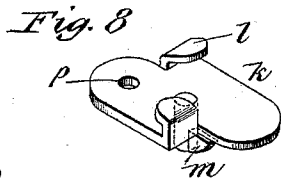
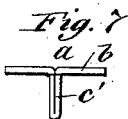
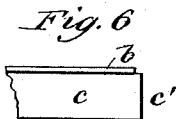
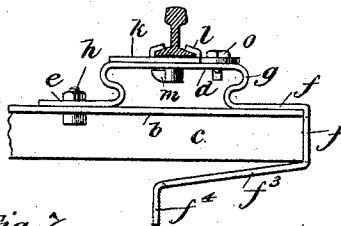
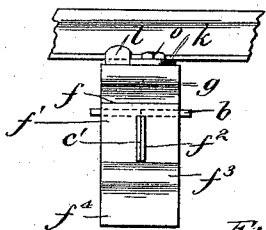
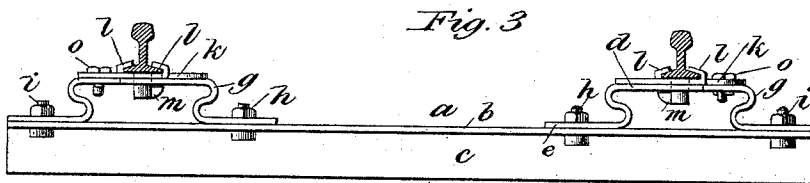
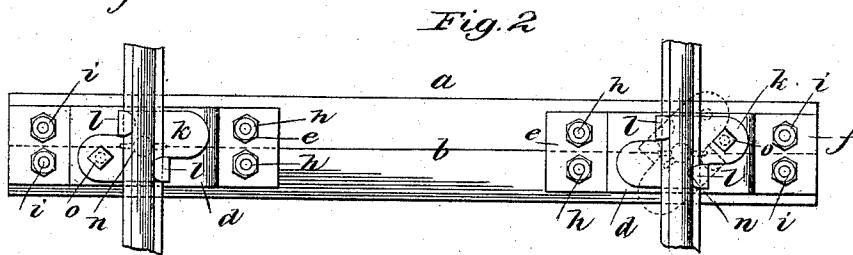
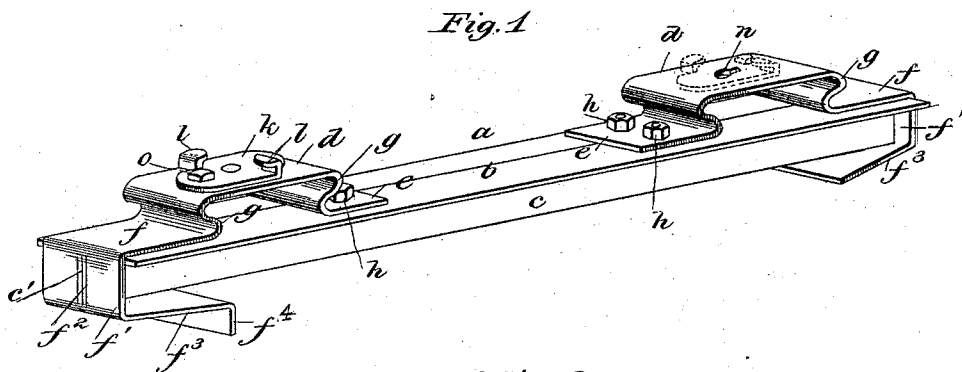


(No Model.)

W. W. WHITAKER.
RAILWAY TIE.

No. 499,071.

Patented June 6, 1893.



Witnesses

J. F. Sherman
E. A. Ginnel,

Inventor

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UNITED STATES PATENT OFFICE.

WILLIAM W. WHITAKER, OF GLOVERSVILLE, NEW YORK.

RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 499,071, dated June 6, 1893.

Application filed January 6, 1893. Serial No. 457,454. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. WHITAKER, a citizen of the United States, residing at Gloversville, in the county of Fulton and State of New York, have invented a certain new and useful Improvement in Railway-Ties, of which the following is a full, clear, and exact description.

This invention relates to metallic railroad ties and the means for supporting and securing the rails to such ties.

I will describe the principle of the invention first, and then set forth the best mode in which I have contemplated applying that principle and, finally, will particularly point out and distinctly claim the part or improvement which I claim as my invention.

In the accompanying drawings, illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a perspective view showing my tie and two forms of the device for supporting the rail upon such tie. Fig. 2 is a plan view showing a modification and illustrating in dotted lines at the right hand end of said figure the manner of adjusting the chair to receive the rail. Fig. 3 is an elevation with the rails in cross section. Fig. 4 is an end view, and Fig. 5 a side view, of the preferred form of rail-support. Fig. 6 is a side view, and Fig. 7 an end view, of one end of the tie; and Fig. 8 is a perspective view of the chair.

