

T. W. WILLIAMS.

RAIL JOINT.

APPLICATION FILED JUNE 16, 1909. RENEWED FEB. 15, 1911.

990,691.

Patented Apr. 25, 1911.

Fig. 1.

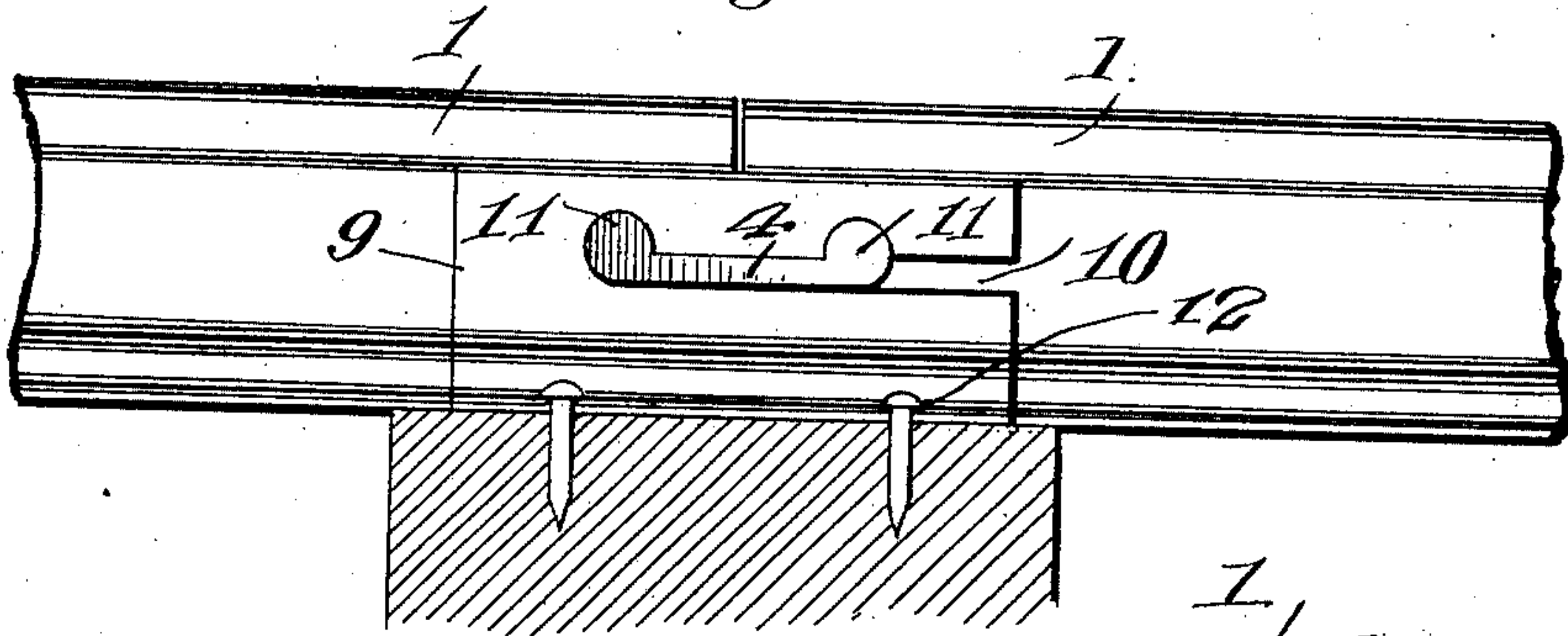


Fig. 3.

