

Sept. 27, 1932.

L. OTTROSINKA

1,880,180

RAIL FASTENER

Filed Feb. 25, 1932

2 Sheets-Sheet 1

Fig. 1.

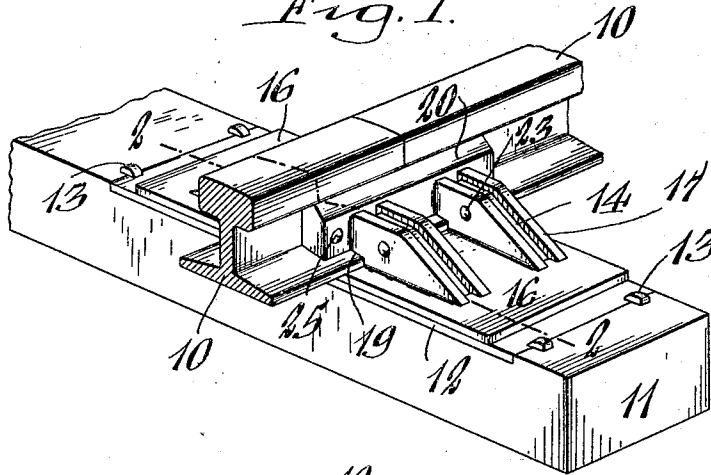


Fig. 2.

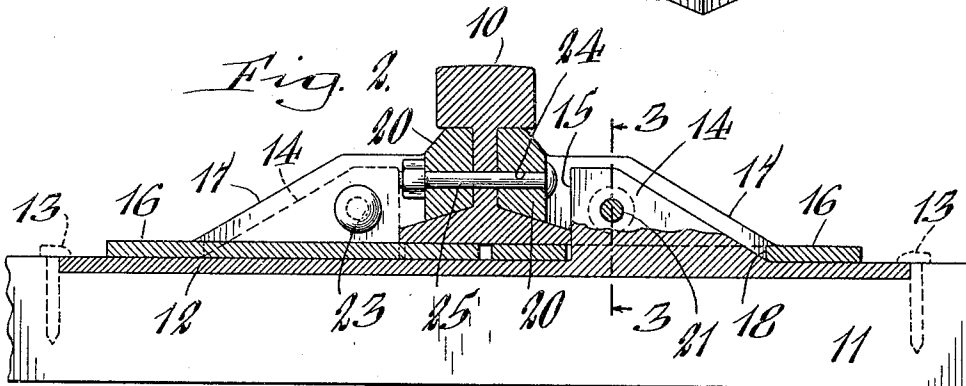


Fig. 4.

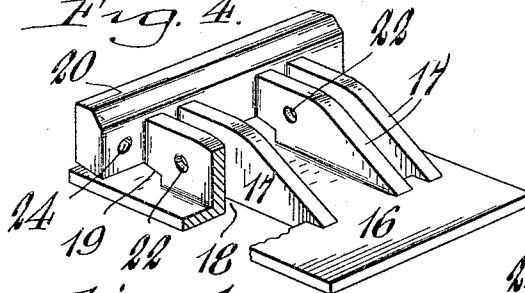


Fig. 5.

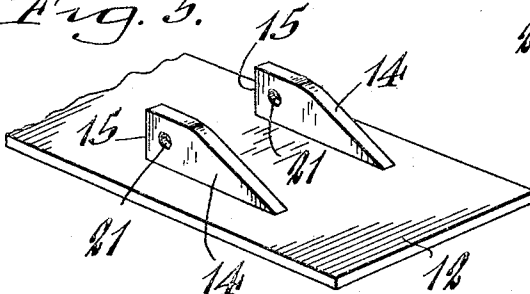
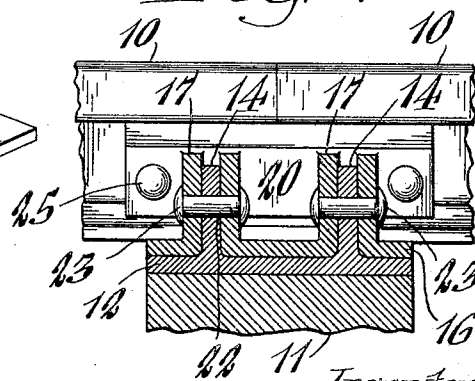


Fig. 3.



