

Oct. 12, 1926.

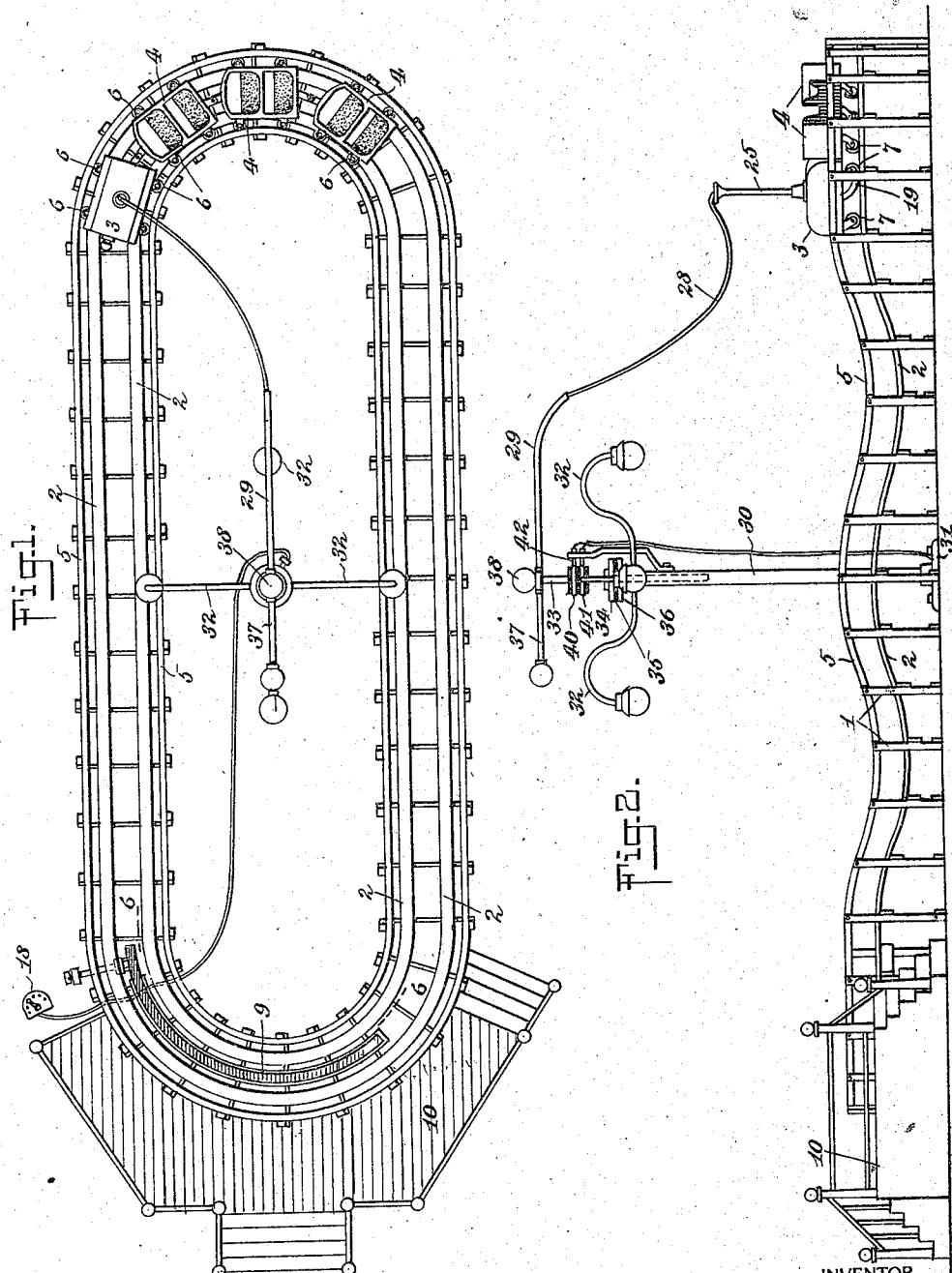
1,603,254

W. F. MANGELS

AMUSEMENT DEVICE

Filed Nov. 6, 1925

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FIG. 3.

