No. 763,900. PATENTED JUNE 28, 1904.

E. J. JOHNSON.

CROSS TIE.

APPLICATION FILED NOV. 30, 1903.

NO MODEL.

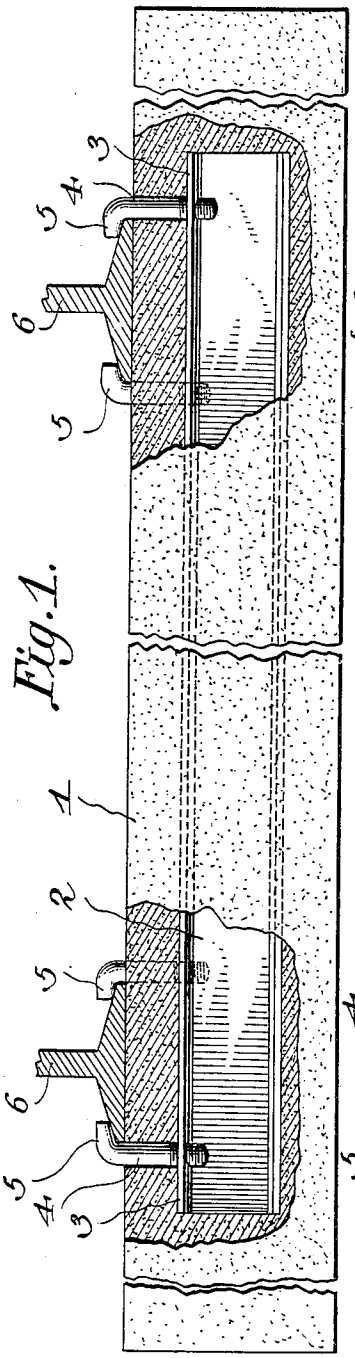

Fig. 1.

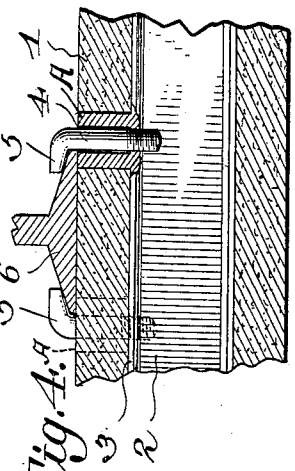

Fig. 4.

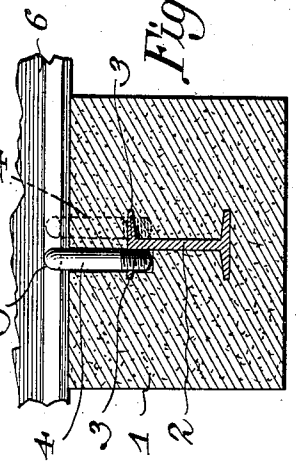

Fig. 3.

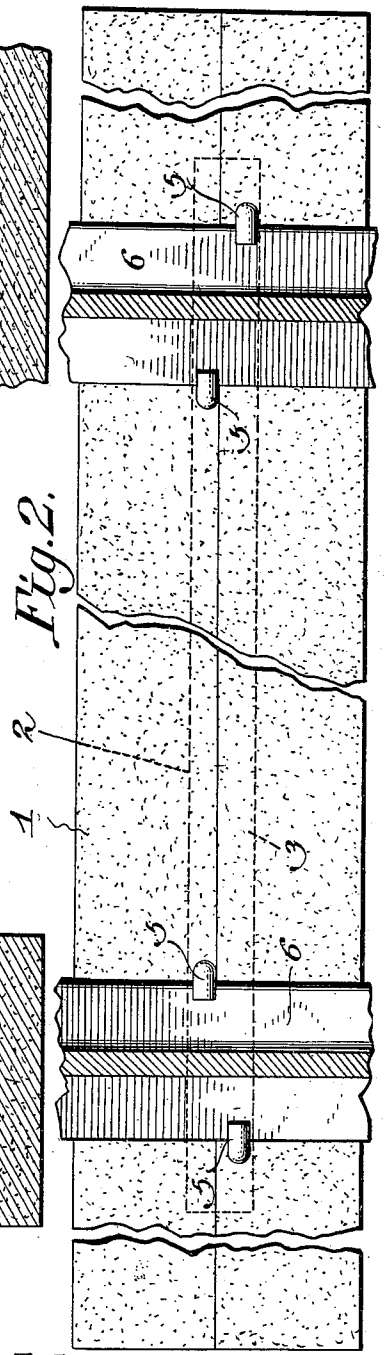

Fig. 2.

