W. J. GIRARD.

TRACK FASTENING AND TIE.

APPLICATION FILED AUG. 28, 1907.

905,867.

Patented Dec. 8, 1908.

2 SHEETS—SHEET 1.

FIG. 1.

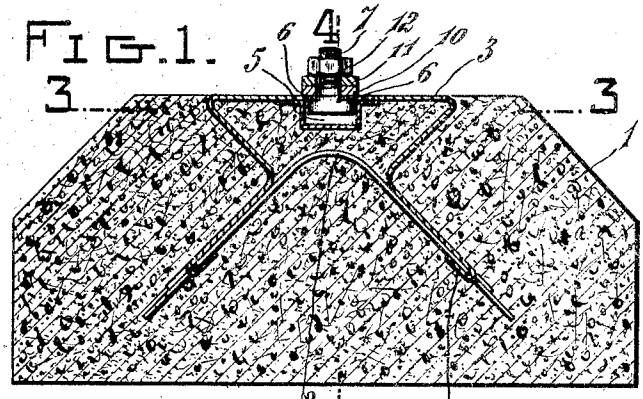


FIG. 8.

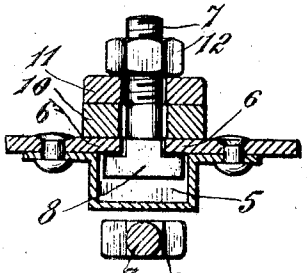


FIG. 2.

FIG. 3.

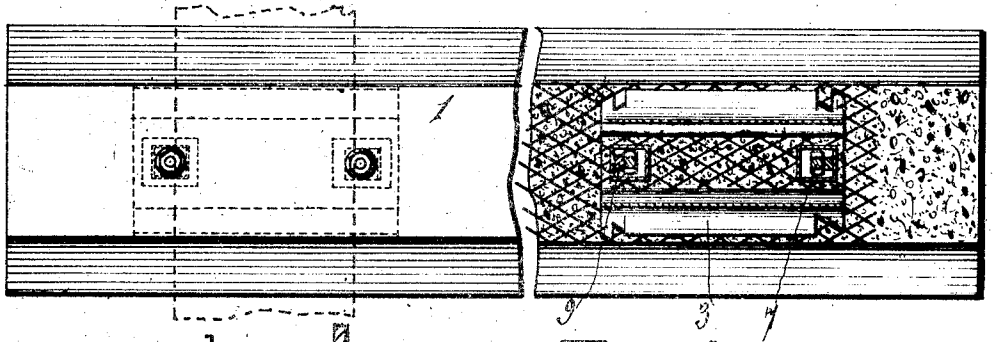
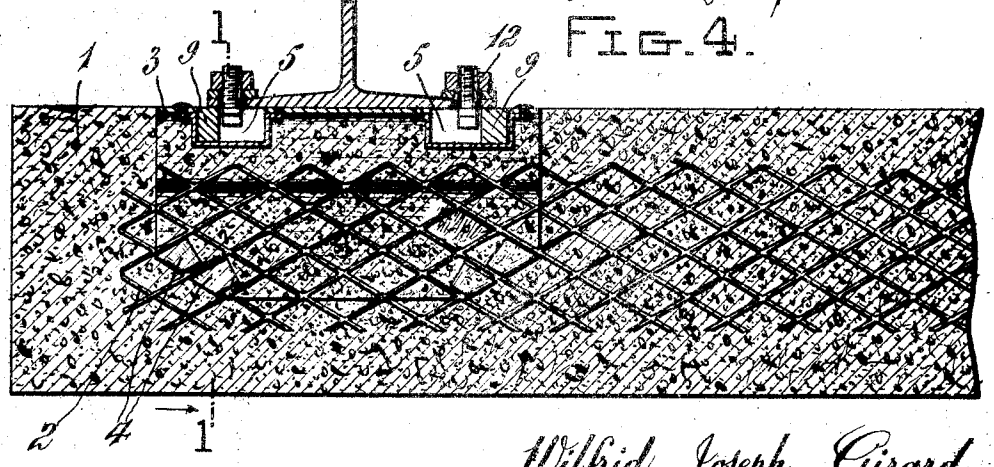


FIG. 4.



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2 SHEETS—SHEET 2.

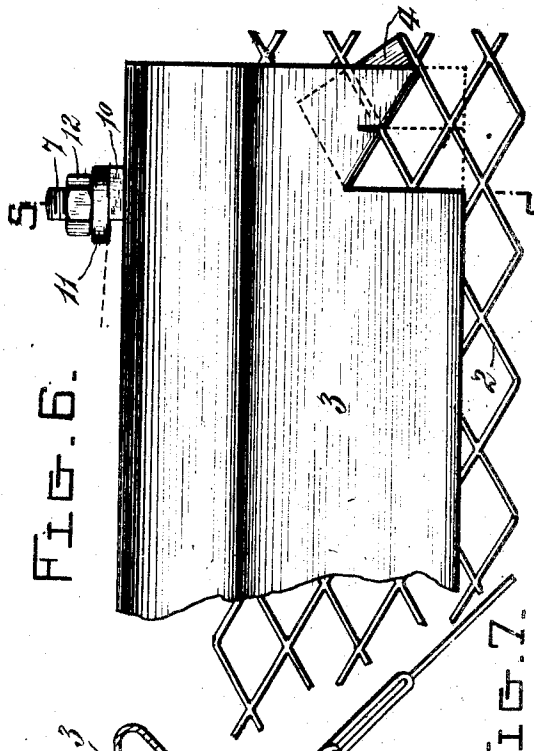


FIG. 6.

