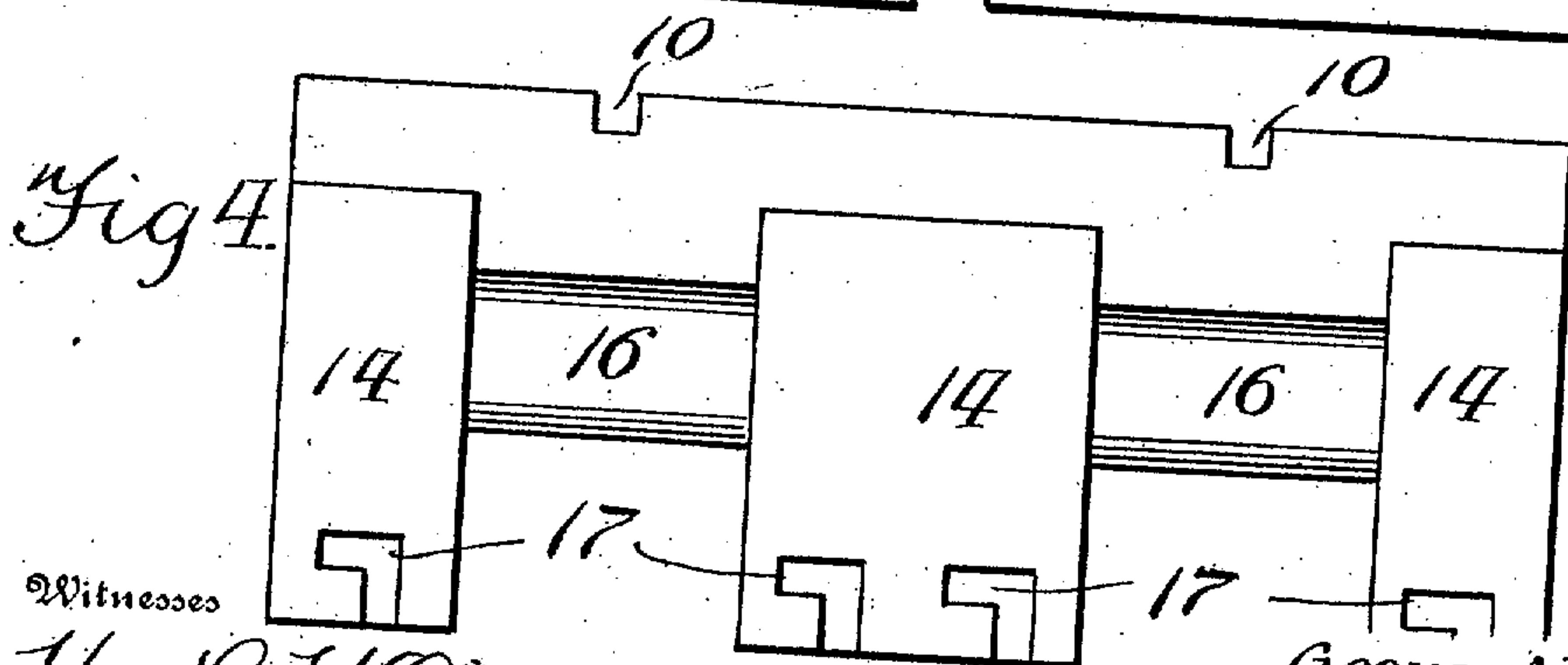
