R. FRENCH.

Improvement in Railroad Splice Pieces.

No. 125,448. Patented April 9, 1872.

Fig. 1.

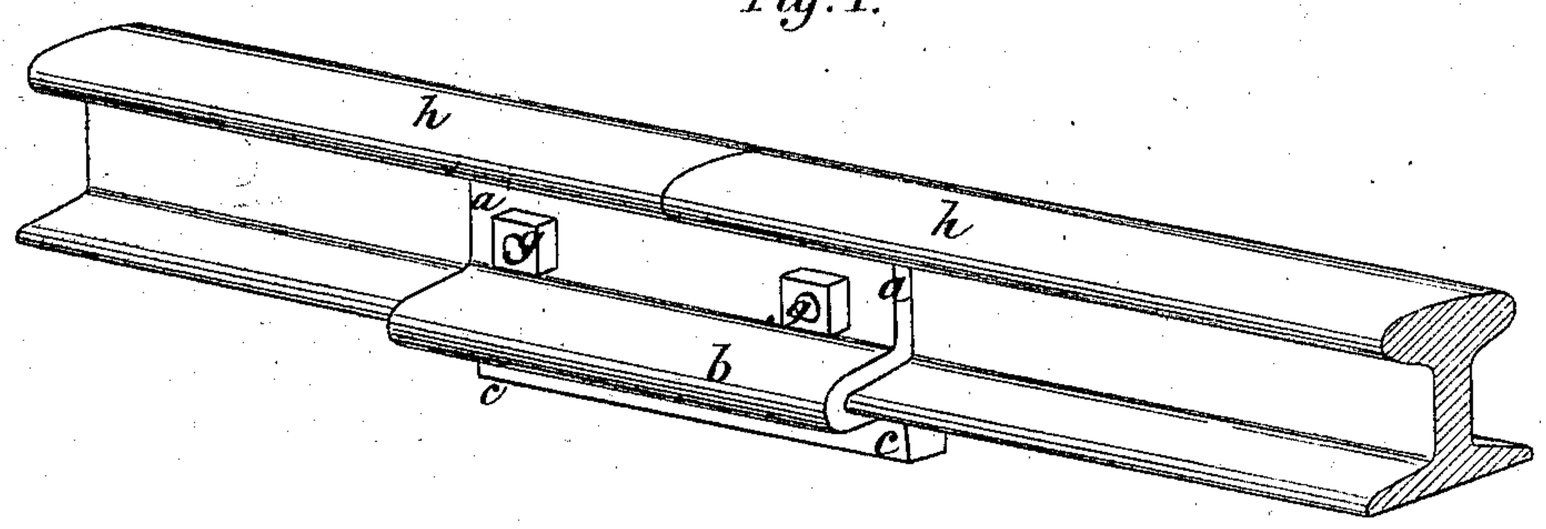


Fig. 2.

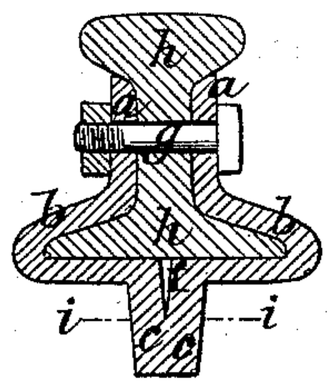


Fig. 3.

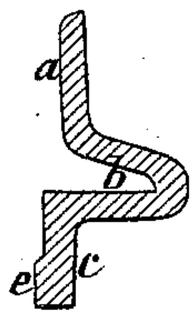
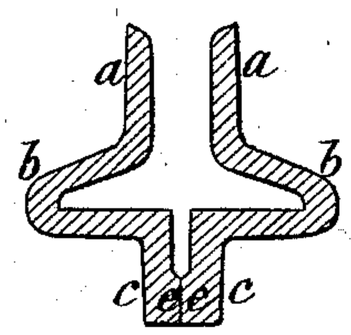


Fig. 4.



Witnesses.

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125,448

UNITED STATES PATENT OFFICE.

RAYMOND FRENCH, OF SEYMOUR, CONNECTICUT.

IMPROVEMENT IN SPLICE-PIECES FOR RAILWAY RAILS.

Specification forming part of Letters Patent No. 125,448, dated April 9, 1872.

