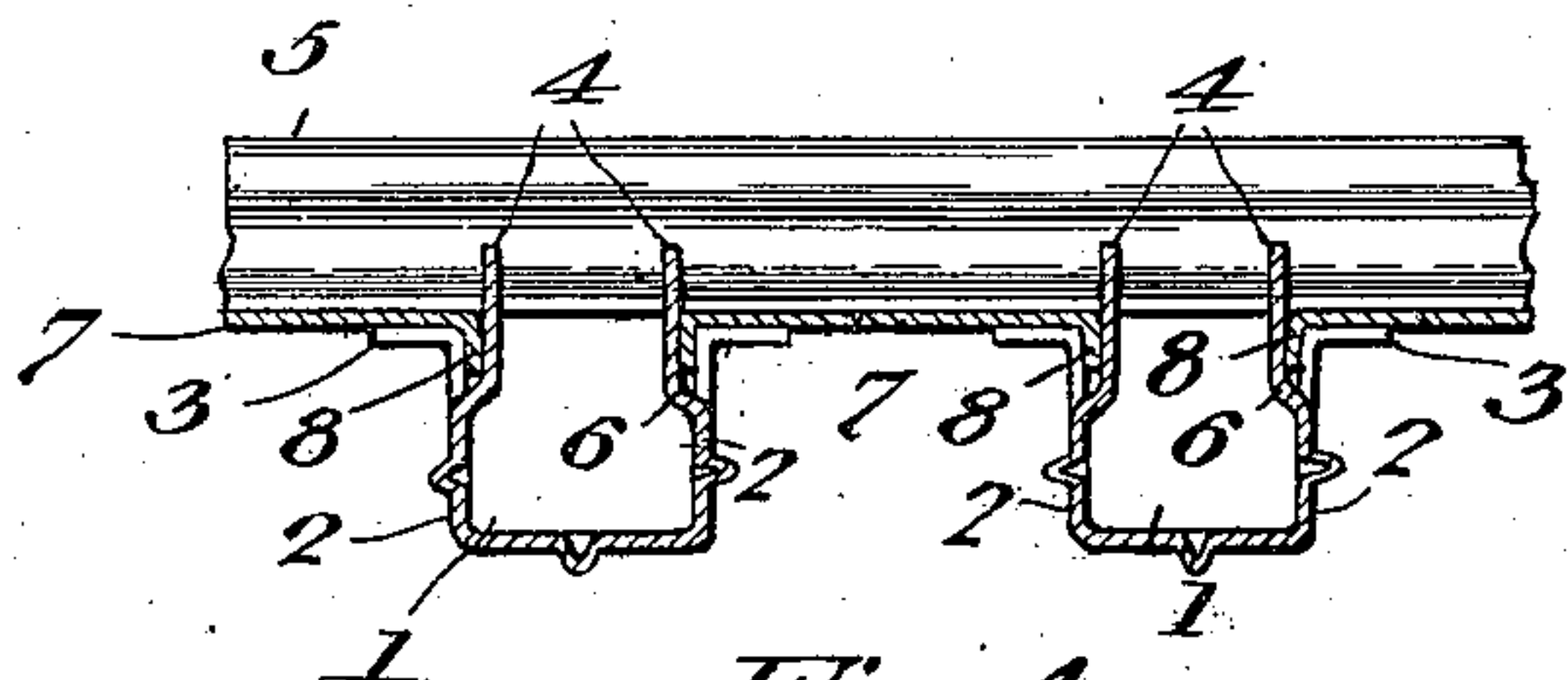
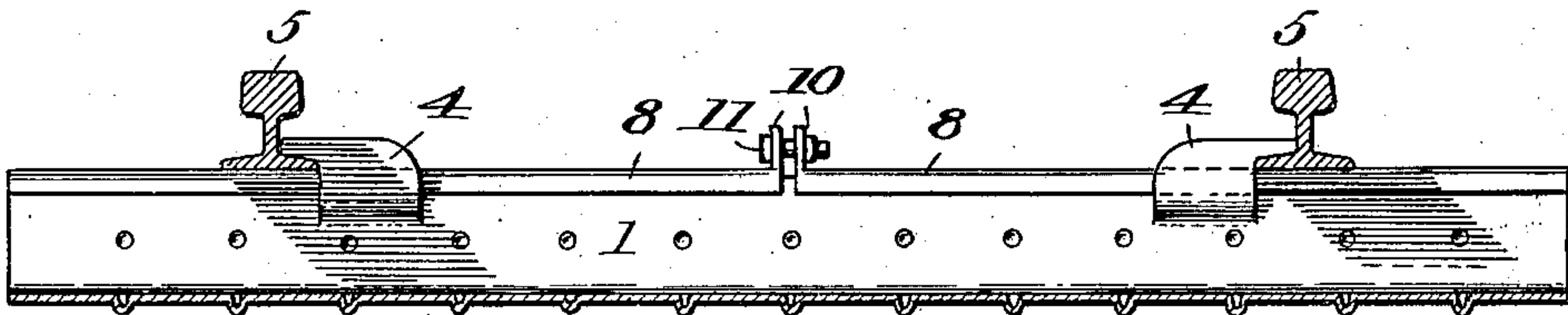
