Jan. 1, 1929. 1,697,701

L. A. WALLACE

AMUSEMENT APPARATUS

Filed June 16, 1928 4 Sheets-Sheet 1

Fig. 1.

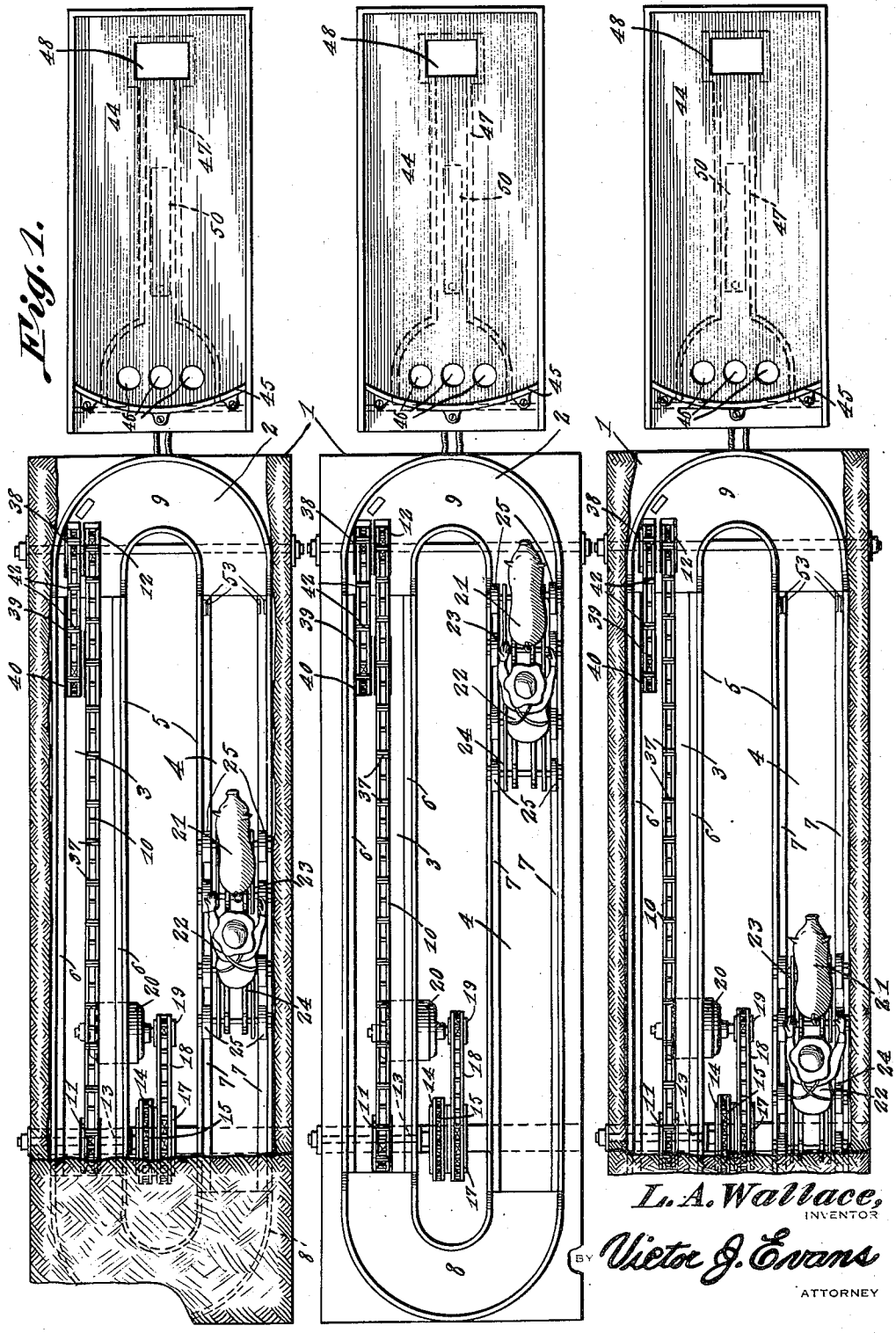

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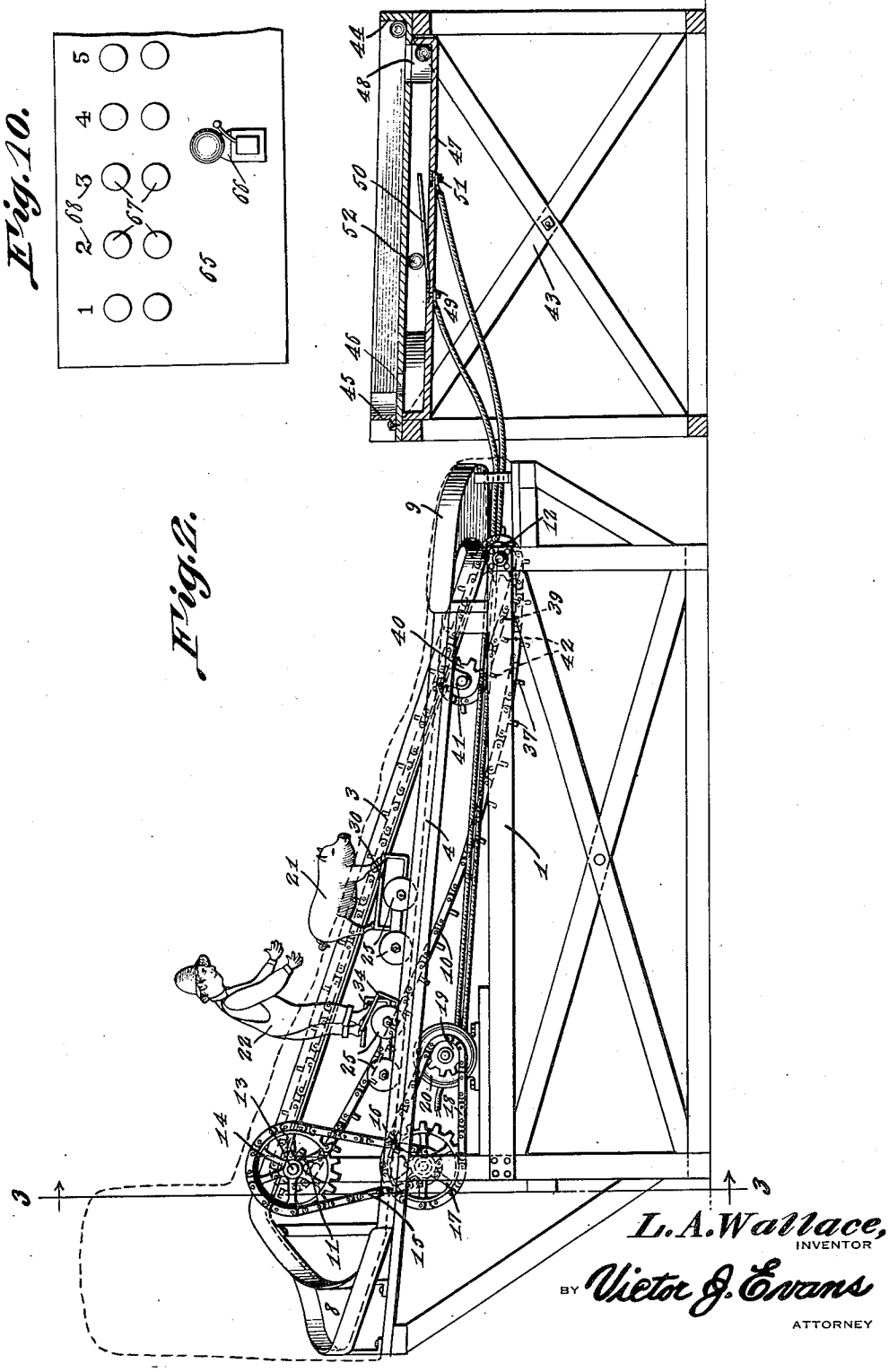
Fig. 10.




Fig. 2.

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AMUSEMENT APPARATUS

Filed June 16, 1928 4 Sheets-Sheet 3

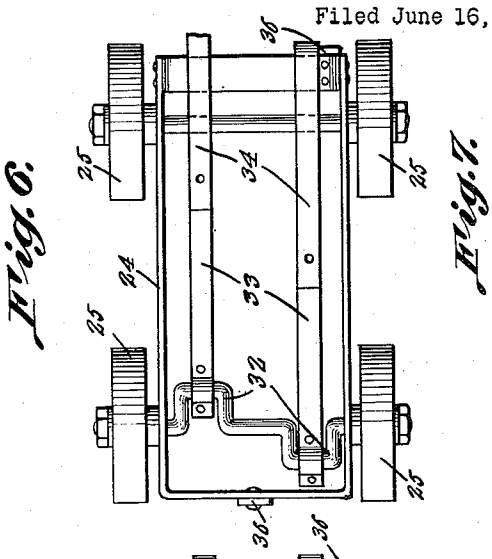

Fig. 6.

