W. H. COTTON & T. D. HENDERSON.

RAILWAY RAIL SUPPORT.

APPLICATION FILED OCT. 8, 1908.

928,942.

Patented July 27, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

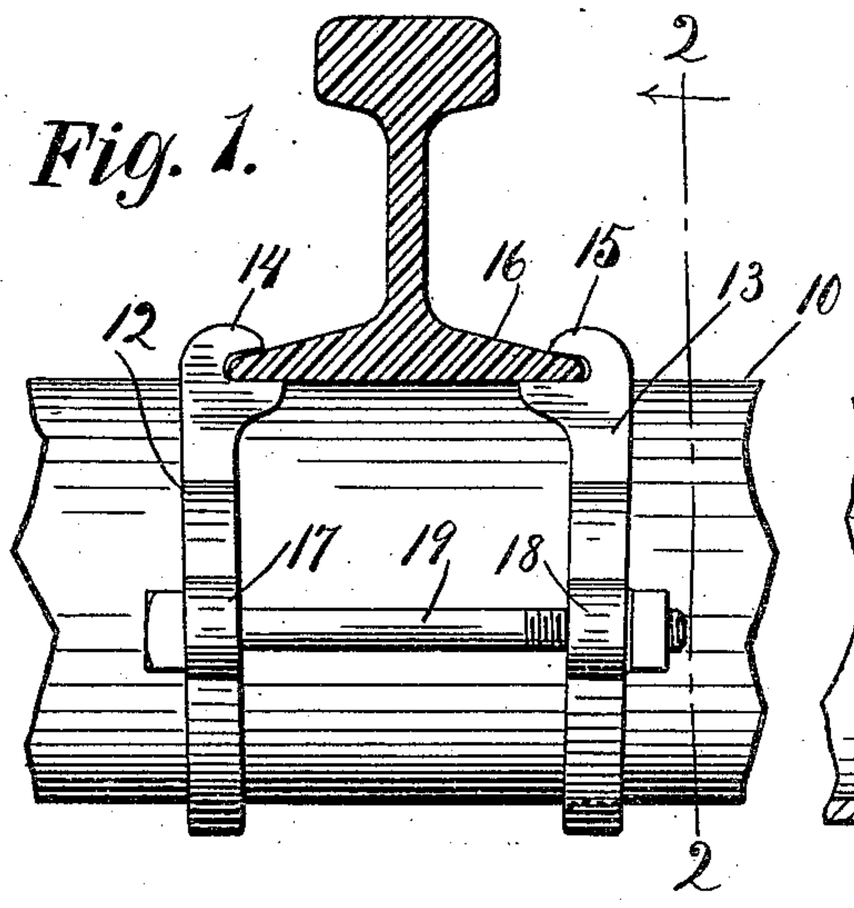
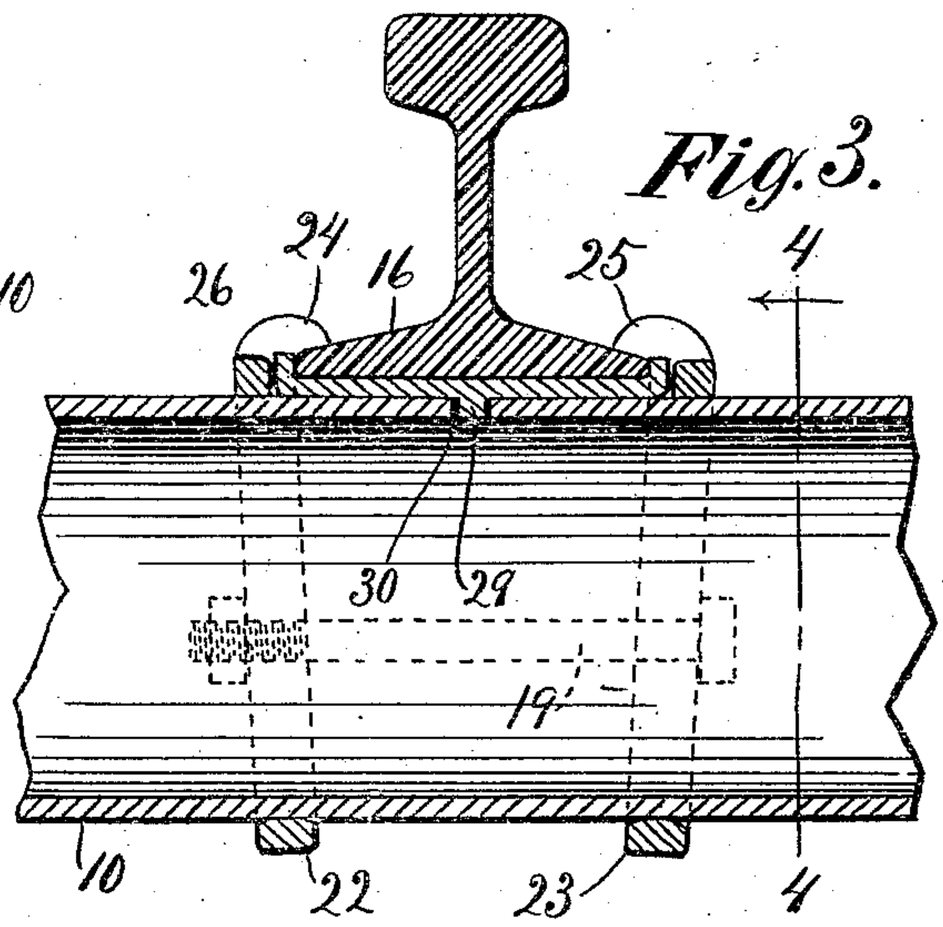