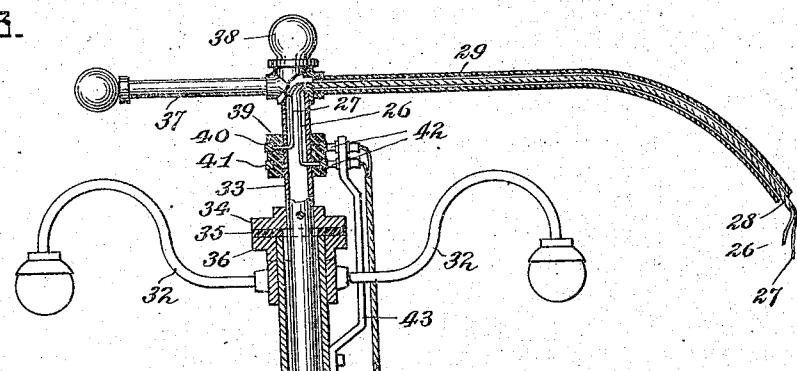


FIG. 4.

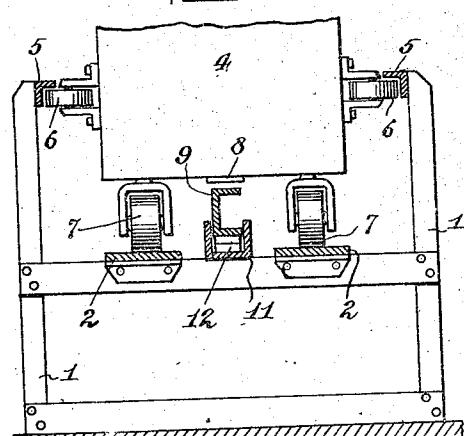


FIG. 5.

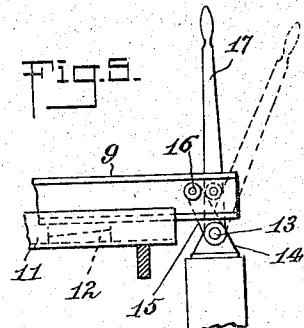
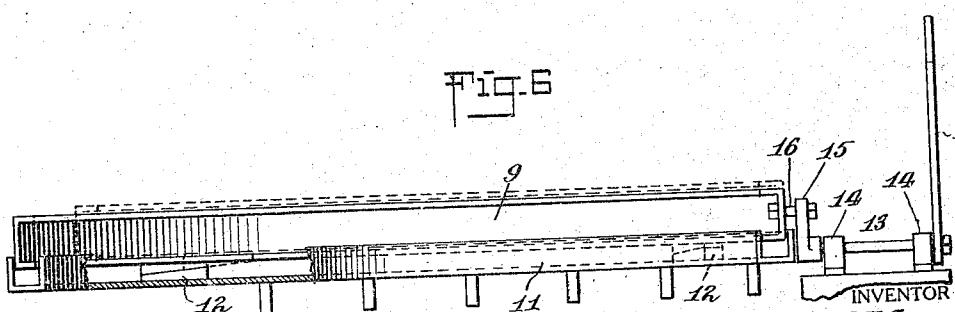


FIG. 6.



WITNESSES

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Fig. 7.

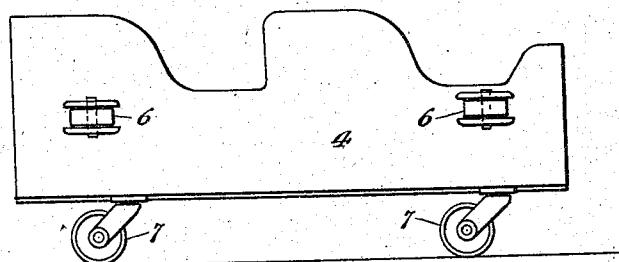


Fig. 8.

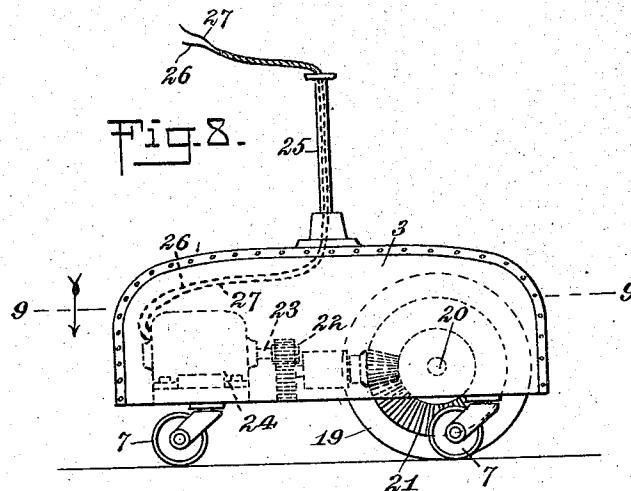
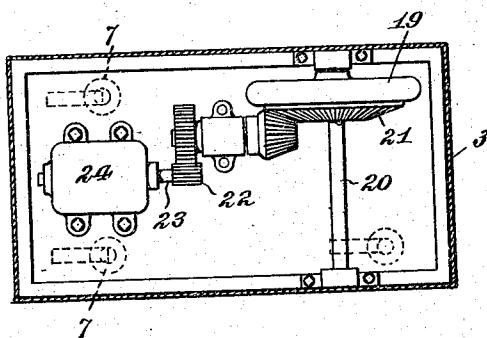


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

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AMUSEMENT DEVICE.

