

Aug. 16, 1927.

1,639,620

C. TROUP

RAIL JOINT

Filed July 24, 1926

3 Sheets-Sheet 1

Fig. 1.

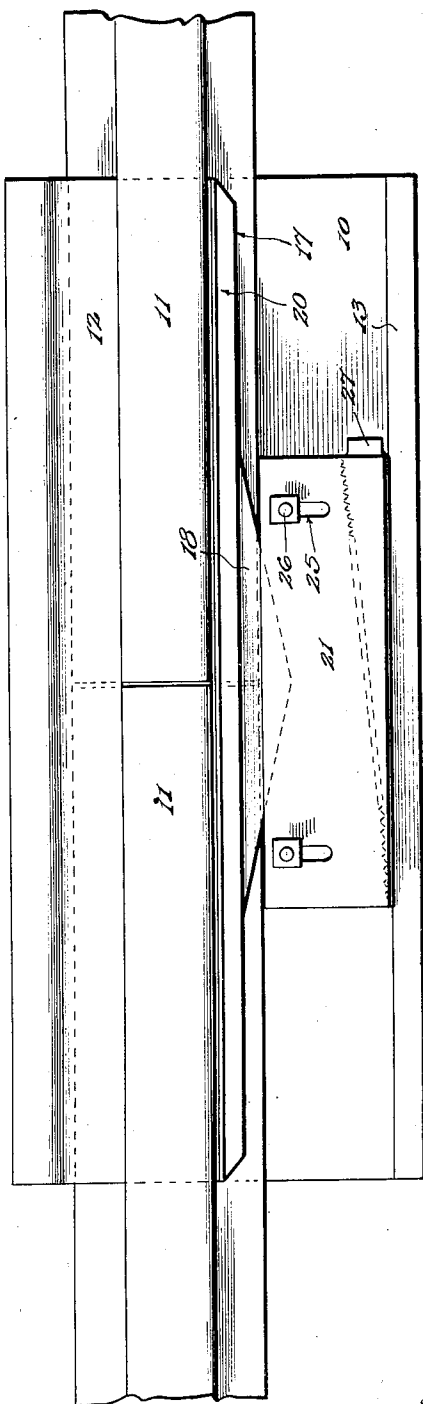
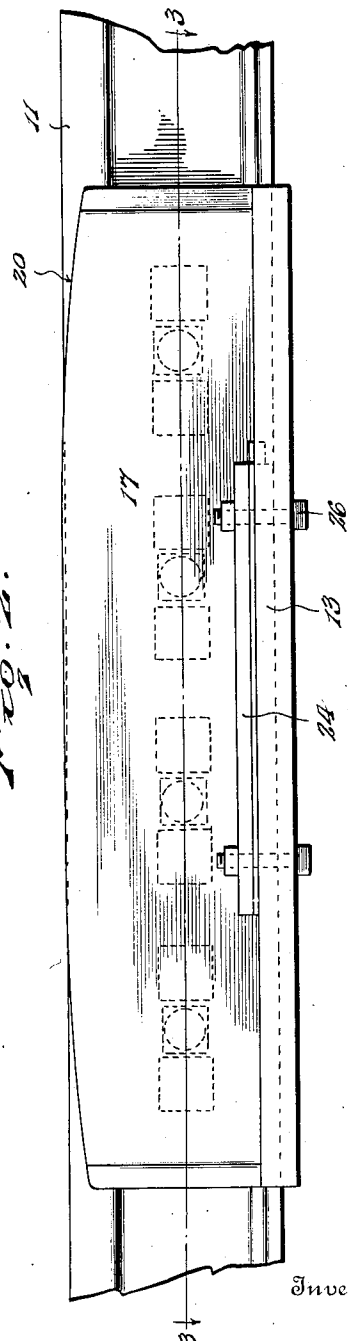


Fig. 2.



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Fig. 3.