Fig. 3.



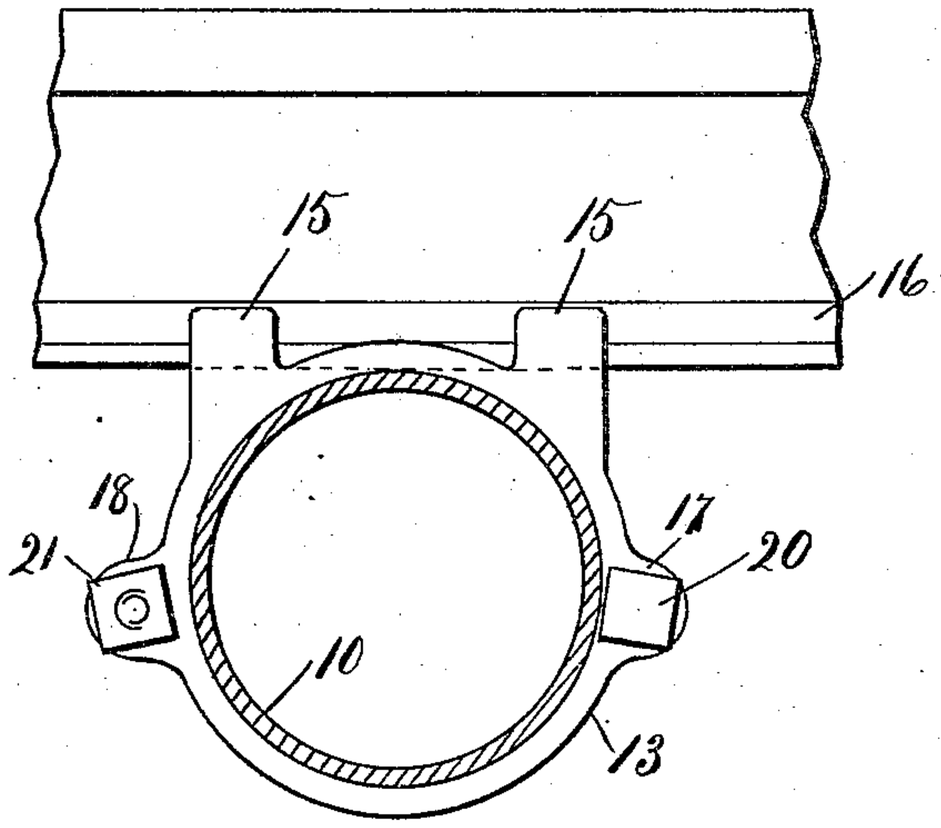


Fig. 2.

