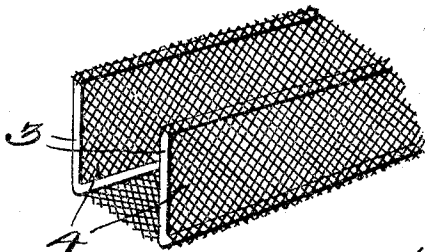
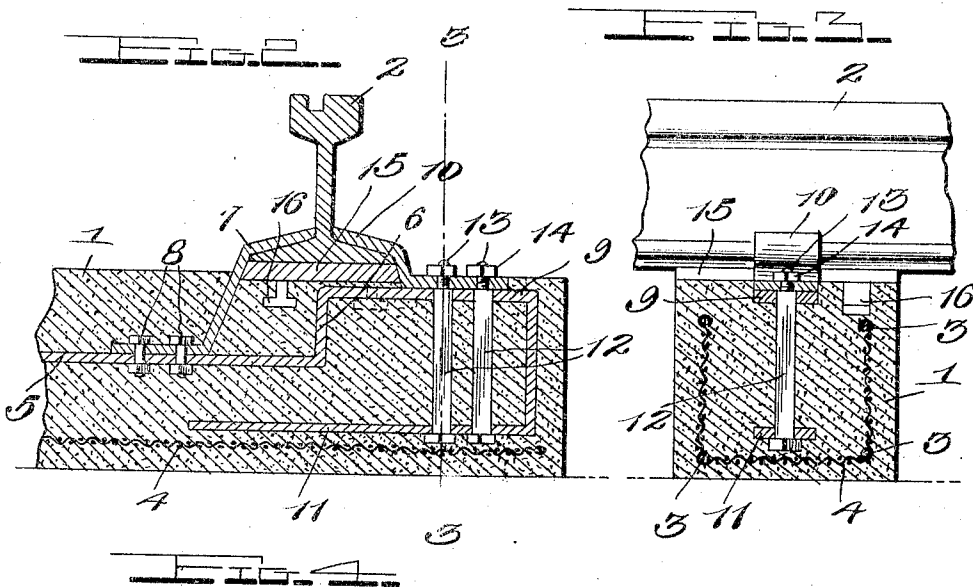
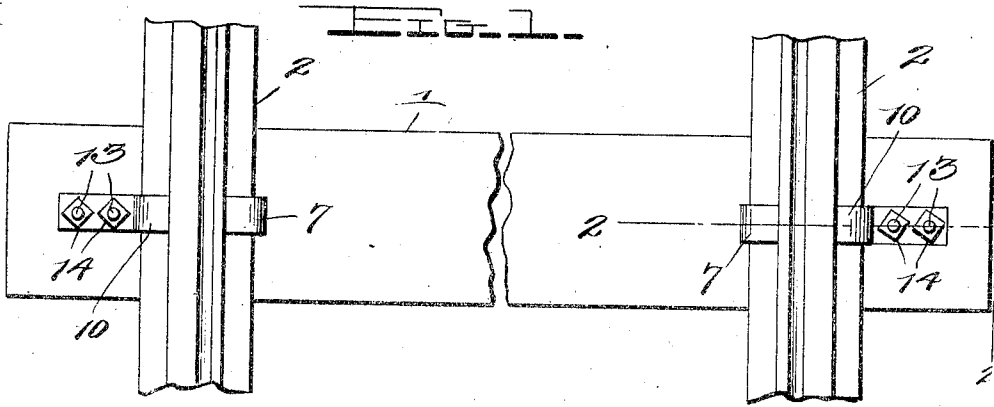


S. A. JEFFORDS.
RAILWAY TIE.
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1,058,436.

Patented Apr. 8, 1913.



Inventor

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SIDNEY A. JEFFORDS, OF HABANA, CUBA.

RAILWAY-TIE.

1,056,436.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, SIDNEY A. JEFFORDS, a citizen of the United States, residing at Habana, Island of Cuba, have invented certain new and useful Improvements in Railway-Ties, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to railroad ties and more particularly to reinforced concrete ties.

The principal object of the invention is the provision of a railroad tie of the above stated character which embodies a reinforcing structure and a reinforcing bar member disposed longitudinally and medially of said structure, and provided with means at the opposite ends thereof for clamping the rail flanges securely upon the tie.

A further object of the invention is the provision of a cement tie which is reinforced in such a way as to provide a tie that will be of durable and substantial design, and one which will stand a great deal of wear and tear without the liability of chipping or crumbling away.

A still further object of the invention is the provision of a cement tie embodying a bar disposed longitudinally thereof and having its terminal ends bent to form substantially rectangular loops embedded within the tie, flange engaging clamps secured at one end to the bar adjacent the looped ends and projecting up through the tie and disposed above in spaced relation thereto, and removable clamps adapted to be secured to the looped ends of the bar member so as to overlap the rail flanges to secure and hold the rail in position, the tie being further provided with bearing plates embedded therein and disposed beneath the rail flange clamp.

