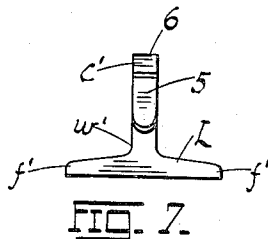
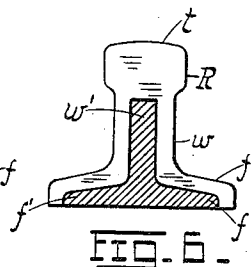
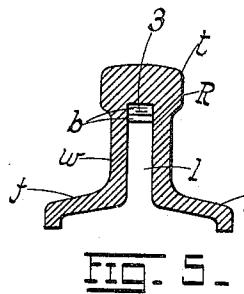
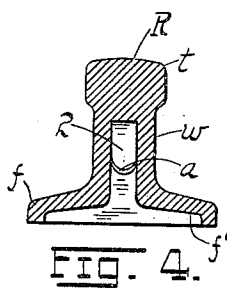
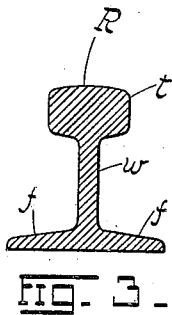
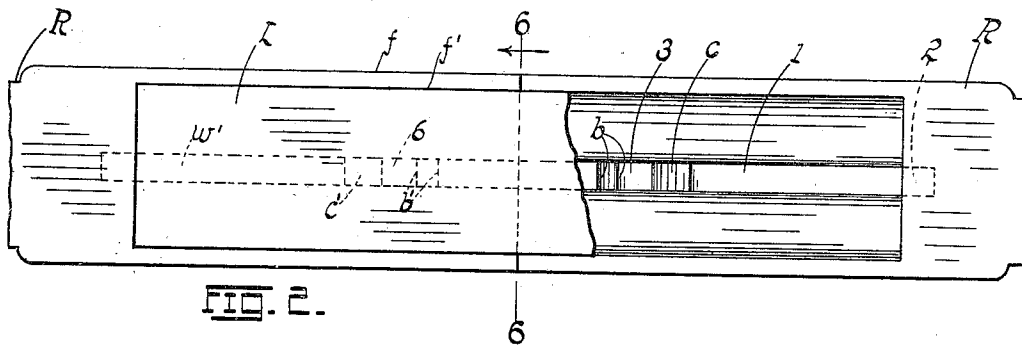
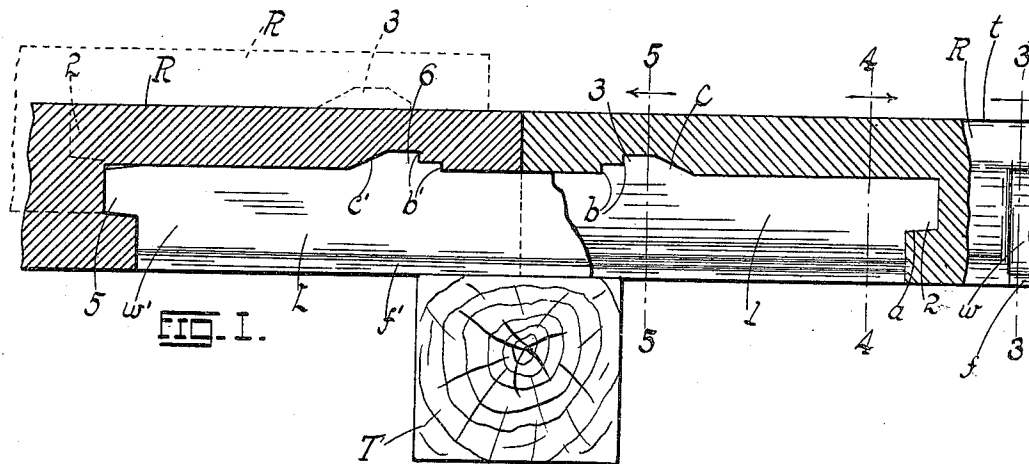


R. ZEPPENFELD.
RAIL JOINT.
APPLICATION FILED JAN. 6, 1911.

993,936.

Patented May 30, 1911.



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RICHARD ZEPPENFELD, OF ST. LOUIS, MISSOURI.

RAIL-JOINT.

993,936.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, RICHARD ZEPPENFELD, citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Rail-Joints, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in rail-joints; and it consists in the novel construction of joint more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a longitudinal vertical section at the meeting ends of two rails, part of the locking key or bar being broken; Fig. 2 is a bottom plan of the parts shown in Fig. 1, a portion of the key being broken; Fig. 3 is a vertical cross-section of the rail on the line 3—3 of Fig. 1; Fig. 4 is a vertical cross-section on the line 4—4 of Fig. 1; Fig. 5 is a vertical cross-section on the line 5—5 of Fig. 1; Fig. 6 is a vertical cross-section in the plane between the rail ends on the line 6—6 of Fig. 2; and Fig. 7 is an end view of the key.

