May 6, 1924.

W. V. VAN DOREN ET AL

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RAILROAD CROSSING

Filed July 3, 1923

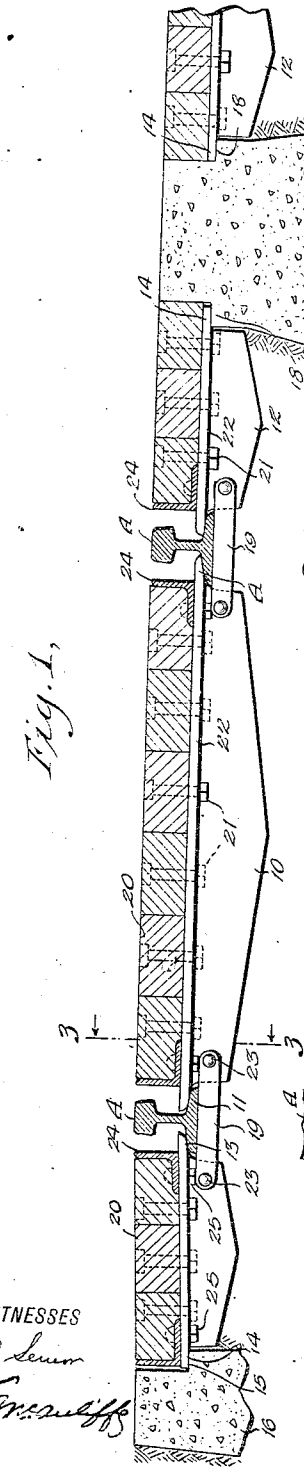


Fig. 1.

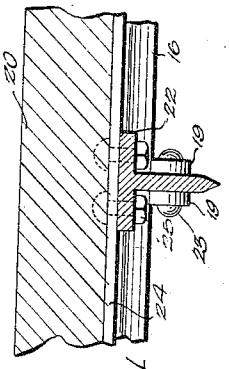


Fig. 3.

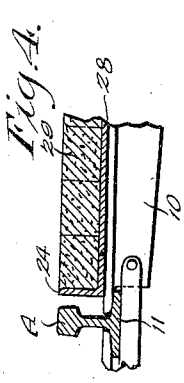


Fig. 4.

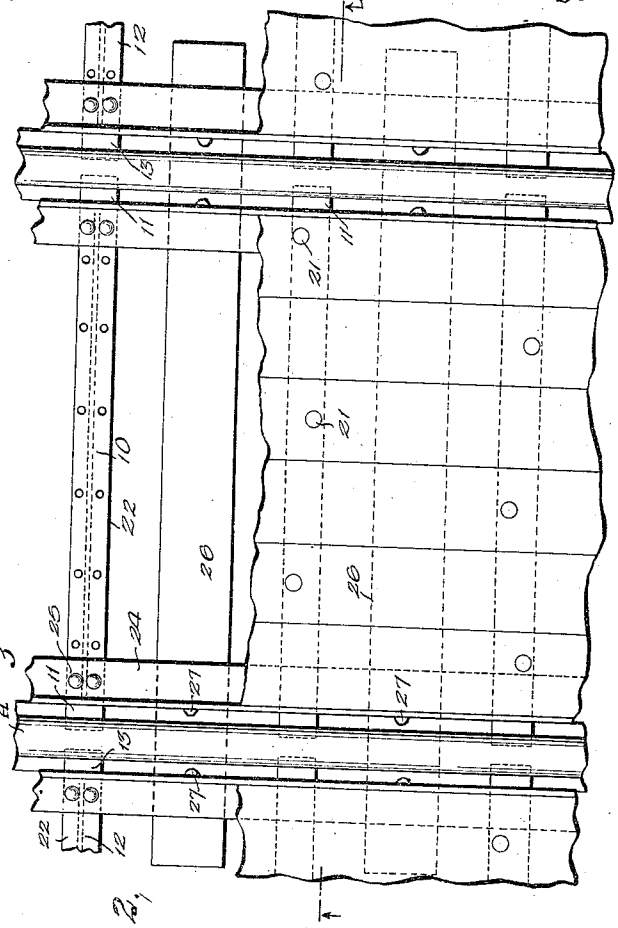


Fig. 2.

