Aug. 19, 1930. A. SPILLMAN **1,773,636**

DRIVING MECHANISM FOR AMUSEMENT DEVICES

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Fig. 1.

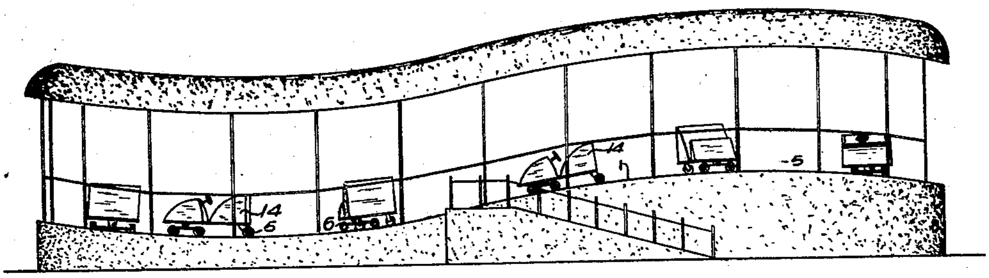
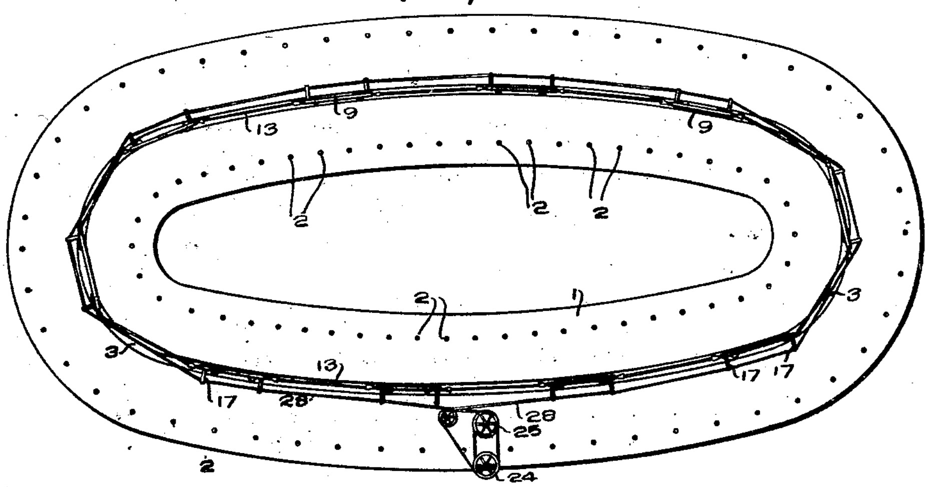


Fig. 2.



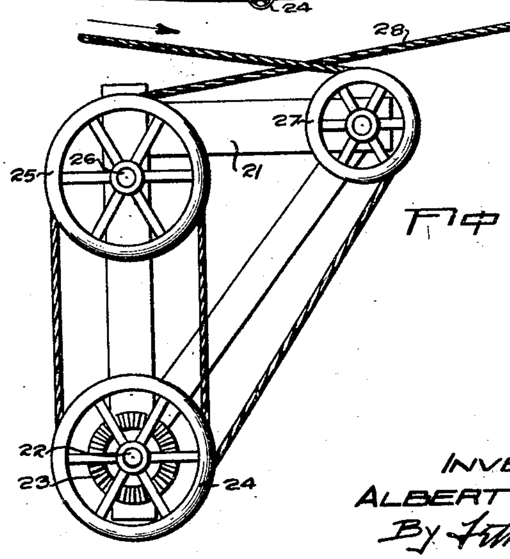


Fig. 3.

INVENTOR
ALBERT SPILLMAN
By Fetherstonhaugh & Co
Attys

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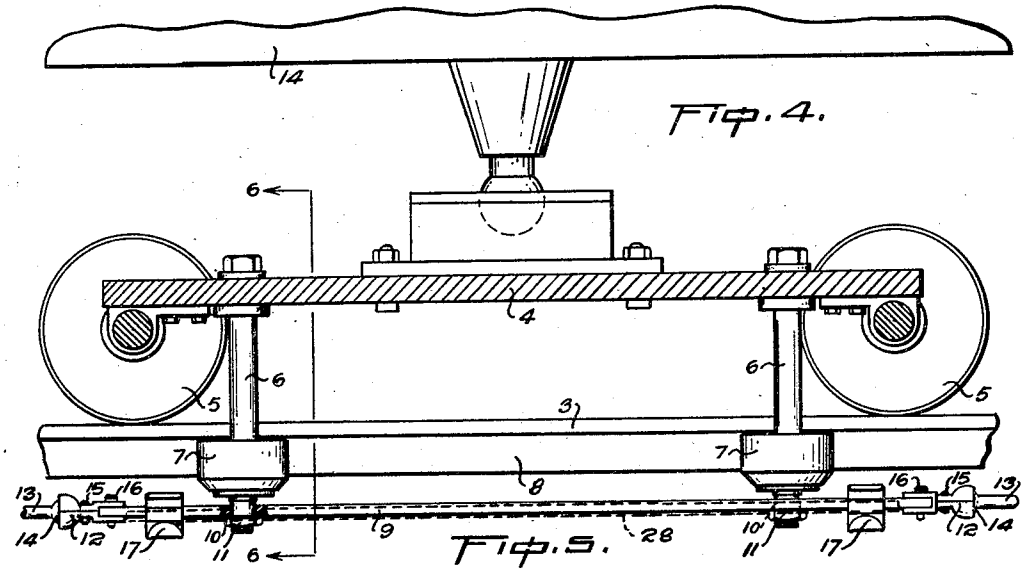


