

(No Model.)

L. O. ORTON.

CROSS TIE AND FASTENING FOR RAILROAD RAILS.

No. 290,793.

Patented Dec. 25, 1883.

Fig. 1.

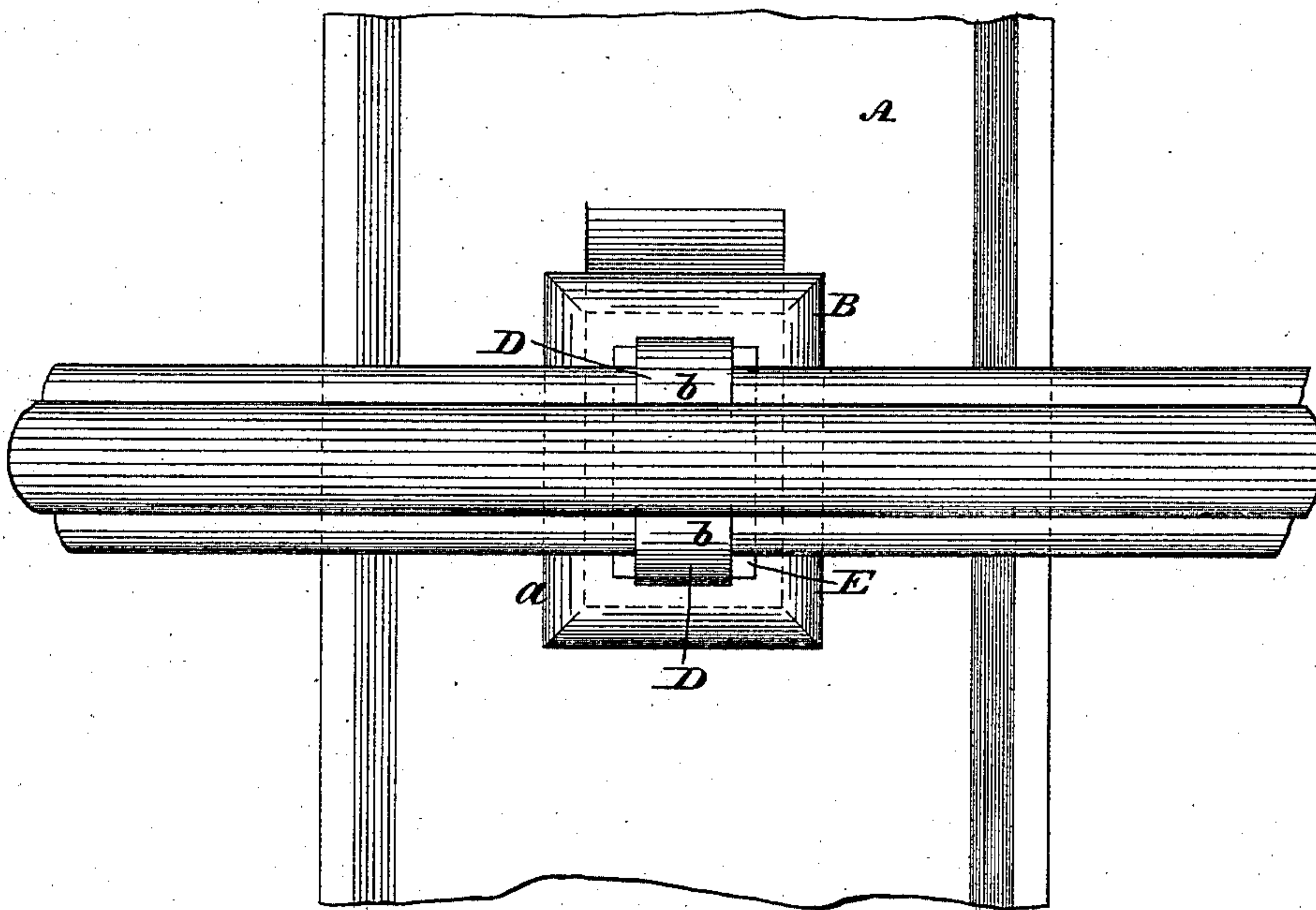


Fig. 2.

