(No Model.) 2 Sheets—Sheet 1.

I. & W. T. LYND.

RAIL JOINT.

No. 397,242. Patented Feb. 5, 1889.

Fig. 1.

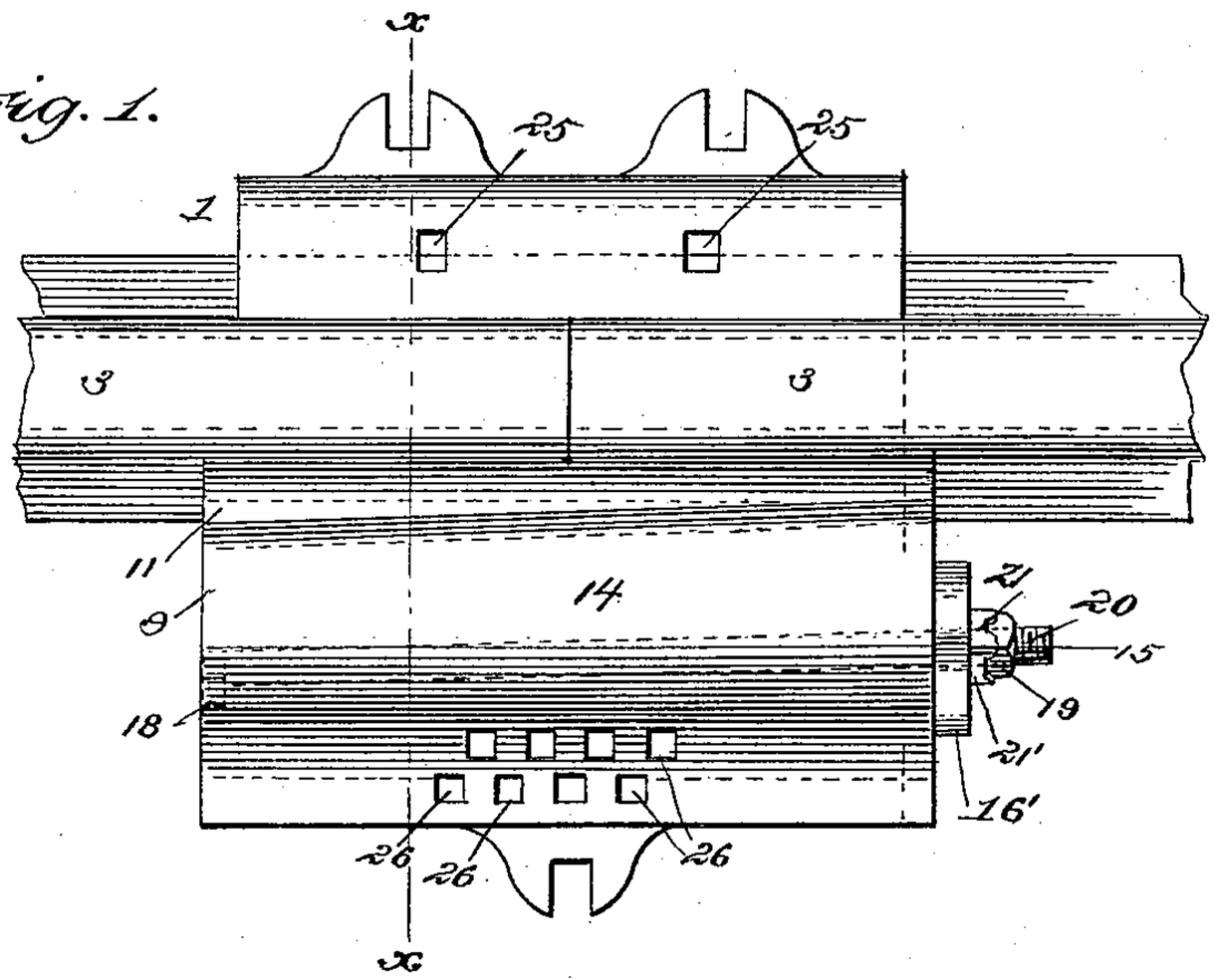


Fig. 2.

