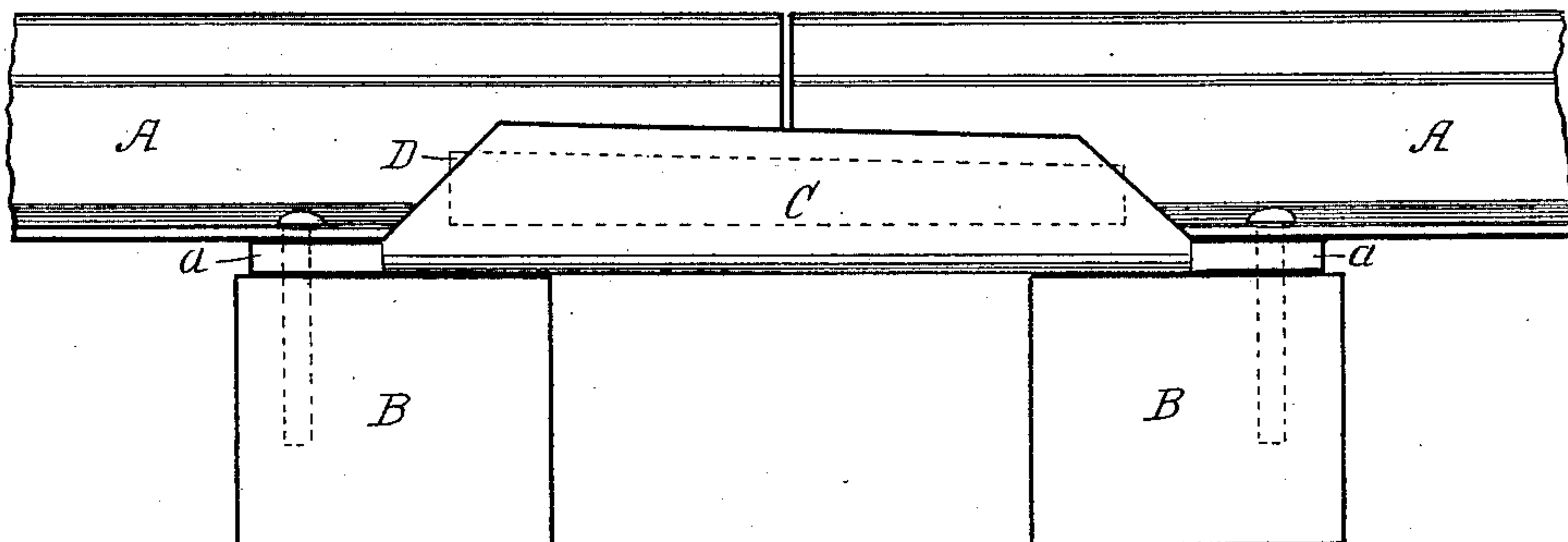


(No Model.)

