

J. O. BROOKS, F. E. PARSONS & G. J. ALTSTETTER.

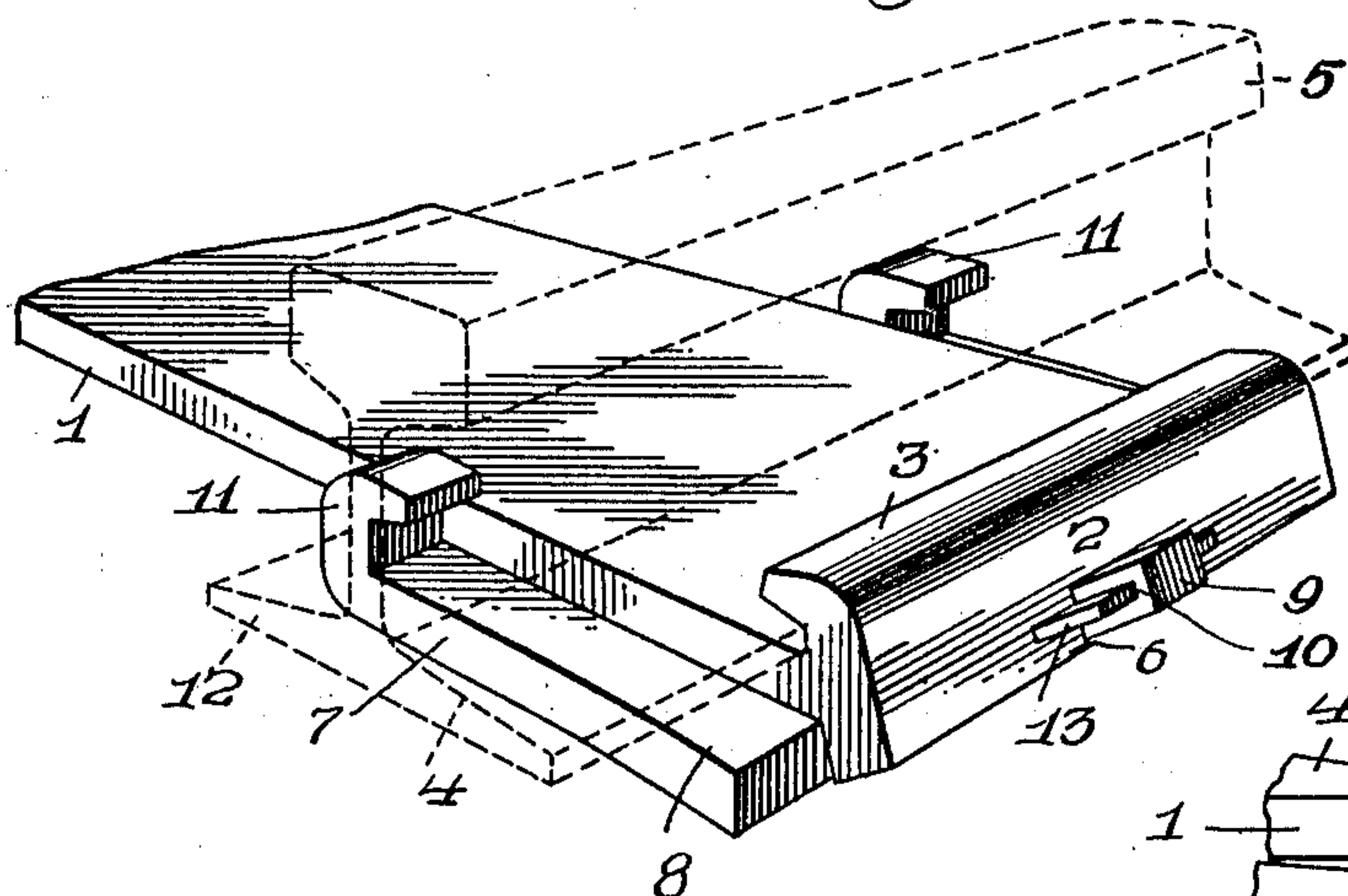
METALLIC TIE AND RAIL FASTENER.

APPLICATION FILED JAN. 6, 1911.

