H. W. WOODRUFF.
RAILWAY-RAIL JOINTS.

No. 194,755. Patented Aug. 28, 1877.

FIG. 1.

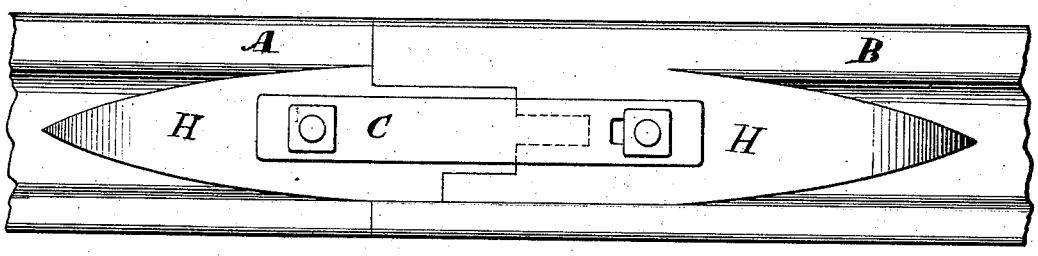


FIG. 2.

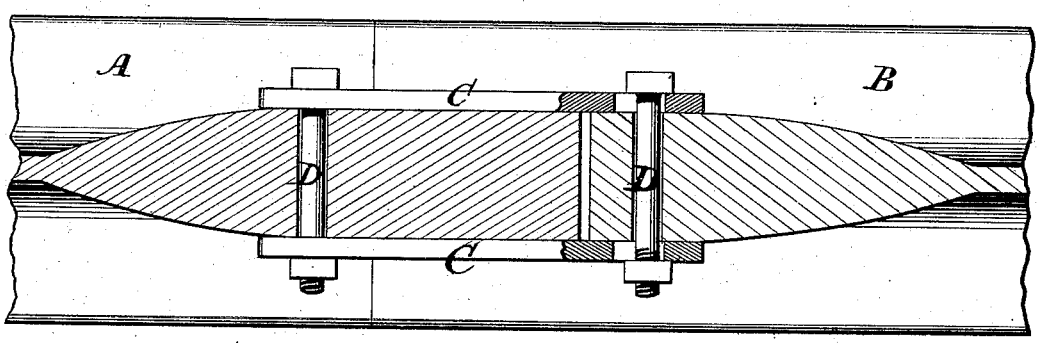
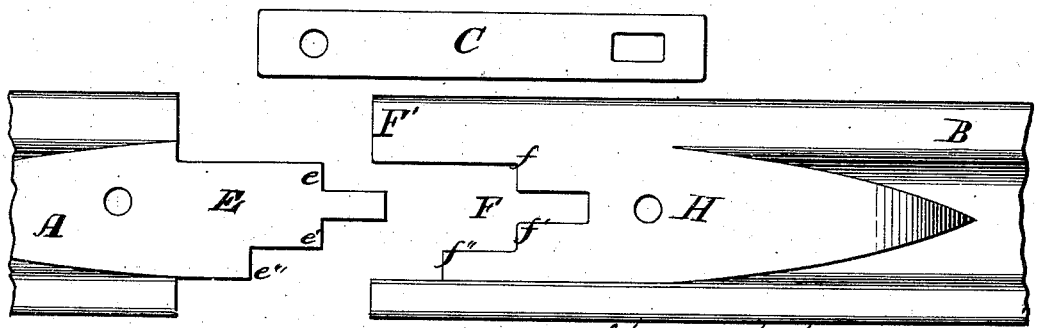


FIG. 3.



Attest.
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UNITED STATES PATENT OFFICE.

HORACE W. WOODRUFF, OF CINCINNATI, OHIO.

IMPROVEMENT IN RAILWAY-RAIL JOINTS.

Specification forming part of Letters Patent No. **194,755**, dated August 28, 1877; application filed July 14, 1877.

To all whom it may concern:

Be it known that I, HORACE W. WOODRUFF, of Cincinnati, Hamilton county, Ohio, have invented an Improvement in Railway-Rail Joints, of which the following is a specification:

My invention relates to a new and improved method of uniting rails on railway-tracks.

Where the rails are simply united by the ordinary fish-plate, and spaces are allowed sufficient for the expansion and contraction of the rail, a heavy locomotive-wheel striking the end of the rail as it passes over it presses it down somewhat, and occasions a jar as it strikes the end of the contiguous rail.

My invention is designed to obviate this difficulty, and unite the rails in such a manner as to form a continuous rail, over which the train passes without jar.

In my drawings, Figure 1 represents a side view of the device, showing the rails united. Fig. 2 represents a longitudinal section of the same taken horizontally. Fig. 3 represents the rails disunited, and shows the peculiar construction of the contiguous ends.

A and B represent, respectively, the contiguous ends of the rails that are to be united. C C represent the ordinary fish-plates. D D are two bolts with nuts passing through the fish-plates and rails, making the ordinary joints. E represents a horizontal projection or tenon, formed at the end of the rail, and made with shoulders *e e' e''*, and which fits into a corresponding horizontal recess, *f f' f''*, in the end of rail B. This tenon is made horizontal, so that the part F' overlapping onto the projections E of the rail A, fills the space and rests squarely upon the projection E of the rail A.

It has been attempted to unite rails by tongue and recess arranged vertically at the end of the rail, but the details were different from this here described, and the device was not a success, as it presented a narrow surface on the top of the rail that was liable to become broken or wedged together, and it did not prevent one rail from sinking lower than the other.

By my invention the top of the rail remains whole and firm, and in the expansion and contraction there is no interval made between the rails, but there is a continuous even rail, the tongue preventing one from sinking below the other.

The enlargements H H may be omitted, if desired, and the device can be used either with or without the fish-plates.

I intend to make this tongue and recess upon the respective ends of the rails by cutting out the parts with a die after the rail is finished.

I claim as my invention—

1. The horizontal tongue E and corresponding recess F in the webs of the contiguous ends of the railway-rails, the heads and bases of which are of the usual form, with squarely abutting ends, substantially as and for the purpose specified.

2. The combination of horizontal tongue E and corresponding recess F with the fish-plates C C, as and for the purposes described.

HORACE W. WOODRUFF.

Witnesses:

JEREMIAH F. TWOHIG,

ARTHUR STERN.