

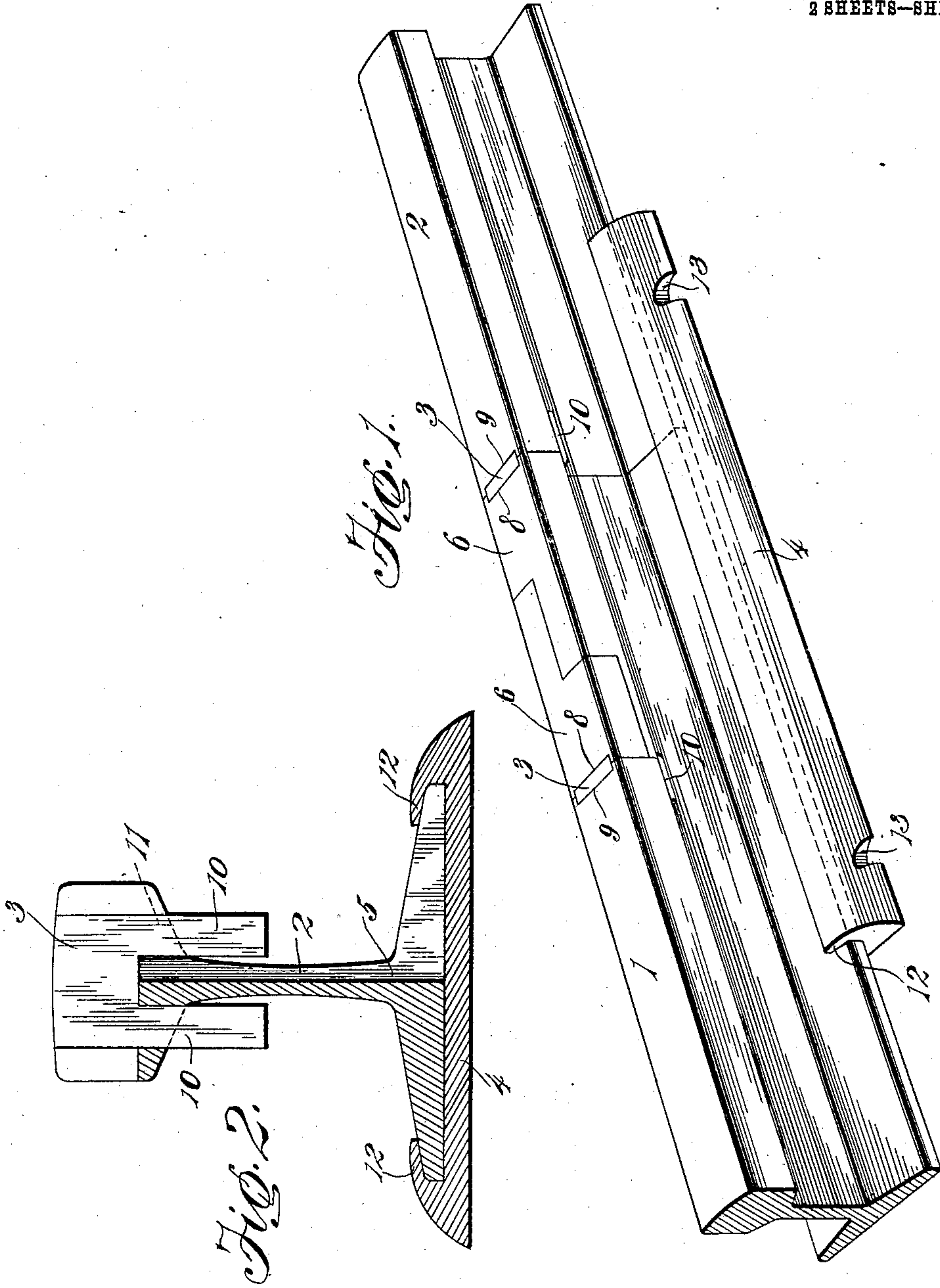
G. M. ELLIS.
RAIL JOINT.

APPLICATION FILED AUG. 12, 1908.

928,952.

Patented July 27, 1909.

2 SHEETS—SHEET 1.



Witnesses

Rose S. Johnson
J. M. Terry.

