

No. 636,233.

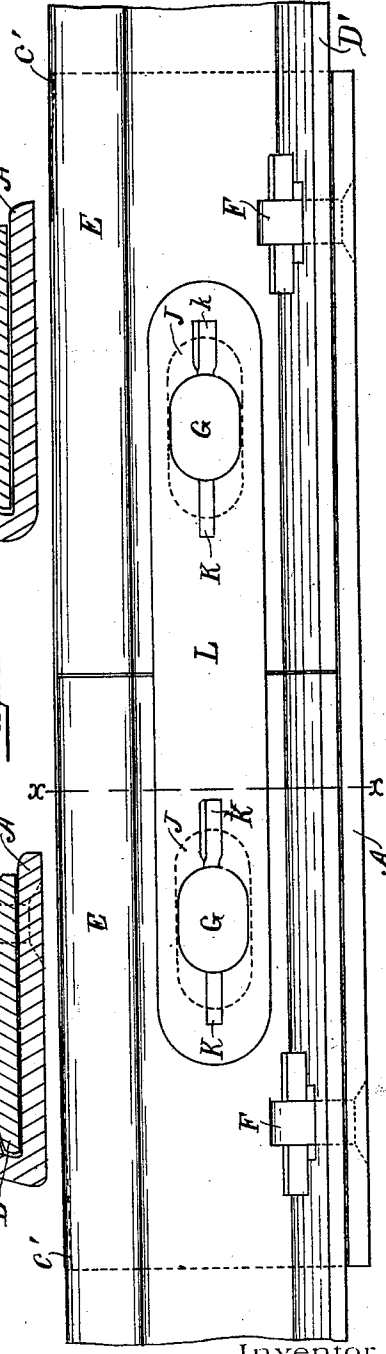
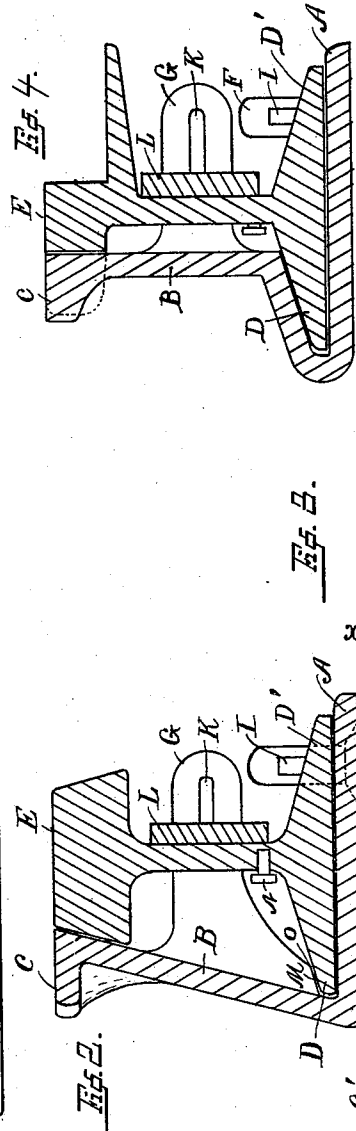
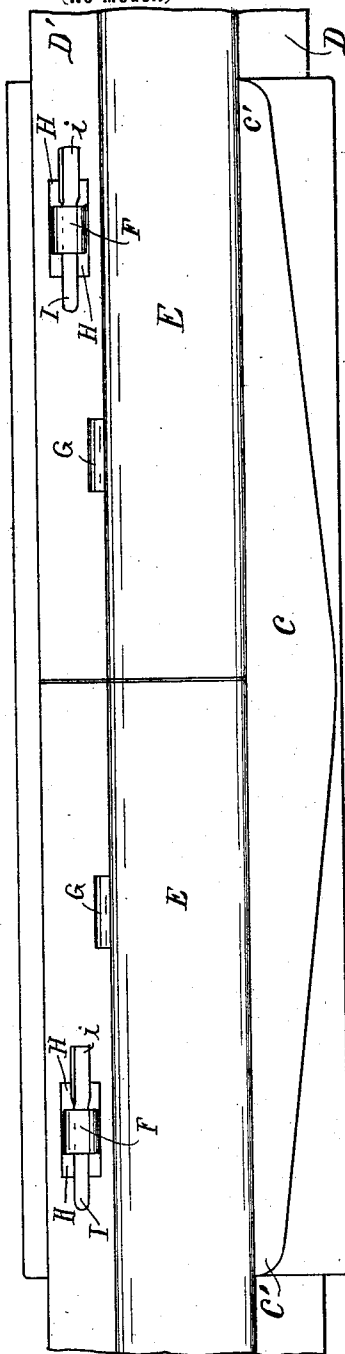
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W. J. AUSTIN.

EXPANSION JOINT FOR RAILWAY RAILS.

(Application filed Aug. 5, 1898.)

(No Model.)



Witnesses.

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EXPANSION-JOINT FOR RAILWAY-RAILS.

SPECIFICATION forming part of Letters Patent No. 636,233, dated November 7, 1899.

