G. W. CURTISS.

RAILWAY CROSS TIE.

APPLICATION FILED MAY 6, 1912.

1,037,599.

Patented Sept. 3, 1912.

2 SHEETS—SHEET 1.

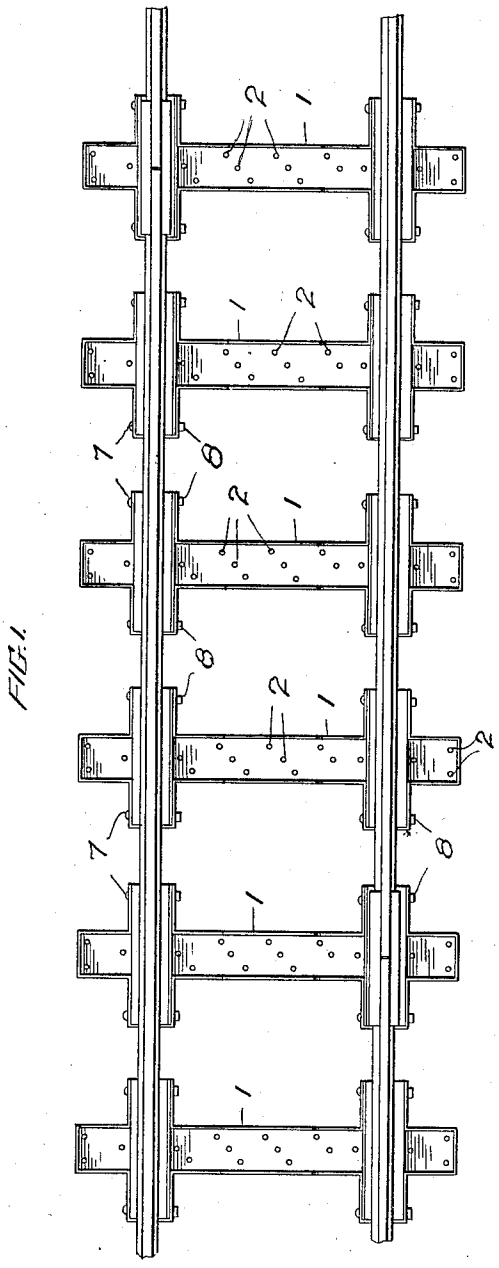

FIG. 1.

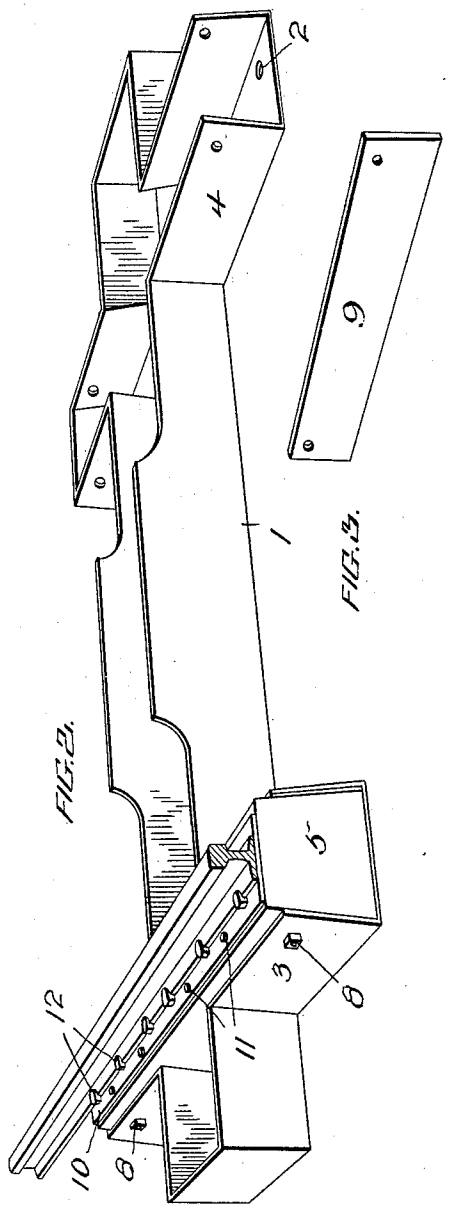

FIG. 2.

FIG. 3.

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2 SHEETS—SHEET 2.

FIG. 4.

