

(No Model.)

J. McKENZIE.
RAILWAY RAIL JOINT.

No. 390,881.

Patented Oct. 9, 1888.

Fig. 1.

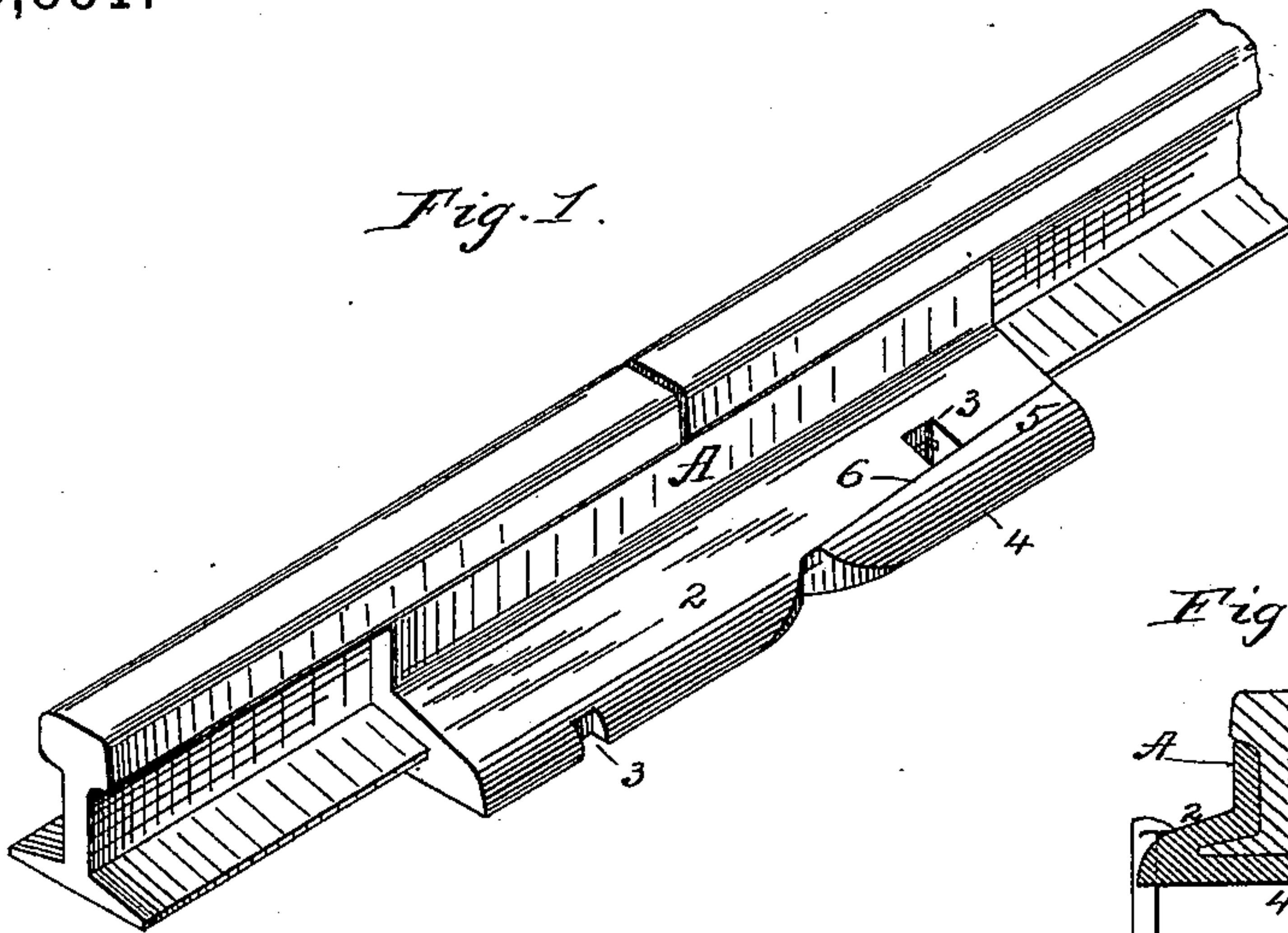


Fig. 3.

