D. R. AUSTIN.

METALLIC CROSS TIE.

APPLICATION FILED MAY 27, 1912.

1,040,113.

Patented Oct. 1, 1912.

2 SHEETS—SHEET 1.

FIG. 1.

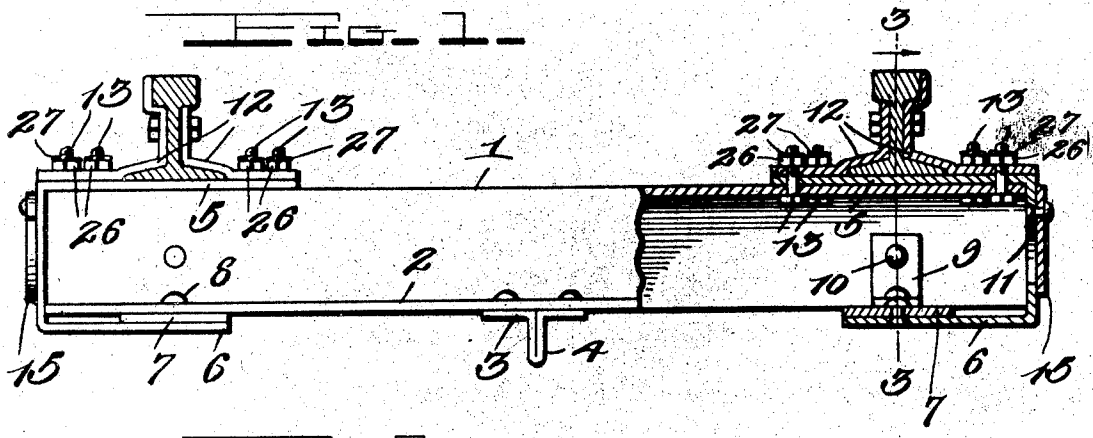


FIG. 2.

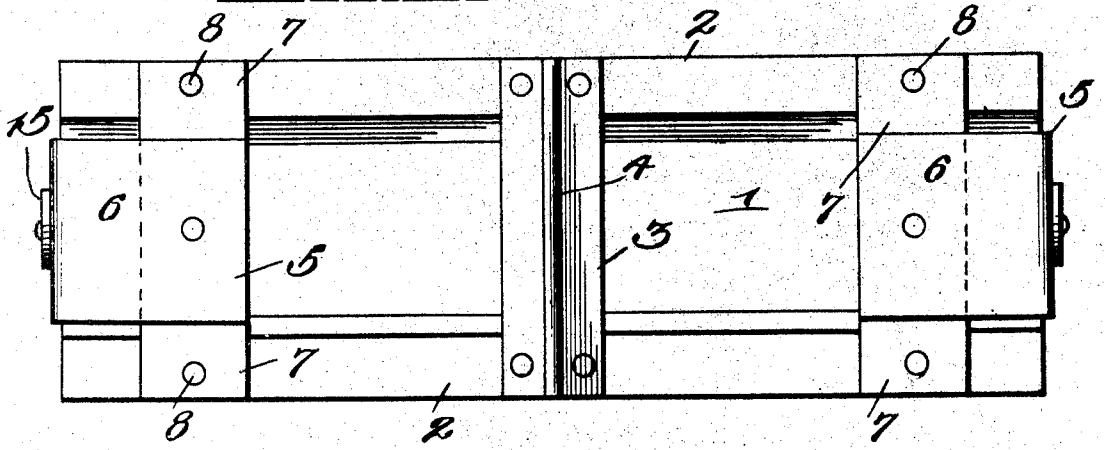


FIG. 3.

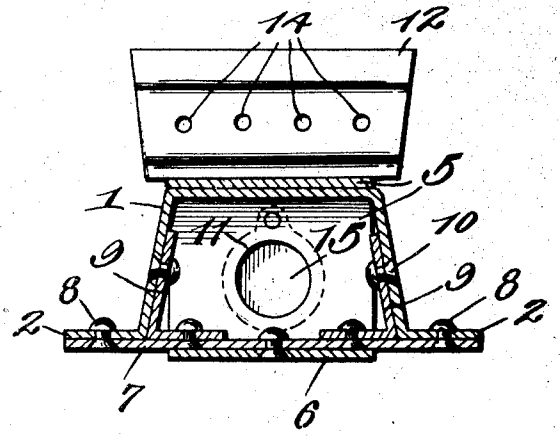
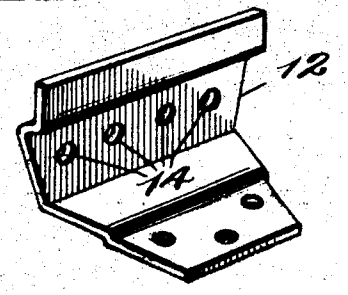


FIG. 4.



