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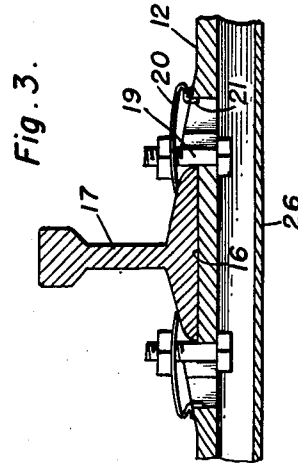
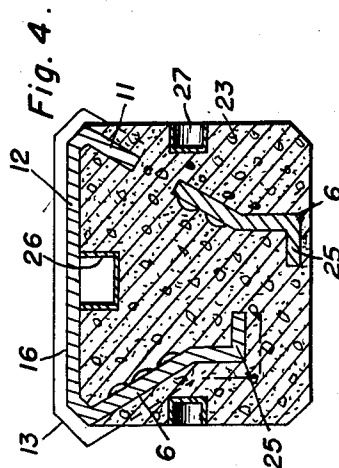
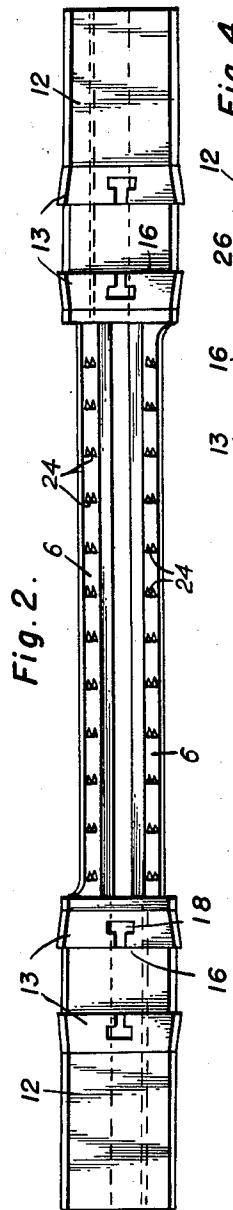
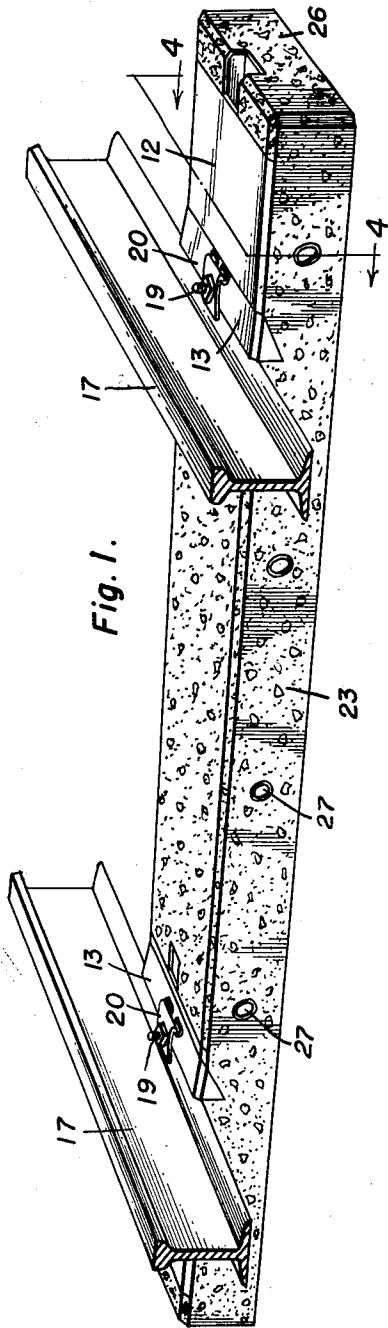
W. H. KOCH

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RAILWAY TIE AND RAIL FASTENER

