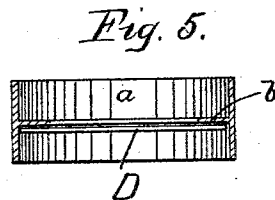
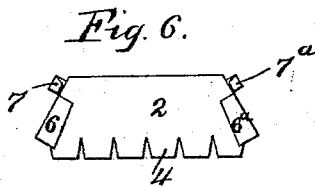
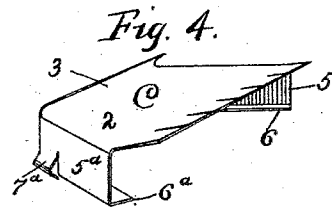
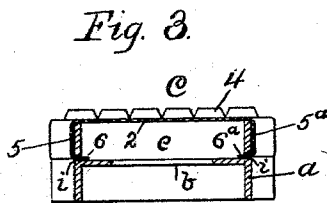
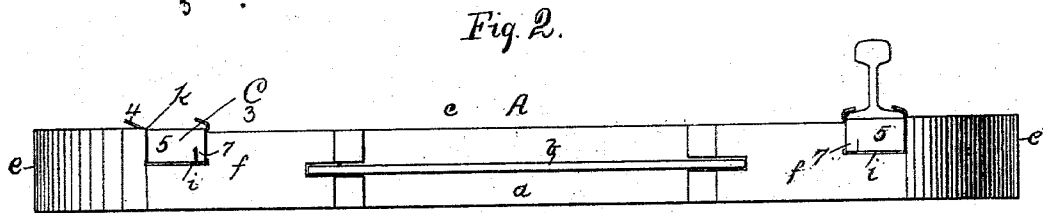
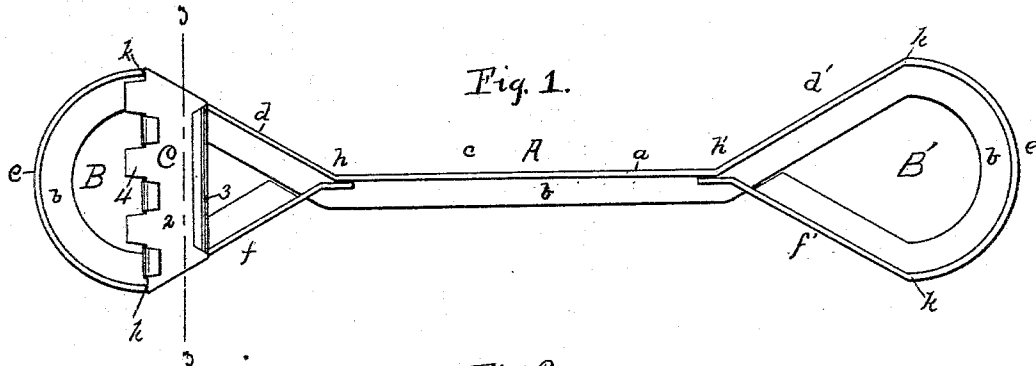


(No Model.)

H. A. DE RAISMES.
METAL RAILWAY TIE.

No. 511,072.

Patented Dec. 19, 1893.



WITNESSES:

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HIPPOLYTE A. DE RAISMES, OF ELIZABETH, NEW JERSEY.

METAL RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 511,072, dated December 19, 1893.

Application filed January 26, 1891. Serial No. 379,073. (No model.)

To all whom it may concern:

Be it known that I, HIPPOLYTE A. DE RAISMES, of Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Metal Railway-Ties, of which the following is a specification.

This invention relates to metallic railway ties, the main objects of the invention being, first, to provide a tie which when in position for use will have a firm bearing upon the road-bed and thereby successfully resist all ordinary vertical pressure, as well as all lateral and tractional strain; and, second, to provide a railway tie to which the rail-engaging chairs may be secured without the use of bolts or other movable, independent locking devices.

To the end above named, my invention consists essentially of a tie formed with end loops and preferably from T metal, the web of said metal being slotted to receive flanges that are formed on the rail chair, all as will be hereinafter more fully described and specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar reference letters and figures indicate corresponding parts in all the views.

Figure 1 is a plan view of the tie, one chair being shown in place. Fig. 2 is a side view of the tie, one chair being shown as it appears when its divided rail-engaging flange is clamped against the rail base, and the other chair being shown as it appears prior to such clamping. Fig. 3 is a cross-sectional view on line 3-3 of Fig. 1. Fig. 4 is a perspective view of the chair. Fig. 5 is a sectional view of a modified arrangement; and Fig. 6 is an inverted plan view of the chair.