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2 SHEETS—SHEET 2.

Fig. 5.

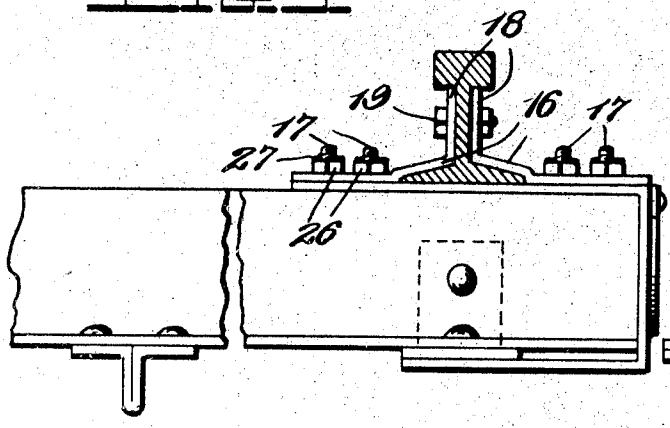


Fig. 6.

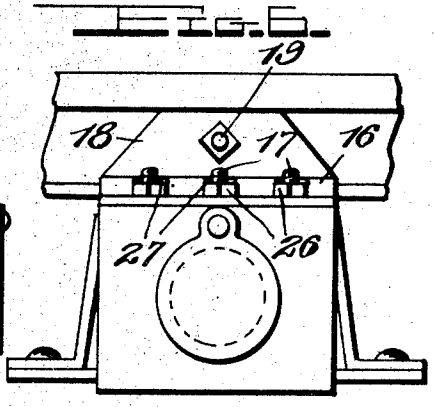


Fig. 7.

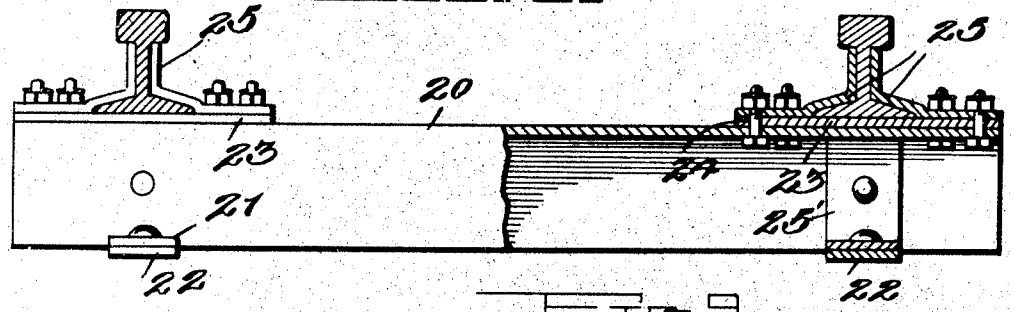


Fig. 8.

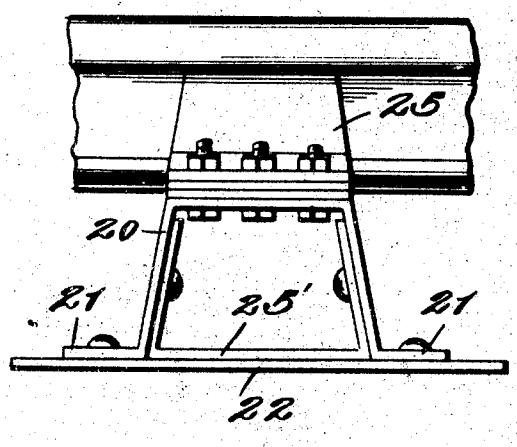
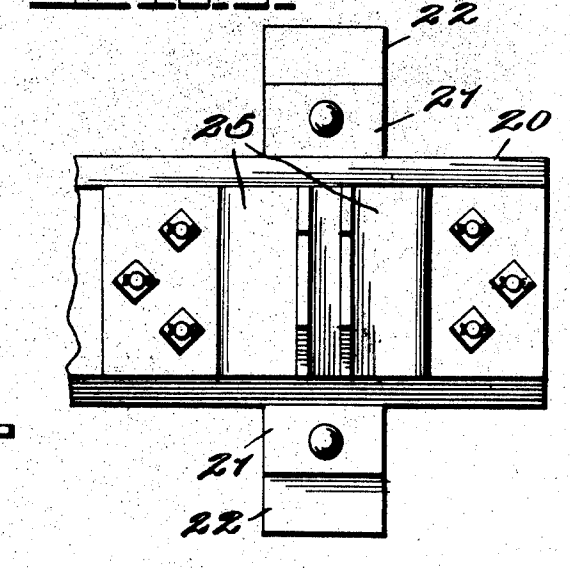