George M. Ellis^{Inventor}

By Watson E. Coleman^{Attorney}

G. M. ELLIS.

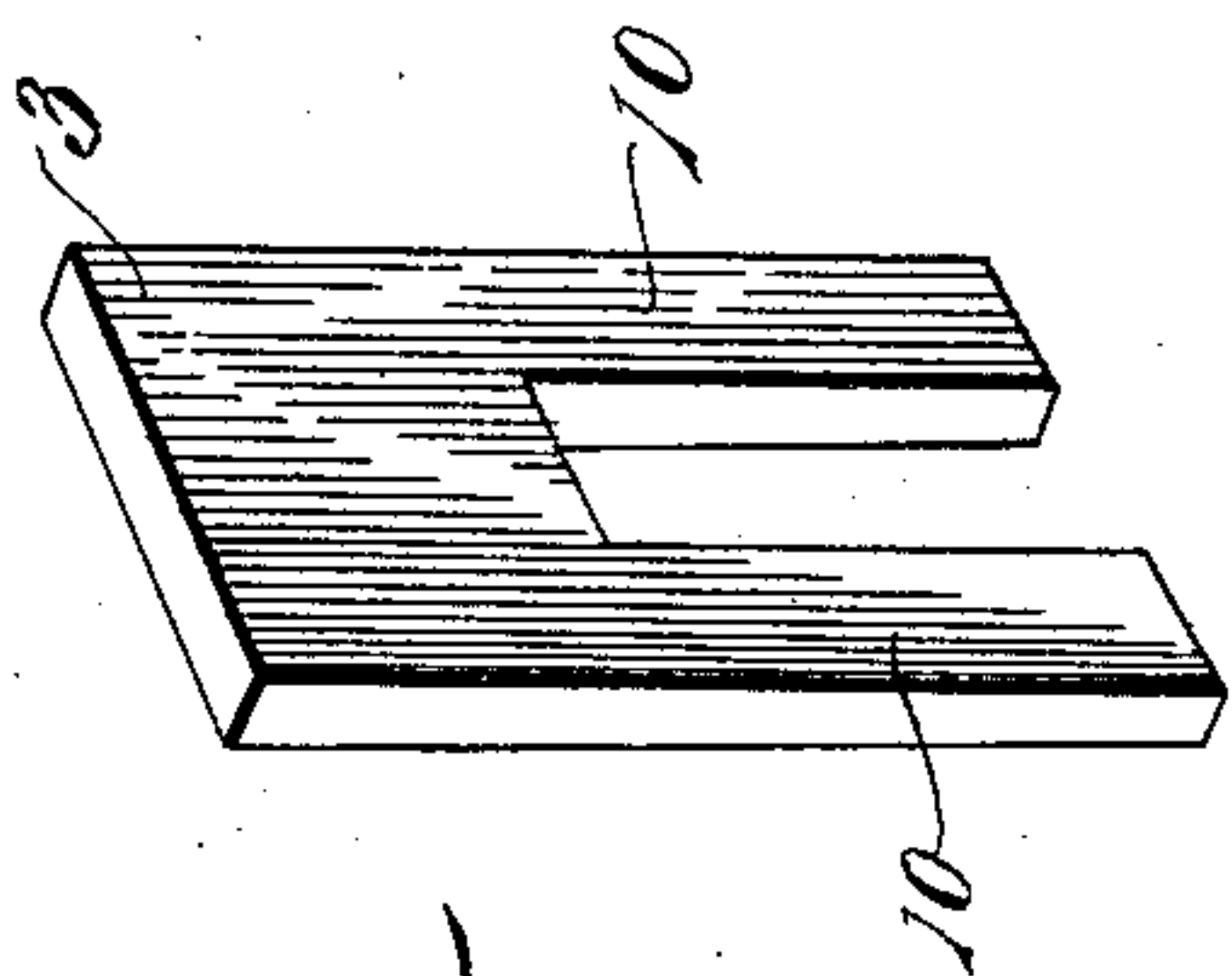
