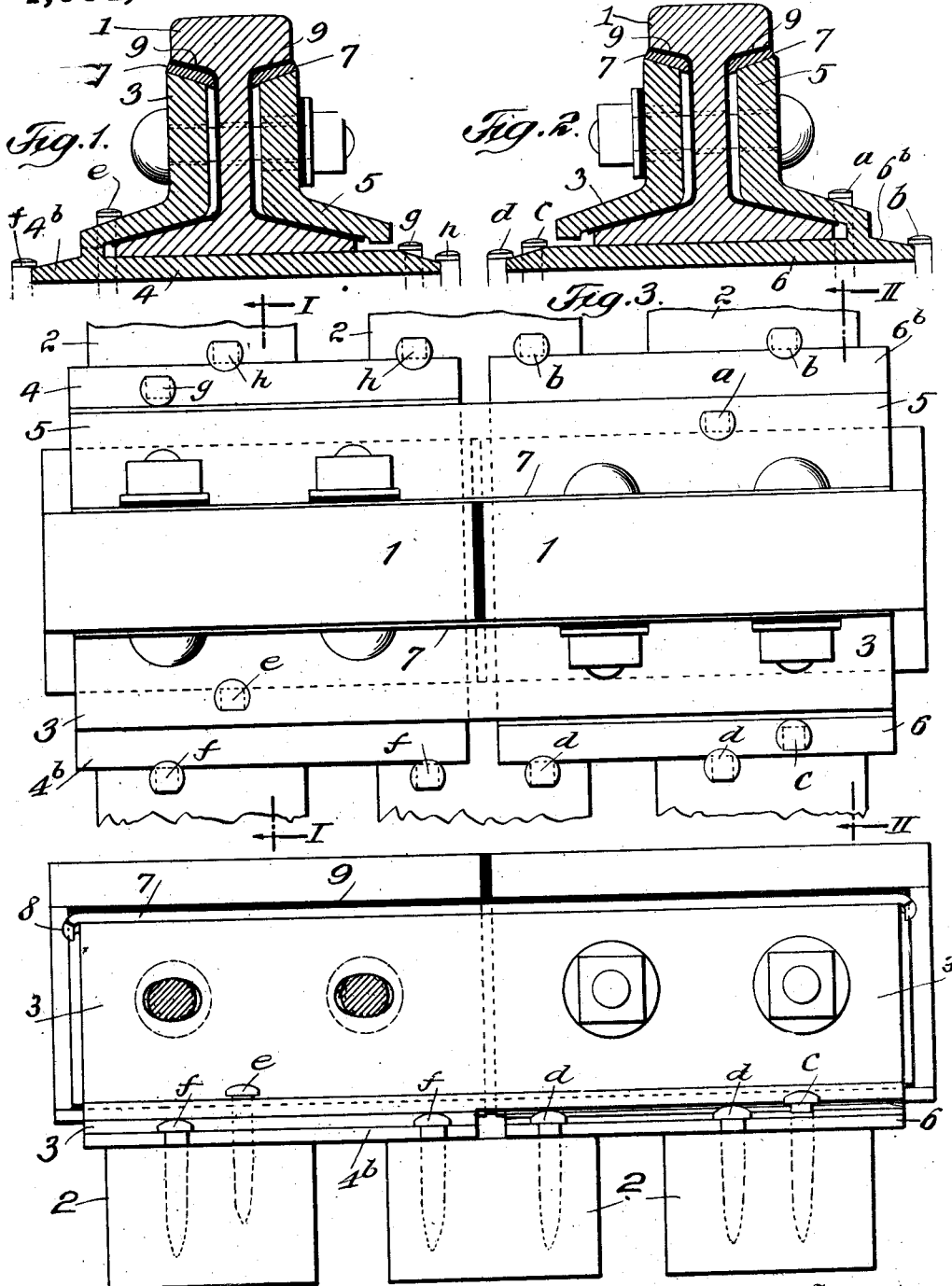


L. GRIFFITH.
INSULATED RAIL JOINT.
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1,064,900.



Witnesses:
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Fig. 4. Inventor
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INSULATED RAIL-JOINT.

1,064,900.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LAWRENCE GRIFFITH, a citizen of the United States, and resident of Yonkers, county of Westchester, and State of New York, have invented certain new and useful Improvements in Insulated Rail-Joints, of which the following is a specification.

