G. PALMER.

RAILROAD RAIL-JOINT.

No. 182,848. Patented Oct. 3, 1876.

Fig. 1.

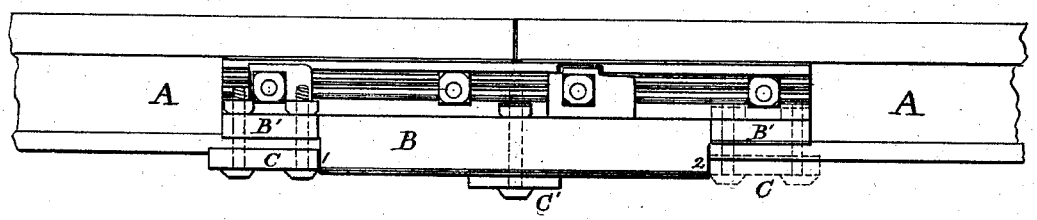


Fig. 2.

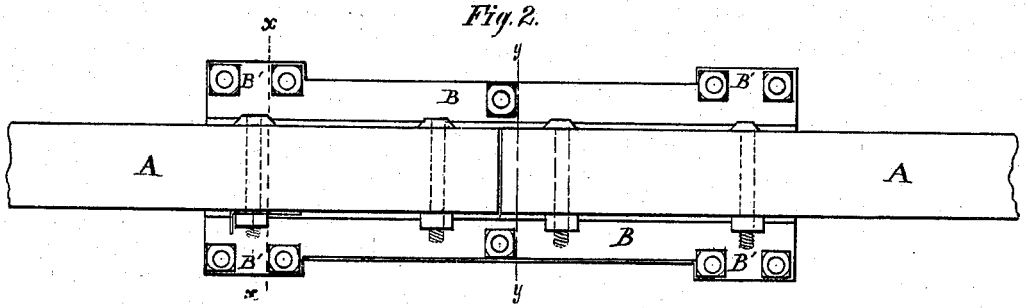


Fig. 3.

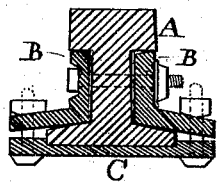
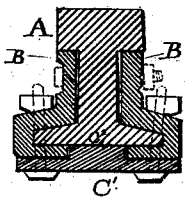


Fig. 4.



WITNESSES:

Horace L. Singleton

L. W. Connell

INVENTOR.

George Palmer

Per Blanchard & Singleton

ATTORNEYS.

UNITED STATES PATENT OFFICE.

GEORGE PALMER, OF LITTLESTOWN, PENNSYLVANIA.

IMPROVEMENT IN RAILROAD-RAIL JOINTS.

Specification forming part of Letters Patent No. **182,848**, dated October 3, 1876; application filed April 19, 1876.

To all whom it may concern:

Be it known that I, GEORGE PALMER, of Littlestown, in the county of Adams and State of Pennsylvania, have invented certain new and useful Improvements in Fish-Joints for Railroad-Rails; and I do hereby declare that the following is a full, clear, and exact description thereof, 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 the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in the construction and arrangement of fish-plates for railroad-rails in such a manner as to be more firmly secured to the railroad-rails, and furnish a more certain support to the joints of abutting rails, thereby preventing injury thereto from the passage of cars and locomotives over such rails, and causing vibration of the same and consequent abrasion or fracture of the points or ends of the rails.

In the drawings, Fig. 1 is a side view. Fig. 2 is a top view; Fig. 3, section on *x x*, and Fig. 4, section on *y y*, Fig. 2.

The fish-plate is constructed in such a manner as to fit into and conform to the shape of the rail between the tread and flange thereof, and a return flange upon such fish-plate receives the flange of the railroad-rail. Upon each end of such fish-plates (there being one on each side of the rail-joint) a projecting horizontal lip is formed, of sufficient length to allow one or more bolts to pass through it on the outside of the flanges of the rail. These fish-plates are secured together by bolts and nuts, the bolt passing through each fish-plate and the rail. The return flanges of the fish-plates are shorter than its length upon the upper side of the same, to the extent of the lips formed thereupon, which difference in length leaves a shoulder on each end of the return flange of the fish-plate below the rail.

Two end plates are constructed, in length equal to the width of the rail and lips of the fish-plates, when secured in the manner above described. These plates abut upon the ends of the return flanges of the fish-plates, under the railroad-rail, and are bolted to the lips formed upon the ends of the fish-plates. A central plate is also applied and bolted through both the fish-joint and the flange of the railroad-rail. This plate has formed upon its upper side, and being part and parcel of the plate, a projection, or width and thickness, that fills up the space between the two return flanges of the fish-plates, and upon which the points of the railroad-rail can rest.

When the plates are applied as herein described, and suitably secured and bolted, they prevent, in a great degree, the vibration of the railroad-rails when trains are passing over them, and consequent injury and wear of such rails.

In the drawings, A A represent the railroad-rails; B B, the fish-plates; B′ B′, the lips formed upon the ends of the same; C C, the under cross-plates, bolted to the lips B′ B′, and C^1 the central cross-plate, having formed upon it the thickened portion C^2, filling the space between the return flanges of the fish-plate, as herein described. 1 and 2 are the shoulders formed upon the flanges of the fish-plate, on the under side of the rail, against which the cross-plates C C abut. Layers of rubber or other elastic material may be interposed between the said cross-plates and the bottom of the railroad-rail, if desired.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the cross-plate C^1, with its projection C^2, (filling the space between the return flanges of the fish-plate,) and the fish-plates B B and rails A A, in the manner and for the purpose herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

GEORGE PALMER.

Witnesses:
B. F. JAMES,
JOHN W. PILLING.