Filed Aug. 18, 1947

2 Sheets-Sheet 1



Inventor

William H. Koch

By

Clarence A. O'Brien
and Harvey B. Jacobson
Attorneys

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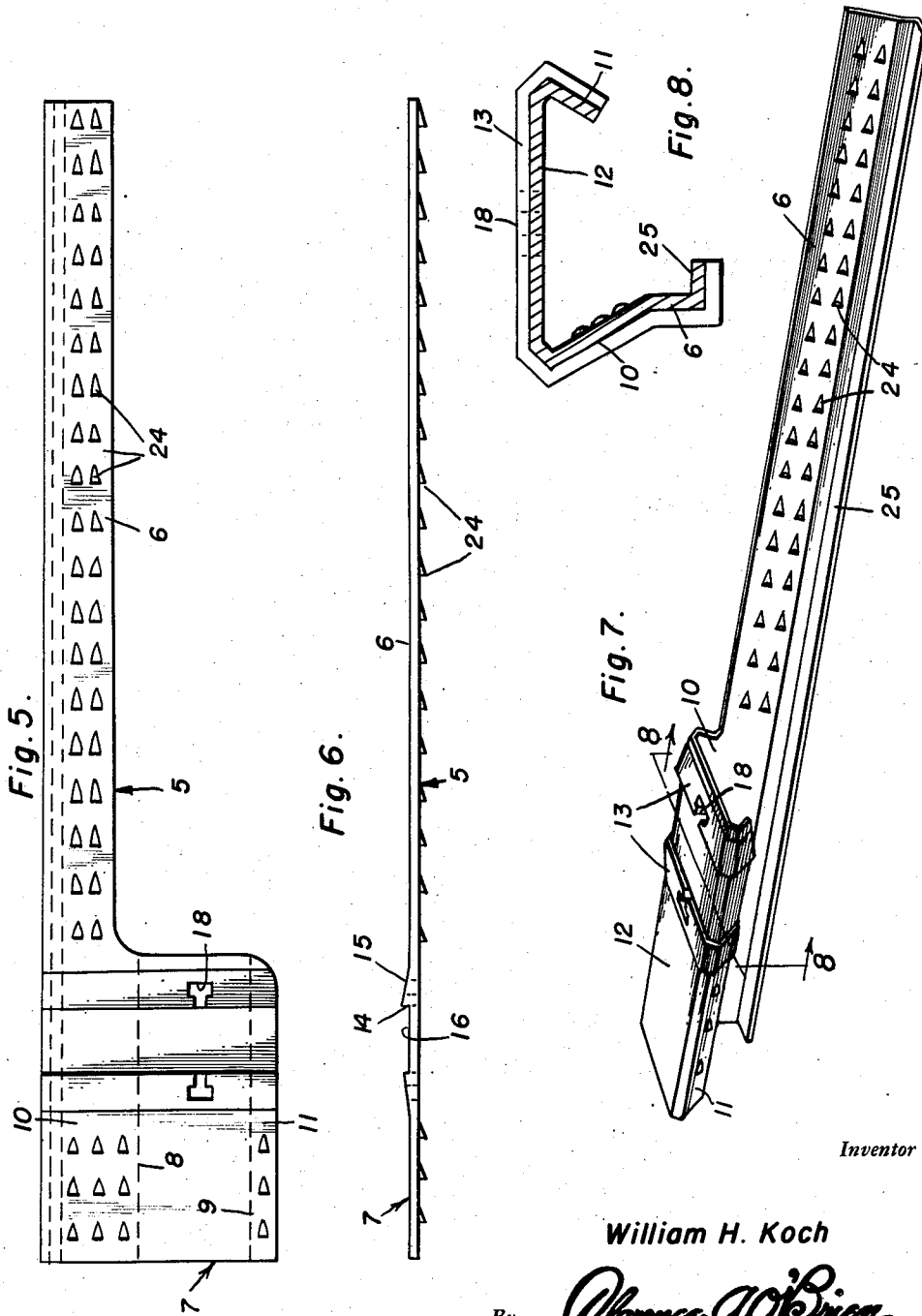
W. H. KOCH

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Inventor

William H. Koch

By *Clarence W. Brien*
and Harvey B. Jacobson
Attorneys

UNITED STATES PATENT OFFICE

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RAILWAY TIE AND RAIL FASTENER

William H. Koch, Oneonta, N. Y.

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The present invention relates to new and useful improvements in railway ties constructed of plastic material such as concrete or the like, together with rail fastening means imbedded in the tie.

An important object of the present invention is to provide reinforcing means for the tie integrally formed with the rail fastening means and whereby the reinforcing means is embedded in spaced relation in a tie of electrical insulating material to anchor the rail fastening means against spreading movement and to prevent a flow of electricity therebetween.

Another object of the invention is to provide combined rail fastening and reinforcing means for a concrete railway tie and in which the rail fastening means and reinforcing means are stamped as an integral unit from sheet metal.

