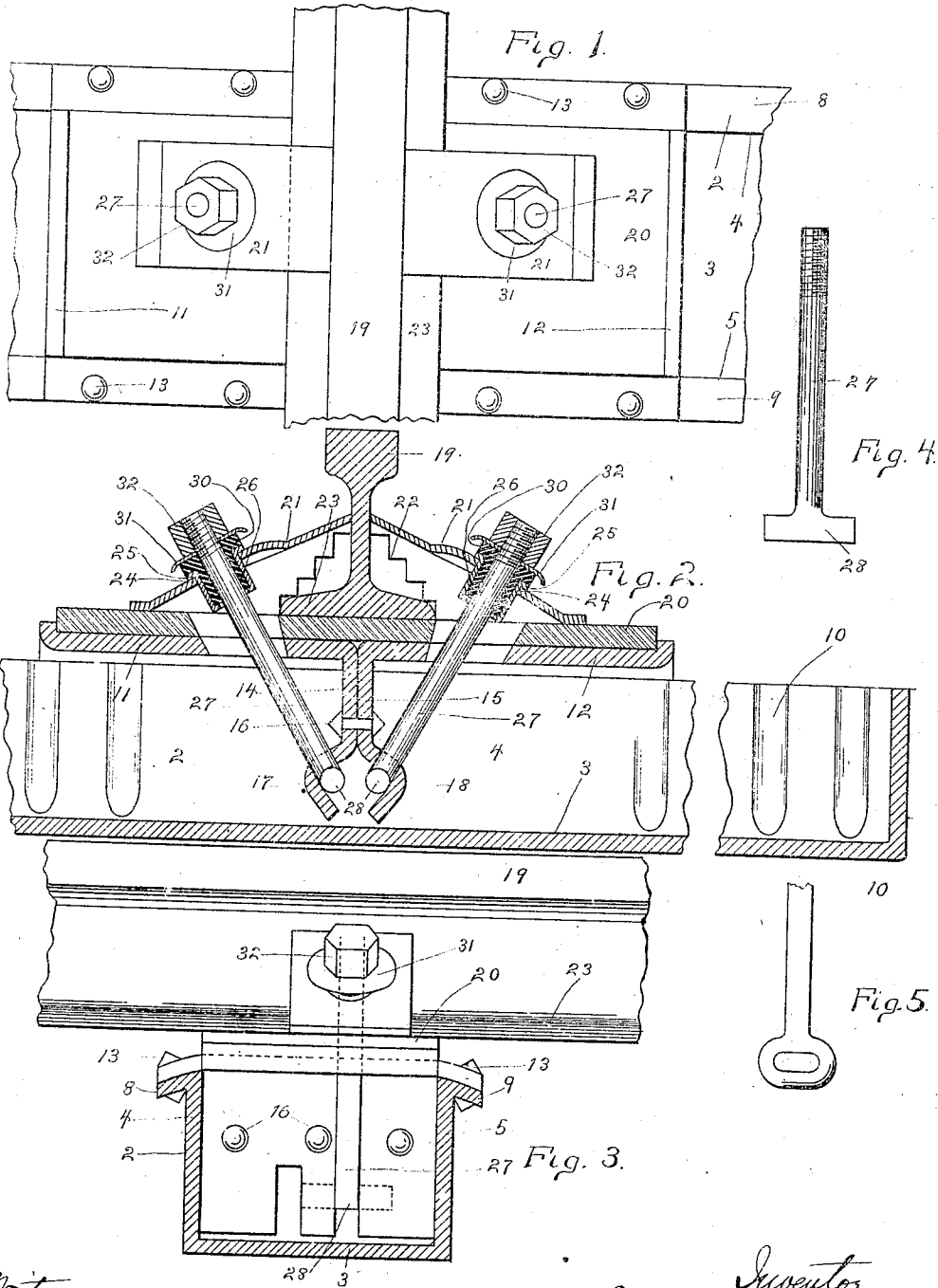


F. G. METCALF.
 INSULATED CONNECTION FOR METALLIC RAILWAY TIES.
 APPLICATION FILED APR. 10, 1911.

998,108.

