No. 743,783. PATENTED NOV. 10, 1903.

R. J. WEKEN.

RAIL JOINT.

APPLICATION FILED MAY 19, 1903.

NO MODEL.

Fig. 1.

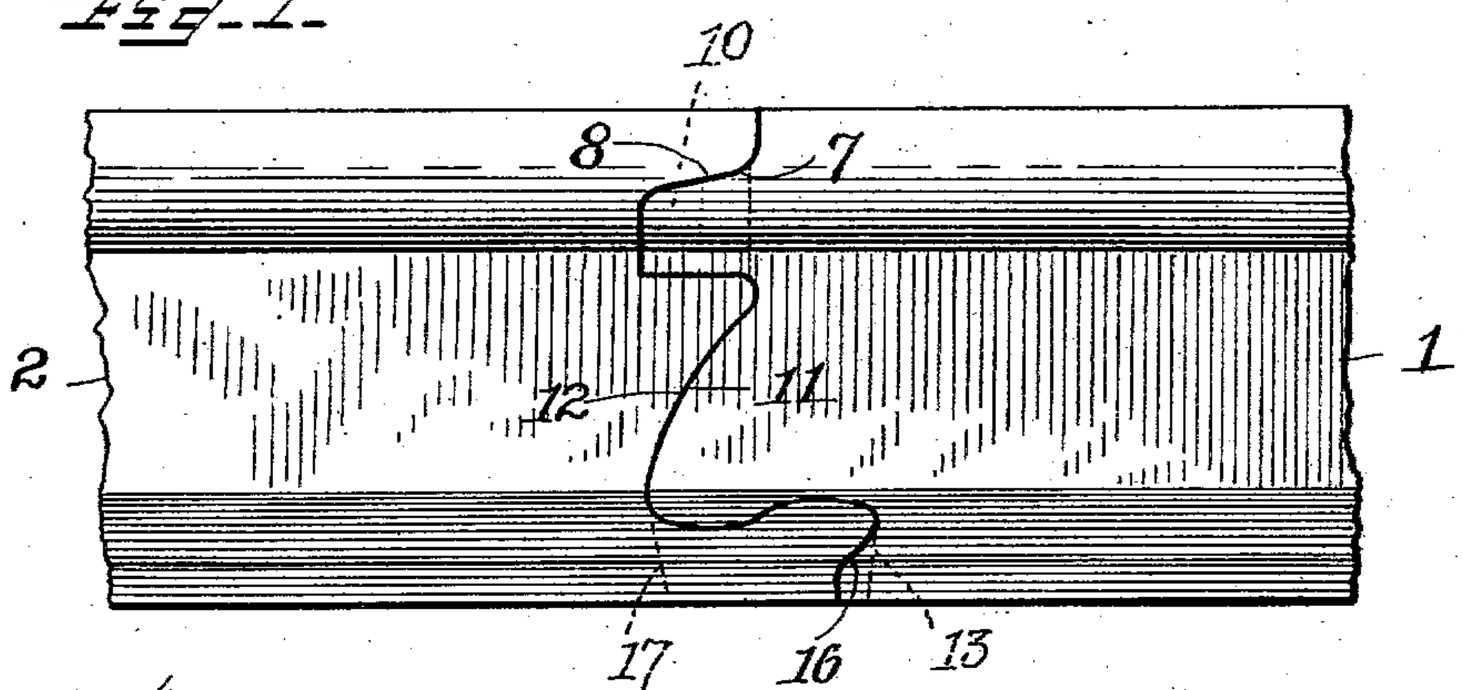


Fig. 2.

