No. 873,585. PATENTED DEC. 10, 1907.

L. R. NORDQUIST.

RAIL TIE.

APPLICATION FILED APR. 6, 1907.

Fig. 1.

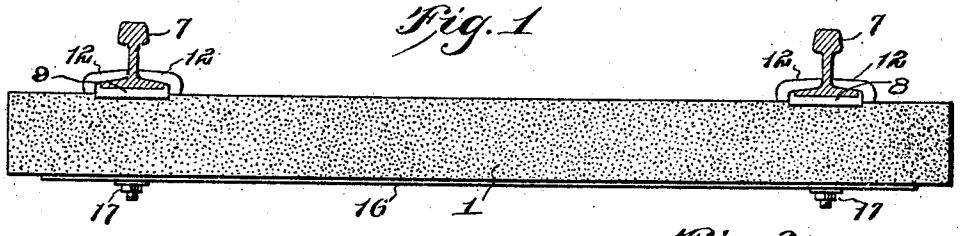


Fig. 2.

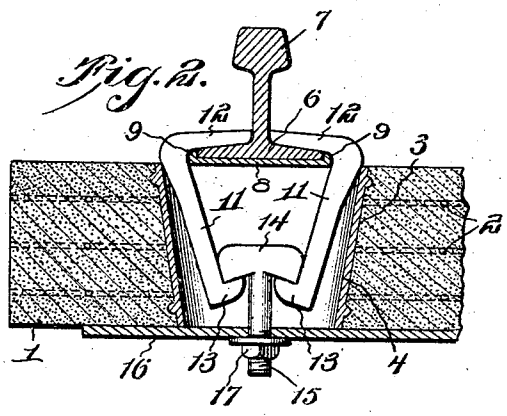


Fig. 3.

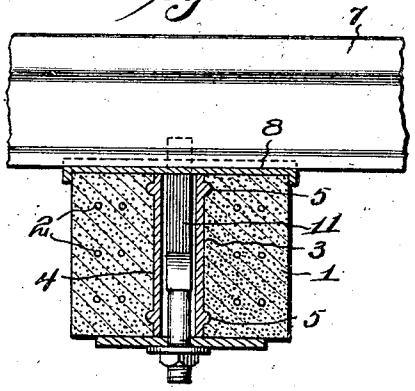


Fig. 4.

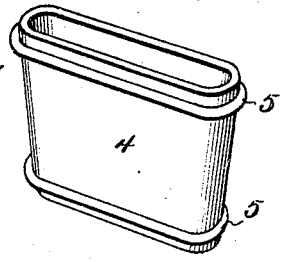


Fig. 5.

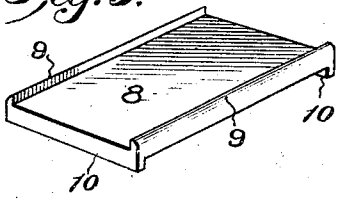


Fig. 7.

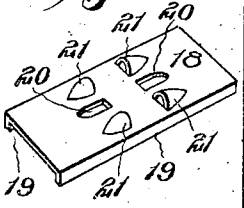
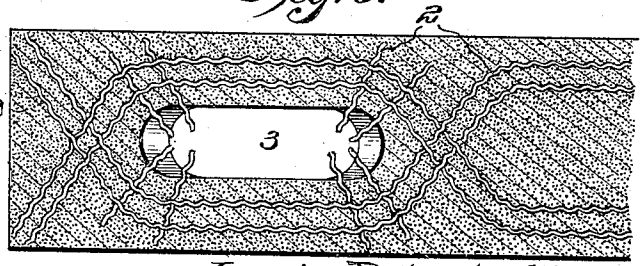


Fig. 6.



Inventor

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Witnesses

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UNITED STATES PATENT OFFICE.

LOUIS ROBERT NORDQUIST, OF TAMPA, FLORIDA.

RAIL-TIE.

No. 873,585. Specification of Letters Patent. Patented Dec. 10, 1907.

Application filed April 6, 1907. Serial No. 366,780.

To all whom it may concern:

Be it known that I, LOUIS ROBERT NORDQUIST, a citizen of the United States, residing at Tampa, in the county of Hillsboro and State of Florida, have invented new and useful Improvements in Rail-Ties, of which the following is a specification.

The invention relates to an improvement in railroad ties, comprehending a molded tie provided with means for securing the rails thereto.

The main object of the present invention is the provision of a railroad tie made up of a reinforced plastic material, and formed at determinate intervals with transversely arranged openings for the reception of a socket member to secure the rail securing means.

The invention in its preferred form will be described in the following specification, reference being had particularly to the accompanying drawings, in which:—

Figure 1 is a view in side elevation of a tie constructed in accordance with my invention, the rails being shown in transverse section thereof. Fig. 2 is an enlarged broken longitudinal section of the same, illustrating particularly the rail securing means. Fig. 3 is a transverse section through the tie and illustrating the rail securing means. Fig. 4 is a perspective of the tie socket member to receive the rail securing means. Fig. 5 is a perspective view of the bridge plate for the tie which is arranged to receive the rail. Fig. 6 is a broken longitudinal section through the tie illustrating the reinforcing means. Fig. 7 is a perspective view of a modified form of bridge plate.

