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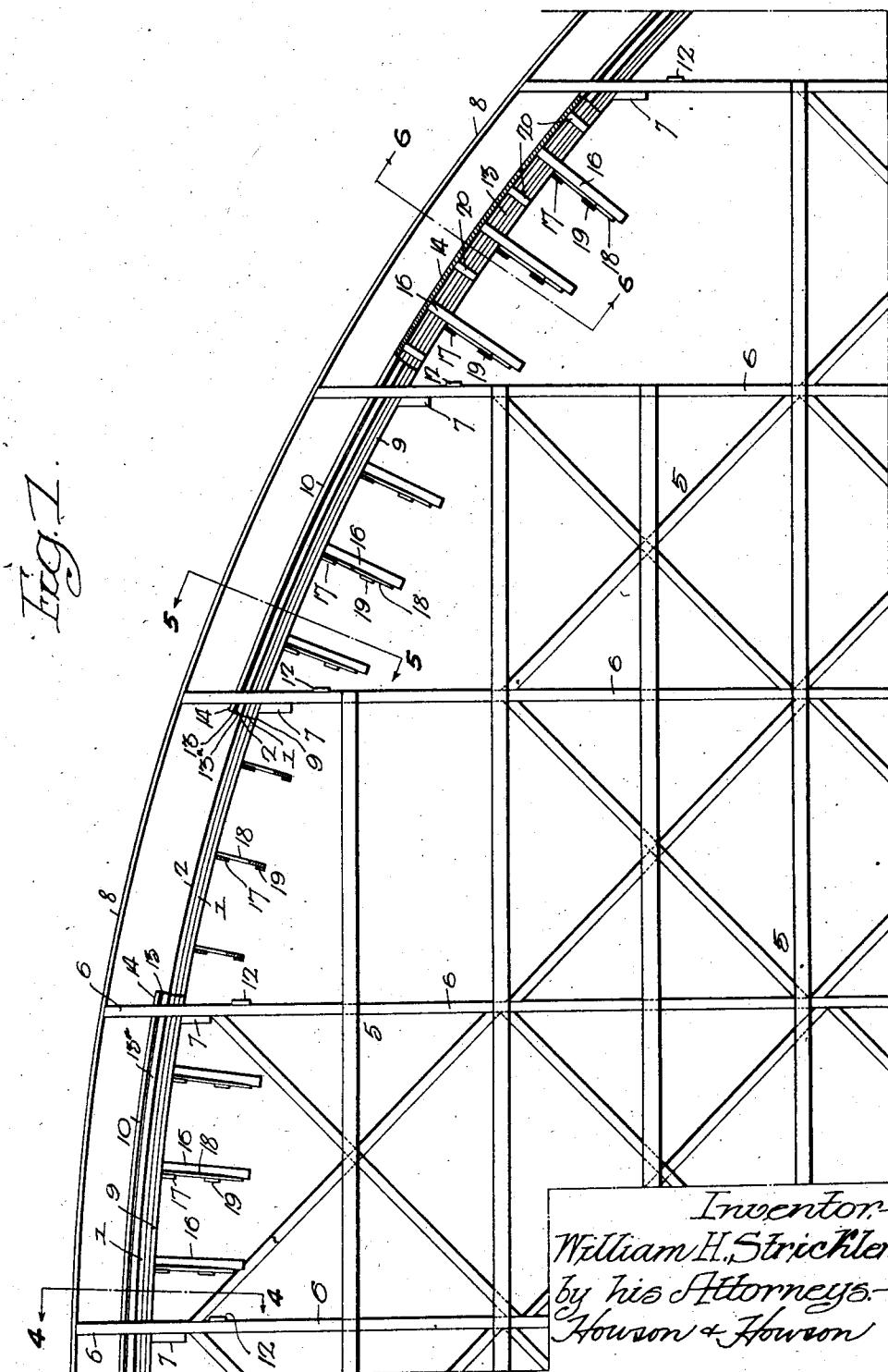
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W. H. STRICKLER

