

No. 633,413.

Patented Sept. 19, 1899.

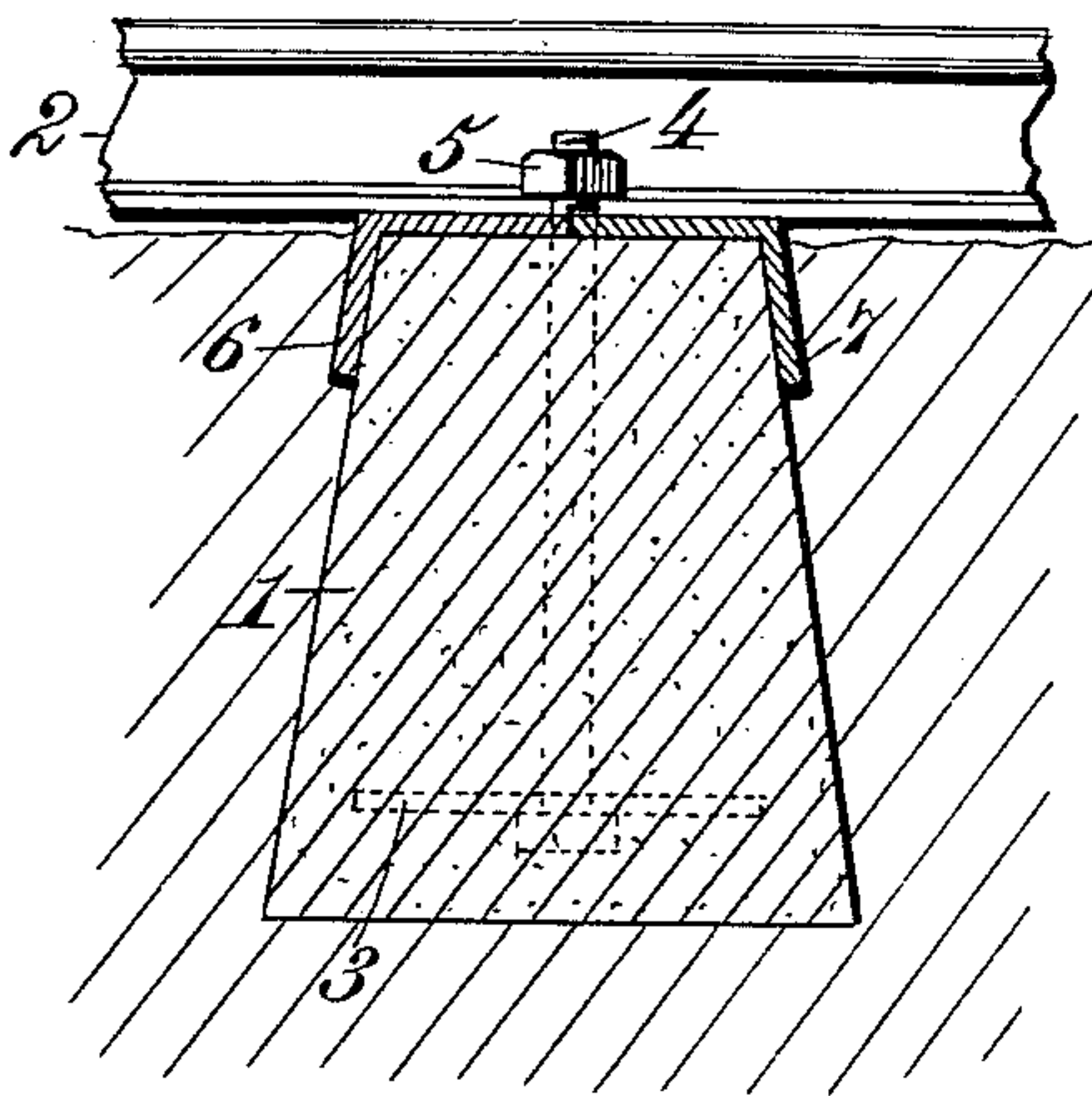
A. BACA.

COMPOSITION RAILROAD TIE AND MEANS FOR SECURING RAILS THERETO.

