(No Model.)

W. PARTRIDGE & W. J. McCUTCHEON, Jr.

METALLIC RAILWAY TIE.

No. 418,052. Patented Dec. 24, 1889.

Fig. 1.

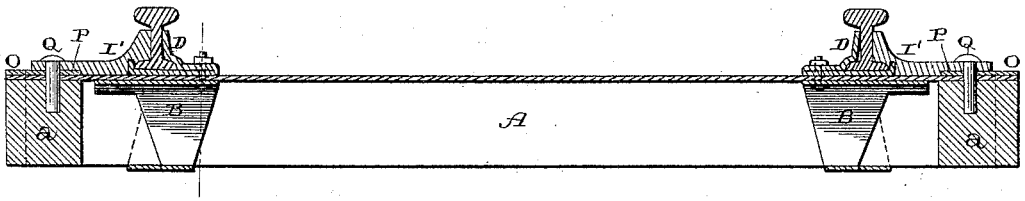


Fig. 2.

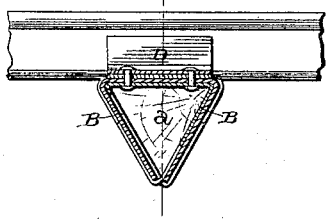


Fig. 3.

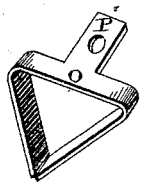
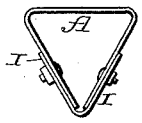


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM PARTRIDGE AND WILLIAM JAMES McCUTCHEON, JR., OF ALLEGHENY, PENNSYLVANIA.

METALLIC RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 418,052, dated December 24, 1889.

Application filed September 25, 1889. Serial No. 325,000. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM PARTRIDGE and WILLIAM JAMES McCUTCHEON, Jr., of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Metallic Railway-Ties; and we 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to an improvement in railway-ties; and it consists in a metallic tie which is given a triangular shape, in combination with a metallic brace which is placed inside of the tie, in the manner and for the purpose hereinafter set forth and claimed.

It also consists in the arrangement and combination of parts which will be more fully described hereinafter.

The object of our invention is to produce a railroad-tie which is made from metal of any desired thickness, and which is more durable and elastic than the wooden ties now in use.

Figure 1 is a longitudinal section of a tie which embodies our invention. Fig. 2 is a vertical section of the same taken at right angles to Fig. 1. Figs. 3 and 4 are detail views.

A represents the tie, which is made of metal of any desired thickness or kind, and which is rolled, bent, or given a triangular shape in any manner that may be preferred. In order to brace and strengthen the tie, there is placed inside of it, under the rails, where the chairs are secured in position, suitable metallic braces B, of any suitable construction, and which form an additional thickness of metal at that point where the chair is to be secured. Either the lower ends of these braces may project through the opening at the lower edge of the tie and be bent up along opposite sides, as shown in Figs. 1 and 2, or the lower portion of the tie may be closed by an angular plate I, as shown in Fig. 4, which will cover the lower edge of the tie and extend upward upon opposite sides any desired distance. These braces may be fastened in position by means of bolts or any other suitable devices that may be preferred. The top of the tie forms a broad base or bearing for the chairs and the rails, while the sharp portion of the tie projects down in the ballast. This triangular shape of the tie causes it to pack solidly in the ground, and at the same time enables it to be quickly raised and easily moved when it becomes necessary to do so.

Each end of the tie will be filled by a triangular block of wood *a*, which will extend into the tie far enough to be held securely in position by the bolt Q, or fastening which holds a portion of the chair in position. After the tie has been completed, but before the block is inserted, it is dipped in hot tar or pitch, so as to thoroughly coat every part and protect it from rust. The blocks of wood *a*, before they are inserted in the ends, are also dipped in tar, so as to preserve them from decay.

Near each end of the tie and through the braces B, placed therein, are punched or formed in any suitable manner bolt-holes, through which clamping-bolts are passed for the purpose of securing the part D of the chair in position. This part D has one flange to extend up along the side of the rail, and has its lower portion made so as to receive the bottom flange of the rail, as shown; also secured to the tie by suitable bolts is the metallic block or brace I′, which has its inner end bearing solidly against the opposite side of the rail from the part D of the chair, and thus holds the rail rigidly in position.

In order to brace and strengthen the ends of the tie, a brace-plate O is applied to each end, and this plate has an arm P, which extends along upon the top of the tie, and is secured in position by the bolt Q, which secures the block I′ in place. This brace-plate forms a double thickness of metal at each end of the tie, so that it will not be battered or bent out of shape during transportation.

Having thus described our invention, we claim—

1. The combination of a metallic tie and brace placed inside of the tie with the chair

composed of the two parts D I′, which hold the rail from opposite sides, substantially as set forth.

2. A metallic tie made triangular in cross-section, whereby one of its edges is adapted to be forced into the earth, in combination with the blocks of wood *a*, which close its ends, substantially as shown.

3. A metallic tie triangular in cross-section, whereby one of its edges is adapted to be forced down into the earth, in combination with the metallic brace B, which is placed inside of the tie, and which has the same shape as the tie itself, in combination with the rail, and the chair by which the rail is secured in position, substantially as described.

4. The combination of a metallic tie, the blocks *a*, which close its ends, and the brace-plates O, placed around the ends of the tie and provided with the extension P, through which the bolt Q is passed, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM PARTRIDGE.
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