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J. A. MILLER

PLEASURE RAILWAY STRUCTURE

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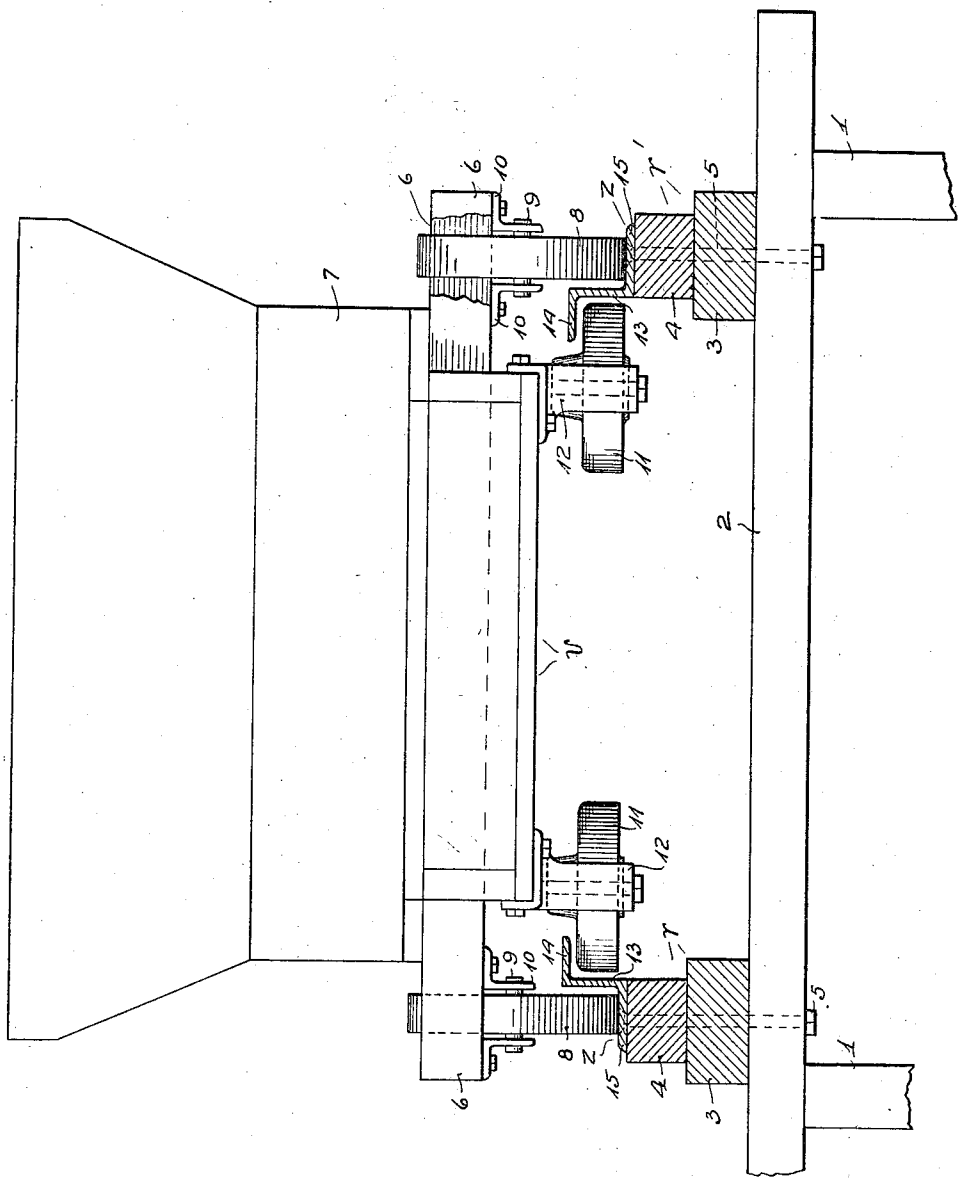

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PLEASURE-RAILWAY STRUCTURE.

Application filed February 1, 1924. Serial No. 689,866.

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 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 structures, particularly to improved track construction therefor. In pleasure railway structures the track should be sufficiently yieldable vertically to permit smooth and flexible travel of the cars thereover and also to reduce stresses and strain in the trackage and cars, it being understood that in such pleasure railways the cars travel over abrupt summits and inclines and around sharp curves at a rapid rate. On account of such varying contour of the track and high speed of travel of the cars provision must also be made to prevent the cars from leaving the track, and to insure the highest degree of safety to the car occupants.

In some of my constructions heretofore used, as for example in my Patent No. 1,319,888 of October 28, 1919 and Patent No. 1,448,763 of March 20, 1923, I build up the rail structures of wooden beams or stringers with rails in the form of flat bars thereon for receiving the unflanged vehicle wheels, and on the rail structures I secure other flat bars affording engaging surfaces for safety roller structures for preventing derailing of the cars as they travel rapidly around the track supporting structure. Such flat bars, sometimes tend to bend up at their ends and leave their supports, and owing to the small available surface it is almost impossible to weld the bar lengths together. Furthermore where separate bars are used for providing the various vehicle wheel and safety rollers considerable labor is required to secure all the bars to the rail structure. The important object of my invention is therefore to combine all the rail engaging surfaces into one unitary rail element preferably in the form of commercial bars or beams. I find that Z-bars or beams adapt themselves very efficiently for this purpose. These bars can be readily secured on top of the wooden stringers and will then afford trackage surface for the vehicle wheels and for the side and upper engaging surfaces of safety roller structures. The installation labor is therefore greatly reduced, and furthermore such bars afford ample surface for welding them securely together at their ends so that continuous rails are readily provided. Such Z-bars can also be very easily and readily bent in ordinary bending machines to accurately fit the vertical and horizontal curves of the track.

