(No Model.)

J. M. HOON.

METALLIC RAILWAY TIE AND MEANS FOR SECURING RAILS THERETO.

No. 565,000. Patented Aug. 4, 1896.

Fig. 1.

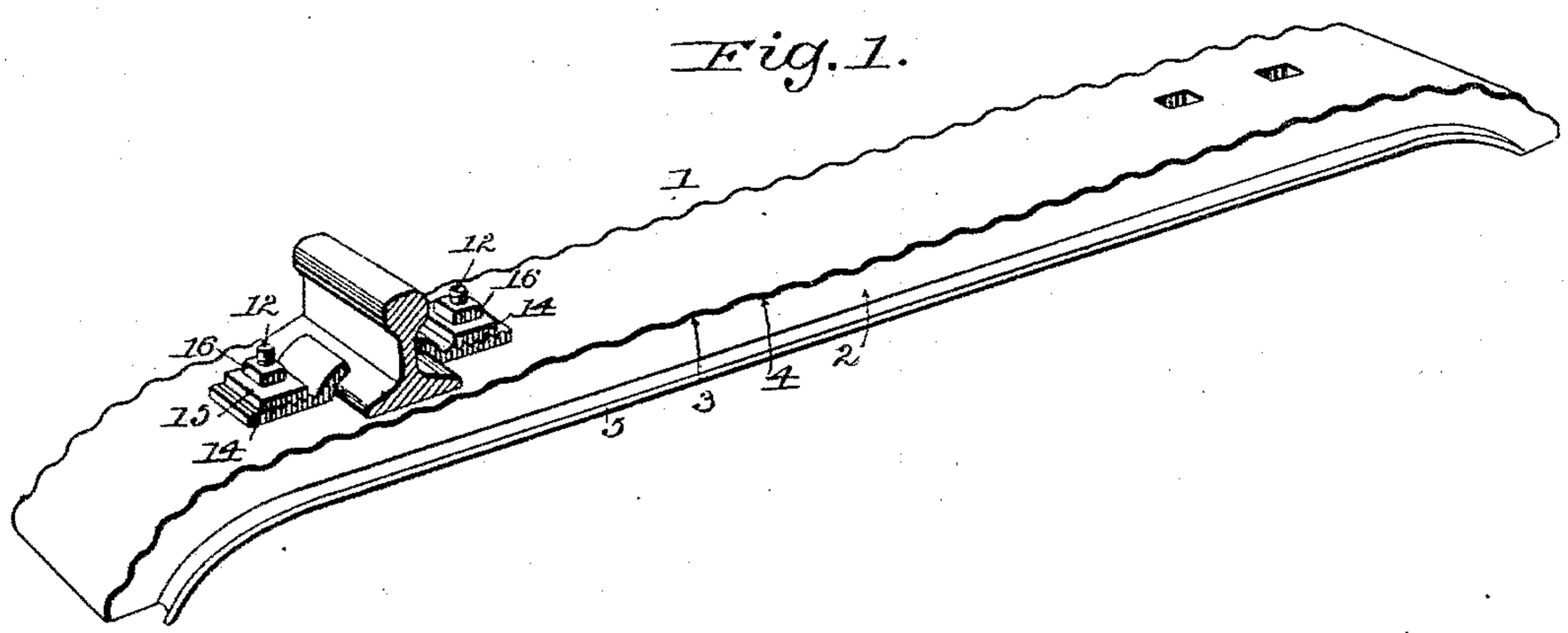


Fig. 2.