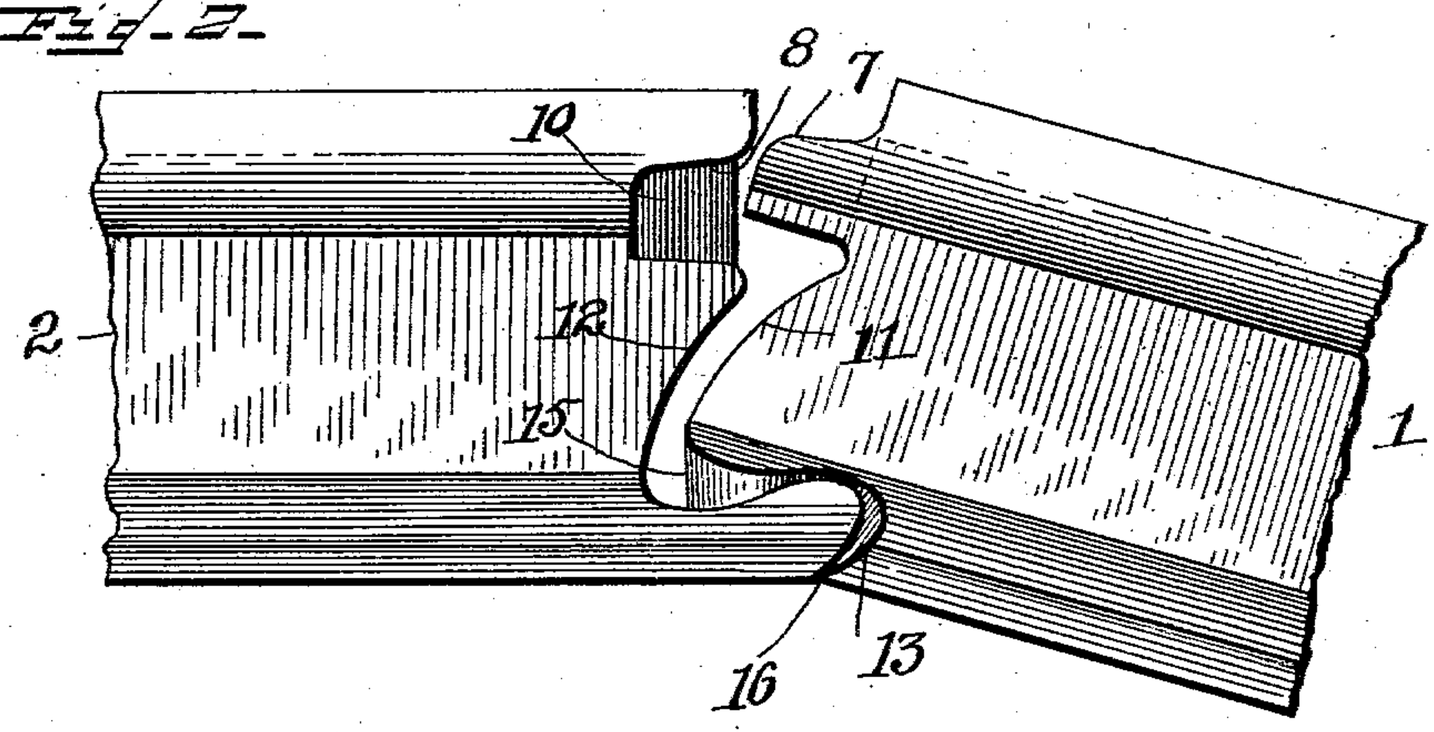
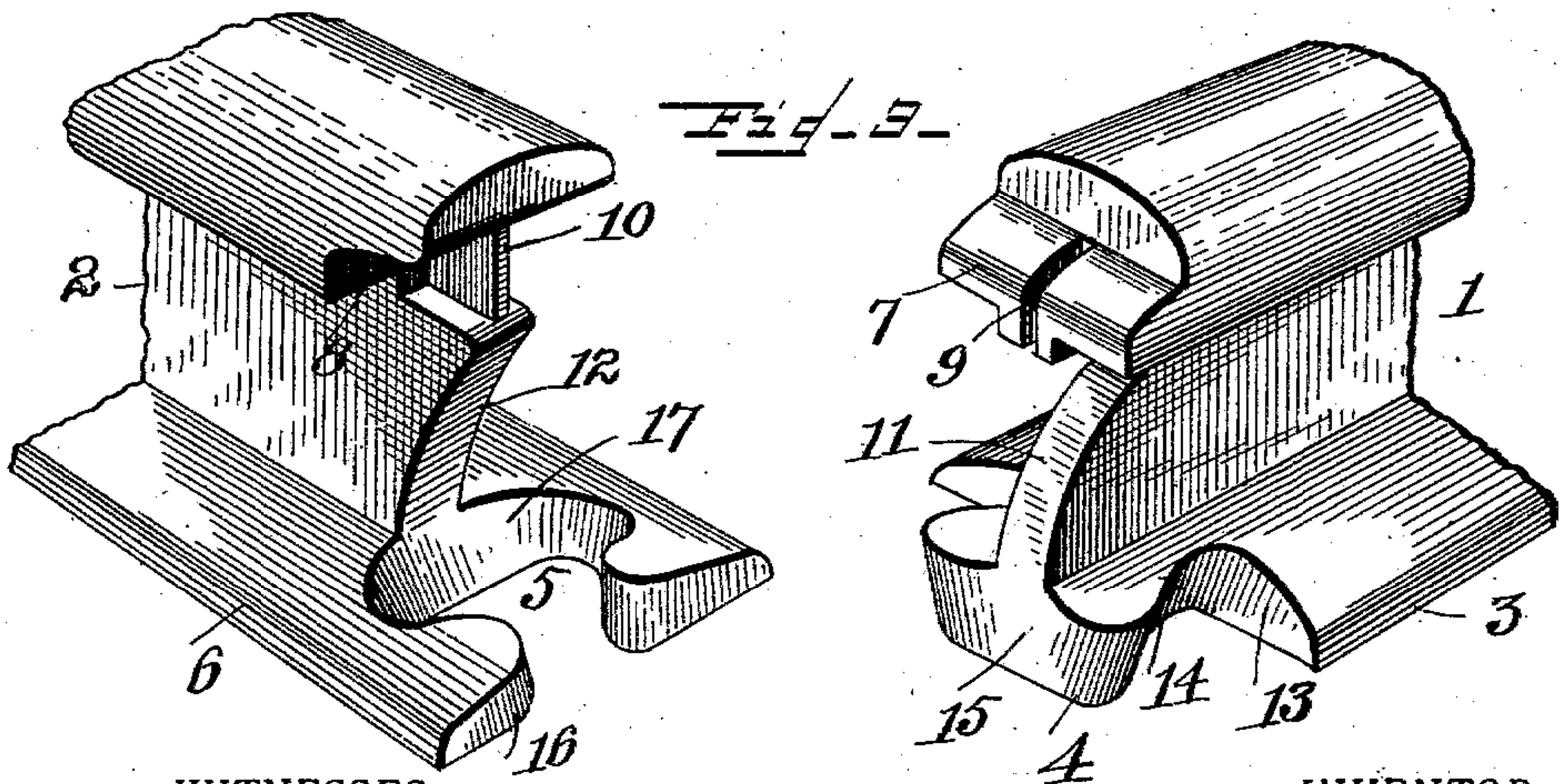


