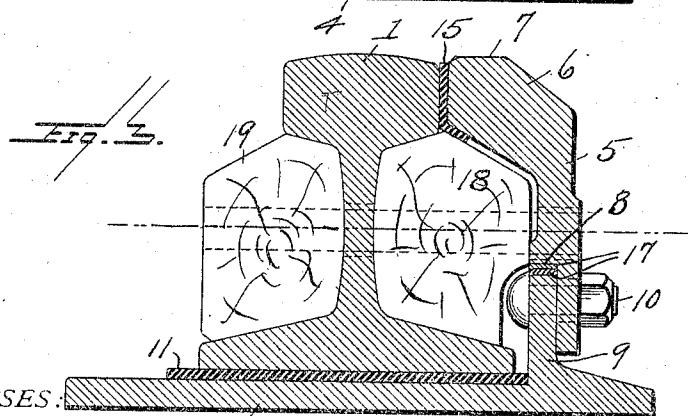
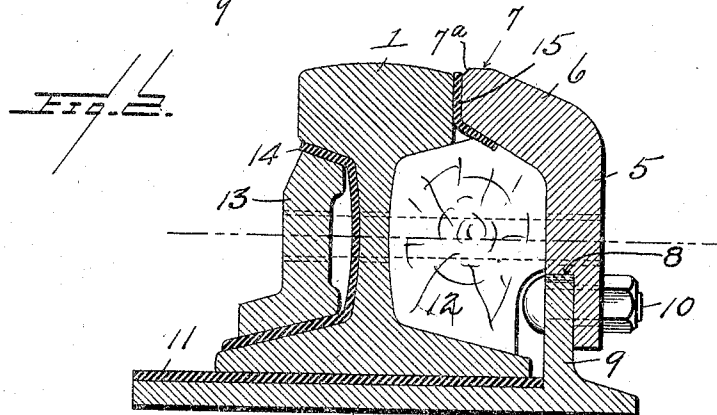
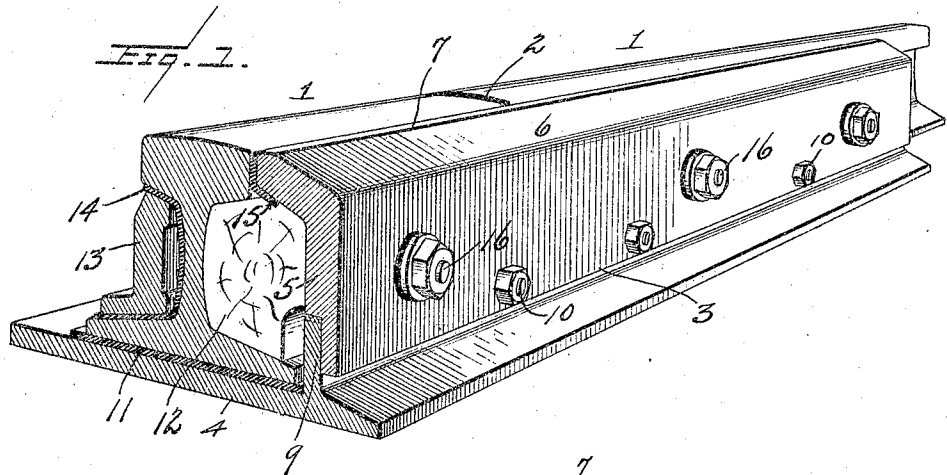


B. WOLHAUPTER.
INSULATED RAIL JOINT.
APPLICATION FILED JUNE 18, 1907.

985,092.

Patented Feb. 21, 1911.

4 SHEETS-SHEET 1.



WITNESSES:

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INVENTOR

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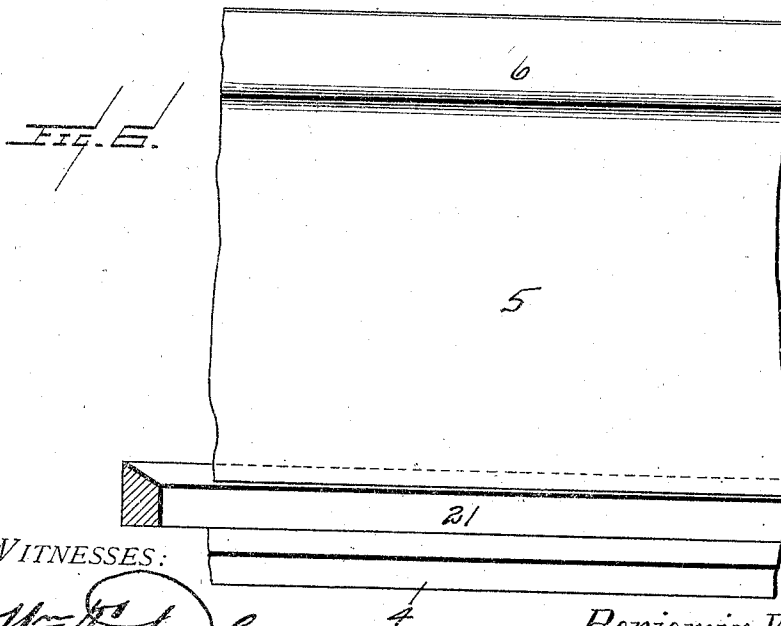
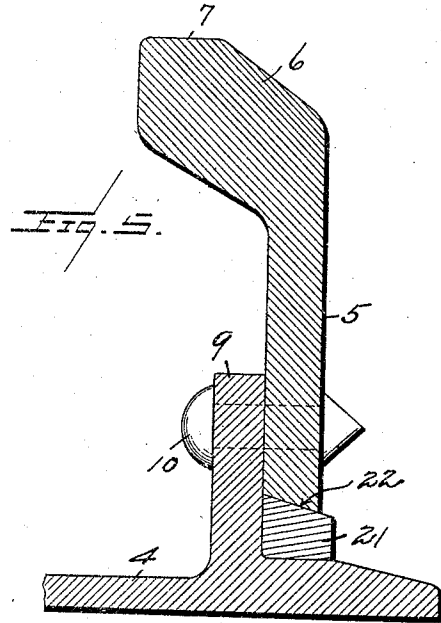
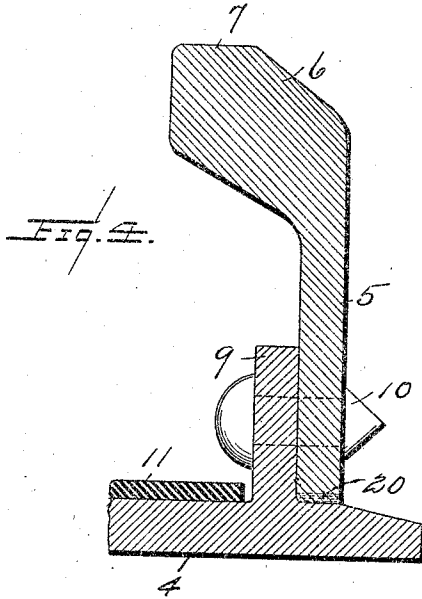
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4 SHEETS—SHEET 2.



WITNESSES:

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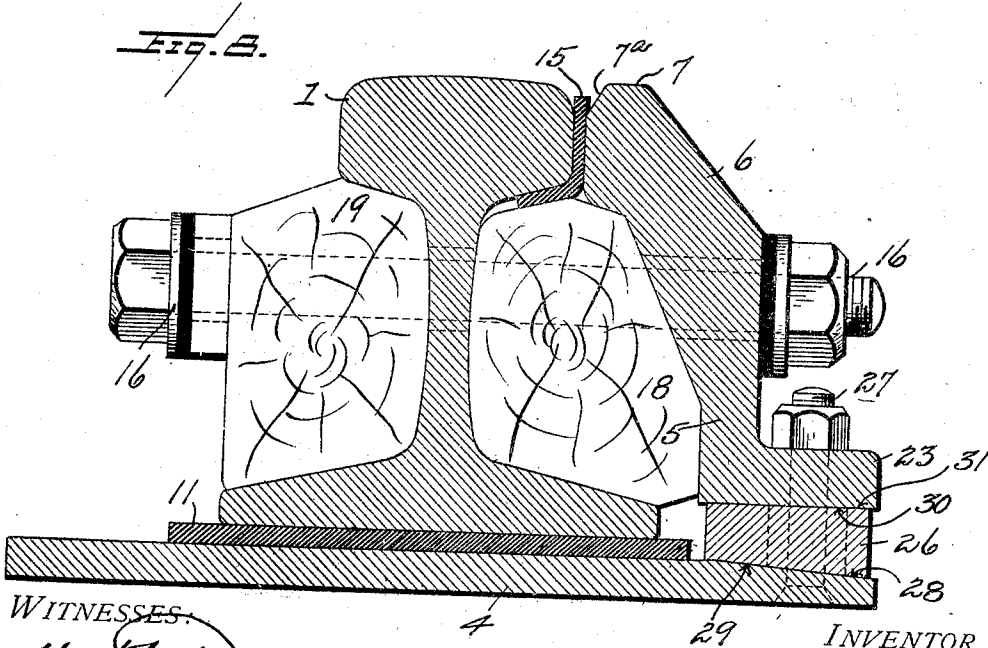
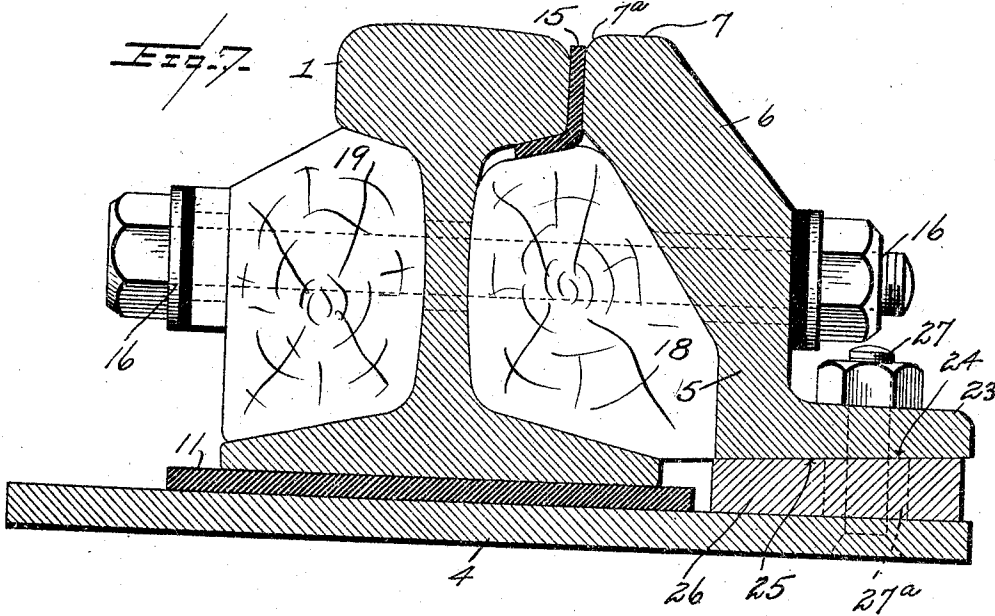
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985,092.

Patented Feb. 21, 1911.