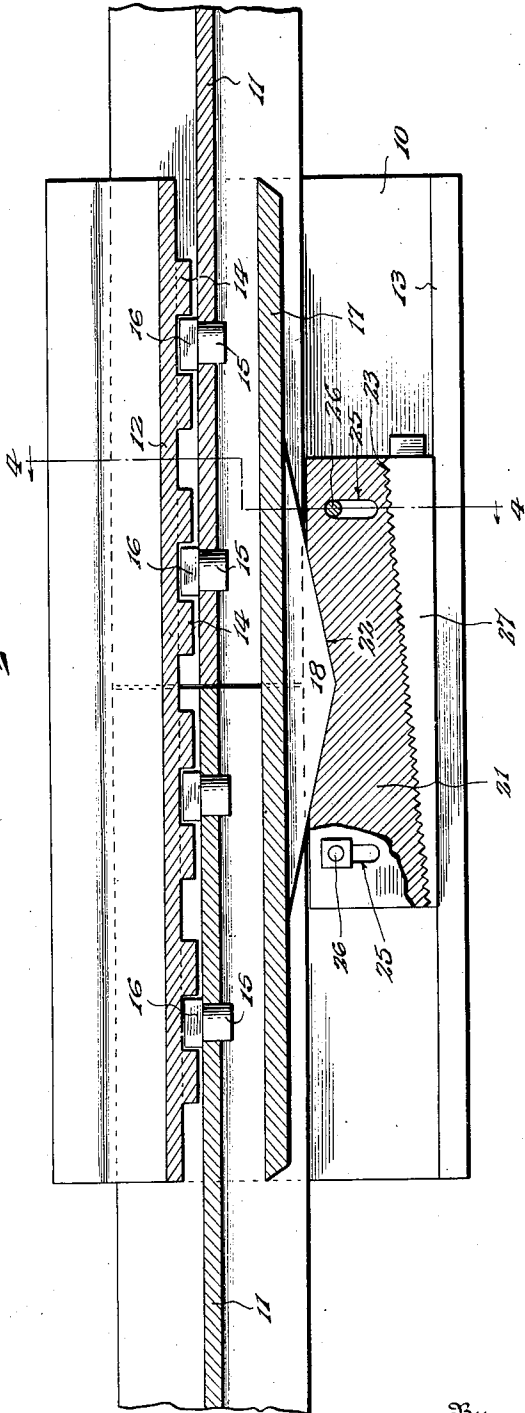


Fig. 4.

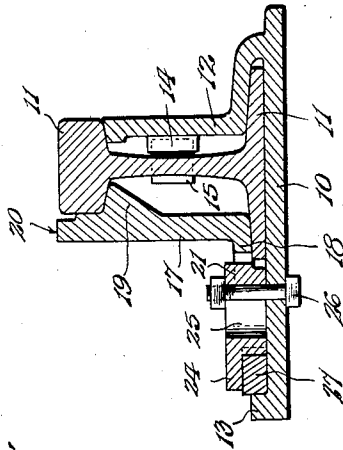
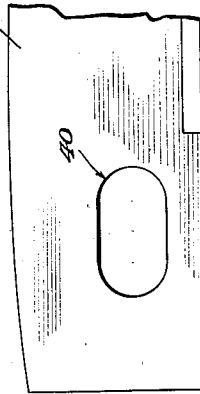


Fig. 9.



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Fig. 6.

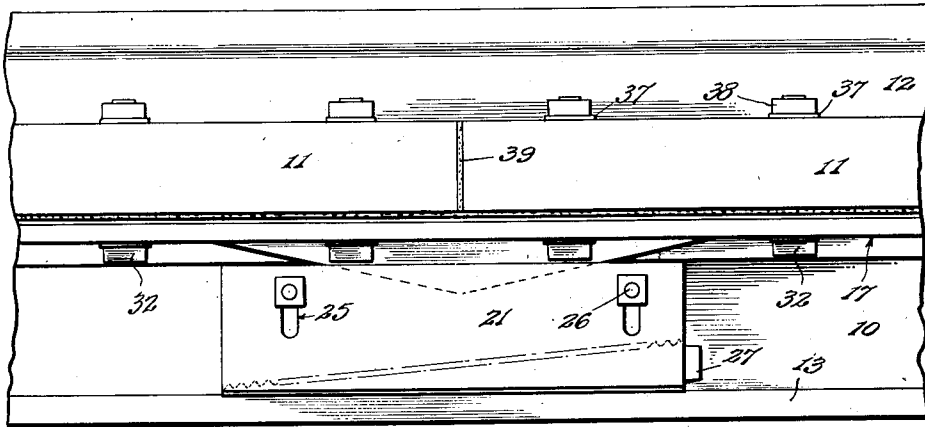


Fig. 5.

