

(No Model.)

S. R. SCHARF.
FASTENING FOR RAILROAD RAILS.

No. 488,578.

Patented Dec. 27, 1892.

Fig. 1.

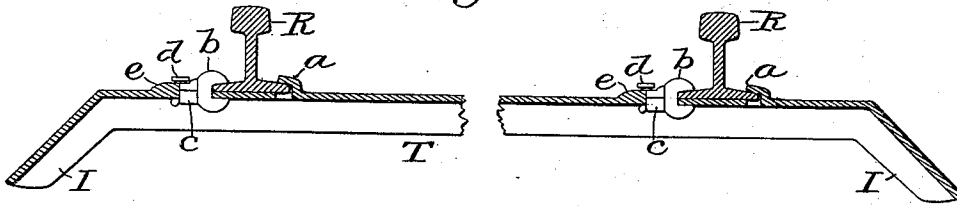


Fig. 3.

Fig. 2.

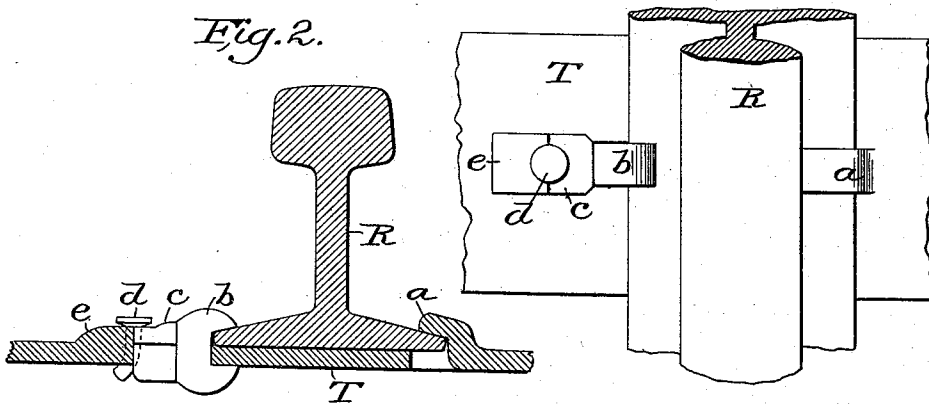
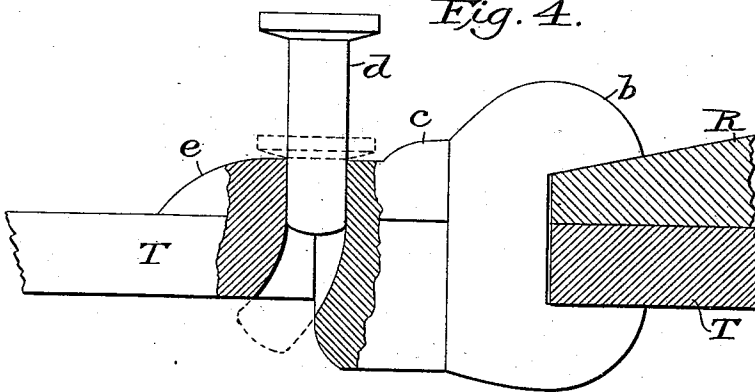


Fig. 4.



Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

SAMUEL R. SCHARF, OF WASHINGTON, DISTRICT OF COLUMBIA.

FASTENING FOR RAILROAD-RAILS.

SPECIFICATION forming part of Letters Patent No. 488,578, dated December 27, 1892.

Application filed April 19, 1892. Serial No. 429,798. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL R. SCHARF, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Fastenings for Railroad-Rails, of which the following is a specification.

My present invention relates to fastenings for railroad rails, in connection with metal ties, and the invention consists in the novel construction of the fastening devices used to hold the rails in place, all as hereinafter more fully set forth.

Figure 1, is a longitudinal vertical section of the tie, with the rails fastened in place. Figs. 2 and 4 are similar sectional views of a portion of a tie and single rail enlarged to more fully show the construction; and Fig. 3 is a top plan view of the same, also enlarged.

The object of this invention is to furnish means or devices by which the rails of a railroad can be securely fastened to the tie without the use of nuts, and which will not work loose by use.

Another object is to so construct the tie and the fastenings, that a single tie can be removed when necessary, without loosening the rails from the remaining ties, or disturbing them.

In order to carry out my invention I first construct a tie of metal, of the general form shown in Fig. 1, in which T represents the tie shown in longitudinal section, and which will preferably be made of wrought metal, though they may be made of malleable cast iron. The sides and ends are turned down at an angle, substantially as shown, so that when properly bedded in the road bed with its concave under side filled with the earth or gravel, it will be held firmly in place, the bent ends and sides preventing it from moving either endwise or sidewise. These ties I provide with a permanent clip *a* for each rail, as shown in the several figures, and which may be formed by cutting or punching it up from the solid body of the tie as shown, or it may be made separately and be firmly riveted to the tie, as may be found most convenient in practice. As shown in Fig. 1, I prefer to so form and locate these permanent clips *a*, that both of them will be on the same side of the rails. It will be observed by examining Fig. 1, that the permanent clip *a* is on the right hand side of

each rail, or as shown, one on the outside of the right hand rail, and the other on the inside of the left hand rail. The object of this arrangement is to enable any single tie to be removed when necessary without loosening the rails from any of the other ties, it only being necessary to take out the removable fastenings at the opposite side of each rail, dig away the earth around and from under the tie, when it can be removed endwise from under the rails, without loosening the rails from the adjoining ties, or in any manner disturbing the latter or the rails at any other point.