WITNESSES

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UNITED STATES PATENT OFFICE.

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RAILROAD CROSSING.

Application filed July 3, 1923. Serial No. 649,284.

To all whom it may concern:

Be it known that we, WILLARD V. VAN DOREN and PETER O. HEITMANN, citizens of the United States of America, and residents, respectively, of Burlingame, county of San Mateo, and State of California, and San Francisco, county of San Francisco, and State of California, have invented a new and Improved Railroad Crossing, of which the following is a description.

Our invention relates to a railroad crossing and the invention has for its general object to provide a railroad crossing improved in various particulars, whereby the weight of the roadbed both between the rails of a track and outside of the track is supported through the medium of the rails on a supporting assemblage beneath the track and whereby the bed is prevented from jumping movements.

A further object of the invention is to stiffen the rails through the medium of the bed supporting means and also to provide in connection with the portion of the bed outside of the rails pier supports along the outer edge of said bed portion and to so arrange the bed and supporting means that the up-and-down motion of the rails is converted into angular motion in the outer bed portion with outer pier supports as fulcrums or centers. The manner and means whereby the above and other objects are attained will clearly appear from the specific description following.

Reference is to be had to the accompanying drawings forming a part of this specification, it being understood that the drawings are merely illustrative of two examples of the invention.

Figure 1 is a transverse vertical section of a railroad crossing constructed in accordance with our invention, the plane of the section being indicated by the line 1—1 in Figure 2;

Figure 2 is a fragmentary plan view with parts of the roadbed broken out;

Figure 3 is a detail in longitudinal vertical section as indicated by the line 3—3, Figure 1;

Figure 4 is a fragmentary transverse vertical section illustrating the modified form of roadbed on our novel supporting elements.

In embodying our invention in a railroad crossing in accordance with the illustrated example we provide a transverse supporting element 10 extending between the rails A of a track. The supporting elements 10 have end projections 11 to overlie and rest upon the opposed rail flanges. At the outside of the rails we provide transverse supporting members 12 each of which at one end has a projection 13 to overlap and rest upon a rail flange and at the opposite end each supporting element 12 has a projection 14 which rests and has support upon a shoulder 15 of a concrete pier 16 disposed outside of the outer bed portion of the crossing. Between the tracks a concrete pier 17 is provided in the crossing and formed with shoulders 18 to form rests for the outer ends 14 of the bed portions between two tracks. Thus, the supporting element 10 is disposed between the rails of each track and a supporting element 12 outside of the rails of each track. A pier 17 is provided between the two adjacent tracks and piers 16 at the outer sides of the outermost bed portions of the crossing.

The adjacent ends of transverse elements 12 are linked together by supporting bars 19 extending beneath each track rail A transversely thereof. The supporting bars 19 prevent depression of the track rails and transfer the load to the transverse elements 10 and 12 while the engagement of the projecting ends 11 and 13 with the rail flanges prevents undue jumping of the track rail or vertical displacement thereof. In the case of the elements 12, which have support at their outer ends on the concrete piers 16 or 17, in responding to vertical play of the rails, any up and down motion of the rails is converted into angular motion of the elements 12 and the bed portions supported thereby with the outer fixed concrete supports as fulcrums or centers.

The roadbed in the illustrated example of our invention consists of planks 20 laid longitudinally of the rails and secured by bolts 21 to the side flanges 22 integral with the supporting elements 10 and 12, said supporting elements being T-shaped in cross section as shown clearly in Figure 3. The numeral 23 indicates bolts fastening the ends of the supporting bars 19 to the elements 10 and 12. At the inner and outer sides of each bed portion formed by the planks 20, that is to say, the bed between adjacent tracks, and outside of the outermost rails,

is reinforced with angle bars 24 secured by bolts 25 or equivalent means to the flanges 22.

