

(No Model.)

C. L. FITZHUGH & S. S. BABBITT.
METAL RAILROAD TIE.

No. 493,492.

Patented Mar. 14, 1893.

Fig. 1.

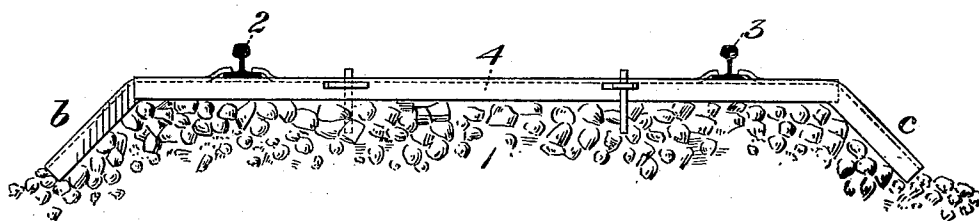


Fig. 2.

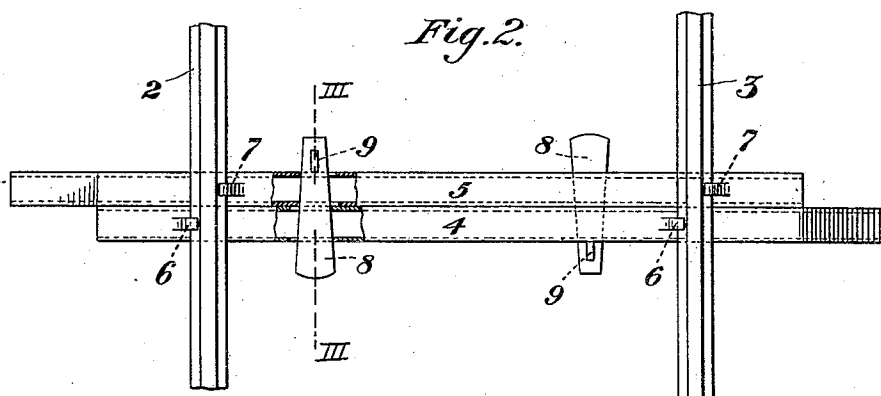


Fig. 3.

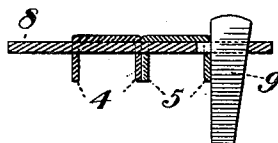
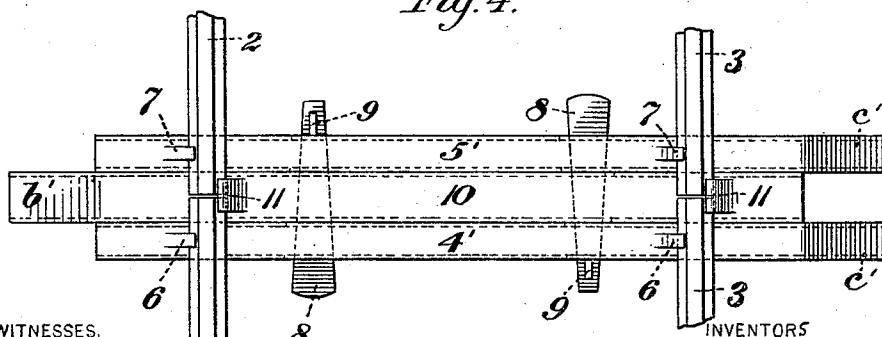


Fig. 4.



WITNESSES.

S. M. Corwin
N. J. Corwin

INVENTORS

Seward S. Babbitt
Charles L. Fitzhugh
by W. Baxendell & Sons
their Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES L. FITZHUGH, OF ALLEGHENY, AND SEWARD S. BABBITT, OF
PITTSBURG, PENNSYLVANIA.

METAL RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 493,492, dated March 14, 1893.

Application filed November 9, 1891. Serial No. 411,559. (No model.)

To all whom it may concern:

Be it known that we, CHARLES L. FITZHUGH, of Allegheny, and SEWARD S. BABBITT, of Pittsburg, both in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Metal Railroad-Ties, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a cross-sectional view of a railway track illustrating our improved device for holding the rails in place. Fig. 2 is a plan view of part of the track. Fig. 3 is a vertical section on the line III—III of Fig. 2. Fig. 4 is a plan view of a modified construction of our improvement.

