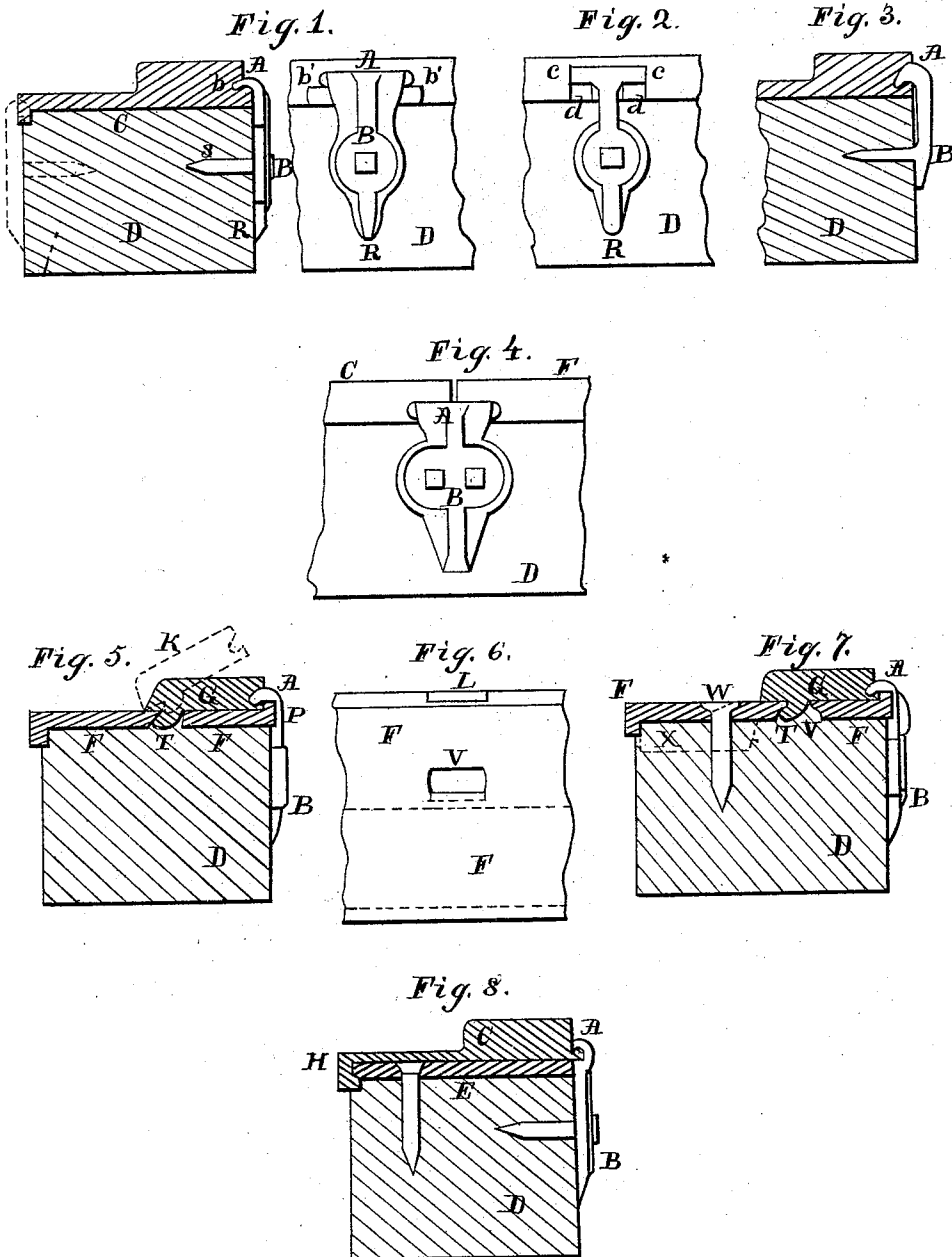


E. J. HOUSTON & E. THOMSON.
STREET-RAILWAY RAIL-FASTENER.

No. 177,124.

Patented May 9, 1876.



Witnesses:

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UNITED STATES PATENT OFFICE.

EDWIN J. HOUSTON AND ELIHU THOMSON, OF PHILADELPHIA, PA.

IMPROVEMENT IN STREET-RAILROAD-RAIL FASTENERS.

Specification forming part of Letters Patent No. 177,124, dated May 9, 1876; application filed October 18, 1875.

To all whom it may concern:

Be it known that we, EDWIN J. HOUSTON and ELIHU THOMSON, both of the city of Philadelphia, Pennsylvania, have invented certain new and useful Improvements in the Construction and Mode of Fastening Street-Railway Rails, of which improvements the following is believed to be a true and accurate description.

