No. 771,034. PATENTED SEPT. 27, 1904.

H. W. AVERY.

METALLIC RAILWAY TIE.

APPLICATION FILED JUNE 6, 1904.

NO MODEL.

Fig. 1.

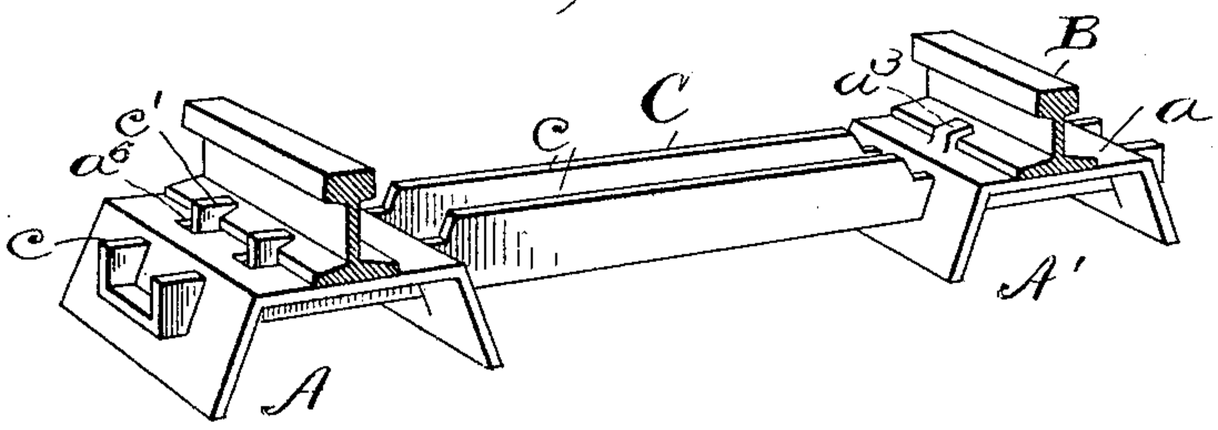
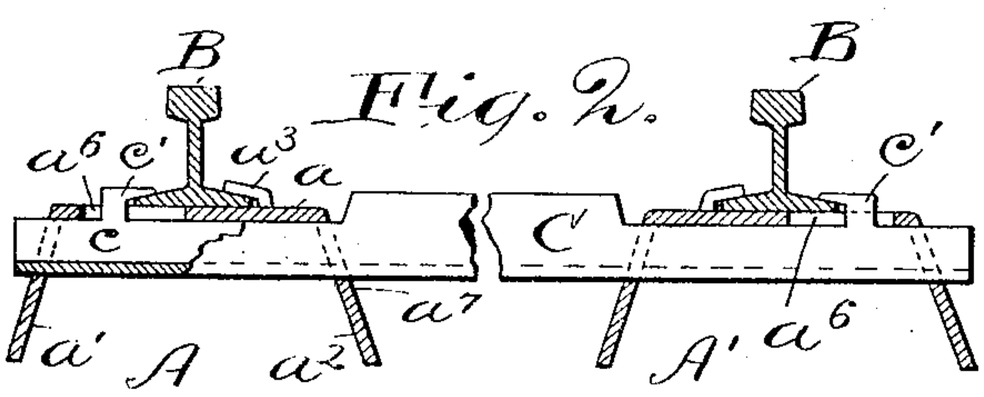


Fig. 2.



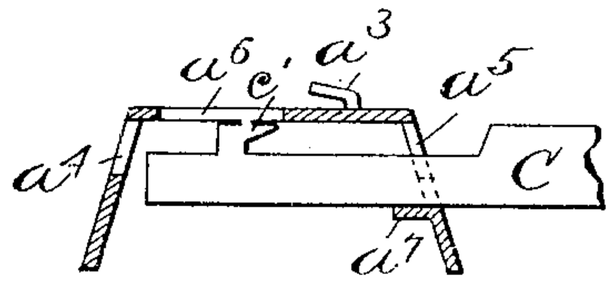


Fig. 3.