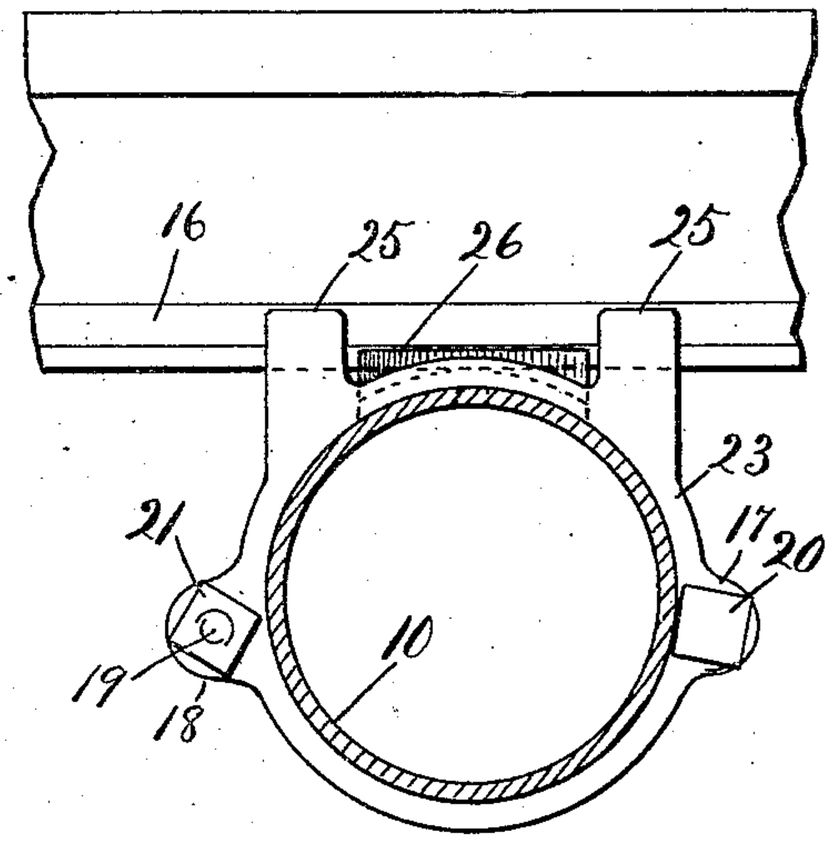


Fig. 4.

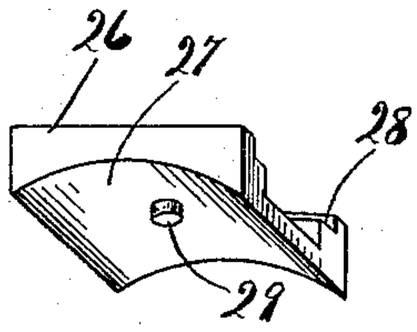


Fig. 5.

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2 SHEETS—SHEET 2.