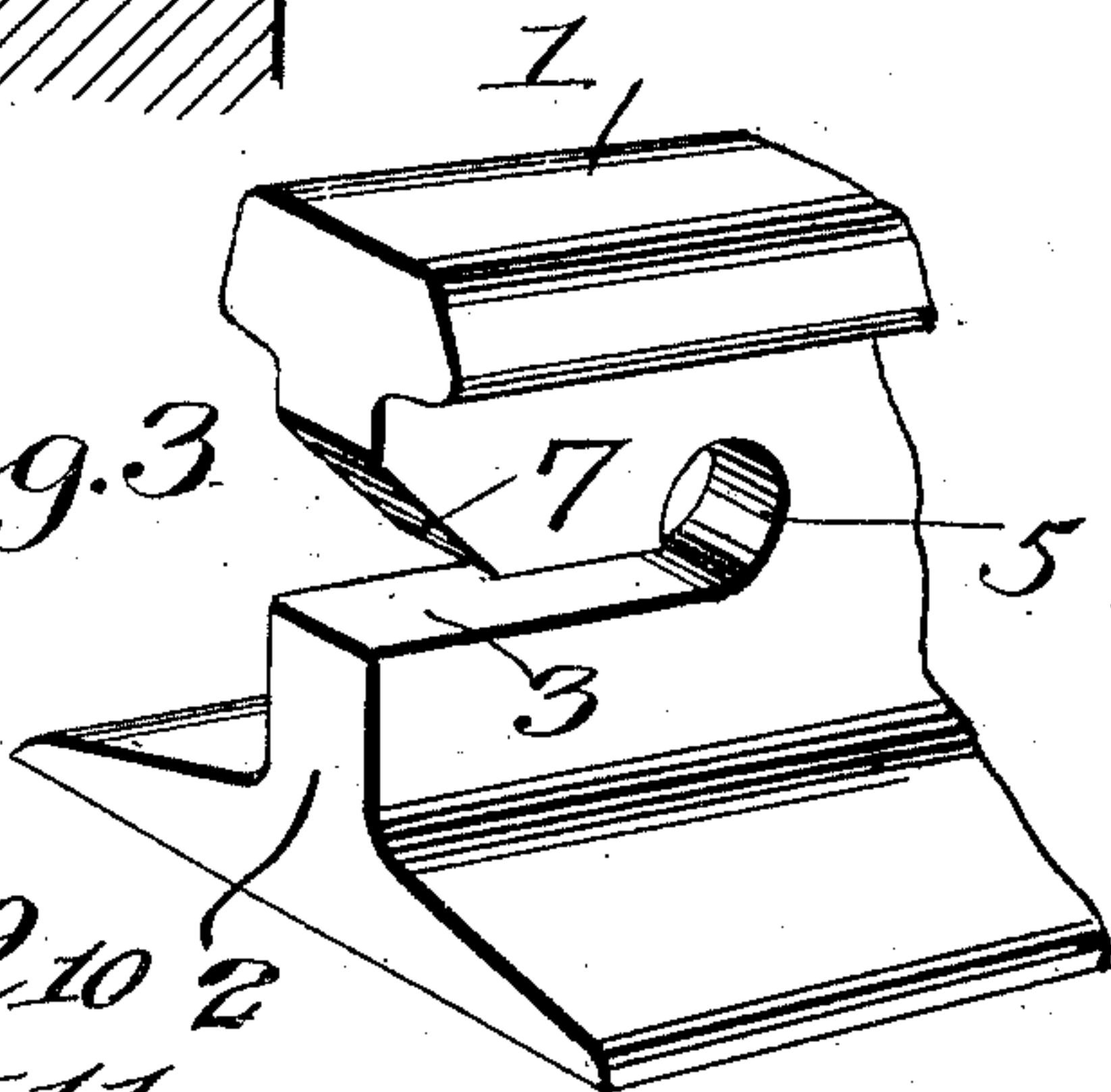


Fig. 2.

