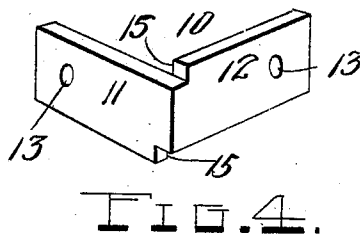
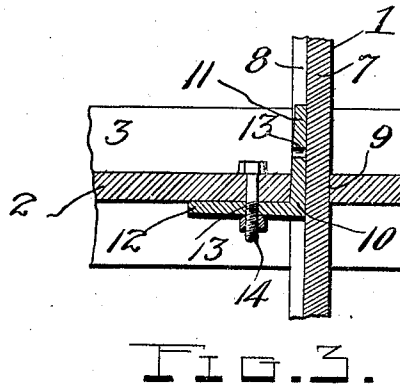
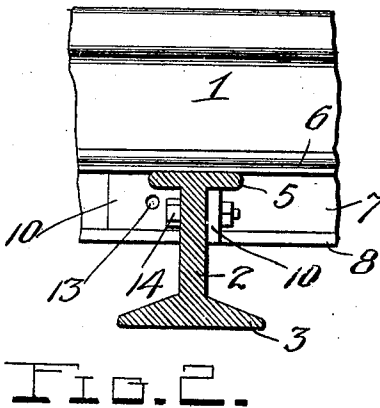
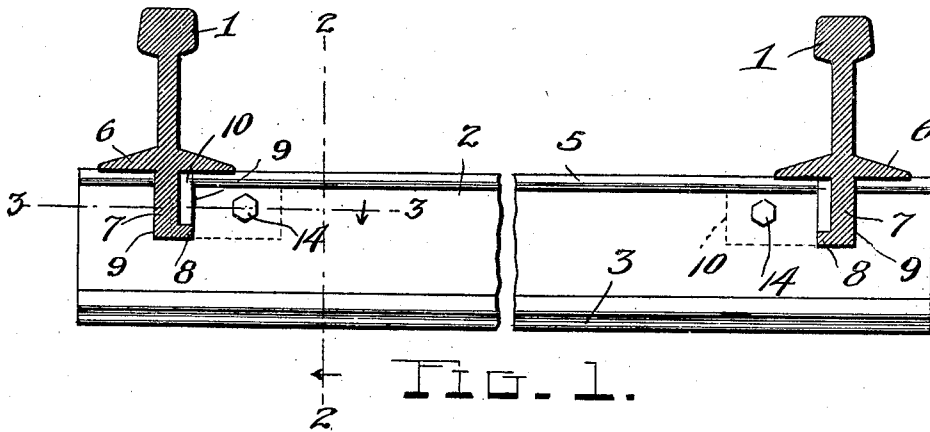


No. 828,401.

PATENTED AUG. 14, 1906.

G. H. GROVE.
RAILWAY TIE AND RAIL.
APPLICATION FILED JUNE 14, 1906.



Witnesses
Chas. R. Griesbauer
C. N. Griesbauer.

Inventor
Geo. H. Grove.

by *H. B. Wilson & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

GEORGE H. GROVE, OF HUMMELSTOWN, PENNSYLVANIA.

RAILWAY TIE AND RAIL.

No. 828,401.

Specification of Letters Patent.

Patented Aug. 14, 1906.

Application filed June 14, 1906. Serial No. 321,703.

To all whom it may concern:

Be it known that I, GEORGE H. GROVE, a citizen of the United States, residing at Hummelstown, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Railroad Ties and Rails; 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.

This invention relates to improvements in railway ties and rails and fastening devices therefor; and it consists in the novel construction, combination, and arrangement of parts hereinafter described and claimed.

The object of the invention is to provide a simple, strong, durable, and comparatively inexpensive track-fastening of this character which will effectively hold the rails in place and prevent them from spreading.

The above and other objects, which will appear as the nature of the invention is better understood, are accomplished by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a vertical transverse sectional view through a railway-track constructed in accordance with my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a detail horizontal sectional view taken on the plane indicated by the line 3 3 in Fig. 1, and Fig. 4 is a perspective view of the angle-metal fastening-plate.

Referring to the drawings by numeral, 1 denotes the track-rails, and 2 the cross-ties upon which they are secured, in accordance with the invention. The ties 2 are in the form of substantially I-shaped metal beams which have their lower base-flanges 3 somewhat larger than their flat top flanges 5, upon which latter the base-flanges 6 of the track-rails rest. The track-rails 1 are of the usual form, but have projecting downwardly from the centers of their bottoms or base-flanges longitudinally-extending ribs 7, formed with laterally-projecting flanges 8. These portions 7 8 are adapted to extend through vertical slots or openings 9, formed in the top and web portions of the cross-ties 2, and they are locked therein by angle-metal fastening-plates 10. These plates are right angular in form, consisting of two members 11 12, which are formed with bolt-holes 13. One of these members is adapted to engage one of the faces of the web portion of the cross-tie and

to be secured thereto and beneath the flange 5 of said tie by a bolt or similar fastening 14, passed through the opening 13 and an alining opening in the tie, as clearly shown in Fig. 3 of the drawings. The other member of the angle-metal fastening is inserted in the slot 9 between one wall of the latter and the rib 7, as clearly shown in Fig. 1. The width or height of the members 11 12 corresponds to the space between the top of the flange 8 and the bottom of the base-flange 6 of the tie, and said members are tapered or of gradually-decreasing width, so that they may be wedged between the rib 7 and one wall of the slot 9. By making both of the members 11 12 similar in form with the cut-away or offset portions 15 it will be seen that either one may be inserted in the slot 9 and that when one wears the fastening may be turned around and the other one used.

The construction, use, and advantages of the invention will be readily understood from the foregoing description, taken in connection with the accompanying drawings. It will be seen that the fastening is of simple construction and that the track-rails will be firmly and securely held in position, so that they cannot spread. The rails may be quickly applied to or removed from the ties, and both the rails and ties and also the angle-metal fastenings may be manufactured at comparatively small cost.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as defined by the appended claims.

It will be understood that this invention is applicable to either steam or electric railways.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a rail having an angular rib projecting therefrom, a transverse tie slotted to receive said rib and flanged to support said rail, and an angle-metal plate secured upon said tie and projecting into its slot to retain said rail upon said tie, substantially as described.

2. The combination with a track-rail having a depending angular rib thereon, of a metallic cross-tie slotted to receive said rib and flanged to support said rail, an angle-metal plate engaged with said rib and inserted be-

tween the latter and one wall of the slot in said tie, and means for fastening said plate upon said tie.

3. The combination with a track-rail having a depending longitudinally-extending angular rib, a metallic cross-tie having a flanged top to support said rail and a transverse slot to receive said rib, and an angle-metal fastening-plate secured upon said tie beneath its flange and having a portion projecting into the slot in said tie and engaged with the angular rib of said rail, substantially as described.

4. The combination with a track-rail having a depending longitudinally-extending angular rib, a metallic cross-tie having a flanged

top to support said rail and a transverse slot to receive said rib, an angle-metal plate having similar shaped tapered apertured members, and a bolt or the like for fastening one of said members upon said tie beneath its flange, the other of said members being inserted in the slot in said tie and engaged with the angular rib upon said rail, substantially as shown and described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GEORGE H. GROVE.

Witnesses:

M. A. SWEENEY,

S. A. RAMSAY.