COASTER TRACK STRUCTURE

Filed Jan. 16, 1926

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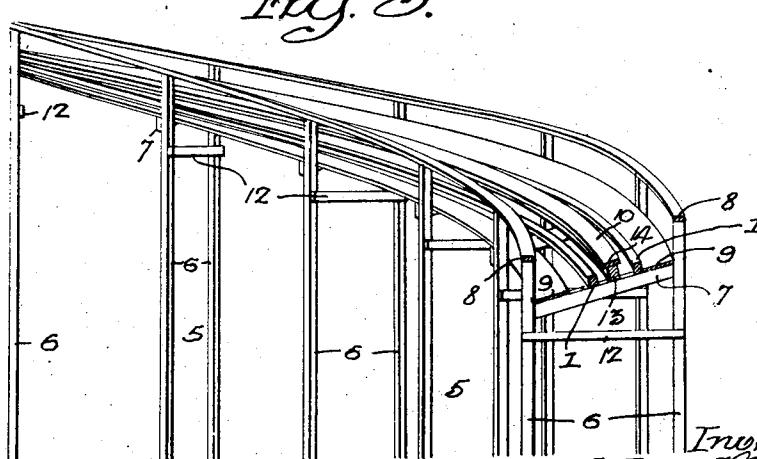
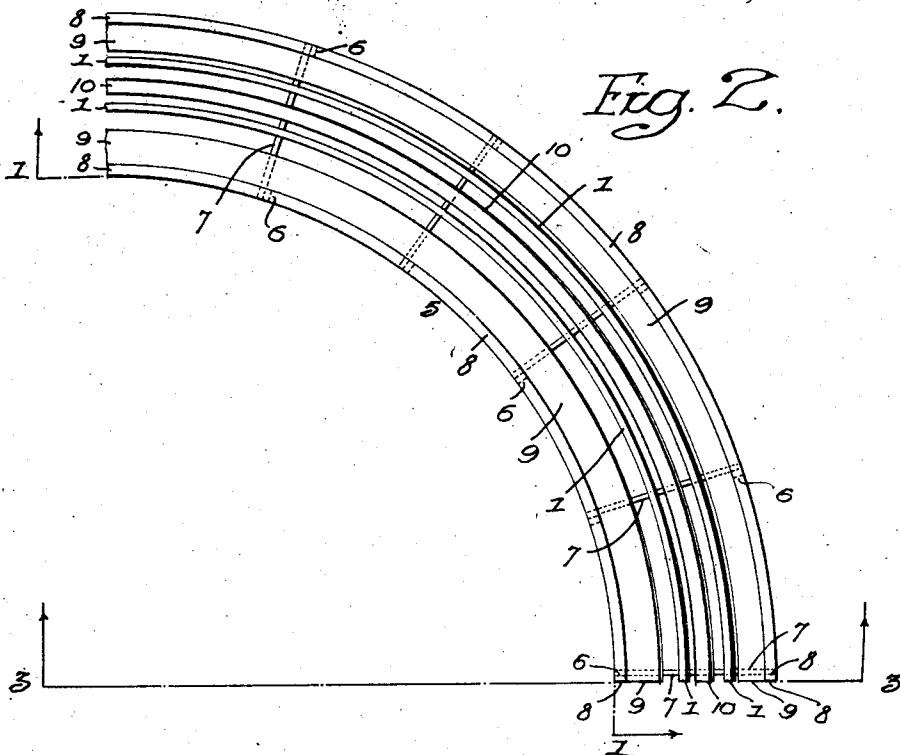
