

(No Model.)

A. J. HARTFORD.
METALLIC RAIL SUPPORT.

No. 467,166.

Patented Jan. 19, 1892.

Fig. 1.

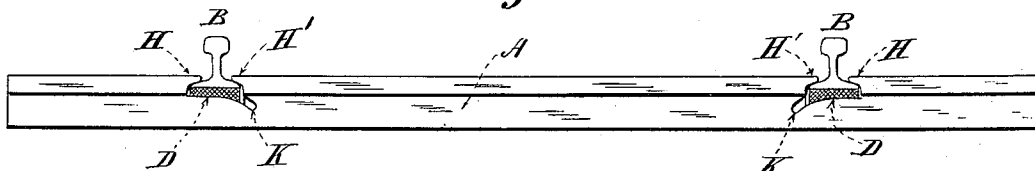


Fig. 2.

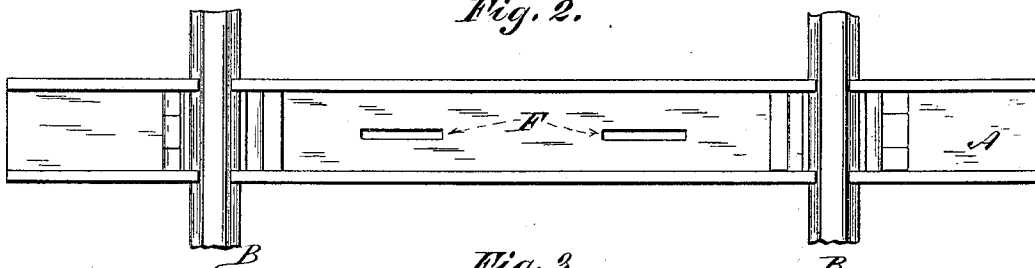


Fig. 3.

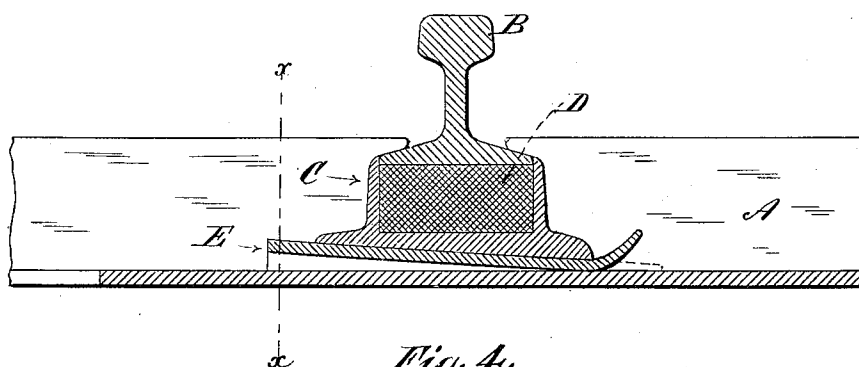
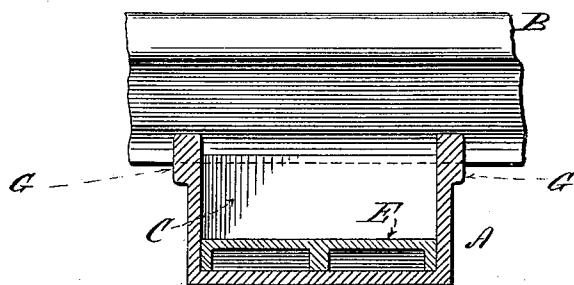


Fig. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

ARTHUR J. HARTFORD, OF NEW YORK, N. Y., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE A. J. HARTFORD STEEL RAILWAY TIE MANUFACTURING COMPANY, OF WEST VIRGINIA.

METALLIC RAIL-SUPPORT.

SPECIFICATION forming part of Letters Patent No. 467,166, dated January 19, 1892.

Application filed December 21, 1887. Serial No. 258,600. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR J. HARTFORD, of city, county, and State of New York, have invented a new and useful Improvement in Metallic Rail-Supports, of which the following is a full, true, and exact description, reference being had to the accompanying drawings.

The primary object of my invention is to make a tie so metallically combined with the rail as that the rail is locked in the tie when placed in position and cannot be spread or removed therefrom under ordinary conditions of operation without breaking the rail or tie.

The second object of my invention is to so lock the rail within the tie that it shall be firmly held there and incapable of vibration or motion; and the third object of my invention is to combine a firmly-locked rail in a tie with an elastic bearing-surface to diminish the jar of the passage of the car over the rail.