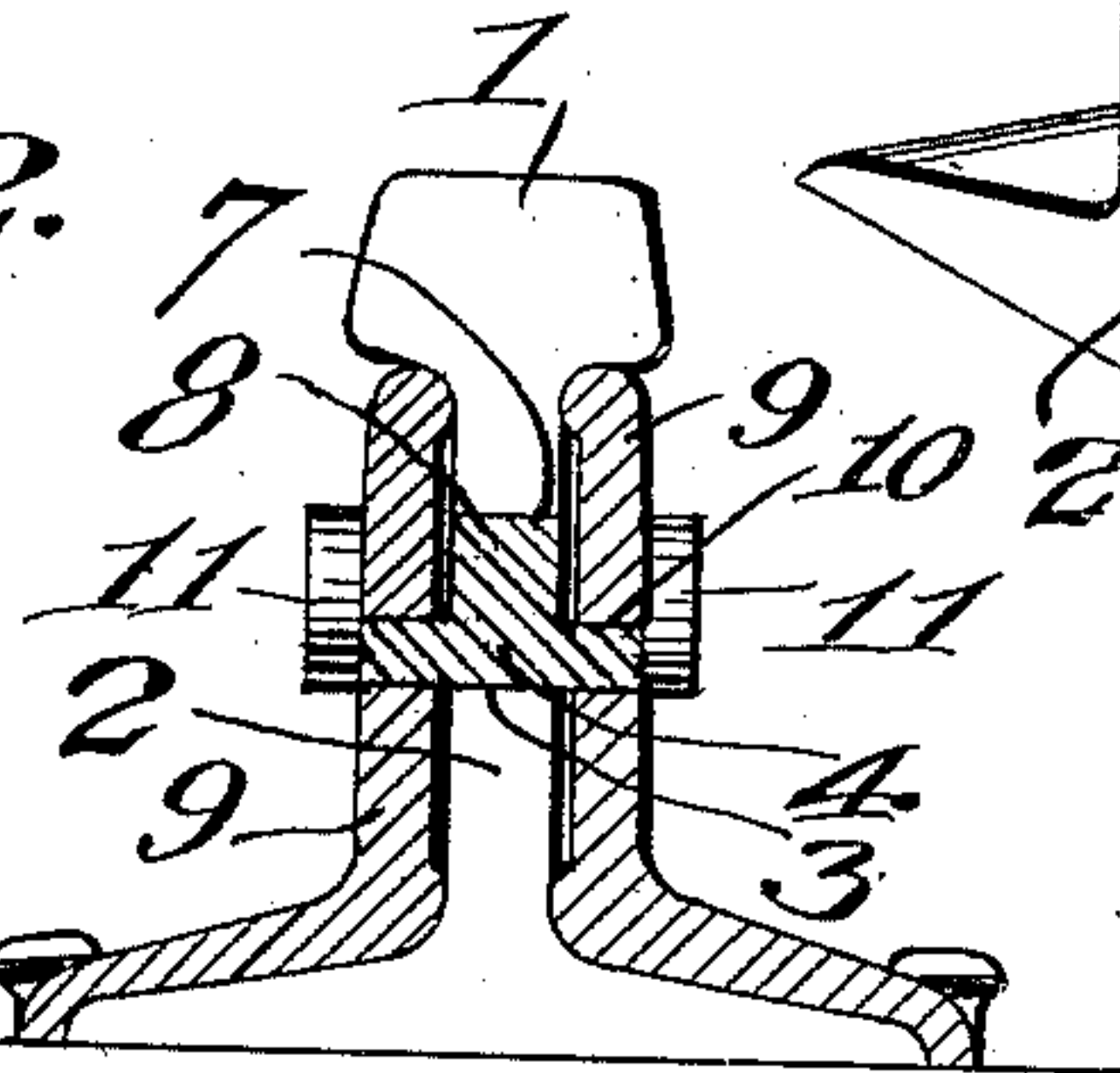


Fig. 4.