4 SHEETS—SHEET 3.



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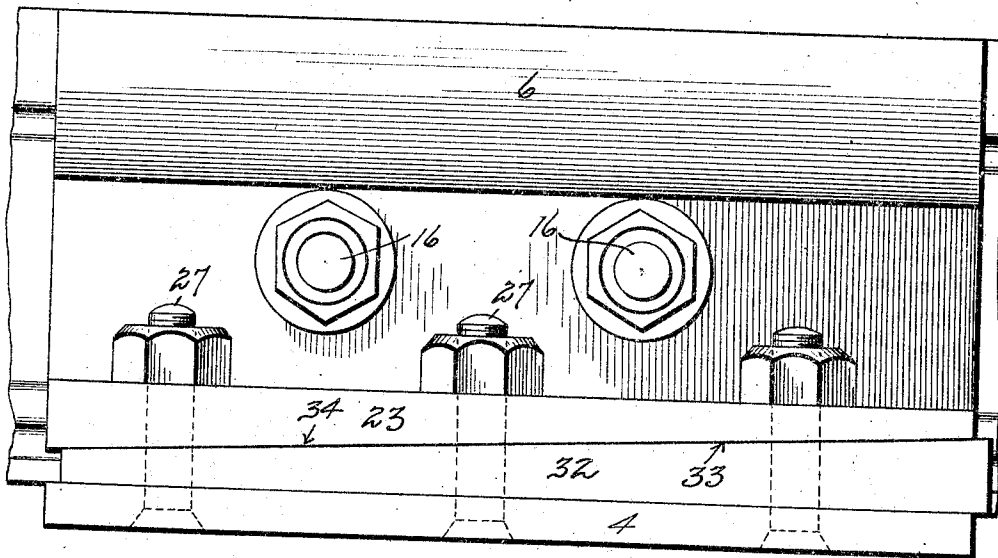
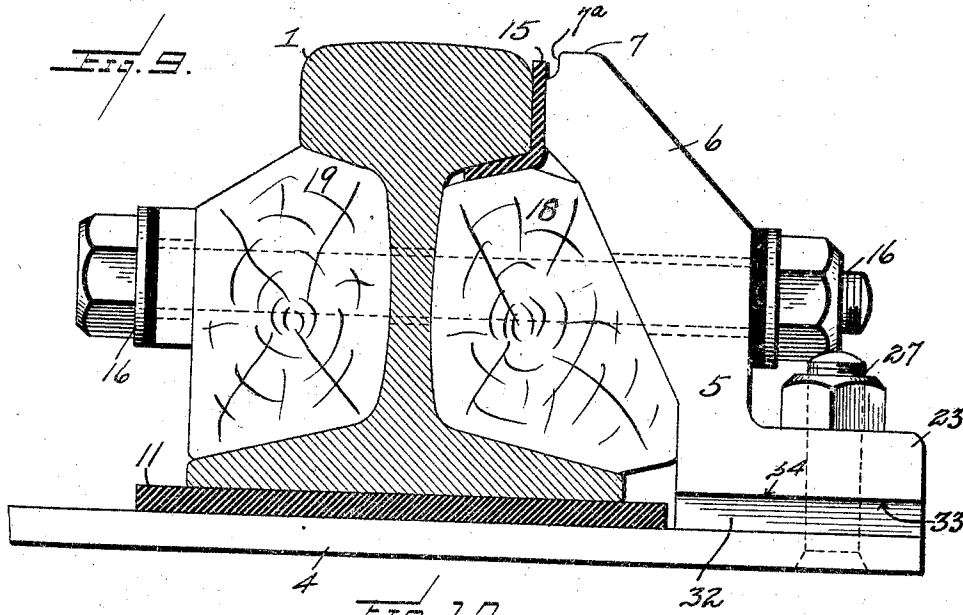
Attorney

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985,092.

Patented Feb. 21, 1911.

4 SHEETS—SHEET 4.



WITNESSES:

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Attorney

UNITED STATES PATENT OFFICE.

BENJAMIN WOLHAUPTER, OF NEW YORK, N. Y., ASSIGNOR TO THE RAIL JOINT COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

INSULATED RAIL-JOINT.

985,092.

Specification of Letters Patent.

Patented Feb. 21, 1911.

Application filed June 18, 1907. Serial No. 379,548.

To all whom it may concern:

Be it known that I, BENJAMIN WOLHAUPTER, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Insulated Rail-Joints, of which the following is a specification.

This invention relates to the subject of insulated rail joints, and has special reference to certain practical embodiments of a joint of this character which embodies in its construction a rail supporting base and base insulation, and an auxiliary side rail receiving the treads of the car wheels when passing the joint.

To this end the invention contemplates an improved construction of insulated rail joint, which provides a broad and firm base support for the service rails, and a thorough and complete base insulation for the latter, which base insulation is entirely relieved from the load or weight of the passing trains.

A distinctive object of the invention is the provision of practical and positive means for determining and fixing the relative height of the service rails and the auxiliary side rail, whereby the height of said auxiliary rail may be adjusted to the level of the service rails to compensate for the varying heights of traffic worn rail ends, in the application of the improved rail joint to old rails, or to new rails of different heights. In this aspect the present case is a divisional application of a companion application filed December 3, 1906, Serial No. 346,151.