On the accompanying drawing, which shows my improved construction the figure is a cross sectional view of the track supporting superstructure and a rear view of a car thereon.

On the drawing 1 represents the trestle or supporting framework for the railway structure and 2 represents the tie beams which are supported on such framework which in turn support the rail structures r and r' of the track on which the pleasure vehicles v travel. As shown the rail structures comprise wooden beams or stringers 3 and 4, the stringers overlapping sufficiently at their ends and being secured to the tie beams by bolts 5.

The vehicle shown comprises the cross beams 6 which support the vehicle body 7, and the vehicle supporting wheels 8 have their axles 9 supported in the angle bar lengths 10 which are secured to the under sides of adjacent cross beams as shown. The safety roller arrangement is substantially the same as that disclosed in my Patent 1,448,763 already referred to. A horizontal safety roller or wheel 11 is associated with each vehicle wheel and supported in a bearing bracket 12 secured at the adjacent corner of the vehicle body as clearly shown.

In accordance with my invention I utilize Z-bars for providing the necessary engaging surfaces for the vehicle wheels and safety rollers. The Z-bars are secured on top of the stringers 4 with their webs 13 parallel with the inner faces of these stringers and with the inner flanges 14 overhanging the safety rollers. The outer flanges 15 may be secured by the bolts 5, or may be independently secured to the stringers 4 by means of screws or bolts. The vehicle wheels travel on the outer flanges 15 and the inner flanges 14 and webs 13 provide engaging surfaces for the top and sides respectively of the safety rollers. The safety rollers serve to limit the lateral and vertical movements of the vehicle when traveling over summits or down inclines and when travelling around lateral curves, and in order to provide sufficient contact area between the rollers and

the Z-bar flanges 14 the upper peripheral corners of the rollers are rounded off as indicated.

By having all the wheel and roller engaging surfaces combined in a unitary rail the construction is greatly simplified and less expensive as one set of screws or bolts will serve to hold the Z-bars securely in position. As there is sufficient area at the ends of the bars they can be readily welded together to form a smooth continuous rail. The Z-bars, on account of their balanced shape, can also be easily run through ordinary bending machines and bent vertically or laterally to the curvature desired for the track and to accurately fit the rail superstructures r and r'. The rails will also yield sufficiently without distortion to follow the flexures of the superstructures r and r' during travel of a heavily loaded vehicle or train thereover. The result is smooth, resilient, and safe riding for the occupants of the cars, and less installation and maintenance expense.

Having described my invention, I claim as follows:

1. In pleasure railway structures, the combination of a supporting structure, and rails in the form of Z-bars secured at their lower flanges on said supporting structure with their webs extending vertically and their upper flanges extending toward each other.

2. In pleasure railway construction, the combination of a supporting structure, a track comprising parallel stringers secured on said supporting structure, and rails in the form of Z-bars secured by their lower flanges on top of said stringers, the webs of said Z-bars extending upwardly and the upper flanges extending inwardly.

3. In a pleasure railway structure, the combination of a supporting structure, rails in the form of Z-bars having their lower flanges resting on said supporting structure and secured thereto and having their webs extending vertically and their upper flanges extending inwardly, a vehicle having vehicle wheels engaging on said lower flanges, and safety roller structures on said vehicle adapted to engage with the inner and under sides of said webs and upper flanges respectively.

4. In a pleasure railway structure, the combination of a support, a rail in the form of a Z-bar secured on said support with its web vertical and flanges extending laterally, a vehicle having supporting wheels engaging one of said flanges, and safety roller structures secured to said vehicle and having engagement with said web and other flange to limit the lateral and vertical movement of said vehicle.

5. In pleasure railway construction, the combination of a supporting structure, a track comprising parallel rails in the form of Z-bars, said Z-bars being arranged with their webs vertical and resting with their lower flanges on said supporting structure and secured thereto and having their upper flanges extending inwardly, a vehicle, supporting wheels on said vehicle engaging on said lower flanges, and horizontal safety rollers engaging at their sides and tops respectively with said webs and upper flanges to limit the lateral and vertical movement of said vehicle.

6. In pleasure railway construction, the combination of a supporting structure, a track on said structure comprising parallel rails in the form of Z-bars arranged with their webs upright, the lower flanges of said Z-bars resting on and secured to said support, a vehicle, supporting wheels therefor for engaging on said lower flanges, and horizontal safety rollers supported from said vehicle and engaging with said webs and said upper flanges of said Z-bars to limit the lateral and vertical movement of said vehicle when traveling along said lower flanges.

7. In a pleasure railway structure, the combination of a track support, rails in the form of Z-bars secured to said support with their webs vertical and flanges extending laterally, a vehicle having supporting wheels engaging the lower flanges of said rails, and abutments on said vehicle for engaging with the webs and upper flanges of said rails to limit the lateral and vertical movements of said vehicle.

8. In a pleasure railway structure, the combination of a track comprising rails in the form of Z-bars secured to rest on their lower flanges with their webs extending upwardly, a vehicle having vehicle wheels engaging on said lower flanges, and safety abutments on said vehicle adapted to engage with the under side of the upper flanges of said Z-bars to limit the vertical movement of said vehicle.

9. In a pleasure railway structure, the combination of a track comprising rails in the form of Z-bars secured to rest on their lower flanges with their webs extending upwardly and their upper flanges extending inwardly, a vehicle having vehicle wheels engaging on said lower flanges, and safety abutments on said vehicle adapted to engage with the under sides of said upper flanges to limit the vertical movement of said vehicle.

In witness whereof, I hereunto subscribe my name this 25th day of January A. D. 1924.

JOHN A. MILLER.