Fig. 4.

Fig. 5.

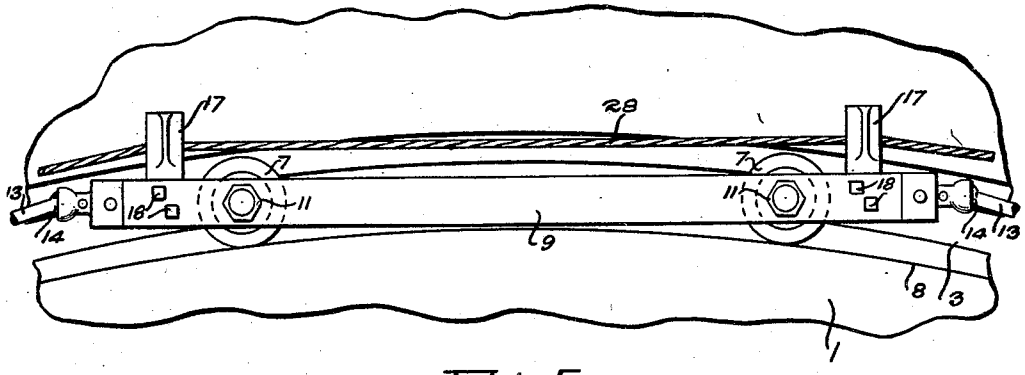
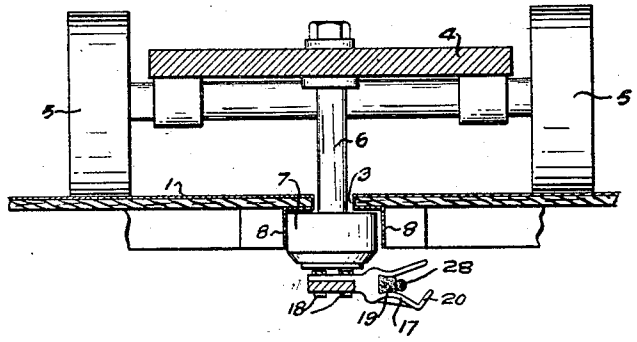


Fig. 6.



INVENTOR
ALBERT SPILLMAN
By Fitzgerald & Co
Attys.

Patented Aug. 19, 1930 1,773,636

UNITED STATES PATENT OFFICE

ALBERT SPILLMAN, OF NORTH TONAWANDA, NEW YORK

DRIVING MECHANISM FOR AMUSEMENT DEVICES

Application filed November 7, 1925. Serial No. 67,618.

My invention relates to improvements in driving mechanisms for amusement devices and the object of the invention is to construct a mechanism whereby a driving cable passing underneath a platform is connected to and propels a plurality of cars or other passenger carrying devices movably mounted thereon. A further object of the invention is to so construct the cable drive that it will be capable of propelling the cars along an undulated platform and a still further object of the invention is to construct the cable receiving driving mechanism of a minimum number of parts so that the amusement device may be very readily assembled and taken asunder for transportation.

My invention consists of a driving mechanism for amusement devices constructed and arranged all as hereinafter more particularly described and illustrated in the accompanying drawing in which:

Fig. 1 is a side elevational view of the amusement device showing the passenger carrying cars positioned upon an undulated platform.

Fig. 2 is an inverted plan view of the platform structure showing the cable driving mechanism which is positioned beneath the platform connecting with the cable engaging means on the cars which extend therethrough.

Fig. 3 is a plan view of the cable drive showing the cable passing therefrom to the passenger carrying devices.

Fig. 4 is a vertical, sectional view of a fragmentary portion of the platform showing the truck of one of the passenger carrying devices mounted thereon and the cable gripping means therefor which extends through a slot in the platform, the cable thereon being shown in the dotted lines.