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Fig. 6.

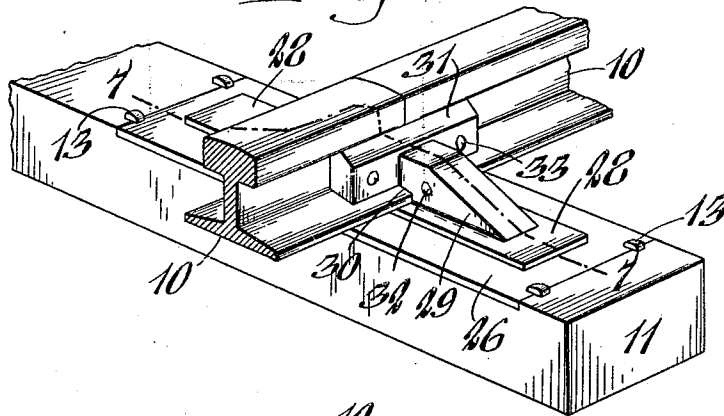


Fig. 7.

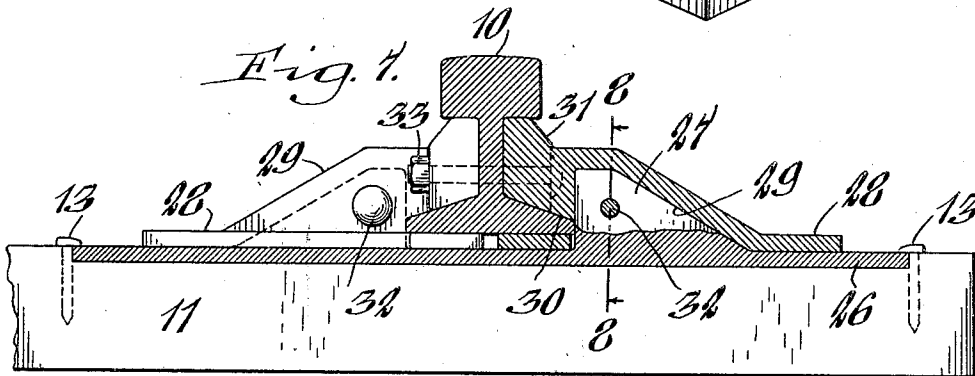


Fig. 9.

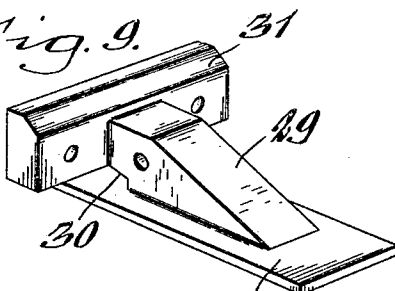


Fig. 8.

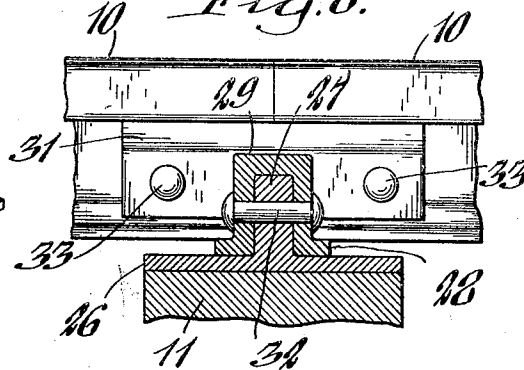
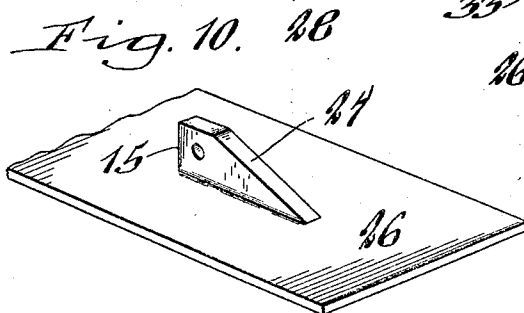


Fig. 10.