Fig. 3.



WITNESSES

John Louis Lotsch

Geo. Robt. Taylor

INVENTOR

Richard J. Weken

by L. A. Dyer

Attorney

No. 743,783. Patented November 10, 1903.

UNITED STATES PATENT OFFICE.

RICHARD J. WEKEN, OF EVERETT, WASHINGTON.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 743,783, dated November 10, 1903.

Application filed May 19, 1903. Serial No. 157,811. (No model.)

To all whom it may concern:

Be it known that I, RICHARD J. WEKEN, a citizen of the United States, residing at Everett, in the county of Snohomish and State of Washington, have invented certain new and useful Improvements in Rail-Joints; and I declare the following to be a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to improvements in rail-joints of that type in which portions formed upon the ends of the rails interlock and coöperate.

The object of my invention is to produce a joint which will yield neither laterally, vertically, nor longitudinally, which will have no loose parts, and will require no fish-plates or bolts to secure the two rail-pieces together and yet will permit such contraction and expansion of the rail as is necessary.

The invention consists, broadly, in so conforming or cutting the abutting rail extremities that a contracted recess will be formed in the flange of one within which will engage a headed projection formed in the other, whereby longitudinal separation will be prevented. One of the abutting ends has formed within it upon and below the head of the rail a horizontal mortise, within which a tenon upon the other rail-section will engage, so that vertical movement will be prevented. This tenon has formed within it a slot, which engages with a vertical web within the horizontal opening, forming a lock to prevent lateral movement. The lock within the flange and the double lock within the head of the rail effectively prevent movement of the two abutting parts in any direction.

In order to better understand the nature of the invention, attention is directed to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a side view of two rail-sections locked in place. Fig. 2 is a view of the same, but with the joint partially separated; and Fig. 3 is a perspective view showing the joint entirely separated.

In all of the several views like parts are designated by the same reference-numerals.

The two rail-sections 1 and 2 have formed upon them the engaging members of the joint. Upon the section 1, within the flange 3 thereof, is formed a headed projection 4, which engages within the contracted recess 5, formed within the flange 6 of the section 2. The engagement of the headed projection 4 with the recess 5 forms an effective lock against longitudinal separation.

