No. 894,090. PATENTED JULY 21, 1908.

H. L. WILLIAMS.

RAILWAY TIE.

APPLICATION FILED JAN. 9, 1907.

Fig. 1.

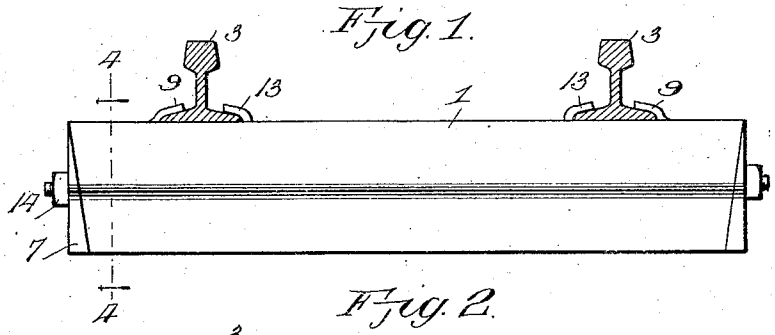


Fig. 2.

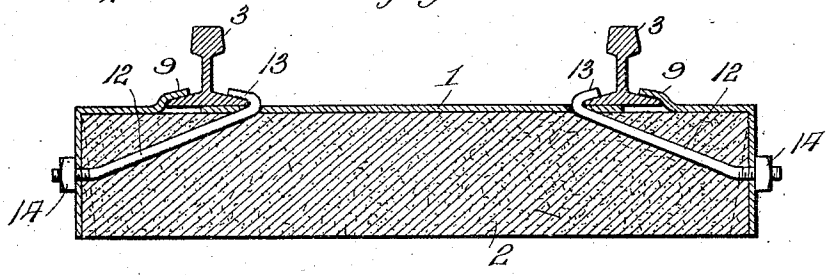


Fig. 3.

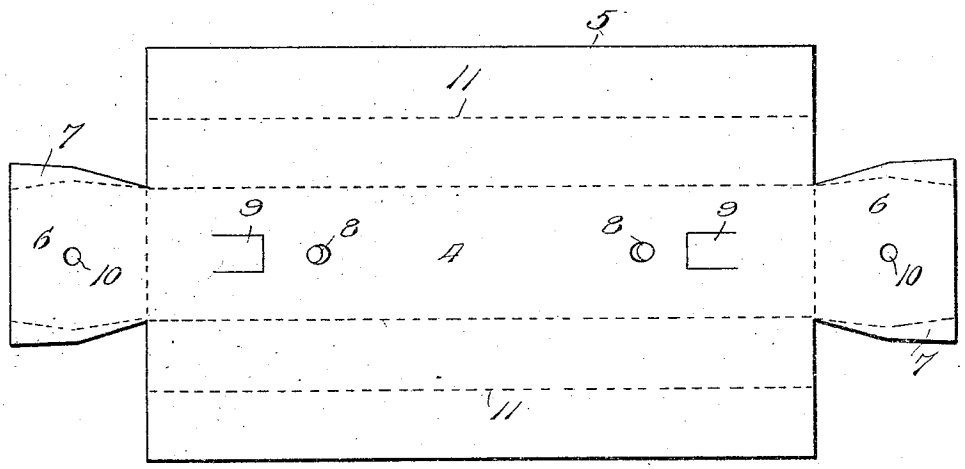
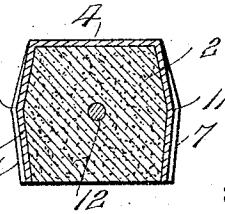


Fig. 4.



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RAILWAY-TIE.

No. 894,090. Specification of Letters Patent. Patented July 21, 1908.

Application filed January 9, 1907. Serial No. 351,538.

To all whom it may concern:

Be it known that I, HARRY LAWRENCE WILLIAMS, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented new and useful Improvements in Railway-Ties, of which the following is a specification.

This invention relates to railway ties of the type embodying a metal shell or casing containing a filling of cement or other moldable material, and has for its objects to provide a comparatively simple, inexpensive device of this character which will be exceedingly strong and durable, one wherein the filling will be retained firmly and securely in place within the casing, and one wherein the casing will be positively prevented from spreading transversely.