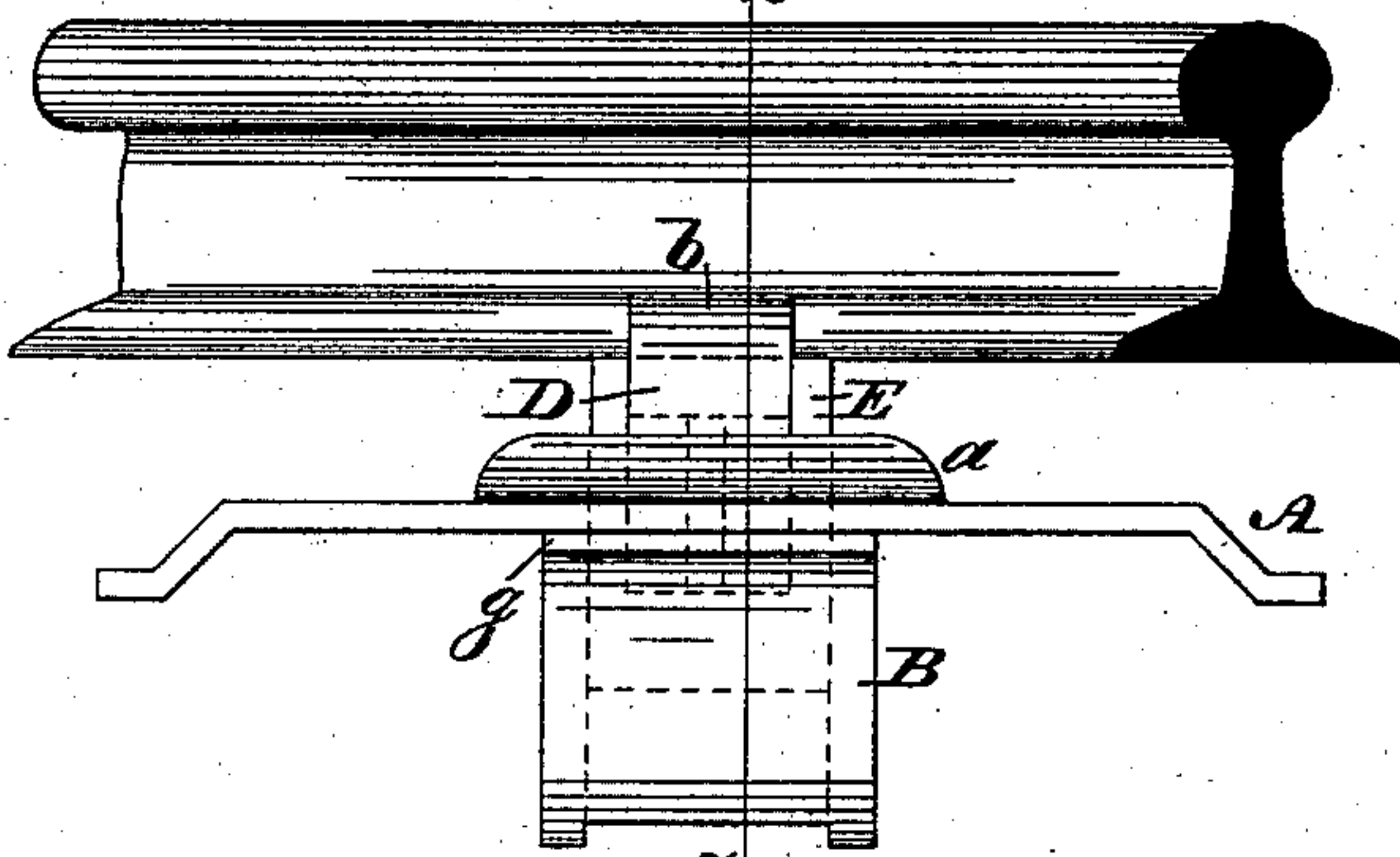


Fig. 3.

