R. T. BAGBY.

CONCRETE RAILWAY TIE.

APPLICATION FILED OCT. 21, 1913.

1,086,981.

Patented Feb. 10, 1914.

2 SHEETS—SHEET 1.

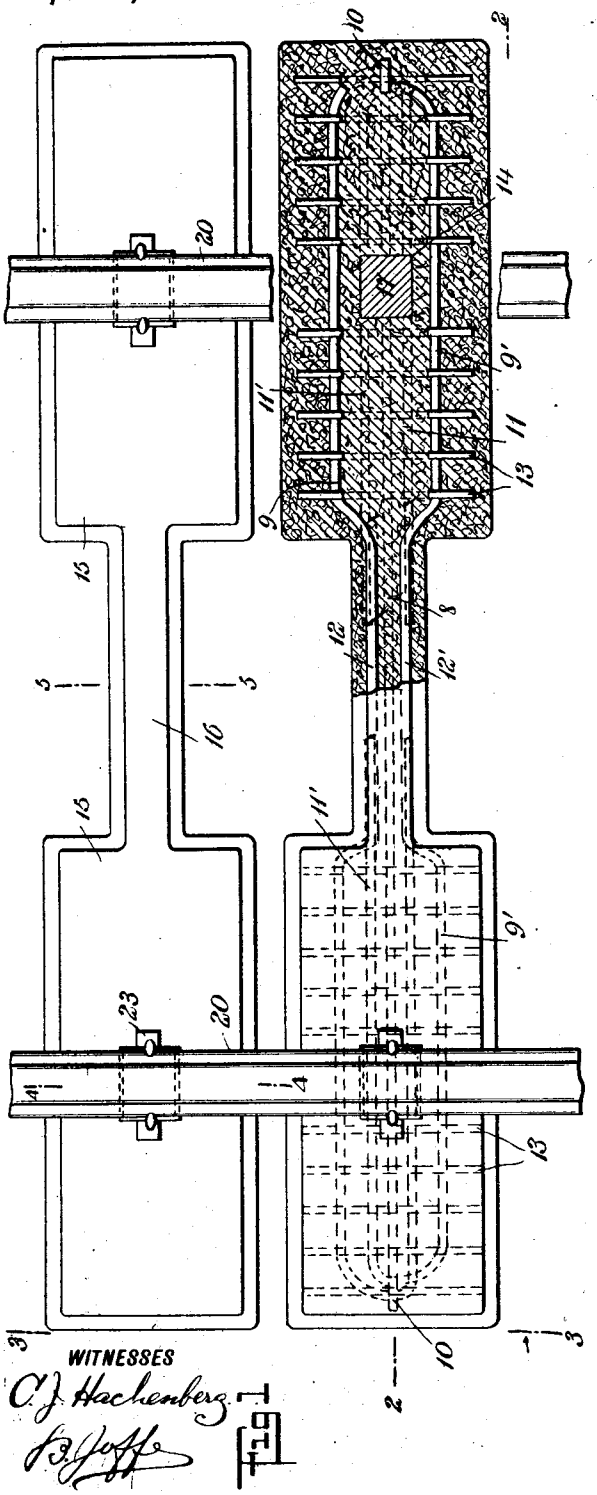


FIG 1

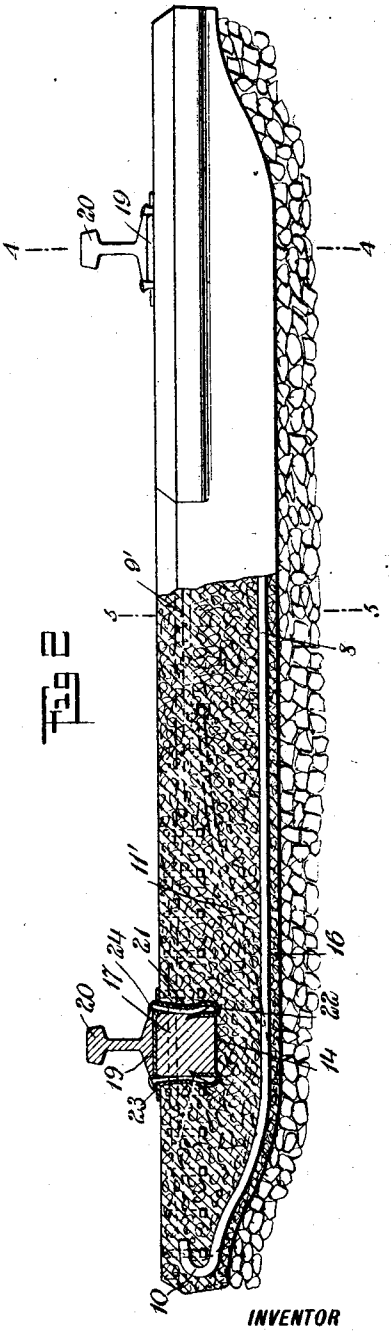


FIG 2

WITNESSES

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Fig 3

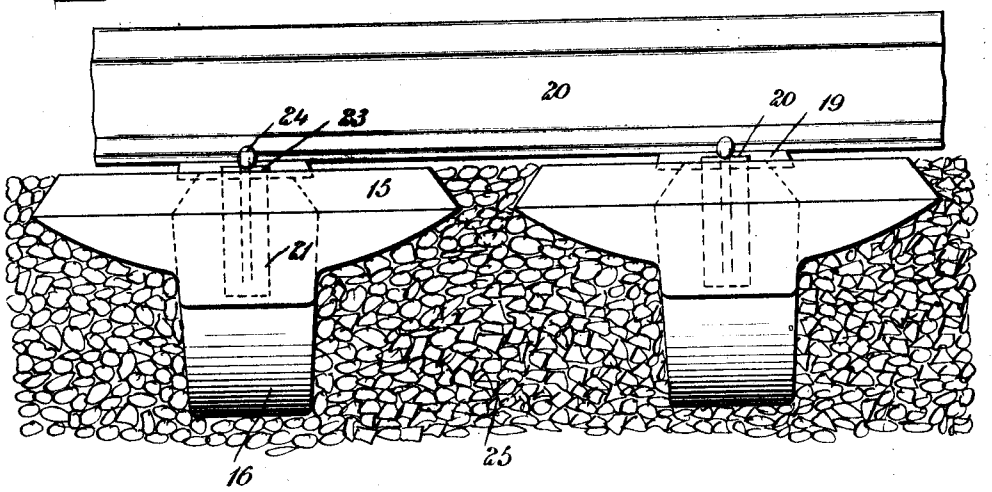



Fig 4

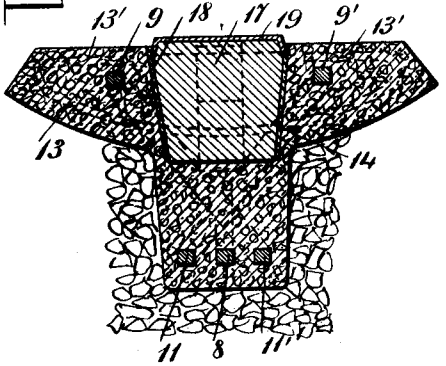



Fig 5

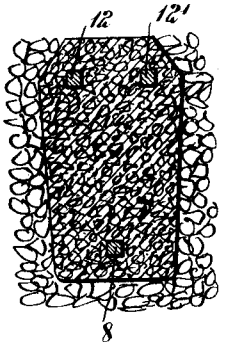



Fig 6

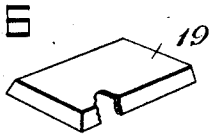
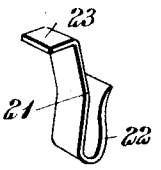



Fig 7




WITNESSES

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# UNITED STATES PATENT OFFICE.