To all whom it may concern:

Be it known that I, RAYMOND FRENCH, of Seymour, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Splice-Pieces for the Joints of Railroad Rails; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 represents in perspective the splice-piece in place at the joint between two adjacent rails. Fig. 2 represents a vertical transverse section through the rail and splice-piece. Fig. 3 represents a cross-section through one of the rolled bars from or out of which the splice-pieces are made after two are welded together at the edge of the rib; and Fig. 4 represents two of the pieces laid together ready for being welded.

Similar letter of reference where they occur in the separate figures denote like parts in the drawing.

In making splice-pieces for the joints of railroad rails of the character herein shown and described, it is almost impossible, owing to the difference in the size and conformation of the ends of the rails, caused by want of uniformity of heat and the difference in the expansion and contraction of the metal, though rolled in the same grooves or rolls, to make the splice-piece of such exact form as to fit the rails snugly, and yet be easily placed at the joints, because they have had little or no capacity to yield or spring enough to receive readily the ends of such rails, or to close tightly upon them after it has so received them.

My invention consists in making a portion of the otherwise solid or solidly-welded rib underneath the splice-piece open or unwelded, so that the jaws may spring apart sufficiently to receive the ends of the rails, and then close up snugly against the rail, and when bolted thereto make a very strong and unyielding joint-splice; and my invention further consists in rolling out bars of the shape and form, in cross-section, of that shown in Fig. 3, which, when cut up into suitable lengths or pieces, are welded together at the edges of their ribs, and shaped and held on a mandrel or former to finish them.

Three modes of making splice-pieces of wrought-iron have been practiced, all of which are objectionable—viz., to fold or bend the plate up into the form desired, to make them in two parts and bolt them together through the rib on the under side, and, third, to draw them out solid over a mandrel. Neither of these modes works well in practice. The first will bend without springing back, and thus stand off from the rail. The second is expensive, and lacks rigidity and strength; and the third, besides being difficult and expensive to make, has the other objection, hereinabove referred to, of not being readily adapted to the ends of the rails, which vary in size materially, owing to unequal heating, expansion, and contraction.

In making my joint splice-pieces I first roll out the bars into the shape or form of that shown by the section at Fig. 3, of which the portion *a* fits into the waist of the rail, the portion *b* embraces the flange and part of the base of the rail, and the portion *c* forms a part of the rib of the splice-piece. Upon one side of the rib portion there is an enlarged part, *e*, of slightly greater thickness than the other portions, for a purpose to be explained. The bar so rolled out is cut up into such lengths as the splice-piece to be made should require, and two of these pieces are laid together, as shown in Fig. 4. When properly heated a mandrel of the shape of the rail that the splice-piece is to fit is introduced, and by a clamp or by rolls the metal is rolled or clamped to the mandrel; and by the same or another heat the flanges *c c* are welded together throughout the enlarged portions, shown at *e e*, and leaving, as seen at *f*, Fig. 2, a portion of the rib open, the weld extending from the base of the rib *c* up to, say, the dotted line *i*. Thus a splice-piece is made strong, easily applied to the ends or joints of the rails, and snugly fitting them at all its contiguous points or parts. The slot or opening at *f* will admit of the springing apart of the jaws, so as to readily take in the ends of the rails, and then close up against the rails, and when the bolts *g g* are put through make a very strong connection and strengthener for the joint between the rails.

By this mode of making the splice-pieces great uniformity and cheapness is attained, inasmuch as the bar from which the pieces that form the splice are cut is easily rolled;

and when the two parts are put together and welded, they have the rigidity, vertically, of the solid splice-pieces, which are not only difficult to roll, as above stated, but lack the elasticity which is necessary, first, to receive, and then to clasp and bind the ends of the rails *h h*.

The projecting portions *e e*, Fig. 4, are not only welded together, but gauge the distance that the weld shall extend from the bases of the ribs.

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

1. The splice-piece for the joints of railroad rails, made of two pieces, welded together at the base of the rib, and having a slot or unjoined portion, as at *f*, underneath the seat for the rails, substantially as and for the purpose described.

2. I also claim, in connection with a bar rolled out in the shape and form substantially as shown in Fig. 3, and from which pieces to form the splice are cut, the swell or enlargement *e*, to form a welding-surface, as well as a gauge to the extent of the welded surface, as described and represented.

RAYMOND FRENCH.

Witnesses:
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