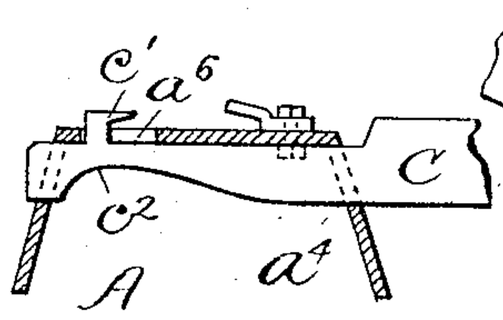


Fig. 4.

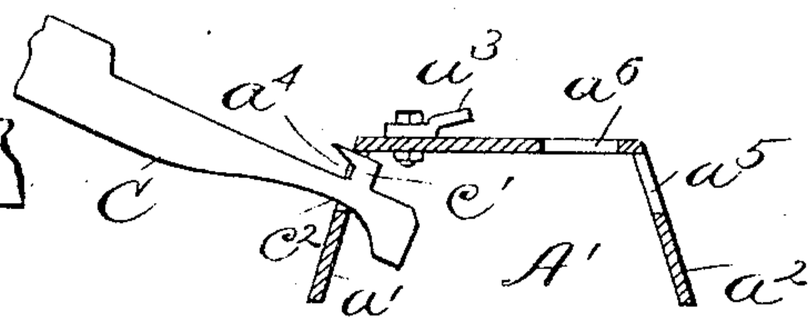


Fig. 5.

Witnesses.
E. B. Gilchrist
B. W. Brockett

Inventor:
Henry W. Avery
By Thurston & Bates
attys.

No. 771,034. Patented September 27, 1904.

UNITED STATES PATENT OFFICE.

HENRY W. AVERY, OF CLEVELAND, OHIO, ASSIGNOR TO THE AVERY STAMPING COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

METALLIC RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 771,034, dated September 27, 1904.

Application filed June 6, 1904. Serial No. 211,281. (No model.)

To all whom it may concern:

Be it known that I, HENRY W. AVERY, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Metallic Railway-Ties, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to the class of metallic railway-ties which include a tie-bar having upwardly-projecting hooks for engagement with the rail-flanges and two chairs each having depending sides through which the tie-bar passes and a seat which supports one of the rails and on which are upwardly-projecting hooks for engagement with the rail-flange, and through which is a slot for the passage of the tie-bar hook which engages with the opposite side of said rail-flange.

The object of the invention is to provide a metallic railway-tie of the class mentioned, but of such form that the seats of the chairs shall have no slots which extend from side to side and communicate with the holes through the sides for the reception of the tie-bars.

In the drawings, Figure 1 is a perspective view of the invention. Fig. 2 is a sectional view. Fig. 3 is a sectional view through one chair, showing the manner in which the tie-bar is passed through the chair; and Fig. 4 is a sectional view of one end of a modified form of the invention when the tie-bar and chair are in their final position; and Fig. 5 is a similar view of the other end of said modified tie-bar, showing the position of said parts as the bar is passing through the chair.

Referring to the parts by letters, A A′ represent metallic rail-chairs of familiar configuration. They include a flat top or seat a and two depending diverging sides a' a^2, and they are preferably made of steel pressed into the desired shape. A hook or hooks a^3 extend upward from the chair-seat, being preferably pressed upward therefrom if the chair is made of pressed metal, as stated.

B represents the rails, which rest upon the chair-seats with their inner flanges engaging beneath these hooks.