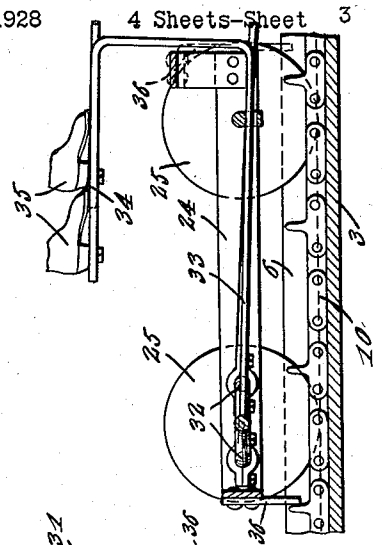

Fig. 7.

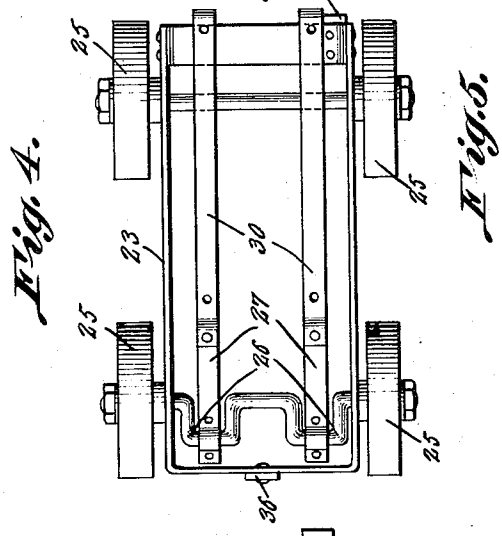

Fig. 4.

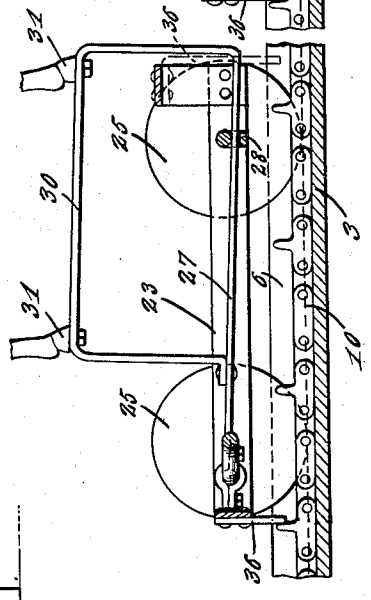

Fig. 5.

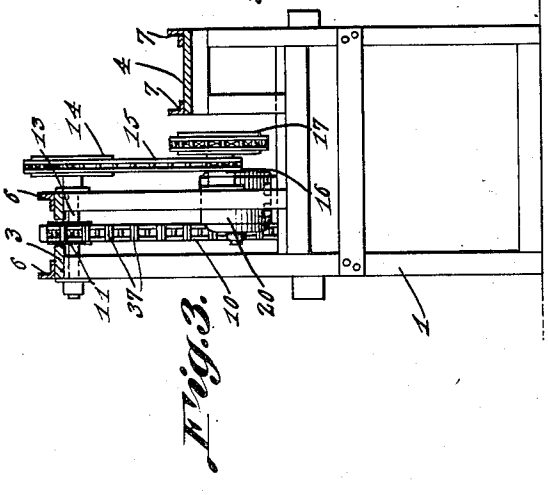

Fig. 3.

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Fig. 9.

