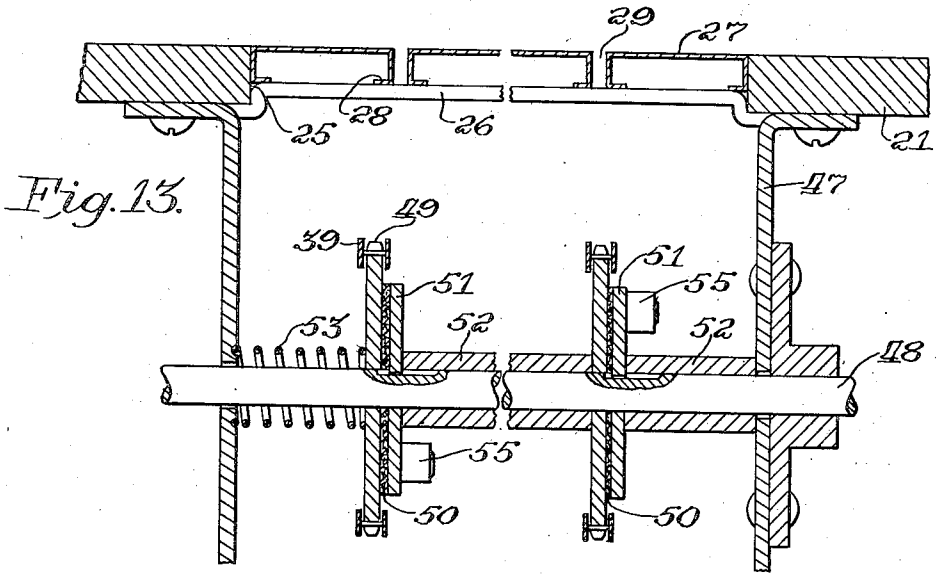


Fig. 13.

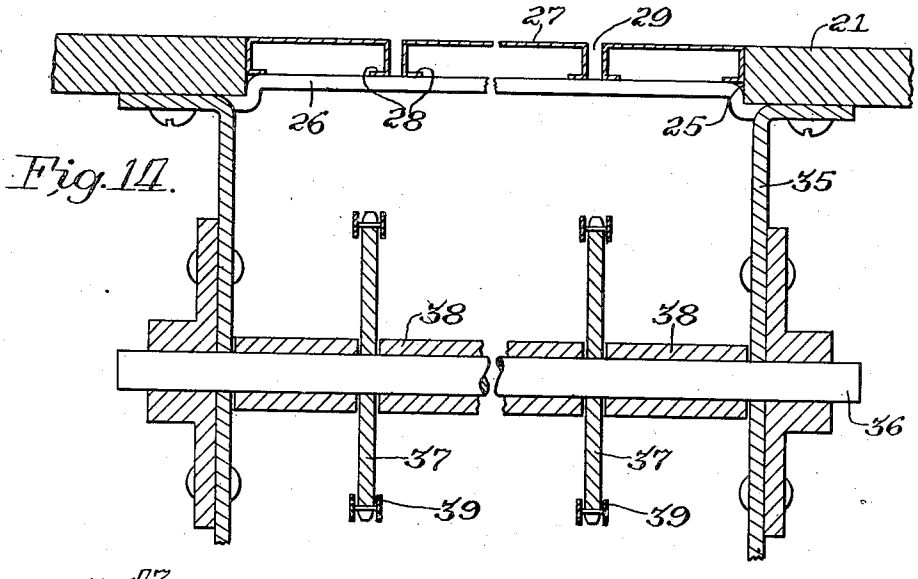


Fig. 14.

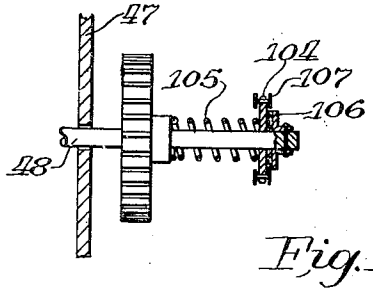


Fig. 15.

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RACE GAME APPARATUS

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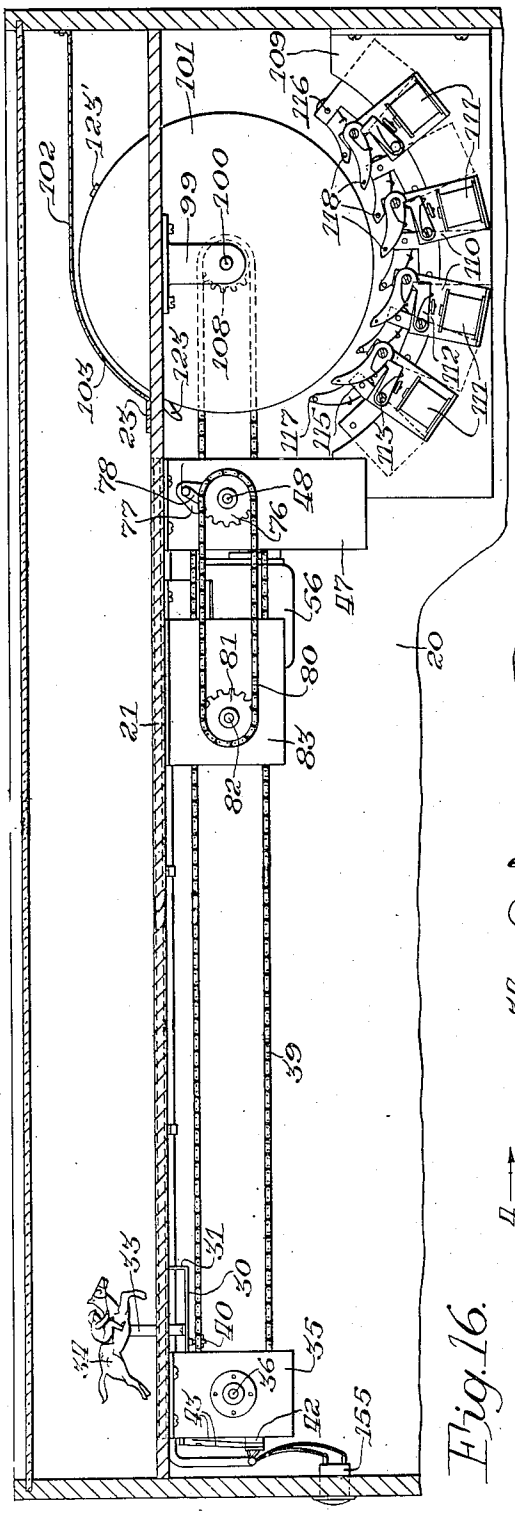


Fig. 16.

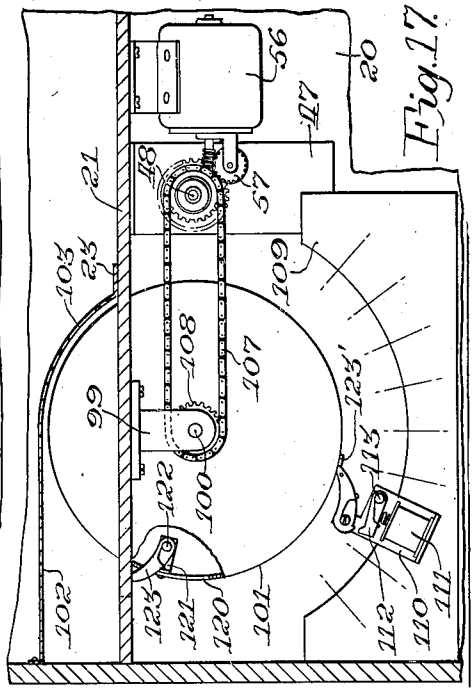


Fig. 17.

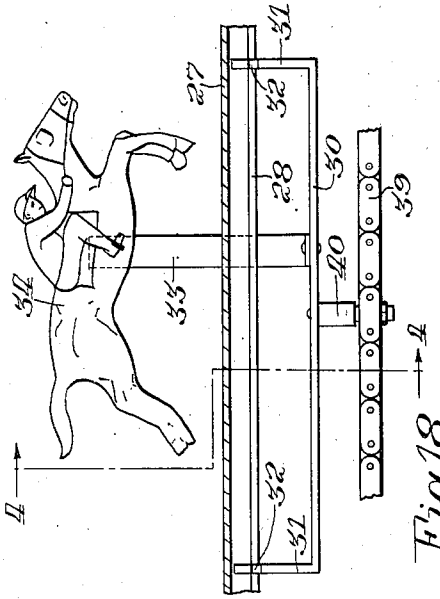


Fig. 18.

