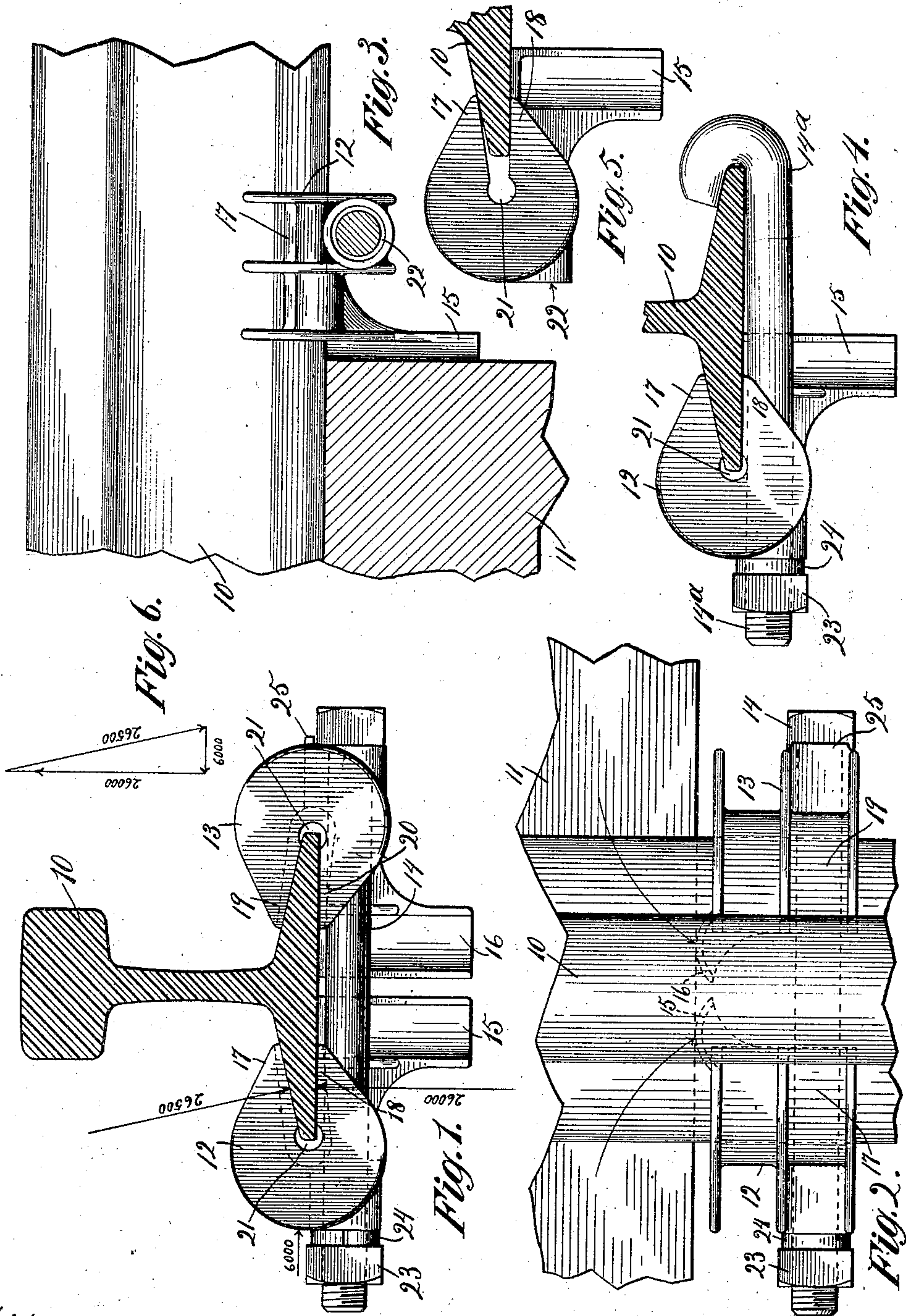


W. H. COTTON & T. D. HENDERSON.
RAILWAY RAIL STAY.

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915,558.

Patented Mar. 16, 1909.



Witnesses:
B. Schlegel
C. B. Whitman

Inventors:
Walter H. Cotton
Thomas D. Henderson

UNITED STATES PATENT OFFICE.

WALTER H. COTTON AND THOMAS D. HENDERSON, OF CHICAGO, ILLINOIS.

RAILWAY-RAIL STAY.

No. 915,558.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, WALTER H. COTTON and THOMAS D. HENDERSON, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Railway-Rail Stays, of which the following is a specification.

This invention relates to devices for increasing the stability of railway tracks.

The objects of this invention are to provide means for anchoring the rails to the ties in such a manner as to prevent creeping with relation thereto, and furthermore, to dispense with the use of serrated or corrugated steel jaws which cut into and weaken the rails.

