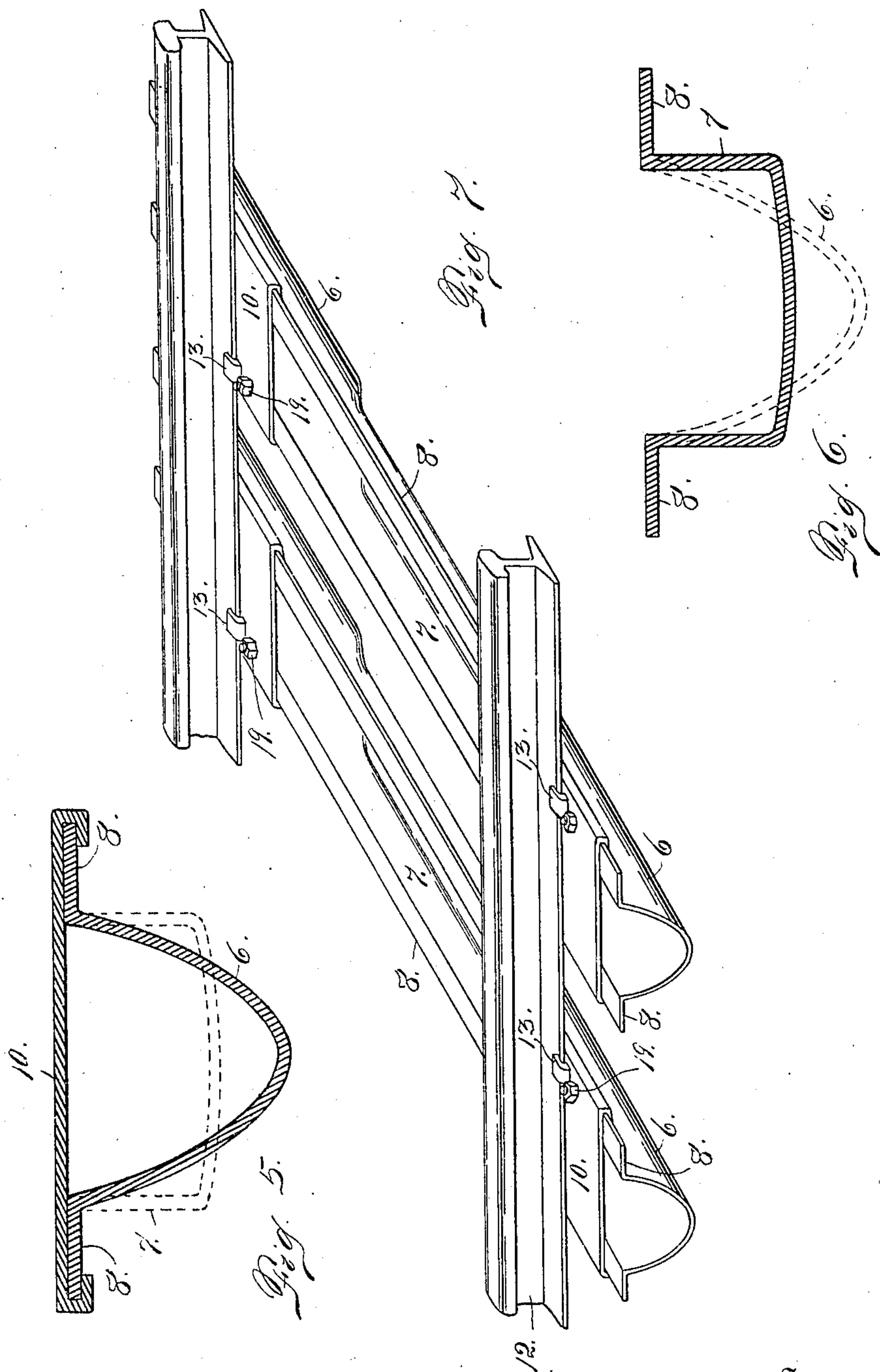


No. 843,492.

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A. O. RIDGWAY.
METAL RAILWAY TIE.
APPLICATION FILED JUNE 11, 1906.

2 SHEETS—SHEET 2.



Witnesses
Otto C. Haddick.
Dena Nelson.

Inventor
A. O. Ridgway.
By *A. J. S. M.* Attorney

UNITED STATES PATENT OFFICE.

ARTHUR O. RIDGWAY, OF DENVER, COLORADO.

METAL RAILWAY-TIE.

No. 843,492.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ARTHUR O. RIDGWAY, a citizen of the United States, residing at the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Metal Railway-Ties; and I do declare the following to be 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in metal railway-ties, and consists of the features hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved tie, showing the rails in cross-section. Fig. 2 is a top plan view of the same. Figs. 3, 4, 5, and 6 are sections taken on the lines 3 3, 4 4, 5 5, and 6 6, respectively, of Fig. 2. Fig. 7 is a perspective view of my improved construction.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate the body of my improved tie, which is composed of the end members 6 6 and the central member 7. These end members in cross-section have the shape of an inverted arch (see Fig. 4) provided with horizontal flanges 8, while the central member 7 is approximately rectangular in cross-section, as shown in Fig. 6. The central member is provided with horizontal flanges 8 in the same manner as the end members. This difference in shape between the central and end members is an important feature in the anchoring of the tie, whereby it is prevented from changing its position on the ground. In the construction of the tie it is pressed into shape in such a manner that the central member contains the same amount of metal as the corresponding length of the end members. Hence in giving the central member the approximately rectangular appearance in cross-section the side walls are thrown outwardly, but the bottom is raised, as shown in Fig. 1. In this way two inclined shoulders 9 are formed where the end members merge in the central member.