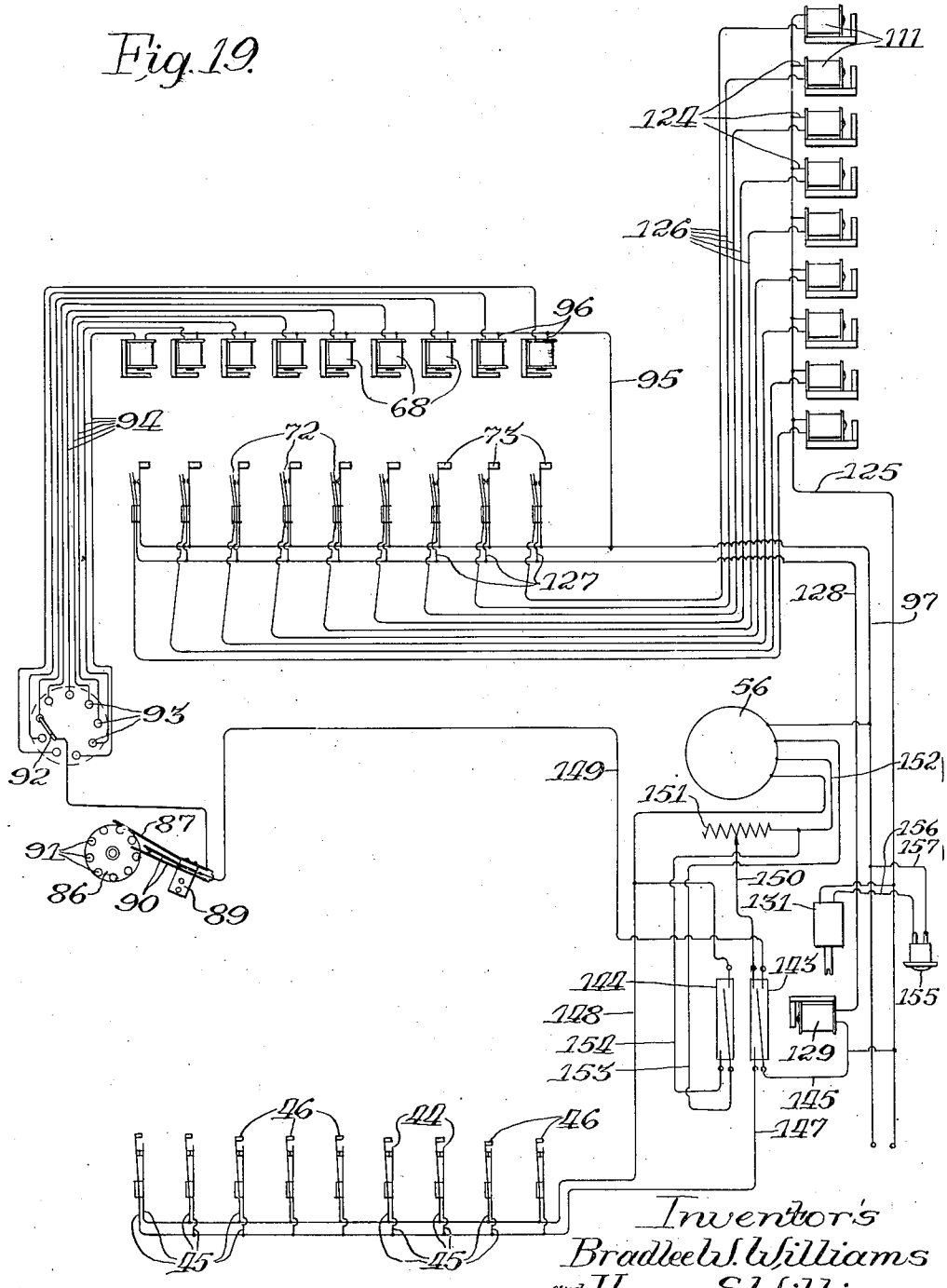
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RACE GAME APPARATUS

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Fig. 19.



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Patented Apr. 6, 1937

2,076,054

UNITED STATES PATENT OFFICE

2,076,054

RACE GAME APPARATUS

Bradlee W. Williams and Homer S. Williams, Chicago, Ill., assignors to Bally Manufacturing Co., Chicago, Ill., a corporation of Illinois

Application January 15, 1936, Serial No. 59,279

26 Claims. (Cl. 273—86)

The invention relates to a race game apparatus, the main purpose of which is to afford amusement to the player, or players, thereof.

Generally, the game is of that type in which a suitable table is provided with a plurality of race-ways, in each of which is moved an appropriate racing object. The group of racing objects, when the game is released for play, simultaneously leaves a starting position to be moved toward an objective or finish line. In their movement means is operative to vary the rate of travel of the several objects in a differential manner, so that it will be impossible to predict which race object will win the race by first reaching the finish line. Accordingly, the maximum amusement value is created for the player who tries to guess which object will win the race.

Games of this type have been previously built and used, but it has been found that they were complicated in structure, unduly costly, and not adequately fool-proof in operation.

The main object of the present invention is to provide an improved race game apparatus.

Another object is to provide a plurality of race object endless chain or belt carriers in combination with an improved simple, and effective means for differentially varying the speed or drive of the said chains, so that the racing objects will advance toward the finish line in an unpredictable manner;

Another object is to provide an improved electrically driven game apparatus and an electromechanical control means for varying the travel of the several race objects.

Still another object of the invention is to provide an improved mechanism for designating automatically the winning race object at the termination of the race.

It is also an object to provide an improved driving mechanism for the race object carriers.

Further, it is an object to provide an improved timing mechanism in combination with electromagnetic clutch mechanism that governs the drive for the respective chains.

Another object is to provide an improved means for slidably mounting the race objects for movement along race-ways formed in a table.

Other important objects will be apparent to those skilled in this art as the disclosure is more fully made.

In the present practicable embodiment of the invention to be disclosed, the race objects will be in the form of horses to simulate a horse race. Obviously these objects may assume other forms, such for example, as automobiles, walking race automatons, rabbits, or sail boats, and the like. In other words, the type of racing object to be employed is optional, for all types mentioned, and others, may be used with the game apparatus of this invention.

Briefly, these desirable objects are attained in an illustrative embodiment of the invention by providing a suitable cabinet, which carries a horizontal table formed with the desired number of parallel, spaced, slotted ways. At each end of the table, and on its under side, is a bracket carrying a cross shaft structure for mounting a plurality of spaced sprocket wheels. The wheels on one end of the table are idlers and those at the other end are drivers; the wheels on the respective shaft structures being alined in pairs to carry a plurality of endless chains. These chains correspond in number with the slotted ways in the table so that each chain is fixedly connected at one point with a mounting movable in a slotted way for carrying a race horse or other simulated object.

An electric motor, of the reversible type, is geared to drive the driven shaft structure, there being operatively associated with each drive sprocket wheel a friction clutch means and an electromagnet. The drive sprockets are free for independent rotation and the friction means normally holds the sprockets for driving the same. A timing mechanism is also driven by power derived from the motor to cause successive energization of the electromagnets whereby brakes or stop devices are successively applied to restrain movement of the drive sprocket wheels for temporarily checking the movement of the respective chains and race objects, whereby to vary the rate of travel of the simulated horses.

A mechanical control means is provided to vary the times when the drive sprockets again are effective to drive the race objects, so that it will mathematically, or otherwise, be impossible to predict or foretell the cycles of movement of the race objects. When one of the objects reaches the finish line, a switch is closed to cause energization of an auxiliary electromagnetic means to control the setting of a driven rotatable drum located in the cabinet at the finish or goal end of the table, said drum also being rotated by power derived from the electric motor. This drum carries appropriate legends to indicate or designate the winning horse, said legend being viewed through a window or slot formed in a cover placed over the drum. Such indicator is necessary in the event several horses appear in a close finish.