Application filed November 6, 1925. Serial No. 67,344.

This invention relates to amusement apparatus, an object of the invention being to provide a roller coaster over which a train of cars is adapted to move, said train being drawn by an electric motor car, and improved means for transmitting electric current to the motor car and dispensing with the employment of a third rail, trolley or other electric conductor which might be a source of danger to the passengers and to the observers.

A further object is to provide a roller coaster of this character which is especially designed for children and will in all probability be of miniature form. Of course the invention is not limited to the sizes and proportions as the invention is adapted for use in connection with cars or trains of any size.

20 A further object is to provide an amusement device of this character having a continuous track of general elliptical form, that is to say, with curved ends and parallel sides, the side portions being in the nature of a roller coaster so that a train in its passage over the track is caused to move upwardly and downwardly over any desired grades.

25 A further object is to provide an amusement apparatus of this character which is always under the control of an operator so that power may be transmitted or cut off and the train stopped by a suitable braking means at the entrance and exit station.

30 A further object is to provide an apparatus of this character which will be extremely ornamental and attractive and which will afford amusement and pleasure to spectators as well as to passengers.

35 With these and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts which will be more fully hereinafter described and pointed out in the claims.

40 In the accompanying drawings—

Figure 1 is a top plan view of my improved apparatus;

Figure 2 is a view in side elevation thereof;

45 Figure 3 is a view, mainly in section but partly in elevation, of my improved means whereby electric current is transmitted to the motor car;

50 Figure 4 is a view, in transverse section through the track, illustrating the operation of the brake;

Figure 5 is a fragmentary detail view showing the operating lever and its connecting parts for controlling the brake;

Figure 6 is a view in section, on the line 60 6—6 of Figure 1;

Figure 7 is a view in side elevation of one of the passenger cars of the train;

Figure 8 is a view in side elevation of the motor car;

Figure 9 is a sectional plan view taken on the line 9—9 of Figure 8.

1 represents a supporting framework which may be made in any suitable manner and which provides a pair of rails 2, 2 to 70 sustain the weight of a motor car 3 and passenger cars 4 thereon. This framework 1 also has side rails 5 against which rollers 6 on the motor and passenger cars 3 and 4, respectively, are adapted to engage, so as 75 to hold the train against lateral displacement relative to the rails.

These rails 5 may be of angular form, as shown in Figure 4, so that the rollers 6 are prevented from upward movement and maintain the cars against the possibility of tilting action as well as lateral movement. In other words, by providing several rails the cars are securely held relative to the framework and cannot escape from their designed 85 path of movement.

The passenger cars 4 are supported on caster wheels 7 which run on the rails 2, and each car has on its under face a brake band 8 which is adapted to be engaged by a brake 90 bar 9 to stop the train at a platform 10. This platform 10 may be of any desired size and ornamented in any desired manner. The brake bar 9 is guided in a channel bar 11, both bars conforming in curvature to the 95 curvature of the track and lying preferably midway between the rails 2.

This guide 11 has therein a wedge-shaped member or members 12 so that when the brake bar 9 is moved longitudinally in one 100 direction said bar will be elevated so that it will engage the brake bands 8 and stop the car. When the bar 9 is moved in the opposite direction it will lower out of the path of the brake band 8.

To operate this bar 9 I provide a crank shaft 13 mounted in suitable supports 14 and having its crank arm 15 pivotally connected by a pin or bolt 16 with one end of the bar 9. A handle lever 17 is secured 110 to the shaft 13 and the operator is positioned so that he may manipulate this lever

17 and also control a circuit closing device 18 for a purpose which will more fully hereinafter appear.

The motor car 3 above referred to is 5 provided with three caster wheels 7 and a friction drive wheel 19. This drive wheel 19 is of any desired diameter and constructed in any desired manner and is secured to a shaft 20 carried by the car 3. 10 This shaft 20 has a gear wheel 21 thereon which is connected by a gear train 22 with the drive shaft 23 of an electric motor 24, and it is to be distinctly understood that I may employ any suitable gear train or any 15 power transmitting mechanism between the motor and the shaft 20 so as to drive the car at the desired speed.