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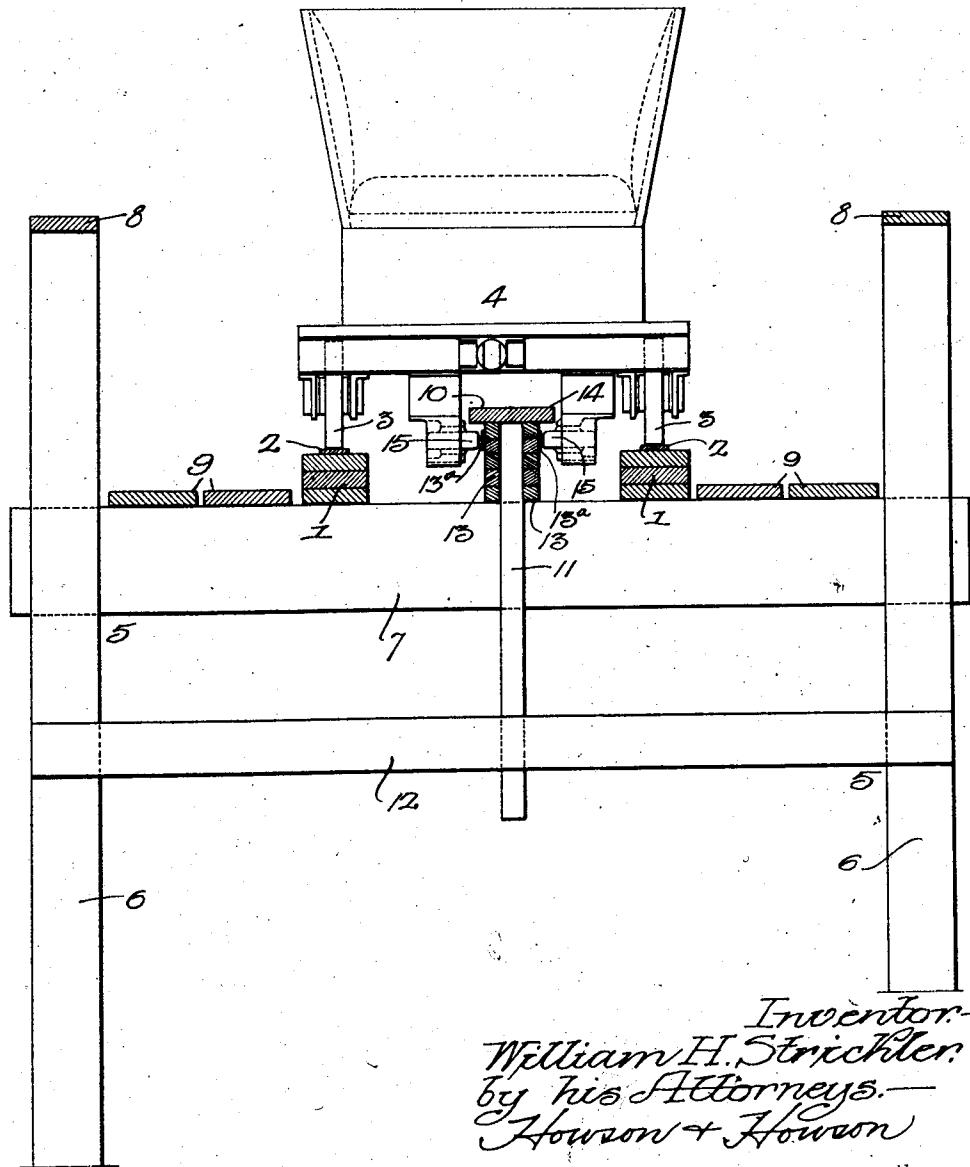
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Fig. 4.



