Aug. 16, 1938. R. W. MacBRIDE 2,127,447

RAIL CHAIR OR BASE PLATE

Filed Feb. 2, 1937

Fig. 1.

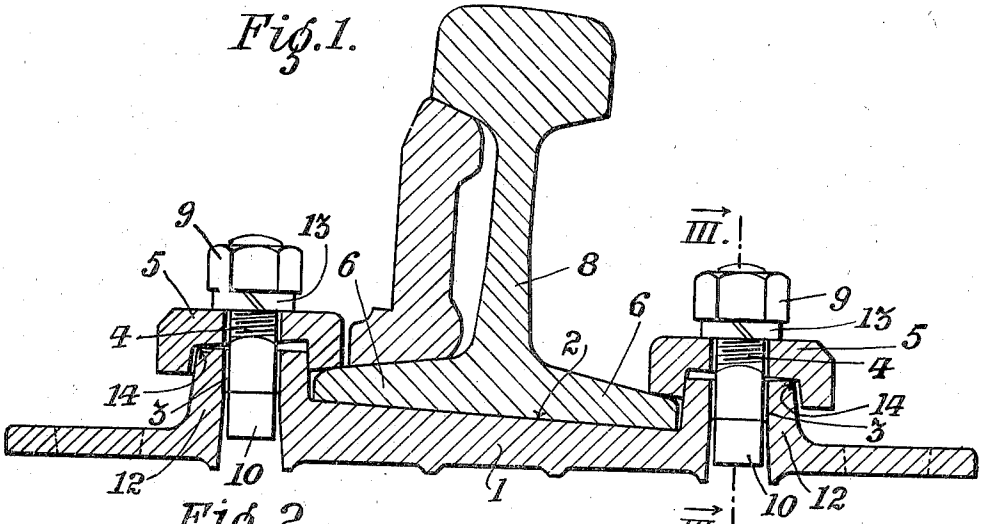
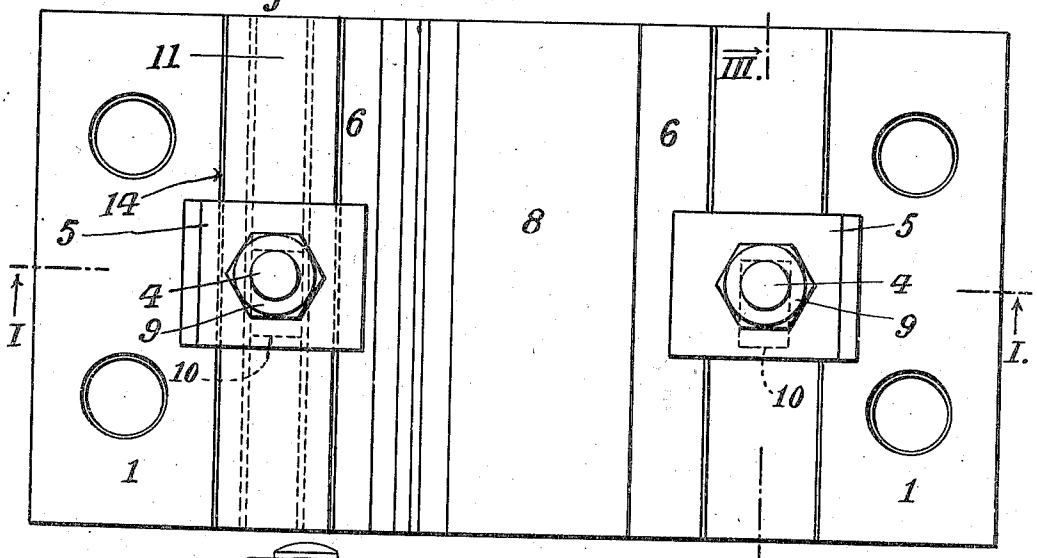


Fig. 2.



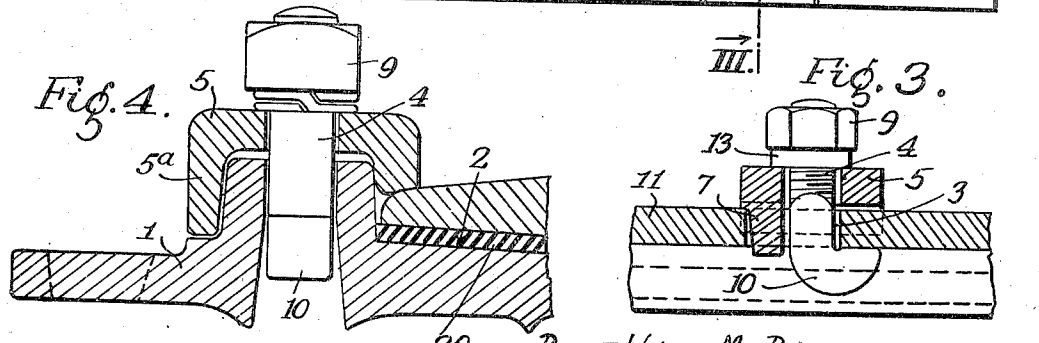


Fig. 4.

Fig. 3.

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RAIL CHAIR OR BASE PLATE

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In Great Britain February 8, 1936

4 Claims. (Cl. 238—338)

This invention relates to chairing means, for example rail-chairs (or base-plates) for railway rails.

The chief object of the present invention is to provide railway-rail chairing means which are eminently suited for rapid production by mass production methods with utilization of the minimum of material, thereby enabling production at economical prices, the chairing means in addition showing in use increased effectiveness and durability and being adapted for rapid assembly and disassembly.

One example of my invention will now be described with reference to the accompanying drawing whereon.