One of the main objects of this invention is to provide a rail joint wherein the splice-bars will be formed with inwardly extending rail supporting flanges adapted to be in direct contact with the rails in order to rigidly support the rail ends, the insulating material used being so disposed that the rail supporting flanges of the splice-bars need not be insulated from the rail ends.

It is the common practice in insulated rail joints in which any form of rail supporting plates or flanges are used to insert between the rail and such supporting plate a strip of insulating material. This insulating material is soon destroyed by the pounding of the rail thereon and for that reason is of great weakness in this type of joint. It is manifest, therefore, that to provide an efficient insulated rail joint in which the rails are directly supported by a metal plate in direct contact therewith, is very desirable.

Another object of this invention is to place a rail support or third tie directly under the ends and between the ties adjacent the ends of the rails. This rail support under the meeting ends of rails is particularly desirable and efficient when used in connection with the insulated rail joint structure described herein for the reason that said rail support is directly engaged by the inwardly extending rail supporting flanges of the splice-bars.

There are other important objects and advantages of the invention which will appear hereinafter.

In the drawing, Figure 1 is a transverse sectional view of the rail joint on the line I—I of Fig. 3, looking in the direction indicated by the arrow; Fig. 2 a similar view on the line II—II of Fig. 3, looking in the direction indicated by the arrow; Fig. 3 a plan view of the rail joint; and Fig. 4 a side elevation of the rail joint, the bolts being shown in section at the left-hand end thereof, to show the non-circular openings in that end of one of the splice-bars.

Referring to the various parts by nu-

merals, 1 designates the rail ends and 2 the ties forming the supports for the rails. The splice-bar 3 is formed at one end with an inwardly extending rail supporting base flange 4; and the splice-bar 5 is formed at one end with an inwardly extending rail supporting base flange 6. Each of these base flanges extends under and contacts with one rail only, and does not bridge the joint between the rail ends. The upper surface of the vertical rail head supporting web of each splice-bar is downwardly and inwardly inclined and between said surface and the adjoining under side of the rail head is interposed a metallic wearing-piece 7 which extends throughout the length of the splice-bar and bridges the joint between the rail ends. The ends of this wearing piece are turned down as shown at 8 in Fig. 4 to prevent any longitudinal movement thereof. This wearing piece is also wedge-shape in cross section and tapers outwardly to prevent outward lateral displacement thereof.

Interposed between the wearing piece and the rail head and between the splice-bar and the rail is suitable insulation 9. It is manifest that it is not necessary to place insulation between the splice-bar and that rail with which the splice-bar base flange is in contact, it being only necessary to insulate the splice-bar and wearing piece from that rail which the splice-bar base flange does not engage. However, for simplicity in assembling the parts of the joint the insulation may be extended throughout the length of the bars on both sides of the rails. It is also manifest that the bolts need be insulated from only one of the splice-bars, as indicated in Fig. 3. It is clear that the bolts passing through the rail which is resting on the splice-bar base flange need not be insulated from the splice-bar carrying said base flange. Said bolts must, however, be insulated from the opposite splice-bar. This arrangement permits bolts having non-circular shanks to be inserted directly in splice-bars having non-circular openings as shown in Fig. 4. This simplifies the assembling of the joint and prevents the turning of the joint bolts when the nuts are being tightened. It also permits bolts to be used which are provided with ordinary round bolt heads instead of bolts having angular or nut heads.

The base flanges of the splice-bars form efficient rail supporting plates which are in direct contact with the rails. The base flange

6 of the splice-bar 5 is extended outwardly to form the spike flange 6^b. This base flange is also sufficiently wide to extend outwardly beyond the splice-bar 3 on the opposite side of the rail, as shown clearly in Fig. 2. Likewise the base flange 4 of the splice-bar 3 is extended outwardly on the splice bar side thereof to form the spiking flange 4^b. This base flange 4 is of sufficient width to extend beyond the rail base and outwardly beyond the splice-bar 5 on the opposite side of the rail, as shown clearly in Fig. 1.