The winning horse further closes another switch to cause energization of another electromagnetic device to operate an appropriate switch to establish circuits to cause reverse rotation of the motor, whereupon all chains are reversely driven to return all horses to their starting positions and aline same in a transverse row prepara-

tory to the start of another race. The horses, of course, do not all return together; however, the controls are so arranged that when the last horse returns to the starting position the motor circuit is opened to cause cessation of its operation so that all parts come to rest preparatory to starting the next race. So much, it is believed, will suffice in giving a general view of the improved game apparatus.

In the accompanying sheets of drawings this preferred form of the invention is illustrated in detail. In these drawings:

Figure 1 is a general plan view of the game;

Figure 2 is a detail side elevational view of one of the electromagnetic control units and the stop detent on the winner indicating drum for causing the latter to stop in its rotation at the termination of a race to designate the winner;

Figure 3 is a detail, side elevational view of the electromagnetic control for the tilting mercury type motor switches, the view being taken along the line 3—3 of Figure 5, looking in the indicated direction;

Figure 4 is a detail, cross sectional view, taken along the line 4—4 of Figure 18, to show the mounting of the race objects in the table;

Figure 5 is a general, bottom plan view of the game structure;

Figure 6 is an enlarged, bottom plan view of the timer for the electromagnetic clutch controls, partly in section, taken along the line 6—6 of Figure 7, looking in the direction of the arrows;

Figure 7 is a side elevational view, partly in section, through the same timer unit, taken along the line 7—7 of Figure 6, looking in the indicated direction;

Figure 8 is a detail, elevational view, partly in section, taken along the line 8—8 of Figure 5, looking in the direction of the arrows;

Figure 9 is a detail side view, partly in section, of the starting end of the drive chains showing an associated idler wheel, taken along the line 9—9 of Figure 10, looking in the direction indicated;

Figure 10 is a similar view, showing the same parts, the section being taken along the line 10—10 of Figure 5, looking in the indicated direction;

Figure 11 is a sectional side view through the driven end of the drive chain structure, taken along the line 11—11 of Figure 12, looking in the indicated direction;

Figure 12 is a fragmentary, enlarged, detail, cross sectional view through the structure shown in Figure 11, taken approximately along the line 12—12 of Figure 1, looking in the designated direction;

Figure 13 is an enlarged, detail, transverse sectional view of the drive shaft structure, taken along the line 13—13 of Figure 11;

Figure 14 is a similar view, but taken along the line 14—14 of Figure 9 to show that structure;

Figure 15 is a detail, transverse, sectional view, taken along the line 15—15 of Figure 5, looking in the indicated direction;

Figure 16 is an enlarged side elevational view of the game as viewed from the section line 16—16 of Figure 5, looking in the indicated direction;

Figure 17 is an enlarged, detail, side elevational view, partly in section, to show the indicating drum, its drive, and control, taken along the line 17—17 of Figure 5, looking in the indicated direction;

Figure 18 is an enlarged side elevational view, partly in section, through the race object mounting, taken along the line 18—18 of Figure 4, looking in the direction indicated; and,

Figure 19 is a wiring diagram for the electrical structure of the game.

The game is housed in any appropriate box or cabinet 20, the same carrying a horizontal table 21, which extends from the front wall 22 of the cabinet to a cross plate 23 near the opposite or rear end of the cabinet. This strip 23 is marked in spaced relation with numbers, in the present instance from 1 to 9, since there are to be provided nine simulated race horses in the present disclosure for purposes of illustration. Obviously, this number may be varied as desired, and the numbers designate the nine horses.

As shown in Figures 1, 13 and 14 the intermediate surface of the table 21 between its side edges, is cut out to provide a large opening 25 running the length of the table 21. At its ends are mounted cross supports 26 for carrying ten longitudinally running, inverted channel strips 27 having inturned lower flanges 28 to provide tracks. These channel strips are transversely spaced apart to provide nine parallel raceway slots 29 as shown in Figure 1.

Looking at Figures 4 and 18 it will be seen that nine of the channel strips carry for guided, sliding movement, an elongated sheet metal slide 30 having a horizontal bottom and upturned front and rear ends 31, which ends near their upper portions are slotted as at 32 to fit and ride on the flanges 28. The slide 30 at its mid-portion carries to one side thereof an upstanding rigid support 33, which extends upwardly through a slot 29 as shown. The upper projected end of each support 33, above the table has securely fastened thereto, an appropriate racing object, such for example, as the simulated race horses 34 shown. It will thus be seen that ten channel strips 27 are provided to create nine slotted race ways 29. Only nine slots are formed because each support 33 is offset to one side of its channel guide strip. The tenth strip 27 is merely provided to create a balanced, symmetrical appearance.

The forward, or starting end of the board, or table 21, carries on its under side, a depending U-shaped bracket 35, which is disposed transversely. See Figures 5, 9, 10, 14 and 16. Journaled in the ends of the bracket is a transverse, horizontal idler shaft 36, which has loosely mounted thereon for independent rotation, nine sprocket wheels 37, held apart in suitably spaced relationship by collars, or spacer sleeves 38. Each sprocket wheel has respectively wrapped therearound the forward loop, of nine endless sprocket chains 39, which run horizontally below the table.

Each chain 39 carries at fixed transversely alined points a fastening device 40 (see Figure 4) for rigidly securing the slides 30 to the upper run of the chains. The bracket 35 along its front side further carries a cross bar 41 as shown in Figures 9 and 10. This bar 41, in alinement with each slide 30, carries spaced insulator strips 42, which serve in mounting separate pairs of conductor spring arms 43, extending vertically with contact points 44 at their upper ends normally held engaged because of the spring in the arms 43. Wires 45 respectively lead in parallel from the arms 43 as shown in Figures 9 and 19. One of the arms, the rear one in each pair, extends higher than its mate, said higher arm 43 carrying a bumper member 46 in the path of

movement of an end wall 31 of the alined slide 30. When the slide is in starting position the end 31 thereof engages the bumper 46 to spread the arms 43 apart to open the contacts 44 and break the circuit in which they are included, for a purpose later to appear. When the slides leave the bumper, of course, the contacts 44 automatically close.

At the winning end of the table, the same carries on its under side another transverse bracket 47 also U-shaped, and carrying as shown in Figures 11, 12 and 13, a transverse drive shaft 48 on which are loosely mounted nine sprocket wheels 49, around which are respectively wrapped the nine drive chains 39. Around the shaft 48, adjacent a face of each wheel 49, is a friction clutch disk 50, and adjacent each disk 50 the shaft has keyed thereto, a disk 51. Each drive sprocket assembly thus includes a loose wheel 49, a loose disk 50, and a keyed disk, or wheel 51, with the friction disks 50 respectively sandwiched between a wheel 49 and wheel 51. These unit assemblies are properly spaced apart along the shaft 48 by means of spacers 52. A spring 53 between one end of the bracket 47 and the adjacent wheel 49 serves to press all units yieldably to hold the friction disks in engagement with the respective wheels 49, 51 in each assembly.

As indicated in Figure 11 each wheel 51 is provided with a circumferentially spaced series of holes 54 in any one of which may be mounted a transversely extending cylindrical pin 55, which may include a roller, if desired.

The underside of the table 21 carries a reversible type of electric motor 56 as shown in Figures 5 and 16, the motor having a shaft to drive a worm gear set 57, thereby turning the drive shaft 48. See also Figure 17.

The depending ends of the bracket 47 carry a transverse, horizontal plate 58 as shown best in Figures 11 and 12, said plate carrying nine upright brackets 59 for pivotally mounting a series of nine upright levers 60. Each lever at its upper end is formed with a bent end to provide a dog 61 adapted to be moved into engagement with the teeth on the adjacent sprocket wheels 49. Below this end 49, each lever 60 includes a cam, or wedge surface 62 adapted to lie respectively in the path of movement of the pins 55 on the wheels 51.

Each lever 60 at a point midway or so between its ends has connected to it one end of a pull spring 63, the other end of which is connected to a channel shaped lever 64 pivoted at 65 to a bracket 66 mounted on the plate 58, as shown. Each lever 64 includes a bight portion carrying on its under face an armature element 67 located in position to be attracted by an electromagnet 68. Nine of these magnets are mounted on the plate 58, one for each unit now being described. Further, each lever 64 has the bight thereof stopped short of the end of the lever thereby providing a stop shoulder 69 and extended sides to span the respective levers 60.