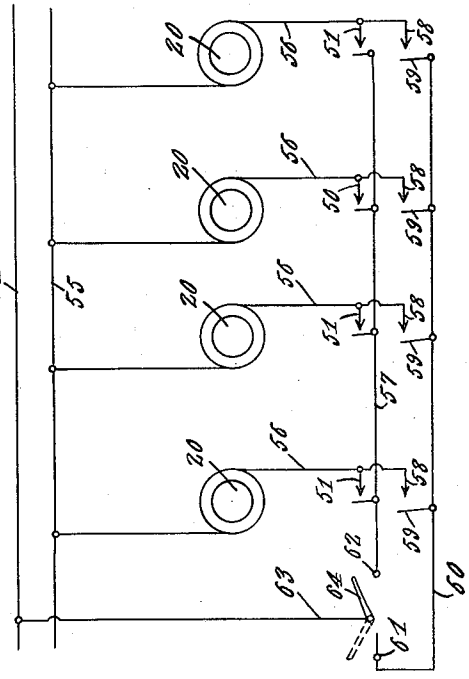
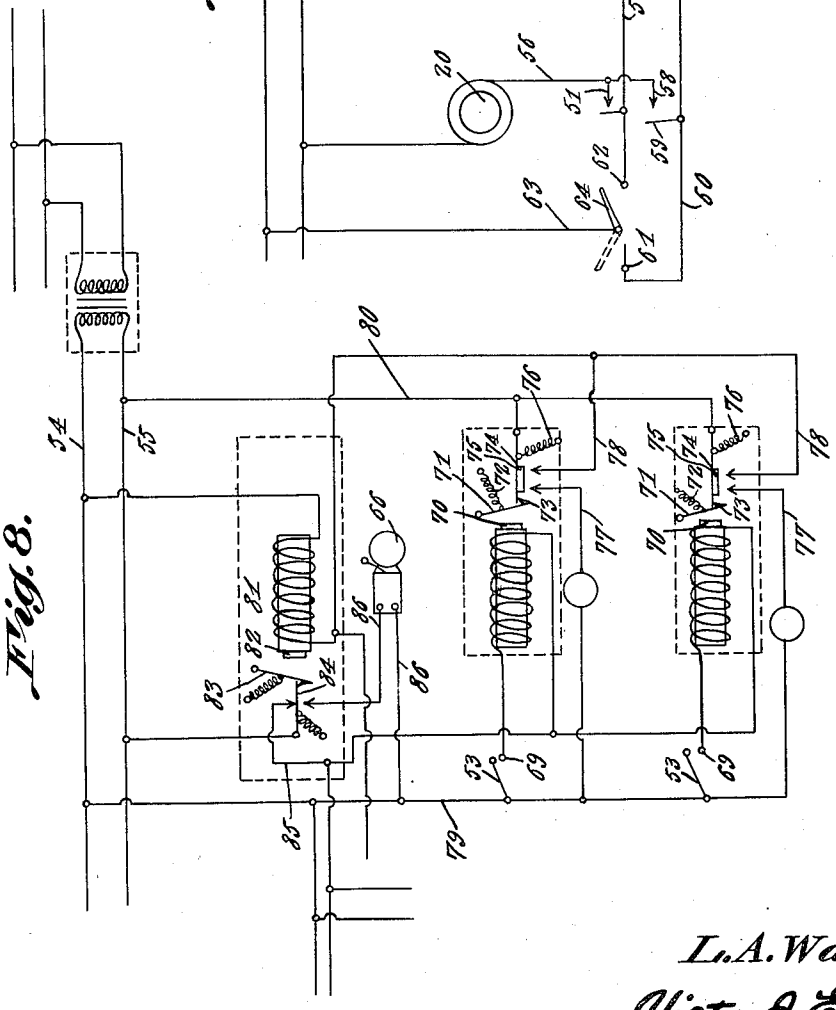


Fig. 8.



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Patented Jan. 1, 1929. 1,697,701

# UNITED STATES PATENT OFFICE.

LAWRENCE A. WALLACE, OF SALT LAKE CITY, UTAH.

## AMUSEMENT APPARATUS.

Application filed June 16, 1926. Serial No. 285,860.

My present invention has reference to an amusement apparatus for parks, fairs and the like, the primary object of the invention being the provision of a racing game in which animated figures are caused to travel over a track or course and in which the movement of such figures depends upon the rapidity and dexterity of the players.

A further object is the provision of an amusement apparatus in the nature of a race track or course having animated figures providing the racing pieces, the said figures being mechanically moved (by electrically actuated means) over one side or stretch of the course by the players of the game, and directed onto and permit the said playing pieces gravitating downwardly on the other side or stretch of the track or course to reach a goal, and to automatically sound and flash signals to indicate the winner of the game, together with means for bringing the racing pieces to the starting point of the course; the playing of the game creating amusement and mild excitement to the players and spectators and which will also train the eye and exercise the arms of the players.