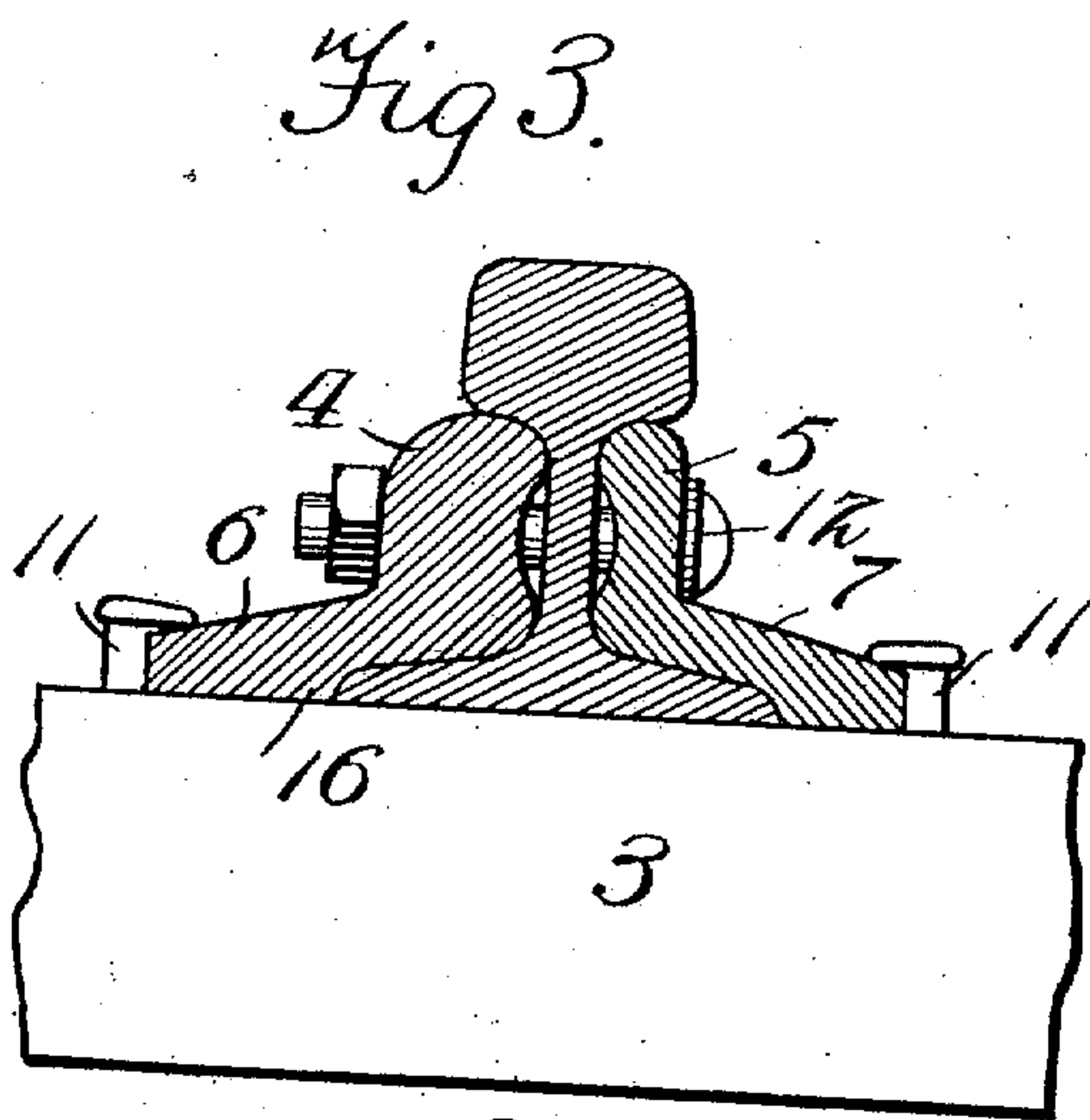
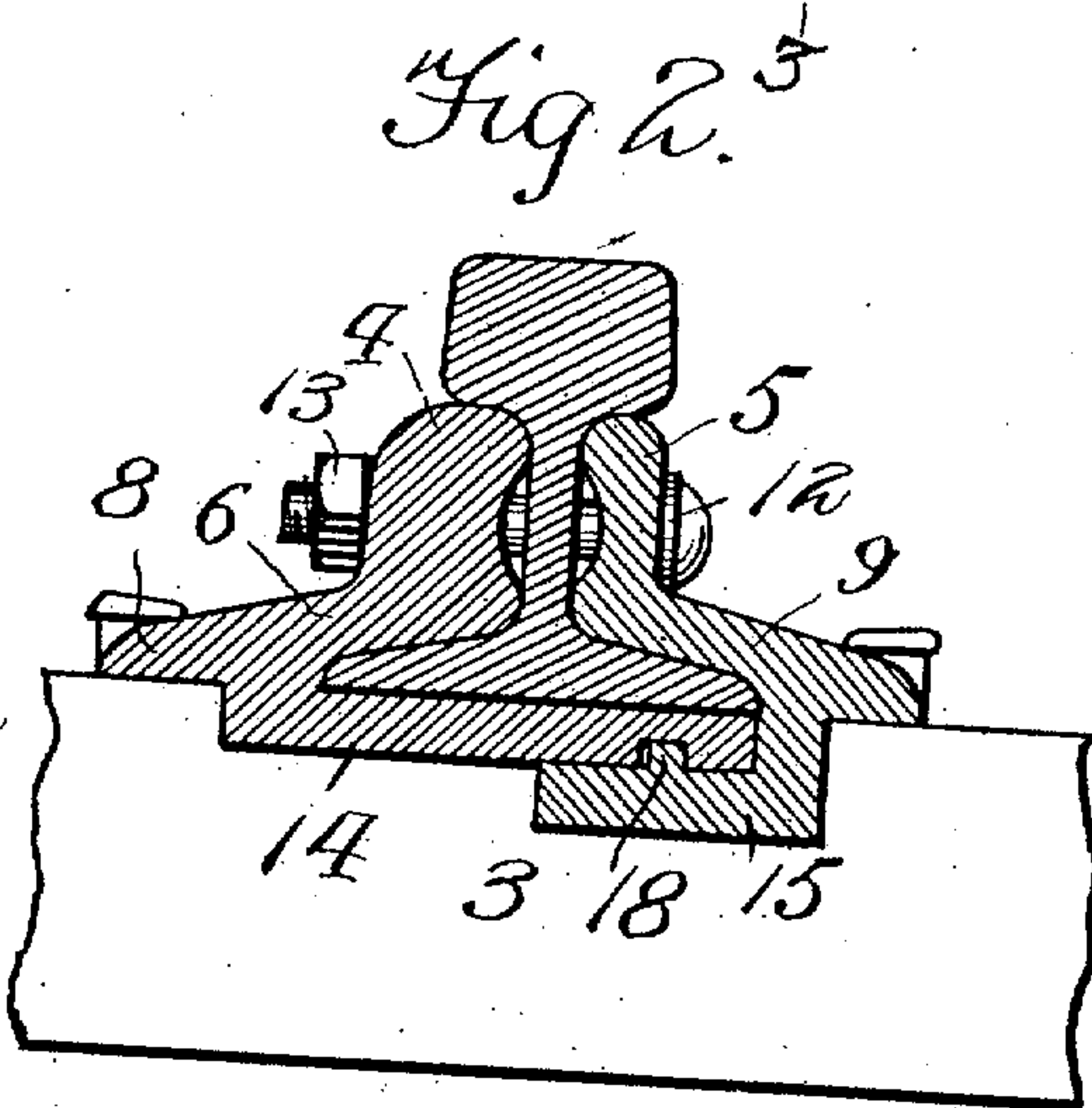
