

Oct. 30, 1951

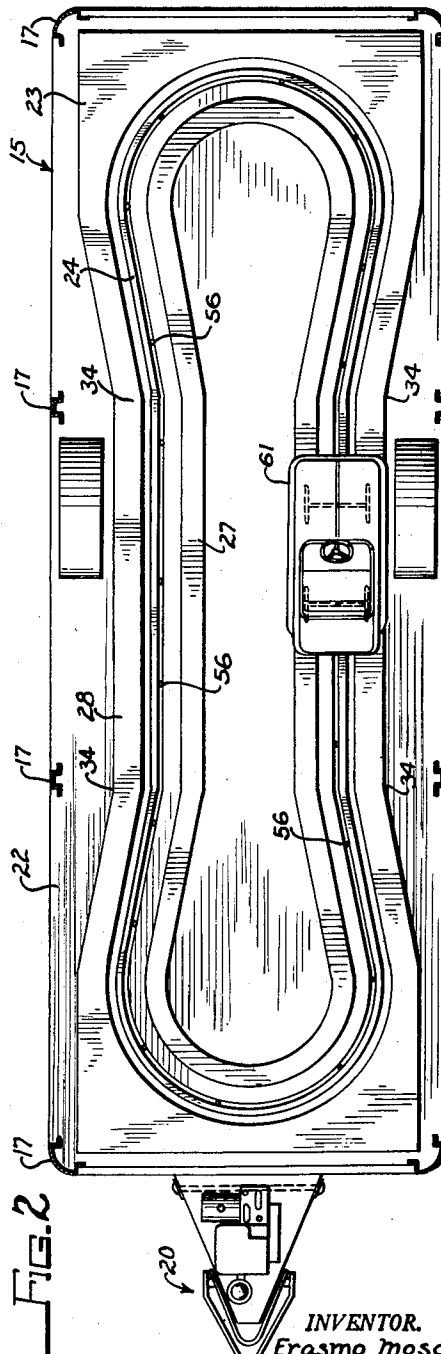
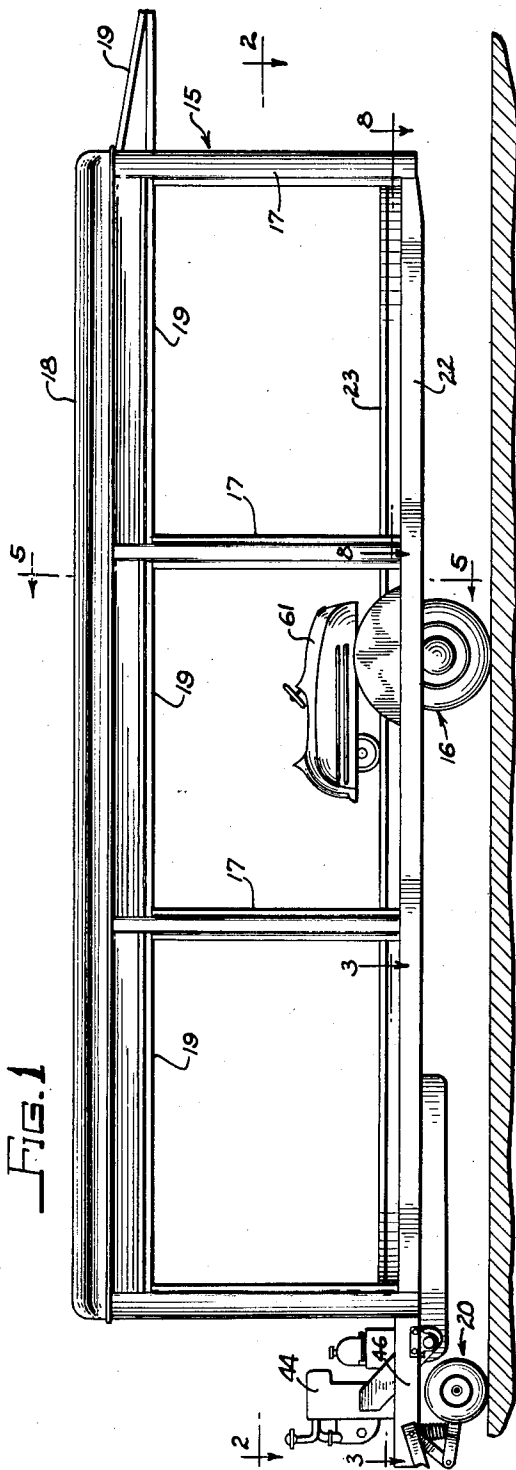
E. MOSCA ET AL

