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PATENTED JAN. 24, 1905.

J. BETSCH, J. T. LOUGHRY & W. R. FRANK.

RAIL JOINT.

APPLICATION FILED OCT. 13, 1904.

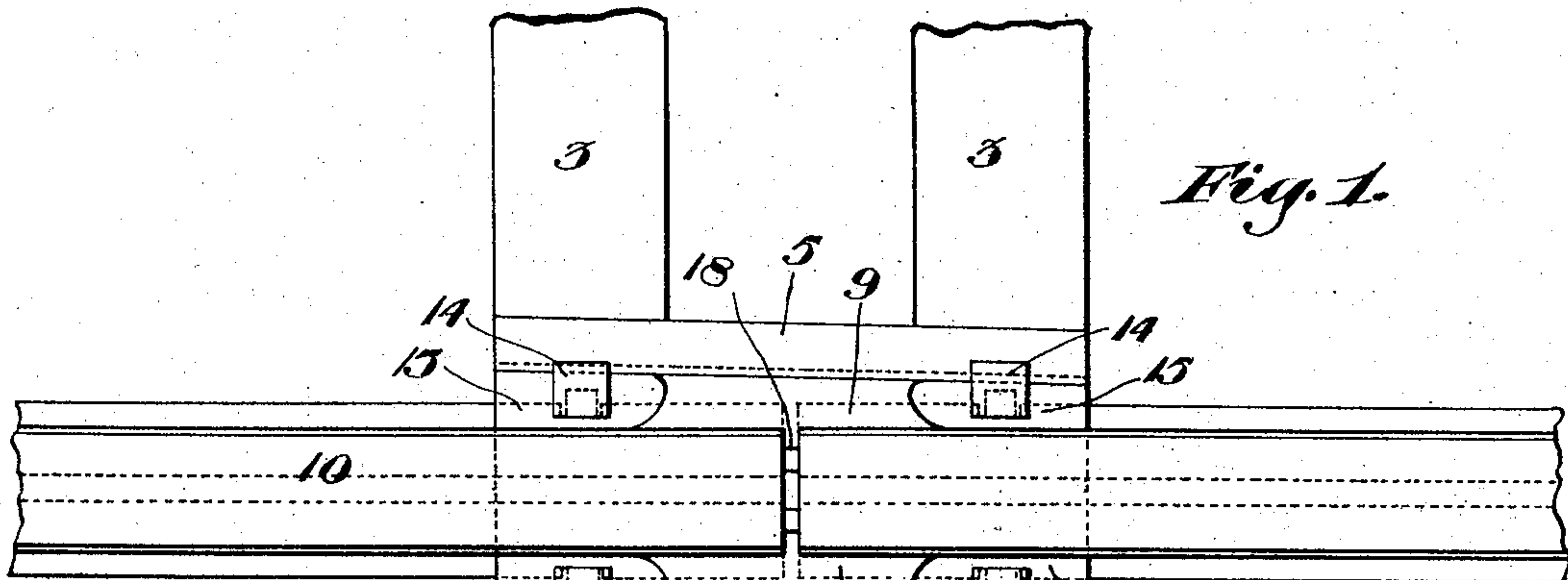


Fig. 1.

