No. 684,758. Patented Oct. 15, 1901.

A. J. HARMS.

RAILWAY TIE.

(Application filed Feb. 4, 1901.)

(No Model.)

Fig. 1.

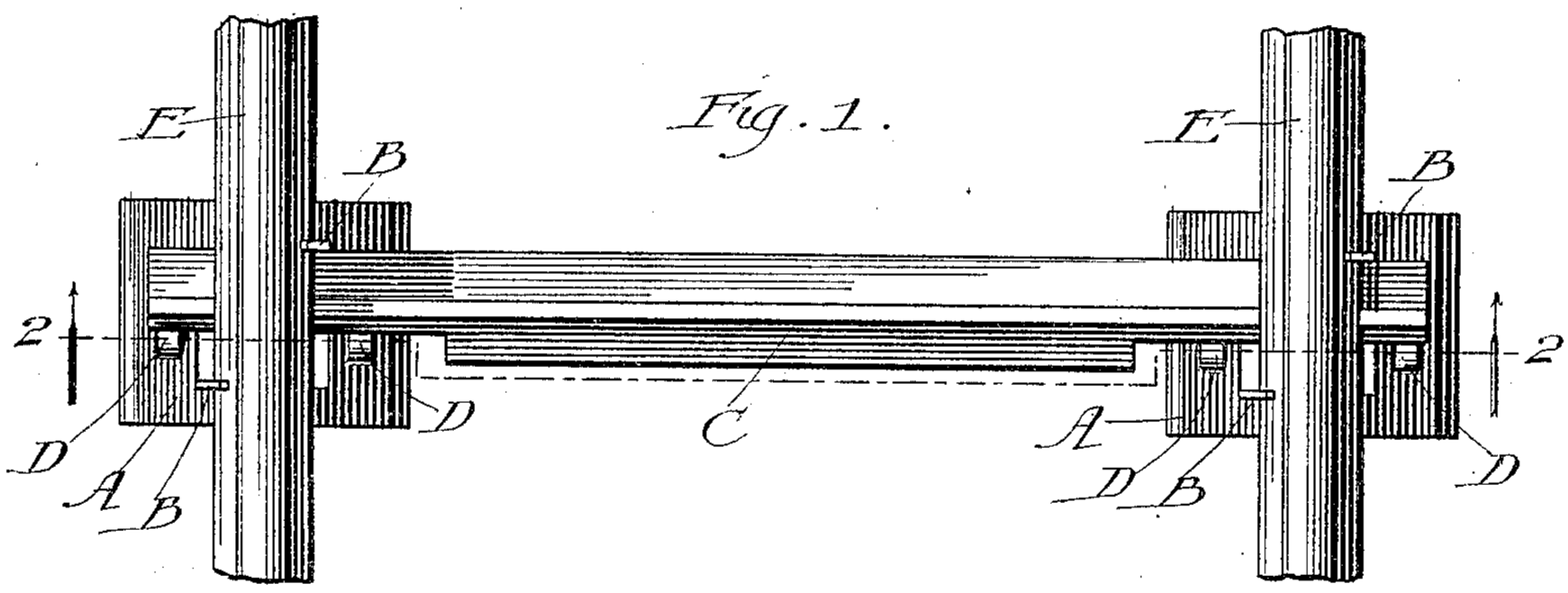


Fig. 2.

