J. W. CLUBB.

METALLIC RAILWAY CROSS, BRIDGE, AND SWITCH TIE AND FASTENING.

APPLICATION FILED AUG. 12, 1909.

971,491. Patented Sept. 27, 1910.

Fig. 1.

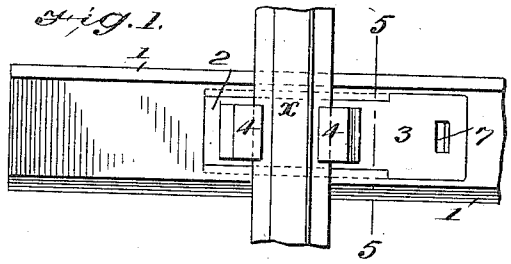


Fig. 2.

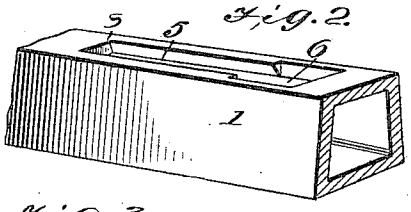


Fig. 3.

Fig. 5.

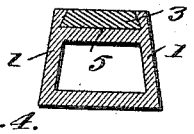


Fig. 6.

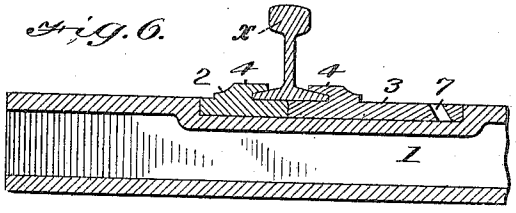


Fig. 4.

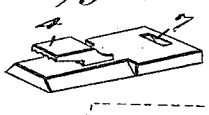


Fig. 7.

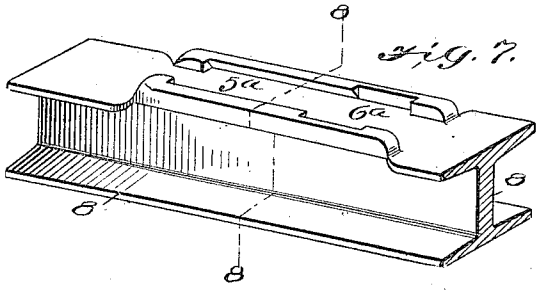


Fig. 8.

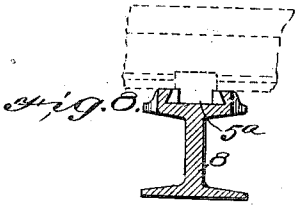


Fig. 9.

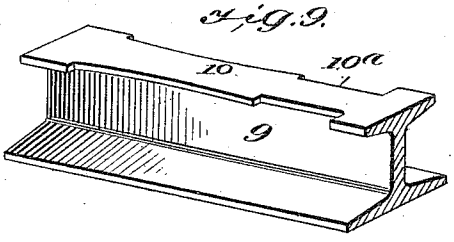


Fig. 10.

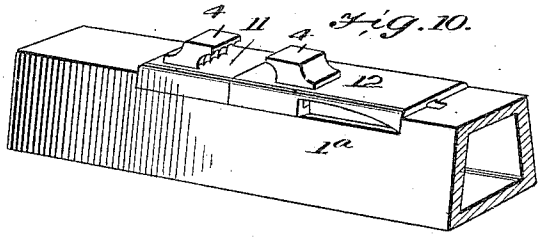


Fig. 12.

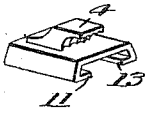


Fig. 11.

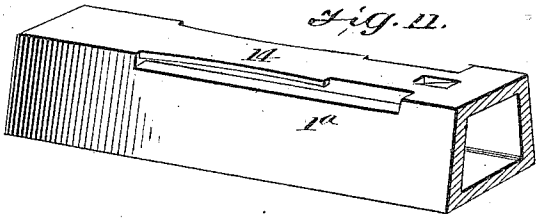
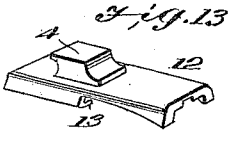


Fig. 13.



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METALLIC RAILWAY CROSS, BRIDGE, AND SWITCH TIE AND FASTENING.

971,491. Specification of Letters Patent. Patented Sept. 27, 1910.

Application filed August 12, 1909. Serial No. 512,550.

To all whom it may concern:

Be it known that I, JOHN W. CLUBB, a citizen of the United States, residing at Paris, in the county of Edgar, State of Illinois, have invented an Improvement in Metallic Railway Cross, Bridge, and Switch Ties and Fastenings, of which the following is a specification.

The object of my invention is to provide a metallic tie and rail fastening by which rails will be held more securely than heretofore, and without the aid of screws, bolts, nails, wedges, or similar adjunctive devices. The fastening is likewise so constructed as to prevent "creeping" of the rails.