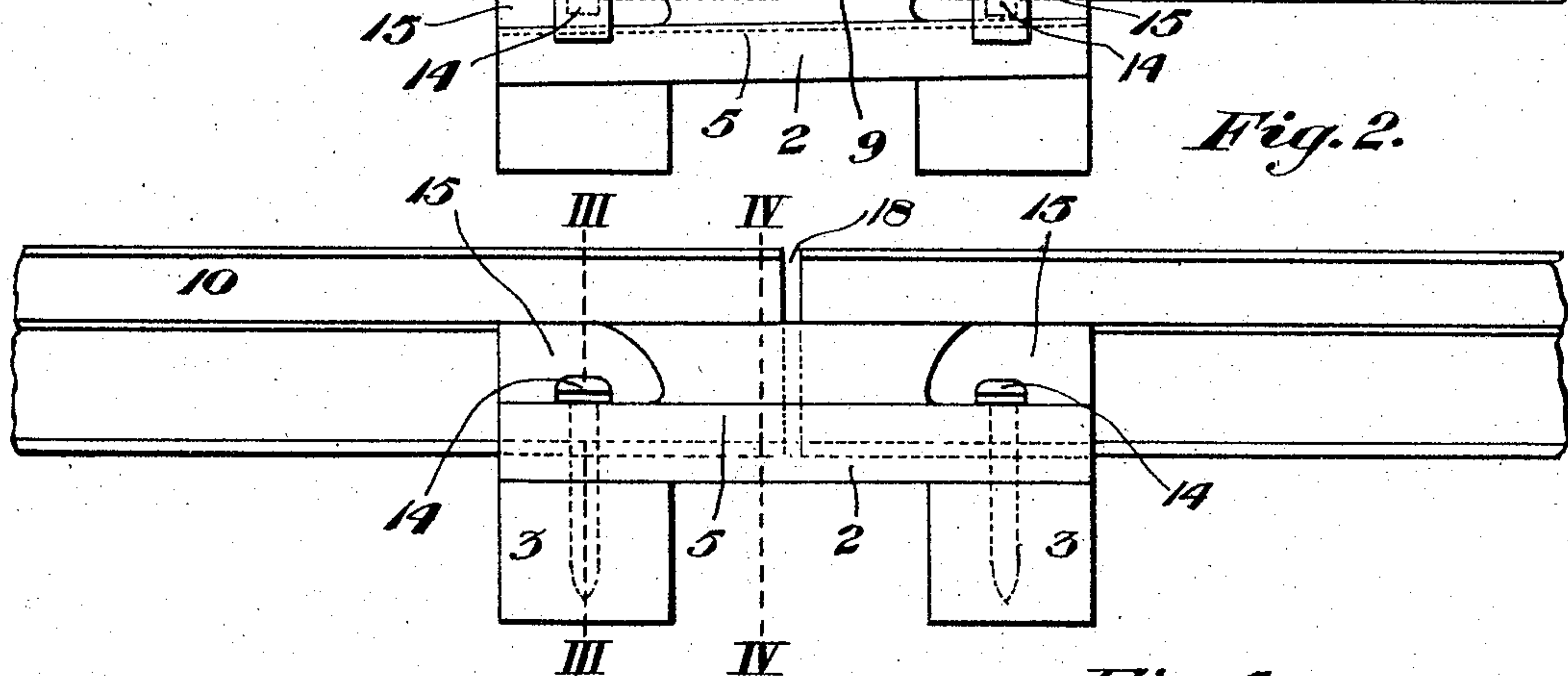


Fig. 2.