The object of our invention is to provide such a means of fastening street-railway rails as to avoid loosening, to increase the rigidity, and consequent durability, of the track, and, at the same time, by presenting, as far as possible, an unbroken surface to the wear, to obviate the injury to the rolling-stock.

The nature of our invention, by which we believe these advantages are secured, is substantially as follows, viz: The application of a self-locking device, clamp, or clutch, so applied to a railway-rail as to secure it firmly to the stringer. The clutch A B, Fig. 1, consists of a plate or bar, bent at one extremity, A, into a hook, and pierced, as at B, so as to allow its being fastened to the stringer or road-bed by spiking or otherwise, as at S, Fig. 1, where D represents the stringer.

The application of the clutch to the ordinary rail is shown in Fig. 1, where C is a cross-section of the rail; *b*, a recess, or *b' b'* a projection or projections, which receive the hooked extremity of the clamp or clutch A B.

Fig. 2 represents a modification of the clamp or clutch, in which the hooked extremity A, Fig. 1, is replaced by a lateral projection or projections, C C, Fig. 2, applied to the rail, as before stated.

The above-described clamp or clutch is applied to the rail by placing the bent extremity A, Fig. 1, or C C, Fig. 2, in the inclined recess *b*, Fig. 1, or on the projections *b' b'*, Fig. 1, or *d d*, Fig. 2, provided therefor. It is then firmly secured by driving a spike or spikes through the openings provided therefor, as shown at S, Fig. 1. To save expense the spike and clutch may be formed in one piece, as shown at A B, Fig. 3.

It is evident that the clutch or clamp applied to the rail in the manner hereinbefore stated forms an efficient self-locking device.

It is a matter of indifference as to which por-

tion of the length of the rail the clutch is applied. The end fastenings, however, may be united into a single clutch, as shown in Fig. 4, where C and F, the two extremities of the rails, are firmly secured by the combined clutch A B, Fig. 4, as described. This arrangement gives stiffness to the joint, and prevents bumping.

In the application of our clutch to rails composed of two or more detached sections, as in Fig. 5, where G represents the head, and F F the flange or bed-plate, the under part of the head is provided with a projection or toe, T, fitting into a suitable opening in the lower plate F F. In Fig. 6 the plate F F is shown in plan, where V represents the opening for the toe T, Fig. 5. The toe is preferably inclined or bent so as to allow of its ready insertion into the plate, as at K, Fig. 5, but, when seated, affording, with the clamp A B, a secure attachment of both head and flange plate to the stringer D.

In Fig. 6, L is a recess formed in the back of the plate F F for the insertion of that portion of the clutch A B which passes over the edge P of the flange F F. The extremity of the clamp A, Fig. 5, fits into an inclined recess in the head G, in the manner hereinbefore stated.

In the application of our clutch to a reversible sectional rail as a means of securing the head to the flange part, when spikes are used as the main flange-fastening, openings are made in the reversible flange-plate—such that when reversed the opening previously occupied by the toe, as before described, now serves as a spike-hole, and vice versa. Fig. 7 represents a reversible sectional rail, where G is the head, and F F the flange-plate. The toe T is inserted into the opening V, formed so that when reversed it, V, occupies the position, and serves the purpose, of the spike-hole W, while W now forms the opening for the insertion of the toe, as shown by dotted lines X. When the entire upper surface of the rail is in a single piece the above-mentioned toe is replaced by a hook, H, Fig. 8, formed by bending the edge of the rail C so as to catch under the lower bed-plate, as shown at E, Fig. 8. The bed-plate E is spiked or otherwise fastened to the stringer D.

We claim—

1. The clutch or clamp A B, provided with a hook, A, the openings B, (one or more,) for the introduction of the spike or bolt, and the projections R, applied in the manner set forth in the accompanying specification.

2. As a fastening for a sectional rail with a detached upper part or head, the projection or toe T, formed on the base of the head, the recess or opening V in the flange-plate F F, for the insertion of the toe, substantially as described in the foregoing specification.

3. The combination of the toe T, the opening V, and the clamp or clutch A B, as a secure fastening for the several parts of sectional rails.

4. As a fastening for a sectional rail, in which the entire upper surface consists of a single

piece, the combination of the clutch or clamp A B with the hook H, as set forth in the foregoing specification.

5. In a sectional reversible rail, the combination of the toe T and the interchangeable spike-holes V W, to be used in the manner for the purpose described.

6. In a sectional reversible rail, the combination of the toe T and the interchangeable spike-holes V W with the clamp or clutch A B, substantially as set forth.

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