

J. G. MONROE.
 CEMENT AND CONCRETE RAILWAY TIE.
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988,803.

Patented Apr. 4, 1911.

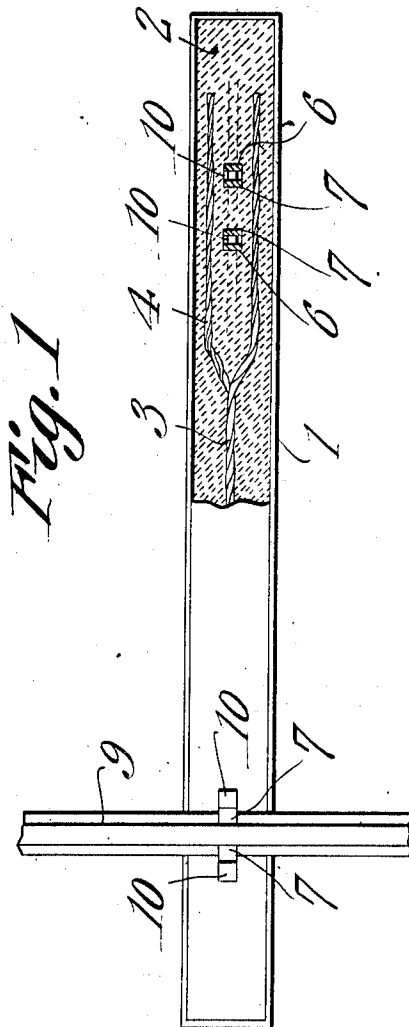


Fig. 1

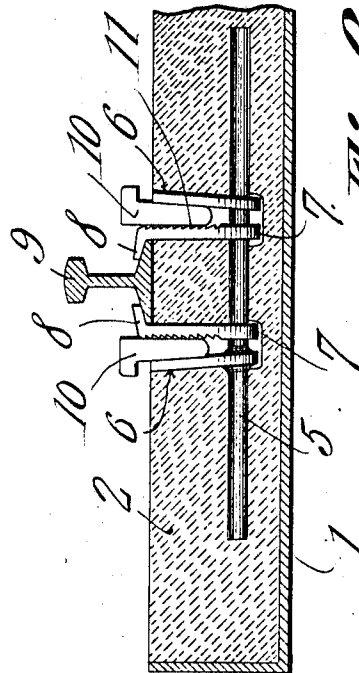


Fig. 2

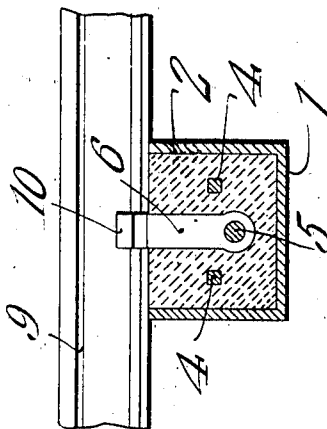


Fig. 3

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CEMENT AND CONCRETE RAILWAY-TIE.

988,803.

Specification of Letters Patent.

Patented Apr. 4, 1911.

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To all whom it may concern:

Be it known that I, JAMES G. MONROE, a citizen of the United States, residing at Clinton, in the county of Clinton and State of Iowa, have invented a new and useful Cement and Concrete Railway-Tie, of which the following is a specification.

This invention relates to improvements in railway ties and has for its object the provision of a tie made from concrete which may be readily formed along the line of the railway or may be made at a central plant and shipped to the point of use.

The invention also seeks to provide a simple and easily applied fastening by which the track rails will be securely held in position upon the tie.

These objects are attained in the use of the device illustrated in the accompanying drawing, and the invention consists in certain features of the same as will be hereinafter first fully described and then particularly pointed out in the claims.

In the drawings, Figure 1 is a plan view, partly broken away, of a tie embodying my invention and showing the position of a track rail thereon. Fig. 2 is an enlarged longitudinal sectional view of one end of the tie, and Fig. 3 is a transverse section of the same.

In carrying out my invention, I preferably employ a casing or shell 1 which may be constructed of sheet metal and is of the proper dimensions to inclose the tie, the upper side or top of the casing being open, as clearly shown. The cement and other materials to form a tie are placed in this casing or shell and allowed to harden so that the shell will not only serve as a casing for the tie but will also perform the functions of a mold. The tie may, however, be formed in any preferred form of removable mold and the shell shown in the drawings dispensed with. The use of the shell, however, will permit the rapid formation of the ties at the point of use, inasmuch as the shell may be properly positioned in the ground and the tie then formed therein, and when hardened will be in position to receive and support the track rails. The concrete mixture 2 is poured in the shell through the open top of the same, and a reinforcing bar 3 is disposed longitudinally within the mixture so as to be embedded therein and impart the necessary tensile strength thereto, as will be un-

derstood. This reinforcing bar is constructed of twisted metal, as clearly shown in Fig. 1, and its ends are forked, as shown at 4, so as to pass on either side of the track fastenings and thoroughly reinforce the tie at the sides of the fastenings. At each end of the tie and between the branches of the fork 4 is embedded a retaining rod 5 on which is fitted a pair of wear or holding plates 6 which extend up to the top of the tie, as shown most clearly in Fig. 2. Rail engaging keepers 7 are also mounted on the retaining rod 5 and are provided with lips or projections 8 at their upper ends adapted to engage over the base of the track rail 9, as clearly shown, the said keepers thereby serving to hold the track rail firmly upon the tie. Wedge-shaped locking keys 10 are inserted between the keepers 7 and the holding plates 6 and serve to force the keepers into positive engagement with the track rails by being driven downward between the keepers and the holding plates, as shown, and as will be readily understood. In order to increase the holding power of the several parts the outer faces of the keepers 7 are provided with downwardly projecting teeth 11 which are adapted to engage the adjacent face of the key when the same is driven home so that withdrawal of the key cannot be easily effected.

It is thought that the advantages of the device will be readily understood from the foregoing description, taken in connection with the accompanying drawings. The tie, as stated, may be made at a factory and shipped to the point of use or it may be formed immediately on the line of the track by burying the shell or casing 1 and then pouring the mixed concrete therein. The members 6 and 7 are placed upon the retaining rod 5 and the said retaining rods and the reinforcing bar 3 are placed in the proper position within the shell before the same has been filled with the concrete mixture. After the tie has hardened the track rails are placed in the proper position thereon with their bases passing under the lips or projections 8 of the keepers 7, and the locking keys are then driven home between the said keepers and the adjacent holding plates so as to force the keepers into positive engagement with the track rail and the track rail may, if so desired, be provided with notches in its edges to fit around the

keepers 7 and thereby prevent creeping of the rail.

Having thus described my invention, what I claim is:

- 5 1. The combination with a plastic body, of an anchoring device embedded within said body, opposed rail-engaging members extending into the body and engaging the anchoring device, a wear device extending
10 into the plastic body adjacent each of the rail-engaging devices and spaced therefrom, said wear devices being engaged by the anchoring device, and spreading elements shiftable between the rail-engaging and
15 wear devices.

2. The combination of a concrete railway

tie, a retaining rod embedded therein at the end of the same, keepers fitted on the said rod and projecting upward therefrom through the concrete body to engage a track
20 rail, holding plates also fitted on the retaining rod adjacent to the said keepers, and wedges driven between the said holding plates and keepers to force the keepers into engagement with a track rail.

25 In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JAMES G. MONROE.

Witnesses:

T. W. HALL,
CATHERINE CONLEY.