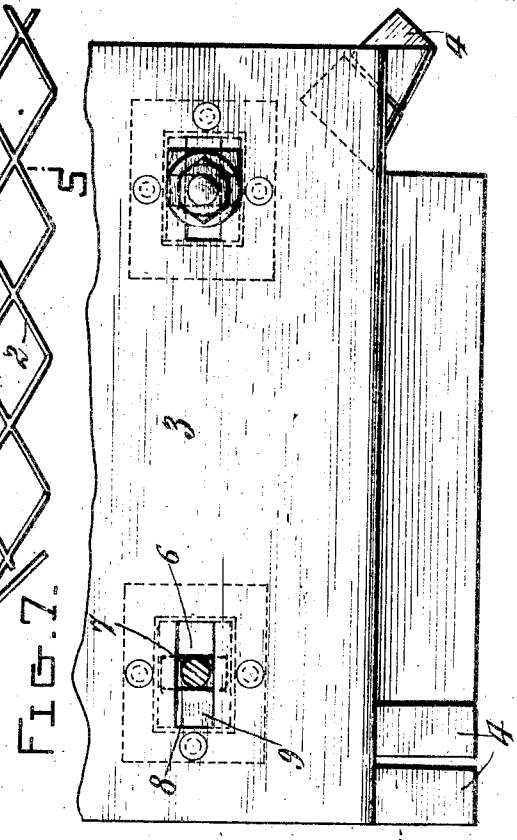


FIG. 7.

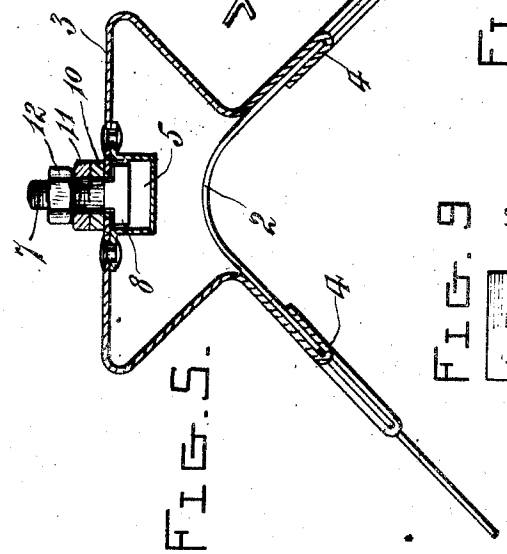


FIG. 5.

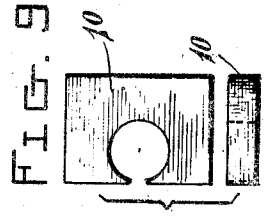


FIG. 9

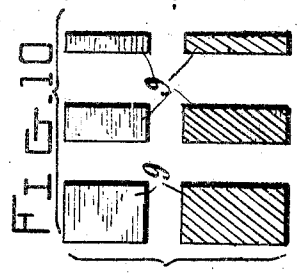


FIG. 10

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UNITED STATES PATENT OFFICE.

WILFRID JOSEPH GIRARD, OF QUEBEC, QUEBEC, CANADA.

TRACK-FASTENING AND TIE.

No. 905,867. Specification of Letters Patent. Patented Dec. 8, 1908.

Application filed August 28, 1907. Serial No. 390,430.

To all whom it may concern:

Be it known that I, WILFRID JOSEPH GIRARD, a citizen of the United States of America, residing at the city of Quebec, county of Quebec, in the Province of Quebec, Canada, have invented certain new and useful Improvements in Track-Fastenings and Ties; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to improvements in a combined track fastening and tie for supporting and fastening railway rails, and is designed with the intention of providing a fastening and support which may be readily applied and removed as desired, which may be adjusted to fit rails of various base dimensions, one which will be securely fastened to the tie with which it is used, thereby forming a material part of the same, and one which will afford an elastic support for the rail.

This device is more particularly adapted to be used in combination with a composite tie or one formed of plastic material having embedded in its interior expanded metal, or a similar construction.

Broadly speaking, the invention comprises a railway tie, post, or the like, of plastic material, having embedded therein an expanded metal structure, a sheet metal structure also embedded in the tie or post, and securely connected to the expanded metal structure to hold the sheet metal structure in place, cups formed in the sheet metal structure or attached thereto, fastening bolts or the like seated in the cups, means for adjusting the bolts to clamp rail bases of various dimensions, means for fastening the bolts to the sheet metal structure, and means for fastening the bolts to the base of the rail.