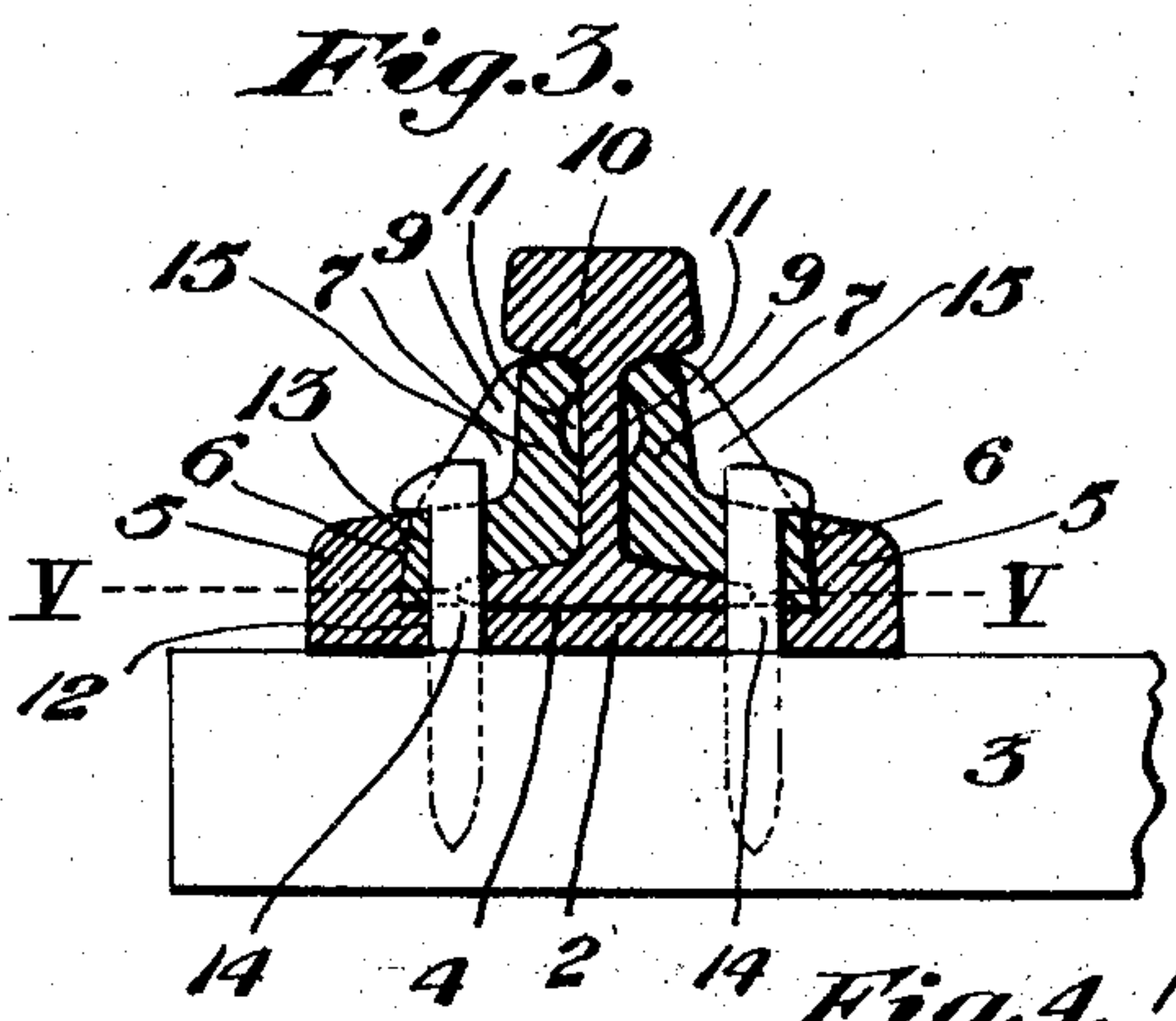


Fig. 3.