In the position of the parts shown in Figures 11 and 12, the sprocket wheels 49 drive the chains 39. However, when a magnet 68 is energized, the associated lever 64 is pulled down, the shoulder 69 leaving the lever 60, whereupon the spring 63 is operative to pull the lever 60 toward the adjacent sprocket wheel 49 to engage the dog 61 in the teeth thereof for locking the wheel 49 temporarily against rotation. The loose friction disk 50 permits this to happen. However, the wheel 51 keyed to the shaft 48 continues to turn and eventually its pin 55 rides against the surface 62 to cam or wedge the lever 60 back to its position free of the wheel 49, it being understood that the magnet 68 is only momentarily energized. As the lever 60 thus is moved to its wheel releasing position the spring 63 is effective to raise the armature lever 64 and eventually the shoulder 69 locks with the lever 60 to hold the parts in the position shown in Figure 11. With the sprocket wheel 49 thus unlocked the friction disk 50 again serves to drive the same and its associated chain 39. By this means the chains move and stop to advance the horses carried thereby.

The bracket 47, on its rear side, carries a cross bar 70 as appears in Figure 11 for mounting adjacent each finishing end of the strips 27, an insulator pack 71 for carrying separate switch units, respectively comprising groups of three spring arms 72 including contacts, normally held open by the springiness of the stock, said spring arms extending upwardly with one arm in each group higher than the others in the same group and carrying a bumper element 73. There are nine such switch units with each presenting a bumper 73 in the path of movement of the slides 30, so that when any slide reaches the race finish line, it will engage and close the switch unit for a purpose presently to appear.

A timer mechanism is provided and driven from the shaft 48 for causing successive energization of the nine drive regulating electromagnets 68. This timer will next be described, and reference is now made to Figures 5, 6, 7 and 8.

The end of the drive shaft 48 away from the motor 56, projects beyond the end of the bracket 47, where it carries loose thereon a ratchet wheel 74 having a long hub 75, which at its outer end includes an integral sprocket wheel 76. Adjacent the inner face of the loose wheel 74 the shaft 48 has keyed thereto an arm 77 (see Figure 8) at the free end of which is pivotally mounted for free swinging movement a pawl or dog 78, the same in one direction being limited in its movement by a pin 79 also carried on the arm 77.

A sprocket chain 80 driven from the sprocket wheel 76 (see Figure 16) drives a sprocket wheel 81 fast on a shaft 82 journaled transversely in a housing 83 suspended from the underside of the table 21. By means of angle bars 84 the box 83 carries a vertical insulation plate 85 in which the shaft 82 is also journaled and projects therethrough so that it may carry a vertical timer wheel 86 made of conductor material.

The edge of this wheel is constantly wiped by a conductor spring 87 anchored at its other end in an insulated pack 88 on a bracket 89 carried by the plate 85. The pack 88 also carries a pair of spring contact bars 90 one of which is longer than the other to dispose same in the path of movement of a series of insulated pegs or pins 91 carried in a circular spaced series on the face of the wheel 86 away from the plate 85.

The face of the wheel 86 adjacent the plate 85 (see Figure 6) carries a conductor wiper 92 adapted to wipe and contact a circular series of conductor buttons 93 mounted in the plate 85. As shown best in Figures 6 and 19, separate wires 94 lead respectively from each of these buttons 93, of which there are nine, to each of the nine electromagnates 68, heretofore described.

A wire 95 from a main power line 97 with a suitable source of energy, is provided with taps 96 respectively into said nine electromagnets 68 as shown in Figure 19. In this figure the wire shown

as connected between the wiper 92 and conductor 87 is purely illustrative and is to be considered diagrammatic only. The exact structure can be seen in Figure 6. It will be seen that the wire 97 additionally is provided with nine taps 98 respectively leading into the nine spring switch units 72, heretofore described, and located at the finish end of the nine race ways 29.

As shown in Figures 2, 5 and 16 the rear end of the table 21 in back of the bracket 47 carries on its under side, journal brackets 99 for rotatably mounting a transverse horizontal drive shaft 100 to carry a cylindrical drum 101, which projects upwardly through an appropriate opening formed in the table 21. This drum is covered by a suitable cover plate 102, which includes a transverse window opening 103 to enable reading of legends on the drum, such as, "The winning horse is number nine".

As seen in Figure 17 the shaft 48 carries a sprocket wheel 104 (see also Figure 15) loose on the shaft, but pressed by a spring 105 against a disk 106 pinned fast to the shaft and having a friction facing 107 to drive the sprocket wheel 104. Said wheel 104 drives a chain 107, which in turn drives a sprocket wheel 108 fast on the shaft 100, whereby to drive the drum 101.

At one end of the drum and therebelow the cabinet 20 appropriately carries a bracket 109 (see Figures 16, 17 and 5), which provides an upper arcuate surface as shown to conform to the shape of the cylinder 101. This wall or bracket 109 carries in alternate disposition on opposite faces thereof, nine brackets 110 (see also Figure 2), each bracket respectively carrying an electromagnet 111 of which there are nine arranged arcuately and appropriately spaced apart.

Each bracket carries an armature 112 on a pivot 113, with a spring, as shown in Figure 2, serving normally to press the armature upwardly or away from the electromagnet. Further, each armature at its free end includes a stop 114. Each bracket 110 includes an upstanding portion 115 carrying a horizontal pivot 116 for pivotally mounting a dog 117, having at its free end a transverse pin 118 for a purpose presently to appear. Each dog 117 is spring pressed upwardly toward the drum 101 and also includes at its heel end a shoulder 119 to cooperate with the stop 114 for normally holding the dog 117 in the full line position shown in Figure 2.

At one portion in its periphery the drum 101 is formed with a cut out opening 120 adjacent which is an inwardly extending radial bracket 121 carrying a pivot 122 for a radially outwardly extending dog 123, the same normally being spring pressed against the edge of the opening as shown in Figure 2, the dog 123 projecting into the path of movement of the dogs 117 and particularly the pins 118 thereon. The drum 101 carries a stop 123' for a purpose to appear.

Looking at Figure 19 it will be seen that these nine electromagnets 111 are respectively connected by taps 124 with a main power line 125, leading from a suitable source of energy. Further, each electromagnet 111 is connected by a wire 126 leading respectively to the nine finish switches 72 heretofore described. Each switch 72 also is connected by a wire 127 with a line wire 128 that connects with an electromagnet 129.

Looking at Figures 3, 5 and 19 the magnet 129 is mounted on a bracket 130 suitably carried by the underside of the table 21 or the adjacent wall of the cabinet. This bracket 130 also mounts a solenoid 131 having a core operating a link 132, which at its free end is pivotally connected to an arm 133 that normally is pulled by a spring 134 to back the arm against a stop pin 135 also carried on the bracket. This arm 133 is rockably mounted with a horizontal shaft 136, the portion of the arm surrounding the shaft being enlarged as a wheel which includes a cam notch 137.

This notch 137 is cooperable with the hook end on an armature 138 pivoted at 139 to the bracket 130, a spring 140, serving normally to hold the said armature away from the electromagnet 129. The shaft 136 extends through the bracket to carry on the other side of the bracket a disk 141 carrying spring clamps 142 for mounting a pair of tilting type mercury switches 143 and 144.

Referring now to Figure 19 it will be seen that the wire 128 leads to the electromagnet 129 and a wire 145 leads from the latter to the mercury switch 143. A tap 146 connects the wire 145 with the main line 125, as shown. A wire 147 goes from the switch to be connected with one half of the wires 45 for the switches 46, while the other tap 45 of these switches goes into a wire 148 leading to the motor 56.

A wire 149 leads from the switch 143 to the switch 90 of the timer and another wire 150 leads from the same switch 143 into a variable resistance 151 connected by a tap 152 to the motor 56. A wire 153 leads from the other mercury switch 144 to the motor 56 and another wire 154 also leads from the switch 144 to the line 152 and into the motor 56.

A hand closed starting switch button 155 is carried on the front wall of the cabinet, the same having a wire 156 to the solenoid 131 and a wire 157 into the line 97.