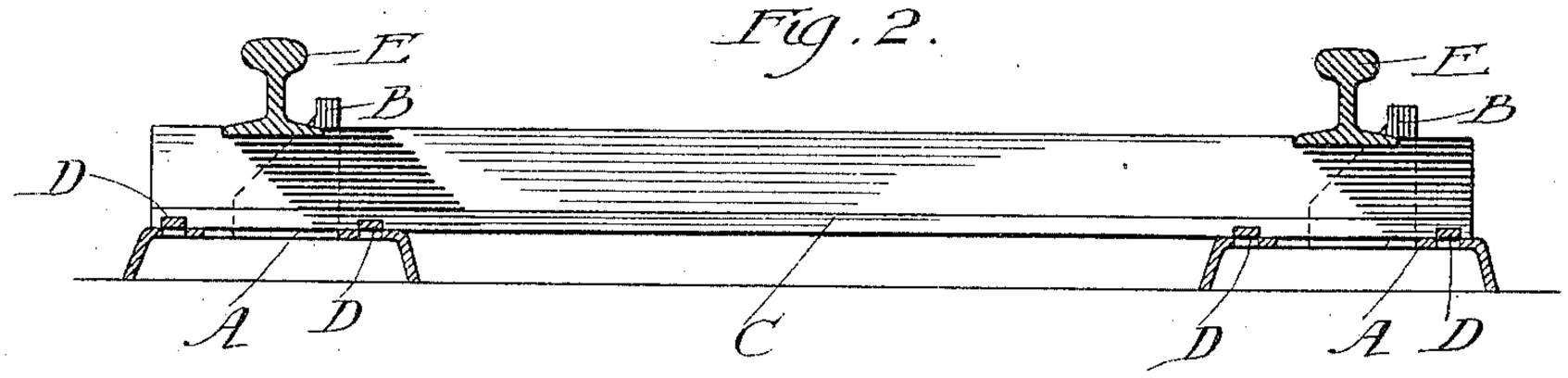


Fig. 3.

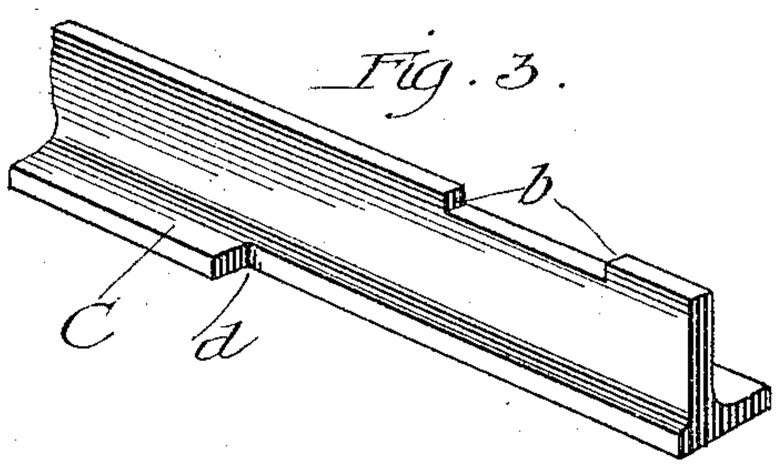
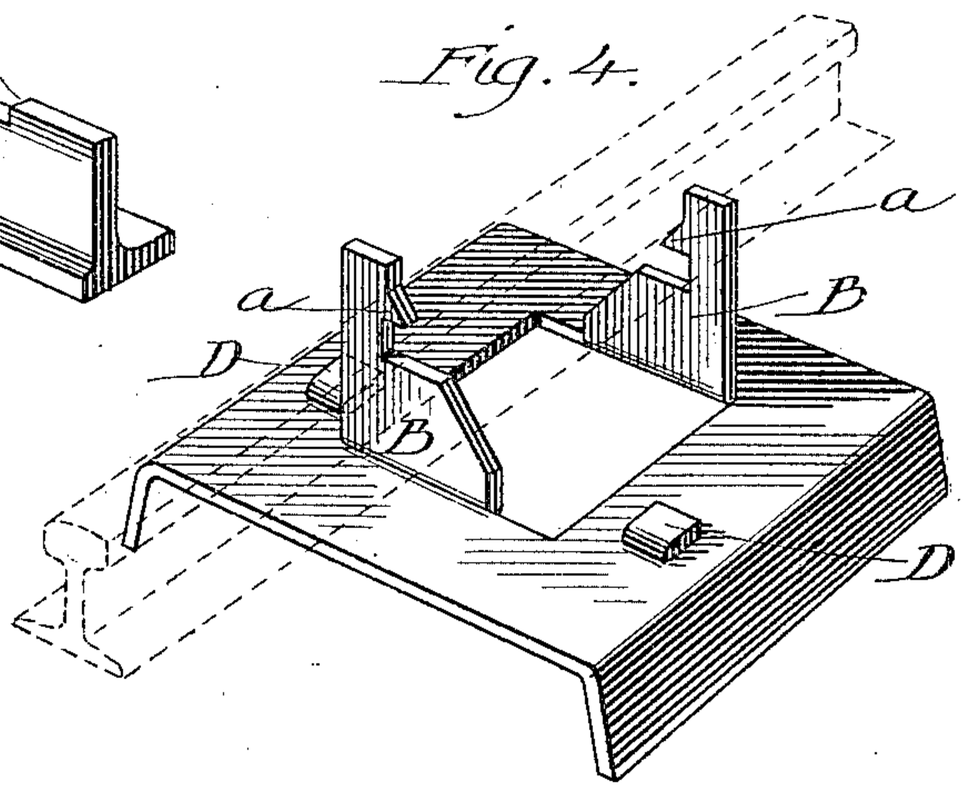


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

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RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 684,758, dated October 15, 1901.