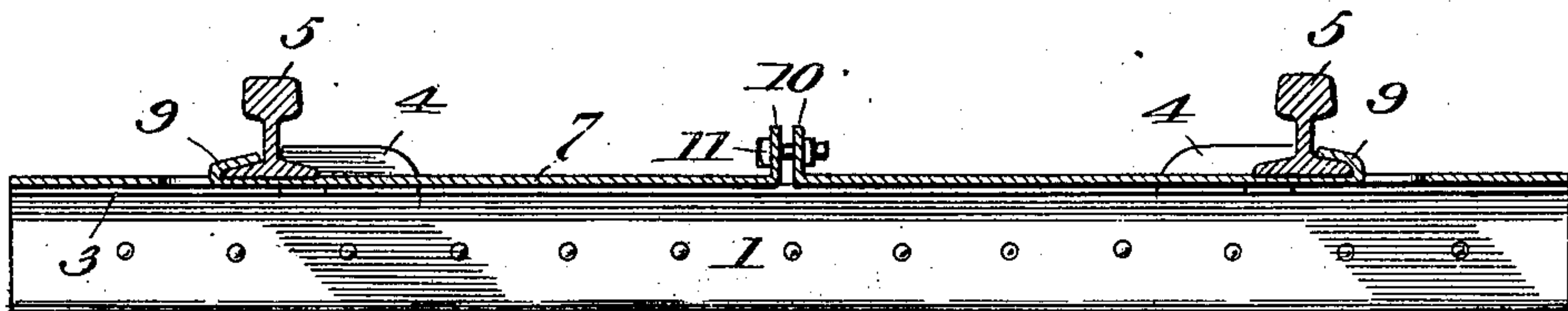
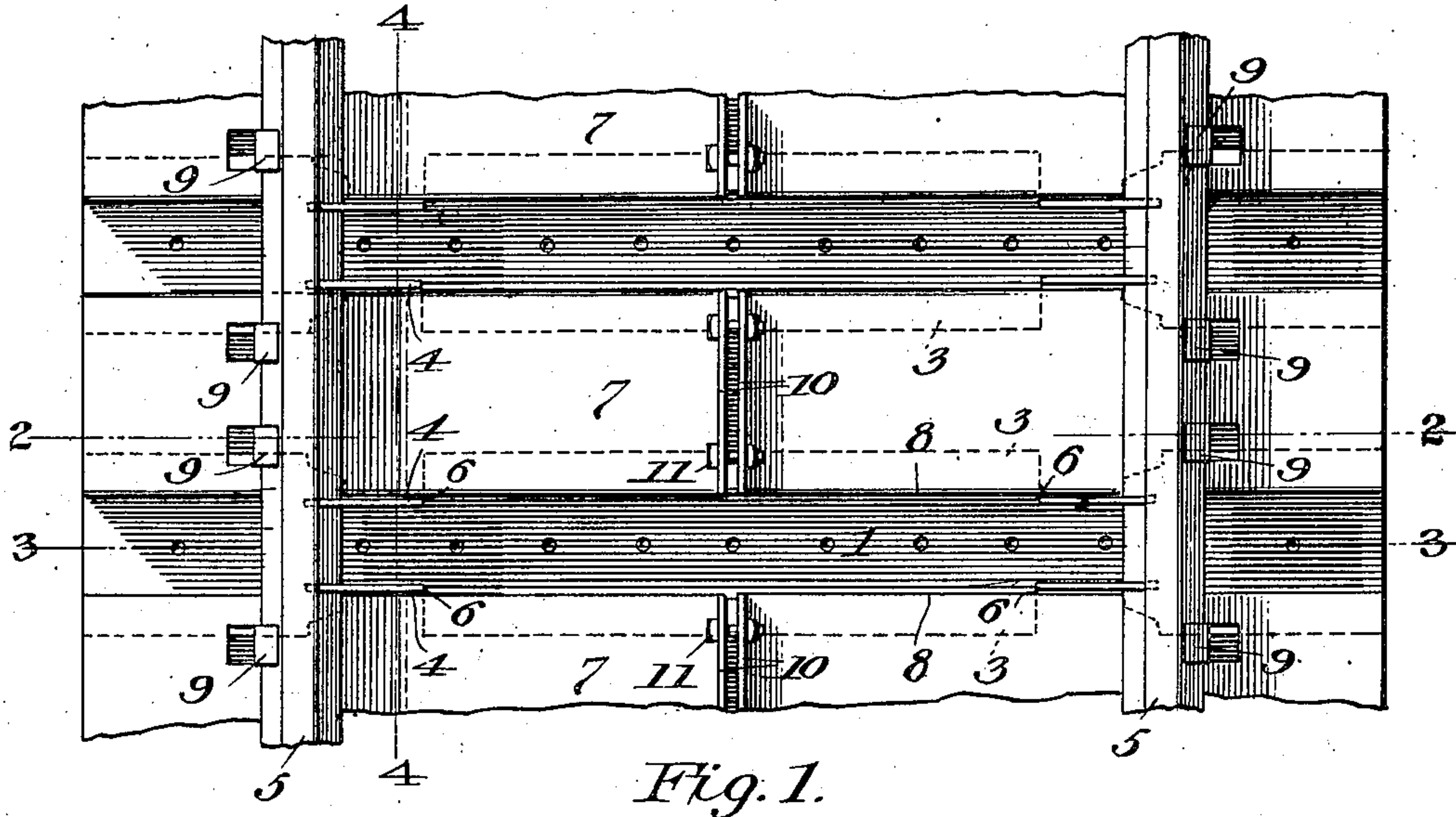