A further object of the invention is to provide a device of this character with which the rails may be readily and securely engaged, and one wherein the main rail engaging members serve as braces for strengthening the tie at points beneath the rails.

With these and other objects in view, the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings: Figure 1 is a side elevation of a tie embodying the invention and showing a pair of rails in position thereon. Fig. 2 is a vertical section taken centrally and longitudinally through the tie. Fig. 3 is a view of the blank from which the casing is formed and showing the same prior to bending into shape. Fig. 4 is a detail cross section taken on the line 4—4 of Fig. 1.

Referring to the drawings, it will be seen that the tie as a whole comprises an outer casing 1 composed of sheet metal or other suitable material and a body portion or filling 2 made from cement or other suitable moldable material and constituting the tie proper, which in practice is extended transversely between and for supporting the overlying rails 3, as usual in devices of this character.

The casing 1, which comprises a top portion or wall 4, side portions or walls 5 and end portions or walls 6, is composed of a single piece or blank of sheet metal of the form shown in Fig. 3 and produced by stamping or otherwise, the blank being finally bent into shape to produce the completed casing which is of substantially hexagonal form in cross section, as seen in Fig. 4. The end portions 6 of the blank are of a width somewhat greater than that of the completed casing, thus providing engaging portions or flanges 7 which in the completed casing are folded inwardly into engagement with the side walls 5 for preventing relative spreading of the latter, while struck from the portion 4 of the blank, which is provided at points suitably remote from its ends with openings 8, is a pair of rail engaging members or tongues 9 spaced relative to the respective openings 8 and bent as shown in Fig. 2 for engagement with the outer edges of the rails, there being formed in the end walls 6 openings or perforations 10, for a purpose which will presently appear.

The side portions 5 of the casing are bent transversely along the dotted lines 11 whereby the inner faces of said walls will, in the completed casing, be of concaved form, thus reducing the width of the casing at its top and bottom, which latter is open to permit introduction of the cement filling 2, or that is, to render the open bottom of lesser diameter than that of the casing at a point above the bottom thus to retain the filling in place within the casing.

Entered longitudinally into the casing through the perforations 10 are tie rods or members 12, the inner ends of which are extended upward through the openings 8 and terminally bent into the form of rail engaging portions or hooks 13, which engage the bases of the rails 3, there being threaded onto the outer ends of the rod tensioning members or nuts 14 through the medium of which the rods may be drawn into secure clamping engagement with the rails. It will be observed in this connection that the rods 12, which are inserted through the cement filling 2 while in a plastic state, serve not only as clamps for the rails but also to brace the tie at points beneath the latter and as auxiliary means for retaining the cement filling in place within the casing 1.

In practice, after the ties have been completed and in assembling the rails in position thereon, the outer edges of the base portion of the rails are seated beneath the engaging lugs 9 and the inner ends of the rods 12 folded down upon the inner edges of the rail bases in the form of the hooks 13, after which the ends 14 are manipulated for tensioning the rods 12 to securely clamp the rails in place, it being observed that owing to the side walls 5 of the casing being of internally

concaved form, the cement filling after hardening will be retained securely in place within the casing, the filling being further secured through the medium of the rods 12, as heretofore explained.

Having thus described my invention, what I claim is:

1. A rail tie comprising a shell of sheet metal, side extensions bent downwardly, end extensions bent downwardly and having their side edges bent laterally over the side extensions to prevent spreading of the latter, means for securing rails to the tie, and a filling of plastic material in the shell.

2. A rail tie comprising a shell of sheet metal, side extensions bent downwardly, end extensions bent downwardly and having their side edges bent laterally over the side extensions to prevent spreading of the latter, rail fastening means serving to prevent the end extensions from spreading and moving out of engagement with the side extensions, and a body of concrete contained in the shell.

3. A rail tie comprising a sheet metal body having end and side extensions bent downwardly to form a casing open at its bottom, there being provided apertures in the top and vertical walls of the casing, lugs stamped upwardly from the top of the casing for engaging the rail bases, a filling of moldable material in the casing, bars extending through the material and through the apertures of the casing, a hook on one end of each bar for engaging the base of a rail, a thread on the opposite end, and a nut on the threaded end bearing against the outside of the casing, the edges of the end extensions being bent laterally to overlap the side extensions and prevent spreading of the latter.

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

HARRY LAWRENCE WILLIAMS.

Witnesses:
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