Application filed February 4, 1901. Serial No. 45,938. (No model.)

To all whom it may concern:

Be it known that I, ALBERT J. HARMS, a citizen of the United States, residing at Etherley, county of Knox, State of Illinois, have invented a new and useful Improvement in Railway-Ties, of which the following is a specification.

The object of my invention is to provide a tie for rails, which may be made of metal and yet light in weight, which will securely hold the rails, and which can be easily put in place or removed.

It consists of a chair at each rail, having lugs for securing the rails, a tie-rod extending from one chair to the other between the rail and the chair and of such a cross-section that when it is turned upon its longitudinal axis it will spread the parts and lock them together.

It further consists of details hereinafter more fully described, and particularly pointed out in the claims.

Figure 1 is a top plan view of my tie. Fig. 2 is a sectional view on lines 2 2, Fig. 1. Fig. 3 is a perspective view of one end of the tie-rod. Fig. 4 is a perspective view of the chair, the rail being shown in dotted lines.

A represents the chairs; B, the lugs upon the chairs, which engage the flange of the rail; C, the tie-rod; D, the shoulders on the chair, against which the side of the tie-rod abuts when in place, and E the rails.

The lugs B project up from the chair on each side of the flange of the rail, but not opposite one another, so that when the chair is turned there will be sufficient space between them to permit the flange to enter. Then by turning it parallel with the rail the lugs B engage the flange. The upper portion of the lugs is formed into a head or key *a*, which projects over the flange and holds the rail securely.

The tie-rod C is T-shaped, with its vertical flange longer than its horizontal one, and has a recessed portion which fits under the flange of the rail, forming two shoulders *b*, which prevent lateral displacement of the rail, and it is cut away at *d*, so that it will enter under the rail when turned with that edge up. The chairs are first put in place at each rail. The tie-rod is then inserted, with portions cut away at *d* uppermost, one end being put in first and passed through far enough to allow the other end to be inserted, and then it is drawn back until the rails come opposite the recess formed by the shoulders *b*. The rod is then turned on its longitudinal axis one-quarter of a complete turn, and the vertical flange being longer than the horizontal the rail is spread upward from the chair and the parts are bound securely together. The shoulders D are placed on the chair for the edge of the tie-rod to abut against and prevent its being displaced laterally. This forms a tie which holds the rail securely and which can be readily put in place or replaced when worn out.

What I claim, and desire to secure by Letters Patent, is—

1. The herein-described rail-tie, consisting of the combination of the chairs A at each rail, having the lugs B, which engage the flange of the rail, the tie-rod C, which is inserted between the rail and the chair, having a cross-section of such a shape that when turned on its longitudinal axis it will spread the rail from the chair and bind the parts together, all substantially as shown and described.

2. The herein-described rail-tie, consisting of the combination of the chairs A, having the lugs B, which engage the flange of the rail, the tie-rod C, adapted to be inserted between the rail and the chair and then turned upon its longitudinal axis, having two flanges of different depths set at an angle to one another, and the shoulders *b* at the inner and outer edges of the rail-flange, all substantially as shown and described.

3. The herein-described rail-tie, consisting of the combination of the chairs A, having the lugs B, which engage the flange of the rail, the tie-rod C, adapted to be inserted between the rail and the chair and then turned upon its longitudinal axis, being T-shaped in cross-section, one flange being longer than the other, and having the shoulders *b*, which engage the flange of the rail when the tie-rod is turned, all substantially as shown and described.

4. The herein-described rail-tie, consisting of the combination of the chair A, having the lugs B thereon, which engage the flange of the

rail, and the shoulders D thereon, against which the edge of the tie-rod abuts, the tie-rod C adapted to be inserted between the rail and the chair and then turned upon its longitudinal axis, of T-shaped cross-section, one flange being longer than the other, and having the shoulders *b* which engage the flange of the rail when the tie-rod is turned, all substantially as shown and described.

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