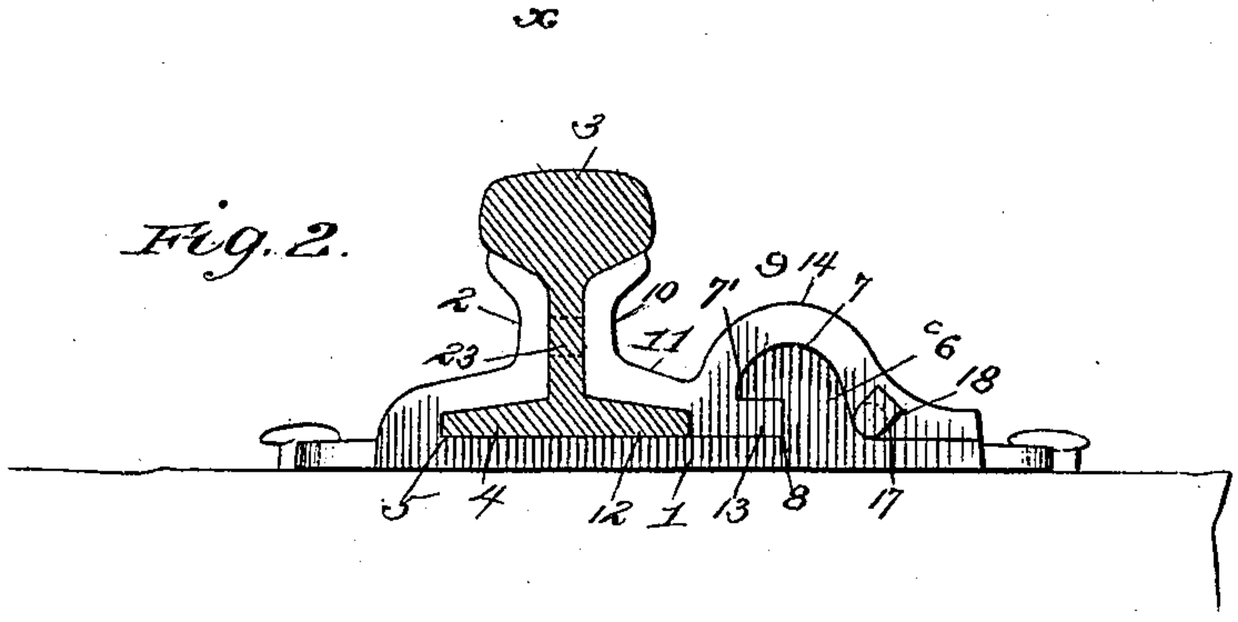


Fig. 3.

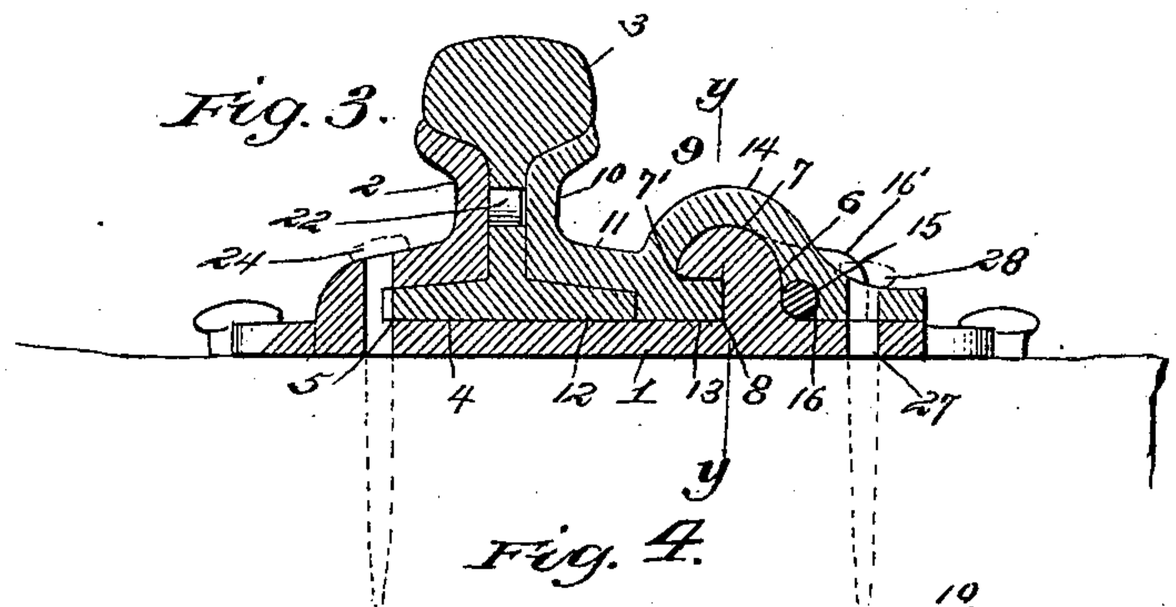
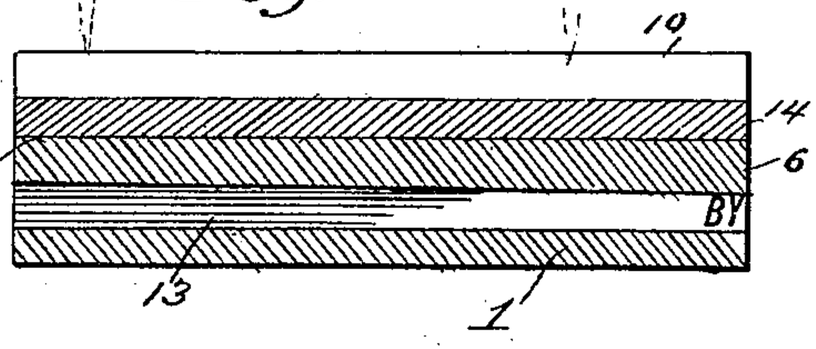


