

Mar. 20, 1923.

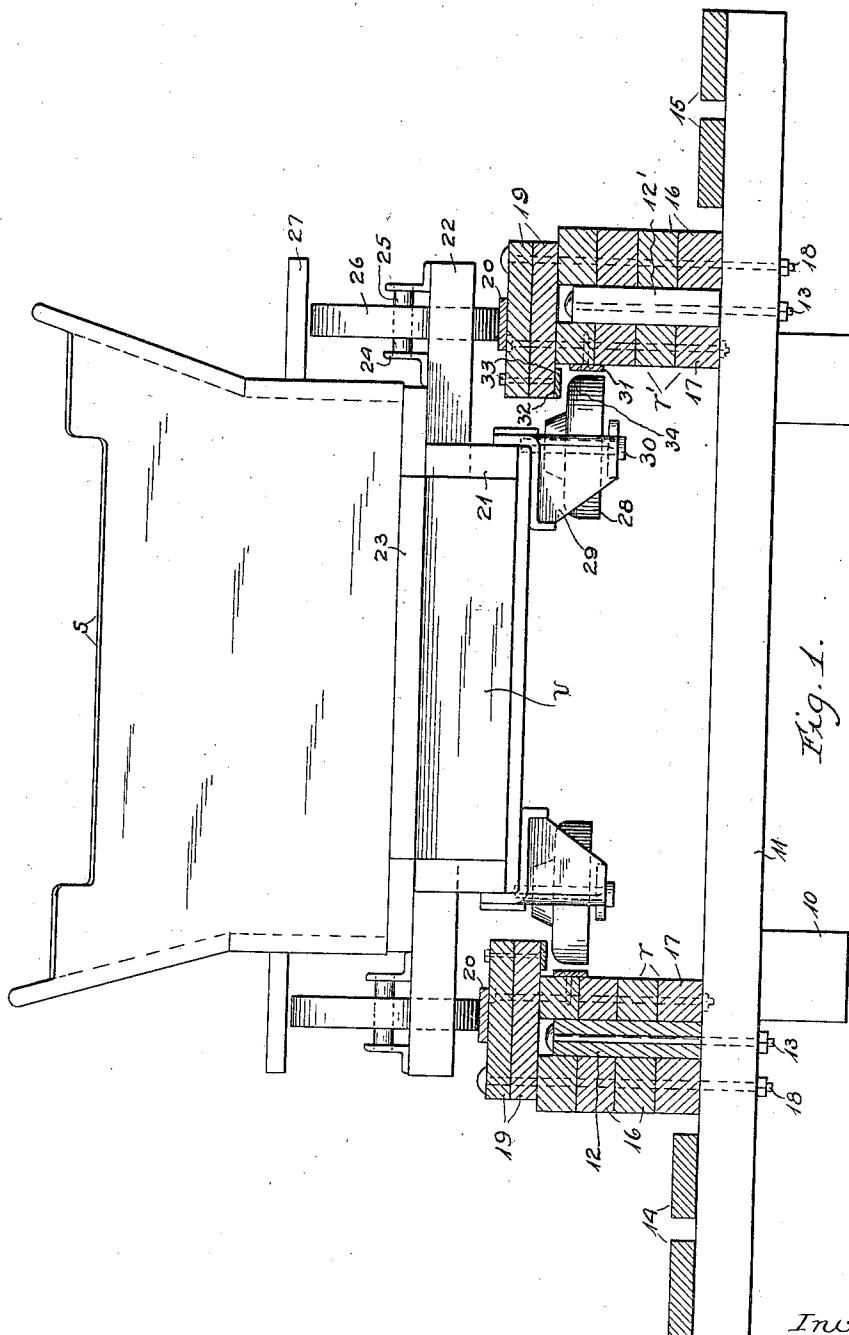
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PLEASURE RAILWAY STRUCTURE