Referring particularly to the drawings wherein is shown a preferred embodiment in detail of the present invention, my improved tie 1 comprises a molded body, of concrete or the like, suitable in length and transverse area to provide the desired tie. In molding the tie is reinforced by a series of interlaced wire sections 2, which may be in any desired form for service as a binder for the tie material.

Adjacent each end, or more properly, in that portion of the tie with which the rails co-act, the tie is formed with vertically disposed openings 3, preferably arranged along the longitudinal center of the tie. The openings are preferably greatly reduced in sectional dimensions toward their lower ends, and are designed to receive the socket members 4, corresponding in sectional contour to the contour of the walls of the openings 3, the socket members being each formed near the upper and lower ends with laterally projecting ribs 5.

As initially formed, the openings 3 are of somewhat greater extent longitudinally than the similar dimension of the socket 4, so that the track layer may adjust the sockets within the openings to provide for properly positioning the rails, and after such disposition of the sockets the end space between said socket and the opening walls may be filled with plastic material to secure the sockets in proper position. After such securing the socket members are firmly embedded in the tie proper, the ribs 5 materially aiding in preventing accidential disconnection of the sockets.

The base flange 6 of the rail 7 is supported upon a bridge plate 8, having upwardly projecting side flanges 9 to engage the side edges of the base flange 6, and downwardly projecting end flanges 10 to engage the respective longitudinal side edges of the tie. The width of the plate 8 is materially less than that of the upper end of the socket 4, thereby providing a space between the end walls of the socket and the proximate edges of the bridge plate, as clearly shown in Fig. 2.

The tie securing means comprises duplicate locking bars 11, formed at their relatively upper ends with laterally extended flange engaging portions 12, designed to overlie and bear upon the base flanges of the rails on opposite sides of the web, and at their lower ends with laterally extending lugs 13 designed when the locking bars are engaged with the rail to project toward each other and engage beneath a suitably formed head 14 of a bolt 15. The lower terminal of the bolt is designed to pass through an opening in a bed plate 16 underlying the tie and slightly less in width and length than the similar dimensions of the tie. Beyond the bed plate the bolt is secured by the usual nut 17, thereby binding the base flange 6 of the rail securely onto the surface of the bridge plate 8 and preventing the separation of said rail from the tie. The locking bar 11 at the juncture with the flange engaging portion 12 is practically equal in width to the distance between the end wall of the socket and the proximate edge of the bridge plate, so that independent lateral movement of the locking bars, after application is prevented.

The tie as thus constructed provides a rail fastening means which is independent of the tie and which may be readily and entirely removed therefrom when desired. The bridge plate tends to reduce to a minimum the crushing effect of the weight of the trains upon the material of the tie.

In Fig. 7 I have illustrated a slightly modified form of bridge plate, comprising a pressed steel plate 18 having downwardly projecting edge flanges 19 to receive the upper edge of the tie, said plate being formed with openings 20 arranged in spaced relation to permit the projection therethrough of the locking bars 11. In alinement with the openings 20 transverse the plate I form said plate with upwardly extending projections 21, preferably of rounded conical form as shown and serving to provide abutments to receive the edges of the rail flanges between them and prevent lateral movement or twisting of the rail under the strain incident to the travel of the cars.

Having thus described the invention, what I claim as new, is:—

1. A rail tie formed with socket openings, socket pieces secured within said openings, a bridge plate bridging the openings and engaging the edges of the tie, and locking means arranged between the bridge plate and the proximate walls of the socket pieces, and means for securing the locking means in place.

2. A tie molded of plastic material and formed with socket openings, socket pieces arranged within the openings, a bridge plate bridging each opening and engaging side edges of the tie, said plate being formed with rail engaging means, and locking means engaging the rails above the bridge plate, said locking means being mounted within the socket pieces.

3. A tie molded of plastic material and having an interior reinforce, said tie being formed with socket openings, socket pieces secured within the openings, a bridge plate bridging the openings and terminally engaging the edges of the tie, locking bars having rail flange engaging portions, a bed plate arranged beneath the tie, and means coöperating with the bed plate and engaging the locking bars.

4. A tie molded of plastic material and having an interior reinforce, said tie being formed with socket openings, socket pieces secured within the openings, a bridge plate bridging the openings and terminally engaging the edges of the tie, locking bars having rail flange engaging portions, a bed plate arranged beneath the tie, and means coöperating with the bed plate and engaging the locking bars, said means engaging the locking bars wholly within the socket pieces.

5. A tie molded of plastic material and having an interior reinforce, said tie being formed with socket openings, socket pieces secured within the openings, a bridge plate bridging the openings and terminally engaging the edges of the tie, locking bars having rail flange engaging portions, a bed plate arranged beneath the tie, and a bolt having a head to engage the locking bars and adapted to be secured to the bed plate.

6. A tie molded of plastic material and having an interior reinforce, said tie being formed with socket openings, socket pieces secured within the openings, a bridge plate bridging the openings and terminally engaging the edges of the tie, locking bars having rail flange engaging portions, a bed plate arranged beneath the tie, and a bolt having a head to engage the locking bars and adapted to be secured to the bed plate, the head of the bolt and the coöperating portion of the locking bars being arranged wholly within the socket pieces.

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

LOUIS ROBERT NORDQUIST.

Witnesses:

J. W. DYKE,

E. B. DRUMRIGHT.