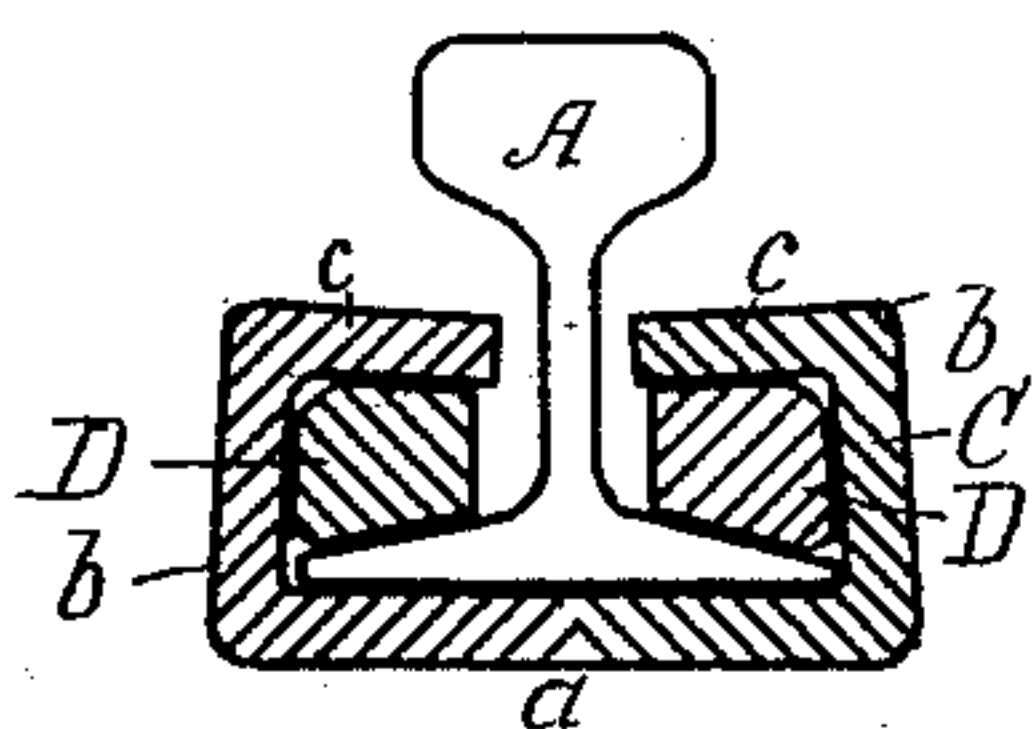
E. G. PATTERSON.  
RAIL JOINT FASTENER.

No. 436,995.

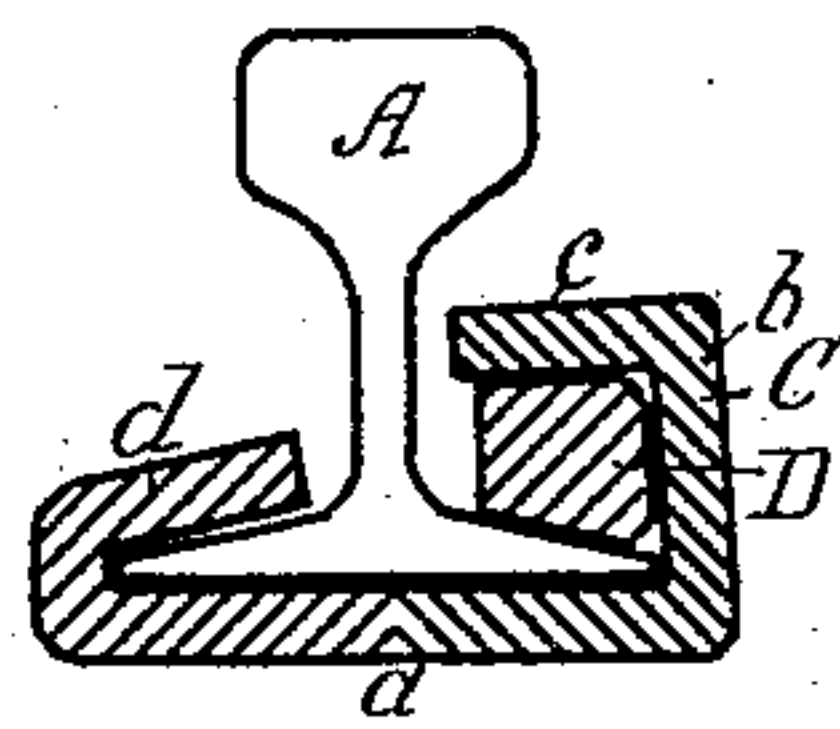
Patented Sept. 23, 1890.



*Fig. 1.*



*Fig. 2.*



*Fig. 3.*

David Weed.  
James Kennedy } Witnesses.

Elisha G. Patterson  
by Joseph Smith } Inventor.  
Attorney.

# UNITED STATES PATENT OFFICE.

ELISHA G. PATTERSON, OF TITUSVILLE, PENNSYLVANIA.

## RAIL-JOINT FASTENER.

SPECIFICATION forming part of Letters Patent No. 436,995, dated September 23, 1890.

Application filed August 26, 1889. Serial No. 321,995. (No model.)