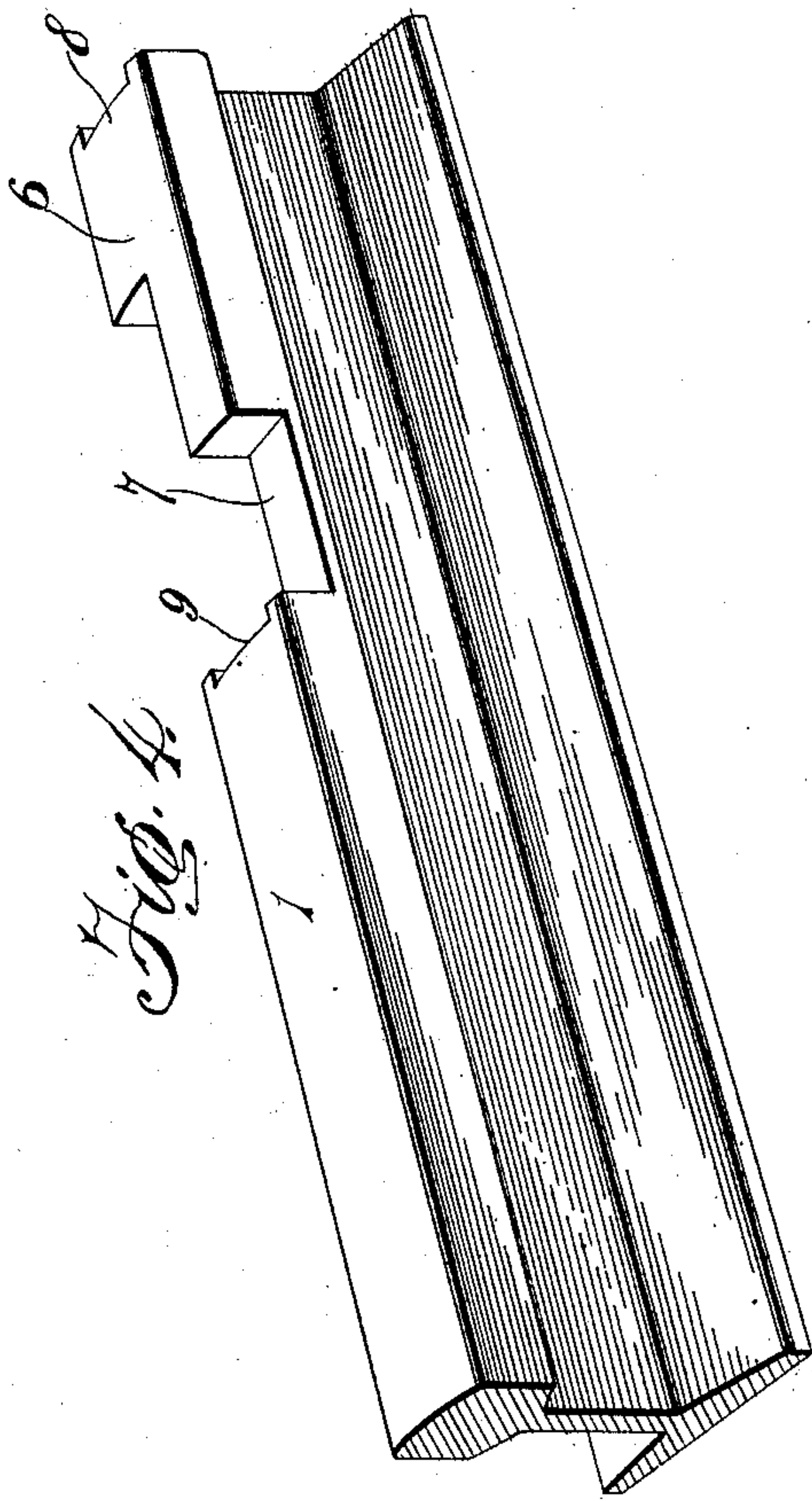
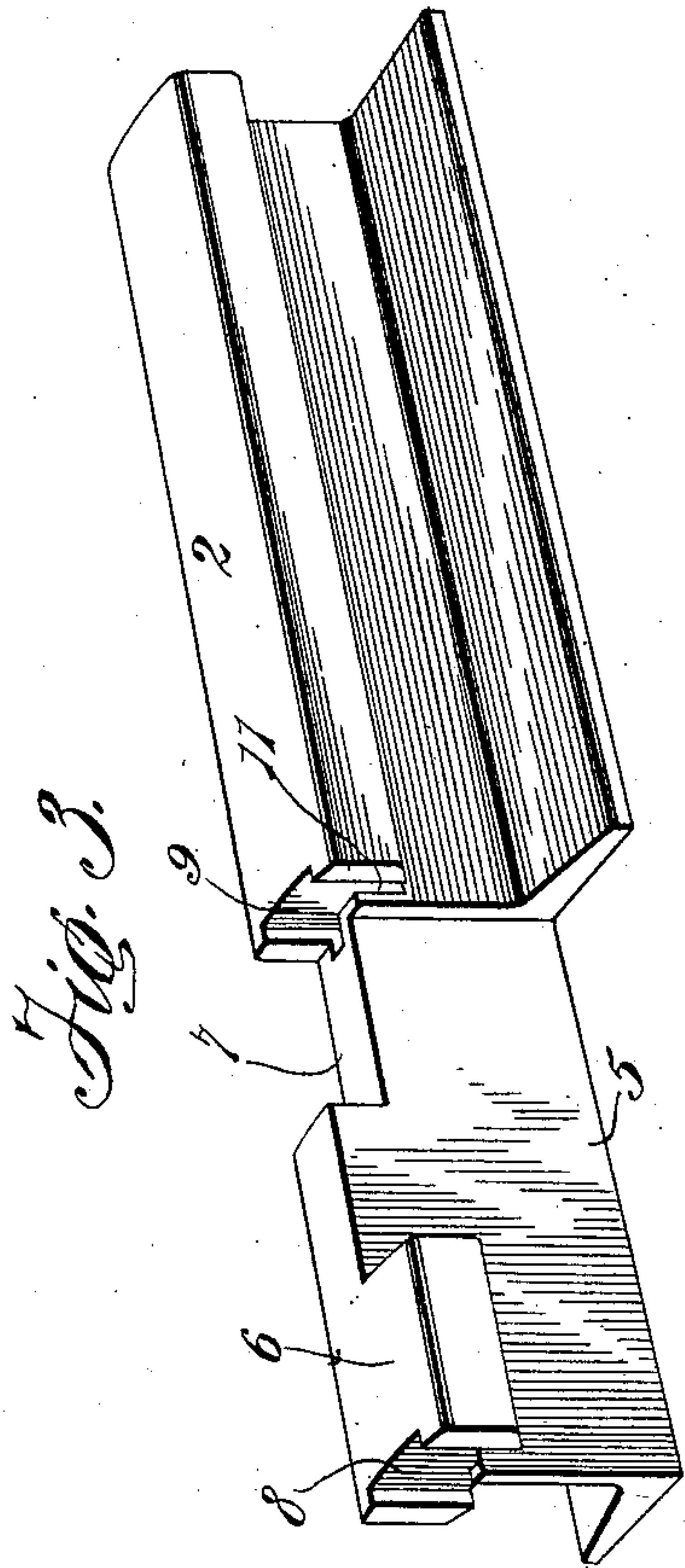
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2 SHEETS—SHEET 2.