At the proper points at the side of the rails opposite to that held by the permanent clips, I make a slot in the tie for the reception of the detachable fastenings, one for each rail, and at the end of these slots farthest from the rail, I increase the thickness of the top of the tie, thus forming at that point an enlargement *e*, as shown more clearly in Fig. 2, thereby securing a greater thickness or depth of metal at that point in order to have a sufficient depth or thickness of metal in which to form one half of a bolt hole, and which in conjunction with a similar recess formed in the edge of the adjoining block *c* will form a bolt hole that is curved longitudinally, as shown in Figs. 2 and 4. This hole, as shown in Fig. 4, which represents the parts still more enlarged to better illustrate its construction, is made perpendicular or straight for about half its depth, and then is curved as shown. Having thus constructed the tie, I then provide a clamp *b*, of the proper size to fit into the slot in the tie, and which is then shoved over to the end of the slot or near it, and made to fit over the flange of the rail and under the top wall of the tie as shown, the shape and size of the notch in the side of this clamp being such that when forced over to its place it will clamp the flange of the rail firmly to the tie, the opposite flange being held by the permanent lip or clamp *a*, as shown. To hold this clamp *b* firmly in place, I provide a block *c*, of the proper size to fill the balance of the slot, this being formed with lateral projections or flanges which rest upon the top of the tie and prevent it from dropping or being forced down through the slot. In the outer edge of this block *c* is formed one half of the curved bolt hole hereinbefore mentioned, so

that when set in place the curved semicircular recess in its edge, in conjunction with the corresponding recess formed in the thickened wall of the tie as above described, will form
 5 a round hole, the lower half of which is curved sidewise as shown. These curved recesses may be formed in the respective parts either by forging them into shape, or by cutting them with a milling machine, as may be
 10 found most convenient. I then provide a bolt *d* of wrought iron or steel, of the proper size to fill this hole, the body of the bolt being straight when formed. This bolt is then driven or forced into the hole, and as it is
 15 forced in it will of course be curved or bent to correspond exactly with the curvature of the hole, whereby it will be so locked in place that it cannot work loose or get out, and thus will lock the block *c* and the clamp *b* securely in place also, the bolt *d* thus acting as
 20 a key to lock the clamp in place, and it may properly be termed a key. This bolt or key is made with a strong head, beveled on its under side as shown, so that when it is desired
 25 to remove a rail or tie, a suitable tool can be placed under the head to draw the bolt out, and which can readily be done by the application of the necessary force, the bolt of course being straightened in the operation of being
 30 pulled out.

The operation of fastening and unfastening the parts will be readily understood from an examination of Fig. 4, in which the bolt is shown in dotted lines before being driven to
 35 its seat, and in full lines in its position after it has been forced to its seat. As there is little or no strain on the bolt or key, one a half inch in diameter will be ample, and one of that size can be readily driven into or withdrawn from the curved hole. I do not however limit it to any particular size, as that can
 40 best be determined by practice, and has nothing to do with the principle of my invention. By this construction of the tie and the fastening devices, I am enabled to produce a means
 45 for fastening the rails in a very secure manner, and dispense entirely with nuts and nut locks, and which can be readily and quickly applied, and readily removed when necessary.

It also enables a single tie at any point on the road to be removed without releasing the rails from any of the other ties, or disturbing them in any manner.

I am aware that a split key has been described to be used in connection with a block having grooves and a wedged shaped projection to spread the points of said key and bend them when driven into place; and also that a tie has been described as being composed of two plates having crooked spike openings formed in their abutting faces for the reception of a spike, and I do not claim such devices, but

Having thus fully described my invention what I claim is—

1. A fastening for a railroad rail, consisting of the clamp *b*, the block *c* and the bolt or key *d*, said block and the abutting wall of the tie each having recesses for the reception of the bolt or key substantially as shown and described.

2. The metallic tie provided with a permanent clip adapted to receive and hold the flange on one side of the rail, with a slot having a curved recess at its end, the clamp *b*, and block *c* with a corresponding curved recess in its edge at the opposite side of the rail, and a bolt or key adapted to lock the parts in place substantially as shown and described.

3. A self locking fastening for railroad rails, consisting of a clamp arranged to engage the flange of the rail and the tie, a block or follower to hold the clamp in place, said block and the adjoining wall of the slot in the tie both being provided with a recess curved at their lower portions, and a bolt or key adapted to be forced or driven into the curved hole formed by said recesses, whereby the clamp and the bolt or key are both securely locked in place substantially as set forth.

In witness whereof I hereunto set my hand in the presence of two witnesses.

SAML. R. SCHARF.

Witnesses:

HENRY J. GROSS,
 JAMES F. DUHAMEL.