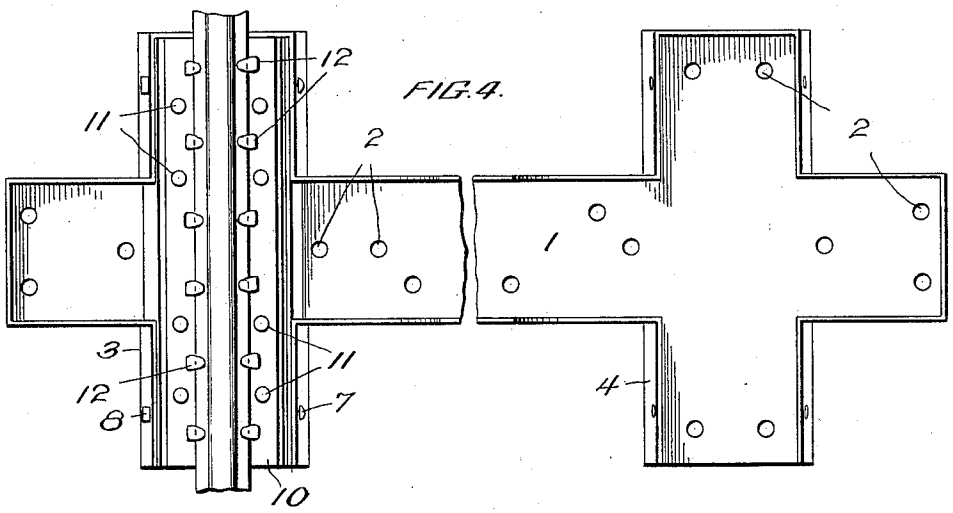


FIG. 5.

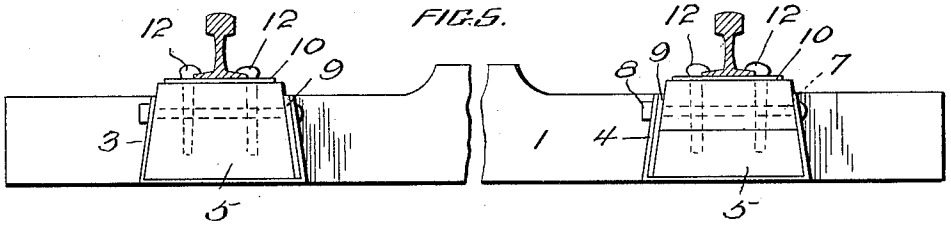


FIG. 6.

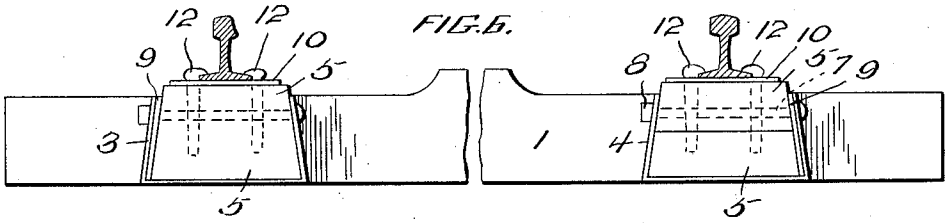
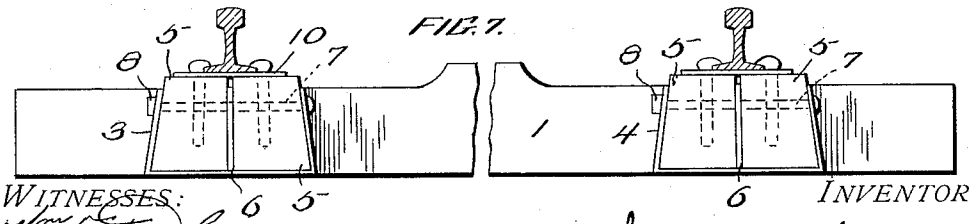


FIG. 7.



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UNITED STATES PATENT OFFICE.

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RAILWAY CROSS-TIE.

1,037,599. Specification of Letters Patent. Patented Sept. 3, 1912.

Application filed May 6, 1912. Serial No. 695,419.

To all whom it may concern:

Be it known that I, GEORGE W. CURTISS, citizen of the United States, residing at Gallitzin, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Railway Cross-Ties; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to railroad cross ties and particularly to that class in which a metal trough-like structure is used in conjunction with wooden rail supports.

One of the objects of my invention is to construct a cross tie of novel design capable of maintaining the rails in their proper position, and affording a support that is more efficient and economical than the ones used heretofore.

Another object of my invention is to prolong the life of the wood by eliminating the necessity of extracting and redriving spikes in the readjustment of the gage of the rails and obviating the use of wooden tie plugs.

Other objects which I have in view are to construct a cross tie which will be inexpensive to manufacture, will insure a greater tamping area, will permit a decrease in cost of maintenance, will provide a smooth track, capable of adjustment to secure perfect alinement of the rails, and one in which perfect insulation is guaranteed. It will also be possible with my improved cross tie to construct a road way with a less number of ties than has been used heretofore.

The premises considered, my invention will be more particularly described and pointed out in the following specification and claims, reference being had to the accompanying drawings which illustrate the same.

In the drawings, Figure 1 is a top plan view of a portion of a railway constructed with my improved cross ties, having certain parts removed for the purpose of clearness. Fig. 2 is a perspective view of the cross tie showing the fastening means for one rail. Fig. 3 is a perspective view of a gage plate. Fig. 4 is a top plan view of the cross tie, with one rail secured in position. Fig. 5 is a front view of the cross tie illustrating one form of adjustment. Fig. 6 is a similar view showing a different adjustment. Fig. 7 is a front elevation showing a modification.