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Rose S. Johnson
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UNITED STATES PATENT OFFICE.

GEORGE M. ELLIS, OF OMAHA, NEBRASKA, ASSIGNOR OF ONE-TENTH TO JOSEPH B. BROWN
AND NINE-FORTIETHS TO ULYSSES R. CHERRY, OF OMAHA, NEBRASKA.

RAIL-JOINT.

No. 928,952.

Specification of Letters Patent.

Patented July 27, 1909.

Application filed August 12, 1908. Serial No. 448,206.

To all whom it may concern:

Be it known that I, GEORGE M. ELLIS, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in rail joints and it consists of the novel features of construction and the combination and arrangement of parts hereinafter fully described and claimed.

The object of the invention is to provide a rail joint which will dispense with the use of nuts and bolts and in which the meeting ends of the rails will be effectively secured in perfect alinement.

The above and other objects of the invention are attained in its preferred embodiment illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the improved rail joint; Fig. 2 is a vertical transverse section on the plane of one of the keys and showing one of the latter before it is bent or locked; Figs. 3 and 4 are perspective views of the meeting ends of the two rails; and Fig. 5 is a detail perspective of one of the keys.

In the drawings 1 and 2 denote the meeting ends of two ordinary track rails which are recessed to interlock and are united by two keys 3 and a joint or chair plate 4. Each of the track rails has half of its web and a portion of its base flange and also a portion of its head removed or cut away on one side, as shown at 5, so that the remaining portion of said end of the rail will fit into the cut away portion of the other rail when the two are placed together in overlapping relation, as shown in Fig. 1. A portion of the head or ball of each rail at the end of the latter is undisturbed to provide a locking projection 6 adapted to fit into a recess 7 formed in the other rail by cutting away a portion of its head, as will be readily understood upon reference to Figs. 3 and 4. The locking projection 6 extends laterally and when the two rails are in alinement will effectively prevent them from moving longitudinally with respect to each other.