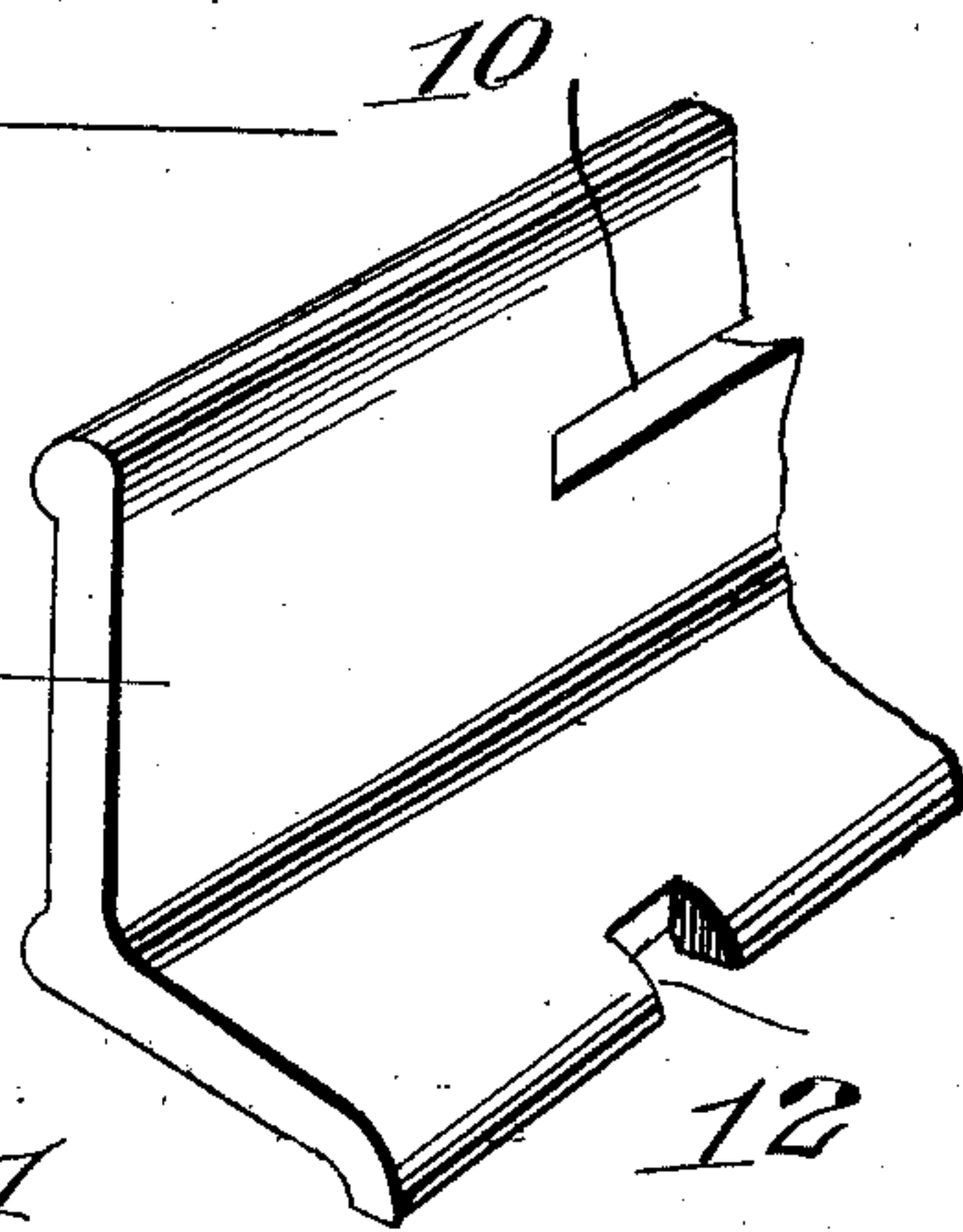
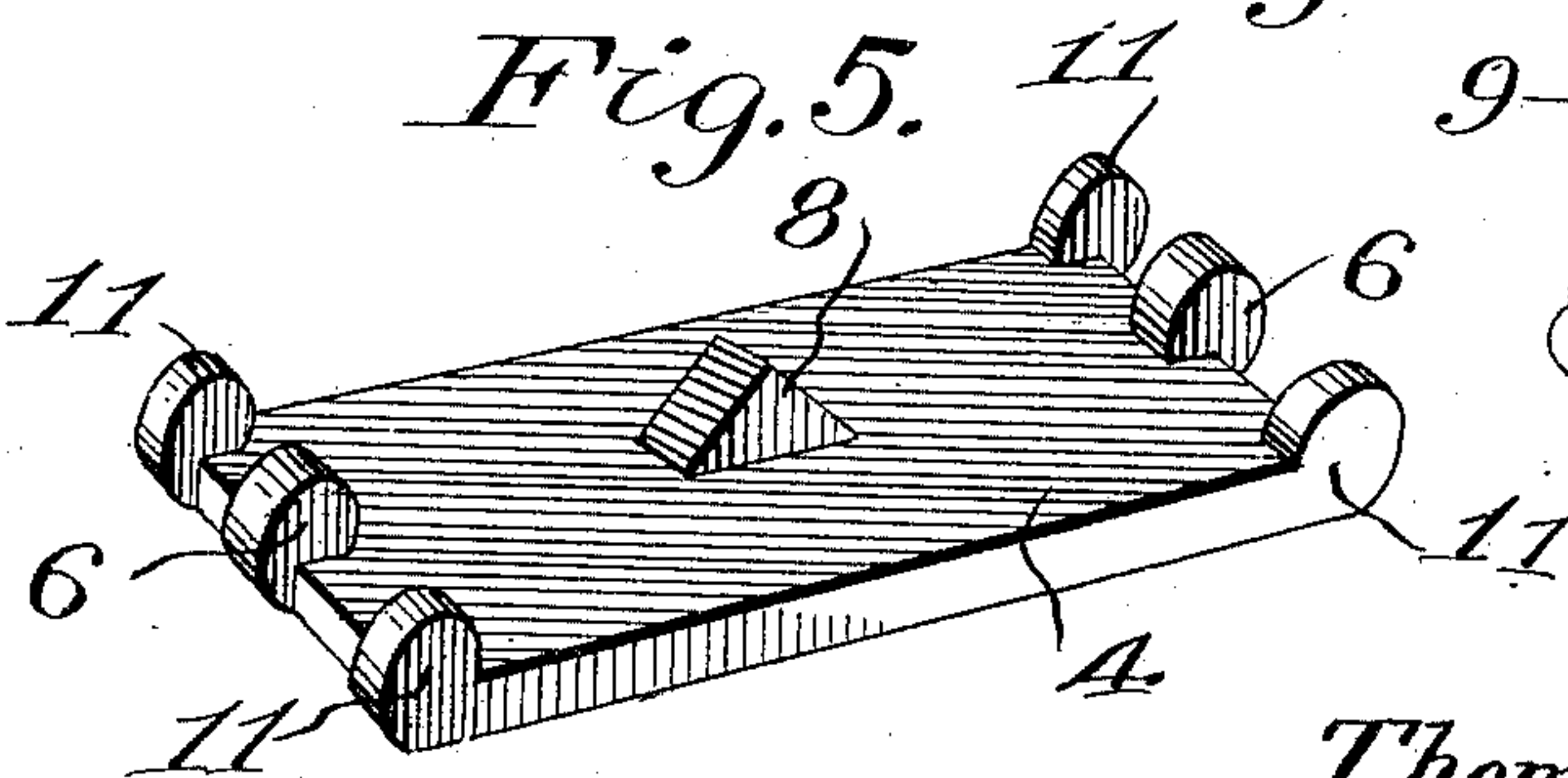