ROBERT TROMMELL BAGBY, OF WHITNEY, NORTH CAROLINA.

## CONCRETE RAILWAY-TIE.

1,086,981. Specification of Letters Patent. Patented Feb. 10, 1914.

Application filed October 21, 1913. Serial No. 796,454.

*To all whom it may concern:*

Be it known that I, ROBERT T. BAGBY, a citizen of the United States, and a resident of Whitney, in the county of Stanly and State of North Carolina, have invented a new and Improved Concrete Railway-Tie, of which the following is a full, clear, and exact description.

My invention relates to concrete reinforcing railway ties; and the object thereof is to provide a strong, inexpensive and stable tie which has large bearing areas in the road ballast for each of the rails, and the center of which areas is substantially in alinement with the axis of the rail.

I obtain the above object by providing a tie having two distinct load carrying sections with centers of bearing in alinement with the axis of the rail, said sections being connected by means integral therewith and adapted to form an anchor for said sections in the road ballast, said sections having means whereby a tie can be secured thereto.

The invention consists of the construction and combination of parts to be more fully described hereinafter and fully set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which like characters indicate corresponding parts in all the views and in which:

Figure 1 is an embodiment of my invention as seen on lines 1—1, Fig. 2; Fig. 2 is a longitudinal section on line 2—2, Fig. 1; Fig. 3 is a section on line 3—3, Fig. 1; Fig. 4 is a section on line 4—4, Fig. 1; Fig. 5 is a section on line 5—5, Fig. 1; Fig. 6 is a perspective view, partly in section, of the cap going between the cushion and the rail; and Fig. 7 is a perspective view of a clasp for retaining the spike in the tie.

Referring to the drawings, the tie is formed of a plurality of longitudinal reinforcing members 8, 9 and 9′, the member 8 being centrally disposed in the tie and extending at the bottom thereof through the entire length of the tie, with each of its extremities shaped into a hook 10 and positioned adjacent the top and the ends of the tie. The reinforcing members 9 and 9′ extend parallel to each other adjacent the top of the tie, with their ends 11 and 11′ bent so as to follow the end of the tie and then turned up toward the top of the tie, as shown in Fig. 2. The ends 11 and 11′ of the reinforcing members 9 and 9′ do not extend to the center of the tie but stop a certain distance from the center, as shown in Figs. 1 and 2, the reinforcing members 9 and 9′ having the central portions 12 and 12′ of the same bent in so as to approach each other. These bends 12 and 12′ of the portions 9 and 9′ make the members farther apart at each end than in the middle.

The members 9 and 9′ at each side of their bends 12 and 12′ are reinforced by transverse members 13 passing under the members 9 and 9′ but above the ends 11 and 11′ of the said members. The said members 13 have their ends 13′ bent so as to overlap the members 9 and 9′ at the top (see member 13 in dotted line in Fig. 4). Thus the members 9 and 9′ at each side of the bends 12 and 12′ are further reinforced by these transverse members 13, as can be seen from Figs. 1 and 4. The two central members 13 on each side of the members 9 and 9′ are spaced farther from each other than the other members are, so as to permit the formation of a recess 14 when the concrete is molded about the reinforcing members 8, 9, 9′ and 13. The molding gives to the tie the shape as shown in Figs. 1, 2 and 3, so that two independent sections 15, preferably rectangular in shape, are formed by the reinforcements 9, 9′ and 13 interconnected and reinforced by a web 16 integral therewith and formed by the reinforcing members 8, 11 and 11′, bends 12 and 12′ of the members 9 and 9′.