To prevent vertical motion one of the parts, preferably the part 1, is provided with a horizontal tenon 7, which engages within a corresponding mortise 8, cut within the head and web of the section 2. The mortise is designed to make a close fit within the tenon and effectively prevents vertical movement of the two rail parts. By forming a slit 9 within the tenon 7 and providing a vertical web 10 within the mortise a third lock will be formed and lateral movement will be prevented. The web 10 may be integrally formed with the rail, or it may be a separate piece of metal inserted within openings (not shown) formed in the head and flange thereof.

The cut-away portions of the web of the two rail-sections may be curved, as at 11 and 12, so that a close fit at this point will be provided; but this is not essential. The sides 14, base 13, and front 15 of the headed extension 4 may be beveled to engage with similarly-beveled portions 16 upon the end of the flange 6 of the rail portion 2 and with the beveled portion 17 upon the inside of the recess 5, whereby a closer-fitting joint may be secured. It is to be noted that the direction of the bevel 13 is the reverse of the bevels 14 and 15 and that the bevels 14 and 15 agree in angle with the bevel 17, but are reversed in relation. The particular advantages to be derived by this configuration will be described in connection with the mode of operation.

The joint is assembled by first engaging the two rail-sections at an angle and inserting the headed extension 4 within the recess 5, as shown in Fig. 2, with the beveled portion 16 engaging within the bevel 13, the parts being so proportioned that there will be ample room to permit this being done. The rails are then moved to the position shown in Fig. 1, the part 16 bearing upon the part 13, which forms a pivot upon which the two rail-sections move, so that the tenon 7 will enter the mortise 8 and allow the web 10 to engage with the slot 9. A continuation of

this motion will entirely seat the headed extension within the opening 5. If the parts be properly proportioned, the beveled walls 14 and 15 of the extension 4 will closely engage with the oppositely-beveled walls 17 of the recess 5 and an absolutely rigid lock will be provided. If desired, sufficient space may be left between the abutting walls of the two pieces to permit the necessary expansion due to changes in temperature; but such clearance-space should not be sufficiently great to endanger the security of the joint. The only way in which the rails may be separated without destroying the members of the lock is to bend one of the parts in relation to the other, as shown in Fig. 2, so that the tenon 7 will be first separated from the mortise 8, allowing the extension 4 to be lifted out of the recess 5.

The invention may be modified in a number of ways, as will occur to one skilled in the art, and such modifications are within the terms of this invention.

In accordance with the Patent Statutes I have described the principle of operation of the invention, together with the apparatus which I now consider to represent the best embodiment thereof. I desire to have it understood that the apparatus shown is only illustrative and that the invention can be carried out by other means.

Having now described and ascertained the nature of my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a rail-joint, the combination with the two rail-sections, of a headed extension on the flange of one section, a coöperating contracted recess on the flange of the other section, and means integral with the rail-sections for preventing vertical and lateral movement of the two rail-sections.

2. In a rail-joint, the combination with the two rail-sections, of a headed extension on the flange of one section, and a coöperating contracted recess on the flange of the other section, a tenon upon one section and an engaging mortise upon the other, and means for preventing lateral movement of the rail-sections, substantially as described.

3. In a rail-joint, the combination with the two rail-sections, of a headed extension on the flange of one section, a coöperating contracted recess on the flange of the other extension, a horizontal tenon upon one section and an engaging mortise upon the other, a vertical web within the mortise and a coöperating slot within the tenon, substantially as described.

4. In a rail-joint, the combination with the two rail-sections, of a headed extension on the flange of one rail-section, the said extension having beveled walls, and a coöperating contracted recess on the flange of the other rail-section the said recess having beveled walls coacting with the walls of the extension, substantially as described.

5. In a rail-joint, the combination with the two rail-sections, of a headed extension on the flange of one rail-section, the said extension having beveled walls, with oppositely-beveled walls on the rail-flange, and a coöperating contracted recess on the flange of the other rail-section, the said recess having beveled walls, coacting with the beveled walls of the extension with oppositely-beveled walls on the flange, substantially as described.

This specification signed and witnessed this 30th day of April, 1903.

RICHARD J. WEKEN.

Witnesses:
M. F. SHEA,
E. A. STRONG.