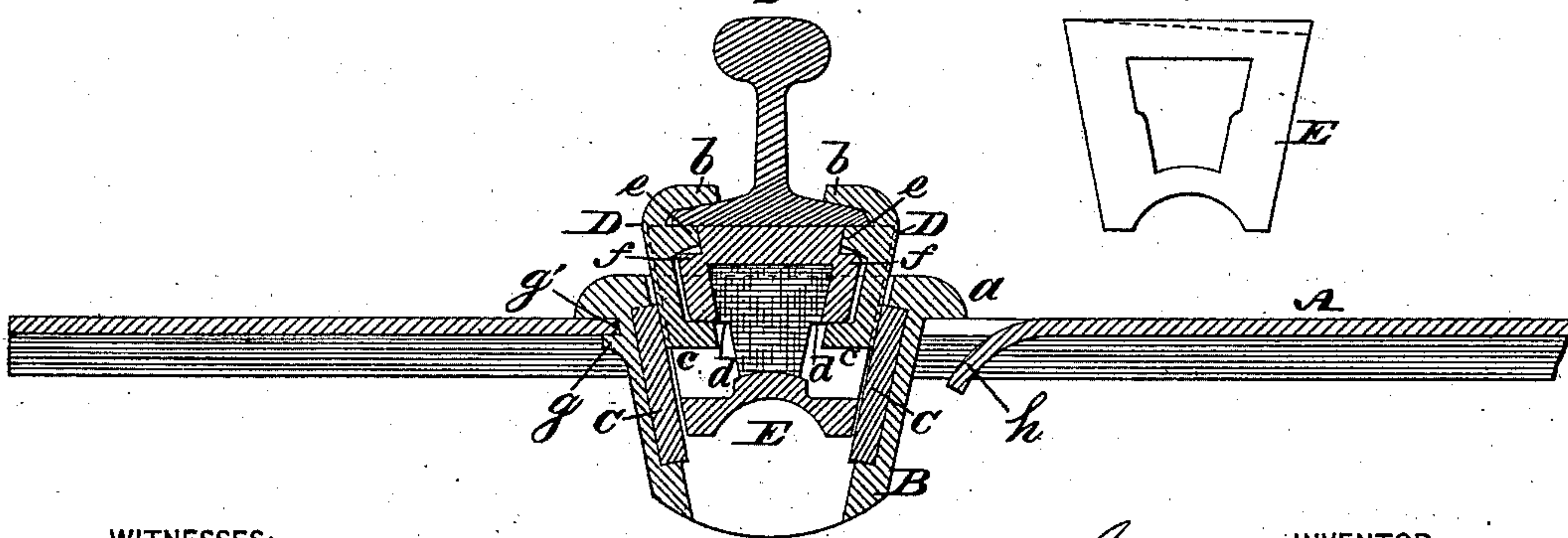
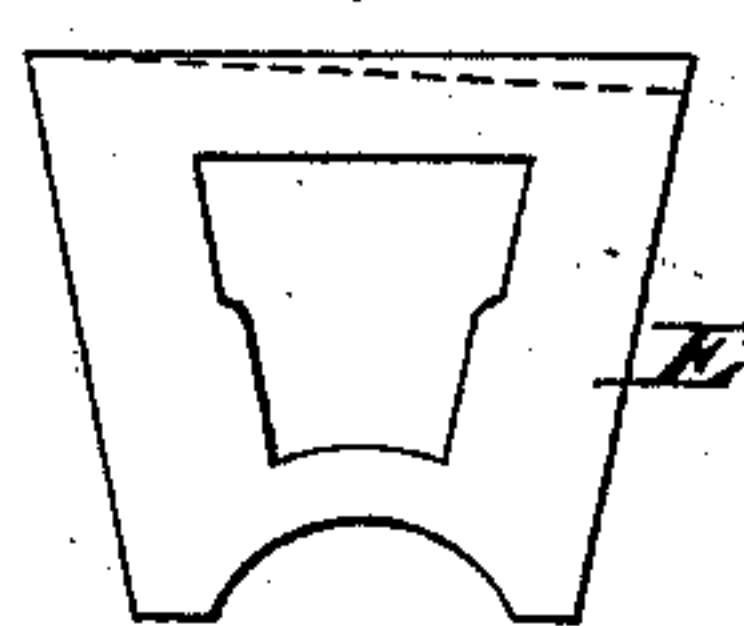


Fig. 4.



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CROSS-TIE AND FASTENING FOR RAILROAD-RAILS.

SPECIFICATION forming part of Letters Patent No. 290,793, dated December 25, 1883.

Application filed June 14, 1883. (No model.)

To all whom it may concern:

Be it known that I, LYMAN O. ORTON, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Cross-Ties and Fastenings for Railroad-Rails, which improvement is fully set forth in the following specification and accompanying drawings, in which—

10 Figure 1 is a top view of a cross-tie and fastening for railroad-rails embodying my invention. Fig. 2 is a side elevation thereof. Fig. 3 is a vertical section in line *x x*, Fig. 2. Fig. 4 is a side elevation of a detached portion.

