

Patented Jan. 14, 1913.

2 SHEETS—SHEET 1.

1,050,262.

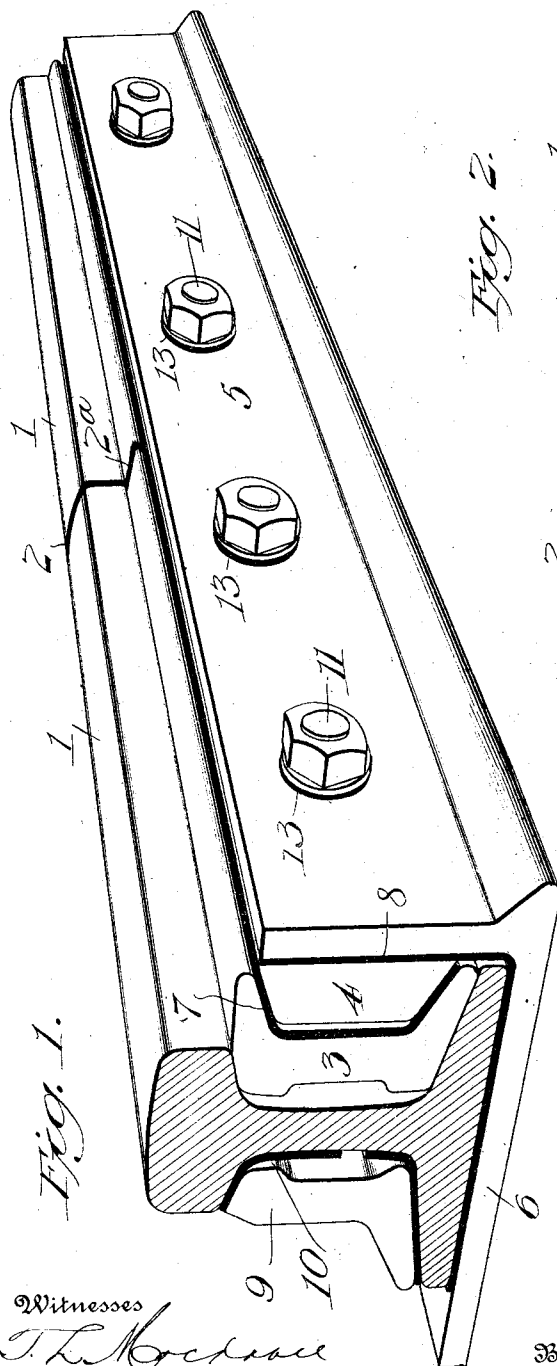


Fig. 1.

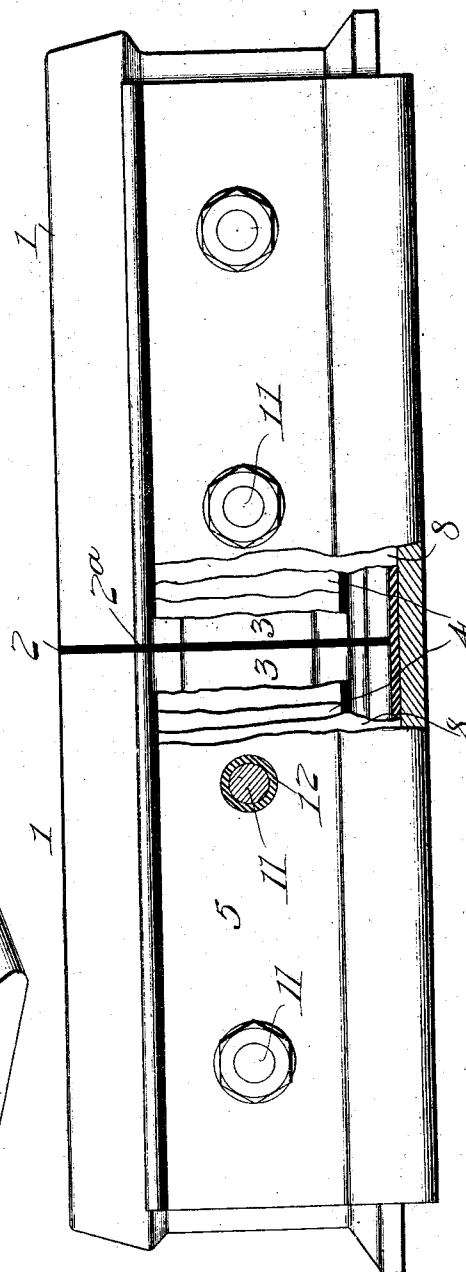


Fig. 2.