Fig. 5 is an inverted view thereof and

Fig. 6 is a vertical, sectional view through the line 6—6 Figure 4.

Like characters of reference indicate corresponding parts in the different views.

1 is the platform which can be of any required formation being also preferably undulated and supported upon a plurality of posts 2. In this case the platform is shown of oval formation and provided with a continuous oval slot 3 therethrough.

A plurality of cars 4 are mounted upon the platform 1 and adapted to run thereabout following the slot 3 being mounted upon trucks 4 having pairs of platform engaging running wheels 5 thereon. Each of the trucks 4 is provided with a pair of centrally positioned downwardly extending spindles 6 upon its under side, such spindles being adapted to project through the slot 3, and 7 are rollers rotatably mounted upon the lower portions of the spindles 6 and positioned underneath the slot 3 running between a pair of oval tracks 8 of inverted L-shape cross section which are positioned underneath the platform one upon each side of the slot 3.

9 is a bar having a pair of orifices 10 therein, each adapted to receive the reduced threaded ends of one of the spindles 6 which are inserted thereinto, the bar extending between the pair of spindles and secured thereto by the nuts 11. Upon each end of the bar a detachable, universal ball socket 12 is provided, each socket being adapted to receive the bulbous end 14 of one of the connecting rods 13 which extend between the adjacent bars 9 of each car. The ball socket 12 is of the split type, the two portions being connected together over the bulbous end 14 of the rod 13 by means of the bolt 15, and 16 is a pin for securing the socket to the end of the bar 9. 17 are a pair of cable receiving jaws positioned one in the vicinity of each end of the bar 9 and secured thereto by pairs of bolts 18, and 19 is a friction pad inserted at the root of the jaw and against which the cable rides. Upon the outer end of the lower member of the jaw I provide an upwardly extending lug 20 for preventing any possibility of the cable riding out should it accidentally become slack.

21 is a subsidiary frame mounted underneath the platform of the device and in which is journaled a vertical shaft 22 carrying a bevel gear 23 which is suitably driven from a source of power. The upper end of the shaft 22 carries a pulley wheel 24. 25 is a tensioning pulley wheel secured to the stub

shaft 26 which is movably mounted in relation to the shaft 22. A third pulley 27 is provided upon the frame 21, the cable 28 which extends around the various pairs of jaws 17 of the passenger carrying devices being wound around the three pulleys in the following manner.

On reference to Figure 3 it will be seen that the cable 28 on leaving the jaws 17 of the passenger carrying devices passes in the direction indicated by the arrow on such figure onto the pulley 27 passing partially therearound and extending to the pulley 24 from where it passes to the pulley 25, passing therearound and back to the pulley 24 from where it extends again around the pulley 25 passing therefrom back to its engagement with the jaws 17 on the preceding cars.

When the cable which is of the endless type is properly tensioned, it is drawn inwardly against the cushions 19 in the respective pairs of jaws 17, a positive driving connection being constituted between the cable and the jaws, the rollers 7 upon the lower ends of the spindles 6 bearing against the inner track 8. Upon reference to Figures 2 and 3 of the drawings, the operation of my cable drive will be readily appreciated. It will be seen that as the cars moving in a clockwise direction approach the cable driving mechanism that the cable will gradually come out of engagement with the jaws 17 passing onto the pulley 27 so that the cars are completely disengaged from the cable in passing the cable driving mechanism, again reengaging the cable upon the far side of the cable driving mechanism after it leaves the pulley 25.

It will be seen that by my construction I have devised a drive wherein each car is connected to the driving cable, the connecting rods 13 constituting a means for positioning the cars in their spaced apart relation, and also constituting a means for propelling each car past the cable driving mechanism, as during this period the cable is necessarily disengaged therefrom. Should it be possible however that one of these connecting rods 13 become unfastened it will be appreciated that the cable will tend to keep the two cars which were connected by the unfastened rod 13 in their required spaced apart relation. This feature is particularly desirable and necessary in an amusement device as shown in Figure 1 wherein each of the cars 14 has an individual erratic movement passing around the platform, each of the cars being liable to run backwards, sideways or rotate in a clockwise or anti-clockwise direction. It is therefore necessary to insure that adjacent cars have complete clearance of each other in all their movements, for this reason the connecting rods 13 are provided. It will, therefore, be seen that should one of these connecting rods become disengaged as before described that a serious accident might occur should the cars connected by such rods approach one another and collide. The provision of the driving cable passing tautly around the cars very materially assists to eliminate the possibility of accidents should such a breakage occur.