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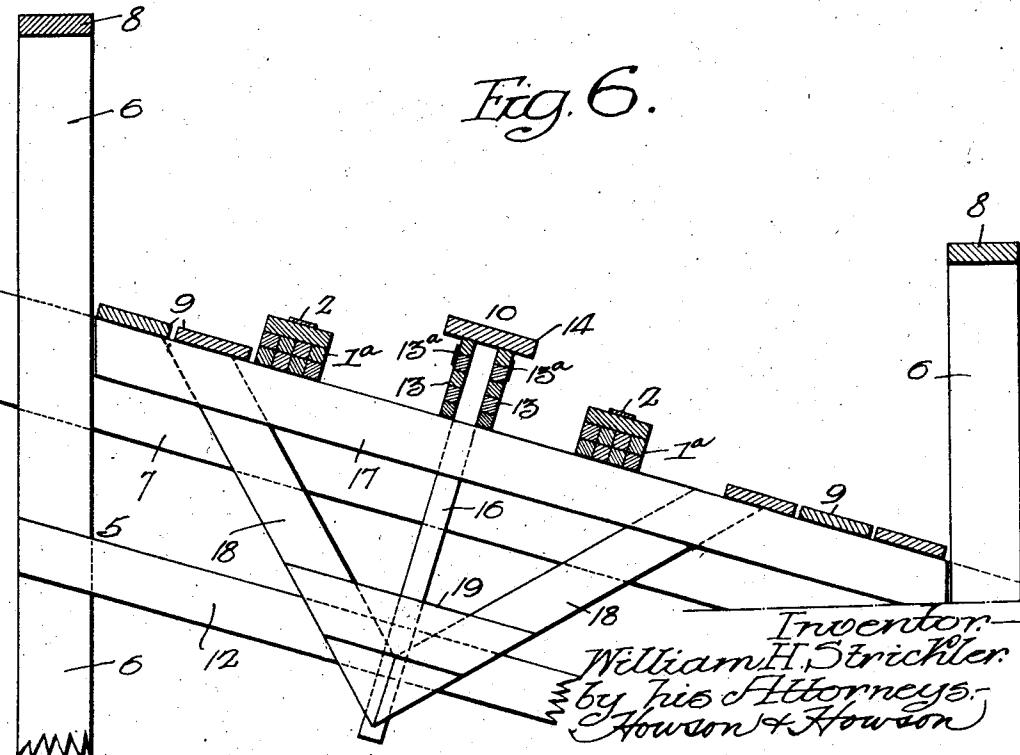
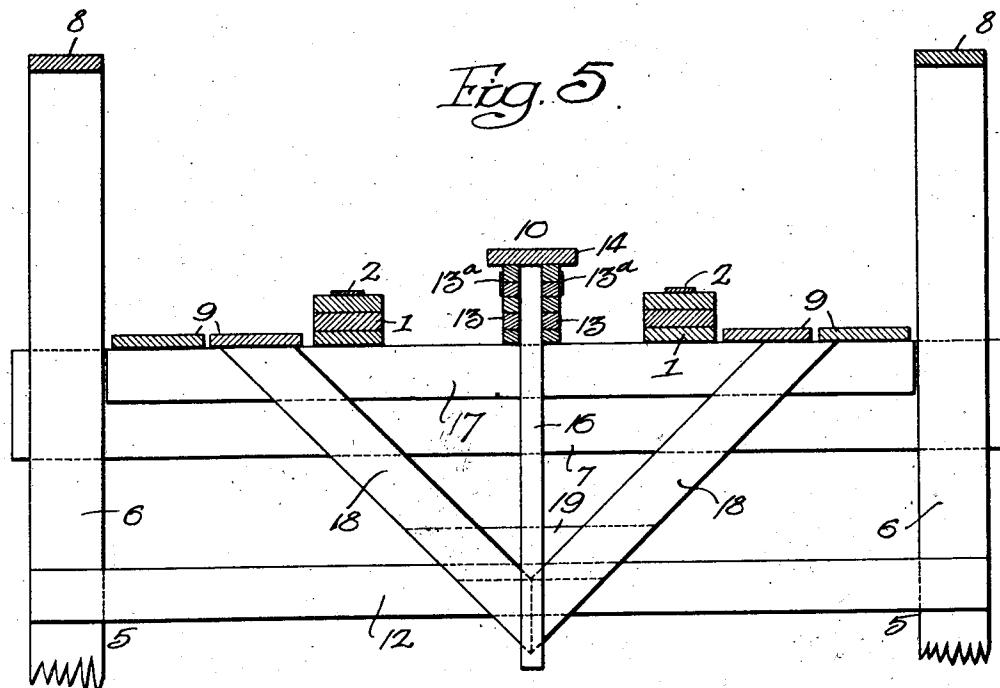
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COASTER TRACK STRUCTURE