My improved railway tie is by preference made from a steel strip, A, that is of T form in cross-section; and hereinafter the word "body" will be used to designate that portion of the strip which is marked *a*, and the word "flange" to designate the part marked *b*.

In constructing the tie, the strip A is bent to form a central section or web, *c*, angular sections, *d d'*, curved sections, *e e'*, and angular sections, *f f'*, the ends of the strip A being brought up close against the tie web or section *c*, whereby there are formed end loops B B', which said loops are entered by the

flange *b*. In practice I prefer to cut away a portion of the flange *b* at each end of the strip A, as is clearly shown in the drawings, thus providing for close joints at the points *h h'*. In sections *d d'* and *f f'* of the tie body I form slots, *i i*, and at or in close proximity to the outer extremities of the sections last referred to, I form shoulders, *k k*.

In connection with the tie above described I employ chairs, C C, such chairs being made from quite heavy plates of mild steel, stamped to form and bent to about the shape represented in Fig. 4. Specifically described, the chair consists of a bed-plate, 2, a flange, 3, adapted to engage the base of the rail, a divided flange, 4, two or more sections of which may be bent up to engage said rail base, flanges, 5 5^a, which are formed to fit close against the outer faces of the tie sections *d f*, or *d' f'*, lips, 6 6^a, adapted to enter the tie slots *i i*, and keys, 7 7^a, which keys prior to the adjustment of the chair to position upon the tie stand out as shown in Fig. 4, but which after the chair is in position may be driven home to the position in which they are shown in Figs. 1 and 2, whereby the tie will be firmly locked to the chair. In case new track is to be laid, the ties are placed at intervals upon the roadbed and the rails adjusted to position upon the ties. The chairs are then slid inward beneath the rail bases to positions such that their lips 6 6^a will enter the slots *i i*, and their flanges, 3, will engage the base of the rail. The keys, 7 7^a, are then driven inward, whereby the lips 6 6^a will be forced against the defining edges of the slots *i i*, and the chairs locked to place. Two or more, preferably three, of the sections of the divided flanges 4 are bent up so as to overlap the rail bases. The ties and chairs might be locked together before the rails are placed in position.

From the construction described it will be noticed that when it is desired to remove a rail the turned-up sections of the divided flanges 4 may be turned back from engagement with the rail base and the keys 7 7^a may be moved outward from their locking positions within the slots *i i*. In case the ties are to be placed beneath rails that are already laid, a proper excavation is made and the tie is slid in endwise beneath the rails, and the

chairs then adjusted to place as hereinbefore described.

Ordinarily the tie as represented in the first three figures of the drawings would have sufficient vertical bearing to resist all ordinary vertical pressure, but if deemed advisable plates, D, such as the one shown in Fig. 5, might be inserted beneath the flange *b* within the loops B. After the tie has been placed in position the material composing the roadbed is tamped to place and the flange *b* acts as a seat, all lateral motion being prevented by the web or body, *a*, which bears against the material composing the roadbed at six points, irrespective of the direction of the strain.

Although the chairs adjusted to position as above described would ordinarily successfully resist any tendency of the rails to spread, I greatly prefer to form my tie with the shoulders *k k*, against which shoulders the outer edge of the rail base abuts.

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

1. The combination with a metallic railway tie formed with end loops that are partially defined by angular sections *d, d'* and *f, f'*, in which sections there are formed slots *i, i*, of a chair formed with rail engaging flanges and with other flanges adapted to enter the tie slots.

2. A railway tie formed from T metal and with end loops, the T flange extending within the loops.

3. A railway tie formed from a strip of slot-
ted T metal that is bent to form end loops,
said loops being entered by the strip flange.

4. The combination with a metallic railway tie, formed with end loops and provided with slots, of a chair, formed with rail-engaging flanges and with other flanges or lips adapted to enter the tie slots, and with locking keys.

5. The combination with a railway tie of a chair, the tie being formed with cuts or slots for engaging flanges or lips on the chair, whereby the parts are held together without the interposition of devices other than those that are integral therewith.

6. The combination with a railway tie of a chair, the tie being formed with cuts or slots for engaging flanges or lips of a chair formed with tie-engaging flanges or lips adapted to engage the tie, and with other lips or flanges adapted to engage the rail, whereby the parts are held together without the interposition of devices other than those that are integral therewith.

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Witnesses:

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