Application filed August 5, 1898. Serial No. 687,879. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. AUSTIN, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Expansion-Joints for Railway-Rails, of which the following is a specification.

My invention relates to improvements in expansion-joints for railway-rails.

The object of my invention is to provide an adequate support for the ends of the rails which will permit of longitudinal movement due to the expansion or contraction of the rails and provide an auxiliary tread-surface for the vehicle-wheels whereby the jolt ordinarily experienced in crossing the joints may be avoided.

In the following description reference is had to the accompanying drawings, in which—

Figure 1 is a top view of my invention. Fig. 2 is a cross-sectional view on line *xx* of Fig. 1. Fig. 3 is a side view of my invention. Fig. 4 is a cross-section showing my invention as it is applied to the rails of tramways.

Like parts are identified by the same reference-letters throughout the several views.

A joint-supporting coupling-shoe provided with a base-flange A, side flange B, and head C is adjusted to the ends of the rails so as to lap the joint, with the flange A extending underneath the base-flanges D and D' of the rails and the head C in contact with the head portions E of the rails. The shoe is coupled to the rails on each side of the joint by pins F and G. The pins F project upwardly from the base-flanges A through longitudinal slots H in the base-flanges D' of the rails and are secured by means of keys I bearing on the upper surface of the rail-flanges D'. The pins G project through slots J in the webs of the rails and are similarly secured by keys K, a bearing-plate L being preferably interposed between the key K and the web of the rail, with an aperture in which the pin G closely fits. The keys are slightly wedge-shaped and are inserted through apertures in the ends of the pins and the tapered end twisted slightly, as shown at *i* and *k* in Figs. 1 and 3, respectively, to prevent it from withdrawing.

Either the pins F or the pins G may be

formed integrally with the shoe, or both may be removable and applied thereto after the shoe is in place. In the drawings I have shown the pins F provided with heads F', which are countersunk in the under surface of the base-flange A, while I have shown the pins G formed integrally with the flange B of the shoe and enlarged, so as to bear upon the upper surface of the base-flange D of the rail at M, as shown in Fig. 2.

Referring to Fig. 1, it will be observed that the head portion C of the shoe coincides with the head portions of the rails along one side, the outer side being tapered inwardly toward each end, the widest portion of the head C being opposite the meeting ends of the rails. By tapering the ends material is saved and the joint is given a more neat appearance. Referring to Fig. 3, it will be observed that the bearing-surface of the central portion of the head C is in the same horizontal plane as that of the rail-heads; but at the tapered ends C' the surface has a slight incline downwardly.

Where it is desired to bond the rails electrically, the bonding wire or plate N is inserted in the space O between the flange B and the web, the bond being thus protected from injury.

In applying my invention to ordinary railway-rails, where the tread of the wheels projects over the head of the rail, the wheel will necessarily run upon the head portion C in passing the joint, and if the ends of the rails are battered down or depressed the car will be supported entirely on the head C while crossing the joint, thus preventing the jolt heretofore experienced in such cases.

In street-railways it frequently happens that the tread of the car-wheels does not project over the head of the rail, being formed in substantially the same width. In such cases I provide short rail-sections having no projecting head portion on the outer side of the web, the head C of the shoe being formed to take the place of that portion of the rail-head which projects outwardly in rails of ordinary construction. One of these special rail-sections is shown in cross-section in Fig. 4, with dotted lines indicating the projecting portion of the head of the main rail to which the short section is applied. The short sec-

tions are rigidly secured to the rails between which they are interposed by means of coupling-sleeves welded or fused to form integral joints or united in any other convenient manner so as to form rigid or integral joints.

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

1. An expansion-joint for railway-rails, 10 comprising the meeting ends of two rails provided with slots in their webs and base-flanges, a coupling-shoe adjusted at one side of the same, with a base-flange projecting underneath the base-flanges of the rails, and pins 15 for securing the coupling-shoe to the base-flanges and webs of the rails, the pins being passed through said slots and adapted to permit the rail ends to move longitudinally, substantially for the purpose set forth.

20 2. An expansion-joint for railway-rails, comprising the meeting ends of two rails provided with slots in their webs and base-flanges, a coupling-shoe adjusted at one side of the same, with a base-flange projecting under-

neath the base-flanges of the rails, and pins 25 for securing the coupling-shoe to the base-flanges and webs of the rails, the pins being passed through said slots and secured by keys whereby the rail ends are permitted to move longitudinally, substantially for the purpose 30 set forth.

3. In a joint for railway-rails, the combination with the meeting ends of two rails, of a shoe formed with a base-flange A and side 35 flange B secured respectively to the base-flanges and webs of the rails by pins passing through slots therein, and keyed to the opposite sides thereof, with a head portion C bearing against the heads of the rails, and a bond 40 for the rails inserted between the coupling-shoe and the rails, substantially for the purpose set forth.

In testimony whereof I hereunto set my hand this 9th day of July, 1898.

WILLIAM J. AUSTIN.

Witnesses:

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