J. W. CHAPMAN.

RAILROAD TIE PLATE.

APPLICATION FILED NOV. 20, 1911.

1,067,305. Patented July 15, 1913.

Fig. 1.

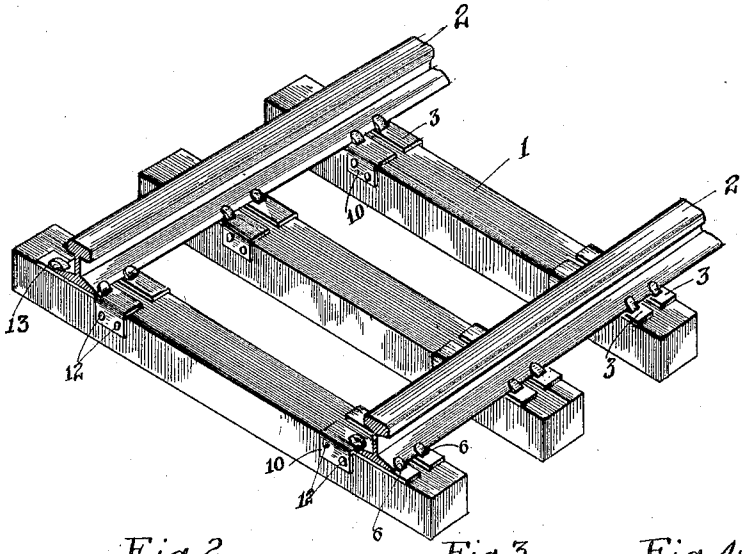


Fig. 2

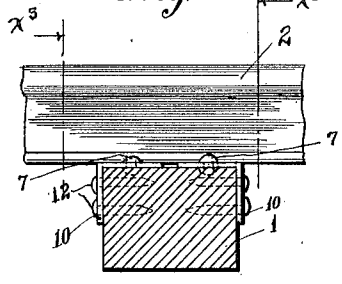


Fig. 3.

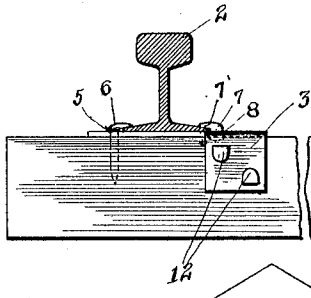


Fig. 4

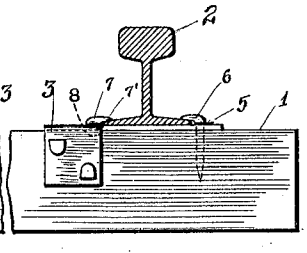
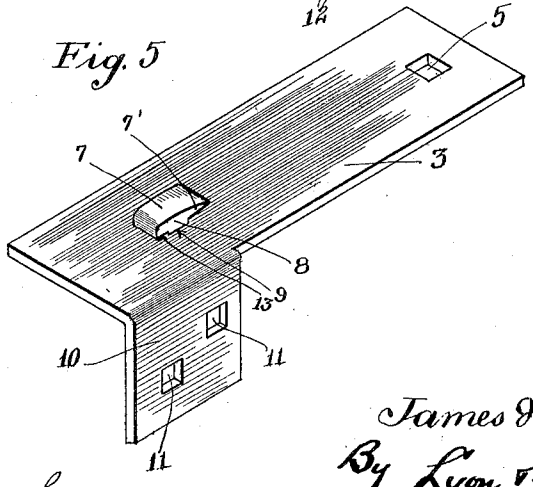


Fig. 5



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RAILROAD-TIE PLATE.

1,067,305. Specification of Letters Patent. Patented July 15, 1913.

Application filed November 20, 1911. Serial No. 661,413.

To all whom it may concern:

Be it known that I, JAMES W. CHAPMAN, a citizen of the United States, residing at Kingman, in the county of Mohave and State of Arizona, have invented a new and useful Railroad-Tie Plate, of which the following is a specification.

This invention relates to plates for supporting and securing railroad rails in place on the ties, and the main object of the invention is to provide a plate for this purpose of simple and cheap construction which will give a firm connection between the rail and tie.

A further object of the invention is to provide improved means for fastening the plate to the tie in such manner as to prevent displacement of the plate on the tie, but to permit the removal of the rails from the ties, when required, without undue expense.