The numeral 26 indicates the usual railroad ties to which the rails A are spiked as at 27. Instead of a bed of planking as described, it will be obvious that a bed may be variously formed as for example in the manner shown in Figure 4 which sheet metal foundation 28 is laid on the ties 26 and supporting elements 10, 12 on which sheet metal foundation any suitable bed or filling may be employed such as bricks 29, concrete, cement, or the like.

Each of the elements 10, 12 is given a truss shape for strength and the lower edge is made V-shaped as shown in section, Figure 3, so as to not materially disturb the ballast of the roadbed by the up-and-down movements as the train rolls over the track.

We would state in conclusion that while the illustrated examples constitute practical embodiments of our invention, we do not limit ourselves strictly to the exact details herein illustrated, since, manifestly, the same can be considerably varied without departure from the spirit of the invention as defined in the appended claims.

Having thus described our invention, we claim:

1. In a railway structure, transverse supporting elements adapted to be positioned between rails of a track and of a length to rest on the flanges of the rails, transverse supporting elements adapted to be disposed outside of the rails of the track, means to support the second-mentioned transverse elements at one end on the flanges of the adjacent rails, fixed means to support the opposite ends of said second-mentioned supporting elements, and means linking the adjacent ends of the first-mentioned and second-mentioned transverse elements and affording support for the track rails.

2. In a railway structure, transverse supporting elements adapted to be positioned between rails of a track and of a length to rest on the flanges of the rails, transverse supporting elements adapted to be disposed outside of the rails of the track, means to support the second-mentioned transverse elements at one end on the flanges of the adjacent rails, fixed means to support the opposite ends of said second-mentioned supporting elements, means linking the adjacent ends of the first-mentioned and second-mentioned transverse elements and affording support for the track rails, and longitudinally disposed bars above and secured to said transverse elements adapted to receive a roadbed between said bars.

3. In a railway structure, transverse supporting elements adapted to be positioned between rails of a track and of a length to rest on the flanges of the rails, transverse supporting elements adapted to be disposed outside of the rails of the track, means to support the second-mentioned transverse elements at one end on the flanges of the adjacent rails, fixed means to support the opposite ends of said second-mentioned supporting elements, means linking the adjacent end of the first-mentioned and second-mentioned transverse elements and affording support for the track rails, longitudinally disposed angle bars, means fastening said angle bars to the transverse supporting elements adjacent to the ends of the latter, and a roadbed forming a filling between the angle bars.

4. In a railway structure, transverse supporting elements having members adapted to rest on the flanges of the rails of a track, transverse supporting elements adapted to be disposed outside of the track rails and having members at one end adapted to rest on the flanges of the rails, and piers on which the opposite ends of said second-mentioned transverse elements rest and are afforded vertical movement with the rest points on the piers as centers.

5. In a railway structure, transverse bed-supporting elements adapted to be disposed outside of the rails of a track and having members at one end to rest on the adjacent flanges of the track rails, and piers on which the opposite ends of said transverse supporting elements may have rocking vertical movement.

6. In a railway structure, transverse supporting elements adapted to be disposed at opposite sides of a track rail to afford support for a roadbed, and links connecting the adjacent ends of said supporting elements and affording support for a rail.

7. In a railway, bed portions between the rails, bed portions outside of the rails, transverse elements affording supports for said bed portions, and means linking the inside bed supports and outside bed supports and adapted to seat the railway rails.

8. In a railway, bed portions between the rails, bed portions outside of the rails, transverse elements affording supports for said bed portions, and means linking the inside bed supports and outside bed supports and adapted to seat the railway rails; together with fixed piers forming rests for the outer bed supports at the outer ends thereof on which piers the said bed supports are permitted vertical rocking movement.

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