2,573,589

AMUSEMENT RIDE DEVICE

Filed July 22, 1949

4 Sheets-Sheet 1



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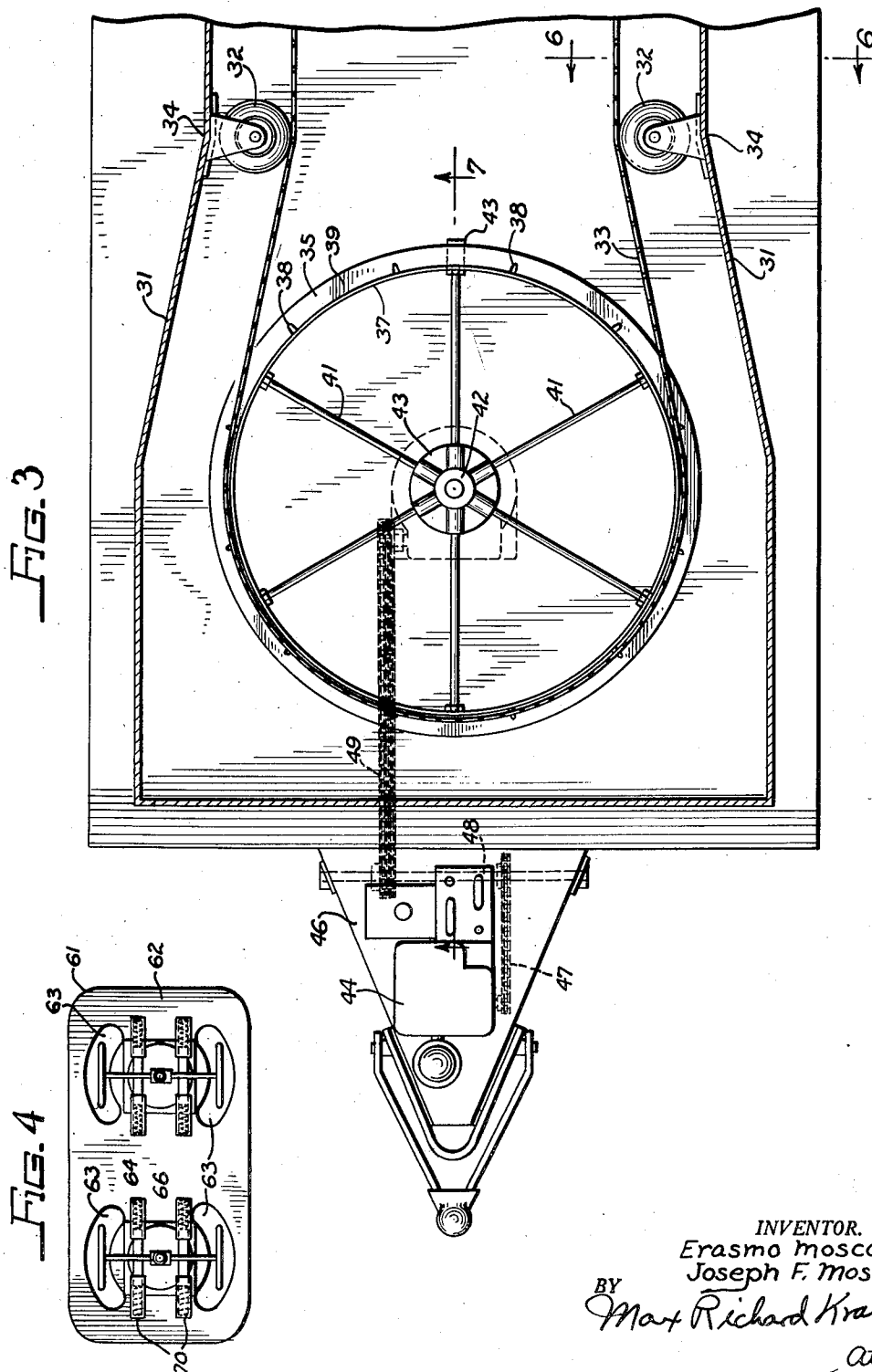
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4 Sheets-Sheet 2



