May 5, 1925.

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J. A. MILLER

PLEASURE RAILWAY STRUCTURE

Filed Dec. 11, 1924

Fig. 1

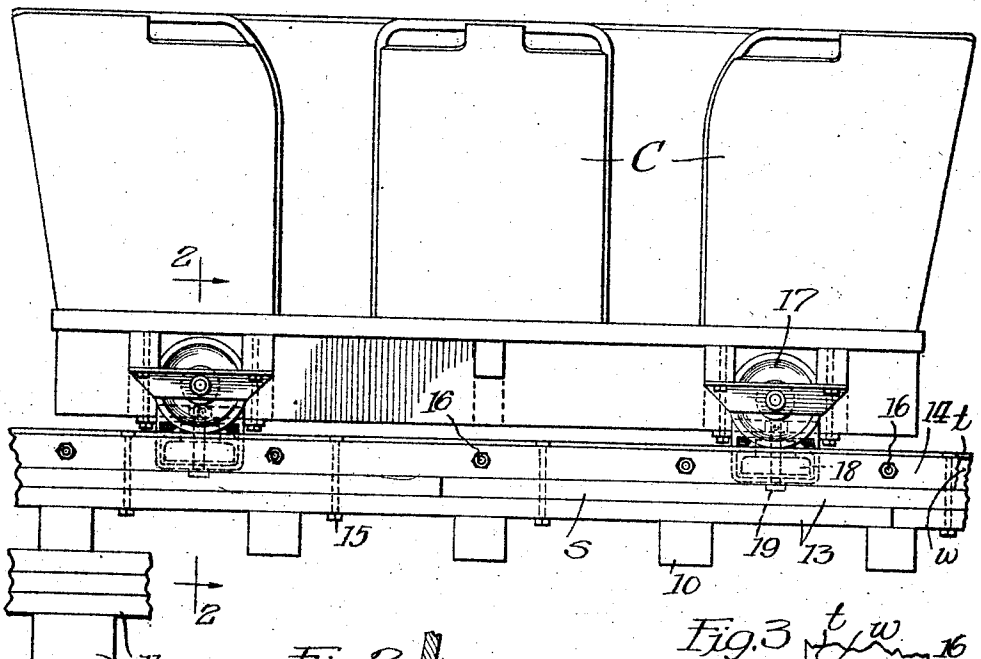



Fig. 2

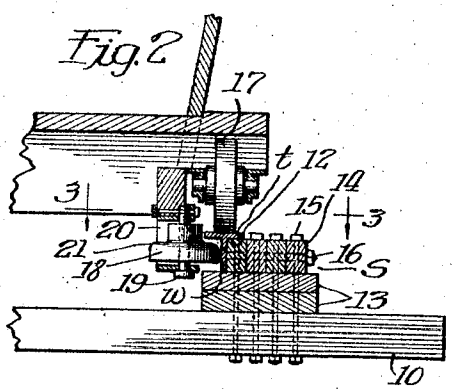
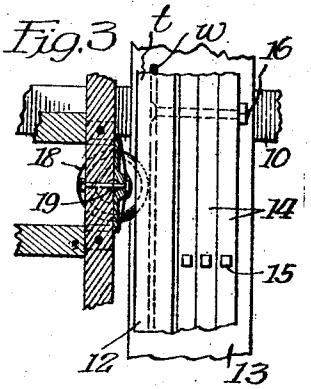



Fig. 3

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# UNITED STATES PATENT OFFICE.

JOHN A. MILLER, OF HOMEWOOD, ILLINOIS.

## PLEASURE-RAILWAY STRUCTURE.

Application filed December 11, 1924. Serial No. 755,133.

*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, 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 and particularly to improved track construction therefore. In order to meet the public craving for more sensation, the curves and particularly the dips and summits are being made more steep and abrupt. This of course requires that strong, smooth and reliable track construction be provided and that safety devices be installed to keep the fast moving cars or trains from leaving the rails. The object of my invention is to meet these requirements, and I utilize rail units in the form of commercial T-bars, and supporting stringer structures built up of lengths of timber and providing seating for the rails to secure them in proper position and also to deaden the noise. The T-rails are supported with their webs vertical and their tops horizontal, the tops receiving the supporting wheels of the cars, and the webs and under side of the tops then presenting abutment surfaces for safety devices which will limit the lateral and vertical displacement of the cars relative to the rails and will prevent them from leaving the rails.

I show my improved construction on the accompanying drawing in which

Fig. 1 is a side elevation view of the track structure and a car thereon,

Fig. 2 is a sectional view on plane 2—2 Fig. 1, and

Fig. 3 is a sectional view on plane 3—3 Fig. 2.

I have shown a stretch of level track, it being understood that in the actual railway structures the track will have many lateral curves and vertical dips and summits. The ties 10 are supported on the structural work 11 which rests on the ground. The rail units are in the form of commercial length of T-bars 12 which are welded together at their ends to form a smooth continuous rail. To properly support these rails I provide stringer structures S comprising the flat timbers or planks 13 whose ends overlap as shown in Fig. 1. On top of these planks are the timbers 14 set on edge and side by side, bolts 15 extending through these timbers, the planks 13 and the ties 10 so that the elements of the stringer structures are rigidly secured together and to the ties. The height of the beams 14 is preferably such that the rails can be applied with their webs *w* engaging the planks 13 and the inner face of beams 14, and with their tops *t* resting on the beams 14. Bolts 16 extend through the rail web and transversely through the beams 14, the heads of the bolts being counter sunk into the rail web to leave the inner face of these webs smooth and unbroken. The heads of the bolts which extends through the inner beams 14 are counter sunk to make way for the rail tops as clearly shown in Fig. 2. With the stringer structure and rail thus intimately engaged and secured together they will mutually strengthen and support each other and the wood will deaden the noise which would otherwise be occasioned by the rapid travel of the cars over the metallic rail.

