

(No Model.)

J. M. BORDNER.
METALLIC CROSS TIE.

No. 486,077.

Patented Nov. 15, 1892.

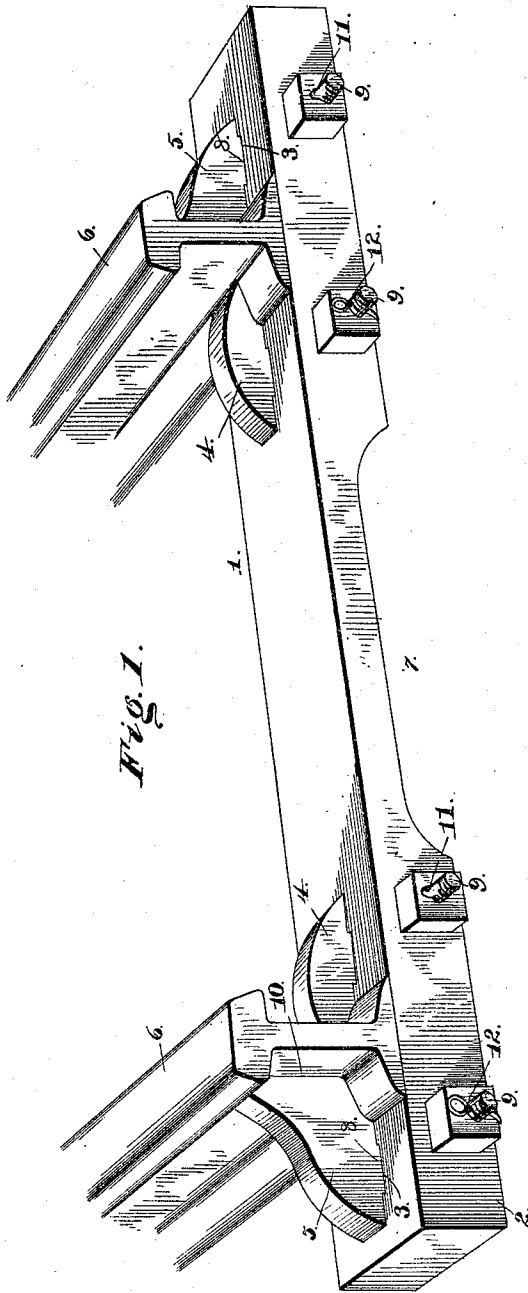


Fig. 1.

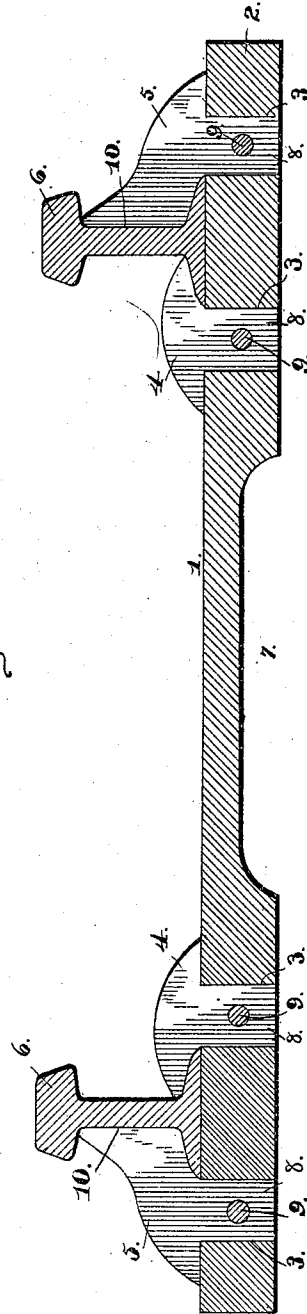


Fig. 2.

Witnesses

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JEROME M. BORDNER, OF PALMYRA, PENNSYLVANIA.

METALLIC CROSS-TIE.

SPECIFICATION forming part of Letters Patent No. 486,077, dated November 15, 1892.

Application filed January 9, 1892. Serial No. 417,543. (No model.)

To all whom it may concern:

Be it known that I, JEROME M. BORDNER, a citizen of the United States, residing at Palmyra, in the county of Lebanon and State of Pennsylvania, have invented a new and useful Metallic Cross-Tie, of which the following is a specification.

The invention relates to improvements in metallic cross-ties.

10 The object of the present invention is to simplify and improve the construction of metallic railroad-ties and to provide one constructed entirely of metal which will possess the necessary spring and elasticity, and there-
15 by dispense with the wooden blocks which are generally employed in connection with metal cross-ties.

The invention consists in the construction and novel combination and arrangement of
20 parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claim hereto appended.

In the drawings, Figure 1 is a perspective view of a cross-tie constructed in accordance
25 with this invention. Fig. 2 is a longitudinal sectional view.

Like numerals of reference indicate corresponding parts in both the figures of the drawings.

30 1 designates a cross-tie constructed of metal and having solid ends 2, provided with vertical openings or mortises 3, in which are secured inner and outer clips 4 and 5, which secure the rails 6 to the cross-tie. The intermediate portion 7 of the tie is arched on its
35 lower face to impart sufficient spring to the cross-tie to prevent rocking, which would occur if the cross-tie were of the same thickness throughout its length.

40 The clips 4 and 5 engage the lower flanges of the rails, which rest flat upon the upper face of the cross-tie and are provided with shanks 8, which are arranged in the mortises and which are secured to the cross-tie by horizontal bolts 9, passing transversely through
45 the cross-tie. The outer clip 5 is enlarged and extended upward and has its inner face 10 conforming to the configuration of the web

of a rail, and it prevents the rail spreading or twisting. These outside clips may be advantageously employed at rail-joints, and their inner faces 10 will fit against the fish-plates, as will be readily understood.

The bolts 9 have their nuts secured on them by burrs 11 or springs 12, passing transversely
55 through the bolts.

It will be seen that the cross-tie is simple and inexpensive in construction, that it is strong and durable, and that rails may be quickly secured to them.

The shanks of the clip are rectangular in cross-section and fit snugly in the openings or mortises 3 of the cross-tie, whereby they are prevented from shifting or spreading.

What I claim is—

65 The combination, with rails, of a straight metal cross-tie having a straight flat upper face and having its lower face concavely recessed intermediate of its ends to form a central arch and solid ends, the inner clips 4, having reduced shanks fitting in vertical mortises of the cross-tie and forming inner and outer
70 shoulders resting upon the upper face of the cross-tie at opposite sides of the shank, the inner shoulder being extended and curved and conforming to the configuration of and
75 engaging the bottom flange of a rail, the outer clips 5, having reduced shanks arranged in vertical mortises of the cross-tie and forming inner and outer shoulders resting upon the
80 upper face of the cross-tie at opposite sides of the shank, the inner shoulder being curved and engaging the bottom flange of a rail and being extended vertically on the web thereof and fitting under the head of the rail, and fast-
85 tening devices securing the shank to the cross-tie and passing through the latter, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature 90 in the presence of two witnesses.

JEROME M. BORDNER.

Witnesses:

S. H. BOWMAN,
A. L. LESSLEY.