A. HAWLEY.

RAILWAY TIE.

APPLICATION FILED OCT. 4, 1909. RENEWED AUG. 12, 1910.

972,694. **Patented Oct. 11, 1910.**

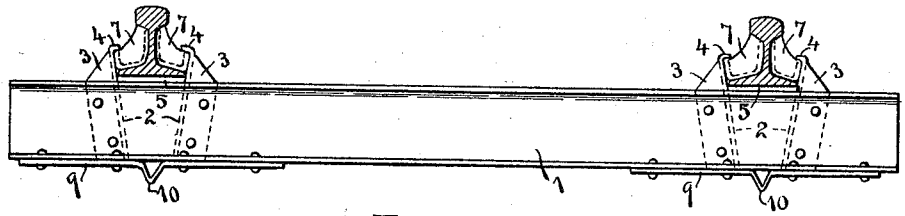

Fig. 1.

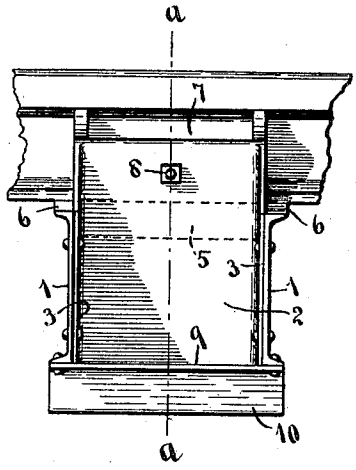

Fig. 2.

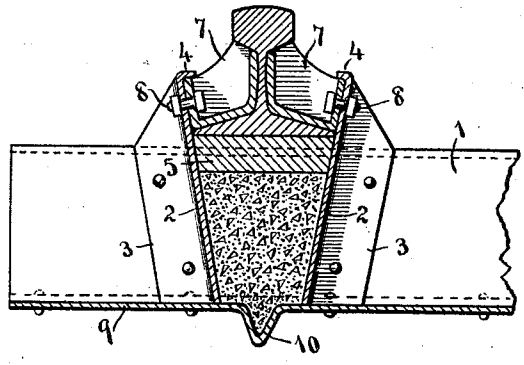

Fig. 3.

WITNESSES:

M. E. Verbeck.

Chas. L. Stoltzlen

INVENTOR

Adelbert Hawley

BY

Eugene Diven

ATTORNEY

UNITED STATES PATENT OFFICE.

ADELBERT HAWLEY, OF ELMIRA HEIGHTS, NEW YORK, ASSIGNOR OF ONE-FOURTH TO L. ESTELLE HAWLEY, OF BATH, NEW YORK, AND ONE-FOURTH TO HENRY BOULIO, OF POTTER BROOK, PENNSYLVANIA.

RAILWAY-TIE.

972,694. Specification of Letters Patent. **Patented Oct. 11, 1910.**

Application filed October 4, 1909, Serial No. 520,796. Renewed August 12, 1910. Serial No. 576,908.

To all whom it may concern:

Be it known that I, ADELBERT HAWLEY, a citizen of the United States, residing at Elmira Heights, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Railway-Ties, of which the following is a specification.

This invention relates to improvements in the construction of metal ties for railways; and the object of my improvements is to provide a tie of this character which will be of low cost, strong, and effective, and upon which the rails will be held securely fastened against spreading, or tilting upon their bases; and from which the rails may be quickly and readily removed for change and repair.

A further object is to provide a cushion of wood or other material between the base of the rail and the tie, to prevent the transmission of vibrations directly from metal to metal.

I attain my object by constructing the tie and the rail connecting devices in the manner illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation of a tie, constructed in accordance with my invention, with the rails shown in section in position thereon; Fig. 2, an end elevation of a tie upon a larger scale; and Fig. 3, a longitudinal section through one end of the tie upon the line *a*—*a* in Fig. 2.

Like numerals designate like parts in the several views.