Filed Dec. 7, 1922

2 sheets-sheet 1



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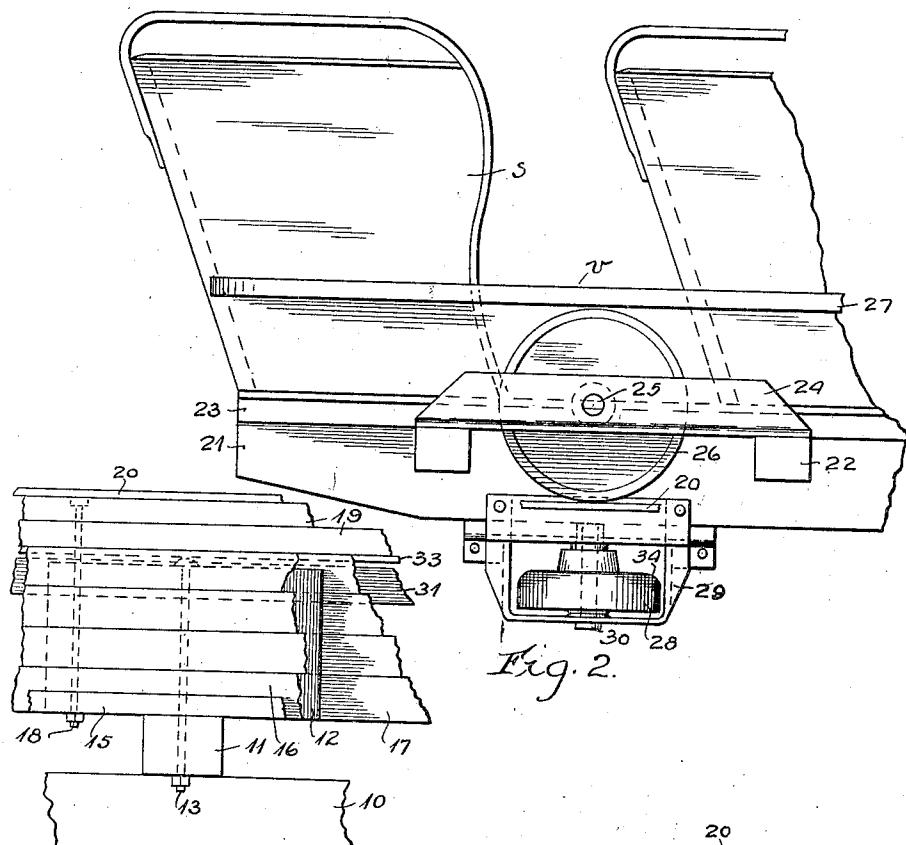


Fig. 2.

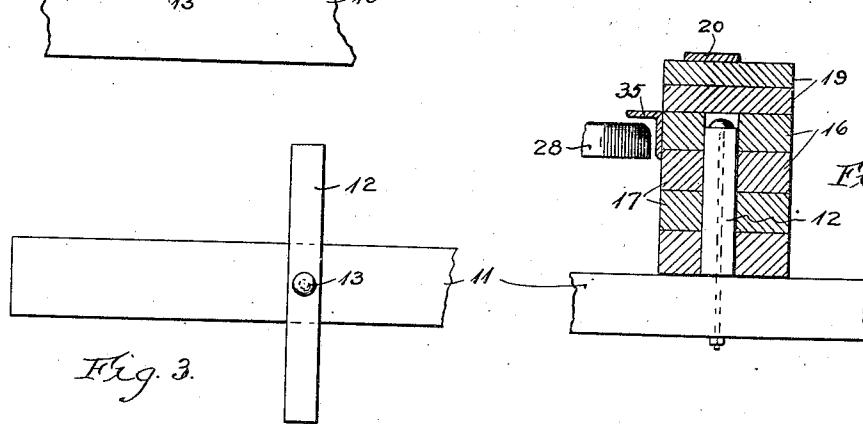


Fig. 3.

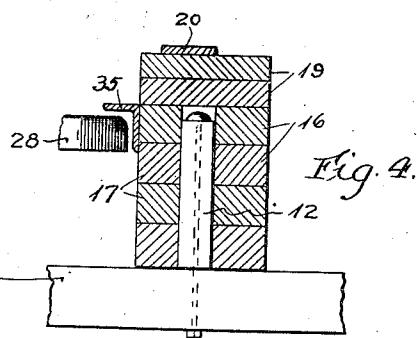


Fig. 4.

