J. A. BERGQUIST.

RAILWAY TIE.

APPLICATION FILED APR. 27, 1908.

901,316. Patented Oct. 20, 1908.

Fig. 1.

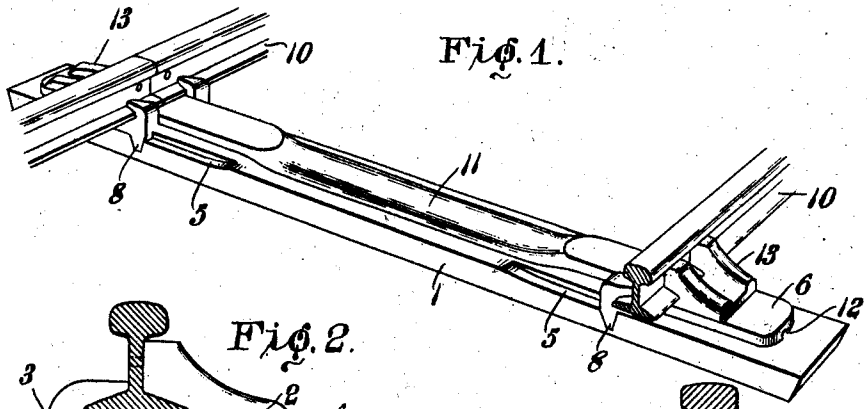


Fig. 2.

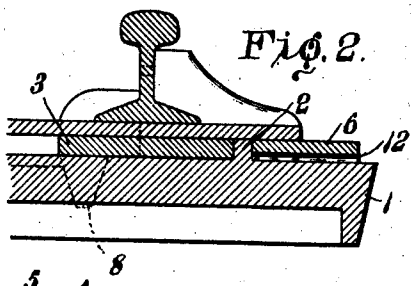
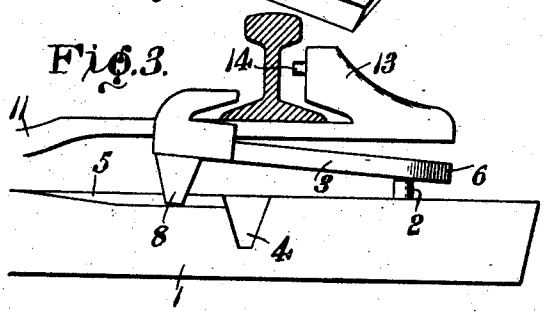


Fig. 3.



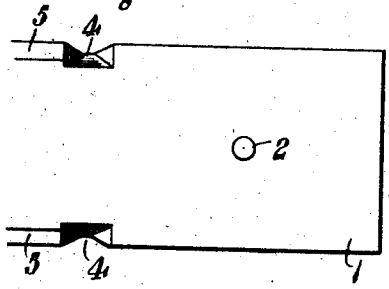


Fig. 4.

Fig. 5.

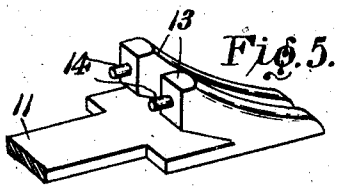


Fig. 7.

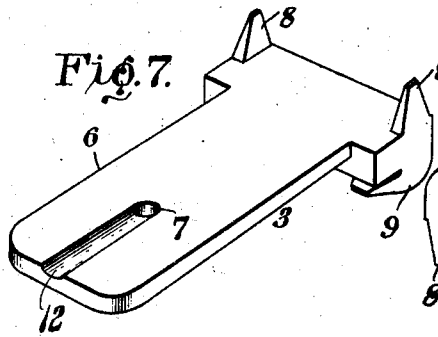
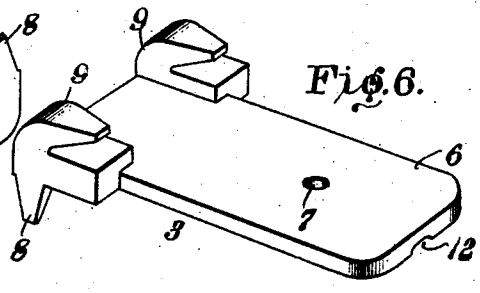


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN A. BERGQUIST, OF MASON, WISCONSIN.

