March 15, 1927. 1,620,730

A. MITCHELL

METALLIC RAILWAY TIE

Filed April 7, 1926

Fig. 1.

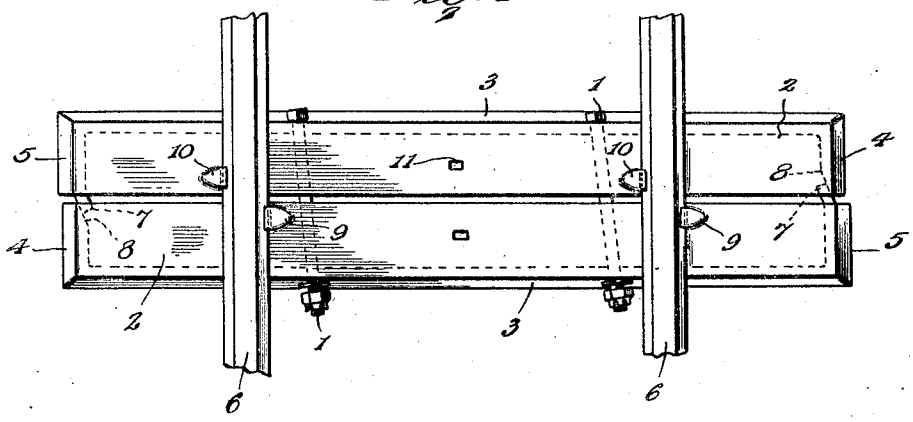


Fig. 2.

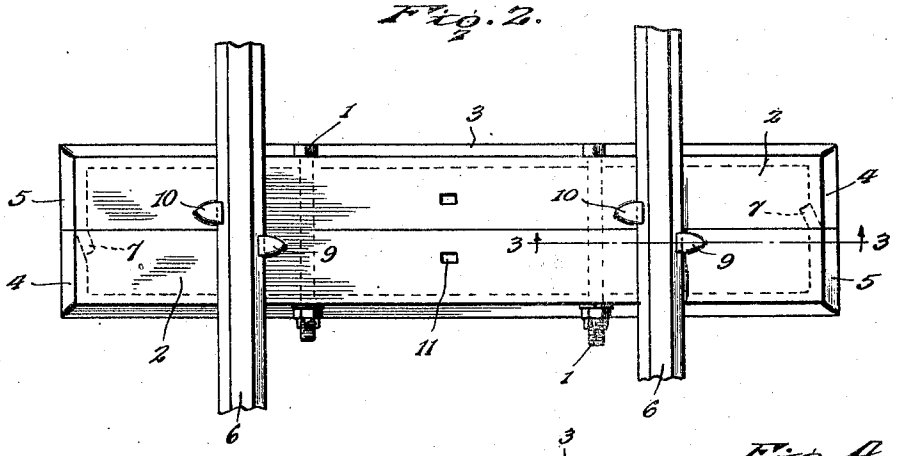


Fig. 3.

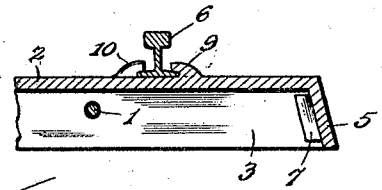
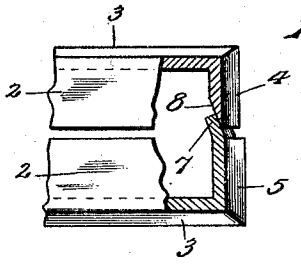


Fig. 4.



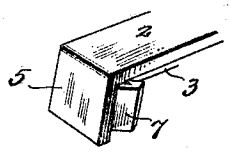


Fig. 5.

Inventor

Amos Mitchell.

By Lacey & Lacey

Attorneys

Patented Mar. 15, 1927. 1,620,730

UNITED STATES PATENT OFFICE.

AMOS MITCHELL, OF KIRKSVILLE, MISSOURI.

METALLIC RAILWAY TIE.

Application filed April 7, 1926. Serial No. 100,397.

The invention relates to ties for railroads and provides a metal cross tie, preferably of pressed steel, which prevents spreading, lipping and creeping of the rails and bleeding of the ties, and which maintains the track in gage and the rails in line and which obviates the use of spikes and fish plates, and which enables the successful use of a less number of cross ties per mile than are usually required, and which saves labor and time in tamping and in the removal and replacement of ties when necessary, and which materially reduces the cost of maintaining the track in condition, and which holds the track in place on curves and in line in mountainous countries, and which is durable and of high salvage value.