My invention will be readily understood from the accompanying drawings, in which—

Figure 1 represents a longitudinal view of the tie, showing the rails in position; Fig. 2, a plan view of the same; Fig. 3, a section through the rail-supporting mechanism of the tie; Fig. 4, a longitudinal view of the supported rail, showing the tie in section on the line *x x*, Fig. 3.

Similar letters refer to similar parts in all the figures.

My tie consists in the form shown of a channel-iron A, having its open or channel side upward when in position. The upper edges of the sides of the channel are preferably strengthened, as shown at G, Fig. 4. Slots are cut into the upper part of the channel, as shown in Fig. 1, in such a way that the channel-iron presents two locking-lips H H' when the rail is in position, while one part of the slot is continued to one side, as shown at K, to allow of the insertion of the rail. The rail itself rests upon another channel-iron placed at right angles in the first channel-iron, which is marked C in the drawings. In this channel-iron is preferably placed a block D of resilient material, upon which the rail B is to rest. The lower part of this iron is prefer-

ably rolled on an angle, as shown in Fig. 3, which corresponds with the angle of a wedge E, preferably a double channel-iron, as shown in Fig. 4. The channel-iron A is preferably provided with slots F to allow the escape of any entering moisture. The block D does not extend to the top of the channel-iron C, but allows for the reception of the rail between the sides of this channel.

The method of placing the rail in position can now be understood. The channel-iron A being empty, the rail is slipped in so that its lower flange passes down into the part of the slot marked K, and the rail is then returned, so as to lock under the lip H. The short channel-irons C C, with the contained blocks D D, are then slipped under the rails, and the wedges E driven in preferably from within outward, (though by reversing the position of the channel-iron C the wedge might be reversed,) thereby locking the rail firmly within the tie. This wedge E is at first straight, as shown in dotted lines in Fig. 3; but when driven home the end of it is turned up into a hook, as shown in Fig. 3. The end of the wedge may be longitudinally cut, as shown in Fig. 2, to facilitate this operation. When so turned up, the rail is firmly locked in the tie. The wedge should be made as acute as is possible with reference to the insertion of the rail within the tie. It is obvious that this arrangement permits the ballasting of the track by the insertion of earth in the open top of the tie. It is plain, likewise, that the resilient block D is of advantage in the driving of the wedge, taking up any loose motion between the wedge and the lips H H'. This block, however, may be dispensed with, and the iron C suitably shaped to carry the rail without the block D. It is plain, likewise, that though the wedge E is the better form, a flat plate might be substituted under a corresponding flat-bottomed surface of the iron C. It is plain, likewise, that the slot K need not be extended so as to be wider than the width of the rail under all circumstances. Thus in case it is not desired to slip the rail into the slot by tipping it the rail could be longitudinally slid through a locking-slot and when in

position embody my invention in part; but this would be a more difficult way of making the arrangement.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a metallic tie, a rail locked therein against upward motion, and a support for the rail, resting within the tie and driven against the rail by a wedge, and when in position is locked against return movement, substantially as described.
2. The combination of the metallic tie A, having thicker portion G, and a rail B locked therein, substantially as described.
3. The combination of the tie A, the rail B, and iron C, containing block D and wedge E, which passes between the bottom of the support and the tie, substantially as described.
4. The tie A, having drainage-openings F and heavier portion G, the rail B, locked therein, and iron C and wedge E, substantially as described.
5. The combination of a hollow tie provided with locking-lips for retaining the rail, a rail-support carried in said tie and having, when in position, a horizontal upper surface and an inclined lower surface, and a wedge driven beneath said rail-support, the inclination of

whose sides corresponds with the angle made between the bottom of the rail-support and the bottom of the tie, substantially as described.

6. The combination of a metallic tie provided with lips retaining the rail therein and a wedge driven beneath the rail and forcing the rail against the tie and locked in position by bending its projecting narrow end, substantially as described.

7. The combination of the tie A, provided with lips H H', the rail-support C, and a wedge E, provided with slotted ends for the purpose of locking the wedge in position, substantially as described.

8. The combination of the rail A, provided with lips H H', the rail-support C, having a cavity at its upper side for the reception of the rail and provided with upwardly-projecting flanges embracing the rail, and the wedge E, substantially as described.

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

ARTHUR J. HARTFORD.

Witnesses:

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