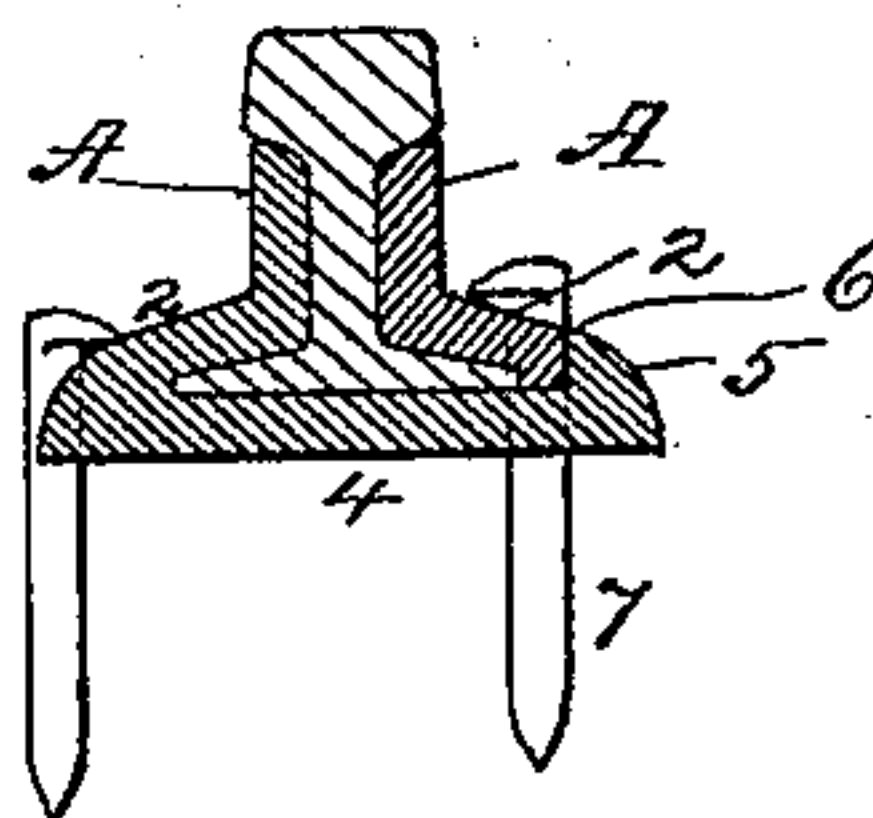


Fig. 2.

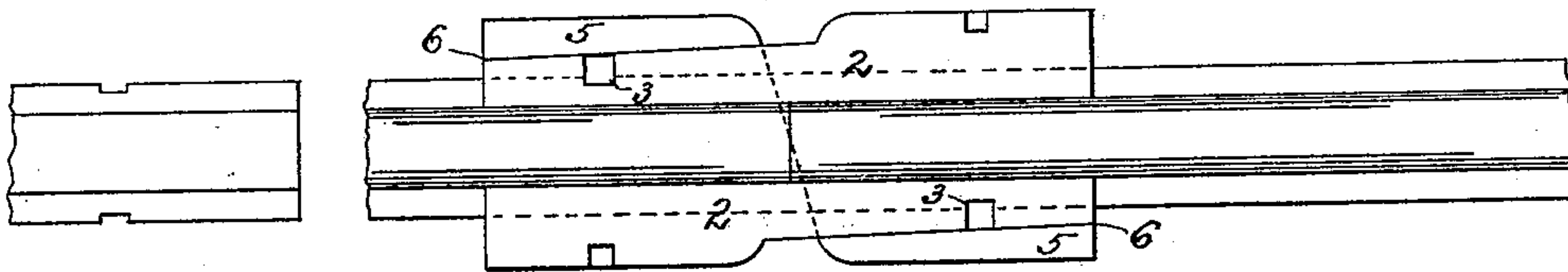


Fig. 4.

