(No Model.)

E. C. DAVIS.

TIE AND FASTENING FOR RAILWAY RAILS.

No. 532,364. Patented Jan. 8, 1895.

Fig. 1.

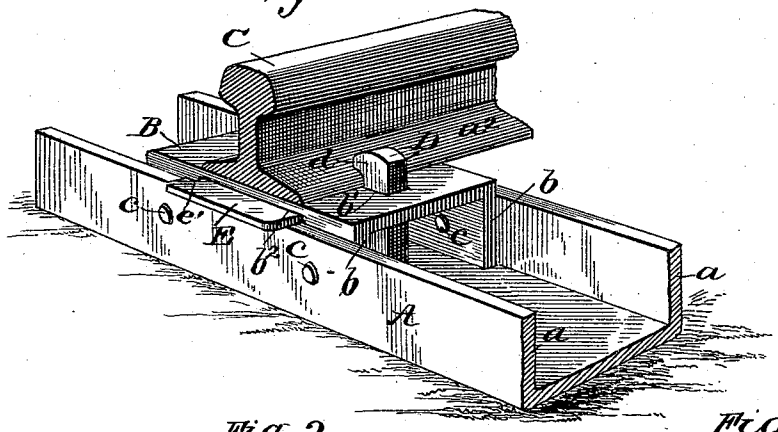


Fig. 2.

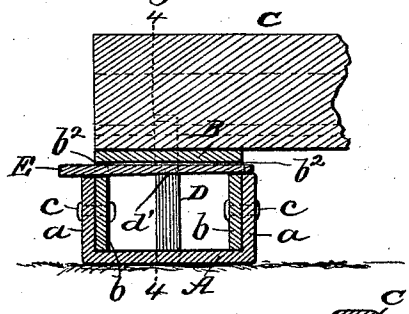


Fig. 3

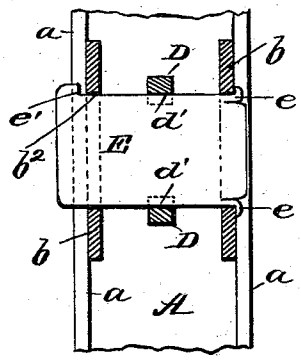


Fig. 4.

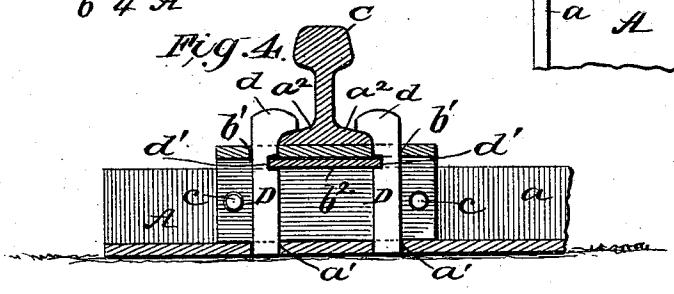
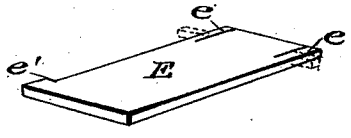


Fig. 5.



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TIE AND FASTENING FOR RAILWAY-RAILS.

SPECIFICATION forming part of Letters Patent No. 532,364, dated January 8, 1895.

Application filed February 15, 1894. Serial No. 500,194. (No model.)

To all whom it may concern:

Be it known that I, ELLERY COWIN DAVIS, of Crookston, in the county of Polk and State of Minnesota, have invented a new and Improved Tie and Fastening for Railway-Rails, of which the following is a specification.

This invention is an improvement in the class of metallic railway ties and rail fastenings applied thereto.

The objects I have in view and attain by my improvement are maximum simplicity, strength, cheapness, and durability of construction, along with like facility and security of attachment of the rails.

In the accompanying drawings, I show in Figure 1 a perspective view of my invention as applied in practice. Fig. 2 is a transverse section of the same. Fig. 3 is a horizontal section. Fig. 4 is a vertical section on line 4—4 of Fig. 2. Fig. 5 is a perspective view of the device for fastening the bolts that clamp the rail in place.

