

(No Model.)

3 Sheets—Sheet 1.

A. J. MOXHAM.

COMBINED CHAIR AND CROSS TIE FOR RAILROAD RAILS IN TRACK.

No. 513,712.

Patented Jan. 30, 1894.

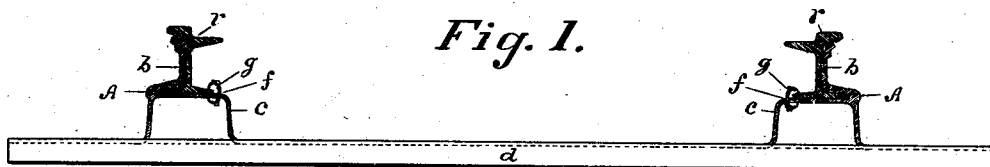


Fig. 1.

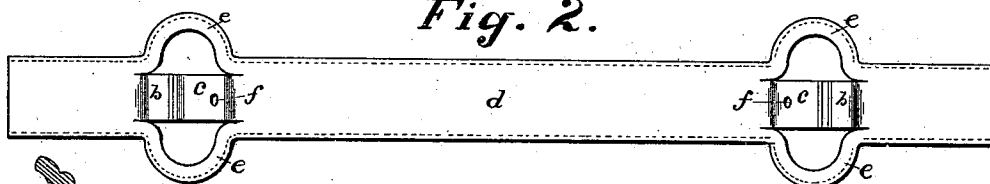


Fig. 2.

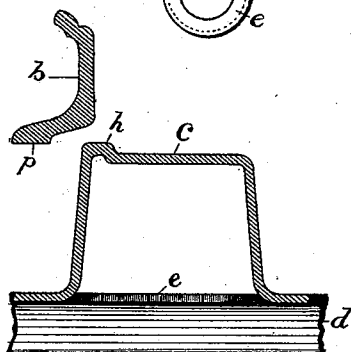


Fig. 3.

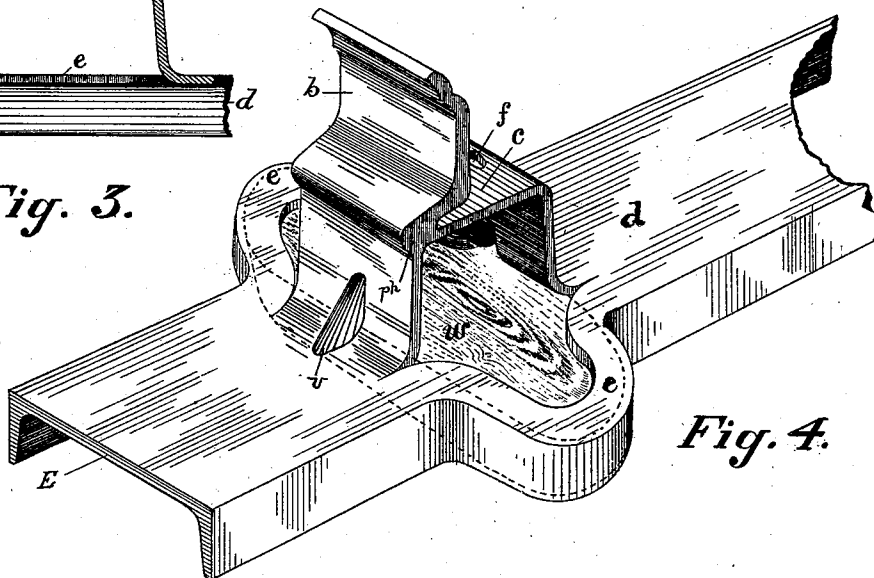


Fig. 4.

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3 Sheets—Sheet 2.