1 is the cross tie which is preferably integral and constructed of any suitable material such as malleable iron, riveted steel or the like, and is of the form of a double hollow, trough-like cross provided on its under side with any number of projections, ribs or corrugations (not shown) for the purpose of engaging the road bed to prevent any displacement of the tie. This double cross formation is provided, both to secure the ties between the rails and also on the outside of the track. The perforations 2 are for the purpose of drainage, to prevent the accumulation of moisture in the hollow tie and also form additional means to prevent displacement. The cross arms 3 and 4 of the tie are dove-tailed in cross section and open at one end to permit the insertion of wooden blocks 5, 5 preferably of the same shape as the dovetailed opening of the cross arms. The dovetailed sides of the cross arms prevent the wooden block or blocks 5, 5 from rising.

The wooden blocks 5, 5 may be of one piece, or they may be of more than one piece, as illustrated at 4, in Figs. 5 and 6 and at 3 and 4 in Fig. 7. In Fig. 7 a metal plate 6 is provided between the blocks 5, 5 to spread the same and cause them to be gripped more firmly by the inclined sides of the cross arms. The blocks 5, 5 may be additionally secured in the cross arms 3 and 4 by means of transverse bolts 7, 7 which pass through apertures in the cross arms and in the wooden block or blocks and are secured by means of nuts 8, 8. As shown in Fig. 7 the bolts 7, 7 also pass through apertures in the plate 6.

When it is deemed desirable, gage plates 9, 9 are inserted in the cross arms adjacent the wooden blocks 5, 5 as shown, for the purpose of laterally adjusting the rails in an obvious manner. In Fig. 5, these gage plates are shown as positioned on the inside of the track which is the usual position in which they are placed when the track is laid. After the rails become worn the gage plate may be removed and inserted on the opposite side, as shown in Fig. 6, thus moving the rail and rail support laterally. This adjustment obviates the necessity of removing and redriving spikes and thereby insures a longer life to the wooden blocks. For the purpose of insulation, the wooden blocks 5, 5 are

adapted to extend above the cross tie as shown in the drawings.

Bed plates 10, 10 may be secured to the upper surface of the blocks 5, 5, preferably by means of spikes 11, 11. The rails are secured upon these bed plates 10, 10 by means of spikes 12, 12 which pass through apertures in the bed plates and enter the wooden blocks underneath.

It will be obvious that the portions of the cross tie not occupied by the wooden blocks, may be filled with suitable ballast, such as concrete or asphalt. The tie is also designed to admit of additional reinforcement at the center, top or bottom as traffic conditions and wheel loads demand.

What I claim and desire to secure by Letters Patent is:—

1. A railway cross tie comprising an integral metal frame consisting of a main portion and cross arm portions intermediate the ends of said main portion, wooden blocks adapted to be inserted in said cross arm portions, and means for securing the rails upon said blocks.

2. A railway cross tie comprising an integral metal frame of double cross shape adapted to rest upon the road bed, wooden blocks adapted to be inserted in longitudinally disposed portions of the frame with relation to the road bed and intermediate the ends of the main portion of said frame, and means for securing the rails upon said blocks.

3. A railway cross tie comprising an integral metal frame of double cross shape adapted to rest upon the road bed, wooden blocks adapted to be inserted in a portion of the frame and extend above the sides of the same whereby the rail is insulated, and means for securing the rails upon said blocks.

4. A railway cross tie comprising an integral metal frame of double cross shape, wooden blocks adapted to be inserted in a portion of the frame, gage plates adapted to be inserted between the blocks and the sides of the block receiving portions, whereby the said blocks and rails may be adjusted laterally.

5. A railway cross tie comprising an integral frame consisting of a main portion and cross arm portions intermediate the ends of said main portion, the cross arm portions being dovetailed in cross section and open at one end to receive and retain suitable blocks which form supports for the rails.

6. A railway cross tie comprising an integral metal frame of double cross shape made in the form of a trough, the cross arms of said frame being adapted to receive suitable blocks which form supports for the rails, and the main portions of the frame being adapted to receive suitable ballast.

7. A railway cross tie comprising an integral frame consisting of a main portion and cross arm portions intermediate the ends of said main portion, the cross arm portions being adapted to receive suitable blocks which form supports for the rails, and the main portion of the frame being adapted to receive ballast.

8. A railway cross tie comprising an integral metal frame consisting of a main portion and cross arm portions intermediate the ends of said main portion, wooden blocks adapted to be inserted in said cross arm portions, bed plates adapted to rest upon the upper surface of said blocks and suitable means for securing the rails to the blocks through said bed plate.

9. A railway cross tie comprising an integral metal frame consisting of a main portion and cross arm portions, blocks adapted to be inserted in said cross arm portions and gage plates adapted to be inserted between the blocks and the sides of the cross arm portions, whereby said blocks may be adjusted laterally.

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

GEORGE W. CURTISS.

Witnesses:
M. J. PANNEK,
JULIUS PANNEK.