At the extremity of each rail is formed in the head of the same a vertically extending recess 8 and similar recesses 9 are formed at

the inner ends of the cut away portions 5. The recesses 8, 9 on the two rails oppose each other when said rails are brought together and are adapted to receive the locking keys 3. These keys are in the form of metal plates of substantially rectangular form and preferably slightly wedge-shaped to permit them to be easily driven into the alined recesses or seats 8, 9. The lower and smaller ends of the keys 3 are bifurcated to form locking fingers 10 which straddle the web portions of the rails and project below the head portions of the same, as shown in Fig. 2, so that they may be bent to lock the keys in position. Said recesses 8, 9 extend from the upper surface of the head portions of the rails to the web portions of the same at which points said recesses are bifurcated or divided to provide the branch passages or channels 11 in said head portions of the rails for the reception of the fingers 10 of the keys. The projecting lower ends of said fingers are bent in opposite directions, as shown in Fig. 1, to effectively lock the keys in position and prevent all possibility of them working loose. The keys 3 are comparatively broad and extend into both of the recesses 8 and the recesses 9 or, in other words, overlap portions of both rails so as to prevent lateral shifting movement of one rail with respect to the other. Lateral movement of one rail with respect to the other is also prevented and the rails are secured to the cross ties by means of the joint or chair plate 4, which latter is a rectangular plate arranged beneath both rails at the joint and having at its longitudinal edges undercut flanges 12 which receive the base flanges of the rails. In said longitudinal edges of the chair or joint plate 4 are formed notches 13 for the reception of spikes which secure said plate to the usual cross ties.

From the foregoing it will be seen that the invention provides an exceedingly simple and effective joint between the meeting ends of two track rails and one which entirely dispenses with the necessity of bolts, nuts and similar fastenings which have a tendency to work loose under the jar and vibration to which the rails are subjected by passing trains. The interlocking connection between the overlapping ends of the rails and the arrangement of the keys 3 and the use of the joint plate 4 causes the ends of the rails

to be held in perfect alinement and renders it impossible for them to spread laterally, shift longitudinally, or move vertically with respect to each other. When the keys 3 are in position and their ends or fingers 10 are bent under the heads of the rails it will be impossible for them to work loose and, consequently, for the rails to separate. The peculiar construction of the several parts not only permits the rails to be quickly and easily united but also as readily disconnected.

When it is desired to separate the rails the chair plate 4 is shifted longitudinally on one of the rails and away from the joint, the fingers 10 of the keys are then bent to vertical positions and the keys driven upwardly out of the recesses 8, 9. When this is done the rails 1, 2 may be moved laterally or away from each other in a horizontal plane. When it is desired to assemble and unite them this operation is reversed.

Having thus described the invention what is claimed is:

1. In a rail joint, the combination of the meeting ends of two rails recessed to interlock, and locking keys inserted vertically in the head portions of the rails to straddle the web portions thereof and having their ends bent to retain them in position.

2. In a rail joint, the combination of the meeting ends of two rails recessed to interlock, locking keys inserted vertically in the head portions of the rails to straddle the web portions thereof and having their extremities bent to retain them in position, and a chair or joint plate arranged beneath the

rails and having undercut side flanges to receive the base flanges of said rails.

3. In a rail joint, the combination of the meeting ends of two rails, each having a portion of its web, base flange and head cut away, portions of the head at the extremity of the rails being undisturbed and adapted to fit into similar shaped recesses formed in said heads of the rails suitable distances from their extremities, said heads of the rail being formed at the extremities of the latter and also at the inner ends of the cut away portions with vertical recesses, the latter being adapted to oppose each other when the two rails are placed in interlocking position, and keys inserted in the last mentioned aligning recesses and having portions straddling the webs of the rails and extending below the heads of the same and adapted to be bent.

4. In a rail joint, the combination of the meeting ends of two rails recessed to interlock and a locking key inserted vertically in the head portions of the rails to straddle the web portions thereof.

5. In a rail joint, the combination of two rails having the head portions of their opposing ends recessed, and a locking key inserted vertically in the recesses of the head portions of the rails and having spaced arms or ends to straddle the web portions of said rails.

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

GEORGE M. ELLIS.

Witnesses:

FRED L. SMITH,
U. R. CHERRY.