15 Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of fastenings for the rails of a railroad, whereby they will be securely held without the aid of bolts, nuts, or 20 pins, and any increase in the load upon the rails will proportionately tighten the grip of the clamps, as will be hereinafter set forth.

It also consists of a novel mode of connecting the fastenings and cross-ties.

25 Referring to the drawings, A represents a metallic cross-tie, in which is an opening for a wedge-shaped box, B, the upper end whereof has a flange, *a*, whereby the box is sustained in position on the tie. The inner face of the 30 box is recessed on opposite sides, and in the recesses are fitted fillings C, of wood or other comparatively elastic material, which project sufficiently beyond the surrounding walls of the box to receive the impact of clamping- 35 jaws D D, which are fitted to the sides of a wedge-shaped block, E, the latter being adapted to enter the box B. Each jaw D has its upper end, *b*, curved or bent, forming flanges to embrace one side of the base of the rail, and the 40 bottom is flanged or bent, as at *c*, to engage with a shoulder, *d*, on the side of the block E. A lip, *e*, also projects from the inner face of the jaw below the upper end, *b*, and rests on a shoulder, *f*, near the top of the block E, it 45 being noticed that the rail rests on the top of the said block E, and has the sides of its base fitted between the ends *b* and lips *e* of the jaws D.

It will be seen that when the rail and jaws

are placed in position on the block and the 50 latter introduced into the box the jaws come in contact with the fillings C and tighten there-against, whereby the rail is firmly clamped by the jaws and securely held, it being evident that the increase in the load upon the rails 55 will proportionately tighten the grip of the jaws. The shoulders *d* and flanges *c* prevent the jaws from rising or upward displacement when the block and jaws are introduced into the box B, and the lips *e* and shoulders *f* serve 60 to retain the jaws in position when primarily fitted to the block. The fillings C are so disposed that they remain firmly in position, and are prevented from being battered on their upper edges by downward action of the jaws, 65 such action being exerted on the contiguous faces of the filling and simply compressing the same without injury thereto. The taper of the outer faces of the jaws coincide with that of the portion of the block E below said 70 jaws, so that the jaws and block coincide with the angle or inclination of the inner faces of the fillings C, and are flush therewith. Furthermore, the tightening action of the jaws is positively effected by the fillings C, providing 75 an elastic support for the block E, the benefits of which are imparted to the rail.

In order to prevent upward displacement of the box B, there is exteriorly on one side thereof a lip, *g*, forming with the flange *a* 80 above the same a groove, *g'*, to receive the wall of the opening in the cross-tie in which said box is fitted. The opening is lengthened, and the wall of the side opposite to the lip *g* is formed into a lip, *h*, which is primarily bent 85 down, as seen in Fig. 3. When the box is introduced into the opening, it is inserted in the side of said opening adjacent to the lip *h*, and then moved to the opposite side, whereby the groove *g'* receives the respective wall of the 90 opening. The lip *h* is now bent up from below against the flange *a* and body of the box, whereby the latter is prevented from being moved laterally, and as the lip *g* is interlocked with the cross-tie, vertical motion of the box is 95 also prevented.

The tie may be made of a continuous piece for the two rails, or a piece for each rail, as

desired, and the ballasting may be of any desirable nature, it being evident that the objections to wooden ties are avoided. The top of the block is right angular to its vertical axis; but it may be inclined or canted, as indicated by dotted lines, when so required by the nature of the road.

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

1. A rail-fastening having a pair of jaws, a wedge-shaped block interposed between said jaws and supporting the same, and a wedge-shaped box receiving said jaws and block, the rail being adapted to rest directly on said block, substantially as and for the purpose set forth.

2. A wedge-shaped box, in combination with a wedge-shaped block and jaws, said block being recessed to receive the jaws forming the sides of the block and jaws flush and tapering, substantially as and for the purpose set forth.

3. A box having recesses on its inner sides, in combination with filling-pieces, a block and jaws, said block being interposed between the jaws and sustaining the rail and said jaws, the sides of the block and jaws being tapering and engaging with the filling-pieces without liability to rest on the top thereof, substantially as and for the purpose set forth.

4. A rail-fastening consisting of a box with filling-pieces, a block formed with shoulders at top and bottom, and jaws flanged at top and bottom and provided with lips below the top flanges, substantially as and for the purpose set forth.

5. In a rail-fastening, a box provided with a groove, in combination with a cross-tie having an opening and lip, whereby the box and tie are connected, substantially as and for the purpose set forth.

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Witnesses:

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