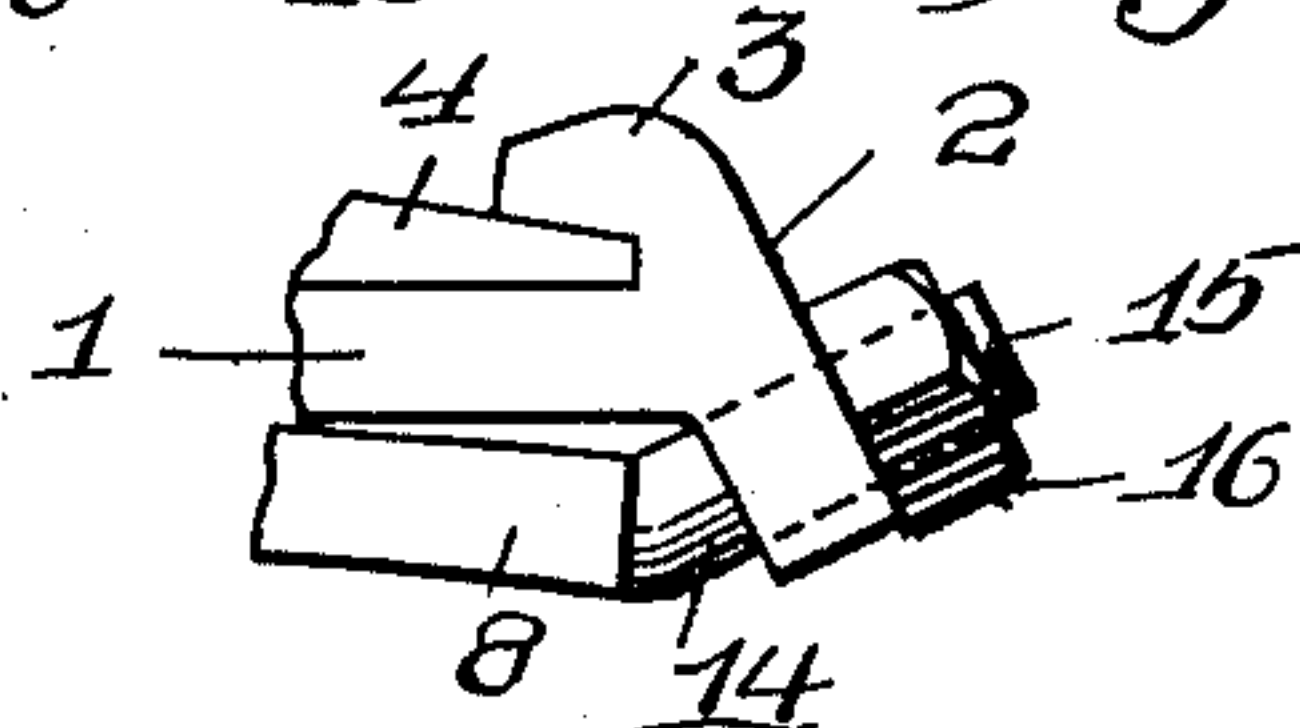
991,943.

Patented May 9, 1911.