This completes the detailed description of the various structural parts and the manner of use and mode of operation of the improved race game apparatus will next be described.

In starting the play of the game the nine horse carriers 30 are in the starting position at the front end of the tracks 29 with all carriers and simulated horses in transverse alinement, and with the respective front walls 31 of the carriers 30 pressed forwardly against the bumpers 46 to hold open all of the switches 44. In this connection it is important to keep in mind the tilted position of both mercury switches 143 and 144. They are disposed for rocking movement on a transverse horizontal axis and they extend longitudinally. In starting both switches are tilted with their forward ends down and their rear ends up, the forward end, of course, being in the direction of the front wall 22. The solenoid 131 and the electromagnet 129 are deenergized since they are in open circuits. Accordingly the springs 134 and 140 hold the armatures for these electromagnetic devices in positions as shown in Figure 3. Of course, all the electromagnets 96 and 111 also are deenergized and the motor 56 is dead.

The play begins when the starting switch 155 is closed, by hand or by a coin released mechanism, if desired. Closing of the starting switch 155 as best seen in Figure 19 causes the solenoid 131 to be energized, whereupon the armature 132 is operative to pull the lever 133 (see Figure 3) to rock the shaft 136 and disk 141. This tilts both switches 143, 144 together. The shoulder 137 locks with the hooked end 138 of the armature for the magnet 129. The solenoid is only momentarily energized and the lock 137, 138 acts to hold the switches releasably in their newly tilted positions.

Going back now to Figure 19 when the switches

143, 144 have been tilted down at their rear ends, we find certain circuits are closed. For instance, power goes through line 125, through tap wire 146 and into the wire 145. Thence it goes through switch 143, wire 150, resistance 151, wire 152, motor 56, and by tap shown to wire 97 to complete a motor circuit causing rotation of the motor in a direction that will drive the chains 39 to advance the horses from the starting position thereof and toward the finish line.

When the switch 143 is in this tilted position just described, current also flows from the line through wire 149 into the timer switch 90 and wiper 87. This timer circuit, of course, passes the current through the disk 96, to the wiper 92, one of the buttons 93, and one of the wires 94, to energize one of the electromagnets 68; the said circuit being completed by the wires 95 and 97.

The motor 56 turns and its shaft through worm gears 57, and reduction gearing shown in Figure 5, rotates the rear cross shaft 48. This causes all of the nine driver disks 51 to turn and through the friction means 50, each of the loose sprocket wheels 49 is driven to drive the nine chains 39. As a consequence all nine carrier slides 30 leave the switches 45, causing them to open, and to advance the horses 34 toward the winning end of the track. At the same time the chain 107 drives the drum 101 to rotate it clockwise as viewed in Figure 16. The dog 123 merely folds back to pass any obstructions in its path of movement as the drum turns.

The horses have now started their advance. As the shaft 48 turns the plate 77 also turns and when the gravity dog 78 hangs pendantly from its pivot, said dog will pick up and engage the ratchet wheel 74 to turn same. It follows, therefore, that the sprocket wheel 76 also turns to drive the chain 80 and the timer wheel 86. The pins 91 now contact, in succession, the long switch arm 90 to make and break the circuit passing through the wheel 86 into the buttons 93. This make and break mechanism prevents arcing across the buttons 93. As the wheel 86 turns the wiper 92 delivers the energy to the circuit wires 94 for energizing the electromagnets. However, this rotation of the wheel 86 is not continuous since the gravity pawl 78 will drop out of engagement with the ratchet wheel 74 and cause temporary stoppage of the drive.

When an electromagnet 68 is energized as shown in Figure 11, the associated armature 64 is pulled down to release its stop 69 from the lever 60, whereupon the spring 63 pulls the lever to engage its stop 61 in the rim of the adjacent sprocket wheel 49, thus locking said wheel 49 against rotation. Accordingly, the associated chain 39 stops and the horse fastened thereto temporarily comes to rest to delay its progress in the race. The associated driver wheel 51 continues to turn and eventually its pin 55 engages the cam 62 to push the lever 60 back, or away from the sprocket wheel to free it whereupon the friction disk 50 causes the said wheel again to be driven to advance the delayed chain and horse. When the lever 60 is thus forced back the same interlocks with the armature 64 of the deenergized electromagnet to releasably hold the lever 60 in its disengaged position.

By means of the timer wheel 86 each of the nine electromagnets 68 is successively energized and deenergized to cause delay in the drive to the nine chains and nine horses. The gravity pawl driver 78 operates to pick up and release the ratchet wheel 74 in an indeterminate manner to prevent the occurrence of any regular, predictable cycles of movement for the horses.

While the wires 94 from the conductor buttons 93 are shown herein connected in successive order with the nine electromagnets 68, such arrangement obviously could be varied to follow a different order or succession of energizing the electromagnets.

The thing that really makes the travel of the horses indeterminate is the location of the pins 55 on the disks 51. In practice each pin on each wheel will have a different angular position which is made possible by the provision of the different holes 54, provided for that purpose. As a result various time intervals for releasing the levers 60 occur, causing the horses to resume travel after various time intervals.

By the combination of timer, releaser pins, and gravity pawl, it is impossible to predict the cycle of movement of the horses. This is desirable from the standpoint of player interest and makes the game unusually fascinating.

Eventually, under the influence of the delayed action differential driving mechanism, one of the horses reaches the end of its raceway before any of the others. The first horse to reach the winning line causes the end 31 of the carrier 30 to push against the associated spring switch bumper 73.

Let us assume that the horse in the track numbered 9 reaches the winning line first and closes the end switch 72. Instantly a circuit from lead 97, a wire 127, wire 128 sends the current to the electromagnet 129 which is connected by wire 146 to line 125 to complete the circuit. The magnet 129 therefore is energized.

As shown in Figure 3, the armature for said magnet 129 is moved against the pull of its spring to free the hooked end thereof from the shoulder 137, whereupon the spring 134 pulls the lever 133 to rock the disk 141 and tilt the mercury switches 143, 144 to the position shown in Figure 3.

The switch 143 now is reversed to break the motor circuits heretofore described which caused the drive to advance the horses toward the finish line. The circuit to the motor is now as follows: from wire 125, through wire 146, wire 145, switch 143 into wire 147, through the closed switches 44 and the wire 148 and into the motor 56. By means of wire 152 the circuit goes through wire 154, switch 144, wire 153 and back into the motor 56. The circuit with the power line 97 is completed by the upper wire shown in Figure 19 connected between the motor 56 and said wire 97.

When the winning horse closed the No. 9 switch 72 a circuit through a wire 126 is also established to energize electromagnet 111 connected therewith. We will assume this No. 9 magnet 111 is shown in Figure 2 since they are all alike.

Energization of this magnet 111 draws the associated armature 112 down thereby releasing the stop 114 to free the pawl 117. Consequently its spring pushes the pawl 117 upwardly so that its pin 118 lies in the path of the stop 121 and the end thereof lies in the path of the stop 123' on the drum 101.

The reverse setting of the mercury switch 144 serves to effect, through the circuits described, a reversal of the motor 56 and a reverse drive of all sprocket wheels 49 and the chains 39, thereby causing the carrier slides 30 with the horses to be moved back to the starting line. This reversal of the drive through chain 107 causes reverse rotation of the drum 101. Thus, said drum

101 rotates reversely until stopped when the stop 123' thereon hits the end of the raised stop dog 117 as shown in Figure 17. In this position the legend "The winning horse is number 9" will be visible through the window 103 in the cover plate 102 to designate to the player in a definite manner the result of the race.

The opening in the table 21 in which the upper portion of the drum 101 turns is so arranged that its rear edge as shown by the dotted line in Figure 17 is spaced from the drum a distance sufficient to allow the dog 123 to pass with the drum upwardly through the table 21 at certain times without hitting the table and preventing turning of the drum counterclockwise as viewed in Figure 17. In the reverse direction of rotation of the drum 101 the dog 123 wipes over and resets the trip 117 which acted and then continues to turn with the drum until the dog 123 hits the underside of the table 21 as shown in Figure 16. In Figure 16 the drum is thus shown in its starting position and accordingly it will be seen that this dog 123 assures that the drum will always have the same initial starting position. The stopping of the drum in a position indicating the winning horse is determined by one of the dogs 117 and the stop 123'.