C represents a metallic tie-bar, which may be made in one piece or in two pieces adjustably connected, as desired. Whatever may be its cross-sectional configuration it must have one or more upwardly-extended flanges c, whereon are formed hooks c'. These tie-bars pass through holes a^4 a^5 in the sides of the chairs, and the hooks pass up through slots a^6 in the chair-seats for engagement with the rail-flanges, said slots being in the seat only and disconnected from the holes in the side. In order that these tie-bars may be passed through the holes in the chair sides and may yet be able to project their hooks up through the slots a^6 in the chair-seats so as to engage with the rail-flanges, the hole a^5 in the inner side member of each chair is made as deep as the height of the tie-bar and hook. The end of the bar, including that part thereof on which the hook is formed, is passed through the hole a^5. Then the bar and chair are moved relatively so as to cause the hook on the bar to pass up through the slot a^6 in the chair-seat, and the end of said bar is then passed through hole a^4. When the rail-flanges lie beneath these hooks and the hooks on the chair-seat, relative movement up and down of the chair and bar is impossible. Such relative movement will also be prevented in a very large measure by the ballast, which will be tamped beneath the chair-seat. The same result may also be accomplished, at least to an extent which will prevent the disengagement of the bar and chair-seat while the tie is being handled, by means of a flap a^7, forming a part of the side through which the larger hole a^5 is formed, which flap may be bent up into engagement with the under side of the tie-bar after said bar has been passed through the hole, as stated. This flap remains attached along its lower edge to the side from which it is pressed, and it is by the turning down of this flange that one may sufficiently enlarge the hole a^5 to permit the said passage of the tie-bar.

In the construction shown in Figs. 4 and 5 the hole a^5 is not made any deeper than the hole a^4. Instead of deepening this hole the lower edge of the tie-bar is cut away at c^2

below and adjacent to the hook c', so that the width of the tie-bar at this point, inclusive of the hook, is substantially the same as the width of that part of the tie-bar on either side of this cut-away portion. This construction permits the tie-bar to be passed through the hole a^5 without enlarging said hole. In other words, it serves the same purpose as does the enlargement of the hole a^5 by the turning down therefrom of the tongue a^7. When the parts, as shown in Figs. 4 and 5, are in place, the lower edges of the tie-bar rest upon the lower edges of the holes a^4 a^5, the upper edges of the tie-bar rest against the under surface of the seat, and the hook c' passes through the slot a^6 to its operative position.

It will be understood that the hooks a^3 when in use must be rigidly connected with the chair in order to be adapted to do their part of the work of holding the rails; but it is not material that they shall be integral parts of said chair. They may be independently made and secured to the chair by bolts or other equivalent means, as shown in Figs. 4 and 5.

I claim—

1. In a metallic railway-tie, the combination of a metallic tie-bar having hooks on its top edge, with two metallic chairs, each consisting of a flat seat, in which is a short slot through which a hook on the tie-bar passes, and two depending side members in which are alined holes through which said tie-bar passes, said holes being unconnected with the slot through the seat.

2. A metallic tie composed of a metallic tie-bar having hooks on its top edge, combined with two metallic chairs, each consisting of a seat, adapted to support the rail, and two members depending from opposite edges of said seat, there being in the seat a slot for the passage of one of said hooks, and in the side members alined holes which do not connect with the slot in the seat, the height of the hole in the inner depending member of each chair being a trifle greater than the width of that part of the tie-bar on which the hook is formed whereby the hooked part of said tie-bar may pass through said hole.

3. A metallic tie composed of a metallic tie-bar having hooks on its top edges, combined with two metallic chairs, each consisting of a flat seat in which is a short slot through which a hook on the tie-bar may pass, and two depending side members in which are alined holes for the passage of said tie-bar, which holes do not connect with the slot in the seat, the slot in one of the side members in each chair being considerably deeper than the other and deep enough for the passage of the part of the said tie-bar from which the hook projects, and hooks projecting up from the seats to coöperate with the hooks on the tie-bar to fasten a rail on said seat.

4. The combination of a metallic tie-bar having hooks on its top edge, with two metallic chairs, each consisting of a flat seat, in which is a short slot through which a hook on the tie-bar may pass, and two depending sides in which are alined holes for the passage of said tie-bar, there being on one of said sides an integrally-connected flap adapted to be turned down to sufficiently enlarge the hole to enable the hooked part of the tie-bar to pass through and to be turned up against the under edge of the tie-bar to hold it in that position in which its hook projects through the slot in the chair-seat.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

HENRY W. AVERY.

Witnesses:

E. L. THURSTON,

B. W. BROCKETT.