Fig. 1 is a vertical section of a rail-chair in accordance with my invention, the section being taken on the line I—I of Fig. 2.

Fig. 2 is a plan view of the rail-chair illustrated in Fig. 1.

Fig. 3 is a fragmentary sectional view on the line III—III of Fig. 1 or Fig. 2.

Fig. 4 is a sectional fragmentary view of a modification.

The rail-chair illustrated comprises a base plate 1 having a rail-seat 2 thereon. At each side of said rail-seat a bolt receiving aperture 3 is provided and a headed bolt 4 is entered into each aperture and has its shank projecting upwardly therefrom. On the projecting bolt-shank rail-engaging clips 5 are mounted, these clips being adapted to engage on the side base flanges 6 of the rail 8 seated on the rail-chair. From the underside of each clip 5 there projects a plug 7 which as shown in the drawing is formed integral with its clip being constituted by the metal displaced in forming the bolt-aperture in the clip. The plugs are entered into the apertures 3 alongside the bolts and preventing upward passage of the bolts out the apertures. Clamping pressure is applied to the clips by the nuts 9 screwed on the shanks of the bolts 4.

The bolt receiving apertures 3 consist of rectangular slots elongated in the longitudinal direction of the chair and the headed bolts 4 are L-shaped, the limbs 10 constituting the bolt heads. The width of the limbs 10, as shown in Fig. 1 corresponds with the width of slots 4 but the length of these limbs is slightly greater than that of said slots, being however not of such length to prevent the bolts being passed head first into the apertures, this being possible by tilting the bolts while they are being inserted. To facilitate insertion, the bolts heads have a semi-cylinder shape, as shown in Fig. 3.

The bolt receiving apertures are located on the top parts or bridges 11 of inverted-channel-section joggles 12 formed on base plate 1, said joggle extending longitudinally of the base plate and defining the width of the rail-seat 2 which corresponds with the width of the rail-base flange, thus preventing lateral movement of the rail. The rail engaging clips 5 are also of channel section, being adapted to nest over the joggles 12.

The operation of assembling the chair parts is as follows:—

The rail 8 being seated on the seat 2, each bolt 4 is tilted and inserted head first through its aperture 3. It is then displaced to the right (in accordance with Fig. 3) so that the limb 10, projecting beyond the edge of the aperture, engages the underside of the top part 11 of the joggle. While the bolt is thus displaced, a clip 5 is mounted on to the projecting bolt shank and in so doing the plug 7 projecting from the underside of the clip enters the aperture 3 alongside the bolt and maintains it in the displaced position. A spring washer 13 and nut 9 are then applied and on application of clamping pressure in screwing up the nut the clip 6 fulcrums about the edge 14 of the corresponding joggle.

If it is desired to remove a bolt it is only necessary to loosen the nut thereon and by raising the clip 6 withdraw its lug 7 from the aperture 3 and then tilt the bolt and withdraw the head through said aperture. If the upper part of the bolt shank is broken it is necessary only to lift up the clip to enable the bolt head to be withdrawn. A new similar bolt can then be inserted in place.

The term "chairing means" used hereafter in the claims is intended to cover not only rail-chair units detachably connected to sleepers but also chairing means formed or permanently provided on metal sleepers.

A cushioning means such as a balata strip, could be interposed between the rail and the seat as shown in the modification according to Fig. 4, where balata rail-cushioning means is denoted by 20.

The expression "longitudinal" or "longitudinally" used in the claims is intended to mean the direction in which the rail extends, or would extend when in position.

I claim:—

1. A railway-rail chair which comprises a base part; a rail-engaging clip formed with a bolt aperture for securing the rail on the base part; a bolt substantially of L-shape and uniform thickness for connecting the clip and the base part; a longitudinally extending inverted channel

formation on the base part, the upstanding walls of which are spaced apart by substantially the thickness of the L-shaped bolt, and the top part of which is formed with a longitudinally elongated aperture wholly enclosed by the material of the channel formation and through which the head of said bolt may pass into the space between said upstanding walls; and a plug projecting from said clip alongside the bolt aperture therein, being adapted to enter the bolt aperture in the channel formation and in conjunction with the bolt substantially fill said latter bolt aperture.

2. A railway-rail chair comprising the combination claimed in claim 1, wherein the plug on the clip is formed integrally on the clip by the material displaced from the bolt aperture with which the clip is formed.

3. In a railway-rail chair of the kind having a base part for supporting the rail, clips to engage the rail located one at each side thereof, and a single bolt securing each clip to the base part; longitudinal joggles of inverted channel formation located one at each side of the base part and defining between them a seat for the rail, the clips being of similar channel formation and adapted each to nest over the corresponding joggle and engage the rail at one side of the joggle and fulcrum on the base part at the other side thereof, and the securing bolts being substantially of L-shape and of uniform thickness, each joggle being formed with an enclosed aperture for the bolt of the corresponding clip through which aperture the bolt can be completely passed and the side walls of the joggle being spaced by substantially the thickness of the bolt, and a plug being provided on each clip adapted in conjunction with the shank of the L-shaped bolt substantially completely to fill the bolt aperture.

4. In a railway-rail chair which comprises a base part for supporting the rail, inverted channel formations on the base part located one at each side of the rail and defining between them a seat therefor, and clips to engage the rail located one at each side thereof; a securing bolt substantially of L-shape and uniform thickness for each clip, the top part of each channel formation being formed with an enclosed and longitudinally elongated aperture for the securing bolt of the corresponding clip through which aperture the bolt can be completely passed, and the sides of each channel formation being spaced by substantially the thickness of the securing bolt so that the bolt is registered against rotation and lateral movement, and a plug being provided on each clip adapted to engage with the corresponding channel formation and prevent longitudinal displacement of the bolt in the aperture.

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