*To all whom it may concern:*

Be it known that I, ELISHA G. PATTERSON, a citizen of the United States, residing at Titusville, in the county of Crawford and State of Pennsylvania, have invented a new and Improved Rail-Joint Fastener and Supporter for Railroad-Rail Joints, of which the following is a specification.

The object of my invention is to provide a clamp which shall firmly hold the adjacent ends of the two rails in correct surface and alignment, and shall furnish a support without the use of bolts and the consequent perforation of the rails or of the joint-supporting device. This I accomplish by the device illustrated in the accompanying drawings, in which—

Figure 1 is a side view as it is applied to the rails; Fig. 2, a cross-section of a double-keyed fastener; Fig. 3, a cross-section of a single-keyed fastener.

The same letters are used in the several figures to indicate the same or similar parts.

A represents the rails, (in Fig. 1 showing the two adjacent ends;) B, the cross-ties; C, the clamp or body of the device. This is of one solid piece of metal, and consists of a flat even (or longitudinally slightly convex) floor *a*, upon which the rails rest. At either edge of the rail-base the body is turned up at right angles *b* or inwardly inclined. At a point dependent upon the height and form of the rail it is again turned inward toward, but not touching, the rail, forming the lip or confining-clamp *c*, which is also so formed as to incline longitudinally toward the base of the rail, leaving between it and the rail-base longitudinally a wedge-shaped aperture. Into this aperture is driven the key D, which is made to bear evenly upon the rail-base, the upright part *b*, and the lip *c*. As to the proper taper of the confining-clamp *c* and key D, I have found by experiment that longitudinally one in forty is a desirable inclination; but I do not confine myself to this. At this taper there has been developed no tendency toward loosening of the key after the first scale of the adjacent parts is worn off.

Against the possibility of such loosening many devices are effective, the most practical

being an L-shaped piece of flat spring-steel, the longer limb pointed and driven into the tie and the shorter bearing upon the larger end of the key. This is not shown in the drawings as a necessary part of my device. Laterally the inward inclination of the under surface of the lip *c* and the corresponding upper surface of the key D may be at any inclination that in approaching the throat of the rail is parallel to or approaching the upper surface of its base or web. The clamp or body of the device C may be formed for keys upon both sides of the rail, as shown in Fig. 2, or, as shown in Fig. 3, with but one upright part *b* and confining-clamp *c*, the metal of the opposite side forming a lip *d*, which confines the web on that side between the lip and the floor *a* of the clamp, and which lip may be of the whole or any part of the length of the floor *a*. The body C of the device may be in length equal to the space between two cross-ties, or for support upon one, two, or more ties. It may be made with a lateral inclination of the upright part *b* and the corresponding taper of the key, and the key may be even made to bear against the throat of the rail, or the clamp and key on one side may be formed with all its sides parallel longitudinally, or in the double-key pattern the inclination longitudinally may be in one or opposite directions; but I have described and shown that form which I believe and have found to be the most effective in meeting all the conditions—viz., that the device should rest upon two cross-ties as representing abutments, the floor *a* carrying the load, the upright side or sides *b* acting as trusses, and the key or keys D, when driven to bearings, not only binding the rails and device together by the resistance of the lip *c*, but aiding and supporting the upright or truss parts *b*. If provision has been made at other points in the rail to obviate its tendency to “creep” or move longitudinally the rail requires no boring or slotting to apply my device; but if not, the web or base of the rail and the floor of the clamp should be so bored or slotted as to admit of the insertion of a spike near each end of the fastener. The spikes passing through the rail-web and the floor *a* into the



tie secure them in their relative positions, and the one behind the larger end of the key secures the key against removal.

What I claim as my invention is—

- 5 A rail-joint supporter consisting of the floor, the vertical or inwardly-inclining side or sides, from which projects toward the rail the confining clamp or clamps, all the above

in one solid piece of metal and strengthened and secured to the rails by a key or keys, 10 substantially as shown and described, and for the purposes herein set forth.

ELISHA G. PATTERSON.

Witnesses:

DAVID WEED,  
J. J. HOLDEN.