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AMUSEMENT RIDE

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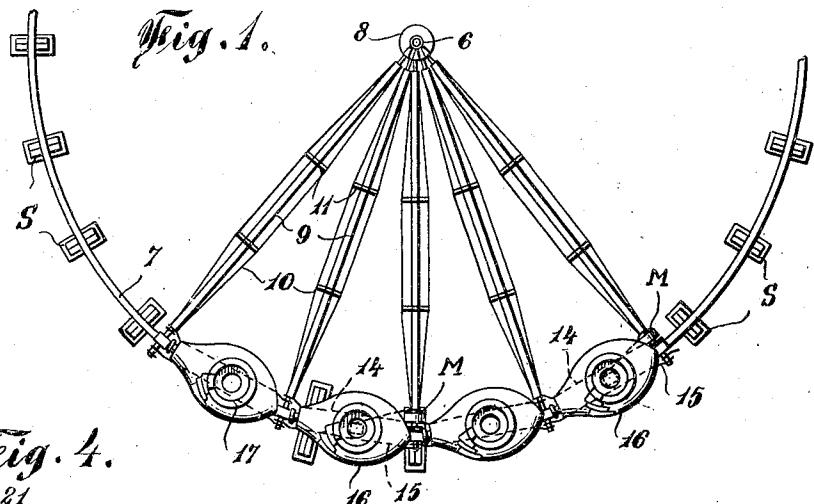
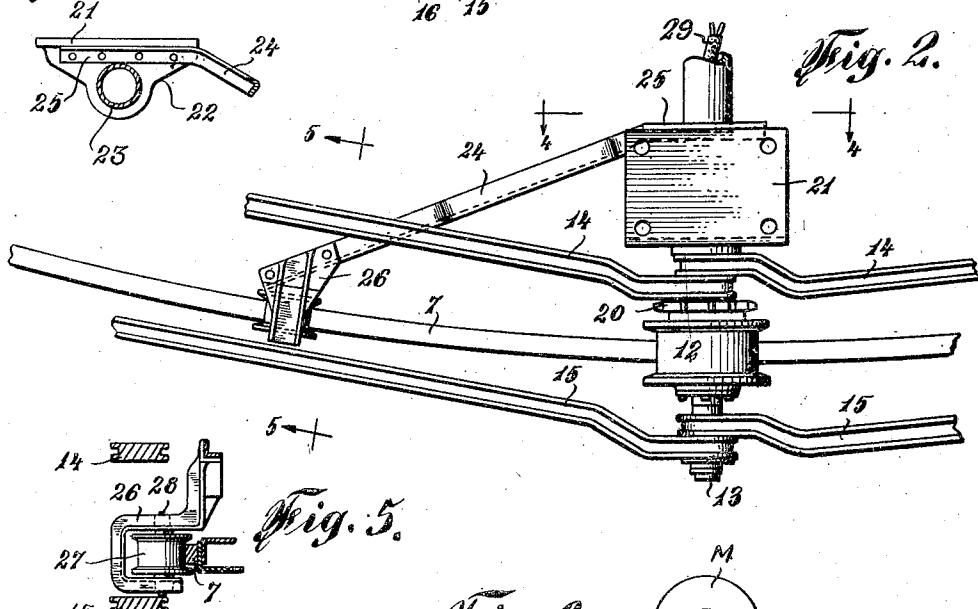


Fig. 4.



UNITED STATES PATENT OFFICE

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AMUSEMENT RIDE

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This invention relates to amusement rides, and particularly of the type wherein a circular undulating track is arranged concentric thereof with a fixed vertical support from 5 which extend radial sweeps mounted at their inner ends upon the support to rotate about support and have movement in a vertical direction, the outer ends of the sweeps being supported by traction wheels engaging upon 10 the track, passenger carriers being mounted upon the sweeps, and the sweeps with the carriers propelled about the track by a motor fixedly mounted upon the sweep and having a driving connection with the sweep support- 15 ing wheel. In the present ride instead of the passenger cars being mounted upon the sweeps they are mounted upon links pivotally connected with the sweeps. In this form of ride with the motors fixedly mounted upon 20 the sweeps the stress and strains of the driving torque of the motor in the transmission of its power to the traction wheels are transmitted to and taken up in the sweep and in the pivot support thereof on the central support 25 as a bending stress with the result that not only does the material of the sweep become crystallized but also the pivot support of the sweeps requiring constant inspection and resulting in frequent renewal of the sweeps.

It is the object of the present invention to 30 overcome this disadvantage by providing means to relieve the sweep on the stresses and strains of the driving torque of the motor and to transmit and take up such torsional driving stresses of the motor in the track structure, said means being also adapted to serve as an auxiliary support for the motor carrying sweep upon the track.

In the drawing accompanying and forming a part of this application Figure 1 is a 35 plan view of an amusement ride with my invention applied thereto, only so much of the track structure being shown as is essential 40 to an understanding of the invention.

Figure 2 is a plan view, on an enlarged 45 scale, showing the manner of connecting the sweep connecting links with the sweeps, the motor mounting means and sweep support- 50 ing traction wheel, and the means for trans-

mitting and taking up the torsional driving strain of the motor in the track structure.

Figure 3 is a view looking at the bottom of Figure 2 and in addition showing the motor mounted on its support and gearing for transmitting the power of the motor to the sweep supporting traction wheel.

Figure 4 is a view taken on the line 4—4 of Figure 2 looking in the direction of the arrows to show the mounting of the motor on the sweep; and

Figure 5 is a view taken on the line 5—5 of Figure 2 looking in the direction of the arrows and showing a portion of the means for transmitting the torsional driving stresses of the motor to the track structure.

