J. B. ALLEN.

Railroad Rail-Joints.

No. 200,013. Patented Feb. 5, 1878.

Fig 1

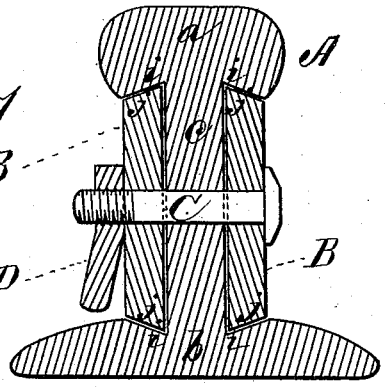
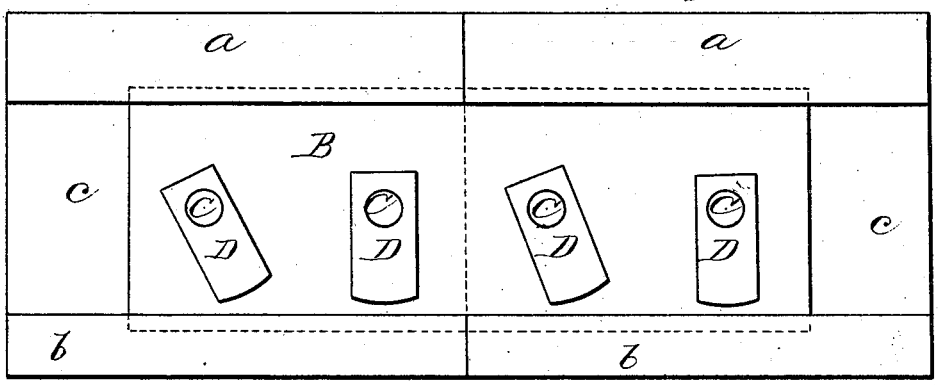


Fig. 2.



WITNESSES

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JOSEPH B. ALLEN, OF LINESVILLE, PENNSYLVANIA.

IMPROVEMENT IN RAILROAD-RAIL JOINTS.

Specification forming part of Letters Patent No. **200,013**, dated February 5, 1878; application filed May 27, 1876.

To all whom it may concern:

Be it known that I, JOSEPH BRADFORD ALLEN, of Linesville, in the county of Crawford and State of Pennsylvania, have invented a new and valuable Improvement in Fish-Plate and Nut-Locks; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a cross-sectional view of my improved plate; and Fig. 2 a side view of the same applied to a railroad-track.

This invention has relation to improvements in railroad-joints; and it consists in the construction and novel arrangement of the beveled re-entering angles under the tread and above the flange on each side of the web, forming lateral dovetail recesses, gradually shelving out to the surfaces of said tread and flange, and, in connection therewith, of the fish-plates, correspondingly beveled on their upper and under edges to fit said recesses, as hereinafter shown and described.

The object of this invention is to provide key-plates for the rails, which can be slid endwise into place on each side of the joint, and which, being in wedge-form, their acute angles will take in the recesses of the rails accurately and with a positive relation which will prevent looseness and shaking.

In the annexed drawings, the letters A A′ designate two adjoining sections of rail. B represents the fish plates or keys; C, the bolts, and D the clamp-nuts, which are extended at their lower ends, and somewhat bent outward, so that they will keep their position by gravitation. The rails A A′ are formed with the usual tread *a*, base or flange *b*, and web *c*. On each side of the web the under side of the tread is planed or otherwise recessed, to form an acute re-entering angle, or longitudinal angular recess, *i*, gradually shelving out to the surface of the tread, said recess being only deep enough to afford a hold to the dovetail key-plate B. The upper side of the flange, next the web, on each side is also provided with a similar longitudinal shelving recess, to receive the lower beveled edge of the key-plate.

The fish-bars or key-plates B are of the usual length, and are beveled upon their upper and lower edges, as shown at *j*, so that their inner corners, which fit in the angles of the recesses of the rails, are acute, so that when slipped into place they will take a firm and secure hold in said angles, and prevent all shaking and rattling. These keys are drawn, by the wedge formation, close to the web, and this intimate relation is only increased by the closeness of the fit and the pressure of the rolling-stock upon the tread.

The endwise movements of the rails consequent upon changes of temperature are provided for in the usual manner by the slots of the rails, and the bolts C serve to clamp the plates against the web, and at the same time to prevent the plates from sliding beyond their proper position at the joint. As the upper edges of the plates are beveled outward and downward, a broad face is presented, in contact with the under side of the tread, to the pressure on the upper and inner side of the same.

The amount of metal removed from the rail to form the beveled recesses is very slight, and will not materially affect their strength, while affording a strong and accurate hold to the acute angles of the fish-plates.

I am well aware that rails have been provided with longitudinal grooves of rounded and square form, entering by vertical walls in the base and tread on each side of the web, to receive key-plates having correspondingly rounded or squared edges, as shown in the patent of Shatswell, May 10, 1870. Hence I do not claim such devices.

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

The railroad joint-fastening, consisting of the wedge-form key-plates B, having their inner corners acute, and the longitudinal acute angular recesses *i* on the under side of the tread and upper side of the flange on each side of the web, said recesses gradually shelving out to the surfaces of said tread and flange without abutment, as shown and described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOSEPH BRADFORD ALLEN.

Witnesses:
W. D. HUGHES,
W. D. HUGHES, Jr.