(No Model.)

F. F. FIELD & J. DRISCOLL.

RAILROAD TIE.

No. 433,651. Patented Aug. 5, 1890.

Fig. 1.

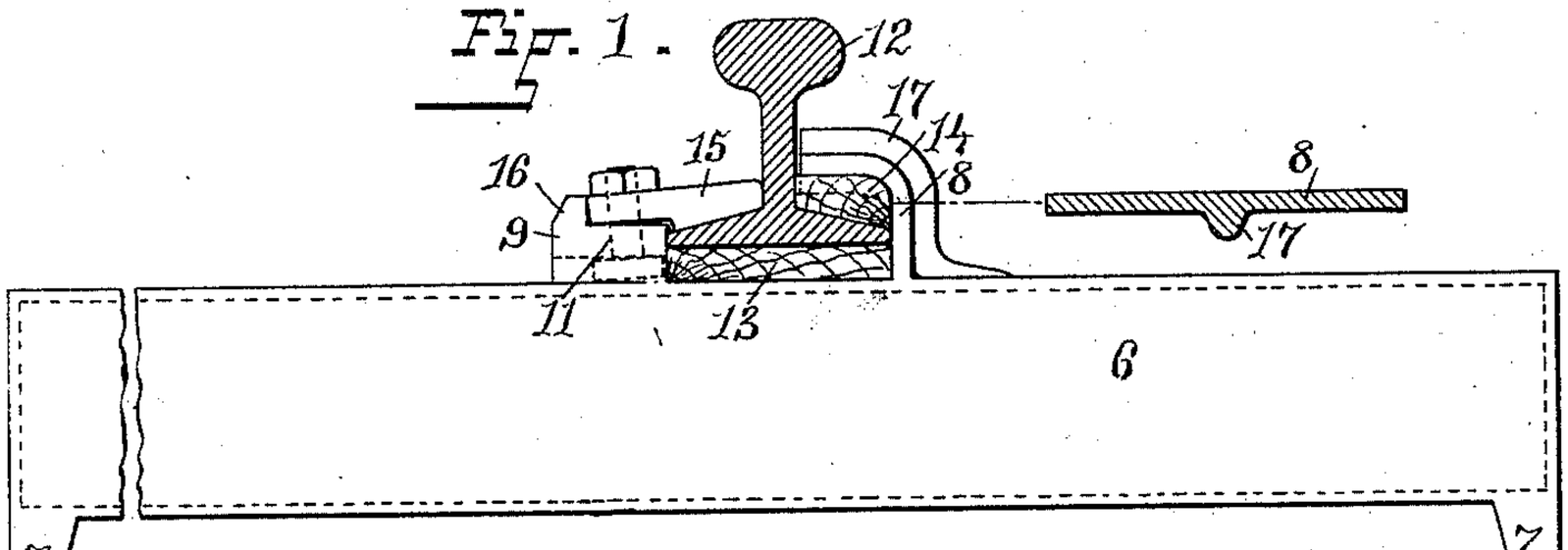


Fig. 2.