In carrying out the invention there is provided a vertical support 6 mounted in a suitable supporting structure as by imbedding in a concrete base, a circular track rail 7 having up and down undulations and mounted upon a suitable supporting structure S is arranged concentrically of the central support 6. A head 8 is rotatably mounted on the central support to which sweeps are connected to participate in the movement of the head and also permit of the outer ends of the sweeps to have movement in a vertical direction. The sweeps are of tubular structure and to reinforce the same tie rods 10 are secured at opposite ends to the sweeps and intermediate the ends engage braces 11 mounted upon the sweeps. The outer ends of the sweeps are supported upon the track by traction wheels 12 rotatably mounted on axles 13 fixed to and extending outwardly from the sweeps. The outer ends of the sweeps are connected by links 14, 15 pivotally connected with the sweeps, as by mounting upon the wheel supporting axles 13, as shown in Figure 2, said links also serving as supports for passenger carriers or cars 16, in the present instance simulating a tumble bug and arranged with a circular seat in the top.

The car carrying sweeps are propelled around the track by electric motors, shown in a conventional manner at M. For illustrative purposes two of such motors are shown, although a greater number may be provided if necessary. One of said motors

is mounted on an end sweep and the other upon the successive alternate sweep. The power of the motor is transmitted to the traction wheel 12 mounted on its associated sweep by suitable power transmission mechanism, and shown as comprising a sprocket chain 18 passing around sprocket wheels 19 and 20 rotatable with the motor shaft and traction wheel.

10 To relieve the motor carrying sweep of the torsional driving stress of the motor and the consequent exerting or bending strain thereon the motor is loosely mounted on the sweep, for which purpose there is provided a bracket 15 21, substantially of U shape in longitudinal section, the opposite legs 22 of the bracket being arranged with aligned openings for loosely engaging on the sweep, as at 23, preferably with a bushing between the wall 20 of the openings and the sweep. The motor is fixed upon the leg connecting portion of the bracket 6 arranged at the top of the sweep. A brace in the form of a rigid arm 24 constructed of angle iron is secured at one and, 25 as at 25, to the motor mounting bracket, in the present instance to the inner end. The arm or brace extends in a direction longitudinally of and toward the track rail, with the intermediate portion offset downwardly and 30 the free end extending in a plane substantially parallel with but below the track rail. A bracket 26 is fixed to the free end of the brace arm, said bracket having a portion of U shape extending above and transversely of the track rail. A flanged wheel 27 is rotatably carried within the U portion of the bracket, as by mounting on a sprocket 28 fixed at the 35 ends in the opposite legs of said U portion of the bracket, the wheel being operatively positioned or tractionally engaging upon the track rail, as clearly shown in Figure 3. The motor is suitably connected with a source 40 of power, as by conductors 29 carried by a cable extended through the sweep. In the transmitting of the power of the motor to the sweep supporting traction wheel the driving torque of the motor would effect a rotative movement of the motor mounting bracket on the sweep. However, by the provision of the 45 brace arm 24 the driving torque of the motor will exert a force upon said brace which is transmitted through the wheel 27 carried thereby and engaging with the track to the track rail thus preventing rotation of the motor bracket on the sweep and transmitting and taking up the torsional driving stresses and strains of the motor in the track supporting structure through the track rail. It will 50 be obvious that by this arrangement not only 55 is the sweep relieved of the torsional driving stresses and strains of the motor but that the motor brace arm will also serve as an auxiliary support for the motor carrying sweep.

Having thus described my invention I 60 claim:

1. In amusement rides, a circular track, a sweep pivotally supported centrally of the track and carrying a wheel to support the sweep upon and run about the track, a motor mounted on the sweep having a driving connection with the sweep supporting wheel to propel the wheel about the track and the sweep about the central support, and means secured to the motor operatively positioned upon and moved around the track with the sweep and take up the driving torque of the motor in the track structure.

2. Amusement rides as claimed in claim 1, wherein the motor is loosely mounted on the sweep and the means to transmit and take up the driving torque of the motor in the track structure comprises a rigid arm connected with the motor and carrying means operatively positioned upon the track.

3. Amusement rides as claimed in claim 1, wherein the motor is carried by a bracket loosely mounted on the sweep, and the means to transmit and take up the driving torque of the motor in the track structure comprises a rigid arm fixed at one end to the motor carrying bracket and a wheel carried by said arm operatively positioned upon the track.

4. Amusement rides as claimed in claim 1, wherein the means to transmit and take up the driving torque of the motor in the track structure comprises a rigid arm fixed at one end to the motor mounting, a bracket fixed to the arm having a yoke shaped portion to extend above and transversely of the track, and a wheel rotatably carried within the yoke portion of the bracket operatively positioned upon the track.

5. In amusement rides, a circular track rail, a support centrally of the track, a series of radial sweeps mounted at one end upon and rotatable about the central supports, wheels supporting the sweeps upon the track, links pivotally connecting the sweeps at the outer ends and adapted for the mounting of passenger carriers thereon, a motor loosely mounted on a sweep and having a driving connection with the supporting wheel for said sweeps to propel the sweeps with the passenger carriers around the track, and means secured to the motor mounting and tractionally positioned upon the track to take up the torsional driving stress of the motor.

6. Amusement rides as claimed in claim 5, wherein the means to take up the driving stress of the motor comprises a rigid arm fixed to the motor mounting and carrying a wheel operatively positioned upon the track rail and also serve as an auxiliary support for the motor carrying sweep.

Signed at Beaver Falls, in the county of Beaver and State of Pennsylvania, this 16th day of February, 1929.

HARRY G. TRAVER.