When the drum 101 was so locked against further reverse rotation the friction drive structure shown in Figure 15 comes into play to permit overrunning between the sprocket wheel 104 and the friction driver disk 106.

The horses with their slide carriers are now being driven back to the starting position. As the number 9 horse leaves the No. 9 switch 72 the latter opens to cause deenergization of the No. 9 electromagnet 111, but the reverse motor circuits remain established and the motor 56 continues to drive in reverse.

During the return of the horses the timer 86 is not driven for the reason that driver pawl 78 rides freely over the drive ratchet wheel 74, thereby holding the latter against rotation.

The slides 30 now return one by one in any order at a uniform rate of travel and as they reach the starting position each carrier slide in turn backs against the switches 44 to open the same. Since these switches are in parallel the motor circuit is not broken until the last horse to return, which in the present instance will be the number 9 horse, opens its switch. Thus, when the last switch 44 is opened the motor circuit is completely broken and the motor 56 stops with all carriers 30 holding open the nine switches 44 preparatory to the running of another race.

When the next race is run the forward rotation of the drum 101 causes the dog 123 to hit the pin 118 on the dog 117 which is still held up by the springs as shown in Figure 2 to cause the dog 117 to be lowered and again interlock it with the armature 112 on the deenergized No. 9 electromagnet 111. In the manner described any of the other eight horses can win the race and set the drum to indicate the winner.

This completes the description of the operation and use of the improved game apparatus, and the same is now set for a subsequent play or race, when the starting switch 155 is again closed.

It is the intention to cover all changes and departures from the example disclosed which do not depart from the spirit and scope of the invention as indicated by the appended claims.

What is claimed is:

1. In a race game, an elongated horizontal table having a series of spaced longitudinal race ways, objects movable in said ways from a starting position at one end of the table to a finish position adjacent the other end thereof, a cross shaft journaled on the under side of the table at the starting end thereof, said shaft carrying a series of spaced idler sprocket wheels, a cross drive shaft journaled on the under side of the table at the other end thereof, said latter shaft loosely carrying a series of spaced drive sprocket wheels respectively alined in pairs with the wheels on the first shaft, endless chains respectively wrapped around said pairs of wheels, carriers mounting the objects and fastened to said chains for moving the objects in the ways, driver disks turnable with the drive shaft and respectively positioned adjacent each drive sprocket, friction means interposed between each drive sprocket wheel and its driver disk, yieldable means engaging each friction means and drive sprocket wheel with a driver disk, a motor including connections to drive the drive shaft to move the chains, an electromagnetic device operatively associated with each drive sprocket wheel including a movable armature, a lock member movably mounted adjacent each armature and normally held disengaged from a drive sprocket wheel, means for energizing the electromagnetic devices to cause release of the members to lock the drive sprocket wheels and stop drive of the associated chains, and means operatively associated with the driver disks to move the lock members to sprocket releasing positions whereby the released sprocket wheels resume driving.

2. In a race game, an elongated horizontal table having a series of spaced longitudinal race ways, objects movable in said ways from a starting position at one end of the table to a finish position adjacent the other end thereof, a cross shaft journaled on the under side of the table at the starting end thereof, said shaft carrying a series of spaced idler sprocket wheels, a cross drive shaft journaled on the under side of the table at the other end thereof, said latter shaft loosely carrying a series of spaced drive sprocket wheels respectively alined in pairs with the wheels on the first shaft, endless chains respectively wrapped around said pairs of wheels, carriers mounting the objects and fastened to said chains for moving the objects in the ways, driver disks turnable with the drive shaft and respectively positioned adjacent each drive sprocket, friction means respectively interposed between each drive sprocket wheel and its driver disk, resilient means normally engaging the drive sprocket wheels and friction means with the driver disks, a motor including connections to drive the drive shaft to move the chains, an electromagnetic device operatively associated with each drive sprocket wheel including a movable armature, a lock lever associated with each armature and normally held disengaged from a drive sprocket wheel, means for energizing the electromagnetic devices to cause release of the levers to lock the drive sprocket wheels and stop drive of the associated chains, and means operatively associated with the driver disks to move the levers automatically to sprocket releasing positions whereby the released sprocket wheels resume driving.

3. In a race game, an elongated horizontal table having a series of spaced longitudinal race ways, objects movable in said ways from a start-

ing position at one end of the table to a finish position adjacent the other end thereof, a cross shaft journaled on the under side of the table at the starting end thereof, said shaft carrying a series of spaced idler sprocket wheels, a cross drive shaft journaled on the under side of the table at the other end thereof, said latter shaft loosely carrying a series of spaced drive sprocket wheels respectively alined in pairs with the wheels on the first shaft, endless chains respectively wrapped around said pairs of wheels, carriers mounting the objects and fastened to said chains for moving the objects in the ways, driver disks turnable with the drive shaft and respectively positioned adjacent each drive sprocket, friction means respectively interposed between each drive sprocket wheel and its driver disk, yieldable means normally engaging the drive sprocket wheels and friction means with the driver disks, a motor including connections to drive the drive shaft to move the chains, an electromagnetic device operatively associated with each drive sprocket wheel including a movable armature, a movable lock member associated with each armature and normally held disengaged from a drive sprocket wheel, means for energizing the electromagnetic devices to cause the members to lock the drive sprocket wheels and stop drive of the associated chains, and means to move the members to sprocket releasing positions whereby the released sprocket wheels resume driving, said last mentioned means comprising a trip device carried on each driver disk to engage the member.

4. A race game as claimed in claim 3 in which each driver disk is provided with a circular series of angularly spaced holes in any one of which the trips may be mounted, whereby the trips respectively on the several disks may have different relative angular positions thereon.

5. In a race game, an elongated horizontal table having a series of spaced longitudinal race ways, objects movable in said ways from a starting position at one end of the table to a finish position adjacent the other end thereof, a cross shaft journaled on the under side of the table at the starting end thereof, said shaft carrying a series of spaced idler sprocket wheels, a cross drive shaft journaled on the under side of the table at the other end thereof, said latter shaft loosely carrying a series of spaced drive sprocket wheels respectively alined in pairs with the wheels on the first shaft, endless chains respectively wrapped around said pairs of wheels, carriers mounting the objects and fastened to said chains for moving the objects in the ways, driver disks turnable with the drive shaft and respectively positioned adjacent each drive sprocket, friction means respectively interposed between each drive sprocket wheel and its driver disk, yieldable means normally engaging the drive sprocket wheels and friction means with the driver disks, a motor including connections to drive the drive shaft to move the chains, an electromagnetic device operatively associated with each drive sprocket wheel including a movable armature, a movably mounted lock member associated with each armature and normally held disengaged from a drive sprocket wheel, means for energizing the electromagnetic devices to cause movement of the members to lock the drive sprocket wheels and stop drive of the associated chains, means operatively associated with the driver disks to move the members to sprocket releasing positions whereby the released sprocket wheels resume driving, and a movable timer device driven from the drive shaft to establish and break circuits with a source of energy for the electromagnetic devices to govern the order of their energization and deenergization.

6. A race game as claimed in claim 5 in which the timer is a rotary device and has operatively associated therewith an interrupter to prevent arcing.

7. In a race game, an elongated horizontal table having a series of spaced longitudinal race ways, objects movable in said ways from a starting position at one end of the table to a finish position adjacent the other end thereof, a cross shaft journaled on the under side of the table at the starting end thereof, said shaft carrying a series of spaced idler sprocket wheels, a cross drive shaft journaled on the under side of the table at the other end thereof, said latter shaft loosely carrying a series of spaced drive sprocket wheels respectively alined in pairs with the wheels on the first shaft, endless chains respectively wrapped around said pairs of wheels, carriers mounting the objects and fastened to said chains for moving the objects in the ways, driver disks turnable with the drive shaft and respectively positioned adjacent each drive sprocket, friction means respectively interposed between each drive sprocket wheel and its driver disk, yieldable means normally engaging the drive sprocket wheels and friction means with the driver disks, a reversible electric motor including connections to drive the drive shaft to move the chains, an electromagnetic device operatively associated with each drive sprocket wheel including a movable armature, a movably mounted lock member associated with each armature and normally held disengaged from a drive sprocket wheel, means for energizing the electromagnetic devices to cause release of the members to lock the drive sprocket wheels and stop drive of the associated chains, means operatively associated with the driver disks to move the members to sprocket releasing positions whereby the released sprocket wheels resume driving, whereby a differential movement of the objects toward the finish line results, and switch means closed when any race object reaches the finish line to cause reversal of the motor to drive the chains reversely and return all objects to their starting positions.