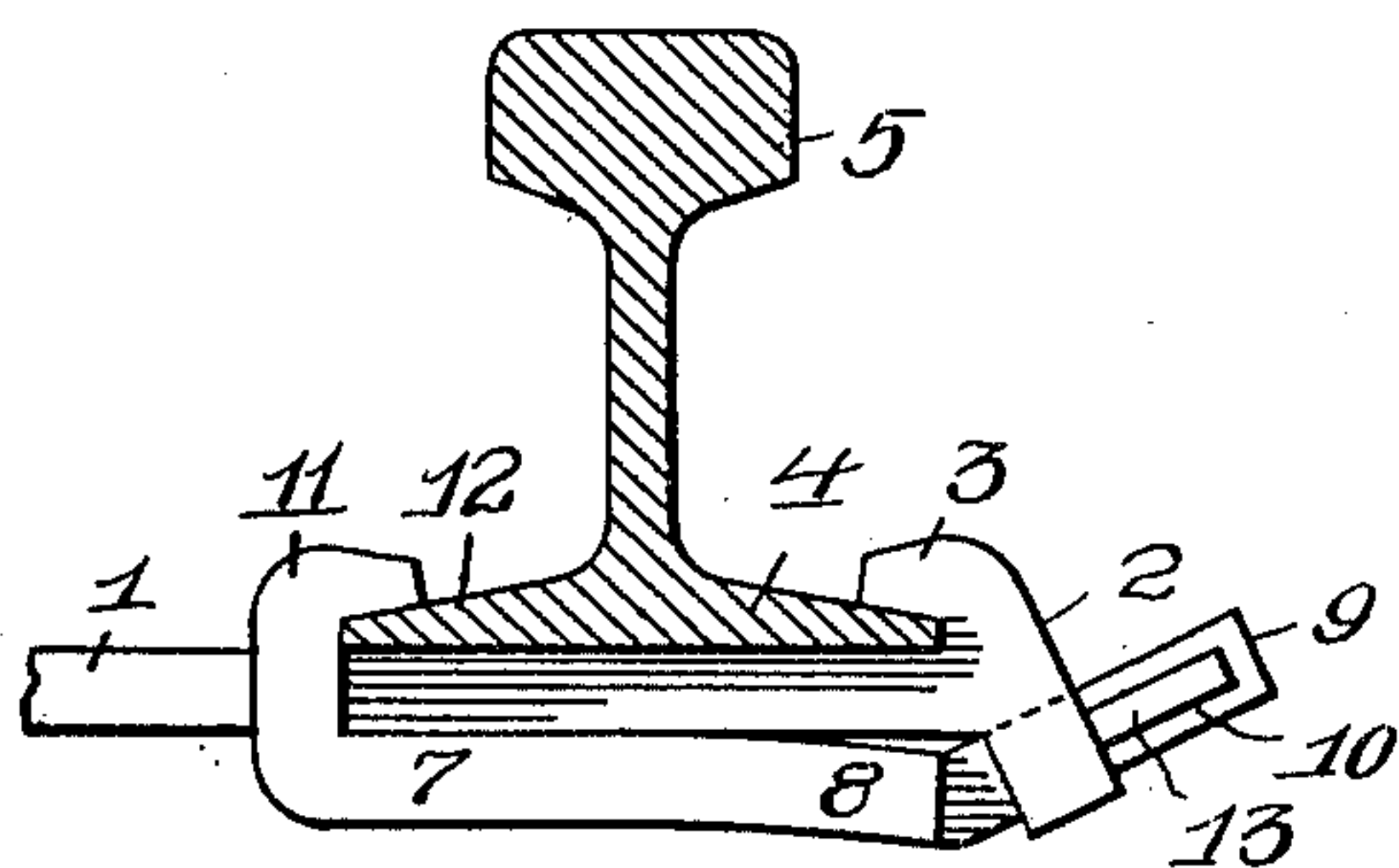
*Fig. 1.*



