

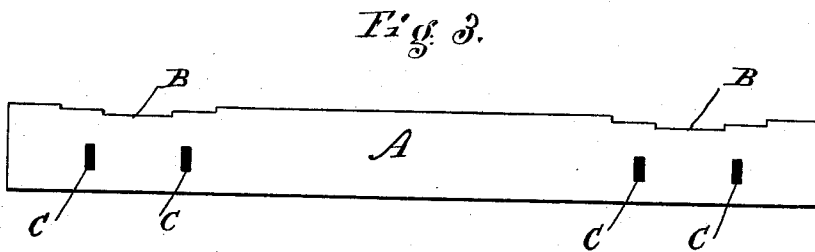
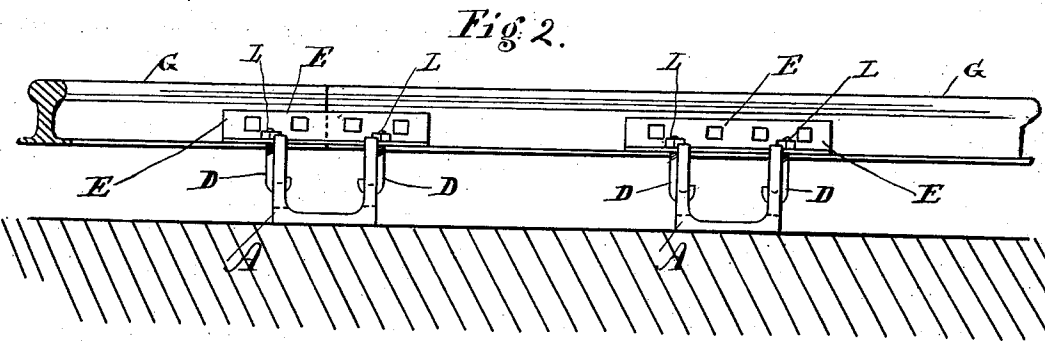
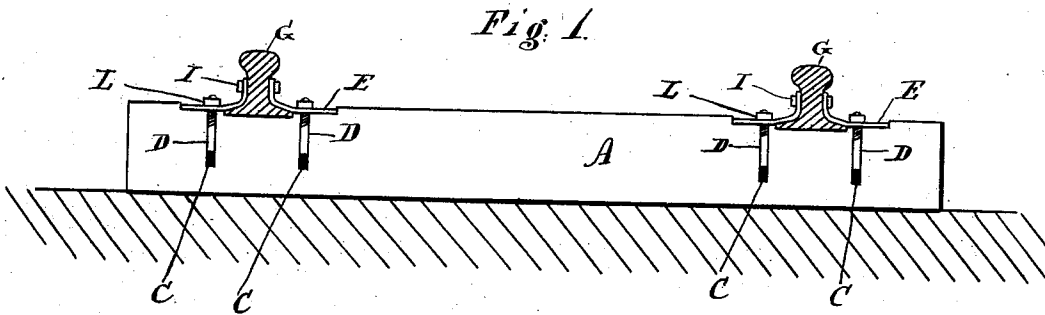
(No Model.)

C. NETTER.

METAL TIE FOR RAILWAY TRACKS.

No. 351,996.

Patented Nov. 2, 1886.



Witnesses.
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METAL TIE FOR RAILWAY-TRACKS.

SPECIFICATION forming part of Letters Patent No. 351,996, dated November 2, 1886.

Application filed March 24, 1886. Serial No. 196,419. (No model.)

To all whom it may concern:

Be it known that I, CHARLES NETTER, of the city, county, and State of New York, have invented new and useful Improvements in Metal Ties for Railway-Tracks, of which the following is a specification.

This invention consists in a U-shaped metal tie for railway-tracks, an L-shaped fish-plate to connect the ends of the rails, and connecting-bolts, all constructed and arranged substantially as herein described and shown.

Reference is to be had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents a side elevation of my improved metal U-shaped tie, with a sectional view of the ordinary rails mounted upon the edges of its upper open side, and the manner of securing them to the tie. Fig. 2 represents an end elevation of two ties, with fragments of two rails secured thereto by fish-plates and hook-shaped bolts and nuts. Fig. 3 represents a side elevation of my improved U-shaped tie with the rails removed therefrom, showing the notches in the upper edges of its open side to receive the base of the rails and the fish-plates.

Similar letters of reference indicate corresponding parts in all of the figures.

A in the accompanying drawings represents a metal tie to be used in the construction of railways, and which resembles a rectangular box with one of its sides and the two ends removed. This metal tie is intended to be embedded in the earth, in the usual manner of embedding railway-ties, with its open side up, as shown in Fig. 2, the two edges B B of which are recessed or notched to receive the base of the rails G and the lower edges of the fish-plates. By this construction the notches in the tie receive the lateral or outward pressure of the rails, thus relieving the fastenings of all lateral pressure, and the tendency of the track to spread apart, which is most important in short curves or loose ground. These ties are provided with openings C in their sides, to receive the hooked ends of connecting-bolts D, the straight ends of which extend upward and through the lower

sides of fish-plates E, and are provided with nuts L, by which the rails are drawn down into their notched seats and firmly held therein, as shown in Figs. 1 and 2. These fish-plates E are fitted to and extend up the sides of the rails, and are secured thereto by transverse bolts and nuts I in the usual manner.

In Fig. 2 the ends of the two rails G are represented as meeting centrally between the sides of the U-shaped tie, the fish-plate E overlapping the ends of the rails and extending considerably beyond the outer sides of the tie along the rails, so as to firmly connect and support the ends of the rails at different points.

It will be observed that by notching the edges of the open sides of the tie to receive the base of the rails and the fish-plates, as shown in the several figures, and securing the rails in their seats in the notched edges of the tie by the hook-shaped bolts D, they are prevented from rising in their seats, and are firmly maintained in position laterally by bearing against the ends of notches B, as shown in Figs. 1 and 2.

Where it is not necessary to employ the fish-plates E to secure the rails to the tie, the nuts L of the hook-shaped bolts, with a washer, may extend over the edges of the base of the rails; or notches may be formed therein, through which the shanks of the bolts may pass, which construction would be the same in effect as the ordinary hook-headed spike driven into a wooden tie. These ties may be made of cast or rolled iron or steel, to suit the various manufacturers and users, and may be ribbed to stiffen and support the sides and bottom, if required.

If preferred, the hooked ends of the bolts D may extend downward, so as to hook over the lower edges of the tie. This form of construction, however, would require longer bolts, and would add somewhat to the expense of the bolts in the additional weight of metal.

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

1. In combination with a U-shaped metal tie for railways, having notches in the edges

of its open sides to receive the base of the rails, and openings C, to receive the hooked ends of the bolts D, the fish-plates E, substantially as herein described.

- 5 2. In combination with a U-shaped metal tie for railways, provided with notches in the upper edges of its open sides to receive the base of the rails, the fish-plate E, extending

beyond the edges of the base of the rails, and the hook-shaped bolts D, substantially as here- 10 in described and shown.

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Witnesses:

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