No. 844,489.

PATENTED FEB. 19, 1907.

J. W. WEBB.
RAILROAD TIE CONSTRUCTION.
APPLICATION FILED MAR. 18, 1906.



Witnesses:
Geo. T. Bean,
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Fig. 4.

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UNITED STATES PATENT OFFICE.

JOHN WILLIAM WEBB, OF COLUMBUS, MISSISSIPPI.

RAILROAD-TIE CONSTRUCTION.

No. 844,489.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN WILLIAM WEBB, a citizen of the United States, residing at Columbus, in the county of Lowndes and State of Mississippi, have invented certain new and useful Improvements in Railroad-Tie Construction; 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 railroad cross-ties.

It has for its object to provide a metallic tie formed of pressed steel and which will by reason of its construction embody in its formation and application the features of a water-shed to the road-bed, a bridle-rod to prevent the spreading of the rails, and an anticreeper to prevent creeping of the rails. Besides these features, it possesses the merits of serving as a gage in laying the rails or track, effectiveness in preventing the rail from being turned or lifted on the side of the inner base-flange, increased strength and holding power of the lugs which take the place of spikes for clamping the inner flange of the rail, ease of access to the ballast between the ties when it is desired to add to the same or to tamp the ballast, facility in removal of ties and sections of rail when for any reason they are to be replaced, and comparative inexpensiveness in the cost of production due to the simplicity of construction of the parts constituting the ties.