Fig. 9.



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UNITED STATES PATENT OFFICE.

DAVID R. AUSTIN, OF NEVADA, MISSOURI.

METALLIC CROSS-TIE.

1,040,113. Specification of Letters Patent. Patented Oct. 1, 1912.

Application filed May 27, 1912. Serial No. 700,067.

To all whom it may concern:

Be it known that I, DAVID R. AUSTIN, a citizen of the United States, residing at Nevada, in the county of Vernon and State of Missouri, have invented certain new and useful Improvements in Metallic Cross-Ties, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to new and useful improvements in railway cross ties, the object of the invention being to provide a cross tie constructed wholly of metal, and further to provide novel fastening means whereby the rails will be securely fastened to the upper side of the tie.

Another object of the invention is to provide a metallic cross tie which will possess advantages in points of efficiency and durability, is inexpensive to manufacture and at the same time is simple in construction and operation.

With the above and other objects in view the invention consists in the novel features of construction and the combination and arrangement of parts hereinafter more fully described, pointed out in the claims, and shown in the accompanying drawings in which,

Figure 1 is a side elevation partly broken away and in section. Fig. 2 is a bottom plan view. Fig. 3 is a sectional view on the line 3—3 of Fig. 1. Fig. 4 is a detail perspective view of one of the angular fastening members. Fig. 5 is a side elevation of one end of the tie showing a modified form of fastening means. Fig. 6 is an end elevation. Fig. 7 is a side elevation partly broken away and in section showing a slightly modified form of tie. Fig. 8 is an end elevation of the same. Fig. 9 is a top plan view of one end of the modified form of the tie.

Referring more particularly to the drawings, 1 indicates the inverted U shaped body portion of the tie which is provided on its longitudinal edges with the outwardly extending flanges 2 adapted to rest upon the ground to prevent any tilting of the tie. Secured to the under side of the flanges 2 and arranged transversely across the under side of the tie is the central brace member 3 provided with a downwardly extending flange 4 which is adapted to be disposed within the ground to prevent the longitudinal movement of the tie.

Plates 5 are provided having one of their ends secured to the upper face of the tie and their other ends bent downwardly over the end of the tie and then bent inwardly and disposed beneath the tie as shown at 6. The extreme ends of the plates are secured to the transverse end braces 7 which are arranged beneath the tie and secured at their ends to the flanges 2 by means of the rivets 8. Angular brace members 9 are arranged in each end of the tie and have one of their ends secured to the inner side of the vertical portions of the tie as shown at 10 and their other ends arranged upon the end braces 7 and rigidly secured thereto. The intermediate portions of the plates 5 which are arranged at the end of the tie are provided with a centrally arranged opening 11 for receiving a filling of earth, cement or gravel.

In Fig. 4, I have shown a novel form of rail fastener, and upon one end of the tie, I have shown a form of fastener which is adapted to be used where the ends of the rails are joined together. This form of fastener comprises angular plates 12 having their horizontal portions rigidly secured to the top of the tie by means of the bolts 13, and the vertical portions of the plates are provided with a plurality of openings 14 for the reception of bolts which are adapted to pass through the vertical portions of the plates and through the ends of the rails to hold the same securely in place. Upon the opposite end of the tie from the plates 12 is a form of fastener which is to be used upon the body portion of the rail. The opening 11 formed in the intermediate portions of the plate 5 is closed by means of a pivotally mounted closure plate 15 so that after the body of the tie has been filled with earth, gravel or cement, the same will not work out through the opening 11 by the jar of the trains passing thereover.