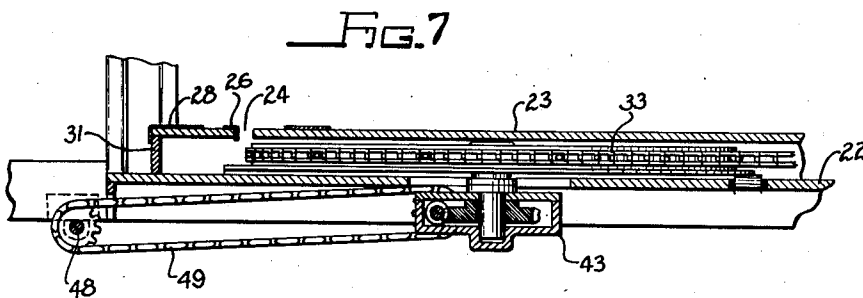
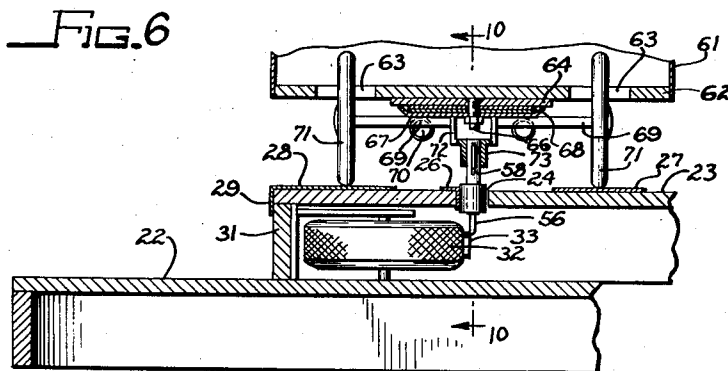
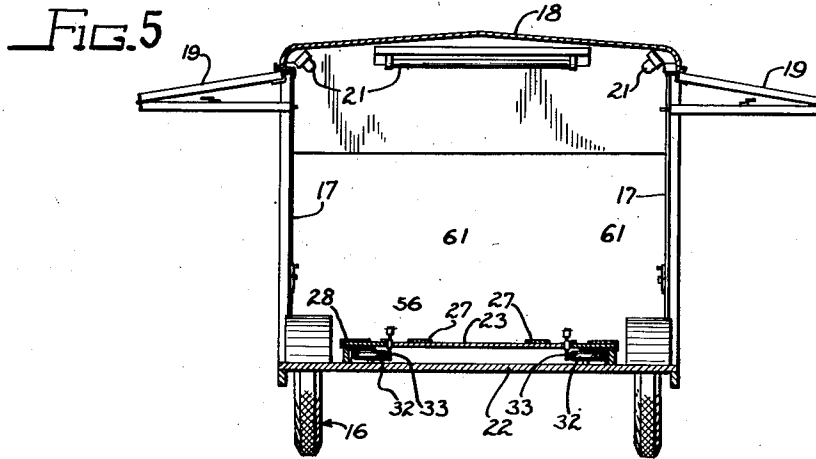
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4 Sheets-Sheet 3