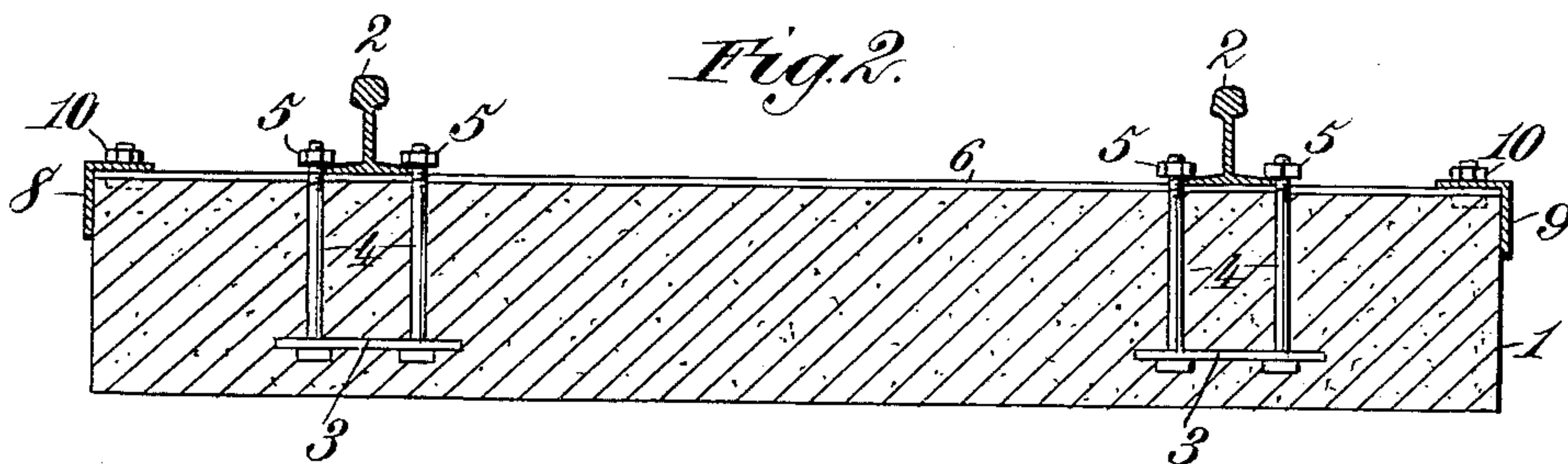
(Application filed Apr. 8, 1899.)

(No Model.)

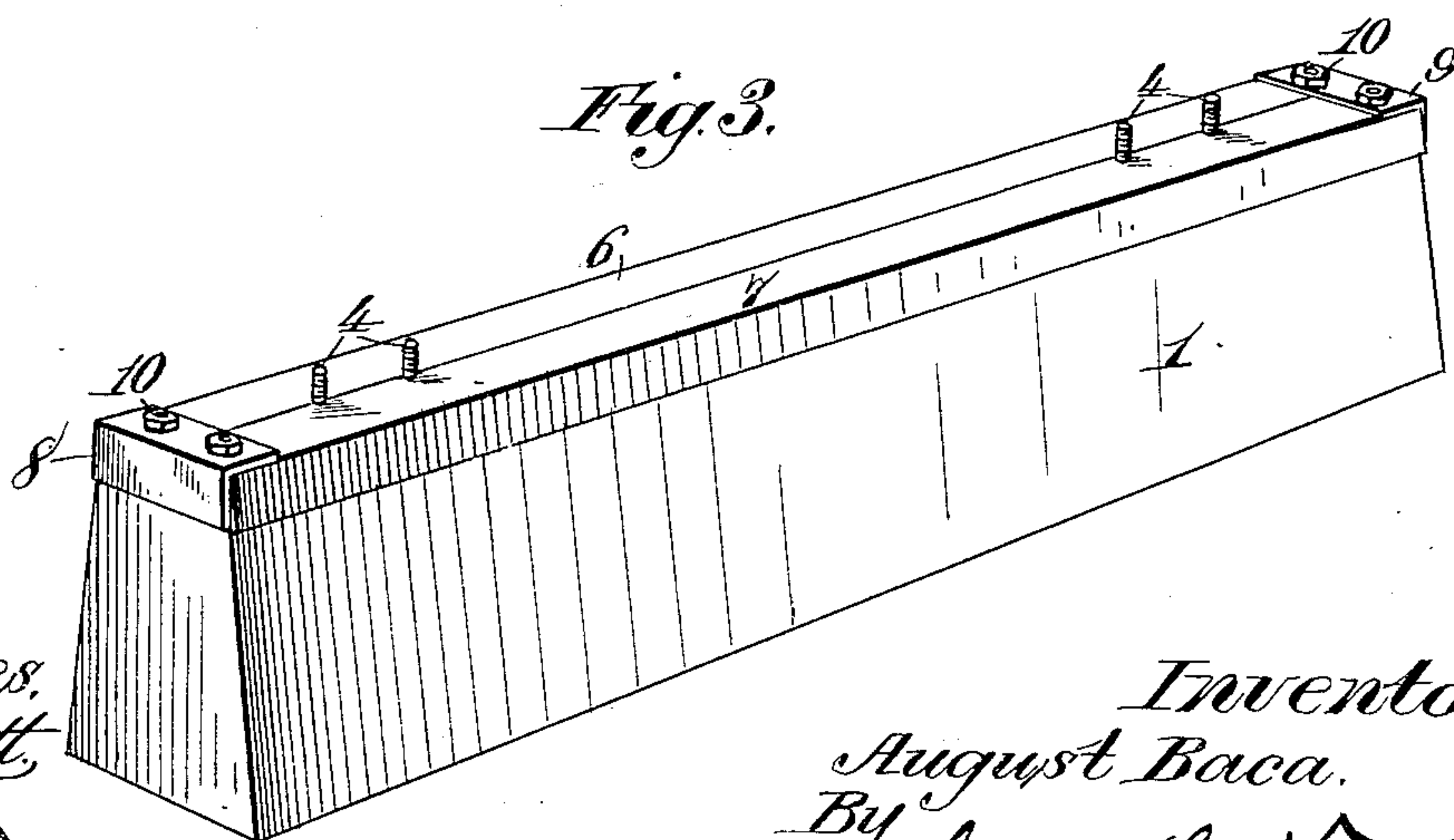
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses,  
*Robert G. Watt,*  
*J. B. Keefe*

Inventor,  
*August Baca.*  
By *James L. Norris,*  
*Atty.*



# UNITED STATES PATENT OFFICE.

AUGUST BACA, OF FAYETTEVILLE, TEXAS.