Patented July 18, 1911.



Witness
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UNITED STATES PATENT OFFICE.

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INSULATED CONNECTION FOR METALLIC RAILWAY-TIES.

998,108.

Specification of Letters Patent. Patented July 18, 1911.

Application filed April 10, 1911. Serial No. 619,988.

To all whom it may concern:

Be it known that I, FRANK G. METCALF, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented a new and useful Improvement in Insulated Connections for Metallic Railway-Ties; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1 a top or plan view of a section of a railway tie showing a rail secured thereto and insulated therefrom in accordance with my invention. Fig. 2 a transverse sectional view of the same. Fig. 3 a side view of the clamping device, and section of the tie. Fig. 4 a side view of one form of bolt. Fig. 5 a side view of another form of bolt which may be employed.

This invention relates to an improvement in insulated connections for metallic railway ties, the object being to provide means for securing the rails thereto and insulating the rails from the ties; and the invention consists in the construction hereinafter described and particularly recited in the claim.

For convenience of illustration, I have shown a tie and means for securing the rail thereto substantially like the construction shown and described in U. S. Patent No. 809,000 granted to me January 2, 1906, and which comprises a tie 2 formed from sheet metal bent to form a bottom 3, sides 4, 5, preferably extending vertically therefrom, an end 6 turned upward from the bottom 3 at each end and side flanges 8, 9, these flanges being inclined downward from the upper edge of the sides 4, 5, all forming a trough. Preferably and as herein shown, the tie will be formed with a series of corrugations 10 for the purpose of strengthening it. Secured to the flanges 8 and 9 are rail plates formed in two parts 11 and 12 each secured to the flanges 8 and 9 by rivets 13. The inner edges 14 and 15 of the plates are bent downward and secured together by rivets 16 and the extreme portions of the edges are turned outward and formed with notches 17 and 18. The rails 19 rest upon these plates over the meeting edges and upon blocks 20 which insulate the rail from

the plates. The rails are held by clips 21 one on each side of the rail, and the sides of the clips are formed with a series of shoulders 22 one of which bears upon the base 23 of the rails, the shoulder which bears upon the said flange depending upon the thickness of the base 23. These clips bear upon the block 20 which is sufficiently large for the purpose, and which is preferably in one piece although it is apparent that a block made up of several sections might be employed. In the said clips are holes 24 for the reception of insulator sockets 25 which are cup-shaped and receive insulating sleeves 26 through which bolts 27 extend, the bolts being formed at their inner ends to engage with the notches 17 or 18.

If, as shown in Fig. 3, bolts with bar ends 28 are employed, the bolts may enter either notch; but if bolts with eyes 29 are employed, the eye will engage with the portion of plates between the notches. The insulating sleeves have flanges 30 at their upper ends overlapping the upper edge of the sockets 25, and over this insulator is placed a flanged washer 31 upon which a nut 32 bears, it being understood that the hole through the socket 25 is larger than the diameter of the bolt 27 so that they will not come in contact with each other. The insulating block 20 insulates the clamping-plates and rail from the tie-plates 11 and 12, and the bolts are insulated from the clamping-plates by the insulated sleeves 26. Thus the rails and the means for clamping them to the ties are insulated from the ties.

I claim:—

The combination with a trough-shaped metal tie, plates secured thereto, rails resting on said plates but insulated therefrom, said plates formed with inwardly extending notched edges, clips resting on said plates and insulated therefrom, bolts extending through said plates into engagement with the edges thereof, insulator sleeves mounted in said clips through which the said bolts extend, substantially as described.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

FRANK G. METCALF.

Witnesses:

FREDERIC C. EARLE,
CLARA L. WEED.