In spiking or otherwise securing the splice-bar to the ties, a spike *a* is passed downwardly through the splice-bar 5 at the edge of the rail and downwardly through the base flange 6 into the tie. The spiking flange 6^b is secured in position by means of spikes or other fastening means *b* arranged along the edge thereof. In view of the fact that the base flange 6 is in contact with the rail it is unnecessary to insulate the spike *a* from the rail. The other edge of the base flange 6 is secured to the ties by means of spikes *c* and *d*, spikes *c* passing through the base support and the spikes *d* being arranged at the edge thereof, one of said spikes *d* securing the base flange to the tie directly under the meeting ends of the rails. It is to be noted that the spikes *c* and *d* do not contact with the splice-bar 3 and that, therefore, said splice-bar is not electrically connected to the base flange 6 of the splice-bar 5. The splice-bar 3 with its base flange 4 is secured to the ties by means of the spikes *e* and *f*; spike *e* passing through the splice-bar and its base flange close to the edge of the rail base, spikes *f* engaging the outer longitudinal edge of the spiking flange 4^b. The other edge of the base flange is secured in position by spikes *g* and *h*, spikes *g* passing through the base flange and spikes *h* engaging the outer longitudinal edge thereof. It is to be noted that the spikes *g* and *h* do not contact with the splice-bar 5 so that said splice-bar is not electrically connected to the base flange of the splice-bar 3. It is, therefore, clear that only one end of each splice-bar proper is spiked or otherwise secured directly to the ties. By this arrangement of the base supports or base flanges of the splice-bars the said base supports may be securely spiked to the tie on both of its edges. This is very desirable in that it holds the base support very rigidly in position transversely of the rail base. This arrangement of the securing means also insures the complete insulation of the unflanged end of each splice-bar.

From the foregoing it is manifest that I provide an insulated joint of very simple construction; which may be very readily assembled, and in which a minimum amount of insulation will be used and wherein the insulation will be thoroughly protected. It

is also manifest that I provide a base support for each rail end in which the rail is directly supported on metal, no insulation being necessary between the rail base and the rail support. It is also manifest that I provide a joint wherein the splice-bar need be spiked or otherwise secured to the ties only at one end of the splice-bar. By forming each splice-bar with a rail base supporting flange of sufficient width to extend under the rail base and project outwardly beyond the rail base on both sides, said base supporting flange may be spiked directly to the tie at both of its edges without interfering with the complete insulation of the joint.

What I claim is:

1. An insulated rail joint comprising the meeting ends of two rails, splice-bars, insulation between the splice-bars and the rails, an independent rail support under each rail end and in electric contact therewith, said rail supports being electrically disconnected from each other, one of said rail supports being connected to one splice-bar and unconnected with the other splice-bar, and each of said rail supports extending outwardly beyond the splice-bar to which it is not connected.

2. An insulated rail joint comprising the meeting ends of two rails, splice-bars, insulation between the splice-bars and the rails and an inwardly extending rail supporting base flange formed at one end of each splice-bar, each of said flanges directly contacting with and supporting one rail and out of electrical connection with the splice-bar on the opposite side of said supported rail, each of said flanges extending outwardly beyond the splice-bar to which it is not connected.

3. An insulated rail joint comprising the meeting ends of two rails, splice-bars, insulation between the splice-bars and the rails and an inwardly extending rail supporting base flange formed at one end of each splice-bar, each of said flanges directly contacting with and supporting one rail and out of electrical connection with the splice-bar on the opposite side of said supported rail, each of said flanges extending outwardly beyond the splice-bar to which it is not connected, and means for securing said outwardly projecting portion of each rail supporting flange to a tie, said means being independent and out of electric contact with the unconnected splice-bar.

4. An insulated rail joint comprising the meeting ends of two rails, splice-bars, insulation between the splice-bars and the rails, an independent rail support under each rail end and in electric contact therewith, said rail supports being electrically disconnected from each other, one of said rail supports being connected to one splice-bar and unconnected with the other splice-bar, and each of said rail supports extending out-

wardly beyond the splice-bar to which it is not connected.

5 An insulated rail joint comprising the meeting ends of two rails, splice-bars, insulation between the splice-bars and the rails, an independent rail support under each rail end and in electric contact therewith, said rail supports being electrically disconnected from each other, one of said
10 rail supports being connected to one splice-bar and unconnected with the other splice-bar, and each of said rail supports extend-

ing outwardly beyond the splice-bar to which it is not connected, and means for securing said outwardly projecting portion 15 of each rail support to a tie, said means being independent and out of electric contact with the unconnected splice-bar.

In testimony whereof I hereunto affix my signature in the presence of two witnesses. 20

LAWRENCE GRIFFITH.

Witnesses:

LILLIAN MCGUIRE,

F. R. MILLER.

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