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FIG. 8

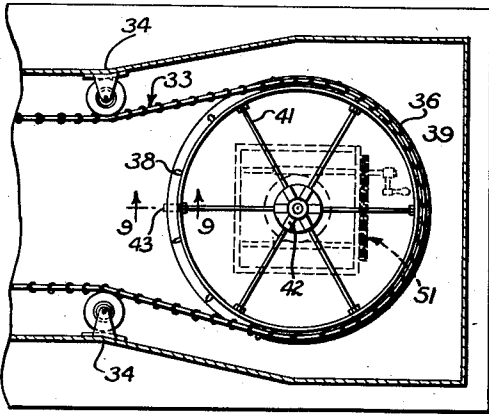


FIG. 9

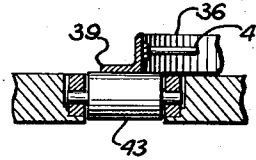


FIG. 11

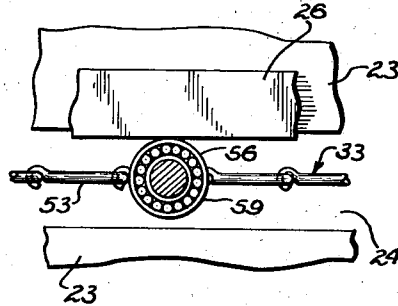


FIG. 10

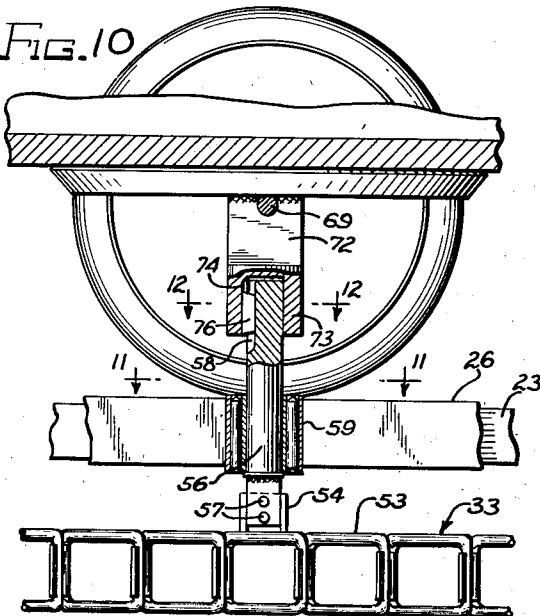


FIG. 13

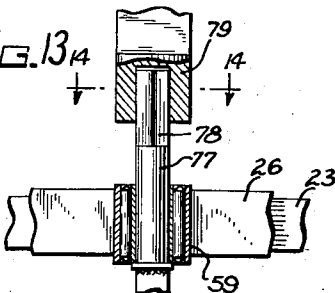


FIG. 14

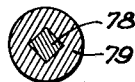
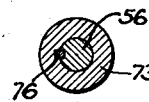


FIG. 12



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2,573,589

AMUSEMENT RIDE DEVICE

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Application July 22, 1949, Serial No. 106,288

3 Claims. (Cl. 104—172)

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Our invention relates to amusement devices generally, and more particularly to amusement devices of the type employed at carnivals, amusement parks and the like.

It is known that traveling carnivals, in view of their particular mode of operation involving frequent changes in location and stops at each location of relatively short duration, carry amusement ride devices which must be disassembled and reassembled with each change in location. Such practices involve considerable time and labor which are important factors in the cost of operation of such carnivals.

Accordingly, it is an object of our invention to provide a self driven amusement ride device which is permanently assembled and permanently mounted on a trailer conveyance, and which may be readily transported from one location to another and placed in immediate service upon arriving at a new location without requiring assembly of the device thereat, or upon preparing to move to a new location without requiring disassembly of the device.

Another object of our invention is the provision, in a device of the foregoing character, of novel means to control the direction of movement of the passenger carrying vehicles employed in the ride device.

A further object of our invention is the provision of an amusement device of the character described which is durable in service and efficient in operation.

Other and further objects and advantages of our invention will become apparent from the following description when considered in connection with the accompanying drawings, in which:

Fig. 1 is a side elevational view of an embodiment of our invention.

Fig. 2 is a cross-sectional view taken substantially on line 2—2 of Fig. 1.

Fig. 3 is a cross-sectional view on an enlarged scale taken substantially on line 3—3 of Fig. 1.

Fig. 4 is a bottom plan view of one of the passenger carrying vehicles employed in our invention.

Fig. 5 is a vertical cross-sectional view taken substantially on line 5—5 of Fig. 1.

Fig. 6 is a fragmentary cross-sectional view, on an enlarged scale, taken substantially on line 6—6 of Fig. 3 and showing a passenger carrying vehicle in operative relation to the driving mechanism.