8. In a race game, an elongated horizontal table having a series of spaced longitudinal race ways, objects movable in said ways from a starting position at one end of the table to a finish position adjacent the other end thereof, a cross shaft journaled on the under side of the table at the starting end thereof, said shaft carrying a series of spaced idler sprocket wheels, a cross drive shaft journaled on the under side of the table at the other end thereof, said latter shaft loosely carrying a series of spaced drive sprocket wheels respectively alined in pairs with the wheels on the first shaft, endless chains respectively wrapped around said pairs of wheels, carriers mounting the objects and fastened to said chains for moving the objects in the ways, driver disks turnable with the drive shaft and respectively positioned adjacent each drive sprocket, friction means respectively interposed between each drive sprocket wheel and its driver disk, yieldable means normally engaging the sprocket wheels and friction means with the driver disks, a reversible electric motor including connections to drive the drive shaft to move the chains, an elec-

tromagnet operatively associated with each drive sprocket wheel including a movable armature, a lock member movably associated with each armature and normally held disengaged from a drive sprocket wheel, means for energizing the electromagnet to cause movement of the members to lock the drive sprocket wheels and stop drive of the associated chains, means operable by the disks to move the members to sprocket releasing positions whereby the released sprocket wheels resume driving, an open switch located at the finish end of each race way, said latter switches being closed when a race object engages the same, said switches being in a circuit with an electromagnetic device, and a motor control switch operable by said device when a switch is closed to reverse the motor to drive the objects back to their starting positions.

9. In a race game, an elongated horizontal table having a series of spaced longitudinal race ways, objects movable in said ways from a starting position at one end of the table to a finish position adjacent the other end thereof, a cross shaft journaled on the under side of the table at the starting end thereof, said shaft carrying a series of spaced idler sprocket wheels, a cross drive shaft journaled on the under side of the table at the other end thereof, said latter shaft loosely carrying a series of spaced drive sprocket wheels respectively alined in pairs with the wheels on the first shaft, endless chains respectively wrapped around said pairs of wheels, carriers mounting the objects and fastened to said chains for moving the objects in the ways, driver disks turnable with the drive shaft and respectively positioned adjacent each drive sprocket, friction means respectively interposed between each drive sprocket wheel and its driver disk, yieldable means normally engaging the drive sprocket wheels and friction means with the driver disks, a motor including connections to drive the drive shaft to move the chains, an electromagnetic device operatively associated with each drive sprocket wheel including a movable armature, a lock member movably associated with each armature and normally held disengaged from a drive sprocket wheel, means for energizing the electromagnetic devices to cause release of the levers to lock the drive sprocket wheels and stop drive of the associated chains, means operable by the driver disks to move the levers to sprocket releasing positions whereby the released sprocket wheels resume driving, a rotary switch device for regulating the energization and deenergization of the electromagnetic devices, and means for driving the rotary switch from the drive shaft, said latter means including a ratchet wheel and gravity pawl for indeterminately rotating the switch device.

10. In a race game, an elongated horizontal table having a series of spaced longitudinal race ways, objects movable in said ways from a starting position at one end of the table to a finish position adjacent the other end thereof, a cross shaft journaled on the under side of the table at the starting end thereof, said shaft carrying a series of spaced idler sprocket wheels, a cross drive shaft journaled on the under side of the table at the other end thereof, said latter shaft loosely carrying a series of spaced drive sprocket wheels respectively alined in pairs with the wheels on the first shaft, endless chains respectively wrapped around said pairs of wheels, carriers mounting the objects and fastened to said chains for moving the objects in the ways, driver disks turnable with the drive shaft and respectively positioned adjacent each drive sprocket, friction means respectively interposed between each drive sprocket wheel and its driver disk, yieldable means normally engaging the drive sprocket wheels and friction means with the driver disks, a motor including connections to drive the drive shaft to move the chains, an electromagnetic device operatively associated with each drive sprocket wheel including a movable armature, a lock lever associated with each armature and normally held disengaged from a drive sprocket wheel, means for energizing the electromagnetic devices to cause release of the levers to lock the drive sprocket wheels and stop drive of the associated chains, a pin carried on each driver disk to engage and move the levers to sprocket releasing positions whereby the released sprocket wheels resume driving, and a rotary switch device driven intermittently by power derived from the motor to regulate the order of energization and deenergization of said electromagnetic devices.

11. In a race game, an elongated horizontal table having a series of spaced longitudinal race ways, objects movable in said ways from a starting position at one end of the table to a finish position adjacent the other end thereof, a cross shaft journaled on the under side of the table at the starting end thereof, said shaft carrying a series of spaced idler sprocket wheels, a cross drive shaft journaled on the under side of the table at the other end thereof, said latter shaft loosely carrying a series of spaced drive sprocket wheels respectively alined in pairs with the wheels on the first shaft, endless chains respectively wrapped around said pairs of wheels, carriers mounting the objects and fastened to said chains for moving the objects in the ways, driver disks turnable with the drive shaft and respectively positioned adjacent each drive sprocket, friction means respectively interposed between each drive sprocket wheel and its driver disk, yieldable means normally engaging the drive sprocket wheels and friction means with the driver disks, a motor including connections to drive the drive shaft to move the chains, an electromagnetic device operatively associated with each drive sprocket wheel including a movable armature, a lock member movably associated with each armature and normally held disengaged from a drive sprocket wheel, means for energizing the electromagnetic devices to cause movement of the members to lock the drive sprocket wheels and stop drive of the associated chains, means operable from the driver disks to move the members to sprocket releasing positions whereby the released sprocket wheels resume driving, thereby resulting in differential advance of the objects to the finish line, a rotary indicator for indicating the winning object, said indicator being driven from power derived from the motor, and other electromagnetic means operable when an object reaches the finish line to cause setting of said indicator to show the winning object.

12. In a race game, a horizontal table carrying on its under side a plurality of endless chains each of which rigidly mounts a race object movable through longitudinal slots arranged in spaced relation on the table, the said chains being driven by a drive structure including a shaft carrying loose sprocket wheels each of which is associated with a driver disk fast on the shaft, friction means respectively interposed between each drive sprocket wheel and its driver disk for nor-

mally causing the disks to drive the sprocket wheels, an electromagnetic brake device for each sprocket wheel, and a plurality of means to cause differential travel of the objects comprising a driven timer to regulate the order of operation of the brake devices, means on the disks to release the brake devices, and an intermittent driving connection from the drive shaft for driving the timer.

13. In a race game, a horizontal table carrying on its under side a plurality of endless chains each of which rigidly mounts a race object movable through longitudinal slots arranged in spaced relation on the table, the said chains being driven by a drive structure including a shaft carrying loose sprocket wheels each of which is associated with a driver disk fast on the shaft, friction means respectively interposed between each drive sprocket wheel and its driver disk for normally causing the disks to drive the sprocket wheels, an electromagnetic brake device for each sprocket wheel, a motor having connections to drive the shaft, spring means normally engaging the disks and sprocket wheels to drive the chains, and a plurality of means to cause differential travel of the objects comprising a rotary switch to regulate the order of operation of the brake devices, pins mounted one on each disk in different relative angular positions to regulate release of the brake devices, and mechanism for intermittently rotating the switch.

14. In a race game comprising a horizontal table having an elongated cut out opening formed therein, a plurality of inverted channel shaped strips mounted longitudinally in said opening in spaced apart relation to provide parallel race ways between them, each strip including track portions, carriers slidably mounted on the track portions and each including an offset arm projecting upwardly through an adjacent race way, a race object carried on each arm above the table, drive chains located below the table for the respective carriers, and means for connecting the carriers respectively to the drive chains.