The details of construction, arrangement, and operation of parts are as hereinafter described, and illustrated in the accompanying drawing, in which—

Figure 1 is a plan view of one form of my invention, a section of a railroad rail being shown secured to a metallic tie by my improved fastening. Fig. 2 is a perspective view of a portion of the same tie illustrated in Fig. 1. Figs. 3 and 4 are perspective views of the rail fastenings. Fig. 5 is a cross section on the line 5—5 of Fig. 1. Fig. 6 is a longitudinal section of the tie fastenings, a rail being shown in cross section. Fig. 7 is a perspective view of a form of metallic tie which is constructed of a section of an I-beam. Fig. 8 is a cross section on the line 8—8 of Fig. 7. Fig. 9 is a perspective view of a modification of the tie shown in Fig. 7. Fig. 10 is a perspective view of a modification of the part shown in Figs. 1–6. Fig. 11 is a perspective view of the tie constructed as shown in Fig. 10. Figs. 12 and 13 are perspective views of the fastening devices employed with the ties illustrated in Figs. 9, 10, 11.

In Figs. 1–6, the numeral 1 indicates a hollow metallic tie, which may be closed at either end, if desired. In its upper side is formed a socket suitable for receiving the rail fastenings 2 and 3, illustrated separately in Figs. 3 and 4, respectively. In Figs. 1, 5, and 6, they are shown arranged in due working position and with their jaws or clamps 4 engaging the base of the rail *x*. A portion 5 of the socket formed in the rail 1 is narrower than the shorter adjacent portion 6, and is further distinguished by the fact that the opposite sides or ribs are undercut as shown in Figs. 2 and 5. The rail fastening 2 has beveled sides corresponding to the construction shown in part 5 of the tie socket. It is to be understood that the fastening fits loosely enough between the ribs, or has sufficient clearance, to permit convenient insertion or removal of the same. The fastening 2 may, therefore, be slid into position in the part 5 of the socket, and will then be held therein by reason of the dovetail joint or connection shown in Fig. 5.

It will be understood that the base of the fastening 2 is of such length as can be dropped into the enlarged portion 6 of the socket formed in the top of the tie 1, and this is of course done preparatory to sliding the fastening along in the socket 5, to the required position for engaging the rail *x*. The rail fastening 3 has a portion beveled similarly to the fastening 2, and, when it is in position as shown in several figures, such beveled portion engages the undercut ribs of the socket 5 so that another dove-tailed connection is formed between the fastening 3 and the socket. The squared and larger end, of the fastening 3 fits into the enlarged portion 6 of the tie socket, as will be readily understood. When both fastenings are in position, as shown best in Figs. 1 and 6, they lie flat in the sockets 5—6, and their ends abut against the end shoulders of the said sockets, and effectually secure the rail tightly to the tie.

When it is desired to remove the fastenings, a crow-bar or other suitable tool is inserted in the hole 7 formed in the larger end of the rail fastening 3, and that end can thus be pried up, whereupon the fastening as a whole may be slid backward out of the tie socket 5, 6.

The variation of the invention just described is illustrated in Figs. 7 and 8, this form of my invention being in fact, the preferred one. Instead of employing a hollow tie 1, I utilize a section 8 of an I-girder, and I form what serves as a socket for the rail fastenings by rolling up the flanges at the top of the girder and shaping them interiorly to provide a socket 5^a and 6^a, as shown best in Fig. 7.

It will be seen that the rail fastenings 2 and 3, illustrated in Figs. 3 and 4, can be used with this form of socket in precisely the same manner as illustrated in Figs. 1, 6, and already described. This form of tie is light, strong, durable, and may be manufactured at small cost.

Fig. 9 shows another modification of a tie

constructed of an I-girder 9. Instead of the top flanges being rolled up and shaped to form the required sockets, they are cut away as shown at 10, 10^a, thus leaving lateral projections or flanges, with which the fastenings 11 and 12, shown in Figs. 12, 13, will engage. As shown in the last-named figures, these fastenings 11, 12, have inturned flanges 13 adapted to engage the lateral flanges of the tie shown in Fig. 9.

In Figs. 10, 11, I illustrate another modification in which a hollow tie 1^a is constructed at the top substantially like the top portion of the tie shown in Fig. 9. That is to say, the tie 1^a has a flat flush top and is cut out and recessed on the sides, thus forming flanges 14 with which the fastenings 11, 12, will engage, as will be readily apparent.

In the several forms of tie shown in Figs. 9, 10, 11, it will be seen that there are shoulders provided at the ends of the sockets or flanges with which the fastenings 11 and 12 engage when in normal position, the same as in the case of the fastenings 2, 3, applied to the tie 1.

In order to enable the claws or clamps 4 of the several fastenings to take a firmer hold on the base flanges of the rail x, the same are ribbed or serrated on the under side, as illustrated in Figs. 3, 4, 10, 12.

It will be noted that the ribs extend down so as to bite the edge of a rail base, whereby they take a very effective hold and prevent "creeping" of the rails.

What I claim is:

1. A metallic tie provided on its upper side with opposite, parallel, undercut ribs, the portion of the tie which intervenes between said ribs being flat in order to support a rail fastening, and the space between the ribs being enlarged at the entrance whereby the tie is adapted for reception, engagement, and support of rail fastenings in the manner described.

2. A metallic tie having an I-form in cross section, its top flanges being rolled upward and inward for a portion of their length and shaped to form opposite ribs which are undercut and thereby adapted for sliding engagement with rail fastenings, substantially as described.

3. The combination, with a tie, having its top surface provided with ribs arranged opposite and which are undercut for a portion of their length, and are separated more widely at their inner ends where end shoulders are provided, of rail fastenings having base portions adapted to engage the aforesaid ribs when slid into place between them, and provided with claws adapted for engagement with the edge of a rail base, the rail fastening when in place abutting against the end shoulders of the ribs, substantially as described.

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