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Patented Sept. 13, 1927.

1,642,275

# UNITED STATES PATENT OFFICE.

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## COASTER-TRACK STRUCTURE.

Application filed January 16, 1926. Serial No. 81,733.

The principal object of the invention is to provide a track structure for roller coaster railways which is simple and strong and is economical to build and which is at 5 the same time well adapted to conform to curves, especially combined horizontal and vertical curves.

More particularly the object of the invention is to provide a track structure which is 10 specifically adapted to support and cooperate with coaster cars of the type set forth in my copending application for coaster cars filed on even date herewith.

Other objects of the invention will be apparent from the following specification and claims.

In the accompanying drawings, I have shown the embodiment of the invention which I now deem preferable, but it will 20 be understood that the drawings are for illustrative purposes only and that various changes and substitutions may be made within the scope of the claims without departing from the spirit of the invention.

25 Of the drawings:

Fig. 1 is a right hand side view of a part of a coaster railway track structure embodying the invention, this view being in the nature of a development along the line 30 1-1 of Fig. 2 with the transverse inclination of the track omitted.

Fig. 2 is a plan view.

Fig. 3 is a sectional elevation on the line 3-3 of Fig. 2.

35 Fig. 4 is an enlarged transverse sectional view taken along the line 4-4 of Fig. 1.

Fig. 5 is an enlarged transverse sectional view taken along the line 5-5 of Fig. 1.

40 Fig. 6 is an enlarged transverse sectional view taken along the line 6-6 of Fig. 1.

Referring to the drawings 1, 1 are the longitudinal rail supports or girders which at straight portions of the track may be constructed of planks, several superposed planks 45 being provided for each support. Carried by these girders are rails 2, 2 which are preferably in the form of flat strips of steel suitably secured in place. These rails are adapted to be engaged by the main supporting wheels 3, 3 of a car 4.

50 The girders and rails are carried by a suitable trestle structure 5 which can be of any usual or preferred character, and it will be understood that the trestle structure can

be varied to suit conditions or to suit the 55 desires of the designer. Ordinarily numerous curves and inclinations will be provided in accordance with the usual practice in the construction of coaster railways. To avoid so-called "dead" portions of track the horizontal curves may be and preferably are 60 combined with the vertical curves. This is clearly shown in Figs. 2 and 3.

The structure 5 includes uprights 6, 6 which are arranged in pairs at opposite sides 65 of the track and which are uniformly or approximately uniformly spaced longitudinally of the track. Extending transversely between the uprights of the respective pairs are main cross bars 7, 7 to which the rail supports 1, 1 are directly secured by nailing or by any other usual or suitable means. Hand rails 8, 8 are preferably secured to the tops of the uprights 6, 6 and planks 9, 9 forming foot walks are arranged at the 70 sides of the girders 1, 1 and supported in part on the cross bars 7, 7.

Located midway or substantially midway 75 between the rails 2, 2 is a guide rail 10, and it is to the construction and mounting of this guide rail that my invention particularly relates. This guide rail is preferably located a small distance at one side of the center for a purpose fully set forth in my said copending application, Serial No. 81,734, filed Jan. 16, 1926.

The guide rail proper is reinforced and partly carried by means of supports 11, 11, each of which is located approximately midway between the girders and in a plane 80 perpendicular to the plane of the track. The supports 11, 11 are located between the uprights 6, 6 of the respective pairs as clearly shown in Fig. 2. Each of these supporting bars is directly secured to the corresponding main cross bars 7. Preferably in order to additionally support the lower ends of the supporting bars 11, 11 there is provided for each of them a supplemental cross bar 12 which is at its ends secured to the uprights 6, 6. 85

Secured to the opposite sides of the several supporting bars 11, 11 and immediately above the cross bars 7, 7 are bars or planks 13, 13. Preferably, instead of providing two wide planks I provide several relatively narrow bars. These bars permit the rail 100 to conform not only to horizontal curva-

tures in the track but also to vertical curvatures therein. It will be understood that as the bars are put in place they are all suitably nailed or otherwise held together and 5 are also suitably secured to the supports 11, 11 and to the cross bars 7, 7. Preferably a plank 14 forms a part of the guide rail, this plank overlying the bars 13, 13 and the supports 11, 11. Preferably as shown 10 this plank 14 is wide enough to project beyond the bars 13, 13 on both sides. Metallic wear strips 13<sup>a</sup>, 13<sup>a</sup> are preferably secured to the sides of the guide rail and these are adapted to be engaged by wheels 15, 15, 15 which are secured to the car 4 and which 15 are arranged for rotation about vertical axes. These wheels serve to prevent lateral movement of the car with respect to the track, and the wheels further serve in co- 20 operation with the plank 14 to prevent the car from jumping the track or tipping over toward either side.

In order to still further reinforce and support the guide rail, I provide one or more 25 intermediate supporting bars 16, 16 between each two adjacent supporting bars 11, 11. Preferably these intermediate supporting bars 16, 16 are disposed perpendicularly to the track and, therefore, are not vertical at 30 places where the track is inclined. The relative locations of these intermediate supports is clearly shown in Fig. 1. As shown more particularly in Fig. 5 an intermediate cross bar 17 is associated with each sup- 35 porting bar 16, these supplemental cross bars being secured to the girders 1, 1 and extending laterally far enough to assist in supporting planks 9, 9 constituting the foot walks. Diagonal braces 18, 18 extend in 40 opposite directions from the cross bar 17 to the lower end of the supporting bar 16. Preferably an additional short cross bar 19 is provided for connecting together the lower 45 ends of the braces.