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# UNITED STATES PATENT OFFICE.

JOHN A. MILLER, OF HOMEWOOD, ILLINOIS.

## PLEASURE-RAILWAY STRUCTURE.

Application filed December 7, 1922. Serial No. 605,345.

To all whom it may concern:

Be it known that I, JOHN A. MILLER, a citizen of the United States, and a resident of Homewood, in the county of Cook and 5 State of Illinois, have invented certain new and useful Improvements in Pleasure-Railway Structures, of which the following is a specification.

My invention relates to pleasure railway 10 structures and the object is to provide improved track construction and safety arrangement for permitting the use of abrupt dips and summits and short curves and for assuring safe travel of the cars on the track.

15 More in detail one important object of the invention is to provide improved track construction which will enable the rail structures to be more quickly and accurately aligned and which will give such structures 20 the required flexibility particularly at dips and curves. Another important object is to provide improved attachments each in the form of a single wheel or roller for engaging both horizontally and vertically with the 25 rail structure to prevent the car from leaving the rail structure vertically or laterally.

The various features of my invention are incorporated in the construction shown on the accompanying drawing, in which—

30 Fig. 1 is a rear elevational view of a car together with the track structure,

Fig. 2 is a side elevational view of the parts shown in Fig. 1,

Fig. 3 is a plan view of a tie beam with 35 the fillet blocks thereon, and

Fig. 4 is a cross sectional view of the rail structure showing a modified arrangement.

On the drawing 10 represents the trestle or supporting framework for the railway 40 structure and 11 represents the tie beams which are supported on such framework and

which in turn support the rail structures  $r$  and  $r'$  of the track on which the pleasure vehicles  $v$  travel. Before applying the tie 45 beams to the supporting framework I secure to each beam fillet blocks 12 and 12' preferably by means of bolts 13, these blocks being accurately spaced in accordance with the gauge and curvature of the track at the

50 points where the beams are to be used. The beams are then applied on the supporting trestle 10 and secured thereto in any desired manner. At the ends of the beams board 55 walks 14 and 15 are applied for the work-

men who can then readily assemble the rail structures. Having determined the gauge

by means of the fillet blocks 12 and 12' the rail structures can be accurately built up. In the arrangement of Fig. 1 each rail structure comprises tiers of beams 16 and 17 at 60 the opposite sides of the fillet blocks, and these beams can be readily secured by means of bolts 18 passing therethrough and through the tie beams, and on top of the tiers are supported the planks or beams 19 65 either on edge, or flat as shown. The planks or beams 19 are secured to the tiers by separate bolts or by the same bolts 18 which secure the tier beams to the tie beams. The building up of the tiers 16 and 17 and the 70 planks 19 around the fillet block 12 affords very strong and rigid yet sufficiently flexible rail structures whose gauge is fixed and maintained by the fillet blocks which are securely bolted to the tie beams. On top of 75 the rail structures are secured the flat rail bars 20 for the vehicle.

Describing now the vehicle safety appliances and their cooperation with the rail structures, the vehicle  $v$  shown comprises 80 the longitudinal supporting beams 21, the cross beams 22, the floor 23 and the seat structures 8. At the corners of the vehicle the cross beams 22 project to support angle fittings 24 for journaling the axles 25 of the 85 respective vehicle wheels 26, the wheels engaging the flat rails 20. Over the wheels extend the guard or fender boards 27. Associated with each vehicle wheel is a guide or safety wheel 28. For each guide wheel a 90 supporting bracket structure 29 is provided secured to the vehicle framework, the guide wheel being journaled on a vertical shaft or axle 30 supported in the bracket and each guide wheel extends laterally outwardly to 95 engage with the adjacent rail structures. On the rail structures the rail plates or bars 21 are secured in position to be engaged by the peripheral surfaces of the guide wheels, such engagement serving to limit the lateral 100 movements of the vehicle and prevent the vehicle wheels from leaving their rails 20 laterally.