In Fig. 6, I have shown a modified form of fastener which is adapted to be used on curves to give extra support to the standing of the rails, this fastener comprises the angular plates 16 having their horizontal portions securely fastened to the top of the tie by means of the bolts 17. The tapering vertical portions 18 are arranged on opposite sides of the rail and are securely fastened thereto by means of the bolt 19.

In Fig. 7, I have shown a slightly modified form of cross tie for use upon bridges and trestle-work and comprises the inverted U shaped body portion 20 provided upon its longitudinal edges with the outwardly extending ears 21 arranged at each end thereof. Arranged beneath the tie at each end thereof are the plates 22 which are secured at their ends to the ears 21, said plates being securely bolted to the sills or stringer-rests by means of spikes or other similar fastening means. Bearing plates 23 are arranged upon the top of the tie at each end thereof and are provided with the openings 24 which are adapted to register with the openings in the top of the tie and the openings in the horizontal portions of the fastening members 25. U-shaped braces 25′ are arranged within each end of the tie, having their intermediate portion arranged upon and secured to the brace members 22 and their ends extending upwardly and secured to the side edges of the body 20.

It will be seen that by having the opening 11 formed in the ends of the tie that a wrench or other tool may be easily inserted to release the bolts 13. The nuts 26 upon the bolts are held securely in place by means of the cross pins 27. These cross pins are removed when the rail fasteners are to be removed from the tie. It will be understood that the fastener which is shown in Fig. 4, and described as adapted for use upon a tie where the meeting ends of two rails come together can be used, if desired, in place of the fastener upon the opposite end of the tie shown in Fig. 7, but it is preferably used at the meeting ends of two rails. It will also be understood that the fastener 16 may also be used upon the rail at any point, if desired.

From the above description taken in connection with the drawings, it will be readily apparent that I have provided a novel metallic tie which will withstand all kinds of weather and all strain or stress which may be applied thereto by the trains passing thereover, and it will be further seen that the novel forms of rail fasteners can be quickly and easily applied thereto or removed therefrom.

While I have shown and described the preferred form of my invention it will be obvious that various changes in the details of construction and in the proportions may be resorted to for successfully carrying my invention into practice without sacrificing any of the novel features or departing from the scope thereof.

What I claim is:—

1. A railway cross tie comprising an inverted U shaped body portion, having outwardly extending flanges formed upon its longitudinal edges, a central brace member arranged transversely across the under side of the tie and having its ends secured to the outwardly extending flanges, transverse end braces arranged beneath the tie and secured at their ends to the outwardly extending flanges, angular brace members having one of their ends secured to the side walls of the body of the tie, and their other ends secured to the transverse end braces, plates having one of their ends arranged upon and secured to the top of the tie, the other end of said plates being bent downwardly across the end of the tie, and then bent inwardly and secured to the transverse end braces, the intermediate portion of said plates which are arranged across the ends of the tie are provided with an opening for communication with the interior of the body of the tie, pivotally mounted closure plates adapted to close said openings, and means mounted upon the tops of said ties for securely fastening the rails thereto.

2. A railway cross tie comprising an inverted U shaped body having outwardly extending flanges formed on its longitudinal edges, transverse end braces arranged beneath the tie and having their ends secured to the outwardly extending flanges, plates having one of their ends arranged upon and secured to the top of the tie, the other ends of said plates being bent downwardly and arranged across the end of the tie, and then bent inwardly beneath the tie and secured to the transverse end braces. Oppositely disposed angular plates having their horizontal portions secured to the top of the tie and their vertical portions provided with a plurality of openings whereby the rails may be securely fastened to the top of the tie by means of bolts or other fastening means.

3. A railway cross tie comprising an inverted U shaped body portion having outwardly extending flanges formed upon its longitudinal edges, transverse end braces arranged beneath the tie and having their ends secured to the outwardly extending flanges, plates having one of their ends arranged upon and secured to the top of the tie, the other ends of said plates being bent downwardly and arranged across the ends of the tie, and then bent inwardly and secured to the transverse end braces, a rail fastener secured to the top of the tie and arranged at each end thereof, said fastener

comprising two oppositely disposed angular plates, having their horizontal portions secured to the top of the tie, and the vertical portions of said angular plates being tapered and provided with alined openings whereby the rails may be securely fastened to the tie by means of bolts or other fastening means.

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

DAVID R. AUSTIN.

Witnesses:
J. B. HARRIS,
M. C. ETLER.