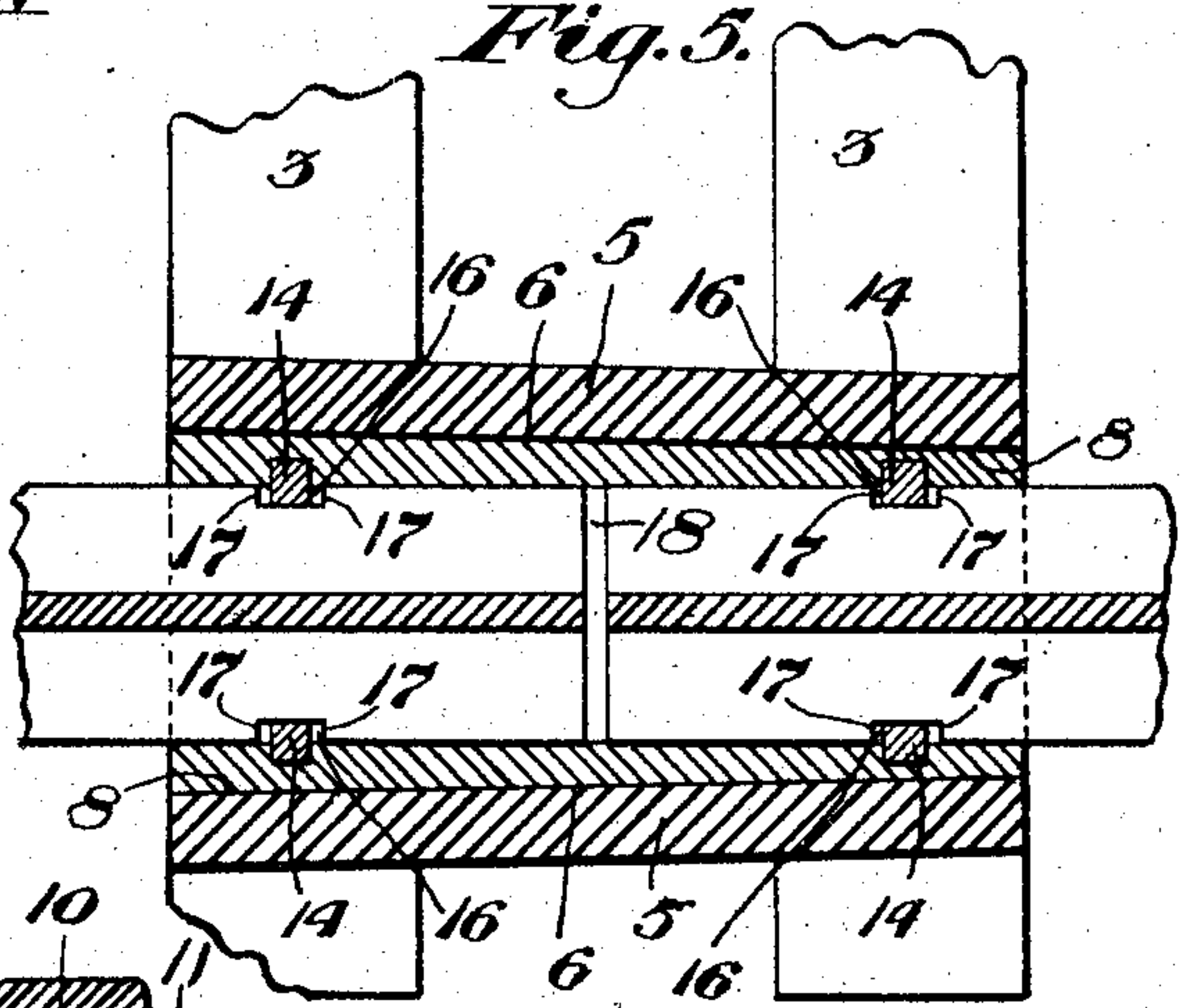
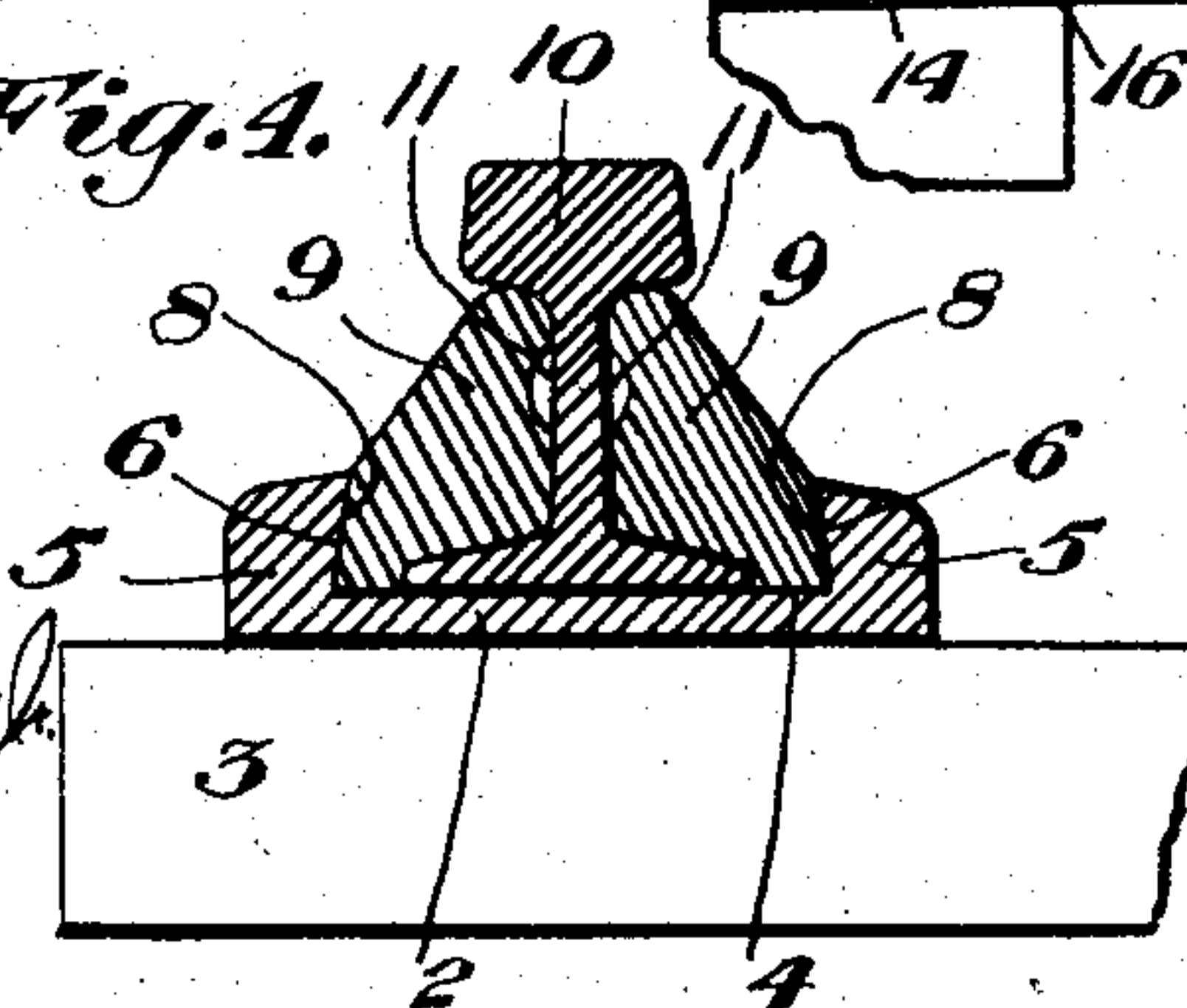