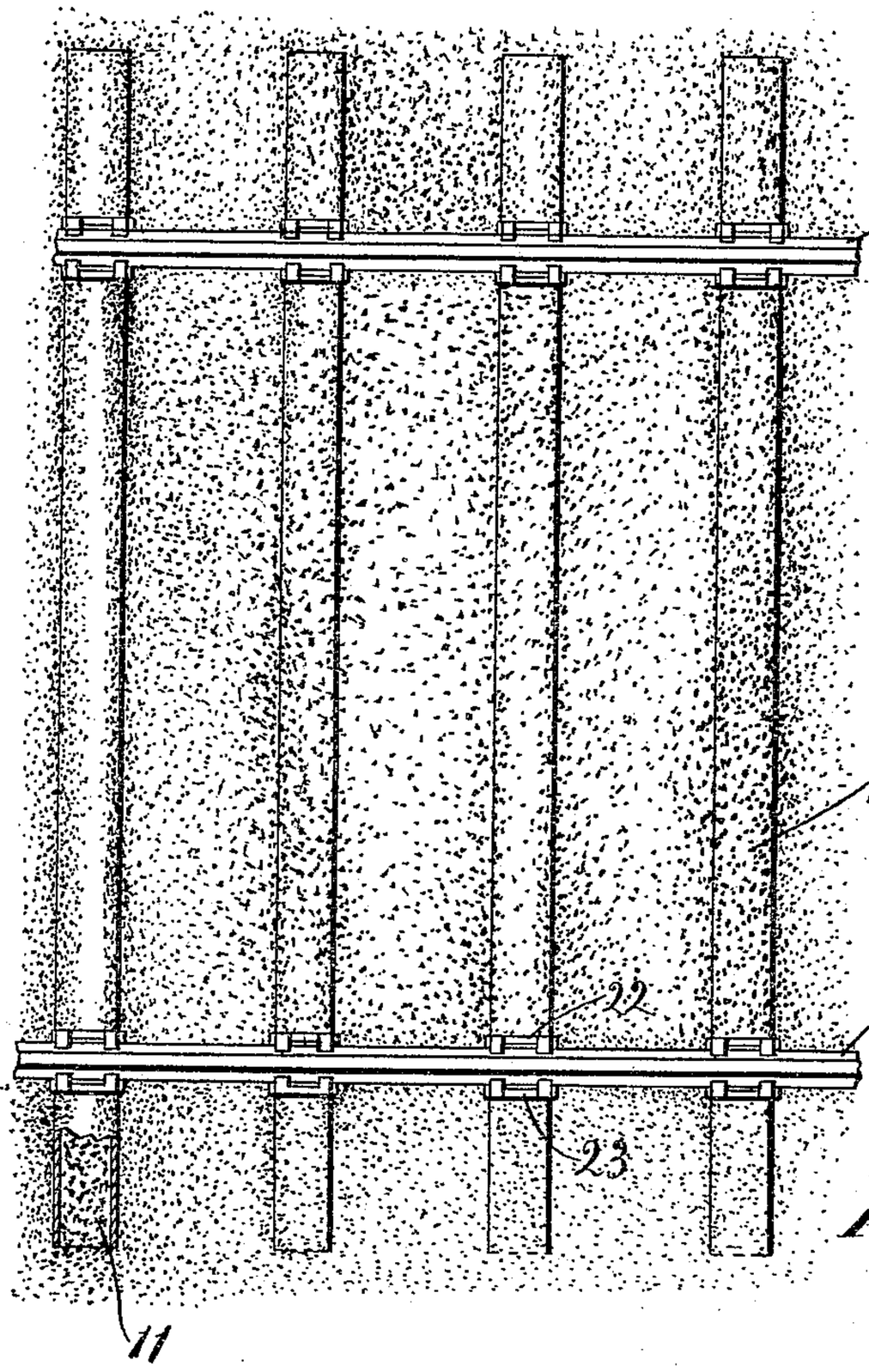

Fig. 6.

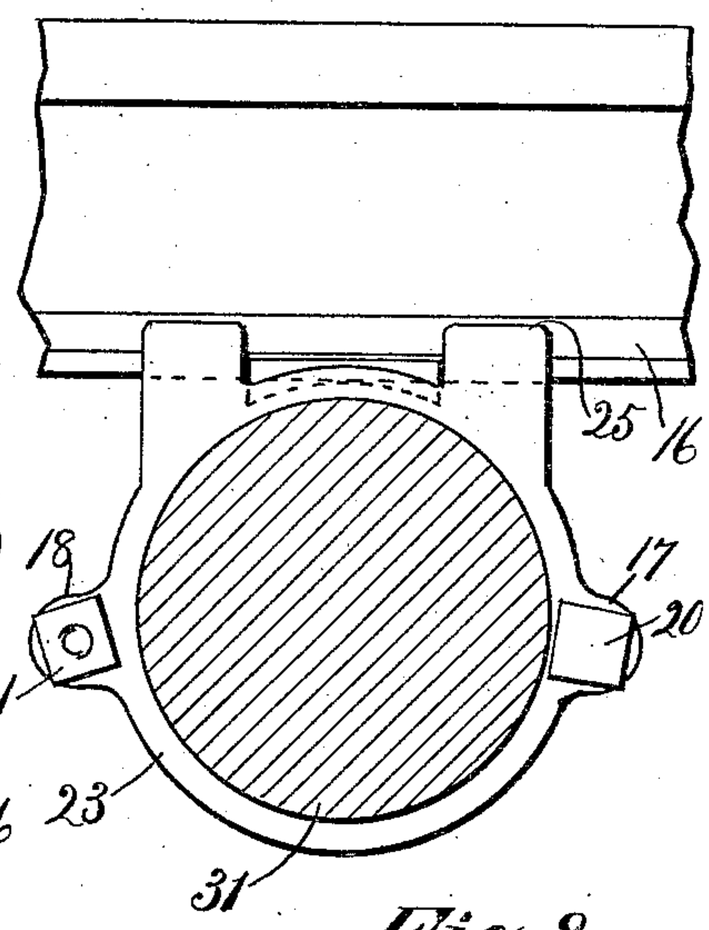

Fig. 8.