Fig. 4.



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(No Model.) 2 Sheets—Sheet 2.

I. & W. T. LYND.

RAIL JOINT.

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Fig. 5.

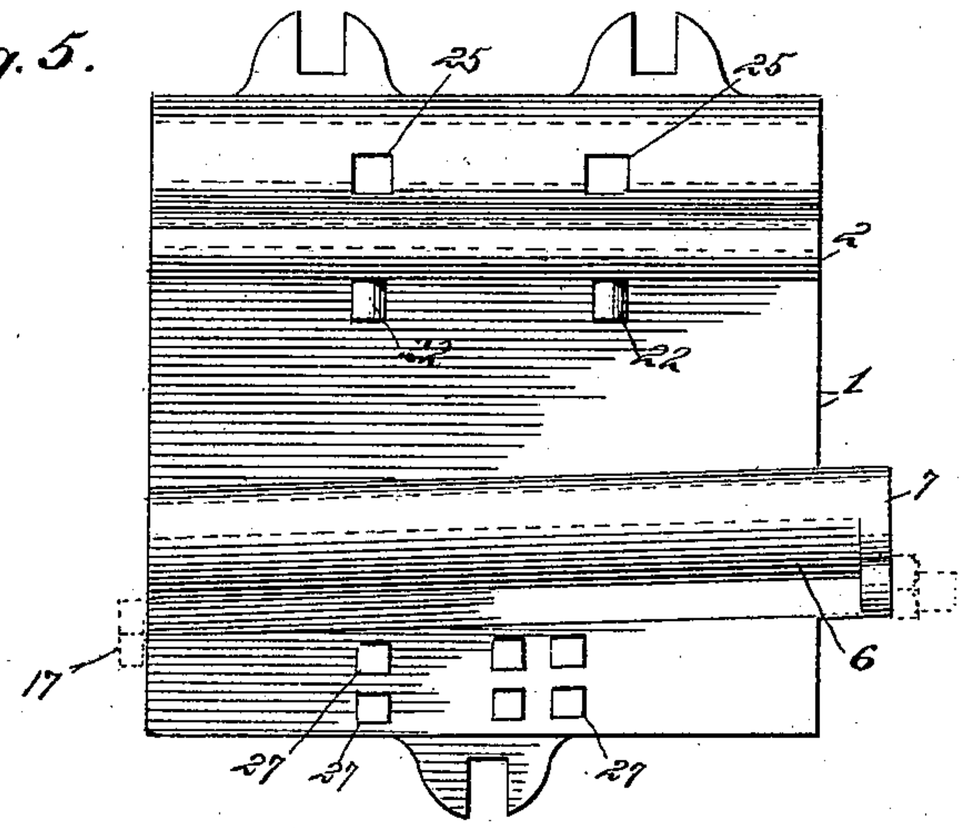


Fig. 6.