RAILWAY-TIE.

No. 901,316. Specification of Letters Patent. Patented Oct. 20, 1908.

Application filed April 27, 1908. Serial No. 429,502.

To all whom it may concern:

Be it known that I, JOHN A. BERGQUIST, citizen of the United States, residing at Mason, in the county of Bayfield and State of Wisconsin, have invented certain new and useful Improvements in Railway-Ties, of which the following is a specification.

The present invention is designed primarily to provide a railway tie which obviates the use of spikes or kindred fastenings for securing the rails thereto, thereby enabling a railway to be quickly constructed and to be easily and cheaply repaired when necessary to replace worn or broken rails, since spikes are not required to be extracted or bolts removed.

The invention further contemplates the construction of a tie and fastening means for the rails which enable the ordinary fish plates and bolts to be dispensed with, with the result that the construction is simplified and cheapened and the expense incident to tightening bolts wholly avoided.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still the preferred embodiment is shown in the accompanying drawings, in which:

Figure 1 is a perspective view of a railway tie embodying the invention. Fig 2 is a longitudinal section of an end portion of the tie, the parts being in normal position. Fig. 3 is a side view of the parts shown in Fig. 2, the chair being elevated and moved on the base to a position to admit of the rail being either placed in position or removed. Fig. 4 is a top view of an end portion of the base. Fig. 5 is a perspective view of an end portion of the tie-bar. Fig. 6 is a perspective view of the rail-chair. Fig. 7 is a perspective view of the rail-chair inverted.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The tie comprises a base 1 which is preferably of metal and hollow upon its lower side to provide a light structure, as well as to enable the base to secure a firm anchorage in the road-bed by reason of the side and end flanges being embedded therein. Studs 2 project upward from the end portions of the base and serve as anchoring means to secure the rail-chairs 3. The studs 2 may form a part of the base or be applied thereto in any manner. Notches 4 are formed in opposite edges of the base a short distance from their extremities and taper towards their lower ends. Rabbets 5 are provided in opposite edge portions of the base and communicate with the notches 4 and extend inward from said notches towards the center of the base and decrease in depth towards their inner ends, which vanish into the plane of the upper side of the base. Each rail-chair consists of a plate 6 having an opening 7 to receive one of the studs 2 and provided at one end with pendent projections 8, which are adapted to snugly fit opposite notches 4, said projections being tapered in their length so as to come flush at their outer sides with the edges of the base 1. Spaced jaws 9 project upward from the end of the plate 6 having the pendent projections 8 and are adapted to engage over the foot of the rail 10. The jaws 9 are of hook form and are spaced apart a distance to receive between them the tie-bar 11. When the rail-chair is in position, one of the studs 2 extends through the opening 7 and the projections 8 enter opposite notches 4, thereby preventing both longitudinal and lateral displacement of the chair.

A groove 12 is formed in the under side of the plate 6 and extends from the opening 7 outward and is designed to receive the upper end of the stud 2 to prevent lateral displacement of the rail-chair when the same is placed upon the base and occupies the position about as shown in Fig. 3. The projections 8 rest upon the rabbeted portions 5, thereby acting in conjunction with the groove 12 and stud 2 to secure the chair against lateral displacement when moving the rail 10 thereon.

The tie-bar 11 is of metal and its hand portions are of similar or like formation, being slightly elevated a distance corresponding approximately to the thickness of the plates 6, so that the middle portion of the tie-bar may touch the base 1, while the end portions of said tie-bar are resting upon the

rail-chairs. Jaws 13 are provided at opposite ends of the tie-bar and are of hook form so as to engage over the flange of the rail 10 and act in conjunction with the jaws 9 to prevent displacement of the rails after the parts have been properly assembled. The jaws 13 are formed with the tie-bar and are provided with studs 14 to pass through the openings in the web of the rails, so as to secure the latter against longitudinal movement. The tie-bars are made of standard size and the jaws 13 are sufficiently heavy to prevent any give thereto when in operation. The jaws 9 of the rail-chairs are preferably malleably cast to admit of their bending when struck by a sledge so that any looseness in the fit may be taken up.