Fig. 5.



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# UNITED STATES PATENT OFFICE.

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## RAIL-JOINT.

990,691.

Specification of Letters Patent.

Patented Apr. 25, 1911.

Application filed June 16, 1909, Serial No. 502,576. Renewed February 15, 1911. Serial No. 608,708.

*To all whom it may concern:*

Be it known that I, THOMAS W. WILLIAMS, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented new and useful Improvements in Rail-Joints, of which the following is a specification.

This invention relates to rail joints, the object in view being to provide a simple, reliable and effectively braced rail joint in which the parts may be readily assembled and associated with the rail ends so that the rail ends are interlocked and relative movement thereof prevented except in a longitudinal direction to compensate for expansion and contraction due to changes in the weather.

With the above and other objects in view the invention consists in the novel construction, combination and arrangement of parts herein fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a side elevation of a rail joint embodying the present invention showing one of the ties in section. Fig. 2 is a central cross section through the same. Fig. 3 is a perspective view of one end of a rail used in connection with the joint. Fig. 4 is a perspective view of a portion of one of the fish plates. Fig. 5 is a perspective view of the key plate.

In carrying out the present invention each of the abutting ends of the rails 1 is provided in the web 2 thereof with a key seat 3 extending horizontally and lengthwise of the web from the extreme end of the rail backward a suitable distance commensurate with the length of the key plate. This key seat 3 is in the form of a slot being of the proper width to agree with the thickness of a key plate 4 approximately one-half of which is adapted to fit into said key seat in the manner indicated in Fig. 1.

At its inner end the key seat is provided with a recess 5 substantially circular in shape and adapted to receive a key lug of

corresponding shape at the adjacent end of the key plate. Adjacent to its outer end, the upper wall is cut away or beveled as shown at 7 to receive a portion, approximately one-half, of a wedge-shaped lug 8 extending upward from the upper surface of the key plate 4 as shown in Fig. 5.

The key plate 4 is of a width greater than the combined thickness of the web 2 of the rail and the fish plates 9 arranged at opposite sides of the rail ends so that said key plate is adapted to extend transversely through the key seats 3 and also through corresponding key slots 10 in the oppositely located fish plates. The key plate 4 is further provided with shoulder lugs 11 at each of the four corners thereof as clearly shown in Fig. 5, which shoulder lugs are adapted to bear against the opposite outer faces of the fish plates in the manner shown in Figs. 1 and 2 thereby retaining the fish plates in close engaging contact with the rail ends. The fish plates are provided with spike notches which are adapted to receive the usual spikes by means of which the fish plates are securely fastened down on the ties.

It will be understood from the foregoing description that after the rail ends have been brought together, the key plate 4 is slid into place in a direction at right angles to the length of the rails, and then the fish plates are slid into engagement with the key plate by moving said fish plates horizontally on the opposite sides of the rails until all the parts are brought into the relation shown in Figs. 1 and 2. The spikes are then driven into the tie through the notches of the fish plates, thus preventing any movement of the fish plates and holding all of the parts in interlocking engagement.

I claim:

In a rail joint, rail ends formed with open ended key seats extending longitudinally of the webs thereof and enlarged at their inner ends and also at their outer ends, in combination with a key plate adapted to fit

into said seats at opposite ends and provided with key lugs receivable laterally in the enlarged opposite ends of the seats and a wedge-shaped projection receivable in the other ends of the key seats, shoulder lugs on the key plate at opposite sides of the key lugs, and fish plates formed with key slots adapting them to be slid into place be-

tween the shoulder lugs and the web of the rail.

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

THOMAS W. WILLIAMS.

Witnesses:

CHARLES E. BELCHER,  
FRED W. POSTLE.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

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