If preferred, spacing blocks 20 may be provided between the successive supporting bars 11, 11 and 16, 16 to assist in holding the bars 13, 13 in proper spaced relation.

In Fig. 6, I have shown the form of construction which is provided at a curve in the track. It will be noted that this construction is substantially the same as shown in Fig. 5, except that the track is transversely inclined so as to resist the centrifugal force of the car in following the curve. It will be noted that instead of constructing the girders 1, 1 of wide planks relatively 55 narrow bars 1<sup>a</sup>, 1<sup>a</sup> are used which can be more readily bent transversely to follow the curvature.

As already stated it is frequently desirable to provide combined vertical and horizontal curvatures as shown. By making both the main girders and the guide rails 60 from relatively narrow or small bars any

desired curvature in either directions or in both directions may be obtained. In earlier constructions attempts have been made to bend relatively large planks or timbers to conform to curves. These relatively large 70 timbers tend to straighten out again, and the result is that a large portion of the total strength of the structure is used in overcoming this tendency. This leaves the structure with less effective strength to resist the action of the cars. In accordance with my invention the track can be curved vertically or horizontally or both without subjecting the supporting structure to abnormal initial strains. 80

What I claim is:

1. A coaster railway track structure comprising in combination two parallel longitudinal girders for the main rails, a series of cross bars immediately below the rail girders, a series of guide rail supporting bars located approximately midway between the girders, the said supporting bars being at right angles to the respective cross bars and secured thereto, and a longitudinal 85 guide rail secured to the upper ends of the said supporting bars.

2. A coaster railway track structure comprising in combination two parallel longitudinal girders for the main rails, a series of cross bars immediately below the rail girders, a series of guide rail supporting bars located approximately midway between the girders, the said supporting bars being at right angles to the respective cross bars and secured thereto, and a longitudinal 90 guide rail secured to the upper ends of the said supporting bars, and comprising at least two members located respectively at 95 opposite sides of the supporting bars. 100

3. A coaster railway track structure comprising in combination two parallel longitudinal girders for the main rails, a series of cross bars immediately below the rail girders, a series of guide rail supporting bars located approximately midway between the girders, the said supporting bars being at right angles to the respective cross bars and secured thereto, and a longitudinal 110 guide rail secured to the upper ends of the said supporting bars. 115

4. A coaster railway track structure comprising in combination two parallel longitudinal girders for the main rails, a series of cross bars immediately below the rail girders, a series of guide rail supporting bars located approximately midway between the girders, the said supporting bars being at right angles to the respective cross bars and secured thereto, and a longitudinal 120 guide rail secured to the upper ends of the said supporting bars and comprising at least two members located respectively at 125 opposite sides of the supporting bars, the said guide rail also comprising a longitudi- 130

nal top member overlying the ends of the supporting bars and also overlying the side members.

5. A coaster railway track structure comprising in combination two parallel longitudinal girders for the main rails, a series of cross bars immediately below the rail girders, a series of guide rail supporting bars located approximately midway between the girders, the said supporting bars being at right angles to the respective cross bars and secured thereto, and a longitudinal guide rail secured to the upper ends of the said supporting bars and comprising at least two members located respectively at opposite sides of the supporting bars, the said guide rail also comprising a longitudinal top member overlying the ends of the supporting bars and also overlying and projecting laterally beyond the side members.

6. A coaster railway track structure comprising in combination two parallel longitudinal girders for the main rails, a series of cross bars immediately below the rail girders, a series of guide rail supporting bars located approximately midway between the girders, the said supporting bars being at right angles to the respective cross bars and secured thereto, means supplemental to the cross bars for holding the lower ends of the supporting bars, and a longitudinal guide rail secured to the upper ends of the said supporting bars.

7. A coaster railway track structure comprising in combination two parallel longitudinal girders for the main rails, a series of cross bars immediately below the rail girders, a series of guide rail supporting bars located approximately midway between the girders, the said supporting bars being at right angles to the respective cross bars and secured thereto, supplemental cross bars below the main cross bars for holding the lower ends of the supporting bars, and a longitudinal guide rail secured to the upper ends of the said supporting bars.