In constructing a railway in accordance with this invention, the base pieces 1 are placed at proper intervals along the roadbed, after which the rail-chairs are placed upon the end portions of the base pieces in about the position as indicated in Fig. 3. The tie-bars are next placed in position upon the rail-chairs preliminary to placing the rails 10 in position thereon. After the parts have been positioned about as indicated in Fig. 3, the rail-chairs are moved outward upon the bases until the projections 8 register with the notches 4 and the openings 7 register with the studs 2 when the chairs, tie-bars and rails drop, thereby causing the studs 2 to enter the openings 7 of the plates 6 and the projections 8 to slip into the notches 4. Lateral and longitudinal displacement of the parts is prevented by the interlocking of the studs 2 and projections 8 with the parts 6 and 1, respectively. The weight of the chairs, tie-bars and rails is sufficient to prevent vertical displacement of the parts, hence they remain in the adjusted position until pried upward when it is required to make repairs or for other cause. The studs 14 projected from the jaws 13, may form a part thereof, or be secured to said jaws in any manner, and are adapted to enter openings in the web portions of the rails 10 to secure the latter in place.

Having thus described the invention, what is claimed as new is:

1. In a rail-tie, the combination of a base, a rail-chair provided with jaws to engage over the foot of the rail upon one side, interlocking means between the rail-chair and base, a tie-bar overlapping the rail-chair and provided with a jaw to engage over the foot of the rail upon the opposite side, and interlocking means between the rail and jaw to prevent displacement of the parts.

2. In a railway tie, the combination of a base, a rail-chair mounted upon the base and provided with spaced jaws to engage over the foot of the rail upon one side thereof, interlocking means between the rail-chair and base, and a tie-bar overlapping the rail-chair and passed between the spaced jaws thereof and receiving the rail and provided with a jaw to engage over the foot of the rail upon the opposite side thereof.

3. In a railway tie, the combination of a base, a rail-chair mounted upon the base and adapted to move longitudinally thereon and provided with rail engaging jaws and with a pendent projection adapted to interlock with the base, and a tie-bar overlapping the rail-chair and adapted to receive the rail and provided with a rail engaging jaw to act in conjunction with the jaws of the rail-chair and secure the rail.

4. In a railway tie, the combination of a base having opposite notches, a rail-chair mounted upon the base and provided with pendent projections adapted to enter the notches of the base and secure the rail-chair in proper position, said rail-chair having rail engaging jaws, and a tie-bar overlapping the rail-chair and provided with a co-operating rail-engaging jaw.

5. In combination, a base provided with opposite notches and having rabbets leading from said notches towards the center of the base, a rail-chair mounted upon the base and having rail engaging jaws and pendent projections, the latter adapted to travel upon the aforesaid rabbeted portions of the base and to enter the notches thereof, and a tie-bar overlapping the rail-chair and provided with a rail-engaging jaw coöperating with the jaws of the rail-chair to secure the rail in proper position.

6. In combination, a base having a stud projected upward from an end portion and having opposite notches, a rail-chair mounted upon the base and having an opening to receive the aforesaid stud and provided with pendent projections to enter the said notches of the base and formed with rail-engaging jaws, and a tie-bar overlapping the rail-chair and provided with a rail-engaging jaw coöperating with the jaws of said rail-chair.

7. In combination, a base having an upwardly extended stud and opposite notches, a rail-chair mounted upon the base and having an opening to receive the stud and provided in its under side with a groove leading outward from said opening and formed with spaced projections to enter the aforesaid notches, and having rail-engaging jaws, and a tie-bar overlapping the rail-chair and having a coöperating rail-engaging jaw.

8. In combination, a base provided near each end with an upwardly extended stud and having notches in its edges, and rabbets extended from said notches inward, rail-chairs mounted upon end portions of the base, each having an opening to receive one of the studs and provided with pendent projections to travel along the rabbeted portions of the base and to enter the notches

thereof and having spaced rail-engaging jaws, and a tie-bar overlapping the rail-chairs and passed between the spaced rail-engaging jaws thereof and formed at its ends with coöperating rail-engaging jaws and having studs projected from its jaws to interlock with the rails.

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

JOHN A. BERGQUIST. [L. S.]

Witnesses:
W. N. WOODSON,
V. B. HILLYARD.