Fig. 7 is a fragmentary cross-sectional view taken substantially on line 7—7 of Fig. 3.

Fig. 8 is a fragmentary cross-sectional view taken substantially on line 8—8 of Fig. 1.

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Fig. 9 is a cross-sectional view of a detail and taken substantially on line 9—9 of Fig. 8.

Fig. 10 is a cross-sectional view of a detail and taken substantially on line 10—10 of Fig. 6.

Fig. 11 is a cross-sectional view of a detail and taken substantially on line 11—11 of Fig. 10.

Fig. 12 is a cross-sectional view of a detail and taken substantially on line 12—12 of Fig. 10.

Fig. 13 is a cross-sectional view of a detail and showing a modified form of the structure shown in Fig. 10.

Fig. 14 is a cross-sectional view taken substantially on line 14—14 of Fig. 13.

Referring to the drawings wherein is illustrated an embodiment of my invention, the numeral 15 designates, generally, a trailer conveyance suitably supported on a main axle and wheel group indicated generally by the numeral 16 and arranged somewhat rearwardly of the longitudinal center of the trailer conveyance 15, and a forward wheel group 20 disposed at the front end of the trailer conveyance 15. The said trailer conveyance includes a plurality of vertical columns 17 supporting a roof 18. Between the said columns are arranged a plurality of folding walls 19 formed of hinged sections and adapted to be moved to the positions shown in Figs. 1 and 5 when the device is made ready for use, or to be moved downwardly substantially in vertical planes to provide a closure for the trailer conveyance. A plurality of lighting fixtures 21 are suspended from the roof 18.

Supported on the floor 22 of the trailer conveyance, in elevated relation thereto, is a platform 23, shaped substantially as shown in Fig. 2. The platform 23 is provided with a slot 24 shaped substantially in hour glass configuration, as illustrated in Fig. 2. As a reinforcement against wear the outer marginal edge and wall of the slot 24 may be covered with a metal angle 26 which has one leg overlying the marginal edge and the other leg abutting the vertical wall of the slot. Arranged on either side of the slot 24 and substantially following the configuration thereof are inner and outer tracks 27 and 28 respectively, providing a trackway. Both the inner and outer tracks may be identical in construction and may consist of flat sheet metal plates arranged in end to end relationship. Preferably, however, the outer track 28 may be extended to cover the floor area of the platform outside of the slot 24 and may be provided with a depending flange 29 which serves as a means of protecting the outer edges of the platform 23.

Mounted on the platform supporting walls 31 with their axes of rotation disposed vertically are

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a plurality of guide rollers or wheels 32 which serve to guide the endless propellor chain 33, hereinafter to be described, so as to cause the same to follow the configuration of the slot 24. As will be seen clearly in Figs. 2, 3, and 8, the guide rollers 32 are preferably disposed at four points, as at 34, with the peripheries of the guide rollers substantially tangent to the center line of the slot 24.

Supported for rotation under each end of the platform 23 are chain driving and driven pulleys 35 and 36 respectively. The said pulleys are each of a size corresponding to the radius of curvature of the arcuate end portions of the slot 24, with the peripheries of the said pulleys coinciding with the center lines of the curvatures of the said end portions of the slot. Each of the pulleys 36 is provided on its peripheral flange 37 with a plurality of uniformly spaced nubs or cleats 38 which are adapted to register in accommodating openings in the conveyor chain 33. Preferably the pulleys 35 and 36 are each formed of an angle section 39 bent in the form of a circle and supported by a plurality of radial arms 41 mounted in a hub 42. One or more rollers such as 43 may be disposed under the pulleys as a support for the same. The driving pulley 35 is coupled to the shaft of a worm type gear reducer 43 which may be driven by a gasoline engine or electric motor 44 mounted on a supporting platform 45 carried on the trailer conveyance. Power from the motor or engine 44 is transmitted through sprocket chain 47 to the jack shaft 48 and from the said jack shaft through sprocket chain 49 to the gear reducer 43. The jack shaft 48 is suitably journaled in bearings mounted in the platform 46.