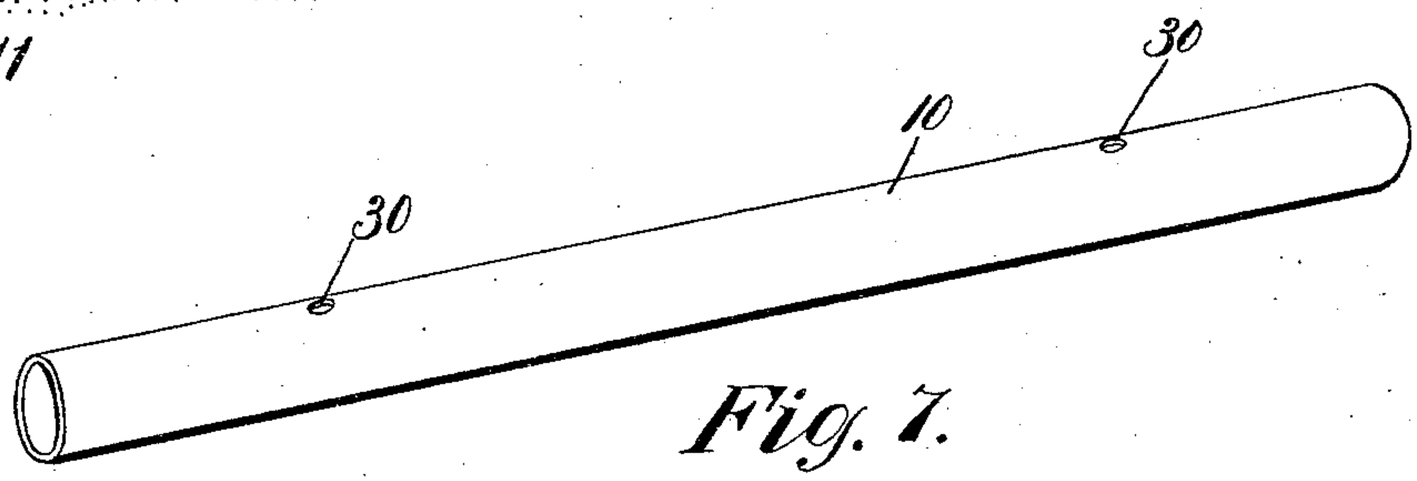

Fig. 7.

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UNITED STATES PATENT OFFICE.

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RAILWAY-RAIL SUPPORT.

No. 928,942. Specification of Letters Patent. Patented July 27, 1909.

Application filed October 8, 1908. Serial No. 456,779.

To all whom it may concern:

Be it known that we, WALTER H. COTTON and THOMAS D. HENDERSON, citizens of the United States, and residents of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Railway-Rail Supports, of which the following is a specification, and which is illustrated in the accompanying drawings, forming a part thereof.

The invention relates to supports for railway rails comprising a tie and a mechanism for securing the rail to the tie, and its objects are to provide for simplicity and cheapness of construction, coupled with high efficiency.

The invention consists of the structure hereinafter described, and which is illustrated in the accompanying drawings, in which—

Figure 1 is a detailed side elevation of one form of the tie and securing means, the rail being shown in cross-section, Fig. 2 is a transverse section on the line 2—2 of Fig. 1, Fig. 3 is a detailed longitudinal section of the tie showing a modified form of attaching mechanism, the rail being shown in cross-section, Fig. 4 is a sectional view on the line 4—4 of Fig. 3, Fig. 5 is a perspective of the chair shown in Figs. 3 and 4, Fig. 6 is a detailed plan of a railway track equipped with the improved rail support, Fig. 7 is a perspective of one form of the tie, and Fig. 8 is a transverse section of a modified form of tie, the attaching means being shown in elevation.