The essential features of the invention above indicated are necessarily susceptible to a variety of modifications without departing from the scope of the invention, but a few of the preferred embodiments thereof are shown in the accompanying drawings, in which:

Figure 1 is a sectional perspective view of a rail joint constructed in accordance with the present invention, and showing one expedient for effecting the relative vertical adjustment of the auxiliary side rail. Fig. 2 is a cross sectional view of the design of joint shown in Fig. 1. Fig. 3 is a view similar to Fig. 2 showing a modification of the joint. Figs. 4 and 5 are detail sectional views of a portion of a two-part joint shoe or chair, respectively illustrating further modifications in the means which may be resorted to for

securing the relative height adjustment for the side rail. Fig. 6 is a fragmentary elevation of the modification shown in Fig. 5. Figs. 7, 8 and 9 are sectional views similar to Fig. 2 showing other practical modifications of the joint. Fig. 10 is an elevation of the joint shown in Fig. 9.

Like references designate corresponding parts in the several figures of the drawings.

Referring to the exemplification of the invention shown in Figs. 1 and 2 of the drawings, the rail joint illustrated therein includes in its construction the service rails 1—1, between which is interposed the usual insulating end post 2, and a joint shoe or chair, designated in its entirety by the numeral 3. This joint shoe or chair essentially consists of a metallic base plate 4, and an upright auxiliary side rail 5 supported and carried by the base plate at one side edge thereof and located wholly at one side of the service rail ends. The base plate 4 is preferably of greater width than the rail bases so as to afford a wide and effective base support for the rails, and the auxiliary side rail 5 is preferably formed at its upper edge with an inwardly deflected carrying head 6 having a running surface 7 disposed in such proximity and parallelism to the service rails as to receive and carry the treads of the car wheels. This provides a construction wherein the load is borne by the auxiliary side rail and the base 4. Furthermore, it will be observed that the inward deflection of the head 6 of the auxiliary side rail produces on the outer side of said head what may be termed an inclined clearance face which affords a complete clearance for worn car wheels, and it may also be found desirable to provide the head 6 of the side rail, along the inner edge of said head next to the service rails, with a flow-accommodating top edge portion 7^a. This top edge portion 7^a may be formed by beveling, recessing, or otherwise, as suggested in the several figures of the drawings, but in all cases is intended to provide a space, next to the top insulation between the side and service rail heads, which accommodates and receives the flow of the metal from the side rail head, all of which is fully explained in the companion application aforesaid.

As indicated, a distinctive feature of the invention resides in the provision of means for adjusting the relative height of the side

rail and the service rails, that is, to provide means for bringing the side rail to the level of the service rails so that the joints, when constructed, can be made up so as to compensate for the varying heights of traffic worn rail ends: This adjustment may be effected by various expedients, but in the construction illustrated in Figs. 1 and 2, the desired adjustment is accomplished through the individual adjustment of the auxiliary side rail itself. As shown in said figures of the drawings, the auxiliary side rail is made separate from the base plate 4, and is provided along its lower inner edge with a rabbeted seat 8 engaging over an upright supporting rib 9 rigid with and arising from, the base plate at one edge portion thereof and constituting the lower fixed supporting member of the side rail. In this construction, the rail parts 5 and 9 are designed to be rigidly united by fastening bolts 10 after the proper height for the auxiliary side rail has been secured by suitably cutting off the top edge of said rib 9, as indicated by the dotted lines in Figs. 1 and 2 of the drawings. In the form of the invention shown in Figs. 1 and 2 of the drawings, it is simply necessary to employ a plain base insulating sheet 11 interposed between the base plate 4 and the bottom of the rail base, and the joint may be made up with a wooden filler block 12 interposed between the side rail and the service rails, and with an ordinary angle bar or fish plate 13 arranged at the side of the service rails opposite the auxiliary rail together with suitable insulation 14 between said bar or plate and the adjacent faces of the service rails. To complete the insulation of the form of joint just described, an insulating strip 15 is placed between the service rail ends and the carrying head 6 of the side rail, and it will, of course, be understood that the various joint parts are drawn together and tightened through the medium of the usual joint bolts 16 provided with any of the conventional or approved bolt insulation.