The driven pulley 36 is freely rotatable and serves as an idler pulley to guide the chain 33. The pulley 36 is mounted on a belt tensioning mechanism indicated generally by the numeral 51, the said mechanism being adapted for taking up slack in the conveyor chain 33.

The propellor chain 33 is formed of hinged links 53 having openings arranged to cooperate with the nubs 38 of the pulleys 35 and 36. Suitably mounted on links arranged at predetermined spaced intervals on the propellor chain 33 are upwardly extending brackets 54. Mounted on each of said brackets for vertical adjustment relative thereto are pins 56. As will be seen clearly in Fig. 10 the lower end of each of the pins is preferably of rectangular cross-section and is secured to a bracket 54 as by bolts 57. The upper end of the pin is of cylindrical form and is slotted to provide a keyway 58. The pins 56 are adapted to project upwardly through the slot 24 and each pin is provided with a roller 58 rotating on a needle bearing with the roller arranged to ride within the slot 24. Actually in view of the particular arrangement of parts, the roller 59 is urged outwardly and will bear against the metal angle 26 in the course of travel of the chain 33.

The pins 56 carried by the chain 33 are adapted to propel a plurality of passenger carrying vehicles 61 in a manner, as will be hereinafter described. The vehicles 61 are here shown as miniature automobiles although it will be understood that the said vehicles may be of any other desired form or type. The body of each vehicle is suitably mounted on a base member 62 which may be in the form of a flat plate. The said base member is provided with arcuate slots or cutout portions 63 arranged in pairs in opposed relation, as shown particularly in Fig. 4. Refer-

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ring to Fig. 6, secured to the underside of the base member 62 between each pair of slots 63 is a plate member 64 which may be substantially square in plan, the said plate member having a central aperture through which projects a bolt or stud 66 secured to the plate member 64 as by welding. Disposed adjacent the plate member 64 is a circular bearing disc 67 having a central aperture to accommodate the stud 66 and being provided with a plurality of spaced perforations. Adjacent the disc 67 is a dished cover plate member 68 having a central aperture to accommodate the stud 66, the member 68 having a depth sufficient to enclose the disc 67 when the parts are in assembled relation, as shown in Fig. 6. Suitably secured as by welding to the dished member 68 are a pair of stub axles 69 in axial alignment with each other. Rotatably mounted on each of the said axles is a supporting wheel 71 which is adapted to project into one of the arcuate slots 63 in the base member 62 and to ride on one of the tracks 27 or 28. Depending from the dished member 68 and secured thereto as by welding is a substantially U-shaped bracket 72 having a depending boss 73 which is bored axially to receive a pin 56. The bore of the said boss is provided with a keyway 74 which registers with keyway 58 of the pin 56 to accommodate a key 76 to lock the pin 56 to the bracket 72. Thus, it can be seen that the axles 69 are locked in fixed relation to the pin 56 and accordingly can move only with the said pin. The dished plate member 68 is adapted to be filled with lubricant which is retained therein and distributed by the apertures in the disc 67 to associated bearing surfaces.

Stabilizers 70, here in the form of spring biased plungers are secured to the under side of the base member 62 and are arranged in pairs in confronting relation and proximate to each end of an axle 69. The said stabilizers serve to normally urge the axles to positions whereby their axes are at right angles to the longitudinal axes of the vehicles.

As will be seen by reference to Fig. 4 the arcuate slots are of such dimensions as to permit limited movement of the wheels therein. It will be apparent that as the chain 33 moves in its path, the pins 56 which are rigidly attached to the links of the chain are caused to accommodate themselves to the configuration of the slot 24. Thus, when moving in the straight line portions of the slot 24, the positions of the pins 56 relative to the slot is such that a vertical plane through the keyway 74 is substantially parallel to the longitudinal center line of the trackway. However, when the pins 56 reach a point in their travel, as at 34 where the slot 24 begins to deviate from a straight line, the pins are caused to rotate axially relative to the center line of the trackway to a degree corresponding to the angle of deviation from the straight slot portion. This rotation is imparted to the pair of wheels 71 associated with a particular pin 56 thus, causing the said wheels to swivel about their vertical axis so as to accommodate themselves to the deviation in the trackway.

