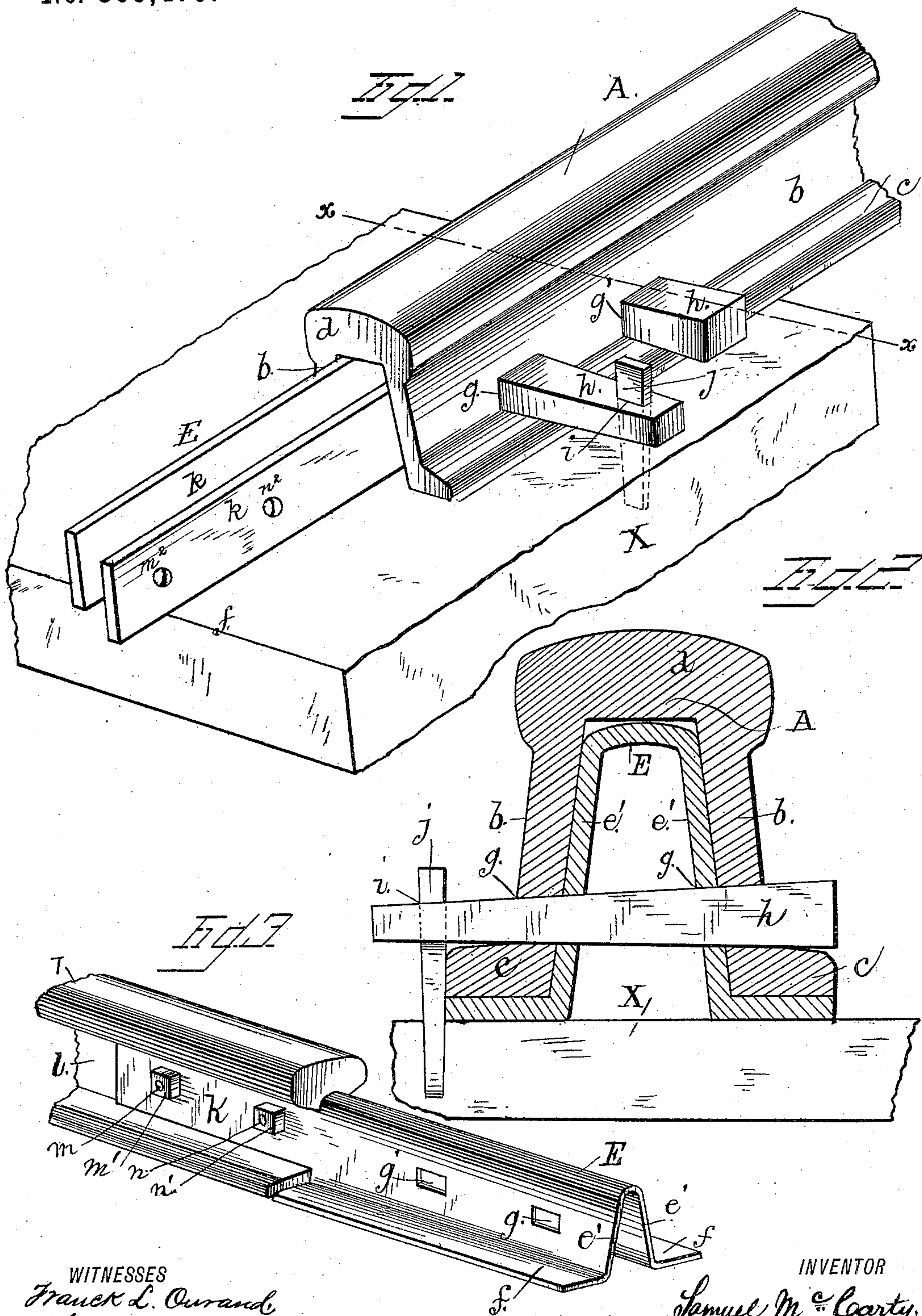


(No Model.)

S. McCARTY.
JOINT FOR RAILROAD RAILS.

No. 309,479.

Patented Dec. 16, 1884.



WITNESSES
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UNITED STATES PATENT OFFICE.

SAMUEL McCARTY, OF AURORA, ILLINOIS.

JOINT FOR RAILROAD-RAILS.

SPECIFICATION forming part of Letters Patent No. 309,479, dated December 16, 1884.

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

To all whom it may concern:

Be it known that I, SAMUEL McCARTY, of Aurora, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Joints or Connections for Railroad-Rails; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to a novel means for connecting the ends of hollow rails to the ends of T-rails, and to the combination, with an Λ -rail and with a T-rail, of a specially-constructed connecting-plate.