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UNITED STATES PATENT OFFICE

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RAIL FASTENER

Application filed February 25, 1932. Serial No. 595,073.

This invention relates to certain new and useful improvements in fasteners for railroad rails.

One of its objects is the provision of a rail fastener of this character which is designed to effectually and reliably hold the rails in place, and particularly to prevent vertical displacement and spreading of the rails.

Another object of the invention is to provide a rail fastener which is simple, compact and strong in construction, and whose parts are arranged to positively interlock and prevent accidental displacement of the rail.

In the accompanying drawings:—Figure 1 is a perspective view of a rail fastener embodying my invention. Figure 2 is an enlarged cross section taken substantially in the plane of line 2—2, Figure 1. Figure 3 is a cross section taken on line 3—3, Figure 2. Figure 4 is a perspective view of one of the rail fastening or clamping elements, partly in section. Figure 5 is a fragmentary perspective view of the tie-engaging member of the fastener. Figure 6 is a perspective view showing a modified form of the rail fastener. Figure 7 is a perspective view taken substantially in the plane of line 7—7, Figure 6. Figure 8 is a cross section taken on line 8—8, Figure 7. Figure 9 is a perspective view of one of the rail fastening or clamping elements. Figure 10 is a fragmentary perspective view of the tie-engaging member of the fastener.

Similar characters of reference indicate corresponding parts throughout the several views.

In the embodiment of the invention shown in Figures 1–5, inclusive, 10 indicate the adjoining ends of the rails and 11 indicates a tie upon which the elements of my improved fastener are mounted, it being understood that the fastener is applicable for use with wood, steel or concrete ties. Applied to the tie is a plate 12 which extends beneath the rails and may be anchored to the tie by spikes 13 or, in the case of a steel tie, may constitute an integral part thereof, if desired. Rising from this base plate on opposite sides of the rails are ribs or projections 14, two being shown in the drawings in spaced relation at

opposite sides and transversely of the rail. The inner edges 15 of these ribs terminate at the adjoining edges of the base flanges of the rails 10 and constitute abutments against which the rails are adapted to abut. The top edges of these ribs are preferably sloped outwardly and downwardly toward the tie-plate in the manner shown in the drawings.

Mounted on this tie-plate for engagement with the opposite sides of the rails 10 in clamping relation therewith is a pair of fastening elements arranged to be superposed in interlocking engagement with the tie-plate 12 and rails and each consisting of a base 16 constituting a seat or support for the base of the rail and underlying the same in the manner shown in Figure 2, the inner edges of the companion supporting bases terminating at a point substantially centrally of the rail. Rising from each supporting base 16 are pairs of spaced transverse lugs 17 and in registration with the spaces between these lugs the supporting base is provided with transverse slots or openings 18 of substantially the same dimensions as that of the companion lugs 14 rising from the tie-plate 12. Said lugs 14 are adapted to engage the openings 18 and the spaces between the lugs 17 in the manner shown in Figures 1, 2 and 3, whereby longitudinal as well as transverse displacement of the fastening elements relative to the tie-plate is prevented. The inner edges of the lugs 17 extend beyond those of the lugs 14 and project or overhang the marginal edges of the top sides of the rail flanges and for this purpose they are provided in their bottom edges with notches 19. Carried by the fastening elements at the inner edges thereof are fish plates 20, which, as shown in Figure 4, are preferably disposed at the inner edges of the lugs 17 and may be integrally formed therewith, the lower edges of the fish plates being spaced from the top side of the base 16 to rest upon the top side of the rail flanges and the upper portions of these fish plates extending above the lug 17 and abutting against the bottom faces of the rail-heads, as seen in Figure 2.

For preventing relative vertical displacement of the clamping members and the tie-

plate 12, I preferably provide the companion lugs 14 and 17 with registering holes 21 and 22, respectively, for receiving locking pins or rivets 23. The fish plates 20 may also be provided with transverse openings 24 for receiving bolts 25 to firmly anchor the rails 10 thereto.

In assembling the parts of the fastener, the adjoining ends of the rails 10 may be elevated above the tops of the tie-plate lugs 14 after which the fastening elements of the device are embraced about the rail ends and the whole lowered in place on the tie-plate 12 with the lugs of the later fitted between the companion lugs 17 rising from the bases 16 of the fastening element. With the parts in this position, the pins 23 and bolts 25 are applied.