More specifically the game comprises any desired numbers of race tracks or courses arranged side by side, the sides or stretches of each course being arranged at an upward inclination from the post or starting point for the racing pieces, one of said stretches being disposed at a greater inclination than the other, both of said stretches being connected by rounded ends, the elevated stretch having arranged longitudinally thereon an endless chain provided with upstanding lugs or flights to engage with depending lugs on the playing pieces, the said chain being operated by an electric motor which has a normally open circuit, and which circuit is temporarily closed by weighted balls manipulated by the players so that the motors will be operated to move the chains and the playing pieces engaged thereby a predetermined distance each time the circuit is closed, whereby the playing pieces will be advanced on this stretch of the course and directed onto and permitted to gravitate down the second stretch of the course to reach a goal and to automatically sound and flash signals to indicate the winners of the race, there being means for simultaneously bringing all of the racing pieces to the starting post or point of the courses.

The invention will be fully and comprehensively understood from a consideration of the following detailed description when read in connection with the accompanying drawings which form part of the application, with the understanding, however, that the improvement is capable of extended application and is not confined to the exact showing of the drawings nor to the precise construction described and, therefore, such changes and modifications may be made therefrom as do not affect the spirit of the invention nor exceed the scope thereof as expressed in the appended claims.

In the drawings:

Figure 1 is a top plan view of the improvement.

Figure 2 is a side elevation with parts in section.

Figure 3 is a transverse sectional view approximately on the line 3—3 of Figure 2.

Figure 4 is a plan view of one of the trucks employed.

Figure 5 is an approximately central vertical longitudinal sectional view therethrough, showing the same arranged upon one of the stretches of the course or track.

Figure 6 is a plan view of the second truck employed on each course or track.

Figure 7 is a central vertical longitudinal sectional view therethrough showing the same arranged upon one stretch or side of the track or course.

Figure 8 is a diagrammatic view of the electric circuit for the annunciator and bell.

Figure 9 is a similar view of the circuit for the motors.

Figure 10 is a plan view of the annunciator.

As disclosed by Figure 1 of the drawings, any desired number of tracks or courses and playing boards or tables for such tracks or courses may be employed. As the tracks or courses, the racing pieces and the playing tables are all of a similar construction a detailed description of one may be taken as equally applicable to the remainder.

On a suitable frame 1, there is supported a track or racing course. The racing course is of any desired length and may, of course, be constructed of any desired material. For distinction I will designate the front of the course, which has both the goal and the starting point thereon by the numeral 2. The track or course provides two spaced parallel sides 3 and 4, respectively. Both of these sides have their edges formed with upstanding flanges 5, and in a line with the flanges and on the base or floor of the sides 3 and 4

there are arranged metal plate or strips 6—6 and 7—7 that provide the rails of the tracks. Both of the sides 3 and 4 are arranged at upward inclinations with respect to the front 1 of the improvement, but the elevated end of the side 3 is disposed a suitable distance above the elevated end of the side 4. The sides 3 and 4 have their ends connected by upper and lower rounded plates 8 and 9, respectively, and these plates or ends have their edges flanged, the said flanges being continuous with the flanges 5 of the sides. The rounded upper end 8 is inclined from the upper end of the side 3 to its connection with the elevated end of the side 4 and in a like manner the end 9 of the course has its base inclined or rounded downwardly to its connection with the side 3. The sides 3 and 4 provide the stretches of the track or course and will hereinafter be so called.

The base of the stretch 3 is centrally formed with a longitudinal opening that extends into the end 8. Arranged for travel through this opening there is an endless chain 10. The ends of this chain are trained around upper and lower sprocket wheels 11 and 12, respectively. The shaft 13 for the upper sprocket wheel 11 has fixed thereon a second and larger sprocket wheel 14 around which is trained a downwardly directed endless sprocket chain 15. This chain passes between the confronting flanges 6 and 7 of the stretches 3 and 4, and has its lower end trained around a comparatively small sprocket wheel 16 on whose shaft there is fixed a larger sprocket wheel 17. Around this sprocket wheel 17 there is trained a longitudinally extending sprocket chain 18 which is also trained around a sprocket wheel 19 on the shaft of an electric motor 20. The motor is supported on the top of the frame 1 below the course.