The recess 14 formed in each section 15 is substantially in the center thereof and is adapted to receive a wooden block or cushion 17 which is secured thereinto by means of a mixture of tar and cement 18 so as to prevent the decay of the cushion in the tie. The end of the cushion projecting out of the recess is provided with a metallic cap 19 adapted to receive the base flange of the rail 20. The clasps 21 for retaining the spikes are placed in the recess 14 of the tie simultaneously with the placement of the cushion 17 (see Fig. 2). A hooked-shaped end 22 is positioned in the bottom of the recess, while a lateral bent end 23 forms a support for the clasps on the surface of the section 15. When a spike 24 is forced between the clasps 21 and the cushion, the end of the spike engages into the hook-shaped end 22 of the clasp and forces

the end of the hook into the cushion (see Fig. 2), whereby the spike is clamped in position and thereby the rail secured to the tie.

As described each of the sections 15 formed of the reinforcing members 9, 9′ and 13 has a cushion 17, substantially in the center, on which the tie rests; therefore, each of the ties is provided with two independent sections the center of bearing of which is in alinement with the axis of the rail and thereby two distinct load-carrying sections are formed by the said sections 15. These two sections, as described, are integrally connected and reinforced by means of the portion 16 formed by the reinforcing member 8 and bent portions 12 and 12′ and the ends 11 and 11′ of the members 9 and 9′. The portion 16 between the sections 15, and also under the same, forms an anchor for said sections in the road ballast 25 and, therefore, helps to maintain the track in alinement and prevents the ballast from being washed out in case of flood. The shape of the transverse members 13 gives to the lower surface of the sections 15 a convergence toward the portion 16 whereby the strength of the sections 15 is greatly increased.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a reinforcing concrete tie, two distinct load-carrying sections, the center of bearing of each of which is substantially in alinement with the axis of the rail; a web connecting and reinforcing said sections and forming an anchor for said sections in the road ballast, each of said sections having means substantially in the center thereof for securing the rail thereto.

2. In a reinforcing concrete tie, longitudinal reinforcing members; transverse reinforcing members at each end of said longitudinal members forming two distinct load carrying sections, the center of bearing of each of which is substantially in alinement with the axis of the rail, said longitudinal members connecting and reinforcing said sections by forming a web extending under said sections and constituting an anchor for the sections in the road ballast, each of said sections having a cushion substantially in the center thereof and means associated with said cushion whereby a rail can be secured thereto.

3. In a reinforcing concrete tie, a pair of longitudinal reinforcing members parallel to each other adjacent the top of the tie and having their ends bent to follow the contour of the end and bottom of the concrete, with the extremities of said ends directed toward the top of the tie; a longitudinal member adjacent the bottom of the tie positioned between the bent ends of the first-mentioned longitudinal members; transverse reinforcing members positioned at each end of said first-mentioned longitudinal members between said members and their bent ends, said transverse, reinforcing members having their extremities bent over the said first-mentioned longitudinal members and whereby two distinct load-carrying sections are formed, the center of bearing of each of which is substantially in alinement with the axis of the rail, said longitudinal members and their bent ends reinforcing said sections and forming an anchor for the same in the road ballast, each of said sections having a cushion substantially in the center thereof; clasps associated with the cushion and adapted to receive a spike whereby a rail can be secured to the tie, substantially as and for the purpose set forth.

4. In a reinforcing concrete tie, two distinct load carrying sections the center of bearing of each of which is substantially in alinement with the axis of the rail; a central longitudinal web connecting said sections and extending thereunder, forming an anchor for said sections in the road ballast; and means in said sections for securing a rail thereto.

5. In a reinforcing concrete tie, two distinct load carrying sections having longitudinal and transverse reinforcing means; a central longitudinal web connecting said sections and extending thereunder and having longitudinal reinforcements therein forming an extension of the reinforcement of the two distinct load carrying sections, said web forming an anchor for said sections in the ballast of the road, said sections having means for securing a rail thereto.

6. In a reinforcing concrete tie, two distinct load carrying sections and a web connecting and reinforcing said sections, the cross section of said sections with web being T-shaped, of which the vertical branch is formed by the web and which web forms an anchor for said sections in the road ballast.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT TROMMELL BAGBY.

Witnesses:
JOE TAYLOR,
JOHN A. KELLY.