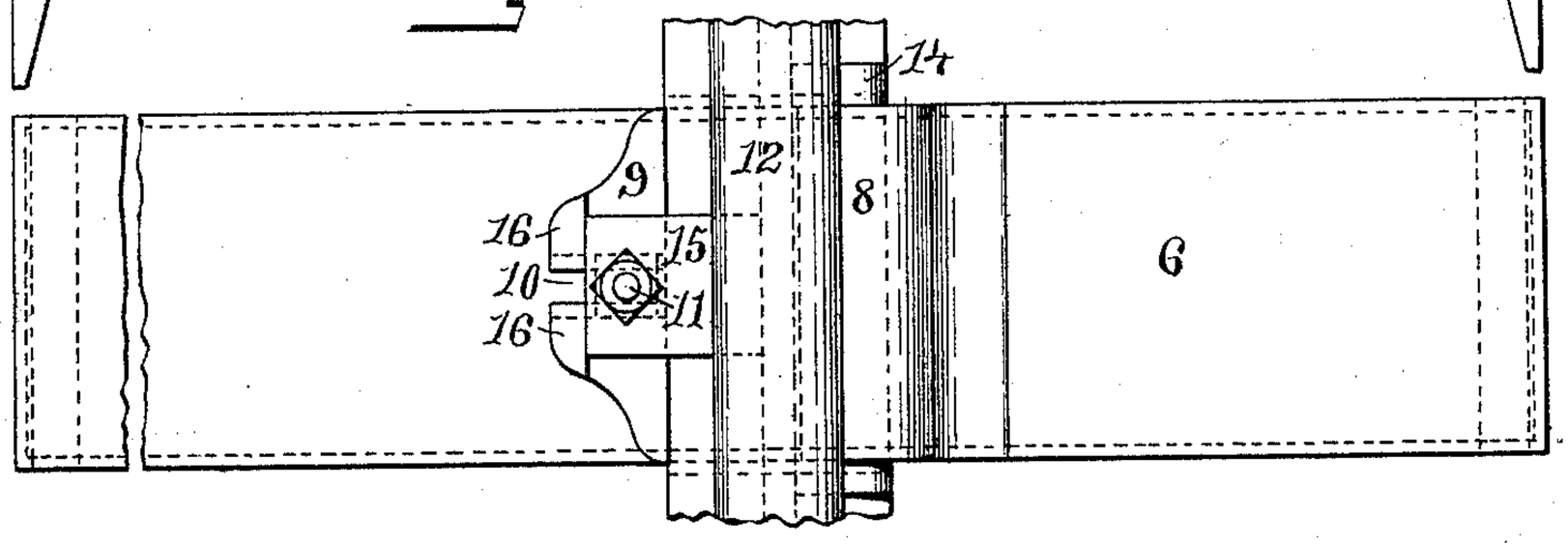


Fig. 3.

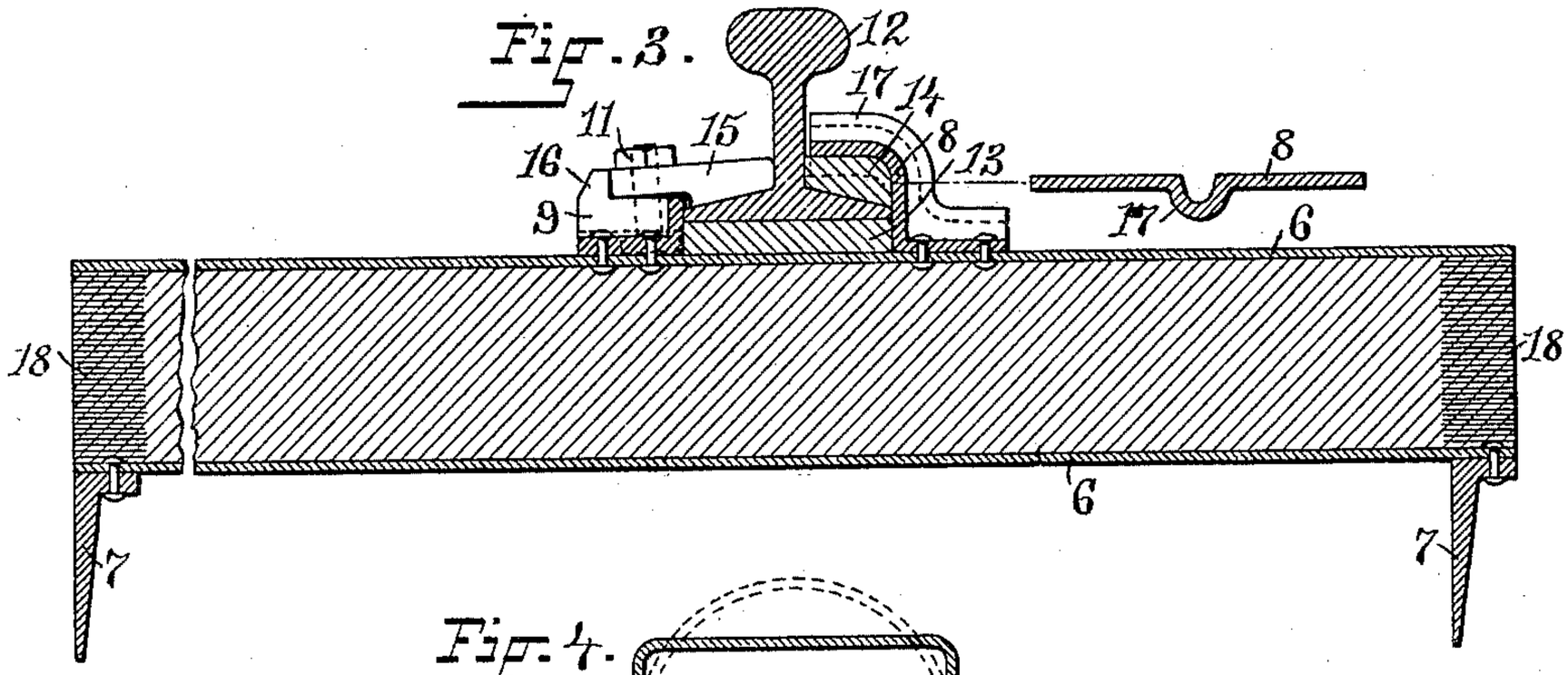
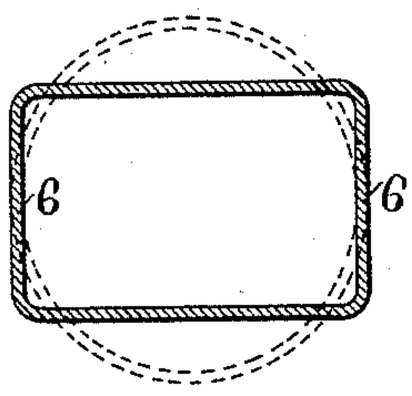


Fig. 4.