A still further object is to provide a device of this character of simple and practical construction, which is strong and durable, efficient and reliable in use, and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of a tie constructed according to the principles of this invention and showing rails, partially in section, mounted thereon;

Figure 2 is a top plan view of the rail fastening and railway tie reinforcing means separated from the tie;

Figure 3 is an enlarged fragmentary sectional view through one of the rail fasteners;

Figure 4 is a transverse sectional view taken on a line 4—4 of Figure 1;

Figure 5 is a plan view of the blank on which the metallic rail fastener and reinforcing member is formed;

Figure 6 is a side elevational view thereof;

Figure 7 is a perspective view showing the blank shaped to provide a rail fastener and reinforcing member; and

Figure 8 is an enlarged transverse sectional view taken on a line 8—8 of Figure 7.

Referring now to the drawings in detail wherein for the purpose of illustration I have disclosed a preferred embodiment of invention, the numeral 5 designates generally one of the metallic rail fasteners and reinforcing members and which comprises a metal stamping and including a

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rectangular reinforcing strip 6 having one end formed with a laterally projecting head 7 and which is bent along spaced parallel longitudinally extending lines 8 and 9 to provide a downwardly and inwardly inclined flange 10 of which the reinforcing strip 6 is formed as a continuation and coplanar therewith. A relatively narrow flange 11, as compared to flange 10, is bent downwardly and inwardly along the line 9 and with the central portion of the head 7 forming a flat plate 12.

A pair of spaced parallel shoulders 13 are integrally formed with the head 7 and extend transversely thereof, the opposed edges of the shoulders being vertical as shown at 13 and the upper surface of the shoulders sloping from the vertical edges 14 as shown at 15. The shoulders 13 provide a channel-shaped seat 16 in which the lower flange of a rail 17 is seated.

The shoulders 13 also provide reinforcing means for the flanges 10 and 11.

T-shaped openings 18 are formed in the shoulders 13 at the inner edges thereof for receiving rail fastening bolts 19 and which extend upwardly through rail fastening clips 20 which have one end overlying the lower flange of the rail 17 and are formed at their opposite ends with downwardly extending tongues 21 inserted in the openings 18 to thus hold the bolts from working in the openings or slots 18.

One of the rail fastening plates 12 is provided for each rail 17 and with the reinforcing strip or bar 6 of one rail fastener extending parallel to in overlapping relationship and spaced from the reinforcing strip or bar 6 of the other rail fastener and having its outermost end underlying and spaced from the other plate 12, as shown in Figure 4, to prevent short circuiting of a track signalling system from one rail to the other.

In this arrangement the pair of rail fasteners and reinforcing bars or strips are embedded in a concrete railway tie 23 with the reinforcing strips or bars 6 extending longitudinally thereof and with the rail fastening plates 12 positioned adjacent the ends of the tie and flush with the upper surface thereof. Teeth 24 or similar protuberances are struck from the reinforcing strip or bar 6 as well as from the flanges 10 and 11 to prevent creeping of the rail fasteners in the tie.

The lower edge of the reinforcing strips or bars 6 are also bent horizontally inwardly to form flanges 25.

A channel iron 26 extends transversely under each rail seat 16 to provide a recess for bolts 19, the heads of the bolts being inserted through

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the openings 18 and held against turning in the channel irons, since the lower end of bolt 19 seats under the narrow leg of T-slot 18 and is retained in immovable position by the enlarged lower head within the slot together with clips 20.

Thimbles 27 are recessed in the sides of the tie to receive lifting tongs.

From the foregoing it will be apparent that the reinforcing strips or bars 6 securely anchor the rail fastening plates 12 to the tie and also serve to reinforce substantially the entire length of the tie.

In view of the foregoing description taken in conjunction with the accompanying drawings it is believed that a clear understanding of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claims.

Having described the invention what is claimed as new is:

1. In combination with a railway tie formed from electrical insulating material, a first elongated reinforcing strip embedded in said tie, a first lateral head integral with one end of said strip and overlying said tie at one end thereof, a second elongated reinforcing strip embedded in said tie in horizontally spaced parallel relation to said first strip, a second lateral head integral with one end of said second strip and overlying said tie at the end opposite said first head, thereby providing electrical insulation for the tie by the spaced relation of the strips in the electrical insulating material, rail holding seats on the lateral heads, and fastening means on said strips and heads to retain them in position.

2. The combination of claim 1 wherein said fastening means include instruck teeth on said strip to grip the tie and an instruck flange depending integrally from said lateral head.

3. A railway tie construction comprising an elongated, substantially rectangular block of electrical insulating plastic material, metallic rail supporting plates disposed on the upper face of the block in spaced relation and adjacent the opposite ends thereof, an elongated metallic reinforcing member attached to and depending from each of said plates, said members being embedded in said block and extending longitudinally thereof in parallel, spaced and overlapping relationship to each other, each of said plates and the reinforcing member attached thereto being electrically insulated from the other plate and its reinforcing member.