Fig. 4.

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UNITED STATES PATENT OFFICE.

JOSEPH BETSCH AND JAMES T. LOUGHRY, OF EAST PITTSBURG, AND WILLIAM R. FRANK, OF BRADDOCK, PENNSYLVANIA, ASSIGNORS OF FOUR-TENTHS TO SAID LOUGHRY AND SAMUEL W. WOLFE, OF EAST PITTSBURG, PENNSYLVANIA.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 780,931, dated January 24, 1905.

Application filed October 13, 1904. Serial No. 228,260.

To all whom it may concern:

Be it known that we, JOSEPH BETSCH and JAMES T. LOUGHRY, residing at East Pittsburg, and WILLIAM R. FRANK, residing at Braddock, in the county of Allegheny and State of Pennsylvania, citizens of the United States, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification, reference being had therein to the accompanying drawings, forming part of the specification, in which—

Figure 1 is a plan view showing our improved rail-joint. Fig. 2 is a side elevation of Fig. 1. Fig. 3 is a cross-section on the line III III of Fig. 2. Fig. 4 is a similar section on the line IV IV of Fig. 2. Fig. 5 is a horizontal sectional view indicated by the line V V of Fig. 3.

Our invention refers to improvements in rail-joints; and it consists in a supporting-base provided with a rail receiving and holding chair wedged into the base arranged to receive the meeting ends of the rails and to hold them rigidly with provision for a limited amount of expansion and contraction.

The invention is designed to dispense with the necessity of the usual fish-plates and securing bolts and nuts, thus obviating the tendency of these securing devices to become loose, while providing a more efficient, simple, and durable device for the purpose in view.

The entire device when assembled is held to the ties by the usual rail-spikes, which also engage the edges of the rails, in such a manner as to provide for the limited longitudinal movement referred to.