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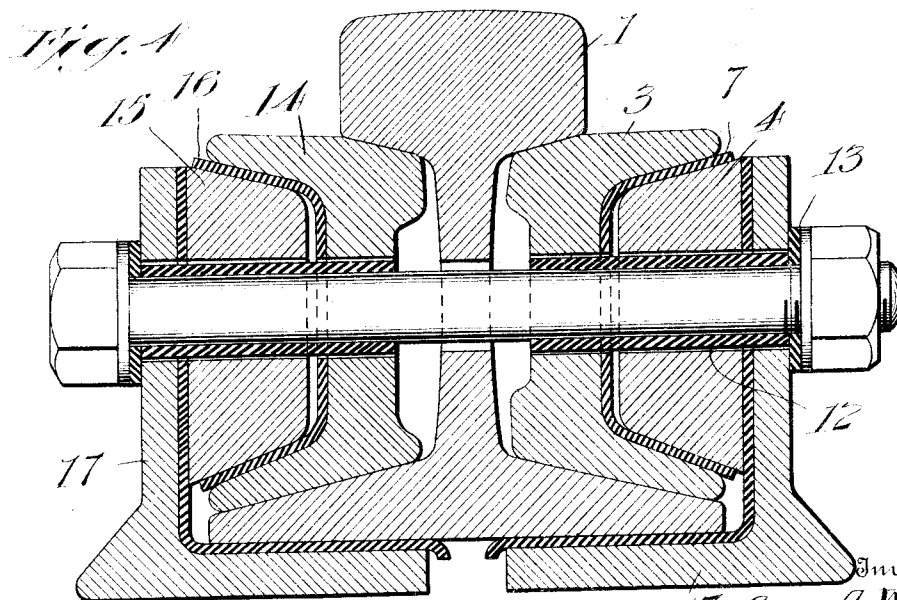
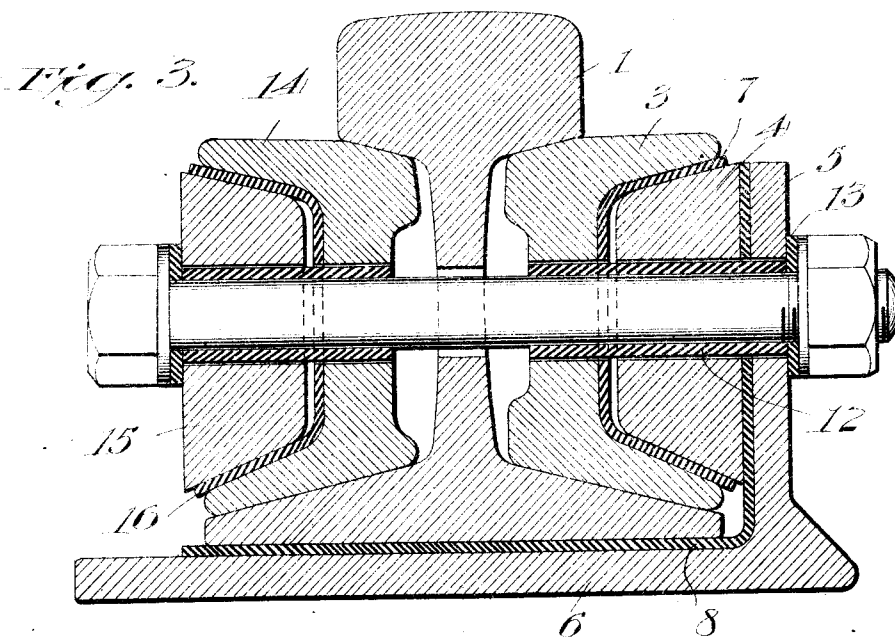
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INSULATED RAIL JOINT.
APPLICATION FILED JULY 27, 1911

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2 SHEETS-SHEET 2.