From the foregoing description it will be apparent that I have provided a particularly simple and efficient means for driving a plurality of cars around either a regular or irregular track from a single source of power and by the provision of rollers bearing against the track under the influence of the cable have devised means whereby the cars may follow any desired path and not be confined to a circular movement as is only possible where radiating arms or sweeps carrying cable jaws are used.

What I claim as my invention is:—

1. A driving mechanism for amusement devices comprising a platform having a plurality of connected passenger carrying cars movable thereon, an endless cable engaging and propelling the cars upon the platform, means for driving the cable, means whereby said cable comes out of engagement with the cars as they pass in proximity to the cable driving means, and means for propelling said disengaged cars through the medium of the other connected cars engaging the cable.

2. A driving mechanism for amusement devices comprising an undulated platform having a plurality of passenger carrying cars movable thereon, an endless driving cable, means for driving the cable, means whereby the cars are engaged by the cable and propelled around the platform coming out of engagement therewith as they approach the cable driving means and coming into engagement therewith when they pass the cable driving means, and means whereby each car is propelled past the cable driving means by the other cars which are in engagement with the cable drive.

3. A driving mechanism for amusement devices comprising a platform having an endless slot therein, a plurality of means extending through and adapted to travel along the slot, a plurality of cars connected to the upper ends of said means and adapted to roll on the platform, an endless driving cable passing around the under side of the platform in the vicinity of the slot, means for driving the cable, means whereby the means extending through the slot in the platform are successively engaged by the cable and propelled around the slot coming out of engagement therewith as they approach the cable driving means and coming into engagement therewith when they pass the cable driving means, and means whereby each car is propelled past the cable driving means by the other cars which are in engagement with the cable drive.

4. A driving mechanism for amusement devices comprising a platform having an endless slot therein, a plurality of cars adapted to roll on the platform and having spindles extending downwardly through the slot, an endless cable passing around the platform in the vicinity of the slot, jaws carried by the lower ends of the spindles and into which the cable is adapted to enter, and rods extending between the spindles of adjacent cars for retaining the cars in their spaced apart relation.

5. A driving mechanism for amusement devices comprising a platform having an endless slot therein, a plurality of cars adapted to roll on the platform, and having spindles extending downwardly through the slot, an endless cable passing around the platform in the vicinity of the slot, jaws carried by the lower ends of the spindles and into which the cable is adapted to enter, and lugs extending upwardly from the lower members of the jaws for preventing the cable becoming accidentally displaced therefrom.

6. In an amusement apparatus or roundabout, a passenger vehicle comprising a superstructure and an under carriage with which the superstructure has a swivel connection for unrestricted rotary motion about its axis, means for supporting the superstructure beyond the undercarriage, an undulating track upon which the undercarriage travels in a fixed path, an endless slot therein, an endless drive below the undulating track for imparting travelling motion to the vehicle, means for connecting the undercarriage with the drive, and a guide element for maintaining the travel of the undercarriage in the fixed path on the undulating track.

7. An amusement apparatus or roundabout as claimed in claim 6, in which the underside of the undulating track is provided with guide bars at opposite sides of the slot for engaging the guide element and coacting with it to maintain the travel of the undercarriage in the fixed path.

8. An amusement apparatus or roundabout as claimed in claim 6 in which the undercarriage is provided with wheels which engage the top surface of the undulating track at opposite sides of the endless slot.

9. An amusement apparatus or roundabout as claimed in claim 6, in which the underside of the undulating track is provided with guide bars at opposite sides of the slot, and the undercarriage is provided with a guide element extending through the slot and engaging the guide bars for maintaining the travel of the undercarriage in the fixed path, and is also provided with a grip for engaging the endless drive.

10. An amusement apparatus or roundabout as claimed in claim 6, in which swivel means are provided for coupling together several undercarriages in series at predetermined distances apart between their swivel points of connection, rigidly maintaining the spaced intervals between the vehicles and permitting the undercarriages to follow the line of the slot and the undulations of the track.

11. An amusement apparatus or roundabout as claimed in claim 6, in which the swivel connection for the vehicle consists of a socket in the undercarriage close to the undulating track, a ball for the superstructure entered in the socket, and clamping means maintaining the assembly of the ball and socket.

12. An amusement apparatus or roundabout as claimed in claim 6, in which several undercarriages are connected together in series and maintained at predetermined distances apart between their swivelling points of connection by rigid coupling bars each of which is swiveled by ball and socket connections to two adjacent vehicles.

13. An amusement apparatus or roundabout as claimed in claim 6, in which each undercarriage is provided with two studs extending through the slot, a brace rigidly connecting the studs below the undulating track, a grip carried by the brace, and engaging the endless drive, and rigid bars connected by ball and socket joints to the braces coupling several vehicles together in series and maintaining the undercarriages at predetermined distances apart between their swivelling points of connection.

ALBERT SPILLMAN.