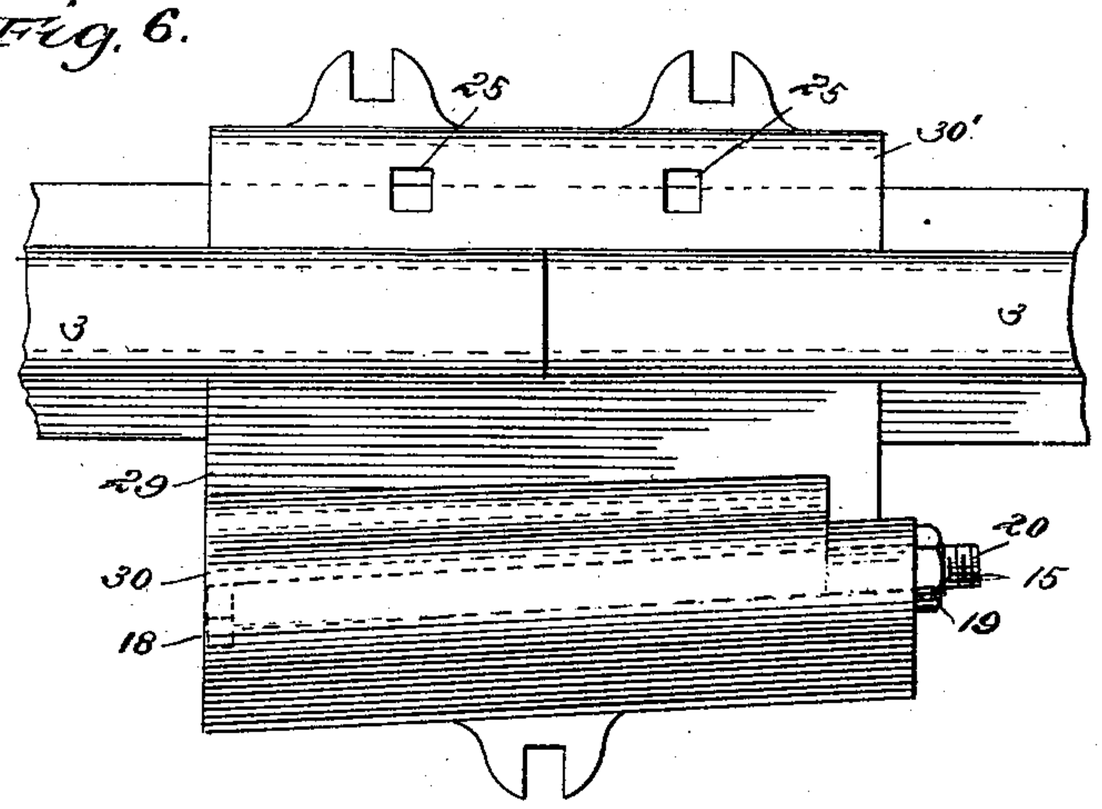


Fig. 7.

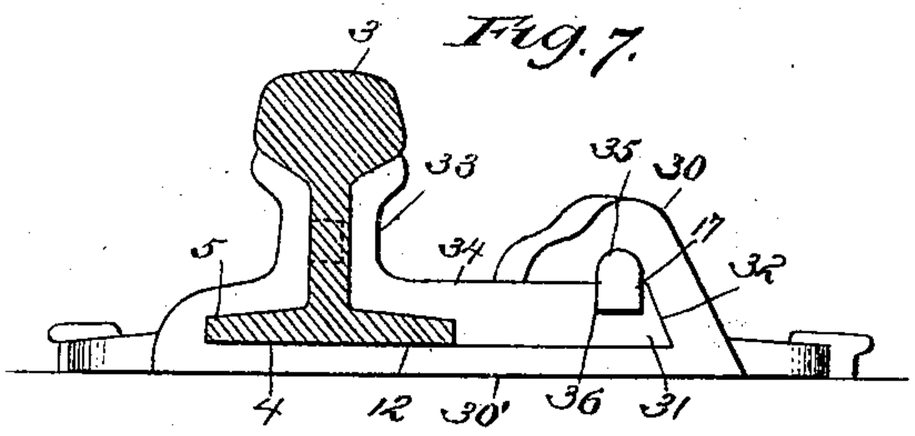
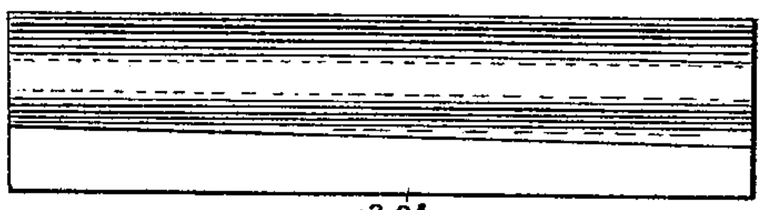