The motor car 3 is preferably provided with an upwardly projecting hollow post 25 20 through which electric wires 26 and 27 extend, the lower ends of these wires being connected to the motor 24, as illustrated. These wires 26 and 27 are preferably enclosed in an insulating covering so that they form a 25 single cord or cable 28 which projects through a tubular arm 29, constituting a portion of an improved mechanism located centrally of the apparatus, which will now be described in detail.

30 represents a tubular post rigidly secured at its base portion 31 and supporting any desired chandelier or lamp, carrying arms 32 adjacent its upper end to give an ornamental and attractive appearance as 35 well as to illuminate the apparatus at night.

33 represents a tubular vertically disposed member which projects into the tubular post 30 and has rotary mounting therein. A disk 34 is fixed to this member 33 and a friction ring 35 is interposed between said disk 34 40 and a supporting disk 36 fixed to the post 30. This friction ring 35 prevents any possibility of the momentum of the parts causing the member 30 to revolve of its own 45 momentum.

The arm 29 above referred to is secured to and constitutes a part of the rotary member 33 and a counter-balancing arm 37 is also secured to member 33 with an ornamental dome member 38 at the top of said member 33 although of course these ornamental features may be varied at will.

A ring 39 of insulating material is secured around the member 33 and supports a 55 pair of electric contact rings 40 and 41, respectively, which are spaced apart and insulated from each other.

The cable 28 with the wires 26 and 27 therein extends through the arm 29 into the 60 member 34, and the wire 27 is electrically connected to the ring 40 while the wire 26 is electrically connected to the ring 41.

A pair of brushes 42 supported in a bracket 43 on post 30 engages the rings 40 65 and 41, respectively, and have lead wires 44

and 45 communicating with any desired source of electricity so that electric current is closed through said switches to the motor when the circuit is closed by the manually operated device 18 above referred to.

The operation is as follows:

Assuming the train to be at the platform 10, the passengers enter the cars 4 while the train is being held against movement by the brake bar 9. The operator then through the 75 medium of the lever 17 lowers the brake bar 9 and at the same time closes the circuit through the manually operated circuit closing means 18. When the circuit is closed it may be traced as follows—from the lead wires 44 and 45, through brushes 42, rings 40 and 41, and through wires 26 and 27 to the motor 24 on the motor car 3. This 80 motor car immediately transmits motion to the wheel 19 which by its traction on one of the tracks 2 causes the train to move over the rails. As the train moves, the flexible cable enclosing the wires 26 and 27 will be caused to move and impart a turning movement to the arm 29 and the rotary member 33, and regardless of the speed of the train the momentum of the rotary member will be checked by the friction disk 35 so that there will be no danger of entanglement of the 85 cable or sudden jerking of the rotary member.

It will thus be noted that I provide an amusement device in which an electric motor car is employed to draw a train of cars and supply electric current to said motor car without having any portion of any electric conductor exposed to contact by the passengers of the car or by those observing the 90 operation of the apparatus. Hence the possibility of electric shock is entirely eliminated.

By providing an apparatus such as above described, the entire operation of the train can be observed, which is desirable when parents have entrusted their children to the cars, and, furthermore, the operation affords entertainment to the riders as well as to the 95 observers.

Various slight changes and alterations 100 might be made in the general form of the parts described without departing from the spirit of my invention and hence I do not limit myself to the precise details set forth but consider myself at liberty to make such 105 slight changes and alterations as fairly fall within the spirit and scope of the appended 110 claims.

I claim:

1. An amusement apparatus, including an 115 endless track of general elliptical shape, a rotary member located within the confines of the track, an electric motor car on the track, an arm connected to the rotary member, electric conductors supported by the arm and 120 operatively connected to the motor car 125 130

whereby movement of the motor car imparts turning movement to the rotary device.

2. An apparatus of the character described, including an endless track, a motor car on the track, a tubular post located within the confines of the track, a rotary member mounted on the post, a friction device retarding the rotary motion of said member, electric conductors supported by the rotary member, and a counterbalanced tubular arm projecting at an angle to said member and through which said electric conductors are projected and operatively connected to the motor car.

15 3. An apparatus of the character described, including an endless track, a motor

car on the track, a tubular post located within the confines of the track, a rotary member mounted on the post, a friction device retarding the rotary motion of said member, electric conductors supported by the rotary member, a counterbalanced tubular arm projecting at an angle to said member and through which said electric conductors are projected and operatively connected to the motor car, lighting fixtures supported by the post, a brake adapted to stop the car, and manually controlled means for controlling the circuit to the motor and the operation of the brake.

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