15. In a race game comprising a horizontal table having an elongated cut out opening formed therein, a plurality of inverted channel shaped strips mounted longitudinally in said opening in spaced apart relation to provide parallel race ways between them, each strip including track portions, carriers slidably mounted on the track portions and each including at each end an upstanding end wall formed to ride on said track portions and including means to slidably interlock therewith, each carrier carrying between its end walls an offset upstanding arm projecting through an adjacent race way, and a race object mounted on each said arm above the table.

16. In a race game having an elongated frame carrying a transverse shaft at each end thereof, one shaft carrying a plurality of idler sprocket wheels and the other shaft carrying a like number of loose drive sprocket wheels, means for driving the latter shaft and means on said latter shaft for frictionally turning the drive sprocket wheels independently therewith, race object moving chains enveloping the idler and drive sprocket wheels, movably mounted brake members provided respectively for engaging the drive sprockets to hold them against rotation, movably mounted latch means provided respectively for holding the brake members in inoperative positions, the combination with said latch means of trip devices respectively positioned adjacent the latch means for causing release of the latch means and movement of the brake members to drive sprocket engaging positions, and respective means operatively associated with each drive sprocket wheel to cause disengagement of the brake members and their return to latched inoperative positions.

17. In a race game having an elongated frame carrying a transverse shaft at each end thereof, one shaft carrying a plurality of idler sprocket wheels and the other shaft carrying a like number of loose drive sprocket wheels, means for driving the latter shaft and means on said latter shaft for frictionally turning the drive sprocket wheels independently therewith, race object moving chains enveloping the idler and drive sprocket wheels, spring pulled brake levers respectively mounted for movement to engage the drive sprocket wheels to hold them against rotation, swingably mounted latch levers provided respectively for holding the brake levers in inoperative positions, the combination with said latch levers of movable trips respectively positioned adjacent the latch levers for causing release of the latch levers and movement of the brake levers to drive sprocket wheel engaging positions, respective means turnable with the drive shaft to cause disengagement of the brake levers and their return to latched inoperative positions, and means driven from the drive shaft to govern the order of operation of the movable trips.

18. In a race game, a drive shaft, a drive sprocket for a chain, the sprocket mounted loose on the shaft, a driver disk turnable with the shaft, means yieldably moving the sprocket against the disk, a friction member between the disk and sprocket, said disk carrying a trip pin, a spring pulled brake lever pivotally mounted adjacent the sprocket and adapted to brake the sprocket, a movably mounted latch member for normally holding the brake lever in released position, the combination with said brake lever of trip devices respectively positioned to release the latch member to cause movement of the brake lever to engage and brake the sprocket, the driver disk trip pin serving to disengage the brake and free the sprocket and cause movement of the brake to its released latched position.

19. In a race game, a drive shaft, a drive sprocket for a chain, the sprocket mounted loosely on the shaft, a driver disk turnable with the shaft, means yieldably moving the sprocket against the disk, friction means between the sprocket and disk, a brake lever pivotally mounted adjacent the sprocket and adapted to engage the sprocket to brake same, the combination with said lever of a movable latch means for normally holding the lever in a disengaged position, movable trip means positioned to release the latch means and cause movement of the brake lever to brake the sprocket, and means operable from the disk to cause release of the brake lever to disengaged latched position.

20. In a race game, a drive shaft, a drive sprocket for a chain, the sprocket mounted loosely on the shaft, a driver disk turnable with the shaft, means yieldably moving the sprocket against the disk, friction means between the sprocket and disk, a brake lever pivotally mounted adjacent the sprocket and adapted to engage the sprocket to brake same, the combination with said lever of a movable latch means for normally holding the lever in a disengaged position, movable trip means positioned to release the latch means and cause movement of the brake lever

to brake the sprocket, means operable by the disk to cause release of the brake lever to disengaged latched position, and means driven from the shaft to cause operation of the movable trip means.

21. In a race game, a drive shaft, a drive sprocket for a chain, the sprocket mounted loosely on the shaft, a driver disk turnable with the shaft, means yieldably moving the sprocket against the disk, friction means between the sprocket and disk, a brake lever pivotally mounted adjacent the sprocket and adapted to engage the sprocket to brake same, the combination with said lever of a movable latch means for normally holding the lever in a disengaged position, movable trip means positioned to release the latch means and cause movement of the brake lever to brake the sprocket, a pin on the disk and turnable therewith to engage and release the brake lever to disengaged latched position, and means driven from the shaft to cause operation of the movable trip device at irregular intervals.

22. In a race game, a drive shaft, a drive sprocket for a chain, the sprocket mounted loosely on the shaft, a driver disk turnable with the shaft, means yieldably moving the sprocket against the disk, friction means between the sprocket and disk, a brake lever pivotally mounted adjacent the sprocket and adapted to engage the sprocket to brake same, the combination with said lever of a movable latch means for normally holding the lever in a disengaged position, movable trip means positioned to release the latch means and cause movement of the brake lever to brake the sprocket, means operable from the disk to cause release of the brake lever to disengaged latched position, a sleeve loose on the drive shaft including a ratchet wheel, a driver arm fast on the shaft adjacent the ratchet wheel, a free swinging pawl on said arm adapted in an irregular manner momentarily to pick up the ratchet wheel and turn the sleeve with the shaft and means driven from said sleeve to cause operation of the movable trip means.

23. In a race game providing a plurality of tracks along which objects are movable from a starting to a finishing position with respective normally open switches located at the finish end of each track, the combination with said switches of a drum rotatably mounted on a horizontal axis adjacent the finish end of the tracks and carrying legends to indicate the object which wins a race, a motor, means to rotate the drum by power derived from said motor, a stop on the drum, a series of electromagnetic device released stops carried adjacent the drum proximate to the path of movement of the stop carried thereby, means controlled by the closing of a switch by the winning object to cause energization of a corresponding electromagnetic device and release of its stop to cause such stop to be positioned in the path of movement of the stop on the drum whereby the latter is stopped in a position of rest to indicate the winning object, and friction clutch means included in the driving means for the drum.

24. In a race game providing a plurality of tracks along which objects are movable from a starting to a finishing position with respective normally open switches located at the finish end of each track, the combination with said switches of a drum rotatably mounted on a horizontal axis adjacent the finish end of the tracks and carrying legends to indicate the object which wins a race, an electric motor of the reversible type, means to rotate the drum from a normal initial starting position by power derived from said motor, a stop on the drum, a plurality of electromagnetic device released stops carried adjacent the drum proximate to the path of movement of the stop carried thereby, means controlled by the closing of a switch by the winning object to cause energization of a corresponding electromagnetic device and release of its stop to position such stop in the path of movement of the stop on the drum whereby the latter is stopped in a position of rest to indicate the winning object, a friction clutch means included in the driving connections for the drum, and means for reversing the motor to drive the drum reversely back to its initial starting position.

25. In a race game providing a plurality of tracks along which objects are movable from a starting to a finishing position with respective normally open switches located at the finish end of each track, the combination with said switches of a drum rotatably mounted on a horizontal axis adjacent the finish end of the tracks and carrying legends to indicate the object which wins a race, a motor, means to rotate the drum by power derived from said motor, a stop on the drum, a plurality of electromagnetic device released stops carried in an arcuate grouping adjacent the periphery of the drum proximate to the path of movement of the stop carried thereby, means controlled by the closing of a switch by the winning object to cause energization of a corresponding electromagnetic device and release of its stop to cause such stop to be positioned in the path of movement of the stop on the drum whereby the latter is stopped in a position of rest to indicate the winning object, and means to make the driving connection for the drum ineffective when the latter is thus stopped.

26. In a race game providing a plurality of tracks along which objects are movable from a starting to a finishing position with respective normally open switches located at the finish end of each track, the combination with said switches of a drum rotatably mounted on a horizontal axis adjacent the finish end of the tracks and carrying legends to indicate the object which wins a race, a plate covering said drum and provided with an opening through which a part of the legends may be viewed, a motor, means to rotate the drum by power derived from said motor, a stop on the drum, a plurality of electromagnetic device released stops carried adjacent the drum proximate to the path of movement of the stop carried thereby, means controlled by the closing of a switch by the winning object to cause energization of a corresponding electromagnetic device and release of its stop to cause such stop to be positioned in the path of movement of the stop on the drum whereby the latter is stopped in a position of rest to make the legend indicating the winning object visible through the opening in the cover plate, and means to make the driving connection for the drum ineffective, when the latter is thus stopped.

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