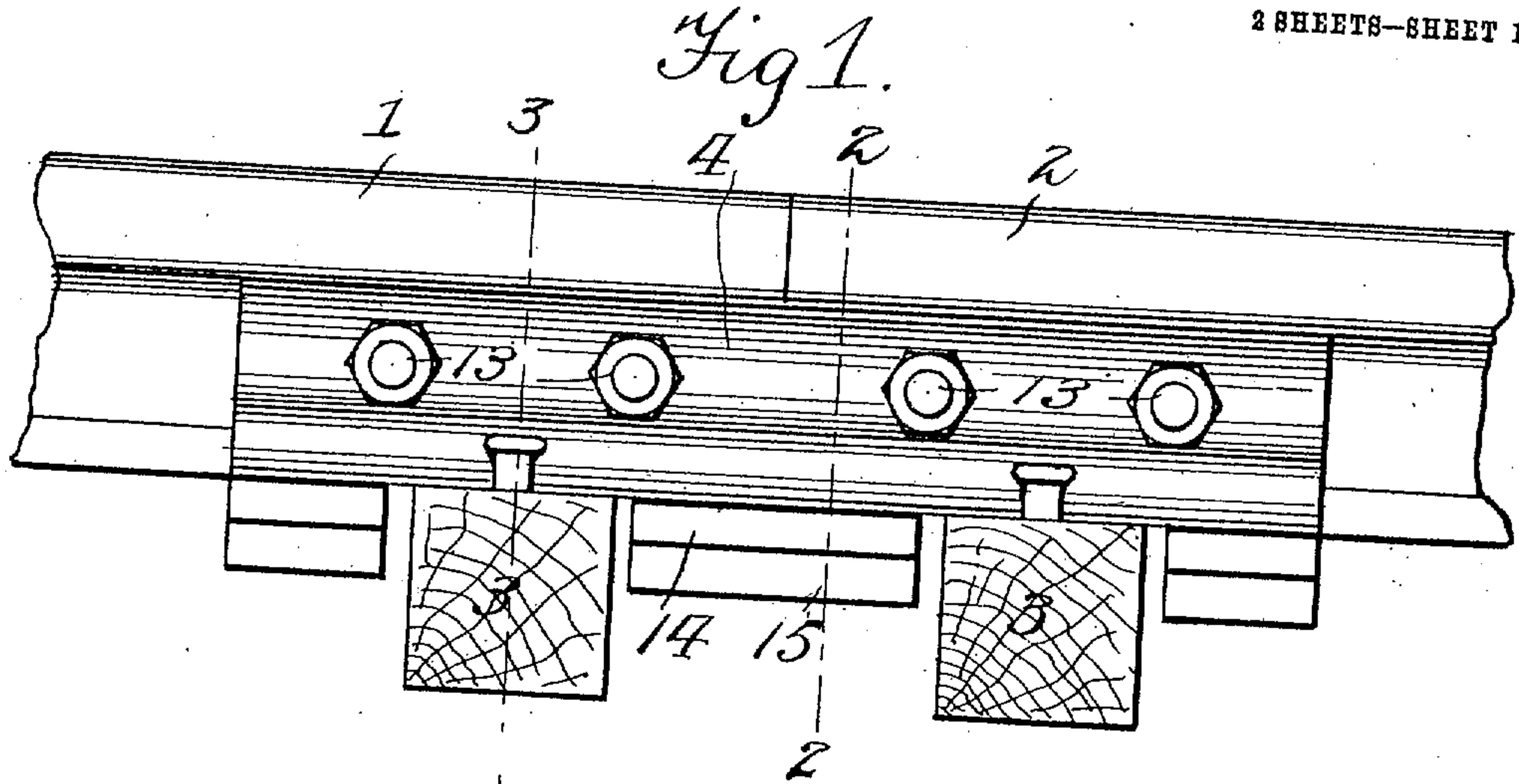