It will be apparent that as a vehicle 61 proceeds along the trackway and the pins 56 associated therewith reach the arcuate portions of the slot 24, at the ends of the trackway, the pins 56 are caused to rotate axially so that the vertical planes through the keyways 74 thereof, at any position in the arcuate portion, are substantially tangent to the center line of the said arcuate portion. The rotational movement of the pins 56 is im-

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parted to the associated pair of wheels and effects a swivelling thereof to a degree such as to steer the vehicle 61 around the arcuate portion of the trackway. It will be seen that since each pair of wheels may swivel independently of the other, each pair of wheels is caused to be swivelled by its associated driving pin 56 so as to effect a steering of the vehicle in a relatively short arc thus permitting the use of a trailer conveyance of conventional size. It will be apparent that in the course of travel of the vehicle over the trackway, the axles of the vehicle at any instant are always arranged at a right angle to the center line of the particular straight portion of the trackway or at a right angle to a line tangent to any arcuate portion thereof over which the axle may then be disposed.

In the modified construction illustrated in Figs. 13 and 14, the pin 77 is shown as having a head portion 78 substantially square in cross section, the said head portion being received in a correspondingly shaped socket provided in the member 79 depending from the vehicle.

It is to be understood that although the trackway is shown as substantially in hour-glass configuration and on a level plane, it is within the contemplation of our invention to provide a trackway of any desired configuration and also to have the trackway either on a level plane or on a curved or undulating surface, thereby adding additional interest and excitement to the amusement ride.

It will be apparent from the foregoing that the amusement ride of our invention is at all times in readiness for immediate operation, it being necessary upon arriving at a new location only to raise the hinged wall members to the positions shown in Figs. 1 and 5. Suitable jacks not shown may be positioned under each of the corners of the trailer to increase the stability of the same while in service. With the motor in operation and its associated clutch placed in operative condition, the vehicles 61 are caused to ride over the course of the trackway and to follow the configuration thereof.

We claim:

1. A movable amusement ride device comprising a floor mounted on wheels, said floor having a closed trackway, a passenger carrying vehicle adapted to travel along said trackway, a propeller chain adapted to travel substantially the course of said trackway, a motor for driving said chain, said vehicle having front and rear pairs of wheels with each pair of wheels adapted to swivel about a vertical axis, and a member depending from each of said pairs of wheels coaxially with said vertical axis, complementary members carried on said chain and engageable in keyed relationship with said depending members so that as said propeller chain is caused to travel said vehicle will be propelled and steered

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over said trackway with each of said pairs of wheels being independently swivelable.

2. A movable amusement ride device comprising a floor mounted on wheels, said floor having a closed trackway and a slot therein substantially coextensive therewith and conforming to the configuration of said trackway, an endless propeller chain arranged under said trackway and adapted to travel substantially the course of said trackway, a motor for driving said chain, a passenger carrying vehicle adapted for movement over said trackway, said vehicle having front and rear pairs of wheels with each pair of wheels adapted to swivel about a vertical axis, a member depending from each of said pairs of wheels coaxially with said vertical axis and extending through said slot, complementary members carried on said chain and engageable in keyed relationship with said depending members so that as said propeller chain is caused to travel said vehicle will be propelled and steered over said trackway, with each of said pairs of wheels being independently swivelable.

3. A movable amusement ride device comprising a floor mounted on wheels, said floor having a closed trackway and a slot therein substantially coextensive therewith and conforming to the configuration of said trackway, an endless propeller chain arranged under said trackway and adapted to travel substantially the course of said trackway, a motor for driving said chain, a passenger carrying vehicle adapted for movement over said trackway, said vehicle having front and rear pairs of wheels with each pair of wheels adapted to swivel about a vertical axis, a member depending from each of said pairs of wheels coaxially with said vertical axis and extending through said slot, complementary members carried on said chain and engageable in keyed relationship with said depending members so that as said propeller chain is caused to travel said vehicle will be propelled and steered over said trackway, with each of said pairs of wheels being independently swivelable, and resilient means acting on each of said pairs of wheels to urge said wheels to positions whereby their axes of rotation are perpendicular to the longitudinal axis of the vehicle.

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JOSEPH F. MOSCA.

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