The guide wheels serve also to limit the vertical play of the vehicle relative to the 105 rail structure. In the arrangement shown in Fig. 1 the top planks 19 are extended inwardly a distance to overhang and to form the abutment or under rail shoulders 32 over the peripheral section of the guide wheels. 110 The shoulders are faced with the rail plates or bars 33 which are engaged by the upper

sides of the guide wheels when the vehicle tends to move upwardly away from the rail structure. To provide sufficient contact area between the guide wheels and the rail bars 33 the upper peripheral corners of the wheels are rounded off as indicated at 34. When the vehicle travels rapidly around a curve one side will tend to rise so that the vehicle will be inclined, but such inclination is restricted by the engagement of the guide wheels with the overhanging rail bars 33 and the rounded corners of the wheels will prevent cutting of the bars by the wheels. When a vehicle is traveling at very great speed and the guide wheels are engaging with the rail bars they will be unable to keep up rotation and will consequently slide along the rail bars and the consequent friction will serve to brake the vehicle.

20 Instead of having the rail structure top beams 19 overhang as shown in Fig. 1 the arrangement shown in Fig. 4 could be used in which angle bars 35 are secured to the rail structures. With this modified arrangement 25 the guide wheels will engage with the vertical and horizontal flanges of the angle beams as the vehicle travels around curves and over dips and summits and the vehicle wheels will be kept to their rails 20 with 30 just sufficient play to permit the vehicle to travel smoothly and without sudden jerks and jolts.

The vehicle can thus travel at very great speed over sudden and abrupt dips and 35 curves with perfect safety to the vehicle occupants.

Having thus described my invention, I claim as follows:

1. In a pleasure railway structure, the 40 combination of a vehicle having supporting wheels, horizontal guide wheels on said vehicle, rail structures having upper rail surfaces for the vehicle wheels and having side and under rail surfaces for said horizontal 45 guide wheels, cooperation of said guide wheels with said side and under rail surfaces preventing lateral and vertical displacement of said vehicle during travel.
2. In a pleasure railway structure, the 50 combination of rail structures having upper rail surfaces and having also side rail surfaces and under rail surfaces, wheels for said vehicle for engaging with said upper rail

surfaces, and horizontal guide wheels journaled on said vehicle for cooperating with 55 said vertical and under rail surfaces to prevent undue vertical and lateral displacement of said vehicle when traveling over said rail structure.

3. In a pleasure railway structure, the 60 combination with rail structures having upper rail bars thereon, a vehicle having wheels for engaging with said upper rail bars, vertical rail bars on the inner sides of said rail structures, under rail bars on said 65 rail structures above said vertical rail bars, and horizontal guide wheels journaled on said vehicle for engaging the respective vertical rail bars with their cylindrical surfaces and for engaging with their upper sides 70 against the respective under rail bars to prevent undue lateral and vertical displacement of said vehicle while traveling on said upper rail bars.

4. In a pleasure railway structure, the 75 combination of rail structures having upper rail surfaces, a vehicle and under rail surfaces on the inner sides of said rail structures, and horizontal guide wheels journaled on said vehicle for engaging at their peripheries with said vertical and under rail surfaces to limit the lateral and vertical play 80 of said vehicle when traveling over said upper rail surface.

5. In a pleasure railway structure, the 85 combination of rail structures having upper rail bars thereon, a vehicle having supporting wheels for engaging with said upper rail bars, vertical and under rail bars on the inner sides of said rail structures, horizontal 90 guide wheels journaled on said vehicle and located to engage at their peripheries with said vertical and under rail bars to limit the vertical and lateral displacement of said vehicle with reference to said rail structures, 95 said guide wheels being transversely rounded at their peripheries.

6. In a pleasure railway structure, the combination with tie beams, of spacing blocks secured thereto, and rail structures built up around said blocks and secured to 100 said tie beams.

In witness whereof, I hereunto subscribe my name this 28th day of November A. D. 1922.

JOHN A. MILLER,