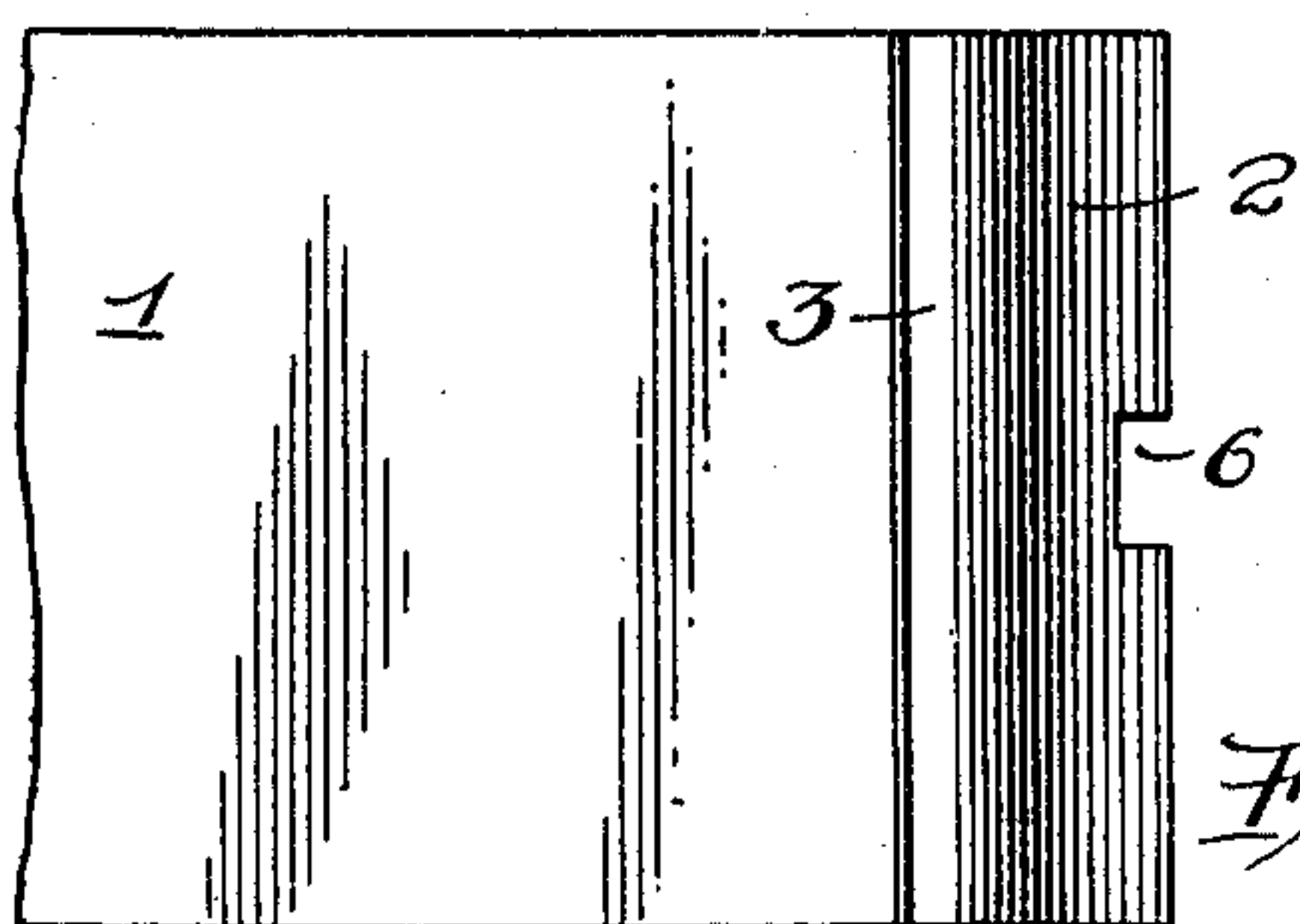
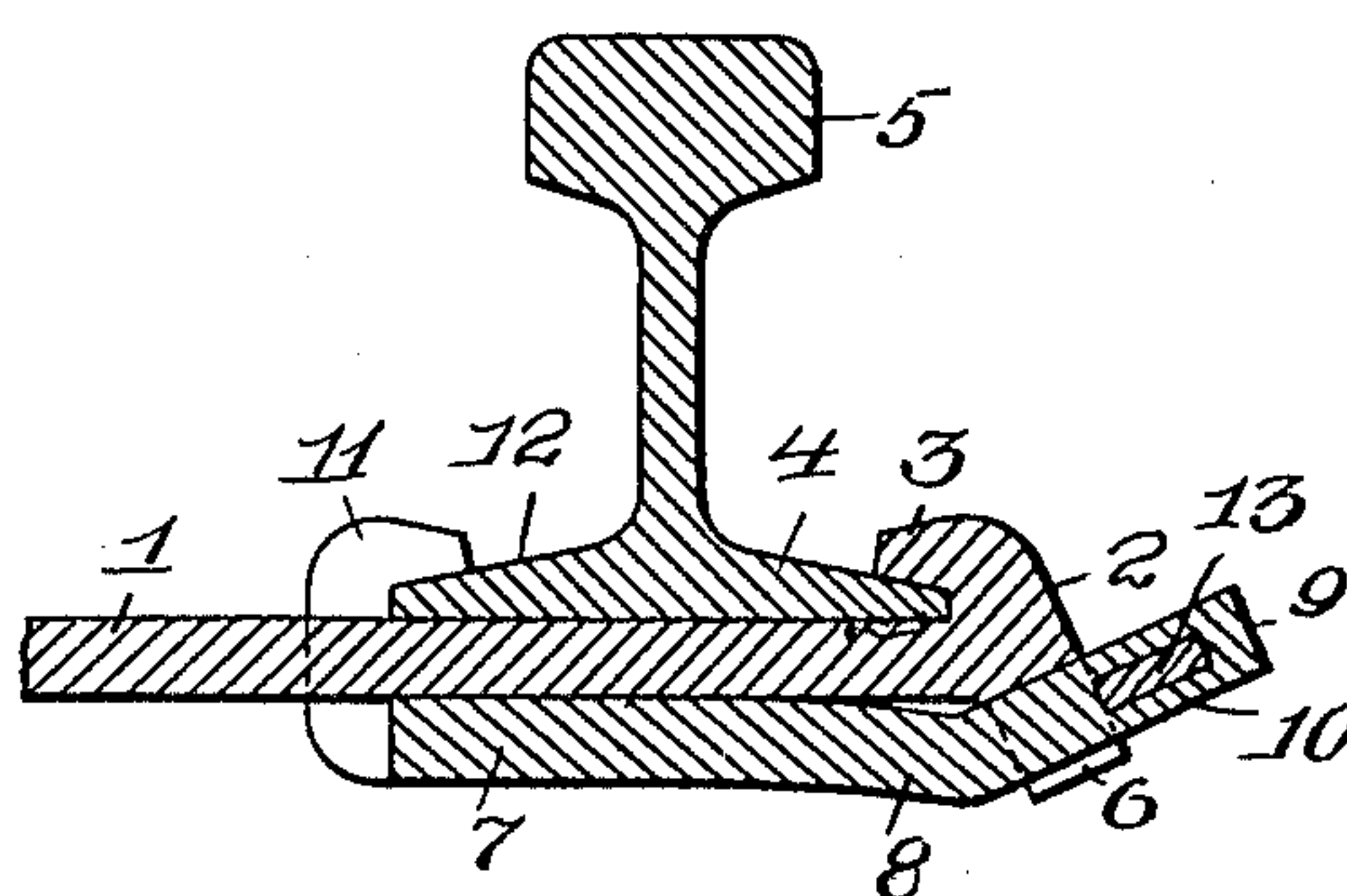
*Fig. 6.*