Fig. 8.



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UNITED STATES PATENT OFFICE.

IVES LYND AND WALTER T. LYND, OF TROY, NEW YORK.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 397,242, dated February 5, 1889.

Application filed October 15, 1888. Serial No. 288,057. (No model.)

To all whom it may concern:

Be it known that we, IVES LYND and WALTER T. LYND, both of Troy, in the county of Rensselaer and State of New York, have invented a new and Improved Rail-Joint, of which the following is a full, clear, and exact description.

This invention relates to an improvement in rail-joints, and has for its object to provide a rail-joint so constructed that it will be effective and durable.

The invention consists in a rail-joint constructed and arranged as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the adjoining ends of two rails with the invention applied. Fig. 2 is an end view with rail in cross-section. Fig. 3 is a cross-section on the line *x x*, Fig. 1. Fig. 4 is a longitudinal section on the line *y y*, Fig. 3. Fig. 5 is a plan view of the bed-plate detached. Fig. 6 is a plan view of a modification, showing the adjoining ends of two rails and invention applied. Fig. 7 is an end view with rail in cross-section; and Fig. 8 is a side view of the key-plate detached.

In carrying out the invention the adjoining ends of a pair of rails are secured in a flanged bed-plate by means of a key-plate wedge-shaped laterally and vertically and located between a flange of the bed-plate and the side of the rails.

Referring to Figs. 1, 2, and 5, a bed-plate, 1, is provided formed with a raised flange, 2, on one side, which lies against and conforms to the web and under side of the head of a pair of abutting rails, 3, the flange 4 on one side of the rails being located in a recess, 5, in the bed-plate 1. The latter is formed with a low flange, 6, on the opposite side of the bed-plate, having a rounded rib, 7, with an inwardly-projecting flange, 7′, forming a groove, 8. The rib 7 and groove 8 are inclined inwardly the length of the bed-plate 1. The groove 8 is also tapering or inclined vertically as well as laterally.

9 indicates a key-plate, which is wedge-shaped laterally as well as vertically, and is formed with a raised flange, 10, which lies against and conforms to the web and under side of the head of rails 3, a horizontal shouldered portion, 11, which fits over the flange 12 of rails 3, a flange, 13, which projects into and fits groove 8, and a rounded portion, 14, which fits over the rib 7 and extends down over the bed-plate 1 to its edge. The wedge-shaped key-plate 9 is slid over the flange 12 of rails 3, the bottom of bed-plate 1 and the rib 7 with the flange 13 moving into groove 8, and by means of the double-wedge shape of plate 9 the latter is forced tightly into place between the low flange, 6, and the ends of the rails 3. The wedging action of key-plate 9 is such as to press the ends of rails 3 sidewise against the raised flange 2, and at the same time, by the vertical tapering form of flange 13 and groove 8, the plate 9 is pressed down upon the flange 12 of rails 3.

To securely hold the key-plate 9 in position, a bolt, 15, is inserted in a longitudinal groove, 16, in the plate 9, adjacent to flange 6, projects through a lug, 16′, on bed-plate 1, and has a lateral projection, 17, at one end resting in a recess, 18, in plate 9, and is secured at its other end by a nut, 19, engaging the projecting threaded end 20, and locked by any suitable means, and, as shown, by flexible lips 21, on a projection, 21′, of plate 9, which may be bent to clamp nut 19 and prevent its turning.