In the showing of the drawings I have disclosed the racing pieces on each course as a figure representing a pig 21 and a figure representing a man 22 who has his arms outstretched as if chasing the pig. Both of the figures 21 and 22 are mounted on wheeled trucks 23 and 24, respectively. The wheels 25 of these trucks are designed to travel on the rails 6—6 and 7—7 in the stretches of the course. The trucks 23 and 24 are approximately of the same length and, of course, of the same width. The truck 23 has the axle for its front wheels 25 provided with two spaced crank portions 26 each arranged in the same direction. On these cranked portions there are journaled rearwardly extending strips 27, the said strips passing between suitable guides 28 on the frame of the truck, and the said strips preferably having their outer ends first bent outwardly and from thence inwardly and longitudinally over the strips 27 as indicated by the numerals 30. The ends of the elevated portions 30 of the strips are bent downwardly, offset and bolted, riveted or otherwise secured to the strips 27. The elevated parts 30 of the strips 27 have secured thereon the hook portions or legs 31 of the figure 21. It will be apparent that when the truck 23 with the figure 21 thereon is caused to travel over the rails on the outer side or stretch of the course, and, of course, the turning of the crank shaft imparts a movement thereto to move the said strips upwardly, downwardly, forwardly and backwardly, thus rendering the figure 21 animated and causing the same to simulate a galloping action.

The truck 24 also has its forward axle provided with spaced cranked portions but these cranked portions 32 are disposed in opposite directions. The crank portions have journaled thereon strips 33, similar to the strips 27, the said strips 33 being guided through the frame of the truck and having their outer ends upturned and from thence extended inwardly, as at 34, over the strips 33, and to these elevated portions 34 there are attached the feet 35 of the figure 22. The legs of the figure 22 are pivotally connected with the body thereof, so that the turning of the crank shaft at the front of the truck 24 will impart a movement similar to the movement of the strips 27 on the truck 23, but by arranging the cranked portions 32 of the front axle of the said truck 24 in opposite directions and by mounting the feet 35 on the spaced elevated portions 34 of the strips 33, a running movement will be imparted to the said figure 22.

The trucks 23 and 24, at one or both of the ends thereof, have depending lugs 36. These lugs are so arranged that they will not contact with the floor or base of the stretch 3 or with the lower walls 8 and 9 at the ends of the course but the said lugs are in the path of engagement with upstanding fingers 37 on the upper flight or lead of certain of the spaced links on the chain 10. The fingers 37 are equidistantly spaced.

The shaft for the wheel 12 has fixed thereon a second sprocket wheel 38 around which is trained one end of a comparatively short sprocket chain 39 that is received through a longitudinal opening in the floor or base of the stretch 3, the second end of the said chain 39 being trained around a second sprocket wheel 40 that is fixed on a short shaft whose ends are journaled in depending bearings 41. This short chain 39 has certain of its equidistantly spaced links formed with outstanding fingers 42. The purpose of this arrangement will presently be apparent.

Arranged slightly forward of the lower ends of each of the courses there is supported upon suitable frames 43 flanged tables 44. The bottom of each of these tables is preferably inclined upwardly from its outer to its opposite end and the last mentioned end of

each of the tables has an arched or curved flange 45 connected with the side flanges thereof. The bottom of each table opposite the arched flange 45 is provided with any desired number of equidistantly spaced transversely arranged round openings 46, and these openings communicate with a flanged downwardly inclined runway 47 fixed beneath the bottom of each of the tables 44. The closed ends of the runways 47 communicate each with a substantially rectangular opening 48 in the bottom of each of the tables 44, adjacent to the outer or plain end of the apparatus.

Each motor 20 is in circuit with a suitable source of power, two of the circuit wires of which being directed beneath the respective tables 44, one of these wires being attached by a binding post 49 to a spring circuit maker 50 in each of the runways 47, the second wire being connected by a binding post to a contact 51 that is disposed below the raised end of the flat spring circuit maker 50.