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UNITED STATES PATENT OFFICE

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INSULATED RAIL-JOINT.

1,050,262.

Specification of Letters Patent.

Patented Jan. 14, 1913.

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To all whom it may concern:

Be it known that I, GEORGE A. WEBER, a citizen of the United States, residing at Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Insulated Rail-Joints, of which the following is a specification.

One of the primary objects of the present invention is the provision of an improved insulated rail joint which embodies novel features of construction whereby a firm and continuous base support is provided at the bottom of the joint, thereby securing vastly increased support, strength, stiffness and durability.

A further object of the invention is the provision of a rail joint of this general character in which means is provided for securing an increased bearing surface for the insulation under the rail heads, thereby greatly reducing the wear and tear upon the insulation and greatly prolonging the life of the joint.

A still further object of the invention is to construct an insulated rail joint which employs the angle-shoe of a Weber joint and possesses the strength, stiffness and durability of this type of joint.

With these and many other objects in view, which will more readily appear as the nature of the description is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

The essential features of the invention, involved in the details for carrying out the objects above referred to, are necessarily susceptible of structural variations without departing from the scope of the invention, but certain preferred embodiments thereof are shown in the accompanying drawings, in which:—

Figure 1 is a sectional perspective view of an insulated rail joint constructed in accordance with the invention, Fig. 2 is a side elevation of the rail joint with portions of the angle shoe broken away to show the insulation between the channel filler plates, Fig. 3 is a transverse sectional view through a slightly modified construction of the insu-

lated rail joint, and Fig. 4 is a similar view showing a still further modification.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

This insulated rail joint possesses many of the features and advantages of the Weber standard joint, an angle shoe being provided which extends under both of the rails so as to firmly support the same and hold them against relative vertical displacement. Channel plates are also fitted in the fishing spaces of the rails, although they do not extend continuously throughout the joint as in the Weber standard joint, but have their inner ends insulated from each other and merely act as filler members. Owing to the manner in which these filler members are constructed and the other elements of the joint assembled in relation thereto, as will be more fully pointed out, an increased bearing surface may be provided for the insulation under the rail head.

Referring to the drawings, the numerals 1 designate a pair of rail ends which may be of any standard or preferred section and have the usual insulated end posts 2 interposed between the same. Channel plates 3 are fitted in the fishing spaces of the respective rail ends on one side of the joint, the inner ends of the channel plates having insulation material 2^a interposed between the same, and the said insulation being preferably provided by side extensions of the end post 2. The top of each of the channel plates 3 bears against the lower side of the respective rail head, while the bottom of each of the channel plates extends along and bears against the upper surface of the basal flange of the respective rail. A metal joint bar 4 which extends continuously throughout the length of the joint is interposed between the channel plates 3 and the vertical clamping plate 5 of an angle shoe similar to that employed in a Weber standard joint, the base plate 6 of the said angle shoe extending under the two rails so as to provide a rigid and continuous support for the same. The joint bar 4 is partially received between the upper and lower flanges of the channel plates 3 and has the upper and lower edges

thereof beveled or inclined so as to correspond to the inner faces of the flanges of the channel plates. Insulation 7 is interposed between the channel plates 3 and the metal joint bar 4, the said insulation extending entirely throughout the length of the joint, while an insulating fiber angle plate 8 is applied to the angle shoe so as to be interposed between the base plate 6 and the bottom of the rails and also between the upright clamping plate 5 and the joint bar 4. The usual angle bar 9 which is employed in the Weber joint may be fitted in the fishing spaces on the opposite side of the rails and preferably extends continuously throughout the length of the joint, insulating material 10 being interposed between the upper edge of the angle bar and the under surface of the rail heads, and also between the bottom of the angle bar and the upper surface of the basal flanges. The usual bolts 11 which extend transversely through the various members of the joint may be employed for holding the parts rigidly together, and these bolts may be insulated in the usual manner by means of fiber bushings 12 and fiber washers 13.