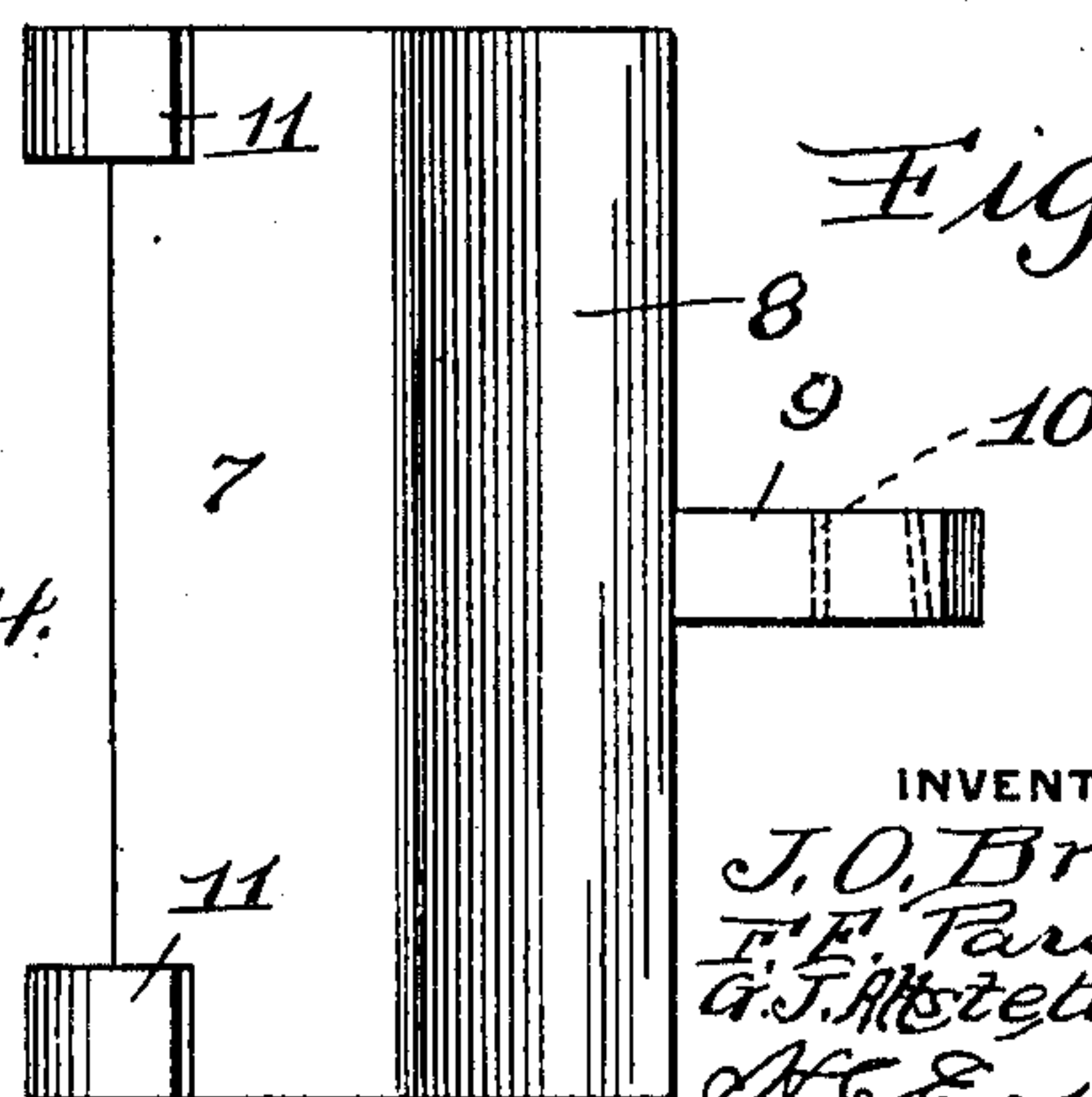
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