Like symbols of reference indicate like parts in each of the views.

The object of our invention is to provide improved means for holding railway rails in place, its purpose being to afford a substitute for the expensive and troublesome devices heretofore employed, consisting of the usual bolts, fish-plates, nuts, spikes and wood ties. In our improved device the rails are held by a metallic tie, the parts of which, by suitable means, are drawn in opposite directions and clamp the rails. This of itself affords sufficient means for holding the rails, but our invention will include its use when bolts or other devices are used as supplementary thereto.

In Figs. 1, 2 and 3; 2, 3, represent the rails of the track, and 1 the permanent way and its ballasting material. The rails are supported by cross-ties, one of which is shown in Figs. 1 and 2. This tie consists of two bars of metal 4, 5, (preferably channel bars) set side by side, and having projecting lugs 6, 7, respectively adapted to engage the rails, as shown in Fig. 2. 8, 8, are wedges which pass through registering holes formed in the sides of the channel bars, and adapted when inserted therein to exert on the bars a wedge action which will move them in the required directions. In order to secure the rails to the tie, the bars 4 and 5 are set in place below the rail in the position shown in Fig. 2, and the wedges are then driven in the required direction, thus drawing the bars in the required

direction, and causing the projections 6, 7, to clamp the rails on both sides. The wedges are then secured by wedge-keys 9, which are inserted in slots in the wedges, and serve also to keep the bars 4, 5, closely together. An additional improvement, is shown in Fig. 1. The opposite ends of the bars 4 and 5, instead of terminating on the same level with the rails, project downwardly at an inclination, as shown at *b, c*. The ballast of the track fitting beneath and back of these projecting portions tends to hold the bars stationary as regards inward longitudinal movement, and thus assist the wedges in their work. For this purpose the end projections are formed at one end only of each bar and at the side of the permanent way opposite to the sides of the rail on which are the projections. The consequence is that the vertical pressure of the trains on the rails bearing on the bars and pressing their inclined ends against the permanent way will tend to draw the bars lengthwise in directions opposite to their projections and will thus tighten the hold of the bars on the rails.

In Fig. 4 we show that form of our invention which we prefer to use at the joints of rails and which may be used with advantage at other portions thereof. Here we employ a third metal bar 10 set between two outer bars 4' and 5'. The projections 6, 7, on the outer bars preferably engage the same sides of the rails, and the projections 11 on the middle bar may be made wider than those of the others and fit against the opposite sides of the rails at the joints. The wedges 8 are driven through all of the three bars, and thus make a very secure device for clamping and holding the rails. By the use of this device, having two bearings on the rail on one side, and an intermediate bearing on the rail on the other side, a tighter and more substantial grip is had on the rail than where there are but two bearings not directly opposite to each other. The end *b'* of the middle bar, at one side of the track, and the ends *c'* of the outer bars at the other side of the track may be inclined downwardly in like manner and for like purpose as illustrated in Fig. 1.

The advantages of our invention in respect of its simplicity of construction, its strength

and efficiency, will be appreciated by those skilled in the art.

We claim—

5 1. As means for holding railway rails on the track, the combination of rail-underlying bars having projections which engage the rails, and means whereby the bars are forced in proper directions to clamp the rails, the bars having end projections at one end only and
10 situate respectively on the side of the permanent way opposite the rail-engaging projections, said end projections having an inclined bearing at the sides of the permanent way and being adapted to be actuated by vertical
15 pressure on the bars to draw the same lengthwise and to tighten the hold on the rails; substantially as and for the purposes described.

2. As means for holding railway rails on the track, the combination of underlying bars having projections which engage the same 20 sides of the rails, an intermediate bar having projections which engage the opposite sides of the rails, and means whereby the outer and middle bars are forced in the proper directions respectively; substantially as and for 25 the purposes described.

In testimony whereof we have hereunto set our hands this 4th day of November, A. D. 1891.

CHAS. L. FITZHUGH.
SEWARD S. BABBITT.

Witnesses:

W. B. CORWIN,
H. M. CORWIN.