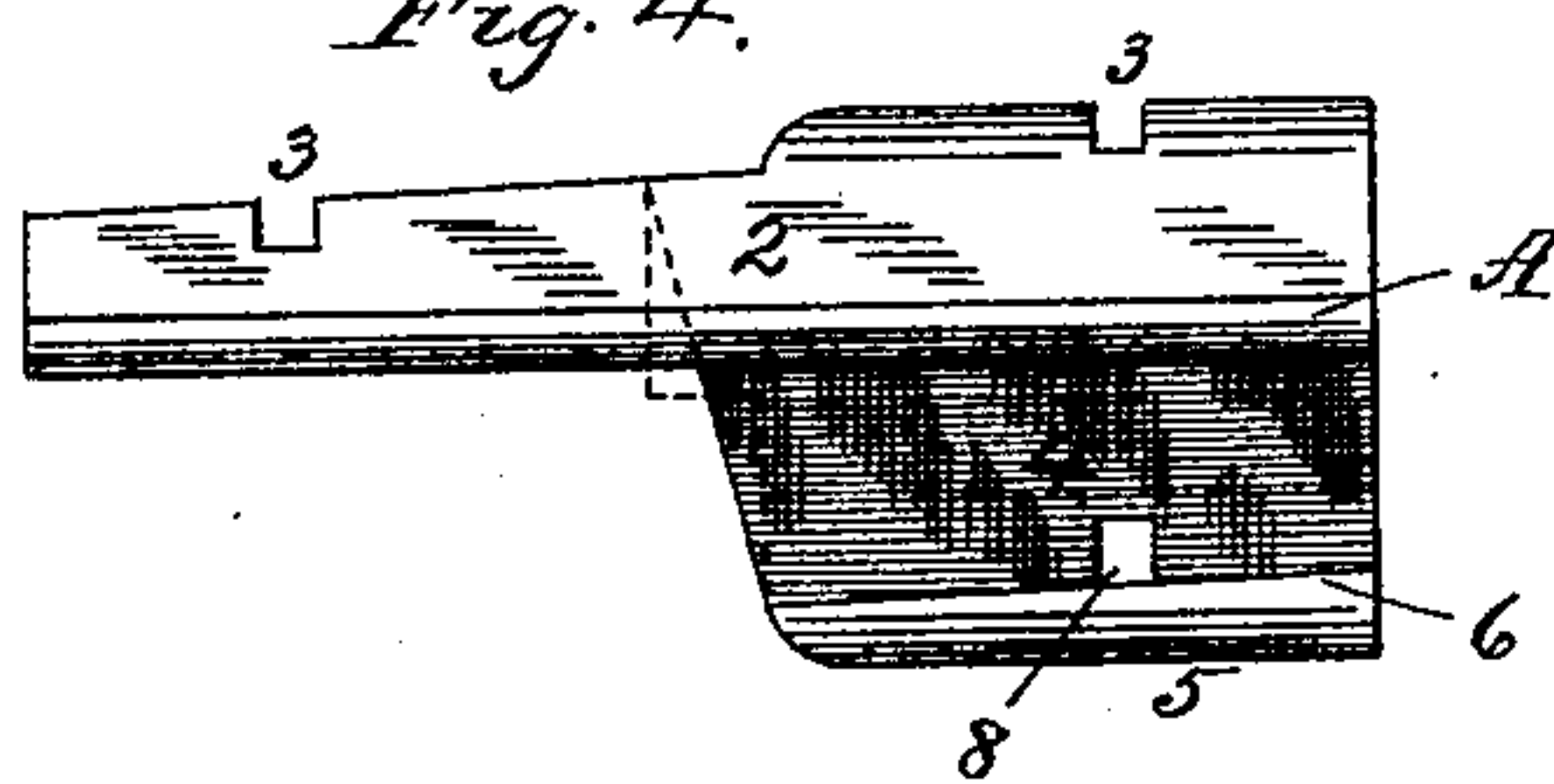


Fig. 5.