The tie, A, is channeled or trough-like, being formed with a flat base and vertical, parallel, side flanges, *a a*. Near each end of the tie is located a rail-support, or chair, B, which has the same cross-section and height as the tie, but is of less width, and inverted in position, so that its side flanges *b*, *b*, fit closely against the flanges *a*, *a*, of the tie, as shown. The chair is permanently and rigidly secured to the tie by means of rivets, *c*, which pass through the flanges, *a*, *b*, and are upset on the outer sides of the respective parts. The flanges *b*, *b*, of the chair rest directly upon the base of the tie, A, and, the two being likewise riveted together and produced from wrought or rolled steel plates, it will be seen that the rail-support thus formed combines in an eminent degree the qualities of strength, rigidity and lightness of construction so desirable in this class of devices.

In practice, the tie and chair are riveted together before leaving the shop, so that they practically form and are shipped and handled as one integral article.

The track rails, C, are laid flat upon the chairs, B, and clamped thereto by means of clamps D, D, which have a general resemblance in form to the ordinary railway spike—that is to say, they have a flanged head, *d*, and a straight polygonal body, which fits in corresponding, coincident, vertical holes or openings, *b'*, and, *a'*, formed in the chair and tie, as shown. There are two such holes in the chair and tie, and they are preferably arranged diagonally opposite.

Each clamping bolt, D, has a transverse notch, or kerf, *d'*, in its inner side, the same being formed at such distance below the flanged head, *d*, that when the body of the bolt is inserted in place, it is just below the flat top of the chair, B, as shown best in Figs. 2 and 4. When the bolts, D, are inserted in place, their notches, *d'*, face each other and are adapted to receive a fastening which is a flat, sliding plate, E. Such fastening is inserted through horizontal slots, b^2, formed in the flanges, *b*, of the chair, at a point just above the flanges, *a*, of the tie.

By preference, I construct the bolt-fastener, E, in wedge form, that is to say, slightly tapered from one end to the other, so that it may be driven tightly and will take up any slack or wear of the flanges of the bolts, and thus always hold the latter tightly clamped upon the base flanges of the rail, C. For this purpose, the notches, *d'*, in the bolts are made wide enough to accommodate the greatest thickness of the fastener, E.

In laying a track, the combined ties and chairs having been properly laid upon a suitably prepared road-bed, the rails C, are laid on the chairs, B, and the clamping bolts, D, then inserted in the coincident holes *b'*, *a'*, with their head flanges, *d*, turned inward, so that, when forced down to place, the said flanges overlap and bear upon the flanges, a^2, of the rail, as shown. It will be noted, that the lower ends of the bolts project into or through the holes, *a'*, in the base of the tie, and are thus always held vertical. The fastener, E, is then driven into place, and locks the clamp firmly upon the rail flanges, thus securing the rail firmly against lateral movement. To prevent the wedge fastener being accidentally displaced, I provide its thinner end (Figs. 3 and 5) with one or more slits near its side edges, thus forming tongues *e*, that may be easily bent or twisted laterally. When it is desired to remove the rails, C, for any purpose, the said tongue is turned back into par-

allelism with the body of the fastener, and the latter then driven out of the chair, or else detached by leverage of a crow-bar, which is engaged with the shoulder, or lug, *e'*, Fig. 1 formed on the head of the plate. Such lug may also serve as a stop to prevent the plate, E, being driven too far, in case the latter is not made wedge-like or tapered.

For use on curves of greater or less radius, the ties and chairs will be provided with bolt-holes located at proportional distances, and special clamping bolts will also be provided, which will have kerfs or notches located farther from the flanged heads than shown in the drawings in order to accommodate the rise of one side of the rails due to tilting the latter inward.

What I claim is—

1. The improved tie and rail fastening composed of the channeled tie, the flanged inverted chair permanently secured thereto, and both provided with coincident bolt-holes and one of them with lateral slots, as specified, the flanged and notched clamping bolts, and a detachable locking device adapted to engage said bolts, substantially as shown and described.

2. As an improved article of manufacture, the metallic tie and chair, the same being composed of a tie and chair proper both having vertical, parallel flanges, and the chair being riveted to the tie, and also provided with lateral slots and vertical bolt holes which are coincident with other bolt holes in the base of the tie, as shown and described.

3. The combination with the chair having vertical bolt-holes and lateral slots, of flanged and notched rail-clamping bolts and a fastening device which is inserted in said slots and engages the notches in the bolts, as shown and described.

4. The combination with the tie and chair secured together, and the latter having bolt holes and lateral slots, of rail-clamping bolts having flanged heads and side notches, of a fastening which is in the form of a thin, tapered or wedge-shaped plate adapted to enter said slots and the notches in the bolts, and thereby lock the same in place, as shown and described.

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