Referring now to the drawings, 2 represents the base, which is of sufficient length to rest upon two or more ties 3, consisting of a single integral metal body, either forged or of cast-steel, having a flat bearing-surface 4 and upwardly-turned sides 5 5. The inner faces of these sides are beveled, sloping inwardly and upwardly, as shown at 6, thus providing a dovetail receiving-opening for the reception of the rail-holding plates 7. The lower faces of plates 7 are substantially flat and rest

upon the face 4, while the edges 8 are correspondingly beveled to interfit with the bases 6 of the base-flanges 5. Both of the inner faces 6 of the base and the outer faces 8 of the plates 7 are tapered longitudinally, as shown in Figs. 1 and 5, so that the chairs may be inserted longitudinally into the base, making a binding fit therein when in to their full length, as shown.

The plates 7 are provided with upwardly-extending sides 9 9, sloping upwardly and inwardly from the base of the chairs at each side and adapted to bear underneath the head 10 of the rail, the inner portion of the plates being shaped and adapted to receive and interfit with the base-flanges and web of the rail, as clearly shown. Channels 11 11 are also provided along the inner faces of the sides 9 to provide clearance for electrical connecting-wires at each joint.

The base and plates are provided with openings 12 13 at each side at suitable points along their length to correspond with the ties, so that when spikes 14 are driven through them into the ties the entire device will be securely attached to them in position. The sloping sides 9 are recessed at suitable positions to give clearance for the spikes, the cut-out portions 16 being appreciably longer than the width of the spike, terminating in edges 17 17, which engage the spike at one side or the other and prevent longitudinal movement or "creeping" of the rails, while permitting a limited movement due to expansion or contraction, an opening 18 being preferably left between the ends of the rails in laying.

By this construction, the base having been laid on the ties and the plate inserted in position, the ends of the rails are inserted longitudinally from each end and the parts properly adjusted to each other. The spikes are then driven through the rail-flange openings and into the ties, when the whole structure will be complete and will provide a strong, serviceable joint. By our construction we entirely avoid the necessity of punching or drilling bolt-holes through the webs of the

rails, which operation, especially with rails of nickel-steel, is very tedious and expensive or with a high percentage of nickel practically impossible. The rails merely require the shallow recesses in their flange edges, so that their cross-sectional strength is not reduced or impaired, and this is an especial and valuable feature of the invention.

It will be understood that the base-bearing ties should be sufficiently lower than the rail-bearing ties or correspondingly recessed to compensate for the difference in level due to the thickness of the base, also that the proportions or dimensions may be changed or varied, as well as other details of construction, by the skilled mechanic without departing from the scope of the following claims.

What we claim is—

1. A rail-joining device consisting of a base having interior vertically-beveled longitudinally-tapered retaining-faces, and rail-bearing plates having corresponding interfitting beveled and tapered edges and interior rail-embracing faces, with spike-holes extending through the base and plates, substantially as set forth.

2. A rail-joint consisting of a base provided with upwardly-turned sides having inner beveled and tapered faces, rail-bearing plates having correspondingly beveled and tapered faces and interior rail-embracing faces, and longitudinal wire-channels, with spike-holes ex-

tending through the base and plates, substantially as set forth.

3. A rail-joint consisting of a base provided with upwardly-turned sides having inner beveled and tapered faces, rail-bearing plates having correspondingly beveled and tapered faces and interior rail-embracing faces, and longitudinal wire-channels, rail ends provided with spike-recesses in their flanges, and spike-holes extending through the base and plates adapted to correspond with said recesses when the rail ends are in position, substantially as set forth.

4. A rail-joint consisting of a base provided with upwardly-turned sides having inner beveled and tapered faces, rail-bearing plates having correspondingly beveled and tapered faces and interior rail-embracing faces, and longitudinal wire-channels, rail ends provided with spike-recesses in their flanges, spike-holes extending through the base and plates and spikes driven therethrough into supporting-ties and in engagement with the rail-flange recesses, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

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Witnesses:

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