The ties consist of two light channel-plates of steel, 1, 1, spaced apart a suitable distance, with pairs of cross-plates, 2, 2, fastened between the channel-plates adjacent the ends, by means of the flanges 3, upon said cross-plates, said flanges being riveted to the channel-plates, as shown. These cross-plate pairs are spaced apart at their upper ends to receive between said ends the bases of the rails, when set to the proper gage; and the members of each pair are set at an incline so as to approach one another at their lower ends. At their upper ends the cross-plates are projected above the channel-plates, and are bent over at 4 to hold in place the rail fasteners.

The spaces between the cross-plate pairs are filled with concrete, or other suitable plastic material, to within a short distance of the top of the channel-plates, and upon this filling I place a hardwood block 5, which extends above the top of the channel-plates, and is carried out at each side over said channel-plates, as shown at 6 in Fig. 2. Upon these wooden blocks the bases of the rails rest.

The rails are held down upon the bearing blocks and between the cross-plates by means of cup-shaped castings 7, said castings being so shaped as to fit the base, web, and undersides of the head of the rails, and the inward sides of the cross-plates, as shown more clearly in Fig. 3. These castings, or fasteners, are to have a driving fit, so as to press the rails down firmly upon the bearing blocks, and to prevent any side play of the rails. They are held against vertical movement at their outward sides by the bent-over ends 4 of the cross-plates. To prevent the fasteners from working out endwise I provide their outward sides with holes which register with corresponding holes in the cross-plates when the fasteners are driven to place, and through these holes small bolts 8 are passed and fastened in place either by nuts or cotter pins.

By setting the cross-plate pairs with their members inclined toward one another from the top downward the weight of the passing trains is transmitted from the bearing blocks and the concrete filling to said cross-plates, and thence to the channel side-plates. When the bearing blocks 5 are set in place with their lower sides resting upon the filling between the cross-plates, their projecting ends 6 have a slight clearance above the flanges of the channel-plates, in order that the weight may be transmitted from the rails to the cross-plates through the body of the bearing block, and not directly to the channel-plates through said extensions.

To the undersides of the channel-plates I fasten cross-plates 9, said plates being provided with downwardly projecting V-shaped bends 10 under the rails, the object of said projections being to so interlock the ties with the ballast as to prevent endwise motion of the ties.

What I claim as my invention, and desire to secure by Letters Patent is—

1. A railway tie comprising a pair of side-plates having pairs of cross-plates fastened

between them where the rails are to rest, said cross-plate pairs being carried above the side-plates, fastening devices inserted at each side of the rails between the projecting ends of the cross-plates, and means on said projecting ends for holding said devices in place.

2. A railway tie comprising a pair of side-plates having pairs of cross-plates fastened between them where the rails are to rest, said cross-plate pairs having their members carried above the side-plates and set at an incline toward one another from the top downward, fillings of plastic material in the spaces between said cross-plate members, bearing blocks upon said fillings, and means engaging the cross-plate members for fastening the rails upon said blocks.

3. A railway tie comprising a pair of side-plates having pairs of cross-plates fastened between them where the rails are to rest, said cross-plate pairs having their members carried above the side-plates and bent over toward one another at their upper ends, said members being set at an incline toward one another from the top downward, fillings of plastic material in the spaces between said cross-plate members, bearing blocks resting upon said fillings, and fasteners inserted at each side of the rails between their webs and the projecting ends of the cross-plates, said fasteners being held upon the base of the rails by engagement with the bent-over ends of the cross-plates.

4. A railway tie comprising a pair of side-plates having pairs of cross-plates fastened between them where the rails are to rest, said cross-plate pairs being carried above the side-plates and bent over toward one another at their upper ends, and fasteners inserted at each side of the rail webs in engagement with the projecting ends of the cross-plates, said fasteners being adapted to be held upon the base of the rails by the bent-over ends of the cross-plates.

5. A railway tie comprising a pair of side-plates having pairs of cross-plates fastened between them where the rails are to rest, said cross-plate pairs being carried above the side-plates and bent over toward one another at their upper ends, and cup-shaped fasteners inserted at each side of the rail webs in engagement with the projecting ends of the cross-plates, said fasteners being so shaped as to engage the head, web, and base of the rails and the bent-over ends of the cross-plates.

In testimony whereof I have affixed my signature, in presence of two witnesses.

ADELBERT HAWLEY.

Witnesses:

M. E. VERBECK,

EUGENE DIVEN.