8. A coaster railway track structure comprising in combination two parallel longitudinal girders for the main rails, a series of cross bars immediately below the rail girders, a series of guide rail supporting bars located approximately midway between the girders, the said supporting bars being at right angles to the respective cross bars and secured thereto, diagonal braces extending from the cross bars to the lower ends of the corresponding supporting bars, and a longitudinal guide rail secured to the upper ends of the said supporting bars.

9. A coaster railway track structure comprising in combination a series of pairs of uprights, main cross bars extending transversely between the uprights of the respective pairs, two parallel longitudinal main rail girders carried by the main cross bars,

intermediate cross bars immediately below and connected to the rail girders, a series of guide rail supporting bars located approximately midway between the girders, the said supporting bars being at right angles to the respective intermediate cross bars and secured thereto, diagonal braces extending from the intermediate cross bars to the lower ends of the corresponding supporting bars, and a longitudinal guide rail secured to the upper ends of the said supporting bars.

10. A coaster railway track structure comprising in combination a series of pairs of uprights, main cross bars extending transversely between the uprights of the respective pairs, two parallel longitudinal main rail girders carried by the main cross bars, intermediate cross bars immediately below and connected to the rail girders, a series of guide rail supporting bars located approximately midway between the girders, the said supporting bars being at right angles to the respective main and intermediate cross bars and secured thereto, supplemental cross bars below the main cross bars for holding the lower ends of the corresponding supporting bars, diagonal braces extending from the intermediate cross bars to the lower ends of the corresponding supporting bars, and a longitudinal guide rail secured to the upper ends of the said supporting bars.

11. A coaster railway track structure comprising in combination a series of pairs of uprights, main cross bars extending transversely between the uprights of the respective pairs, two parallel longitudinal main rail girders carried by the main cross bars, intermediate cross bars immediately below and connected to the rail girders, a series of guide rail supporting bars located approximately midway between the girders, the said supporting bars being at right angles to the respective main and intermediate cross bars and secured thereto, supplemental cross bars below the main cross bars for holding the lower ends of the corresponding supporting bars, diagonal braces extending from the intermediate cross bars to the lower ends of the corresponding supporting bars, a longitudinal guide rail secured to the upper ends of the said supporting bars, and foot walks at the sides of the main girders carried in part by the main cross bars and in part by the intermediate cross bars.

12. A coaster railway track structure comprising in combination two parallel longitudinal girders for the main rails, the said girders having inclined portions, a series of cross bars immediately below the rail girders, a series of guide rail supporting bars located approximately midway between the girders, the said supporting bars being at right angles to the respective cross bars and secured thereto and some of them being inclined to be at right angles to inclined por-

tions of the track, and a longitudinal guide rail secured to the upper ends of the said supporting bars.

13. A coaster railway track structure comprising in combination a series of pairs of uprights, main cross bars extending transversely between the uprights of the respective pairs, two parallel longitudinal main rail girders carried by the main cross bars, the said girders having inclined portions intermediate cross bars immediately below and connected to the rail girders, a series of guide rail supporting bars located approximately midway between the girders, the said supporting bars being at right angles to the respective intermediate cross bars and secured thereto and being inclined to be at right angles to inclined portions of the track, diagonal braces extending from the intermediate cross bars to the lower ends of the corresponding supporting bars, and a longitudinal guide rail secured to the upper ends of the said supporting bars.

14. A coaster railway track structure comprising in combination a series of pairs of uprights, main cross bars extending transversely between the uprights of the respective pairs, two parallel longitudinal main rail girders carried by the main cross bars, the said girders having inclined portions, intermediate cross bars immediately below

and connected to the rail girders, a series of guide rail supporting bars located approximately midway between the girders and between and in the planes of the uprights of the respective pairs, supplemental cross bars below the main cross bars for holding the lower ends of the corresponding supporting bars, a series of intermediate supporting bars being at right angles to the respective intermediate cross bars and secured thereto and being inclined to lie at right angles to inclined portions of the track, diagonal braces extending from the intermediate cross bars to the lower ends of the corresponding supporting bars, and a longitudinal guide rail secured to the upper ends of the said supporting bars.

15. The combination of a supporting structure, two parallel longitudinal girders for the main rails carried by the supporting structure, and a guide rail located between the said girders and also carried by the supporting structure, the said girders and the said guide rail each comprising a plurality of separate small wooden bars arranged side by side and also superposed so that the track can be curved vertically or horizontally or both without subjecting the supporting structure to abnormal initial strains.

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