To each end member of the tie is applied a tie-plate 10, whose outer edges are bent around the corresponding flanges 8 of the end members, whereby the tie-plates are locked securely in place and afford a considerable reinforcement. These tie-plates also form seats for the rails 12, the said rails being secured to the plates by means of angle irons or plates 13. The bottom member 14 of each angle-iron is located below the tie-plate and below the flange 8 of the tie, while the upwardly-projecting part 15 of the angle-plate passes through registering openings formed in the flange 8 and the tie-plate 10, its upper extremity 16 being bent over the edge of the base of the rail. This angle-plate fastening is also provided with a depending part 17, against which one side of the fastening-bolt 18 passes. This fastening bolt passes up through the member 14 of the angle-plate and thence up through the flange of the tie and the tie-plate, being fastened by a nut 19 above. The upper surface part 14 of the angle-plate is inclined or rounded, as shown at 20, the said surface being thickest adjacent the upwardly-projecting member 15 and tapering downwardly and outwardly. This permits the angle-plate a limited degree of rocking movement at the point A, (see Fig. 3,) whereby the hook-shaped extremity 16 of the angle-plate is tightened securely upon the rail. Also by virtue of this fact a limited degree of lateral movement may be imparted to the rail in case the latter is slightly out of alinement.

As shown in the drawings, there are two of these fastening angle-plates connected with each rail portion which crosses the tie. The two angle-plates which engage each rail where it crosses a tie are not located directly on opposite sides of the rail, but are staggered, so to speak, one being located at one side of the tie and the other at the other side. This arrangement holds good for both of the rails which cross the same tie.

In connecting the fastening angle-plates with the tie-plates one side of the bolt-head engages the depending lip 17 of the tie-plate, whereby the bolt is prevented from turning while applying the nut 19.

From the foregoing description the use of my improved tie will be readily understood. The ties are located at suitable intervals, and the rails are connected therewith, as heretofore described. The angle-plates when con-

connected with the tie-plates and rails as aforesaid make the construction very secure and prevent as far as possible any undue or accidental displacement of the connected parts.

5 Having thus described my invention, what I claim is—

1. A metal tie composed of inverted arch-shaped end members, and a central member approximately rectangular in cross-section.

10 2. A metal tie composed of end members having the shape in cross-section of an inverted arch, and an intermediate or central member approximately rectangular in cross-section.

15 3. A metal tie having inverted-arch-shaped end members, and a central member approximately rectangular in cross-section, all of the members being provided with horizontal flanges on opposite sides, and tie-plates
20 applied to the end members and secured thereto.

4. A metal tie, a portion of which has the shape of an inverted arch in cross-section while another portion is approximately rec-
25 tangular in cross-section.

5. A metal tie having inverted-arch-shaped end members provided with horizontal flanges, and tie-plates applied to the end members and having their edges bent around
30 the outer edges of the flanges of the ties, the central part of the tie being approximately rectangular in cross-section.

6. A hollow metal tie open at the top and having flanged edges, the tie having inverted-
35 arch-shaped end portions, and a central portion approximately rectangular in cross-section; tie-plates applied to the opposite extremities of the tie, and angle-plates having one member located below the flange of the
40 tie while another member passes up through openings formed in the flange of the tie and the tie-plate, its upper extremity being bent over the base of the rail, the upper surface of the lower member being inclined to the up-
45 wardly-projecting member, thus permitting a limited degree of rocking movement, and a bolt passing through the lower member of

the angle-plate together with the flange of the tie and the tie-plate.

7. A metal tie having inverted-arch- 50 shaped end portions, and a central portion approximately rectangular in cross-section, the said tie also having flanged edges, tie-plates applied to the opposite extremities of the tie, and angle-plates having one part lo- 55 cated below the flange of the tie while another part passes up through openings formed in the flange of the tie and the tie-plate, its upper extremity being bent over the base of the rail 60

8. A hollow metal tie having arch-shaped end portions, and a central portion approxi- mately rectangular in cross-section, the said tie being also open at the top and having flanged edges, tie-plates applied to the oppo- 65 site extremities of the tie, and suitable means for connecting the rails to the tie.

9. The combination of a metal tie having inverted-arch-shaped end portions and a central portion approximately rectangular 70 in cross-section, the said tie also having flanged edges, tie-plates applied to the opposite extremities of the tie, and angle-plates having one part located below the flange of the tie and another part passing above the 75 tie-plate, its upper extremity engaging the rail.

10. The combination with a railroad-rail, of a flanged metal tie, having inverted-arch-shaped end portions, and a central portion 80 approximately rectangular in cross-section of a fastening device consisting of an angle-plate having one part engaging the under surface of the flange of the tie while another part passes up through the flange of the tie 85 and engages the base of the rail, and suitable means for connecting the lower part of the angle-plate with the tie.

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

ARTHUR O. RIDGWAY.

Witnesses:

A. J. O'BRIEN,

DENA NELSON.