969,679.

Patented Sept. 6, 1910.  
 2 SHEETS—SHEET 1.



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RAIL JOINT.  
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969,679.

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2 SHEETS—SHEET 2.

Fig 5.

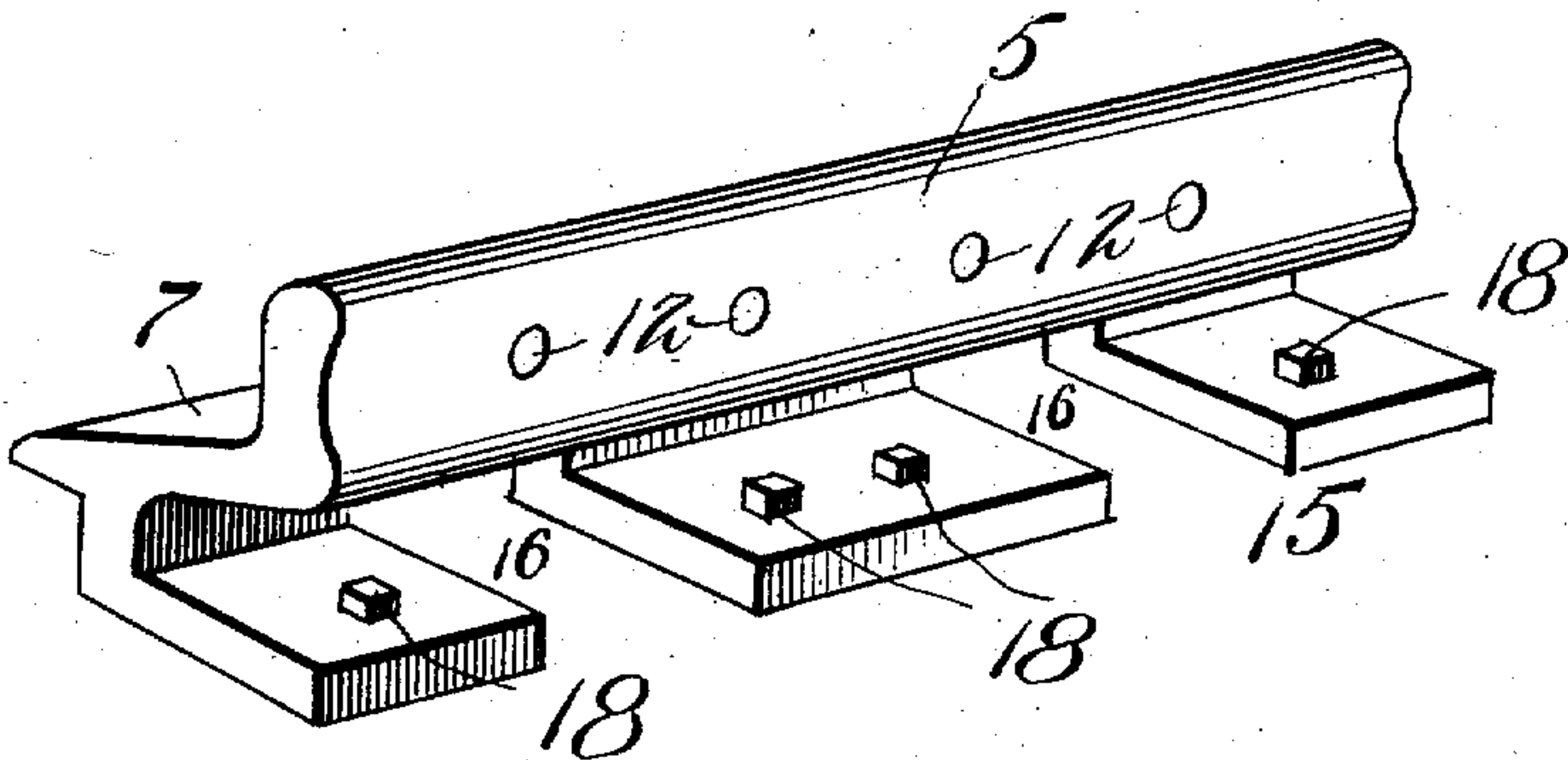
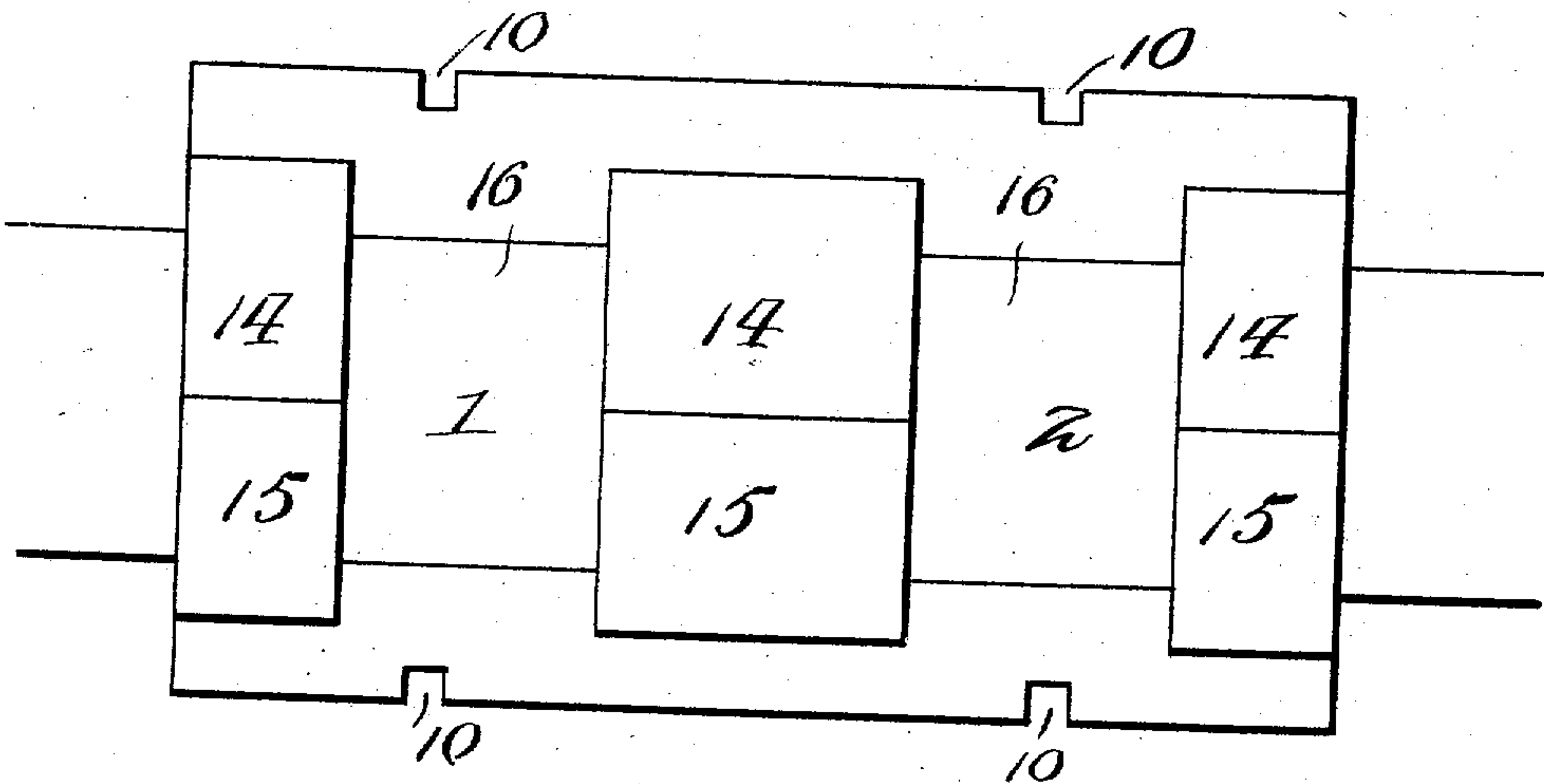