In Fig. 3 of the drawings is illustrated a modification of the invention showing the same general character of joint as illustrated in Figs. 1 and 2, and involving the two-part shoe construction. However, in the construction shown in Fig. 3 there is suggested the expedient of altering the height of the supporting rib 9 by the employment of adjusting shims or filler pieces 17 interposed between the top of the rib and the shoulder of the seat 8. Also, the joint referred to may be made up by employing wooden filler blocks 18 and 19, respectively, upon opposite sides of the service rails. In other respects, the modification described is similar to the joint shown in Figs. 1 and 2 and hence similar references will apply to similar parts. Again, as shown in Fig. 4 of the drawings,

the auxiliary rail 5 is illustrated as being rolled plain with the seat 8, and having its lower end carried down so as to rest directly at the point 20 upon the top of the base plate. In this design, the bottom edge of the rail 5 is designed to be cut or altered, as indicated by the dotted lines, to provide for the height adjustment before the auxiliary rail is made rigid by the fastening rivets or bolts 10.

A further modification in this general character of adjustment shown in Figs. 1 to 4, inclusive, is illustrated in Figs. 5 and 6, which are, in effect, a modification of the construction shown in Fig. 4. The said modification involves the thought of introducing, for adjustment purposes, a wedge block or bar 21 between the base plate 4 and the under-cut bottom edge 22 of the auxiliary rail 5, both said adjustment block 21 and the rail 5 being arranged at one side of the supporting rib 9.

Additional modifications which may be resorted to in the employment of a two-part shoe having a non-integral or separate side rail, are suggested in Figs. 7, 8, 9 and 10 of the drawings. In such particulars as these modifications are the same as the forms of joints already described, the same reference characters will apply, but referring particularly to Fig. 7 of the drawings, it will be seen that the modification shown therein involves a plain base plate 4 having a flat upper surface throughout, while the separate side rail 5, arranged at the inner edge portion of the base plate, is formed with an out-turned foot flange 23 provided on its under side with a bottom inclined bearing face 24 with which contacts the corresponding beveled or inclined adjusting face 25 of a wedge bar 26 having a flat bottom face resting flat upon the base plate 4. Adjustment bolts or rivets 27 are passed through the base plate 4, the foot flange 23 of the side rail, and through the adjustment slots 27^a formed in the wedge bar 26. A direct reversal of this construction is shown in Fig. 8 of the drawings wherein it is illustrated how the wedge bar 26 may be provided with a beveled or inclined bottom adjusting face 28 engaging a correspondingly beveled bearing face 29 formed on the upper side of the base plate 4 contiguous to one edge thereof. In this modification of the drawings, (Fig. 8), the wedge bar 26 is provided with a horizontal flat top face 30 upon which is clamped the horizontal flat bottom face 31 on the foot flange 23 of the side rail member.

In the construction shown in Figs. 7 and 8 the beveling of the wedge bars is transversely thereof, and a modification of that is suggested in Figs. 9 and 10, wherein there is illustrated an adjusting wedge bar 32 whose wedging or inclined adjusting face 33 runs longitudinally of the bar and engages a cor-

responding longitudinally inclined bearing face 34 formed on the bottom face of the foot flange 23 of the auxiliary side rail.

It will be understood that in any and all modifications of the joint described herein, the usual and necessary bolts, washers, and bolt insulation will be utilized in the necessary places to provide for securing the joint to the track rails, and at the same time maintain an effective insulation thereof.

I claim:

1. In an insulated rail joint, the combination with the service rails, of a joint shoe comprising a metallic base plate and a separate upstanding rigid auxiliary side rail, one of which members of the shoe is provided with an inclined bearing face, a wedge having direct metallic engagement with the metallic base plate and the separate side rail and provided with a beveled face engaging said inclined bearing face, fastening means for securing the side rail and the wedge, and insulating means.

2. In an insulated rail joint, the combination with the service rails, of a joint shoe comprising a metallic base plate and a separate side rail provided at its lower edge with

an outstanding foot flange having an inclined bearing face, an adjustment wedge having direct metallic engagement with said bearing face of the foot flange and with the base plate, fastening bolts passing through the base plate, the wedge, and the said foot flange, and insulating means.

3. In an insulated rail joint, the combination with the service rails, of a joint shoe comprising a metallic base plate, and a separate side rail provided at its lower edge with an outstanding foot flange which is longitudinally tapered to form an inclined bearing face, an adjustment wedge interposed between said foot flange and the base plate, and also having a longitudinally inclined bearing face opposing that of the foot flange, fastening bolts passing through the base plate, the wedge, and the said foot flange, and insulating means.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

BENJAMIN WOLHAUPTER.

Witnesses:

G. H. LARSON,

ALMA J. LOVETT.