

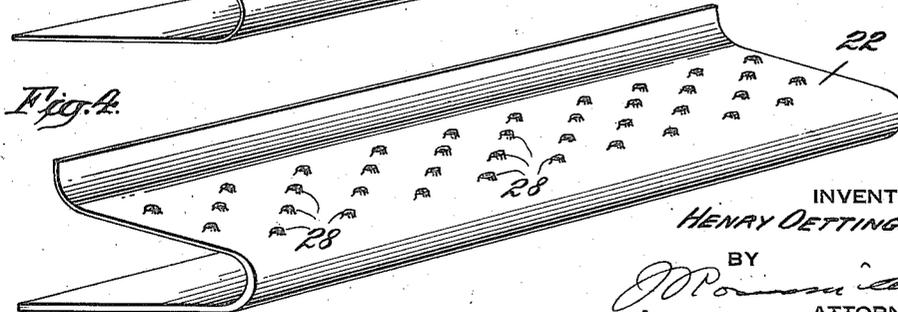
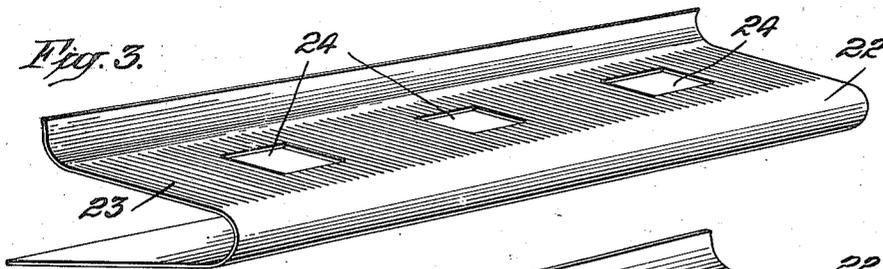
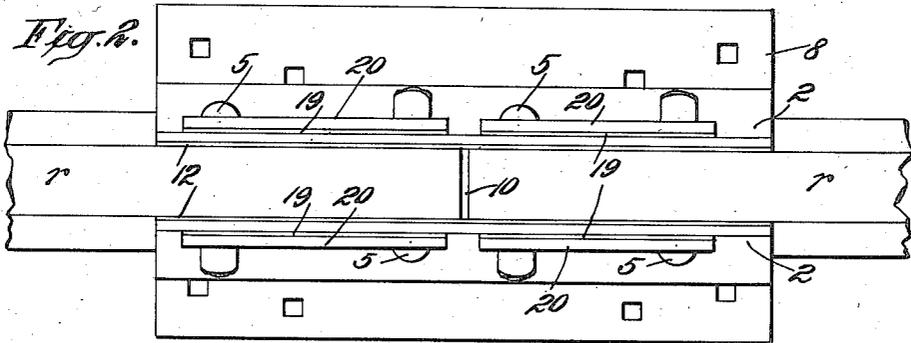
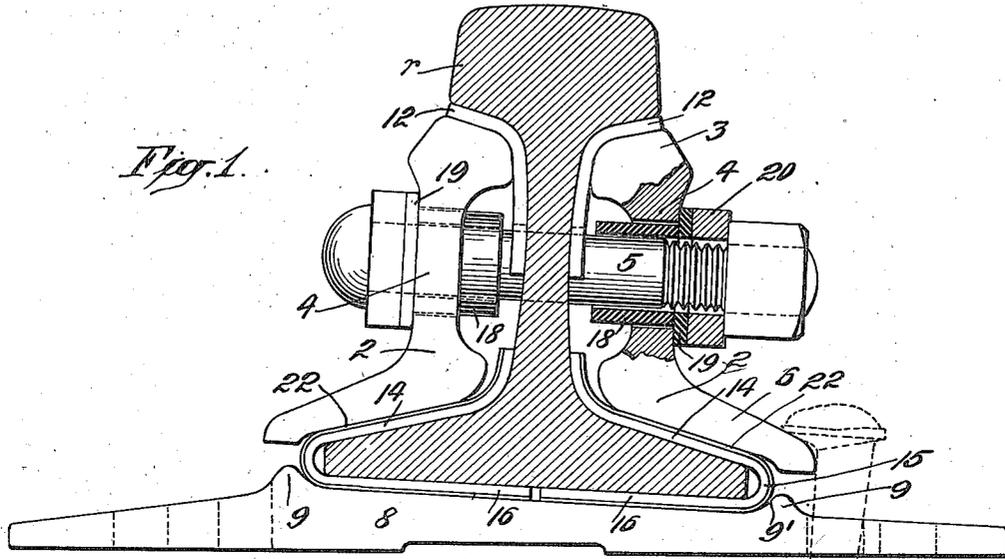
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INSULATED RAIL JOINT

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INSULATED RAIL JOINT

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3 Claims. (Cl. 238—160)

This invention relates to rail joints of the insulated type and has for its object to produce an improved structure designed to afford proper insulation for the track circuit and to possess advantageous features contributing materially to the strength and durability of the joint assembly.