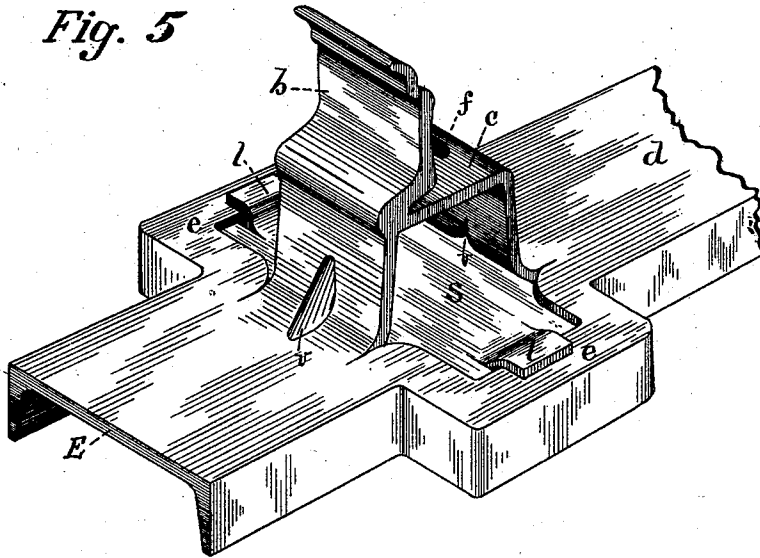
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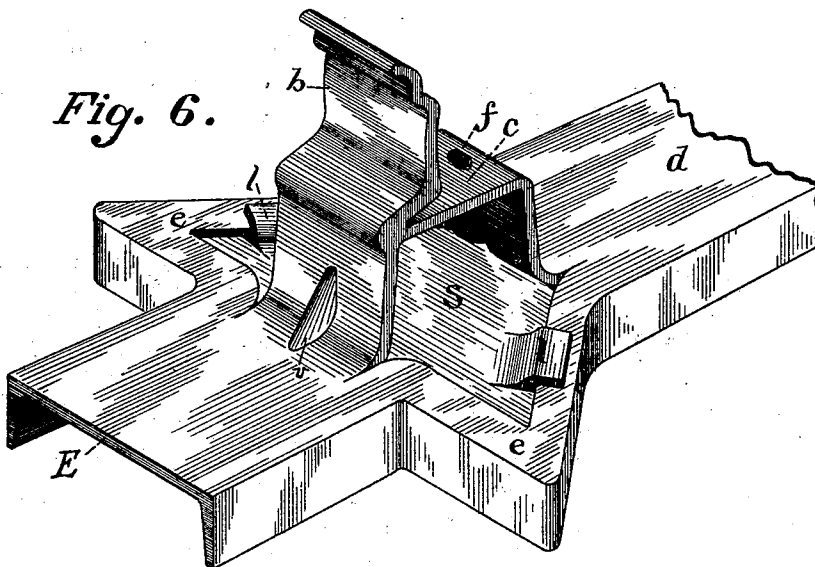
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*Fig. 5*



*Fig. 6.*



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(No Model.)

3 Sheets—Sheet 3.

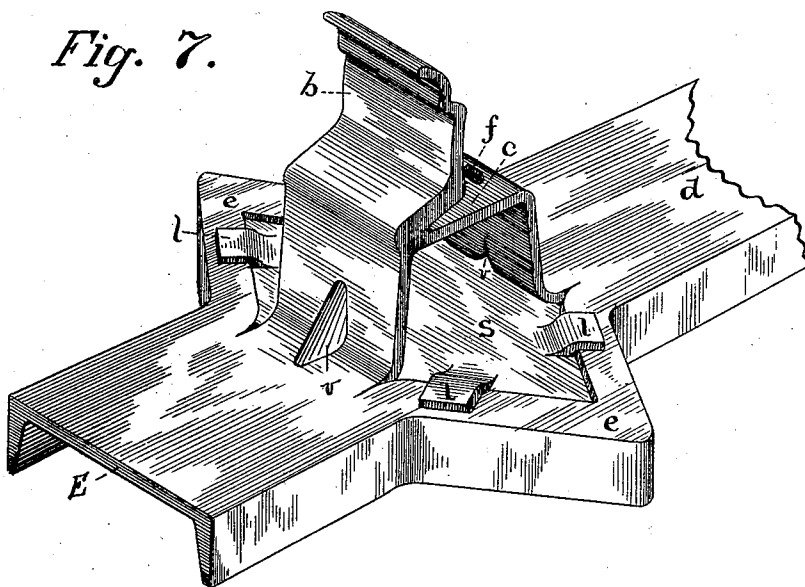
A. J. MOXHAM.

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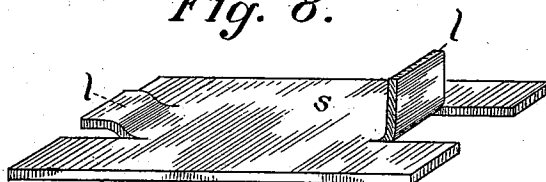
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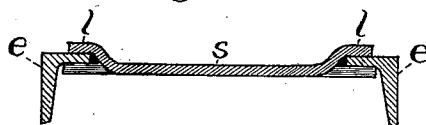
*Fig. 7.*



*Fig. 8.*



*Fig. 9.*



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# UNITED STATES PATENT OFFICE.

ARTHUR J. MOXHAM, OF JOHNSTOWN, PENNSYLVANIA.

COMBINED CHAIR AND CROSS-TIE FOR RAILROAD-RAILS IN TRACK.

SPECIFICATION forming part of Letters Patent No. 513,712, dated January 30, 1894.

Application filed December 5, 1890. Renewed March 7, 1893. Serial No. 464,964. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR J. MOXHAM, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Combined Chair and Cross-Tie for Securing Railroad-Rails in Track, which invention is fully set forth and illustrated in the following specification and accompanying drawings.

The object of this invention is to make a metallic cross-tie for railroad tracks, more particularly for street-car tracks, which shall be light, strong and durable and, when complete, shall consist either of but a single piece of metal, combining cross-tie and rail-chairs in one, or be provided with a reinforce plate as hereinafter described.

The invention will first be described in detail and then particularly set forth in the claims.