Fig. 6.

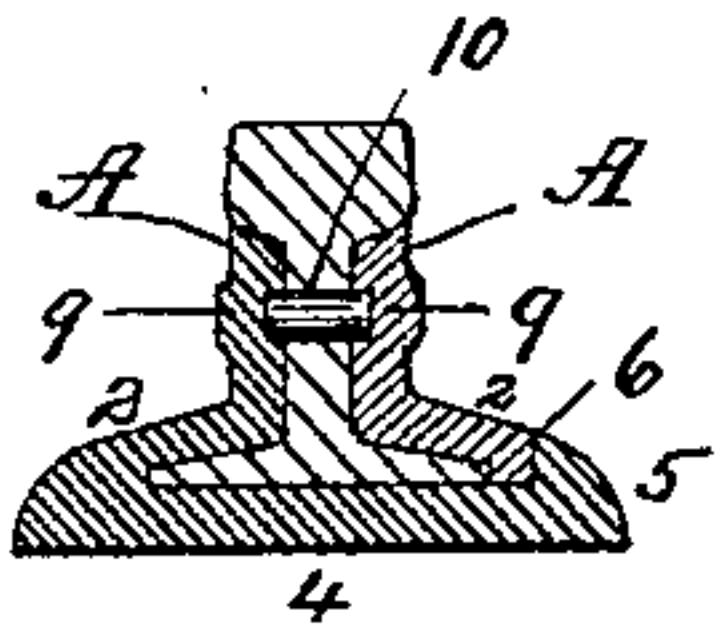
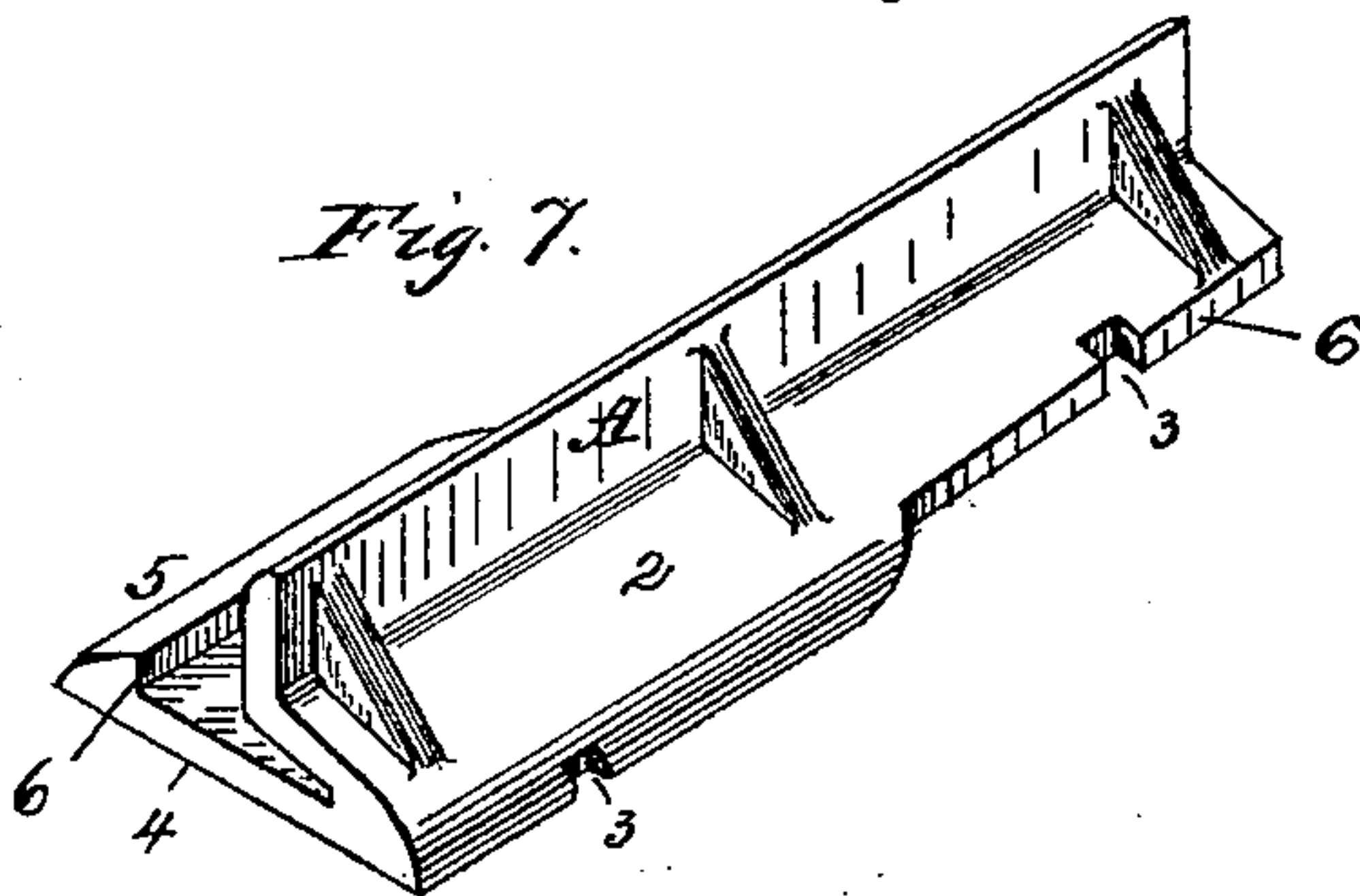