Figure 1 represents a perspective view of a rail and its connections embodying my improvements and as applied to the ties. Fig. 2 is a cross-section through the line $x x$ of Fig. 1. Fig. 3 shows how an Λ -shaped rail may be connected to a T-rail by means of my improved connecting-plate.

The rail A is in its cross-section substantially in the shape of the letter Λ , the two webs or sides b being somewhat flaring and the flanges $c c$ of considerable breadth, this flare in connection with the flanges affording a broad line of base for support and tending to give firmness to the rail when laid. This construction also, as it will stand more firmly on the ties of the track, allows the rail to be made with but a small amount of metal, as compared with its dimensions, and yet to have great strength, as its form involves the principle of the arch. The sides b may be of materially less thickness than the top part, d , of the rail.

Instead of a common fish-plate, or of any other well-known device for connecting the ends of adjacent rails, I have devised the following means, which are very effective.

E is a double key-plate, also made at one end somewhat of the form of an Λ in its cross-section, and adapted to fit snugly within the rail, close to its sides e' , as shown, and also having flanges $f f$, on which rest the flanges $c c$ of the rail, and having projecting parallel ends k , which constitute two splices, and

which are adapted to span or grasp the web l of a T-rail, as shown in Fig. 3, bolts m and n and nuts $m' n'$ serving to hold these splicing ends k to this T-rail. This affords a much firmer hold for the T-rail than when two T-rails are connected by two fish-plates, for the reason that the parts k are integral with the Λ -shaped portion of the key-plate E, and which is held within the Λ -rail and firmly keyed to it. This plate is secured to the rails and to the ties in the following manner: Through the upright webs or sides both of the rails and of the Λ -shaped portion of the plate E are made holes $g g'$, preferably oblong, and adapted to receive tapering keys $h h$, of corresponding cross-section, each of which has at its extremity an opening or slot, i , for the reception of a fastening-spike, j . The ends of two rails being placed or matched together near enough to allow, as customary, for the usual longitudinal expansion and contraction at the joints, the keys $h h$ are driven home in and through their respective holes g and g' in the rails and plate until their slots i are beyond the flanges c and f . The slot-spikes j , which should preferably be tapering, are then driven through these slots and into the ties of the track. This positively prevents the keys from working out and holds the plate and the Λ -rail firmly together. The T-rail is then placed with its web l between the parallel ends k , and the bolts m and n inserted in the holes m^2 and n^2 and tightened up by the nuts $m' n'$. It will be seen from the construction as stated that as long as one of the keys h remains firm in its place in each rail the joint is as secure as any part of the rail. There is no possibility of a lateral shifting of the rail, for the plate E positively prevents this, and there is no possibility of the dropping or sinking of the end of either rail, for the flanges $f f$ and the ends $k k$ of the plate, even independent of the flanges of the rail, positively prevent this, and there is no chance for the end of one rail to rise higher than the end of its adjacent rail, for the keys h prevent this. In fact, the joint is just as secure as any part of the rail itself; and as a tie, X, is placed under the joint, and part of the joint cannot get lower than another part, nor one joint lower than another, all pounding out or

laminating of the rails is obviated or reduced to the minimum.

This improved rail-connection is also much stronger than ordinary fish-plates, and has
5 more stability, because, having a broader base, and having the principle of the arch, has greater resisting power, without liability to break, while the arched part of plate E also sustains its share of the pressure and impact
10 at the joint, and to that extent relieves the rails. By reason of its form the hollow rail will weigh no more per yard than ordinary rails. The keys being tapering or wedge-shaped in their vertical thickness, tend when
15 driven in to draw the rail down upon the plate and its flanges.

I claim—

1. The Λ -shaped connecting-plate adapted for connecting together a hollow Λ -rail and a
20 T-rail, and made with parallel projections kk ,

extending beyond its Λ -shaped portion, for spanning the web of the T-rail, all substantially as set forth.

2. In combination with an Λ -rail and with a T-rail, the described connecting-plate placed 25 at one of its ends within the Λ -rail, and at its other end outside the T-rail, all substantially as shown and described and set forth.

3. In combination, an Λ -rail, a T-rail, the described connecting-plate placed at one of 30 its ends within the Λ -rail, and at its other end outside the T-rail, the tapering keys, spikes j , and bolts and nuts $m n$, all substantially as shown and described, and for the purposes set forth.

SAMUEL McCARTY.

Witnesses:

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