The object of my invention is to construct a rail-joint which shall dispense with the prevailing fish-plates and bolts securing the same; one which will afford a positive support for the rails at the joint thereby preventing depression of the rail ends with the passage of the cars thereover; one which will permit a rapid laying of the rails, one which is simple, cheap and durable, and one possessing further and other advantages better apparent from a detailed description of the invention which is as follows:—

Referring to the drawings, R, R, represent two rails comprising each a web *w*, a tread *t*, and bottom flanges *f*, *f*, as usual in conventional rail construction. Each rail terminates in a bottom chamber, socket, or recess 1 open at the bottom and outer end, the socket extending from between the flanges *f*, *f*, well into and practically through the web *w* as shown. The inner upper corner of the socket is provided with a pocket 2, the bottom wall *a* of which inclines upwardly and inwardly. The roof of the socket 1 is provided at a point adjacent the rail-end, with a pocket 3, having an outer terminal abrupt double locking wall *b* disposed substantially at right angles

to the axis or length of the rail, the opposite wall *c* being inclined upwardly and outwardly.

The sockets 1, 1, of two abutting rails are adapted to receive a bar or key L which is provided with suitable formations to enter the respective pockets referred to; that is to say, the upper corner ends of the bar are provided with tongues 5, to enter the pockets 2, the upper edge of each tongue being slightly rounded to facilitate insertion (Fig. 1), the upper edge of the bar being provided with locking key-projections or lobes 6, 6, to enter the pockets 3, 3. The projection 6 has a terminal abrupt double wall *b'* for shouldering against and locking with the pocket-wall *b* as quite obvious from the drawing. The body of the key or bar L is composed of a web *w'* and flanges *f'*, *f'*, to enter the chambered portions of the rail formed in the web *w* and between the flanges *f*, *f*, as obvious from the drawing (Fig. 1), the rail-flanges, and key flanges jointly resting on the tie T, when the parts are assembled.

In laying the rails, the key L is laid on the bed or tie T, then one end of a rail is placed on the key in such a position as to bring the end of the tongue 5 opposite the pocket 2 (see dotted position of the rail in Fig. 1) when the rail is released or dropped to its lowest position. After this the distant end of the rail is depressed below its normal position if that be convenient, or, the engaging end with the key is raised so that the tongue 5 may enter the pocket 2. As the rail is advanced to locking position the end descends from the projection 6, allowing the tongue 5 to completely enter the pocket 2. In the movement of the rail toward the center of the key, the rail rides over the inclined wall *c'* of the lobe 6, until the tongue 5 has fully entered its pocket 2, after which the rail drops to its lowest position, the wall *b* of the pocket 3 shouldering itself behind the wall *b'* of the key-lobe 6, so that longitudinal displacement of the rails becomes impossible. At the same time vertical displacement is likewise impossible, since the tongues 5 engaging the pockets 2 prevent the rail from rising. Of course, the rail is spiked to the ties in the usual way.

It will be seen from the foregoing that no fish-plates or bolts are necessary to lay a track of this character, and the rails may be quickly and deftly assembled once the knack

of inserting the key has been acquired. The normal cross-section of the rail is substantially as shown in Fig. 3, the rail being necessarily widened or enlarged in the region of the chamber or socket 1 to allow for the reception of the key L (Fig. 2).

Having described my invention, what I claim is:—

1. In combination with a pair of abutting rails having terminal sockets open at the bottom and end of the rail and extending between the flanges through the rail-web, pocket extensions leading from the roofs of the sockets to a point at the base of the rail-tread, pockets leading from the inner upper-corners of the sockets, and a key spanning the joint between the rails, and provided with formations for entering the respective pockets aforesaid.
2. In combination with a pair of abutting rails having terminal sockets open at the bottom and end of the rail, and extending between the flanges into the rail-web, pocket extensions leading from the roofs of the sockets, the outer ends of the pockets terminating in walls or shoulders disposed substantially at right angles to the longitudinal axis of the rails, pockets leading from the inner upper-corners of the sockets and having upwardly inclined bottoms, a suitable key spanning the joint between the rails and received by the sockets, and formations on the key for engaging the respective pockets aforesaid.
3. In combination with the chambered terminals of two abutting rails, a key com-

prising bottom flanges and an upper web, and adapted to span the joint between the rails, the ends of the key-web terminating in tongues projecting beyond the body of the web, and confined to the upper portions of the web terminals, the upper edge of the web being provided with locking formations or projections adapted to shoulder against the rails and prevent longitudinal parting of the same.

4. In combination with a pair of abutting rails, composed of flanges, a web, and a tread, and having bottom terminal sockets in the web and between the flanges, the inner ends of the sockets terminating in upper corner pockets having inwardly and upwardly inclined bottom walls, the outer portions of the sockets beneath the rail-treads being provided with pockets terminating at their outer ends in abrupt walls disposed substantially at right angles to the longitudinal axis of the rails, a key having a web and bottom flanges inserted into the sockets of the abutting rails and spanning the joint between the rails, the key being provided with terminal tongues entering the terminal pockets of the rail sockets, and in upper locking key-projections for entering the pockets beneath the rail-treads.

In testimony whereof I affix my signature, in presence of two witnesses.

RICHARD ZEPPENFELD.

Witnesses:

**EMIL STAREK,
A. W. POWELL.**

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."