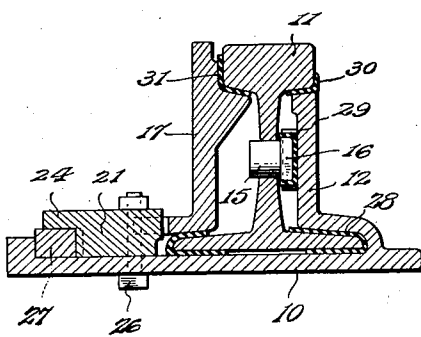


Fig. 7.

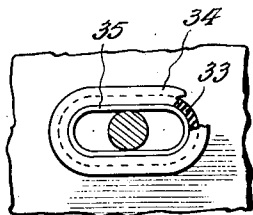
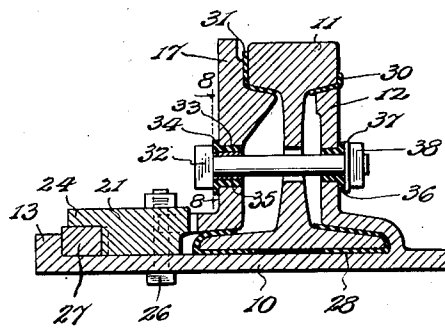


Fig. 8.

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Patented Aug. 16, 1927.

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UNITED STATES PATENT OFFICE.

CHARLES TROUP, OF WATSEKA, ILLINOIS.

RAIL JOINT.

Application filed July 24, 1926. Serial No. 124,623.

This invention relates to an improved rail joint and seeks, among other objects, to provide a chair wherein the usual clicking sound produced by the passage of the wheels of rolling stock over the joint will be eliminated.

The invention seeks, as a further object, to provide a rigid and secure joint which will overcome the premature battering or wear of the rail ends such as would necessitate the replacement of the rails before the intermediate portions of the rails have become worn.

A further object of the invention is to provide a joint wherein any looseness or play which may develop will be automatically taken up.

And the invention seeks, as a still further object, to provide a joint which will not only be applicable for use on surface railways but will also be equally applicable for use on elevated railways.

Other objects of the invention not specifically mentioned in the foregoing will appear during the course of the following description.

In the accompanying drawings:

Figure 1 is a plan view of my improved rail joint.

Figure 2 is a side elevation of the joint.

Figure 3 is a horizontal sectional view through the joint.

Figure 4 is a transverse sectional view on the line 4-4 of Figure 3, looking in the direction indicated by the arrows.

Figure 5 is a transverse sectional view showing a slight modification of the invention wherein the rail ends are insulated with respect to each other.

Figure 6 is a plan view showing a further modification embodying an insulated joint wherein bolts are employed in connection with the joint.

Figure 7 is a transverse sectional view through the joint of Figure 6.

Figure 8 is a detail sectional view on the line 8-8 of Figure 7.

Figure 9 is a fragmentary elevation showing a modified form of clamping plate.

Referring now more particularly to Figures 1 to 4 inclusive of the drawings, I employ a flat base 10 to receive the rail ends, conventionally illustrated at 11, and formed on the base adjacent one side edge thereof is a side plate 12 while at its opposite side edge the base is provided with an upstand-

ing flange 13. As shown in Figure 4, the side plate 12 is shaped to snugly overlie the base flanges of the rail ends and is formed at its upper edge to fit beneath the treads of the rail ends abutting there-against. Formed on the side plate 12 are pairs of spaced lugs 14, and tightly engaged in suitable openings in the rail webs are studs 15 having squared heads 16 which are received between the lugs of said pairs of lugs to coact therewith for limiting the rail ends against endwise movement relative to the chair structure.

Resting against the base flanges of the rail ends opposite the side plate 12 is a clamping plate 17 which is formed at its lower edge with a laterally projecting somewhat V-shaped lug 18, and formed on said plate at its inner side is a longitudinally extending rib 19 which, as seen in Figure 4, snugly fits beneath the treads of the rail ends. Above the rib 19, the clamping plate is reduced in thickness to provide clearance between the upper margin of said plate and said treads, while, as shown in Figure 2, the plate is provided with a curved upper edge 20, the ends of which lie below the upper surfaces of the treads of the rail ends while the crown of said edge is disposed slightly above said surface. Accordingly, as the wheels of rolling stock travel along the rails, said wheels will, upon reaching the rail ends, climb the curved upper edge of the clamping plate so that the usual clicking sound which would otherwise occur at the meeting ends of the rails will be minimized.