*Fig. 5.*

WITNESSES

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# UNITED STATES PATENT OFFICE.

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## METALLIC TIE AND RAIL-FASTENER.

991,943.

Specification of Letters Patent.

Patented May 9, 1911.

Application filed January 6, 1911. Serial No. 601,168.

*To all whom it may concern:*

Be it known that we, JOHN O. BROOKS, FRANK E. PARSONS, and GEORGE J. ALTSTETTER, citizens of the United States of America, residing at Clarksburg, in the county of Harrison and State of West Virginia, have invented certain new and useful Improvements in Metallic Ties and Rail-Fasteners, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to metallic ties and rail fasteners, and the objects of our invention are to provide a metallic tie that can be advantageously used in mines, quarries, subways and in connection with various kinds of industrial railways, and to furnish a metallic tie with positive and reliable means for securing rails thereto, whereby said rails cannot become accidentally vertically or laterally displaced.

Further objects of the invention are to provide a metallic tie and rail fastener that can be easily and quickly installed without the use of skilled labor, and to accomplish the above results by a tie and rail fastener that are simple in construction, strong and durable, free from injury by ordinary use, and highly efficient for the purposes for which they are intended.

With the above and such other objects in view as may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts to be hereinafter specifically described and then claimed.

Reference will now be had to the drawing forming a part of this specification, wherein there are illustrated the preferred embodiments of the invention, but it is to be understood that the structural elements thereof are susceptible to such changes, variations and modifications as fall within the scope of the appended claims.

In the drawing:—Figure 1 is a perspective view of one end of a metallic tie and rail fastener in accordance with this invention, Fig. 2 is a side elevation of the same, Fig. 3 is a longitudinal sectional view of a portion of the tie and rail fastener, Fig. 4 is a plan of a portion of the tie, Fig. 5 is a plan of a detached fastener, and Fig. 6 is a side elevation of a modified form of rail fastener.

A metallic tie in accordance with this invention comprises a flat metallic plate 1 of

a sufficient length to accommodate tracks of various gages. As the ends of the tie are identical in construction, it is only necessary to describe one of the ends of said tie, which is provided with an angularly disposed flange 2 corresponding in width to the plate 1, said flange having the upper end thereof bent inwardly to provide a lip 3 adapted to engage the outer base flange 4 of a rail 5. The lower edge of the flange 2 extends below the plate 1 and intermediate the ends thereof is provided with an inclined slot or notch 6, the object of which will presently appear.

The fastener used in connection with the tie comprises a plate 7 of a greater width than the plate 1, said plate having the outer edge thereof curved downwardly, as at 8 and intermediate the ends thereof provided with an upwardly extending angularly disposed tongue 9, said tongue having a transverse tapering opening 10 formed therein for a purpose that will presently appear. The inner edge of the plate 7 at the ends thereof is provided with vertical hook-shaped members 11, and these members are adapted to extend upwardly, at the sides of the plate 1 and engage the inner base flange 12 of the rail 5. After the fastener has been placed in position with the tongue 9 extending upwardly in the slot or notch 6, a tapering key, wedge or pin 13 is driven into the opening 10 to lock the fastener in engagement with the tie.

The fastener is preferably made of malleable metal, and we now desire to call attention to the function of the curved portion 8 of the plate 7. When the key 13 is driven inwardly, the wedge action of said key has a tendency to straighten or raise the curved portion of the plate 7, consequently the fastener can be firmly locked in engagement with the tie and the rail carried thereby, and the resiliency of this curved portion simply tends to firmly hold the key 13 within the tongue 9 and tighten the same therein should the vibratory stresses and strains to which the tie and rail are subjected have a tendency to loosen the key.