Fig 6.



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# UNITED STATES PATENT OFFICE.

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## RAIL-JOINT.

969,679.

Specification of Letters Patent.

Patented Sept. 6, 1910.

Application filed April 16, 1910. Serial No. 555,807.

*To all whom it may concern:*

Be it known that I, GEORGE A. WILLIAMS, a citizen of the United States, residing at Banner, in the county of Cleburne and State of Arkansas, have invented new and useful Improvements in Rail-Joints, of which the following is a specification.

This invention relates to improvements in rail joints, and has for its object to provide a simple and efficient construction of parts forming a combined rail chair and fish-plates for firmly and securely uniting the meeting ends of rails.

The invention consists of the features of construction, combination and arrangement of parts hereinafter fully described and claimed, reference being had to the accompanying drawings, in which:—

Figure 1 is a side elevation of a rail-joint embodying my invention. Fig. 2 is a cross-section on line 2—2 of Fig. 1. Fig. 3 is a cross-section on line 3—3 of Fig. 1. Fig. 4 is a bottom plan view of one member of the joint. Fig. 5 is a perspective view of the other member of the joint. Fig. 6 is a bottom plan view of the complete joint, the ties being omitted.

Referring now more particularly to the drawing, the numerals 1 and 2 denote the meeting ends of rails arranged to be coupled by my improved joint, and 3 designates ties of the roadbed extending transversely beneath the rails on opposite sides of the central line of the joint.