At the starting of the game, the truck having the figure representing the pig thereon is arranged on the short chain 39 and has its legs contacted by the fingers on the chain, while the figure representing the man is arranged slightly to the rear of the pig figure and has one of the lugs of its track engageable by one of the fingers 37 on the chain 10. The players are allotted any desired number of weighted spheres and standing at the outer end of the tables 44 manipulate or throw the said spheres to cause the same to drop through the openings 46 into the runways 47 and to travel over the circuit makers 50 to cause the same to move against the contacts 51 and thereby energize the motor and impart a longitudinal movement to the chain 10 for the period of time in which the ball or sphere 52 travels over the spring circuit maker 50, or rather as long as the same holds the circuit maker in engagement with the contact 51. The racing figures travel up the steep stretch 3 of the course, and the speed of such travel is determined by the quickness of the throwing or manipulation of the balls or spheres of the several players. When the racing figures have reached the upper or elevated ends of the chain 10 they will, by the contact of the fingers on the chain and the contacts with the lugs on the trucks, be forcibly directed over the downwardly rounded end 8 of the courses and will be permitted to gravitate rapidly down the inclined stretch 4 of the said courses. When the figures reach the goal on the courses, which is at the lower ends of the stretches 4, the wheels of the said trucks will close normally open switches of circuit makers 53 arranged in spaced pairs on the lower ends of the rails 7, bringing such switch members against the contacts and to complete a circuit which will sound an alarm and likewise operate an annunciator or indicator so that the name or number of the winner of the race will appear thereupon. Thus the winner of the race is both visibly and audibly indicated. The manner in which this is accomplished and the manner in which the racing figures are simultaneously returned to the post or starting points in the several courses will presently be described.

Reference is now to be had to the diagram illustrated by Figure 9 of the drawings. The wires of the main circuit are for distinction indicated by the numerals 54 and 55, the wire 55 having branch wires leading to the respective motors 20, and the wires leading from these motors are provided with the contacts 51 of the normally open circuit makers 50. The wires leading from the motor and provided with the contact 51 are for distinction indicated by the numerals 56, and the wire or conductor having the spring switch or circuit is indicated for distinction by the numeral 57. The wires 56 bridge the wire 57 and have at their ends contacts 58. These contacts are in the path of engagement with normally open spring switches or contact makers 59 connected to a wire 60 that merges into a contact 61, and this contact is disposed opposite a contact 62 in the conductor 57. The numeral 63 designates a branch wire leading from the main circuit wire 54, the same being provided with a manually operated switch 64 that is movable against either of the contacts 61 or 62. When the game is played as above described the switch 64 is swung against the contact 62, and when all of the motors are to be stopped the switch 64 is moved to neutral position. When the racing figures have moved off of the switch or contact makers 53 and gravitated through the rounded front end 9 of the course, one of the lugs on the frame of the truck 23 will contact with the wheels one one side of this truck and depress the switches or circuit makers 59 momentarily to operate the motor so that the short chains 39 will bring their fingers 42 against the lugs on the truck and move the said truck the length of the short chain, and all of the trucks carrying the racing figures on the several courses are moved to starting position by the swinging of the switch 60 into engagement with the contact 61.

The annunciator, indicated by the character 65, and illustrated by Figure 10 of the drawings, carries the bell 66 and pairs of superimposed lamp bulbs 67 which may be colored plain or which may have inscribed thereon the name of the winner of the race, and the said face of the annunciator may have imprinted thereon numerals 68 arranged above the lamp bulbs and designating the several courses.

As disclosed by the diagram in Figure 8 of the drawings the normally open circuit makers or contacts 53 on the goals of the courses are in the path of engagement with contacts

69 that are wired to relays each of which including the ordinary magnet, the poles of which are indicated by the numeral 70. The armatures for the poles 70 are indicated by the numerals 71, the same being influenced by springs 72 away from the poles. Each of the armatures has a hooked end 73 to engage with a pivotally supported plate 74 that carries a swinging contact 75. The swinging contacts are each normally influenced by a spring 76 and are movable against contacts on the terminals of wires 77 and 78. Each of the circuit wires or conductors 77 is connected with one of the lamp bulbs 67 in the series on the annunciator and these wires 78 are connected with branch wires 79 to which the inner ends of the normally open switches or circuit makers 53 are connected and which are likewise connected to the main circuit wire 54. The members 74 are connected by wires or conductors 80 to the main circuit wire 55, while wires of the conductors 78 bridge the conductors 80 and are connected with a relay 81, the core of which is indicated by the numeral 82. The armature for the electro-magnet 81 of the relay is pivotally supported and spring influenced away from the core of the relay and is indicated by the numeral 83.