One difficulty in rail fastenings of this general character, as heretofore constructed, has been that the connections between the fastenings and the ties are not sufficiently strong to withstand the strain imposed on them, and another objection has arisen from the fact that they could not be easily adjusted to clamp rail bases of different dimensions and hold them securely when adjusted.

The present invention has been designed with a view to overcoming these objections, as well as with a view to improving many of the features of the general construction.

In order that one skilled in the art to which this particular improvement relates may the more readily understand the construction and operation of the same and its mode of application, reference should be had to the accompanying drawings forming part of the present application.

In the drawings: Figure 1 is a cross section on the line 1—1 of Fig. 4; Fig. 2 is a plan view of a tie with the device applied thereto; Fig. 3 is a cross section on the line 3—3 of Fig. 1; Fig. 4 is a cross section on the line 4—4 of Fig. 1; Fig. 5 is a cross section similar to Fig. 1, with the plastic composition omitted; Fig. 6 is a detailed side elevation of Fig. 5; Fig. 7 is a plan view of Fig. 6; Fig. 8 is a detailed sectional view of the locking bolt in operative position; Fig. 9 is a plan and edge view of the washer; and, Fig. 10 is a side and longitudinal cross sectional view of several sizes of filling blocks.

In the present instance, a tie 1 of concrete or similar plastic material is used, and embedded therein is an expanded metal construction 2. A sheet metal construction 3 is similarly, but only partially, embedded in the tie in such manner as to expose its upper face above the top surface of the tie. The top portion of the sheet metal structure is flat, and lies flush with the upper face of the tie, while its sides, which are embedded in the tie, are bent into V-shape, thus making the body as a whole elastic, and at the same time forming longitudinal grooves in which the concrete embeds itself to hold the same securely in the tie.

In the preferred form of the device, the sheet metal structure and the expanded metal structure run parallel to one another in the tie, and the sheet metal structure is placed above the expanded metal structure.

In order to attach the sheet metal structure to the expanded metal structure, the edges or corners of the same are provided with fastening means, such as, for example, integrally formed tongues 4, which are folded over and about adjacent portions of the expanded metal structure, thus securely fastening the two together as one structure, and practically making them a substantial part of the tie.

The sheet metal structure, so embedded in

the tie and securely locked to the expanded metal structure, is provided in its upper exposed surface with pockets 5, see Figs. 4 and 8. These pockets, preferably, are formed by attaching cups to the under face of the sheet metal structure, and slotting the metal above the cups, thus providing a pocket with the longitudinal opening having flanges 6 extending from its opposite longitudinal edges towards its center. A bolt 7 provided with a narrow elongated head 8 is adapted to be inserted through the longitudinal slot communicating with the pocket 5, to pass downwardly therethrough and to be turned at right angles to its entering position and engage the flanges 6, as will readily appear on reference to Figs. 7 and 8. In this position, the bolt 7 may travel longitudinally of the slot, as will be evident from Fig. 7, thus allowing the insertion of rails of varying base dimensions between a pair of such bolts.

When the rail has been inserted, the bolts, of course, must be locked against movement. To that end, filling blocks 9 are used. These blocks are dropped in the slot just behind the bolt after it has been adjusted, and thus act to prevent both longitudinal and rotary movement of the bolt, so that the bolt is neither allowed to move away from the rail or to turn so that its head could come out through the entrance slot. The blocks 9 are of just sufficient length to fill the pocket vertically, and are made in various widths to fill the spaces left in the slots by the bolts when in various adjusted positions.

When the bolts have been adjusted to the required dimension of rail base, a spacing washer 10 having one straight cut-away edge is placed over the bolt 7, the straight edge lying against the edge of the base of the rail, and the body of the washer acting as a spacer upon which a second washer 11 of ordinary form rests. This second washer bears directly on the upper face of the base of the rail, and is forced home to clamp the rail in place by means of a nut 12 threaded on the upper extremity of the bolt 7.

As illustrated in the present application, a preferred form only of the device is used. It is clear that many alterations, substitutions, and changes in the connections between the several parts may be resorted to without in any way departing from the general scope and intent of the invention. It is meant to include all such changes, alterations, substitution, and rearrangements within the present application.

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

1. In a device of the character described, the combination of a composite tie with an expanded metal structure embedded therein, and a sheet metal structure partially embedded therein, and provided with tongues adapted to be folded over portions of the expanded metal structure to thereby lock the expanded metal structure and the sheet metal structure securely together.

2. In a device of the character described, the combination of a composite tie with a sheet metal structure partially embedded therein, pockets attached to said sheet metal structure, guideways communicating with said pocket, fastening devices adjustably mounted in said pockets and playing through said guideways, interchangeable means for adjusting said devices, and means for locking said devices in their adjusted position.

3. In a device of the character described, the combination of a composite tie with a sheet metal structure partially embedded therein, pockets attached to said sheet metal structure, flanges extending from the edges of said pockets and forming therebetween guideways, headed fastening devices adjustably mounted in said pockets and playing in said guideways and adapted to engage said flanges, interchangeable means for adjusting said fastening devices, and means for locking said devices in adjusted position.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

WILFRID JOSEPH GIRARD.

Witnesses:
J. E. BANKS,
V. MACDONALD.