The preferred form of tie is a metal tube 10, which, when in service, may be wholly or partially filled with ballast, as represented at 11 in Fig. 6. In its simplest form the mechanism for attaching the rail to the tie is represented in Figs. 1 and 2 and comprises a pair of rings 12, 13, which encircle the tie and have upwardly projecting gripping lugs 14, 15, for engaging the foot flange 16 of the rail and are also provided with lateral lugs 17, 18, apertured to receive straining bolts 19. The aperture of one of the lugs, as 17, is sufficiently close to the inner face of the ring to prevent the turning of the bolt 19 by reason of the engagement of its head 20 with the tie. The aperture of the other lug, as 18, is somewhat farther out, to permit the turning of the nut 21 applied to the end of the bolt.

The rings 12, 13, are preferably identical in construction and are applied to the tie in reverse positions. They fit loosely upon the tie and their lateral lugs 17, 18, being below the rail gripping jaws 14, 15, the straining applied by means of the bolts draws them together and inclines them toward each other from above downwardly, this approaching movement continuing until the rings firmly grip the tie. In this form of construction, the angle of the jaws of each of the gripping lugs 14 and 15 is less than the angle of the upper and lower surfaces of the foot flange 16 of the rail to which they are applied, so that strain applied by means of the bolts 19 causes these jaws to bite into the rail flange and therefore not only anchor the rail against lateral movement, but also against longitudinal movement. The device thus serves the purpose both of a rail chair and rail stay.

In the form of construction illustrated in Figs. 3, 4, and 5, the securing rings 22, 23, differ from the rings 14, 15, only in that their rail gripping elements are in the form of hooks 24, 25, bearing upon the upper face of the rail flange 16, and there is placed beneath the rail a chair 26, the lower face of which is curved, as shown at 27, to correspond with the curvature of the tie 10, its upper face being recessed, as shown at 28, to receive the foot flange 16. The chair 25 is provided with a stud 29, projecting from its lower face, and preferably cast integral with the chair, and adapted to enter an aperture 30 in the tie 10. This chair as thus formed reinforces the gripping or securing mechanism in both of its functions of preventing lateral or longitudinal movement of the rail. In this construction, also, the laying of the track at proper gage is facilitated. In the manufacture of the ties, the apertures 30 are properly located and the chair being accurately made, the rails are necessarily placed at the proper gage.

In Fig. 8 there is illustrated a tie 31 formed of wood, and shown as being round in cross-section. The same securing rings, as 23, are employed as are shown in Figs. 3 and 4. While the tie is shown as round in cross-section, it is obvious that its shape may be deviated from according to the judgment of the engineer, and as may be dictated by economy in construction.

A tie made of metal, having an annular

form, is of great strength and may be made with an ample factor of safety, thereby eliminating any danger of buckling or bending under load. It nevertheless has sufficient resiliency to prevent injury to the rolling stock. The form of rail attaching is such that dependence for security is based mainly upon the grip it secures upon the tie and the rail. The nuts used in connection with it being embedded in the ballast are thereby prevented from working loose, though any suitable form of locking device may be readily applied to them. The track having been properly laid, it is practically impossible for it to work loose.

We claim as our invention—

1. In a railway rail support, in combination, a tie, a pair of clamping members encircling the tie and having rail-engaging lugs, and means for drawing the bodies of such members toward each other.

2. In a railway rail support, in combination, a tubular tie, a pair of clamping members encircling the tie and having rail-engaging lugs, and means for drawing the bodies of such members toward each other.

3. In a railway rail support, in combination, a tubular tie, duplicate opposing members encircling the tie and having rail-flange engaging lugs, and a screw-bolt connecting the bodies of the two members.

4. In a railway rail support, in combination, a tubular tie, duplicate opposing members encircling the tie and having rail-flange engaging jaws, and a screw-bolt connecting the bodies of the two members.

5. In a railway rail support, in combination, a tubular tie, duplicate opposing members encircling the tie and having rail-flange engaging jaws, the angle of the jaws being more acute than the angle of the flange with which they are to coöperate, and a screw-bolt connecting the two members.

6. In a railway rail support, in combination, a metal tie, a rail chair seated on the tie and being engaged therewith by mortise and tenon connection, a pair of clamping members encircling the tie and having rail flange engaging lugs, and means for drawing the bodies of such members toward each other.

7. In a railway rail support, in combination, a tie, a pair of clamping members encircling the tie and having rail-engaging lugs and apertured ears on their body portions, and straining bolts engaging corresponding ears of the two members.

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