The improved joint fastening constituting my invention consists of outer and inner members 4 and 5, forming fish-plates to bear against the opposite sides of the webs of the rails and to extend between the bases and heads of the rails, thus firmly supporting and staying such parts. The two members 4 and 5 have horizontal extensions 6 and 7, respectively, which bear against the upper faces of the base flanges of the rails and are provided at their outer edges with longitudinally extending flanges 8 and 9 respectively, each of which is formed with notches 10 for the passage of securing bolts or spikes 11 driven into the ties 3. The rails and plates may be provided, as usual, with openings for the passage of transverse bolts 12 having securing nuts 13, but, as hereinafter described, the use of such bolts is not essential, as the plates are designed to be locked together and fastened to the ties in such a

manner as to obviate the employment, if desired, of auxiliary fastenings.

The member 4 has its horizontal portion provided with a plurality of inwardly extending horizontal base pieces 14, which are designed to extend beneath the rails and to form supporting chairs or seats therefor. In the present instance, said member is provided with three base pieces, one located at the center and one at each end thereof, the central one being somewhat wider than the others, said base pieces being equidistantly spaced apart. The member 5 also has its horizontal portion provided with a corresponding number of inwardly extending base pieces 15 which are arranged to extend below and project beneath or underlap the base pieces 14 of the member 4. The arrangement of these base pieces of the two joint members provides intervening transverse passages 16 for the ties 3, whereby the bases of the rails exposed through said spaces 16 are caused to rest directly upon the surfaces of the ties, while the flanges 6 and 7 of the joint plates are also brought into position to rest on the ties.

In order to secure a locking connection between the base pieces forming the chair portions of the joint members, the base pieces 14 of the member 4 are formed with L-shaped keeper grooves or recesses 17, each groove having one of its portions extending inwardly from the free edge of the base piece and its other portion extending at right angles thereto or in a plane parallel with the rails, while the base pieces 15 of the member 5 are provided with lugs or projections 18 to engage said grooves or recesses. By reference to Fig. 5, it will be seen that these lugs or projections are so arranged as to be fitted in the transverse portions of the grooves when the base pieces 15 of the part 5 are out of accurate alinement with the base pieces 14 of the part 4, so that when the part 5 is slid inwardly and then laterally the lugs or projections will be brought into the longitudinal portions of the grooves, thus bringing the parts 14 and 15 into alinement. When thus connected, the receiving spaces 16 will be formed for the reception of the ties.

In the operation of assembling the parts, after the ends of the rails are seated upon the ties and brought into proper relative position, the outer joint member 4 is slid lat-



erally into engagement therewith, and then the member 5 is applied in like manner so that the locking projections 18 will enter the transverse portions of the grooves 17, and then by sliding the member 5 in one direction longitudinally of the rails or laterally with relation to the member 4 the lugs or projections will be seated in the longitudinal portions of the grooves and lock said members together against relative outward or lateral movement. Upon then fastening the members to the ties by the spikes 11, reverse longitudinal movement of the member 5 and casual disconnection of said members will be rendered impossible. It will accordingly be apparent that the locking engagement of the parts 14 and 15 and attachment of said parts to the ties will prevent the joint members and rails from shifting longitudinally, while the joint members will prevent undue depression of the rails at the joints and allow only sufficient depression for elasticity and relief from strain on the passage of the wheels of a car, locomotive or train. The greater the amount of pressure falling upon the rails, the more firmly will the projections 18 bind against the outer walls of the longitudinal portions of the grooves, thus obviating any tendency of the rails to spread or become displaced laterally. Hence, the invention provides a joint which, while simple of construction, will firmly and positively connect the rails

against relative displacement. When it is desired to disconnect the parts for repairs it is simply necessary, as will be readily understood, to withdraw the spikes and slide the member 3 longitudinally in the reverse direction from that previously described so that the projections 18 will again aline with the transverse portions of the grooves, whereupon, assuming the bolts to have been removed, the joint plates may be disconnected by a relative lateral movement.

Having thus fully described the invention, what is claimed as new is:—

A rail joint comprising two members, each embodying a fish-plate having a base portion provided with a plurality of inwardly extending spaced extensions, said extensions being adapted to overlap beneath the rails, and to form intervening passages for the ties, the extensions of one member being formed with angle keepers and the extensions of the other member with projections to engage said keepers, whereby the members are adapted to be interlocked by a movement of one part toward and from and laterally of the other part.

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

GEORGE A. WILLIAMS.

Witnesses:

JOHN GRAHAM,  
MATTIE GRAHAM.