The tie *a* is made in conventional T-form, with the horizontal flange or flanges *b*, and the vertical web *c*. This tie may be made by folding or bending a plate of steel or iron or other metal, or by rolling the same, or by casting. The preferred construction of the tie is that first described, namely, by bending up a plate of steel or iron into the shape of a T, substantially as shown in cross-section in the end view, Fig. 7. For use in connection with the rail-supports forming a portion of this invention, the vertical member *c* of the tie projects at each end beyond the horizontal portion, as shown particularly at *c'*, in Fig. 6.

The rail-support *d*, in the preferred form of my invention is made by bending up a plate or strip of metal of greater or less elasticity or springiness in such manner as to form an elevated seat, which is connected with the base

flanges *e* and *f* by means of the S or similarly shaped uprights *g*, whereby the seat is rendered more or less yielding, and thereby the tie is made to approximate more closely to the character of a wooden tie in resisting the impact of the wheels of the cars. The base-flange *e* is provided with bolt-holes to receive bolts and nuts *h*, by which the support may be secured to the flanges of the tie. The base-flange *f* has a vertical portion *f'*, which is fitted over the end of the tie and is slotted at *f''*, for the engagement of the projection *c'* of the vertical portion of the tie to lock the support to the tie; and said base-flange is then returned beneath the vertical portion *c* of the tie, as at *f'''*; and this portion *f'''* is left free so as to afford a yielding support for the tie in the ballast. As shown at the left-hand side of Fig. 1, and as in Figs. 4 and 5, the returned portion *f'''* of the rail-support may have a vertical depending flange *f''''*, to enter the ballast and to afford an anchorage against the longitudinal movement of the tie; but, as shown at the right-hand end of Fig. 1, this vertical flange *f''''* may be omitted without departing from the spirit of my invention.

As shown in Figs. 2 and 3, the portions *f'*, *f''*, *f'''*, and *f''''* may be wholly omitted, and the support secured to the horizontal flanges of the tie by bolts *h* and *i*, at both ends, and in such case, the vertical portion *c* of the tie need not have the projecting portions *c'*.

In the preferred form of chair, *k*, I use a piece of flat steel plate, or other metal, or a casting, which is provided with the obliquely-opposite lips *l*, turned toward one another to engage the flange or base of the rail, and from the lower side of the chair there projects an L or similarly shaped key *m*, which is passed through a key-hole slot *n*, Fig. 1, in the support, to lock the chair to the support, and a bolt or other fastening *o* is passed through a hole *p* in the chair and a corresponding hole in the support to retain the chair in given position to secure the rail thereto.

When it is desired to connect the rail and chair the bolt or fastening *o* is removed, and the chair is swung around into the dotted line position, Fig. 2, so that the rail may be dropped vertically down between the lips *l* and thereafter the said chair may be rotated upon its

key *m* as an axis, until it extends longitudinally parallel with the tie, and then the fastening *o* may be inserted, and so the chair held with its lips *l, l*, in engagement with the flange of the rail, to fasten the rail to the chair and the chair to the support. While I prefer this form of chair for use in connection with the rail-support, yet it is not a necessary element of the combination of this invention and may be replaced by other forms of chair.

What I claim is—

1. A metallic railroad tie of conventional T-form having end-projections on its vertical member, combined with rail-supports having one of their base-flanges slotted to engage the said end-projections, substantially as described.

2. The combination, with a railroad tie having end-projections, of rail-supports provided with base-flanges slotted to engage such end-projections and with other base-flanges bolted to the tie, substantially as described.

3. The combination, with a railroad tie having end-projections, of rail-supports provided with base-flanges slotted to engage such end-projections and provided with returned portions extending beneath the tie, substantially as described.

4. The combination, with a railroad tie having an end-projection, of a rail-support fastened to the tie at one end and having a base-

flange slotted to engage such end-projection, and a returned portion extending beneath the tie and itself provided with a vertical flange, substantially as described.

5. The combination of the T-shaped railroad tie, the rail support comprising base flanges and the elevated seat connected by S-shaped uprights, and the rotatable rail-chair mounted on said seat, substantially as and for the purpose described.

6. A rail-support for use on railroad ties, composed of base-flanges, an elevated seat, curved uprights connecting the flanges and seat and one of the said base-flanges provided with a returned portion extending beneath the tie, substantially as described.

7. A rail-support for use on railroad ties, composed of base flanges, an elevated seat, curved uprights connecting the flanges and seat and one of the said base-flanges provided with a returned portion extending beneath the tie, the said returned portion having a vertical flange or anchor, substantially as described.

In testimony whereof I have hereunto set my hand this 19th day of December, A. D. 1892.

WILLIAM W. WHITAKER.

Witnesses:

ROBERT S. STEWART,
WILLIAM S. CASSEDY.