I have shown a car C having the cylindrical vehicle wheels 17, these wheels engaging the tops *t* of the rails. I have shown safety mechanism in the form of horizontal wheels 18 journaled on bearing pins 19 supported in suitable frames 20 secured to the car structure. The wheels engage with their cylindrical surfaces against the inner sides of the rail webs *w* and so limit the lateral displacement or sway of the cars. The upper rounded corners 21 of the wheels engage against the under side of the tops *t* of the rails and limit the vertical displacement of the wheels 17 relative to the rails. The wheels 21 are so positioned that they will tend to keep the wheels 17 on the rails in alignment with the rail web *w*, that is, centrally on the rails. There is sufficient clearance between the wheels and the rails to allow a certain degree of lateral and vertical play for the cars as they travel over the tracks.

The rail units of T-cross sections can be readily and accurately bent to suit the various curves, declines, summits etc., and when

welded together end to end they will present a smooth continuous rail surface for the vehicle wheels and abutments for the safety devices. The laminated arrangement of the stringer structures assures the resiliency and cushioning necessary for the easy and comfortable riding of the cars and also absorbs the noises. The beams 14 can be readily bent to the desired curvature and bolted down, and the rails which have been correspondingly bent can then be accurately seated and secured.

I claim as follows:

1. In track construction for pleasure railway structures, the combination of supporting stringers, rails in the form of commercial T-bars, and means securing said rails with their webs vertical and against the inner side of said stringers and with the outer sections of their tops against the top of the stringers, said tops forming rail surface for vehicle wheels, the inner faces of the webs and the under sides of the inner sections of the tops being clear to form abutment surfaces.

2. In pleasure railway track construction, the combination of stringers, rails in the form of commercial T-bars disposed with their vertical webs against the inner sides of said stringers and with their tops resting on said stringers, and bolts extending through the webs and stringers for securing the rails to the stringers.

3. In pleasure railway track construction, the combination of supporting stringers built up of laminations, rails on said stringers in the form of commercial T-bars, and means for securing said rails with the outer faces of their webs intimately against the sides of said stringers and with the outer sections of their tops against the tops of said stringers, said rail tops forming engagement surfaces for vehicle wheels, and the inner faces of said webs and the under side of the inner sections of the rail tops being free to form abutments for vehicle safety devices.

4. In pleasure railway track construction, the combination of a supporting stringer having a step on its inner side, a rail in the form of commercial T-bar, and means securing said rail with its vertical web part against the vertical face of said step and with its flat part against the top of the stringer, said top part forming rail surface for vehicle wheels.

5. In pleasure railway track construction, the combination of a supporting stringer, a rail in the form of commercial T-bar applied to said stringer to intimately receive the stringer against its outer side, and securing means extending through the rail web and stringer, the top of the rail forming rail surface for vehicle wheels.

6. In pleasure railway track construction, the combination of a supporting stringer, a rail in the form of commercial T-bar positioned with its web vertical and top horizontal and intimately receiving at its outer side the upper inner corner of said stringer, securing means extending through the rail web and through said stringer to hold the rail in place, the top of said rail forming track surface for vehicle wheels.

7. In pleasure railway track construction, the combination of a stringer structure, said stringer structure comprising a lower part and an upper part set inwardly from the inner edge of said lower part, means securing said parts together, a rail in the form of commercial T-bar arranged with its web vertical and top horizontal, said web engaging at its lower edge on said lower part and with its outer face against said top part, the outer side of the rail top overhanging said top part, and securing means extending through said web and said stringer top part.

8. In pleasure railway track construction, the combination of a stringer structure and a rail in the form of commercial T-bar, said stringer structure comprising a laminated lower part and a horizontal row of beams thereon, bolts extending through said beams and lower parts to secure them together, the vertical web of said rail engaging against the inner face of said beam row, and the outer side of the rail top engaging against the top of said beam row, and bolts extending through said web and beams for securing said rail in place.

9. In a pleasure railway structure, the combination of a supporting structure, stringer structures on said supporting structure, rails in the form of commercial T-bars secured with the outer side of their webs against the inner side of said stringers and with the other parts of their tops against the top of the stringers, a vehicle having supporting wheels engaging on said rail tops, the inner faces of the webs and the inner sides of the rail tops being clear to form abutment surfaces, and safety abutments on said vehicles for co-operating with said surfaces to limit the lateral and vertical displacement of said vehicle relative to said track.

10. In a pleasure railway structure, the combination of a supporting structure, track stringers on said supporting structure, rails in the form of commercial T-bars arranged with their webs vertical and tops horizontal, means securing said rails to said stringers with the outer sides of their webs and tops intimately receiving the upper and inner corners of said stringers, a vehicle having vehicle wheels for traveling on said rail tops, the inner sides of said webs and tops being clear to form abutment surfaces, and safety devices on said vehicle for co-operating with said surfaces to limit the lat-

eral and vertical displacement of said car relative to said track.

11. In pleasure railway track construction the combination of a stringer, and a rail in the form of commercial T-bar, said stringer comprising a vertically laminated bottom part and a horizontally laminated top part, means securing said rail to said stringer to intimately receive on its outside the inner corner of the upper part of the stringer, the inner side of said rail being clear.

In witness whereof, I hereunto subscribe my name this 5th day of December, 1924.

JOHN A. MILLER.