Witnesses.
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 763,900. Patented June 28, 1904.

UNITED STATES PATENT OFFICE.

ELEF JOHN JOHNSON, OF NEWARK, OHIO.

CROSS-TIE.

SPECIFICATION forming part of Letters Patent No. 763,900, dated June 28, 1904.

Application filed November 30, 1903. Serial No. 183,214. (No model.)

To all whom it may concern:

Be it known that I, ELEF JOHN JOHNSON, a citizen of the United States of America, residing at Newark, in the county of Licking and State of Ohio, have invented certain new and useful Improvements in Cross-Ties, of which the following is a specification.

This invention relates to railways, and particularly to that class thereunder known as "cross-ties."

The object of the invention is to provide a cross-tie comprising a composition of material resembling stone and a beam annexed therein to which the rail-anchoring means are secured.

Furthermore, an object of the invention is to produce a novel relation of parts between the cement or composition, the channel-iron, and the anchoring means in order that the vibration incident to the use of the tie may not impair the composition or the relation of the composition and the channel-iron.

Furthermore, an object of the invention is to produce a tie of the character noted in which the securing-bolts for the rail are out of alinement and caused to equalize the strain on the channel-iron.

With the foregoing and other objects in view the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail reference will be had to the accompanying drawings, forming part of this specification, wherein like characters denote corresponding parts in the several views, and in which—

Figure 1 is a view in elevation of a tie, partly in section. Fig. 2 is a plan view thereof. Fig. 3 illustrates a transverse sectional view. Fig. 4 is a sectional view showing a portion of a channel-iron suitably embedded and having applied thereto the base of a rail with the means for securing the rail to the cross-tie.

In the drawings, 1 indicates the composition, which may be of any proportion or material desired and which is applied in a plastic state and which will assume the properties of stone when hardened. The I-beam 2 is embedded centrally of the part 1 with relation to the height and width thereof. The upper flanges 3 of the I-beam or channel-iron have threaded holes out of alinement of said I-beam or channel-iron. Clamps comprising shanks 4, with threaded ends and angular portions 5, are adapted to engage the rail 6 and retain it in a fixed relation to the other rail of the track. By screwing the shanks of the clamps in the holes of the flanges of the I-beam or channel-iron the angular ends of the clamps are drawn into contact with the base-flanges of a rail and displacement of the rail transversely can only take place by breaking the angular ends or by bending the shanks. As the strength of these clamps is more than sufficient to withstand the strain to which they are subjected, it follows that the rail will not be accidentally displaced. The clamps are applied by a wrench or other tool, which engages the head thereof.

It has been found in practice that the part 1 may be manufactured in sections, with recess for the channel-irons, and shipped and that the I-beams or channel-irons of a given size may be applied thereto and the parts assembled where they are to be used, the only requirement being that a thin cement should be applied to the interior of the tie 1 through the bolt-holes after the parts are assembled. This will effect the binding of the sections of the part 1 to the I-beam or channel-iron. This construction will be of great advantage, as it will do away with the formation of a mold or casing for each tie, and it will also obviate any imperfect connection between the I-beam or channel-iron and the sections of the part 1.

In Fig. 4 the bolts 4 are shown as extending through housings A, which housings are surrounded by the composition. This provision prevents vibration of the bolts from disintegrating the composition.

The construction, operation, and advantages will, it is thought, be understood from the foregoing description, it being noted that various changes may be resorted to in the proportions and details of construction for suc-

cessfully carrying the invention into practice without departing from its scope.

Having fully described the invention, what I claim as new, and desire to secure by Letters Patent, is—

In a cross-tie for railways, a body portion comprising a composition, a channel-iron embedded in the body, the housings in flanges of the channel-iron said flanges having threaded holes in line with the housings, and clamps run through the housings and threaded in the flanges.

In testimony whereof I affix my signature, in the presence of two witnesses, this 23d day of September, 1903.

ELEF JOHN JOHNSON.

Witnesses:
A. S. HILLIARD,
W. S. STONE.