In Fig. 6 there is illustrated a slight modification of the invention which has been designed for steam or electric railways having heavy rolling stock. In lieu of the tongue 9, a stud bolt 14 is employed and said bolt is threaded, as at 15 to receive a nut 16 em-



ployed for locking the fastener in engagement with the flange 2.

From the foregoing it will be observed that the tie 1 can be easily constructed for 5 tracks of various gages, and that the rail fasteners can be employed for retaining rails of various weights upon the tie.

An important feature of the invention is that the expense of maintenance is reduced 10 to a minimum, and that a specially prepared roadbed is not necessary, and that the spreading and displacement of rails upon the tie are practically impossible.

It will be noted that the flanges of the tie 15 determine the gage of the track and limit the outward movement of the rails, consequently even though the fastener plates become loose, it is impossible for the rails to spread.

20 We reserve the right to use steel or other material in constructing the tie and to make the same of various sizes and proportions.

What we claim is:—

1. In a metallic tie and rail fastener, the 25 combination with rails, of a tie adapted to support said rails, an angularly disposed flange at each end of said tie and adapted to extend below said tie, an inwardly projecting lip carried by the upper edge of 30 said flange and adapted to engage the outer base flanges of said rails, a curved plate arranged under said tie, upwardly extending hook-shaped members carried by the inner edge of said plate at the ends thereof and 35 adapted to extend upwardly at the sides of said tie and engage the inner base flange of said rail, a tongue carried by the outer edge of said plate and adapted to extend through said flange, and a key mounted in said 40 tongue and adapted to hold said plate in engagement with said flange.

2. In a metallic tie and rail fastener, the combination with rails, of a tie adapted to support said rails, an angularly disposed 45 flange at each end of said tie, an inwardly projecting lip carried by each flange and adapted to engage the outer base flanges of said rails, a plate arranged under each end of said tie, hook-shaped members carried by 50 the inner edges thereof and adapted to engage the inner flanges of said rails, and means carried by the outer edges of said plates and adapted to engage said flanges to hold said plates in engagement with said 55 rails and said rails in engagement with said lips.

3. A metallic tie and rail fastener embodying a tie, flanges carried by the ends thereof and adapted to engage the outer 60 base flanges of rails mounted upon said tie, a plate arranged under each end of said tie,

hook-shaped members carried by the inner edges of said plates and adapted to engage the inner base flanges of the rails mounted upon said tie, and means including a tongue 65 and key adapted to lock said plate in engagement with said flange.

4. A metallic tie and rail fastener embodying a tie adapted to support rails, angularly disposed flanges carried by the ends 70 thereof, inwardly projecting lips carried by the upper edge of said flanges and adapted to engage the outer base flanges of rails mounted upon said tie, plates mounted under the ends of said tie, members carried by the 75 inner edges of said plates and adapted to engage the inner base flanges of the rails mounted upon said tie, tongues carried by the outer edges of said plates intermediate the ends thereof and adapted to extend 80 into said flanges, and means adapted to lock said tongues in engagement with said flanges.

5. A metallic tie and rail fastener embodying a tie, angularly disposed flanges 85 carried by the ends thereof, plates arranged under said tie, members carried by the inner edges of said plates and adapted to cooperate with said flanges in retaining rails upon said tie, said plates having the outer 90 edges thereof curved, angularly disposed tongues carried by the outer curved edges of said plates, and means adapted to lock said tongues in engagement with said flanges, 95 substantially as described.

6. A metallic tie and rail fastener embodying a tie, angularly disposed flanges carried by the ends thereof, inwardly projecting lips carried by the upper ends of 100 said flanges, said flanges having the lower edges thereof notched, curved plates arranged under the ends of said tie, hook-shaped members carried by the inner edges of said plates at the ends thereof and adapted 105 to extend upwardly and cooperate with said lips in retaining the base flanges of rails upon said tie, tongues carried by the curved edges of said plates intermediate the ends thereof and adapted to extend upwardly 110 into the notches of said flanges, and tapered keys arranged transversely of said tongues and adapted to engage said flanges for locking said plates and said tie together, substantially as described.

In testimony whereof we affix our signatures in the presence of two witnesses. 115

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Witnesses:

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