Fig. 7.



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UNITED STATES PATENT OFFICE.

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RAILWAY-RAIL JOINT.

SPECIFICATION forming part of Letters Patent No. 390,881, dated October 9, 1888.

Application filed April 20, 1888. Serial No. 271,302. (No model.)

To all whom it may concern:

Be it known that I, JOHN MCKENZIE, a citizen of the United States, residing at West Troy, in the county of Albany and State of New York, have invented certain new and useful Improvements in Railway-Rail Joints; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to railway splice-bars of that class which are self-contained and constitute a combined rail splice or fish-bar and rail-chair; and the invention comprises twin splice-bars, each of which is provided with a chair passing under the rail and formed with an upwardly-extended lip for the direct engagement of the flange of the opposite splice-bar, the corresponding portions of each bar and lip being inclined or wedge faced longitudinally; and the invention further comprises the construction and arrangement of devices, all substantially as hereinafter more fully described and claimed.

In the drawings which form part of this specification, Figure 1 is a perspective of two adjoining rail ends with my improvement applied. Fig. 2 is a plan view of the same. Fig. 3 is a cross-sectional view of Fig. 2. Fig. 4 is a plan view of one of the twin portions of the splice. Fig. 5 is an end view of the same. Fig. 6 is a sectional view of a modified form illustrating a means of preventing the creeping of the rails. Fig. 7 is a perspective of the form given the twin sections when made of cast-iron or steel, showing the braces which I may use in that case.

The object of this invention is to afford cheap construction of a substitute for the present well-known fish-plates, (some of which also form a chair for the rail-joint,) and to make the junction of the rails as strong as possible without unduly affecting the elasticity, and to afford means of tightening up the joint from time to time as may be required, and to accomplish all this without the use of bolts or nuts in any manner.