Slidable upon the base 10 to coact with the lug 18 of the clamping plate 17 is an elongated clamping block 21 which, as shown in Figure 3, is provided at its inner edge with a V-shaped cavity 22 to accommodate said lug, while the outer edge of the block is cut away to provide an inclined serrated face 23 overhanging which is a flange 24. Formed in the block near the ends thereof are slots 25 which freely accommodate bolts 26 slidably connecting the block with the base 10, and confined beneath the flange 24 of the block to abut the flange 13 of the base 10 is a wedge 27, the inner inclined edge of which is serrated to coact with the serrated inclined surface 23 of the block. Thus, as will be perceived, by driving the wedge forwardly, the rail ends may be tightly clamped between the plates 12

and 17 of the chair. Furthermore, it is to be particularly noted that should any looseness develop between the rail ends and said plates, the impact of the car wheels in either direction against the upper edge 20 of the clamping plate 17 will shift the clamping plate endwise so that the lug 18 of the clamping plate will be caused to ride up the corresponding wall of the cavity 22 of the block 21 for taking up such looseness and maintaining the joint tight and rigid at all times.

In Figure 5 of the drawings I have illustrated a slight modification of the invention embodying an insulated joint. Embracing the side margins of the base flanges of the rail ends 11 are strips 28 of suitable insulating material and fitting over the heads 16 of the studs 15 are insulating caps 29. Disposed between the upper edge of the side plate 12 and the treads of the rail ends is an insulating strip 30, and lying between said treads and the clamping plate 17 is an insulating strip 31. Thus, the parts are electrically insulated effectually with respect to the rail ends.

In Figures 6, 7 and 8 of the drawings, I have illustrated a further modification of the invention wherein bolts are employed in connection with the joint. The insulating strips 28, 30 and 31 are utilized, as in the prior embodiment of the invention. However, the lugs 14 and studs 15, as illustrated and described in connection with the preferred construction, are eliminated, and in lieu thereof bolts 32 are employed, these bolts extending freely through the usual openings in the rail ends. Formed in the side plate 17 to accommodate said bolts are elongated openings in which are fitted insulating bushings 33 having end flanges 34 to overlie the outer side face of said plate, and fitting in said bushings are metallic liners 35 which freely receive the bolts there-through so that the plate may shift endwise relative to said bolts. The plate 12, however, is provided with circular openings in which are fitted annular insulating bushings 36, and, as will be observed, the bolts 32 are snugly received through said bushings so that the bolts cannot move with the plate 17. As best seen in Figure 7, the bolts carry washers 37, and screwed on the bolts are nuts

38 which may be adjusted for tightly binding the rail ends between the plates 12 and 17. At the same time, the bolts are electrically insulated with respect to said plates while the plates are electrically insulated with respect to the rail ends. Disposed between the rail ends is an insulating spacer 39 which is shaped to conform to the shape of the rail ends and is adapted to prevent possible engagement of the rail ends.

In Figure 9 of the drawings, I have illustrated a modified form of clamping plate which is intended for use in any instance where bolts are employed in connection with the joint, as in Figures 6, 7 and 8 of the drawings, but wherein insulation is not used. The clamping plate, indicated at 17', is provided with a suitable number of elongated openings 40 to receive the joint bolts like the bolts 32, so that the plate may shift endwise relative to said bolts. Otherwise, the clamping plate of Figure 9 is identical with the clamping plate of the preferred embodiment of the invention.

Having thus described the invention, what I claim is:

1. A rail joint including a base to receive meeting rail ends and having a fixed side plate to overlie the rail ends at corresponding sides thereof, a clamping plate to overlie the rail ends at their opposite corresponding sides and provided with a substantially V-shaped lug, a clamping block slidably connected with the base and having a substantially V-shaped cavity to accommodate said lug, and a wedge to coact with the block for advancing the block and clamping the rail ends between said plates.

2. A rail joint including a base to receive meeting rail ends and having a fixed side plate to overlie the rail ends at corresponding sides thereof, a clamping plate to overlie the rail ends at their opposite corresponding sides, and means including a clamping block for binding the rail ends between said plates, the clamping plate being shiftable relative to the block and the block and said clamping plate being provided with coacting means for advancing the clamping plate when shifted.

In testimony whereof I affix my signature.

CHARLES TROUP. [L. s.]