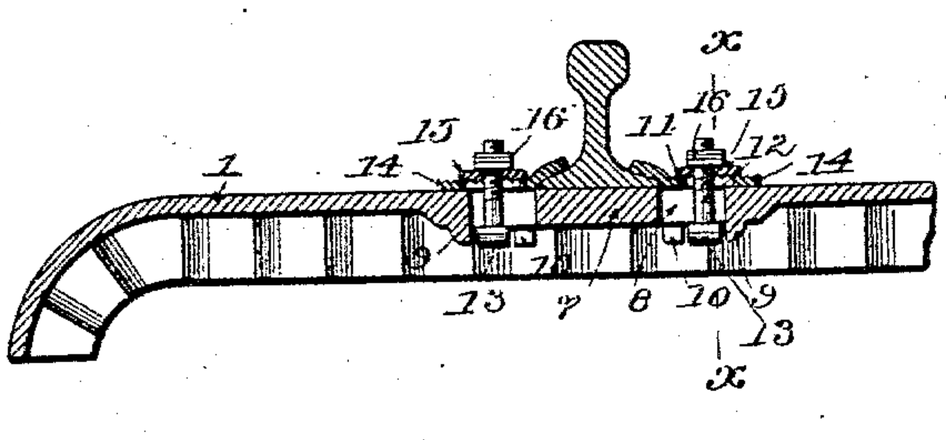


Fig. 3.

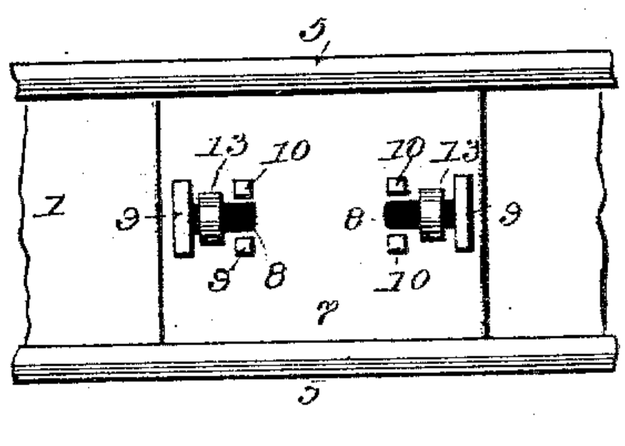


Fig. 4.

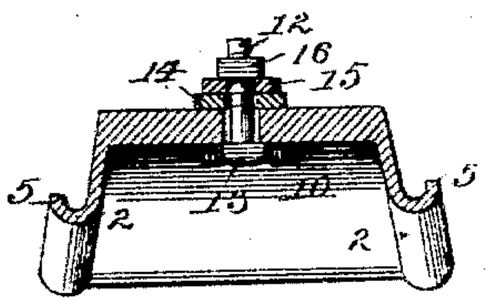
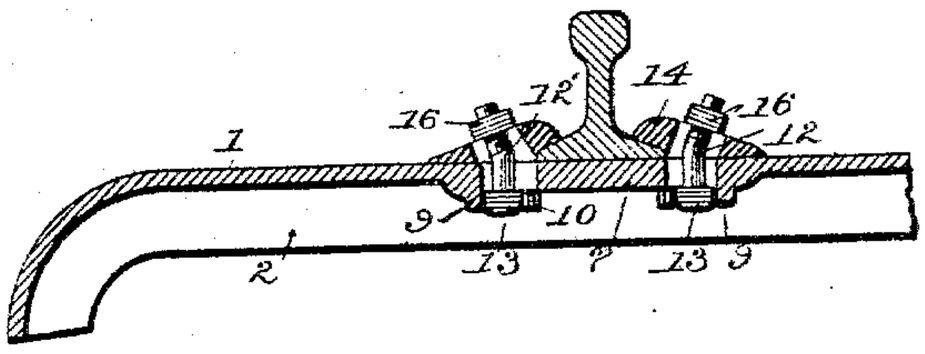


Fig. 5.



WITNESSES

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METALLIC RAILWAY-TIE AND MEANS FOR SECURING RAILS THERETO.

SPECIFICATION forming part of Letters Patent No. 565,000, dated August 4, 1896.

Application filed October 30, 1895. Serial No. 567,447. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. HOON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Metallic Railway-Ties and Means for Securing the Rails Thereto; and I do hereby 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.

My invention relates to metallic railway-ties and means for securing the rails thereto.

The object of the invention is to provide an improved metallic railway-tie which is reinforced at the points where the rails are seated and which are subjected to the greatest strain, with improved devices for adjustably securing the rails to the tie, the construction being such that the rails can be removed and relaid, and new bolts substituted for any broken or damaged bolts, without the necessity of removing the tie from the road-bed, which is generally necessary in inserting new bolts in metallic ties, the construction also admitting of both vertical and lateral adjustment of the rail to the tie and permits the use of rails of different size.