To these and other ends my invention is as follows: I construct, by casting or by shaping wrought-iron or steel, the angle-bar A, having the usual flange, 2, with notches 3, or

recesses for the ordinary spikes, and having also the horizontal extension 4, with upwardly-turned lip 5, whose face is slightly inclined, as shown in Figs. 2 and 4. The extension 4 is not as wide as the length of the whole fish-bar, but about half such length, and its inner edge is given a slant, so as to cross diagonally or zigzag under the center line or line of junction of the rail ends, so that each extension will support both rails. The edge of the flange 2, at the point which when the twin sections are in position comes opposite the inclined portion of lip 5, is formed with a corresponding incline or wedge-surface, 6, so that when the twin sections are forced endwise toward each other the aforesaid inclined surfaces engage on both sides of the rail and tighten the bars A to the utmost possible extent into their proper position against the head and flanges of the rails, as will be clearly understood from inspection of Figs. 1 and 2. This wedging effect may be obtained by simply sledging the two sections, or the last stage of the tightening effect may be obtained by first drawing them far enough to have the notches 3 of one bar afford a sufficient clearance for the entrance of the spikes 7 through the holes 8 in the extension 4 of the other bar and completing the operation by driving the spikes. The creeping of the rails may be prevented by notching the rail-flanges at points corresponding to the spike-notches 3, or by means of the following construction, in which the ordinary bolt-holes through the web of the rails may be utilized.

The angle-bars A, at points corresponding to the bolt-holes in the web of the rail, are constructed with internal pockets, 9, and after one of the sections of the joint has been placed in position, pins 10 are inserted from the other side and are of such length as to pass through the rail at its bolt-holes and extend into both pockets, so that after the splice-bars are tightened up the pins cannot fall out, and their transverse extension through the rail prevents the latter from creeping under any circumstances so long as the flanges of the splice are spiked to the ties. This construction is set forth in the sectional view, Fig. 6.

By the foregoing construction the rail ends are clamped very powerfully into line and in the simplest possible manner. The twin sec-

tions can be applied to the rail ends in a few seconds, and there is nothing left to do but to drive the spikes, which are usually at the splice-bar under ordinary circumstances. There are
 5 no bolts to pass through the rail and no nuts to screw down, and consequently the application of the invention is one of great simplicity, and in laying down track very much greater speed can be made than where bolts and nuts
 10 are required.

It will be observed that the internal configuration of the angle-bar with its extension corresponds with the form of the rail in general, save where the lip 5 clears the rail-flange far
 15 enough to admit the wedge-face 6 of the flange 2 of the other twin section of the joint.

Obviously the angle bar, where it faces the web of the rail, may be concave, as in many cases is now the preferred form, as shown by
 20 dotted lines at Fig. 5.

Both parts which form the complete joint are exactly alike, and hence are interchangeable. No care need be exercised, in assorting or manufacture, as to fitting. No machine-work
 25 is required, such as drilling or planing.

An important advantage exists in the use of my invention in laying short pieces of rail which have no bolt-holes, as I can apply the angle bars with the utmost readiness, having
 30 no necessity for the use of bolts or other devices requiring the drilling of bolt-holes.

I claim as my invention—

1. A rail-joint comprising twin angle-bars

provided with corresponding extensions passing under the rails and upwardly-extending
 35 lips on the opposite side, the corresponding portions of each bar and lip being inclined or wedge-faced longitudinally, whereby the twin bars interlock and are tightened against the rails by endwise motion relatively to each
 40 other.

2. The rail-joint composed of the twin angle-bars A, each having the extension 4 and lip 5, said extension and lip having inclined
 45 engaging-faces 6, substantially as described.

3. The rail joint composed of the twin angle-bars A, each having the extension 4 and lip 5, with inclined engaging-faces 6, the adjacent edges of said extensions being diagonal
 50 or zigzag, substantially as described.

4. The rail-joint composed of the twin angle-bars A, each having extension 4 and lip 5, with inclined engaging-faces 6, said bars A having spike-notches 3, and the extensions 4
 55 having spike-holes 8, substantially as described.

5. The rail joint composed of the twin angle-bars A, each having extension 4 and lip 5 for mutual engagement, in combination with perforated rails and pins transversely arranged
 60 in said perforations and engaging the said bars.

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

JOHN McKENZIE.

Witnesses:

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