This armature has a hooked end to engage with a spring influenced switch 84 to hold the same against a contact or terminal on the end of a wire or conductor 85 that leads to the wiring of the second or lower relay. The switch 84, when attracted by the electro-magnet 81, is spring influenced toward a terminal contact on the end of one of the wires 86 for the bell 66, the return wire 86 for the bell being connected to the conductor 79. Thus it will be noted that the winner of each race is signaled by the flashing of lamps wired to the respective open switches or circuit makers 53 in each of the courses and that the bell 66 will be sounded almost simultaneously with the flashing of the lights.

The several courses of the game have their sides and ends suitably covered so that the racing figures may be seen only when the same are traveling upwardly on the stretches 3 and downwardly on the stretches 4, the covering at the ends of the courses being in the nature of tunnels. These coverings are suitably painted or otherwise decorated and the side coverings will hide or obscure the trucks, so that only the figures on the trucks will be observable. While I have illustrated and described the racing figures as representations of pigs and men chasing such pigs, it is obvious that other figure characters may be employed, the main object of using the figures disclosed being to add to the amusement of the players as well as to the amusement of the spectators of the game.

It is believed that the foregoing description, when carefully read in connection with the accompanying drawings will fully set forth the construction, operation and advantages of my improved racing game so that further detailed description is not thought necessary.

Having described the invention, I claim:

1. A game apparatus comprising race courses arranged side to side and each comprising a race course which includes side stretches and rounded ends, both of the side stretches being inclined from one to its other end but one of said stretches being elevated above the other, an endless chain in the last mentioned stretch, wheeled racing figures to travel around the course, electrically operated means for moving the racing figures onto the endless chain, lugs on said chain to engage with said figures, a motor for operating the endless chain, a normally open electric circuit for the said motor designed to be temporarily closed by weights gravitating thereover whereby to gradually advance the racing figures over the elevated stretch of the chain, to deliver the same onto the raised rounded end of the course and to permit of the said figures gravitating on the second side stretch of the course, and electrically operated means for signalling and audibly announcing the racing figures which first gravitate over the last mentioned course.

2. A game apparatus comprising race courses arranged side to side and each comprising a race course which includes side stretches and rounded ends, both of the side stretches being inclined from one to its other ends but one of said stretches being elevated above the other, an endless chain in the last mentioned stretch, wheeled racing figures to travel around the course, electrically operated means for moving the racing figures onto the endless chain, lugs on said chain to engage with said figures, a motor for operating the endless chain, a normally open electric circuit for the said motor designed to be temporarily closed by weights gravitating thereover whereby to gradually advance the racing figures over the elevated stretch of the chain, to deliver the same onto the raised rounded end of the course and to permit of the said figures gravitating on the second side stretch of the course, and electrically operated means for signalling and audibly announcing the racing figures which first gravitate over the last mentioned course, means for rendering the electrically operated means inactive when the racing figures have reached the goal of the track and electrically operated means for returning all of the racing pieces to engagement with the lugs of the chain and in starting position.

3. A game apparatus comprising racing courses which are arranged side by side and each of which includes side stretches and rounded end stretches, both of said side stretches being upwardly inclined from one to

its other end but one of said stretches being elevated above the other, an endless chain in the last mentioned stretch having spaced upstanding lugs thereon, a track comprising rails in both of the side stretches, a flanged guard surrounding the inner and outer edges of the course, racing figures for traveling over the course, each of which includes a wheeled truck, one of the axles of each of the trucks being cranked, a frame pivotally connected to each of the trucks and having parts connected to the crank portions of the axle, figures mounted on said frames, a motor for operating the endless chain, a normally open circuit for the motor designed to be temporarily closed by weights gravitating thereover, fingers on the trucks engageable with the lugs of the chain, and wherein the closing of the circuit will cause the upward travel on the elevated stretch of the course and to direct the racing figures onto the upper rounded end of the course to permit of the same gravitating on the lower side stretch of the course, electric means actuated by the racing figures first reaching the lower portion of the last mentioned stretch for actuating an indicator and an alarm to announce the winner of the race, and electrically operated means for bringing all of the racing figures to starting position at the lower end of the endless chain.

In testimony whereof I affix my signature.

LAWRENCE A. WALLACE.