It is also an object to provide what is known as a "trough-shaped" metallic tie in which the sides are turned down at an angle to prevent longitudinal displacement and the ends bent or curved downward to prevent lateral displacement, in which said sides are fluted or formed with alternating corrugations on their inner or outer sides, whereby the tie is more securely held to the road-bed.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a railroad-tie and rail-securing devices constructed in accordance with my invention, the rail and fasteners at one end being removed. Fig. 2 is a central sectional view taken lengthwise of the rail. Fig. 3 is a view looking from the under side of the tie. Fig. 4 is a section on the line $x\,x$, Fig. 2. Fig. 5 is a detail longitudinal section showing a modified construction.

In the said drawings, the reference-numeral 1 designates the tie, having its sides bent downward at an angle, forming flanges 2, the opposite sides of which are fluted or corrugated or formed with alternating depressions and projections 3 and 4. At the lower edges said flanges are formed with outwardly-extending ribs 5, which serve to stiffen and strengthen the tie. Near each end, where the rails are seated, the tie is formed with a thickened or reinforced portion 7, the ends of which incline gradually until they merge with the non-reinforced portions of the tie. These reinforced portions near each end are formed with rectangular slots 8, the distance between the inner ends of which is about equal to the base of an ordinary railroad-rail.

The numeral 9 designates transverse rectangular ribs at the outer ends of said slots, and the numeral 10 lugs at opposite sides of the outer ends of said slots.

The numeral 12 designates a T-shaped bolt having a head 13, with the ends rounded so as to enable it to pass through a smaller slot than if the head was made rectangular. The shanks of these bolts are straight and screw-threaded at their upper ends and pass through clips 14, formed with slots 11, and having their upper sides ribbed or corrugated, with which engage corresponding ribs or corrugations on the under side of washers 15. These clips are so formed that their inner ends project over the base of a rail seated on the tie.

The numeral 16 designates the securing-nuts.

In practice the ties are set in the road-bed and the T-shaped bolts passed through the slots in the tie and then turned at a right angle, so that one end thereof will engage between the lugs 10, while the other end will abut against the rib 9, whereby the bolts will be prevented from turning. By rounding the ends of the heads they are enabled to pass through smaller nuts than if the heads were not rounded or rectangular. The rail is then placed between the bolts and the clips applied with the inner ends bearing upon the base of the rail and the shanks of the bolts passing through the slots in said clips. The retaining-washers are then applied, and the ribs thereon will engage with the ribs on the clips, and the nuts being screwed on will clamp the clips securely to the rail and also prevent any liability of lateral displacement

of the clips. To adjust the rails laterally, it is only necessary to loosen the nuts, so as to disengage the ribs of the washers, when the latter can be moved in or out, as the case may be. To remove the rails, the bolts are turned at right angles, so that the heads coincide with the slots in the tie, when the bolts can be readily withdrawn.

In the modification shown in Fig. 5 curved bolts are used instead of straight bolts and the clips are beveled on their upper sides, so that when the nuts are screwed on they will bear squarely on the clips.

While I prefer to make the tie with the corrugated sides, still it is not necessary, as the said sides may be made plain.

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

1. As an improved article, a metallic railway-tie, having reinforced rail-seats at each end, and formed with an elongated slot near each end of the rail-seats, and said rail-seats formed with lugs at each side of the slot at one end thereof and a transverse rib at the other end of the slot with a space between said lugs and rib, substantially as described.

2. The combination with a metallic railway-tie, having reinforced rail-seats near each end and formed with an elongated slot near each end of said seats and said seats formed with lugs at each side of said slot near one end and a transverse rib near the other end, with a space between said lugs and rib, of the headed bolts, the clips, the washers, the nuts and the rail, substantially as described.

3. The combination with a metallic railway-tie having the ends curved or bent downwardly and the sides bent downwardly at an angle and fluted or corrugated and the tie near each end reinforced or thickened and formed with elongated slots, lugs at each side of said slots and a transverse rib at the opposite end with a space between said lugs and rib, of the rail, the clip, the T-shaped bolt and the binding-nut, substantially as described.

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

JOHN M. HOON.

Witnesses:
WILLIAM W. DEANE,
JOS. L. COOMBS.