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UNITED STATES PATENT OFFICE.

FREDERICK F. FIELD AND JOHN DRISCOLL, OF PROVIDENCE, RHODE ISLAND.

RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 433,651, dated August 5, 1890.

Application filed August 5, 1889. Serial No. 319,757. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK F. FIELD and JOHN DRISCOLL, both of Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Railroad-Ties, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to an improvement in the construction of a metal tie and in the chair by which the rail is secured to the tie; and it consists in the peculiar and novel construction of a tubular metal tie provided with anchor-plates, and the peculiar and novel construction of the rail-chair by which the rail is secured to the tie, so as to permit of the ready removal of the rail, as will be more fully set forth hereinafter.

Figure 1 is a side view of part of our improved cast-metal railroad-tie and the chair, the rail being shown in section. Fig. 2 is a top view of the same. Fig. 3 is a longitudinal sectional view of our improved railroad-tie as constructed of wrought-iron. Fig. 4 is a cross-section of the wrought-iron tie, the broken lines showing a tube from which the tie may be formed.

Similar numbers of reference indicate corresponding parts in all the figures.

The number 6 indicates a rectangular or nearly rectangular box of cast metal, usually made of cast-iron. The anchor-plates 7 are cast in one piece with the box 6. The fixed portion 8 of the chair may also be cast in one piece with the box 6. The portion 9 of the chair, provided with the slot 10, into which the head of the bolt 11 enters, may also be cast in one piece with the box 6, so that the tie when cast will be complete to receive the rail. The base of the rail 12 closely fits between the parts 8 and 9 of the chair. The hard-wood bolster 13 is placed between the box 6 and the base of the rail 12. The wedge 14 is driven between the part 8 of the chair and the base of the rail and holds the same firmly on the bolster 13. The clip-plate 15 is secured by the bolt 11, and, abutting against the shoulder 16, bears on the base of the rail 12. The part 9 of the chair may be provided with two slots 10, and the clip-plate 15 may be made of sufficient length to receive two bolts 11, or two separate clip-plates 15 may be used to securely hold the rail. A rail may be readily set into the chairs on the ties on which the rail is to rest. The clip-plates 15 may then be secured, the wedges 14 driven home, and an additional turn given to the nut on the bolt 11 to firmly secure the rail, and by loosening the wedges 14 and removing the clip-plates 15 any rail may be readily removed.

Instead of being cast in one piece with the box 6, forming the tie, the parts 8 and 9 forming the chair may be made of wrought-iron, the part 9 being formed in suitable dies, and the part 8 being rolled into the form shown, cut into the lengths required, and then, while heated, upset in suitable dies to crimp the central portion and form the rib 17, (shown in Fig. 3 and illustrated by a section in that figure,) so as to stiffen the part 8, to form a greater resistance to the wedge 14. The wrought-iron chair thus formed may be secured by rivets, as is shown in Fig. 3.

In place of casting the box 6 the same may be formed of sheet metal by bending a sheet into the form shown in Fig. 4, lapping the edges and securing the same together in any suitable manner, preferably by welding, by either butt or lap welding the edges in the form of a tube, as is indicated in broken lines in Fig. 4, and then forming the tube between suitable rolls into the form shown in cross-section in Fig. 4. To this box or approximately rectangular tube 6 the anchor-plates are secured by riveting, as is shown in Fig. 3.

To deaden the sound of the hollow box 6, the same is filled with concrete or any other suitable material, and when the open-ended wrought-metal box (shown in Fig. 3) is used the ends 18 are for some distance made impervious to water by filling all the interstices with asphaltum or other suitable material impervious to water.

The anchor-plates 7 are made tapering, so as to enter the road-bed to hold the ties and the rails in their required positions against all lateral strains, thus maintaining the alignment of the railroad. The practically rectangular form of the box 6, forming the tie, permits of the tamping of the ballast well under the tie, so as to give a firm bearing to the rail, and thus permits ready vertical adjustment of the rail.

Having thus described our invention, we claim as new, and desire to secure by Letters Patent—

1. The combination, with the metal box 6, filled with sound-deadening material, and having the ends hermetically sealed to exclude moisture, of the anchor-plates 7, and the parts 8 and 9, rigidly secured to the metal box, the bolster 13, wedge 14, clip 15, constructed to secure the rail, as described.

2. The combination, with a railroad-tie, of the curved part 8 of the chair constructed to bear against the flange forming the base of the rail and extending over the same, the part 9, bearing against the opposite side of the rail-base, provided with the slot 10 and bolt 11, the clip-plate 15, bolster 13, and wedge 14, as described.

3. The combination, with the metal box 6, of the chair composed of the part 9, provided with shoulders 16, the bolt 11, and clip-plate 15, and the part 8, provided with the rib 17, and the wedge 14, constructed to secure the rail, as described.

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