4. The combination of claim 3 including means carried by said plate for retaining a rail supported thereon against movement longitudinally of the block.

5. The combination of claim 3 including means on each of said reinforcing members engaging the plastic material of the block for preventing movement of the reinforcing members relative to each other.

6. The combination of claim 5, wherein said last means include a plurality of teeth formed on the reinforcing members.

7. A combined rail support and tie reinforcement formed from a single substantially L-shaped sheet of metallic material for use with

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concrete railway ties, comprising a substantially rectangular and flat plate having a depending flange along one marginal edge thereof, a second depending flange along the marginal edge of plate opposite the first mentioned marginal edge, said second flange extending below the first mentioned flange, and an elongated portion extending laterally from the second flange in parallelism to the juncture between the second flange and the plate and forming a continuation thereof.

8. The combination of claim 7, wherein said flanges are downwardly converging.

9. The combination of claim 7 including a plurality of instruck teeth on said portion.

10. The combination of claim 7, wherein the lower edges of said elongated portion and the second flange are flush, said second flange and the elongated portion being bent inwardly adjacent their lower edges to constitute a supporting foot for the combined rail support and tie reinforcement.

11. A combined rail support and tie reinforcement comprising a substantially rectangular plate having a depending flange along one marginal edge thereof, a second depending flange along the marginal edge of plate opposite the first mentioned marginal edge, said second flange extending below the first mentioned flange, and an elongated portion extending laterally from the second flange in parallelism to the juncture between the second flange and the plate and forming a continuation thereof, and opposed parallel shoulders on the plate defining a rail seat therebetween.

12. The combination of claim 11 including a channel member disposed between said flanges and having the legs thereof engage the under-surface of said plate, and said plate having T-shaped recesses therethrough communicating with the space between the legs of the channel member.

13. The combination of claim 12 including a rail flange clip, and a threaded fastener including polygon-shaped head, said fastener retaining said clip to the plate and being prevented from rotation by the head thereof engaging the legs of said channel member.

14. A rail fastener for use with concrete railway ties comprising a flat rail supporting plate, a depending flange at one marginal edge of the plate, an elongated portion extending from the flange and the plate in parallelism to the juncture between the plate and the flange and forming a continuation thereof, and spaced and parallel opposed shoulders formed on the upper surface of the plate transverse to the marginal edge for seating and retaining a rail therebetween.

15. The combination of claim 14, wherein the dihedral angle between the plate and the flange is less than 90 degrees so that the flange is disposed directly beneath the plate when the plate is horizontally disposed, said elongated portion and the flange having flush lower edges and being inturned adjacent their lower edges to constitute a foot for the fastener, and instruck teeth on said elongated portion for preventing movement of the plate when the elongated portion is embedded in concrete.

16. In combination with a substantially rectangular railway tie, a pair of spaced and asymmetrically formed bearing members, each of said members comprising a bearing plate having a depending flange along one marginal edge thereof, an elongated portion extending from said flange in parallelism to the juncture between the

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plate and the flange and forming a continuation thereof, said members being disposed with the elongated portions thereof oppositely extending with respect to each other and in spaced parallel and overlapping relation, and means for securing said portions to the railway tie.

17. The combination of claim 16, wherein said members are electrically insulated from each other.

18. The combination of claim 16 wherein said railway tie is formed of insulating plastic material, said flanges and elongated portions being embedded in the plastic material of the tie with the lower faces of the plates seated upon the upper surface of the railway tie, said members being electrically insulated from each other.

19. The combination of claim 18 including a second depending flange on said plate along the marginal edge opposite the first mentioned edge, said second flange being embedded in the plastic material of the tie, said flanges being downwardly converging, said first flange and the elongated portion having flush lower edges and which are intumed adjacent their lower edges to constitute a foot for the bearing member, said elongated portions having teeth formed thereon engaging the plastic material of the tie preventing movement of the bearing members relative to each other, means carried by plates for engaging and retaining rails thereon.

20. The combination of claim 19 including said tie being formed with a recess beneath each

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of said plates which opens out of the adjacent ends of the tie, metallic channel members each having legs connected by a web, said channel members being received in said recesses with the webs thereof seated against the lower wall defining said recesses and with the upper ends of the legs engaging the undersurfaces of the plates, said last means including fastening means received in said channels with the legs of the channel members preventing rotation of the fastening means.

WILLIAM H. KOCH.

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