Other objects of the invention will appear hereinafter.

The accompanying drawings illustrate an embodiment of the invention, and referring thereto:

Figure 1 is a perspective of a portion of the track, showing the tie plates thereon, constructed in accordance with my invention. Fig. 2 is a vertical section through a tie, showing the plate in place thereon. Fig. 3 is a vertical section on line x^3—x^3 in Fig. 2. Fig. 4 is a vertical section on line x^4—x^4 in Fig. 2, partly broken away. Fig. 5 is a perspective of the tie plate.

1 designates the tie which may be of wood or other suitable material, and 2 the rails which are supported on the ties by means of the tie plates 3. Said tie plates are formed of flat plates of iron or other suitable material adapted to extend under the foot of the rail and project beyond each end thereof. In the portion of the tie plate which projects beyond the outside of the rail is formed a perforation 5 for receiving a spike 6 for engaging with the outside lower flange of the rail for holding the rail and plate in position on the tie. On the portion of the tie plate on the inside of the rail is provided a projection 7 having a shoulder 7′ adapted to extend over the inner flange of the rail to firmly engage the same, said projection being secured to the tie plate by any suitable means, for example, by a rivet formed of a shank 8 extending from the head or button through a perforation 9 in the plate and upset at its inner end. The tie plate is also provided at its inner portion with a flange 10 extending downwardly at one edge so as to engage and lie against the side of the tie 1, said downwardly extending flange 10 having one or more perforations 11 for receiving spikes 12 driven into the side of the rail.

The tie plates are put in place on the tie, preferably in pairs with the flanges 10 extending from the two plates of each pair extending down on opposite sides of the tie, and the plates are shoved into position so that the projection 7 thereon, engages over the inside flange of the rail. The several spikes 6 and 12 being then driven into place, hold the tie plate firmly in position on the tie. The spikes 12 driven through the perforations in the flange 10 into the side of the tie, hold the tie plate firmly from vertical vibration or upward displacement, and the outside spikes 6 hold the rail in firm engagement with the inside fastening means 7 as well as holding the outer portions of the rail and tie plate firmly down onto the tie.

The head or projection 7 on the tie plate has a flange or shoulder 13 extending over and engaging the tie plate on the side opposite to shoulder 7′, to resist bending action on the head by upward pressure of the rail flange.

In case it is desired to remove a rail it is only necessary to draw the spikes 6 on the outside of the rail, whereupon the rail may be freely slipped from the heads or projections 7 on the inside.

In the operation of a railroad it is found in practice that the loosening of the ordinary spikes is mainly, if not altogether, confined to the spikes on the inside of the rail, the tendency of the movement of the train, for example, in passing around curves on a high speed, or in the lurching of the train from side to side, is to over-turn the rail from the inside, lifting the inner flange and pulling or loosening the spikes on the inside of the rail. By providing the plates extending under the rail with projections extending over the inside of the rail any such action is eliminated, as the over-turning tends to lift the projections at the inner ends of the plates and requires the lifting of the entire rail which is prevented by the

weight of the train. On the other hand, there is little or no tendency to lift or draw the spikes on the outside, and by utilizing driven spikes instead of plate clamps on the outside of the rail, I am able to remove the rails readily as stated, for repairs. Moreover, with this construction the same spikes that fasten down the outer side of the rail also aid in holding the outer end portions of the plates in place. The engagement of the plates with the spikes where they pass through the perforations 5, is sufficient to prevent bending of the spikes due to direct outthrust of the car wheels.

What I claim is:

In combination with a rail and a tie, of a tie plate resting on the tie and extending longitudinally thereof underneath the rail and projecting beyond both sides of the rail, the inner projecting portion of the plate having a downwardly extending flange at the end on one side thereof and at right angles thereto and the plane of said flange being at right angles to the line of the rail, resting against the side of the tie, said downwardly projecting flange having orifices, nails extending through said orifices into the tie, the outer projecting portion of said plate having a perforation, a spike extending through the perforation into the tie and engaging the flange of the rail, the inner projecting portion of the plate having a projection riveted thereto.

In testimony whereof, I have hereunto set my hand at Kingman, Arizona, this 13th day of November, 1911.

JAMES W. CHAPMAN.

In presence of—

G. R. FRANKLIN,

JOHN W. LANE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."