When the various elements of the joint are assembled as has been described and the bolts are placed in position and tightened, the rail ends 1 are held firmly in alinement with each other and a continuous base support is provided at the bottom of the joint without interfering in any manner with the necessary insulation of the parts. It will be observed that the channel plates 3 which are arranged in alinement with each other and merely fitted in the fishing spaces of the respective rails act as filler members, and may be designed, as indicated more clearly by Fig. 1 of the drawing, so that the bearing surface on the insulation 7 between the top of the joint bar 4 and the upper flanges of the channel plates 3 is greater than the area of the under side of the rail heads. This has the advantage of very materially reducing the pressure and consequent wear and tear upon the insulation so as to prolong the life thereof, and this advantageous result is accomplished without interfering with the thorough and complete insulation of the base and without preventing the necessary provision being made for a continuous base support.

Instead of the angle bar 9 which is shown in Fig. 1 as applied to the side of the joint opposite to the channel plates 3, any other suitable means may be provided for completing or building up the joint. As illustrating a possible manner of completing the joint on the inside of the rails, reference may be had to Fig. 3 in which channel plates 14 similar to the previously described channel plates 3 are fitted in the fishing spaces of the rails, the said channel plates being en-

gaged by a continuous joint bar 15, and the insulation 16 being interposed between the said members. An increased bearing surface is thus provided for the insulation under the rail heads on both sides of the rail, and this may be very desirable where the traffic is unusually heavy.

A still further modification is shown in Fig. 4 in which both sides of the joint are identical in construction. The channel plates 3, metal joint bar 4, together with the insulating material associated therewith are applied to the rails on one side thereof, while similar channel plates 14, joint bar 15, and associated insulating material 16 are applied to the opposite side of the rails. An angle shoe 17 is also applied to each side of the rails, the said angle shoes being similar to the angle shoe shown in Fig. 1, with the exception that the base plates thereof only extend partially under the rails and terminate short of the center thereof so that the inner edges thereof are sufficiently spaced to allow of lateral adjustment. The usual bolts serve to hold the various elements of the joint together, and the two angle shoes 17 form a continuous support for the base of the joint, while the channel plates and joint bars cooperate with each other to provide an increased bearing surface for the insulating material receiving the pressure from the bottom of the rail heads.

Various other modifications in both the mechanical and insulating features of the herein described joint will suggest themselves to those skilled in the art without further description, and it will therefore be understood that changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent, is:—

1. An insulated rail joint including the rails, a pair of filler members both of which are arranged at the same side of the rails within the fishing space thereof and each of which is provided at its upper edge with an outstanding flange, insulation interposed between the adjacent ends of the separate filler members, a metal joint bar engaging the filler members and the upper flanges thereof and extending the full length of the joint, a continuous base supporting member extending under the rails, insulation between the filler members and the metal joint bar, and insulation between said base supporting member, the rails, and the metal joint bar.

2. An insulated rail joint including the rails, a shoe angle, a pair of filler members both of which are arranged at the same side of the rails with their upper edges engaged beneath the rail head and formed with an

outstanding flange, a continuous metal joint bar interposed between the upright leg of the shoe angle and both filler members, and means for insulating the rails from the fillers, the joint bar, and the shoe angle.

3. An insulated rail joint including the rails, a shoe angle, a pair of filler members both of which are arranged at the same side of the rails within the fishing space thereof and each having at its upper edge an outstanding flange whose under surface has a greater area than that of the under side of the rail head, a continuous metal joint bar extending the full length of the joint and interposed between the upright leg of the shoe angle and both filler members, said joint bar underlying the upper flanges of the filler members, and means for insulating the rails from the filler members, the metal joint bar, and the shoe angle.

4. An insulated rail joint including the

rails, a shoe angle, a pair of channel filler members both of which are arranged at the same side of the rails within the fishing space thereof, a continuous metal joint bar seated in the channel of both filler members and arranged at the inner side of the upright leg of the shoe angle, insulation between the adjacent ends of the filler members, other insulation between the continuous metal joint bar and the channel surfaces of both fillers, and insulation interposed between the upright leg of the shoe and the joint bar and between the base of the shoe and the rail bottoms.

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

GEORGE A. WEBER.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."