To the accomplishment of the foregoing and such other objects as may hereinafter appear, the invention consists in features hereinafter particularly described and then sought to be clearly defined by the claims, reference being had to the accompanying drawings, forming a part hereof, and in which—

Figure 1 is a plan view of a section of a track containing cross-ties made according to the present invention. Fig. 2 is a cross-section on the line 2 2 of Fig. 1. Fig. 3 is a cross-section on the line 3 3 of Fig. 1, and Fig. 4 is a longitudinal section on the line 4 4 of Fig. 1.

In the drawings the numeral 1 designates a pressed-steel channel-iron or trough-shaped member having its upwardly - extending sides 2 bent outwardly at the upper portion

thereof to form lateral flanges 3, which will tend to stiffen the sides, so as to resist the tendency of the ballast between the ties to press the sides of said members inwardly. These flanges also serve to afford an extra thickness of metal at the angles of the tie-caps, hereinafter described, thus bracing and imparting additional strength at the points where the trough-shaped members and tie-caps are joined one to the other.

At proper points toward the ends of the trough-shaped members the metal along the edges is cut and bent upwardly, so as to form clips 4, which will lap over the inner flange of the rails 5 and clamp the rails to the ties. These clips being formed of bent-up portions made by cutting the metal of the sides of the trough-shaped members, give to the clips additional metal in the direction of strain lengthwise of the ties and laterally to the rails, so that the maximum of strength is imparted to the lips, and the cuts in the metal for the formation of the clips being laterally to the line of strain instead of lengthwise thereof, as when the lips are formed from the face of flat or horizontally-disposed sheets of metal in some forms of metallic ties, there is avoided the possibility of the metal being fractured or torn along the lines of the cuts by the lateral strain transmitted from the rails. These lips 4 are also offset from the sides of the trough-shaped member, as indicated at 6, so as to permit the tie-caps, hereinafter described, to be moved or adjusted lengthwise of the ties in assembling and locking the parts and also in disassociating them when a tie or section of rail is to be replaced or when access is to be had to the ballast between the ties. These trough-shaped members are disposed at suitable distances apart and are connected one to the other by what for convenience and appropriateness will be designated as "tie-caps" 7. These caps are made in two sections, as illustrated, and will cover the space of the road-bed between the trough-shaped members. They are formed with depending side flanges 8, which fit over the sides of the trough-shaped members on the inside thereof, and thus serve not only to connect one trough-shaped member to another, but also to brace the side walls of those members against the tendency of the ballast to press said walls inwardly. These tie-caps are provided with lips 9, struck up therefrom at suitable points toward their outer ends, so that the lips will lap over the

outer flange of the rails when brought into proper position. The adjacent ends of the two sections of each tie-cap are formed with upwardly-extending flanges 10, designed to receive nutted bolts 11, so that by means of said bolts the two sections may be drawn together, and thus cause their clips 9 to clamp the rail-flanges and to securely lock the rails between said clips and the clips 4 of the trough-shaped members and in that manner clamp the rails to the ties. It will be observed that the clips of the trough-shaped members grip the inner flange of the rail at both sides of the trough-shaped members and that the clips of the tie-cap grip the outer flange of the rail at points intermediate of the gripping-points of the clips of the trough-shaped member, thus affording a stronger locking of the rails to the ties.