With these and other objects in view, the invention comprises the various novel features of construction, combination and arrangement of parts as will be more fully described hereinafter and set forth with particularity in the appended claims.

Referring to the drawings, Figure 1 is a plan view of my improved cement tie showing a pair of rails secured in position thereon; Fig. 2 is a vertical longitudinal sectional view taken on the line 2—2 of Fig. 1; Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 2; and Fig. 4 is a perspective view of the U-shaped reinforcing structure.

Similar characters of reference are used to denote like parts throughout the accompanying drawings and the annexed specification.

Referring more particularly to the drawings the reference character 1 indicates my improved cement tie, upon which, as shown, are clamped the rails 2, which may be of any form or construction, this shown being of the type ordinarily used for street cars and the like.

The tie 1 has embedded therein a U-shaped reinforcing structure which comprises spaced vertically disposed rectangular frames 3 that extend substantially throughout the length of the tie. These rectangular frames are covered with a wire mesh 4 which has its longitudinal edges secured to the upper portion of the rectangular frames and extends down over the sides thereof and across beneath the frames.

A longitudinally disposed reinforcing bar 5 is arranged medially of the U-shaped structure and has its opposite ends bent up and around to form a substantially rectangular loop 6. The ends of the bar 5 are bent upwardly to form the loop 6 at a point below and in vertical alinement with the center of the rails disposed upon the tie so as to provide means for reinforcing the tie at a point where the load strain is placed upon the tie. Rail clamps 7 have their lower inner terminal ends securely fixed to the bar 5 at a point adjacent the loop 6 as indicated at 8 through the medium of suitable fastening devices, the clamps extending upwardly and horizontally in spaced relation to the tie so as to overlap the rail flange. The upper face of the tie is cut away so as to bare the upper portion 9 of the loops 6 whereby the ends of the removable clamps 10 may be secured thereon. Each of the loops 6 terminates in a horizontally projecting portion 11 and has extending up through the portions 11 and 9 thereof squared bolts 12 which have their upper ends reduced and threaded as at 13 whereby the apertured ends of the removable clamps 10 may be placed thereover so as to rest upon the portion 9 of the loops and securely held in such position through the medium of nuts 14. When it is desired to place the rails in position upon the tie, the flanges of the rail are inserted beneath the fixed clamp 7 after which the removable clamps 10 are placed in position so as to overlap the rails, and

the nuts 14 screwed down so as to hold the latter clamps in position. The bolts 12 are squared so that they will be prevented from turning within the tie.

5 Bearing plates 15 are embedded within the upper face of the tie between the clamps 7 and 10 so as to provide substantial bearing surface for the bases of the rail whereby any possibility of the rails causing the tie to chip or crumble will be eliminated. As shown, the upper surface of the bearing plates 15 are disposed in a plane slightly above that of the top of the tie. These bearing clamps may, if desired, be further secured to the tie through the medium of suitable anchored elements 16 secured at the end face thereof and extend down into the tie.

From the foregoing description taken in connection with the accompanying drawings, the advantages of construction, and the method of operation of the invention will be readily apparent to those skilled in the art to which the invention relates, and while I have described the principle of operation of the invention together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that such changes may be made when desired as are within the scope of the appended claims.

Having thus fully described the invention what I claim as new is:

1. A concrete tie having a reinforcing bar disposed longitudinally therein, the ends of the bar being bent up and around to provide looped ends, the terminal ends of said loops extending inwardly below and in spaced relation with the bar, rail flange engaging clamps connected to said bar adja-

cent the looped ends thereof, and removable rail flange engaging clamps connected to said looped ends of the bar.

2. A concrete tie embodying a U-shaped wire structure extending throughout the length thereof and consisting of a pair of spaced vertically disposed rectangular frames, a wire mesh covering and connecting said frames together, a reinforcing bar disposed longitudinally and medially of said U-shaped structure, the ends of the reinforcing bar being bent up and around to provide substantially rectangular loops, fixed rail flange engaging clamps secured to the bar adjacent the looped ends, and removable rail flange clamps mounted upon the looped ends of the said bar.

3. A concrete tie embodying substantially a U-shaped reinforcing structure, a reinforcing bar disposed longitudinally and medially of said structure, the ends of the bar being bent up and around to provide looped ends, the terminal end of said loop extending inwardly below and in spaced relation to the bar, squared bolts extending up through the said loops and provided with threaded shanks, remov the rail flange clamps detachably mounted upon the bolt shank and upon said loops, fixed rail flange clamps secured to the reinforcing bar adjacent said loops, and bearing plates embedded within the upper face of the tie between the said clamps.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

SIDNEY A. JEFFORDS.

Witnesses:

THOMAS D. CREWE,
S. O'NEILL.