In the modified form of the invention shown in Figures 6-10, inclusive, the rail fastener consists of a tie-engaging plate 26 having lugs or ribs 27 rising therefrom at opposite sides of the rail. Mounted on this tie-plate for interlocking engagement therewith and with the rail sections 10, is a pair of fastener elements each consisting of a base 28 which rests flatwise upon the tie plate and has a downwardly-opening socket 29 therein for receiving the corresponding tie-plate lug 27. The inner end of the fastener-base extends beneath the base flange of the rail and constitutes a support therefor, while each of the socket portions of the fastener has a notch 30 at its lower inner edge to permit such portions to overhang the base flange of the rail, in the manner shown in Figures 6 and 7. Attached to the inner edge of the socket portion 29 of each fastener element, is a fish plate 31 which engages the web of the rail and bears at its upper edge against the rail-head and at its lower edge against the base flange of the rail. Pins or rivets 32 may be employed for positively connecting the socketed portions 29 of the fastener to the tie-plate lugs 27, and bolts 33 may be employed for connecting the fish plates 31 to the rail webs.

I claim as my invention:—

1. A rail fastener of the character described, comprising a tie-engaging plate having ribs rising therefrom at opposite sides of its center, and fastening means for the rail superposed on said plate and including companion elements disposed at opposite sides of the rail and each consisting of a base having portions disposed beneath the rail to constitute a seat therefor, and means applied to said base for interlocking engagement with said tie-plate ribs and the rail.

2. A rail fastener of the character described, comprising a tie-engaging plate having ribs rising therefrom at opposite sides of its center, and fastening means for the rail superposed on said plate and includ-

ing companion elements disposed at opposite sides of the rail and each consisting of a base having portions disposed beneath the rail to constitute a seat therefor, and means applied to said base for interlocking engagement with said tie-plate ribs, said means including extensions overhanging the base flange of the rail.

3. A rail fastener of the character described, comprising a tie-engaging plate having ribs rising therefrom at opposite sides of its center, and fastening means for the rail superposed on said plate and including companion elements disposed at opposite sides of the rail and each consisting of a base having portions disposed beneath the rail to constitute a seat therefor, means applied to said base for coupling engagement with said tie-plate ribs, and fish plates attached to said coupling means.

4. A rail fastener of the character described, comprising a tie-engaging plate having ribs rising therefrom at opposite sides of its center, and fastening means for the rail superposed on said plate and including companion elements disposed at opposite sides of the rail and each consisting of a base having portions disposed beneath the rail to constitute a seat therefor and portions arranged to engage said tie-plate ribs to prevent relative displacement of the tie-plate and fastening means, said rib-engaging portions having notches in their lower inner edges for receiving the base flange of the rail.

5. The combination of a rail having a tread and a base flange, a tie-engaging plate having lugs rising therefrom at opposite sides of the rail, and companion supporting plates for the rail having means formed thereon for interfitting with the corresponding tie-plate lugs, the opposing inner portions of said supporting plates extending beneath the rail to constitute seats therefor and the opposing inner portions of said lug-engaging means extending over the base flange of the rail.

6. The combination of a rail having a tread and a base flange, a tie-engaging plate having lugs rising therefrom at opposite sides of the rail, companion supporting plates for the rail having means formed thereon for interfitting with the corresponding tie-plate lugs, the opposing inner portions of said supporting plates extending beneath the rail to constitute seats therefor and the opposing inner portions of said lug-engaging means extending over the base flange of the rail, and fish plates applied to the opposing inner portions of said lug-engaging means.

7. The combination of a rail having a tread and a base flange, a tie-engaging plate having lugs rising therefrom at opposite sides of the rail, companion supporting plates for the rail having pairs of spaced

lugs rising therefrom and openings in registration with the spaces between said lugs for interfitting the corresponding lugs on the tie-plate, the opposing inner portions of the supporting plates extending beneath the rail to constitute seats therefor and the lugs thereof being notched at their opposing inner edges to receive the base flanges of the rail, and fish plates applied to the lugs of the supporting plates.

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