By constructing the tie-caps so that they will lap over the side walls of the trough-shaped members and so that the clips 9 may be drawn by a clamping action against the flanges of the rails said clips will so tightly grip and hold the rails and the tie-caps will have so tight a hold on the trough-shaped members that the rails cannot move longitudinally without moving the ties with them, and as that cannot be done the rails will be prevented from "creeping," and thus an anticreeping-anchor is provided for the rails. Furthermore, the construction and mode of application of the tie-caps makes a "bridle-rod" of said tie-caps to prevent spreading of the rails. By connecting one trough-shaped member to another by the tie-caps a practically continuous covering is afforded for the road-bed—that is, for the ballast between the ties and for the portion of the road-bed beneath the trough-shaped members—so that a perfect water-shed for the road-bed is afforded. The trough-shaped members, whether filled with ballast or not, will carry off any water that may pass into the troughs, and washing of the ballast between the members will be prevented by the covering afforded by the tie-caps spanning the spaces between the trough-shaped members.

In practice the road-bed beneath the trough-shaped members and also the ballast between said members may be treated with petroleum or oils, if necessary, to guard against the pressed-steel ties corroding. If it be desired to renew the ballast or to tamp the same, access can be had to the ballast by loosening the bolts of the tie-caps and sliding said caps lengthwise of the trough-shaped members. So if it be necessary to replace a tie or section of rail the parts can be disassociated by loosening the bolts and sliding the tie-caps so that the parts can be removed and replaced or substituted by other parts. Even if the first cost of this construction of road-bed should be more than the construction methods heretofore practiced, the reduction in cost of

maintenance will be materially lessened under this construction, so that the ultimate cost as viewed from a practical and business point of view will be less under this than under other constructions.

The sides and bottom of the trough-shaped members may be roughened, corrugated, or indented, as shown, to guard against endwise movement of the members.

Having described my invention and set forth its merits, what I claim is—

1. In a railroad-tie construction, a metallic trough-shaped member provided with rail-flange-gripping clips formed by struck-up portions of the side walls of the trough-shaped member extending above the side walls of said member, substantially as described.

2. In a railroad-tie construction, a metallic trough-shaped member provided with rail-flange-gripping clips formed by struck-up portions of the side walls of the trough-shaped member extending above the side walls of said member and offset therefrom, substantially as described.

3. In a railroad-tie construction, a metallic trough-shaped member provided with outwardly-turned flanges at the upper portion of the side walls of said member and having rail-flange-gripping clips formed by struck-up portions of the side walls of the trough-shaped member and extending above said side walls, substantially as described.

4. In a railroad-tie construction, a number of metallic trough-shaped members each provided with rail-flange-gripping clips, and tie-caps connecting the several trough-shaped members and provided with rail-flange-gripping clips, substantially as described.

5. In a railroad-tie construction, a number of metallic trough-shaped members each provided with rail-flange-gripping clips formed by struck-up portions of the side walls of said members, and tie-caps connecting the several trough-shaped members and provided with depending side flanges engaging adjacent walls of the trough-shaped members, said tie-caps being provided with rail-flange-gripping clips, substantially as described.

6. In a railroad-tie construction, a number of metallic trough-shaped members each provided with rail-flange-gripping clips, and tie-caps connecting the several trough-shaped members, said tie-caps being formed in sections and provided with means for drawing them toward each other, substantially as described.

7. In a railroad-tie construction, a number of metallic trough-shaped members each formed with outwardly-turned flanges at the upper portion of the side walls of said members and having rail-flange-gripping clips formed by struck-up portions of said side walls, tie-caps formed in sections and connecting the several trough-shaped members and provided with side flanges engaging ad-

5 jacent walls of the trough-shaped members and having rail-flange-gripping clips, and means for drawing toward each other the sections of each tie-cap, substantially as described.

10 8. In a railroad-tie construction, a number of metallic trough-shaped members, sectional tie-caps spanning the space between and connecting the several trough-shaped members and in connection therewith forming a water-shed for a railroad-bed, rail-flange clips attached to said water-shed for locking the

rails thereto, and means for drawing toward each other the sections of each tie-cap to prevent the spreading of the rails, and for holding the trough-shaped members, tie-caps and rails together and preventing "creeping" of the rails, substantially as described. 15

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

JOHN WILLIAM WEBB.

Witnesses:

JAMES BURKE,
J. B. HODGKIN.