The invention further consists of means for gripping the rails in such a manner that when stress is applied from the tie the grip is augmented thereby and furthermore, to provide means for resisting almost its full capacity under slipping action.

The device is illustrated in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a side elevation; Fig. 2 is a plan; Fig. 3 is an end elevation, one of the parts being shown in section; Fig. 4 is a view showing a modification; Fig. 5 is a view showing the normal condition of one of the members with relation to the rail; Fig. 6 is a force diagram, showing theoretically the application of stress on the jaws.

Referring now to the drawings in detail, numeral 10 designates a railway rail, 11 a railway tie, 12 and 13 the rail-engaging members, and 14 a connecting bolt. The members 12 and 13 engage the lower part of the rail known as the foot flange, and are provided with tie-engaging flanges 15 and 16, depending therefrom on the side adjacent the tie. The tie-engaging flanges 15 and 16 are preferably slightly curved and project considerably from the main body of the members 12 and 13. The members 12 and 13 are provided with jaws 17, 18, 19 and 20; the jaws 17 and 19 engaging the upper surface of the foot flange, while the jaws 18 and 20 engage the lower surface. A clearance 21 is provided so that the sides of the foot flange will not be in contact with the members 12 and 13. The members 12 and 13 are provided with holes 22, offset from

the center toward the side remote from the tie-engaging flanges. These holes are adapted to receive a bolt 14, provided with a nut 23 and preferably with a lock washer 24. A lip 25 on the member 13 serves to hold the bolt 14 from turning.

In Fig. 4 the bolt 14 is supplemented by a hook bolt 14^a, and the member 13 is dispensed with.

In Fig. 5 is shown the member 12 in its normal condition before application to the rail. It will be noted that the angle between the two gripping faces of the jaws 17 and 18 is more acute than the angle between the upper and lower faces of the foot flange of the rail 10. By this construction an even distribution of stress throughout the entire engaging surface of the jaws of the members 12 and 13 results when they are forced or driven to the position shown in Figs. 1 and 4.

The diagram Fig. 6 illustrates approximately the ratio between the stresses applied to the upper and lower surfaces of the foot flange and the stress applied in forcing one of the members 12 or 13 to the position shown in Figs. 1 and 4. It should be understood, however, that the angle between the jaws should not be too acute, as the metal should not be strained beyond the elastic limit.

In the application of this device, the members 12 and 13 are applied by hand to the foot flange of the rail, to the position shown in Fig. 5, with the flanges 15 and 16, of course, set up against the tie; a sledge or maul is used to drive said members to the position shown in Figs. 1 and 4; the bolt is next applied with the washer 24 and the nut screwed up tight.

It will be noted that while stress is applied to the flanges 15 and 16 from the tie 11, that the members tend to turn in the direction shown by the arrows in Fig. 2; the bolt-head and washer assuming pivotal points. This action augments the grip of the jaws of members 12 and 13 on the rail.

What we claim as our invention and desire to secure by Letters Patent is:

1. In a railway rail stay, in combination, a member having a pair of jaws for engaging a rail flange and a lateral tie engaging projection on the lower jaw; the angle of the jaws being more acute than the angle of the upper and lower faces of the rail flange with which

they are intended to cooperate and means acting on the body of the member to bind it to the rail flange.

2. In a railway rail stay, in combination, a member having a pair of jaws for engaging a rail flange and a lateral tie-engaging projection on the lower jaw; the angle of the jaws being more acute than the angle of the upper and lower faces of the rail flange with which they are intended to cooperate and a bolt for connecting the body of the member with the opposite flange of the rail.

3. In a railway rail stay, in combination, a member having a pair of jaws for engaging a rail flange, the angle between the jaws being less than the angle of the upper and lower faces of the rail flange to which the member is to be applied, and a lateral projection on the lower jaw; and a bolt connecting the body of the member with the opposite flange of the rail.

4. In a railway rail stay, in combination, a member engaging the upper and lower surfaces only of the foot flange of a railway rail, a tie-engaging flange on said member, a bolt connecting the member to the opposite side

of the rail flange, the point of connection of the bolt with the member being offset toward the side remote from the tie-engaging flange.

5. In a railway rail stay, the combination with a railway rail and tie, of a member consisting of a single piece of metal having jaws engaging the upper and lower surfaces only of the foot flange of the rail, a flange projecting from said member and engaging the tie, a bolt forming a pivotal point for the member and clearance between the tie and the main body of the member.

6. In an anti-creeping device for rails, the combination of a pair of jaws for engaging a rail base and a lateral tie-engaging projection, the angle of the jaws being more acute than the angle of the upper and lower faces of the rail flange with which they are intended to cooperate and means acting on the body of the member to bind it to the rail flange.

WALTER H. COTTON.
THOMAS D. HENDERSON.

Witnesses:

C. B. WHITMAN,
B. SCHLESINGER