The rails 3 may be held from endwise movement by lugs 22 on the raised flange 2 engaging holes 23 in the web of the rails, or by spikes 24, passing through holes 25 in bed-plate 1, or by means of both. The key-plate 9 may be provided with a series of holes, 26, whereby, when the plate 9 has been adjusted into wedged position, one or more of the holes 26 will have been brought into position to register with one or more similar holes, 27, in bed-plate 1 and spikes 28 driven through the same.

In the modification in Fig. 6 the parts are similar, except that the key-plate 29 does not overlap the low flange 30 of bed-plate 30′, the side 31 of the plate projecting into a groove, 32, extending from end to end of the flange 30 and tapering or inclined vertically, as well as laterally. The inner edge of key-plate 29 is formed with a raised flange, 33,

which bears against and fits the web and under side of the head of rails 3, and a horizontal shouldered portion, 34, which rests upon and fits over the flange 12 of rails 3. The plate 29 is secured to bed-plate 30′ by means of a bolt, 15, which extends through a groove, 35, on the inner side of flange 30, and a groove, 36, in the upper surface of key-plate 29, lying in groove 32, and has the lateral projection 17 at one end resting in recess 18 in key-plate 29, and is secured at its other threaded end, 20, by the nut 19 engaging threaded end 20, and locked by a suitable nut-lock, as shown in Fig. 1, by flexible lips 21 on a projection, 21′, of the key-plate, which may be bent to clamp nut 19 and prevent it from turning.

By means of a rail-joint constructed as herein set forth the abutting ends of a pair of rails may be tightly clamped and held in their bed-plate, the rails being firmly held in the bed-plate by a lateral and downwardly-vertical pressure of the key-plate.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. A rail-joint consisting of a bed-plate having a flange on one edge and a tapering flange adjacent to its opposite edge, with a groove in the inner side of the tapering flange, which extends from end to end of the flange and is tapering vertically and laterally, in combination with a pair of abutting rails resting in the bed-plate and bearing at one side against the first-named flange, and a key-plate bearing at one edge against the opposite side of the rails and having its other edge engaging the tapering groove in the tapering flange, the key-plate being wedge-shaped laterally and vertically, substantially as described.

2. In a rail-joint, a key-plate constructed to lie lengthwise between the abutting ends of a pair of rails held in a bed-plate and an inclined flange of the bed-plate, the key-plate being wedge-shaped laterally and vertically, substantially as described.

3. A rail-joint consisting of a bed-plate having a flange on one edge and a tapering flange adjacent to its opposite edge, with a groove on its inner side extending from end to end of the tapering flange and tapering laterally and vertically, in combination with a pair of abutting rails resting in the bed-plate and bearing at one side against the first-named flange, and a key-plate wedge-shaped laterally and vertically and having one edge bearing against the opposite side of the rails and its other edge engaging the tapering groove, with a locking-bolt for holding the key-plate to the bed-plate, substantially as described.

4. A rail-joint consisting of the bed-plate 1, formed with the raised flange 2 at one edge and the tapering flange 6 adjacent to the opposite edge, with the inside groove, 8, tapering from end to end of flange 6 both laterally and vertically, in combination with abutting rails 3, resting on bed-plate 1 and bearing against flange 2, with their flange 4 located in recess 5, and a key-plate, 9, formed with the raised flange 10, bearing against the side of rails 3, the horizontal portion 11 resting on the flange 12 of rails 3, the flange 13 resting on bed-plate 1 and projecting into and fitting tapering groove 8, and the portion 14 extending over flange 6, with a bolt, 15, extending through a groove, 16, in plate 9, and a lug, 16′, on bed-plate 1 and secured by a nut, 19, on the threaded end 20 of bolt 15, held by a nut-lock, substantially as described.

5. A key-plate for rail-joints, formed with a horizontal portion to bear against the flange of a rail and a bed-plate, and a raised flange at one edge to rest against the side of a rail and having its opposite edge tapering laterally and vertically, substantially as described.

6. In a rail-joint, the combination, with a bed-plate having a tapering flange adjacent to one edge extending from end to end of the bed-plate, and having an inside groove tapering laterally and vertically, of a key-plate having one edge tapering laterally and vertically and fitting into the tapering groove, the key-plate being adapted to be wedged between the tapering flange and a pair of abutting rails resting on the bed-plate substantially as described.

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