COMPOSITION RAILROAD-TIE AND MEANS FOR SECURING RAILS THERETO.

SPECIFICATION forming part of Letters Patent No. 633,413, dated September 19, 1899.

Application filed April 8, 1899. Serial No. 712,289. (No model.)

*To all whom it may concern:*

Be it known that I, AUGUST BACA, a citizen of the United States, residing at Fayetteville, in the county of Fayette and State of Texas, have invented new and useful Improvements in Composition Railroad-Ties and Means for Securing Rails Thereto, of which the following is a specification.

My invention relates to an improved composition railroad-tie and means for securing rails thereto.

The principal object of the invention is to provide an improved tie formed of a suitable hardening compound and having combined therewith means whereby rails may be firmly secured thereto.

A further object of the invention relates to means for protecting the upper surface of said tie.

I have illustrated my invention in the accompanying drawings, in which—

Figure 1 is a cross-sectional view through a tie constructed according to my invention. Fig. 2 is a longitudinal sectional view through the same, and Fig. 3 is a perspective view.

The reference-numeral 1 indicates the tie, and 2 the rails secured thereon.

By preference my improved tie is formed of a compound composed of cement, coarse sand, and quartz mixed dry and having water added thereto until the same is reduced to about the consistency of ordinary mortar.

In proceeding with my invention I first make an excavation in the road-bed where the tie is to be located, this excavation being wider at the bottom than at the top, the dimensions thereof being about as follows: depth, seventeen inches; width at bottom, seventeen inches; width at top, ten inches; length, eight feet, or about that of the ordinary tie. Into this excavation I then pour the compound above described, which after it has set is very hard and will have the shape shown in cross-section in Fig. 1. Embedded in this composition tie are the means by which the rails are secured thereto, and these will now be described.

The reference-numeral 3 indicates a metal plate, one of such plates being embedded in the composition near each end of the tie, as shown. Each of these plates is provided with two apertures or bolt-holes, extending upward

through each of which apertures is a bolt 4, the head of which engages the under side of plate 3. These bolts have upper screw-threaded ends, and each pair of bolts is spaced a sufficient distance apart to receive a rail 2 between them. By means of nuts 5, screwed on these bolts and engaging the flanges of the rails, the latter are securely held to the tie.

In embedding the plates 3 and bolts 4 in the tie the following method is pursued: The composition is poured into the excavation to the depth, say, of three inches. The bolts 4 and plates 3 are then lowered into the excavation, and the remainder of the composition necessary to fill up the excavation and form the complete tie is then poured in, leaving the screw-threaded ends of the bolts projecting above the top of the tie, as shown. It will be seen that the plates 3 will serve to hold the bolts 4 at the proper distance apart and in firm fixed relation to each other and that they will also operate to hold the bolts securely in the composition when the latter has hardened.

In order to protect the top of the tie from injury, I cover the same with metal plates in the following manner: The numerals 6 7 indicate two angle-plates which fit over the opposite edges or corners of the upper side of the tie and extend the entire length of the same. The edges of these plates meet at the longitudinal center of the tie and are suitably recessed to encircle the bolts 4, as will be understood. These plates are held on the tie by means of angle-plates 8 9, embracing opposite ends of the tie and the outer ends of the plates 6 7 and secured thereto by means of bolts 10. The plates 6 7 are further held to the tie by means of the rails 2, which rest upon them and are clamped thereon by the nuts 5.

It will be seen that the method of construction described herein will enable my ties to be readily substituted for the ordinary wooden ties now in use and without interfering with the traffic upon the road. Furthermore, the ties as made from the composition described are as hard as stone, are unaffected by the action of the elements, and will last an indefinite length of time. The only manner in which the ties could become injured would be by the train leaving the track and running

over the ties, and injury from this cause is provided against by the metal plates 6 7 covering the tops of the ties.

Having thus fully described my invention,  
5 what I claim is—

A composition railroad-tie formed of a suitable hardening compound, such as described and having embedded therein means for securing the rails thereto, in combination with  
10 two metal angle-plates embracing opposite sides and the upper surface of the tie and angle-plates embracing the ends of the tie and

the outer portions of said first-named angle-plates and secured thereto by bolts, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

AUGUST <sup>his</sup> × BACA.  
mark

Witnesses:

VACLAV PAZDRAL,  
METHOD PAZDRAL.