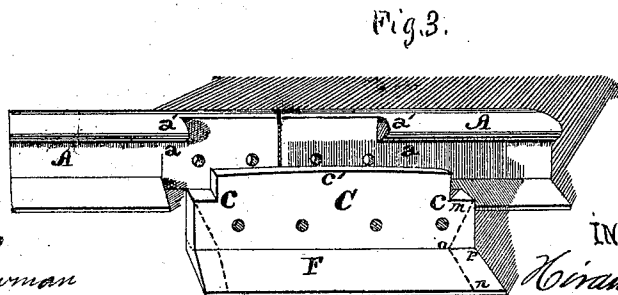
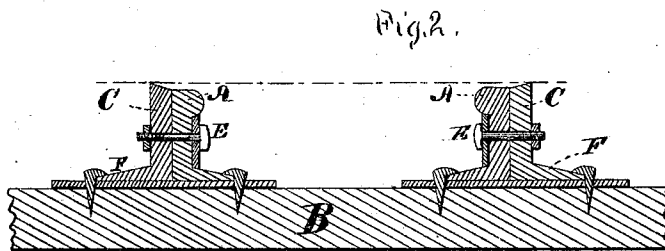
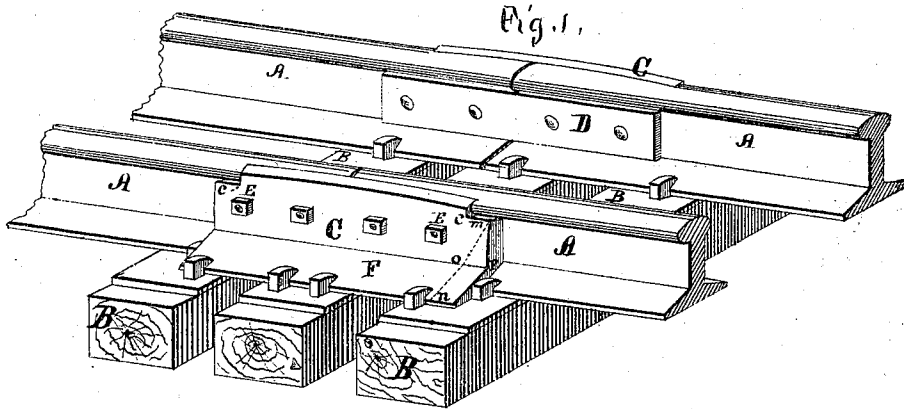


H. WILLIAMS.
Railroad Rail Joints.

No. 133,612.

Patented Dec. 3, 1872.



WITNESSES

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HIRAM WILLIAMS, OF GRASS LAKE, MICHIGAN.

IMPROVEMENT IN RAILROAD RAIL-JOINTS.

Specification forming part of Letters Patent No. 133,612, dated December 3, 1872.

To all whom it may concern:

Be it known that I, HIRAM WILLIAMS, of Grass Lake, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Rail-Joints for Railways; and I do hereby declare that the following is a full, clear, and exact description thereof that will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing and to the letters of reference marked thereon which form a part of this specification.

My invention relates to a joint used to unite the ends of railway rails wherein the fish-plate and splice-bar are used; and consists in an improved splice-bar as regards its shape and its operation.

In the drawing, Figure 1 is a view of two rails united by a joint, wherein A are the rails resting on ties B, one or more of which sustain the splice-bar C. D is an ordinary fish-plate united firmly to C by bolts E which pass through the rails A. Fig. 2 is a view in cross-section of one of the joints. Fig. 3 exhibits my invention in the splice-bar C slightly bulged on its upper edge at *c'*. *cc* are shoulders which, passing along the web *a* beneath the swell *a'*, receive and sustain the pressure of the wheel.

The great strain brought alternately upon the rails at their junction soon causes their ends to become so battered as to require removal before the body of the rail is sensibly injured. In my patent for rail-joints granted to me July 16, 1872, I endeavored to overcome this difficulty by combining the splice-bar and the fish-joint as there set forth; but there was a liability, after considerable use, of a shearing motion arising between the ends of the splice-bar and the rails.

I therefore propose to make a splice-bar with shoulders *cc* formed at the ends of the top edge. These shoulders permit the ends of the splice-bar to project along the web *a* beneath the swell *a'* so that any strain coming on the rail at *a'* will be transmitted directly to the shoulder *c*, and the relative positions of A and C will always be the same. I make the bar slightly bulged from the ends toward the

middle, on top, in order that the wheels of a passing car may transfer their pressure from the rail proper to the splice-bar C. The rails A are prepared by cutting away the swell on the outer edge as far as the web, and for a distance in length sufficient to admit the portion *cc* of the splice-bar C. The flanges F are then cut away to the same depth, but sufficient in length to admit the entire length of the splice-bar C, permitting the latter to rest firmly on one or more ties, as may be desired, distributing the weight by its broad base F'. This, however, necessitates an irregular cutting of the bars A. I propose, therefore, sometimes to make the cutting of the web and flange to correspond in length, and then either make the ends of the splice-bar diagonal, as shown by the dotted line *mn*, or else notch the bar at the lower corners in the same manner as at the upper corners, as shown by the dotted lines *nop*. Either form would effect the purpose, and I desire to be understood as claiming either of the forms shown wherein the principles involved are the same or equivalent. This splice-bar is attached by bolts passing through the rails to an ordinary fish-bar on the opposite side of same, and there may be two or more bolts.

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

As an improvement upon the splice-bar patented to me July 16, 1872, the splice-bar C, for rail-joints herein described, when provided with the shoulders *cc* for receiving the pressure of the rails, the same to be set into the ends of the rails to receive the wheels upon their ordinary bearings provided with a broad bearing upon the ties, substantially as set forth, and secured to a fish-plate of similar length placed against the opposite side of the rail by bolts, all for the purposes set forth and described.

In testimony that I claim the foregoing I have hereunto set my hand.

HIRAM WILLIAMS.

Witnesses:

WELLS W. LEGGETT,
CHARLES HAYNES.