Important features of my improved structure include the use, in conjunction with the usual insulating fibre, of an improved form of metal wear plate presenting a smooth surface in engagement with the fibre to reduce wear thereof. The improved wear plates are desirably interposed between the fibre and the angle bars and are likewise extended downwardly to be interposed between the base insulating fibre and the joint plate. In further accord with my present improvements the joint or base plate is of a shouldered type having a special form of shoulder conforming to the curvature of the fibre and wear plate avoiding, to a large degree, the customary shoulder wear upon the fibre insulation. The improved wear plates are preferably made of non-corrosive wear resisting alloy and are of an improved form to have non-slip engagement with the splice bars so as to prevent relative movement between the bars and the wear plates.

The aforementioned and other important features and advantages of my improved construction will be more fully understood by reference to the accompanying drawing wherein the corresponding parts in the several views are indicated by like reference characters.

In the drawing:

Fig. 1 is a view in end elevation with portions in section showing a joint assembly embodying the features of my invention.

Fig. 2 is a plan view thereof.

Fig. 3 is a perspective view showing the improved wear plate and

Fig. 4 is a similar view showing a modified form thereof.

In the approved embodiment of my invention as here shown *r* indicates the abutting rails to be joined, 2—2 the oppositely positioned angle type joint bars having the head portions 3—3 formed for fishing engagement with the underside of the rail heads, the web portions 4 apertured for the securing bolts 5, and the base flange portions 6. At 8 is shown the customarily employed joint plate providing the bearing for the rail base flanges and having oppositely positioned longitudinally extending shoulders 9—9 on its upper surface.

To effect the insulation of the joint, in addition

to the usual end post fibre 10 conforming to the sectional contour of the rail and interposed between the abutting rail ends, the joint assembly is provided with the head insulating pieces 12 of fibre interposed between the heads of the bars and the heads of the rails and extending for the full length of the joint and base insulating fibre pieces 14 of angular formation to overlie the rail base flange for the length of the joint to insulate it from the joint bar flange and formed integrally with the connecting bend portions 15 and inwardly extending base insulating portions 16 arranged to insulate the base of the rail from the joint plate 8. The connecting bolts, as shown, are likewise insulated by means of the fibre 15 bushings 18 and the insulating washer plates 19, the latter being interposed between protective washer plates 20 and the joint bars as shown.

In accordance with my invention, there is associated with the base insulating fibres 14 a metal protective member or wear plate 22 of substantially the same length and contour as the fibre member 14 and positioned to overlie one surface thereof, as shown, being interposed between the member 14 and the bar flange under side, protectively overlying the bend of the fibre and underlying the base portion thereof. This protective member 22 is desirably made of a special non-corrosive chromium alloy steel having good wearing properties and offering a particularly smooth surface in engagement with the fibre thereby materially reducing the wear thereof.

The joint bar engaging surface of the protective wear plate is further provided with a roughening or deformations to have a non-slip engagement with the bar. The deformations may desirably be produced by rolling ridges 23 so as to produce a corrugated surface effect having the ridges extending transversely of the plate, as best shown in Fig. 3. The plate is also provided with openings 24 in the bar opposed surface so as to offer a lessened interference to the bending or flexing of the splice bars under the weight of the rolling stock.

A further feature of my improved construction consists in forming the joint plate with the oppositely positioned shoulders 9—9 with their inner surfaces 9' of curved contour conforming to the curvature of the return bend of the wear plate and insulation thereby to avoid the excessive wear to which the insulation is commonly subjected at this point.

While I have shown an approved embodiment of the features of my invention, it will be understood that varied modifications may be made

therein without departing from the scope of the invention as defined in the appended claims. As illustrative thereof, there is shown in Fig. 4 a suitable modification of the protective wear plate wherein it is thickened in its section at the region of the bend and at its base portion to increase the strength and durability thereof. In addition, the roughening of the bar engaging surface is provided by punching through the metal at 28 with an upturning of the metal at the margins of the apertures formed.

Having described my invention, I claim:

1. An insulated joint having in combination with the rail ends, joint bars and joint plate, insulating members positioned to insulate the rails from the bars and plate including angular base insulating members having an inturned base extension and metal wear plates formed to overlie the base insulating members in engagement with the bars and joint plate, said wear plates having a roughened non-slip surface positioned to engage the joint bar base flange portion and having smooth surfaces only engaging the insulating members.

2. An insulated joint having in combination with the rail ends, joint bars and joint plate, insulating members positioned to insulate the rails from the bars and plate including angular base insulating members having an inturned base extension and metal wear plates formed to overlie the base insulating members in engagement with the bars and joint plate and having the bar engaging portion roughened by transverse ribs formed on its upper surface and its insulating member engaging portion smooth.

3. An insulated joint having in combination with the rail ends, joint bars and joint plate, insulating members positioned to insulate the rails from the bars and plate including angular base insulating members having an inturned base extension and metal wear plates of substantially similar form positioned to overlie the base insulating members and having their return bend and base extension portions thickened in cross section, substantially as described.

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