While the drawings illustrate a preferred embodiment of the invention it is to be understood that in adapting the means to meet specific needs and requirements, the design may be varied and such other changes in the minor details of construction may be resorted to within the scope of the invention as claimed, without departing from the spirit thereof.

For a full understanding of the invention and the merits thereof, reference is to be had to the following description and the drawings hereto attached, in which—

Figure 1 is a top plan view of a railroad cross tie embodying the invention, showing the sections spaced apart, and the rails in position.

Figure 2 is a view of the parts shown in Figure 1 with the sections of the tie drawn together,

Figure 3 is a detail sectional view on the line 3—3 of Figure 2, looking in the direction of the arrows,

Figure 4 is a detail plan view of an end portion of the tie with the sections spaced and a portion of the tie broken away, and,

Figure 5 is a detail perspective view of an end portion of a section showing the inclined lip.

Corresponding and like parts are referred to in the following description and designated in the several views of the drawings by like reference characters.

The cross tie is of metal, preferably pressed steel, and comprises similar or complemental sections which are adapted to be drawn together by bolts 1. Each of the sections comprises a top 2, an outer longitudinal wall 3 and end walls 4 and 5. The end and side walls flare so that the space enclosed thereby beneath the top 2 flares downwardly toward the open side so as to compress and compact the ballast and obviate tamping. When the sections are assembled the top and end walls come close together and when drawing the sections together by means of the bolts 1, or analogous fastening means the sections receive a longitudinal movement, whereby to cause a positive gripping of the rails between pairs of lugs at opposite ends of the sections. Cooperating inclined elements are provided at each end of the tie and these elements ride one upon the other as the sections are drawn together and effect a simultaneous longitudinal movement of the sections, whereby the lugs carried thereby are advanced so as to clamp the rails 6 therebetween. An inclined lip 7 projecting from the end wall 5 of each of the sections is adapted to engage and ride upon an inclined face 8 formed upon the end wall 4 and these elements are arranged to effect a positive longitudinal movement of the sections in opposite directions, as they are drawn together by means of the bolts 1. One of the sections of the tie is provided with lugs 9 and the companion section with lugs 10. The lugs 9 and 10 face inwardly and are spaced apart a distance to firmly and securely grip the foot of the rails when the sections are drawn together, as shown most clearly in Figures 2 and 3. Since the lugs 9 and 10 occupy a predetermined position and form a part of the sections, the gage and line of the track are preserved and spreading and lipping are prevented. The lower side of the tie is hollow and the space flares downwardly and, as a result, the ballast packs and tamping is unnecessary and in consequence, movement of the tie in any direction is prevented.

In the application of the invention the sections are separately placed in position so that the lugs 9 of one section are disposed upon one side of the rails and the lugs 10 of the companion section come upon the opposite side of the rails. The bolts 1 are now placed in position and tightened, thereby drawing the sections together and at the same time effecting a positive longitudinal movement thereof by reason of the lips 7 riding upon the inclined faces 8. As the sections are drawn together the lugs 9 and 10 are advanced to positively and firmly grip the rails and prevent creeping or lipping

thereof. Openings 11 formed in the top of the sections admit of the point of a pick, crowbar or the like being engaged therein to facilitate the handling and adjusting of the sections when placing them in position.

Having thus described the invention, I claim:

1. A metal railroad cross tie, comprising complemental longitudinal sections provided with rail engaging lugs, each of the sections having end walls and an inclined lip projecting inwardly from one of the end walls and having the opposite end wall inclined upon its inner face, the inclined lips and faces being at opposite ends of the tie and disposed inwardly from the end walls to be protected thereby, and transverse fastenings for drawing the sections together laterally, the sections simultaneously receiving a longitudinal movement by the inclined lips riding upon the said inclined faces.

2. A metal railroad cross tie, comprising complemental sections, provided with rail engaging lugs, each of the sections comprising a top and outer longitudinal and end walls which flare downwardly, one of the end walls having an inclined projection and the opposite end wall having an inclined face and fastenings for drawing the sections together and simultaneously effecting a longitudinal movement thereof by the inclined projections riding upon the inclined faces.

In testimony whereof I affix my signature.

AMOS MITCHELL. [L. S.]