In the accompanying drawings, Figure 1 shows the tie in sectional side-elevation, having two girder-rails mounted on chairs. Fig. 2, shows Fig. 1 in plan, with the rails removed. Fig. 3, shows in longitudinal vertical section, enlarged, one end of the cross-tie with the side support for the rail detached from the chair. Fig. 4, shows, in perspective, an enlarged view of one end of the tie and chair complete. Figs. 5, 6 and 7, are views, in perspective, of the ends of modified forms of the tie, hereinafter described. Fig. 8, is a view, in perspective, of the plate marked S, in Fig. 5, detached. Fig. 9, is a cross-section taken through Fig. 5 at the middle of the plate S.

In said figures the several parts are respectively indicated by reference letters as follows:

The letter E, indicates the cross-tie proper, consisting of a blank of metal preferably of channel form as shown, extending across the track from rail to rail. From the top surface *d*, of said tie, are struck up, at the desired distance apart, the rail-chairs *c*, the metal of the tie being spread laterally where the chairs are located, as shown at *e*. In order to provide a side support for the rails *r*, the brace portion *b*, is then welded to the chairs *c*, at the point *p*, *h*, Figs. 1, 3 and 4, Fig. 3, showing the brace and chair separate before being welded and Figs. 1 and 2 showing the appearance of the chairs when the braces *b*, have

been welded thereto. While it is preferable that said braces should be welded to the chair *c*, they may be secured in any other way, as by bolting or riveting. The form of the braces is also immaterial. Instead of coming up under the heads of the rails, they may simply clamp the lower flanges. Any suitable device may be employed for securing the rails to the chairs on the side opposite the brace *b*. In the drawings, clips and keys *g*, inserted in holes *f*, in the tops of the chairs are shown for this purpose.

In Fig. 4, the space left in the cross-tie by the striking up of the chair *c*, is shown as filled by a block of wood *w*, suitably shaped for the purpose. By this means additional strength and stiffness is imparted to the structure and greater supporting surface obtained directly under the rail-seat where it is most needed.

Referring now to Figs. 5, 6 and 7, the only difference in construction between the ties shown in said figures and that shown in Fig. 1, is in the manner of laterally spreading the metal of the tie at the points, where the chairs are located, and in the means used for filling the spaces created by striking up the chairs. In Fig. 5, the lateral spread put upon the metal of the tie is of a rectangular shape, instead of rounded or curved as shown in Figs. 1 to 4, and the space left in the tie by striking up the chair is closed by a plate of metal S, having two struck up lugs *l* for securing it to the tie, as shown in perspective in Fig. 8 and in cross-section in Fig. 9. In Figs. 6 and 7, the tie is shown spread laterally in the form of a salient angle, the spaces left in the tie by the striking up of the chairs being closed by metal plates similar to that shown in Fig. 5, except that in Fig. 7, the plate may be provided with four struck up lugs *l* instead of two.

The metal plates S, serve to perform the same office as the wooden block *w*, (Fig. 4) of strengthening and stiffening the structure. If additional strength is desired in the chairs, the hollow braces, *v*, may be stamped out of their sides as shown in the several figures. If desired, instead of using a flat plate S, or wooden block *w*, the whole of the under-portion of the chair can be filled-in with a wooden block having an upper bearing against the

lower face of the upper portion of the chair c and a lower bearing on the upper face of the bent-out portion, e, of the tie.

Having thus fully described my said invention, I claim—

1. A metallic cross-tie for securing railroad-rails in track, having a rail-chair struck up therefrom, forming a rail-seat, the metal of the tie being forced out laterally in the operation of striking up the chair.

2. A metallic cross-tie for securing railroad-rails in track, having a rail-chair struck up therefrom at each end, forming rail-seats, the metal of the tie being forced out laterally in the operation of striking up the chair.

3. A metallic cross-tie for securing railroad-rails in track, having a rail-chair of box-form struck up therefrom, forming a rail-seat, said chair being provided with a side rail-clamp secured thereto.

4. A metallic cross-tie for securing railroad-rails in track, having a rail-chair of box-form struck up therefrom, forming a rail-seat, said chair being provided with a side rail-clamp welded thereto.

5. A metallic cross-tie for securing railroad-rails in track, having a rail-chair struck up therefrom and provided with a side rail-clamp secured thereto, the metal of the tie being forced out laterally in the operation of striking up the chair.

6. A metallic cross-tie for securing railroad-rails in track, having a rail-chair struck up

therefrom and provided with a side rail-clamp welded thereto, the metal of the tie being forced out laterally in the operation of striking up the chair.

7. A metallic cross-tie for securing railroad rails in track, having a rail-chair struck up therefrom, forming a rail seat, and the metal of the tie spread laterally where the chair is located, in combination with a block or plate closing the space left in said tie by the striking up of said chair and lateral spreading of the tie.

8. A metallic cross-tie for securing railroad rails in track, having a rail chair struck up therefrom, forming a rail seat, said chair being provided with a side rail-clamp secured thereto and the metal of the tie being spread laterally where the chair is located, in combination with a block or plate closing the space left in said tie by the striking up of said chair.

9. A metallic cross-tie for securing railroad rails in track, having a rail-chair struck up therefrom forming a rail seat, and the metal of the tie spread laterally where the chair is located, in combination with a plate as S, provided with lugs, as l, for the purposes set forth.

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Witnesses:

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