

F. M. WEAVER.
RAILWAY TIE.
APPLICATION FILED OCT. 29, 1908.

913,246.

Patented Feb. 23, 1909.

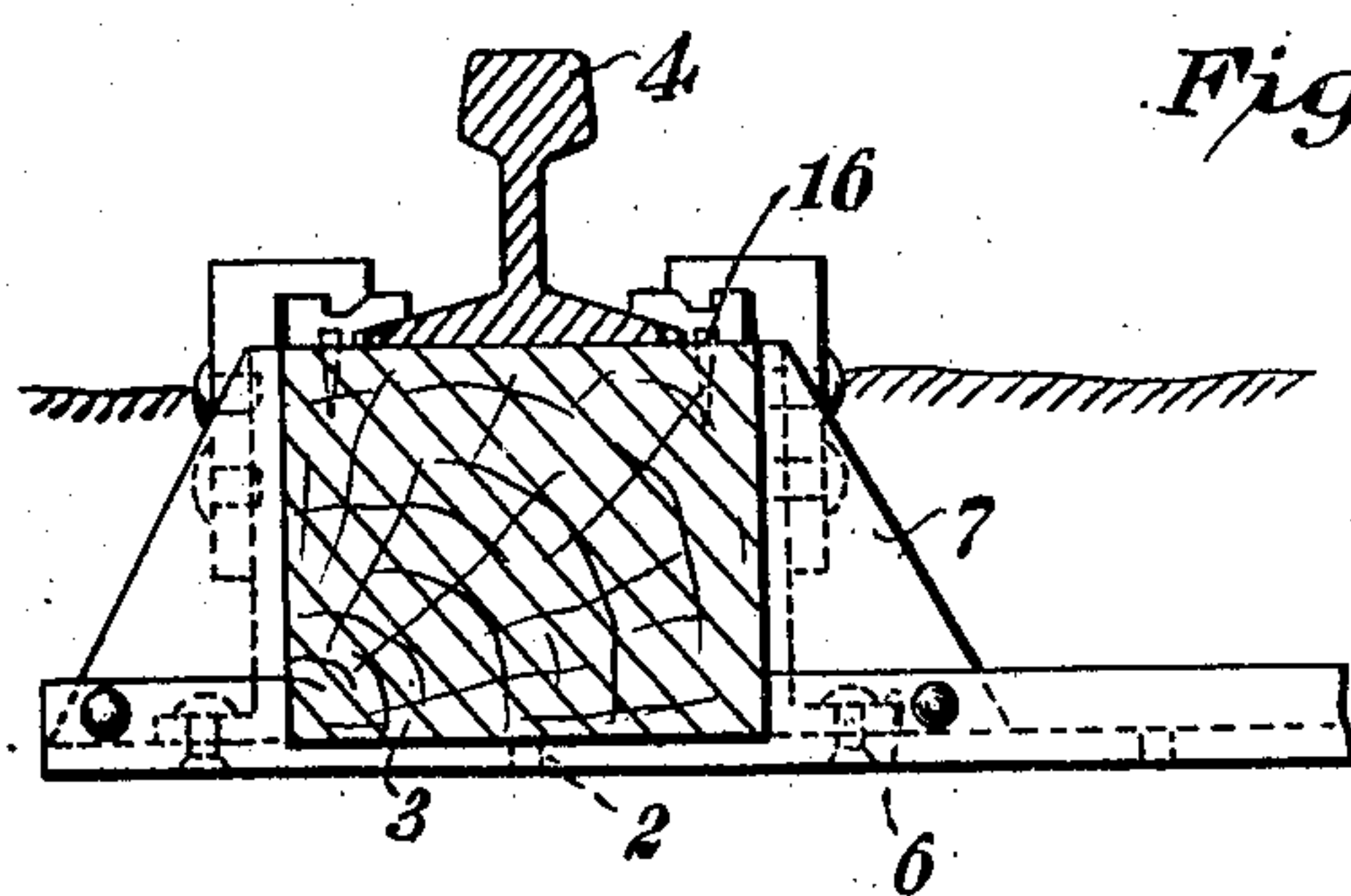


Fig. 1.

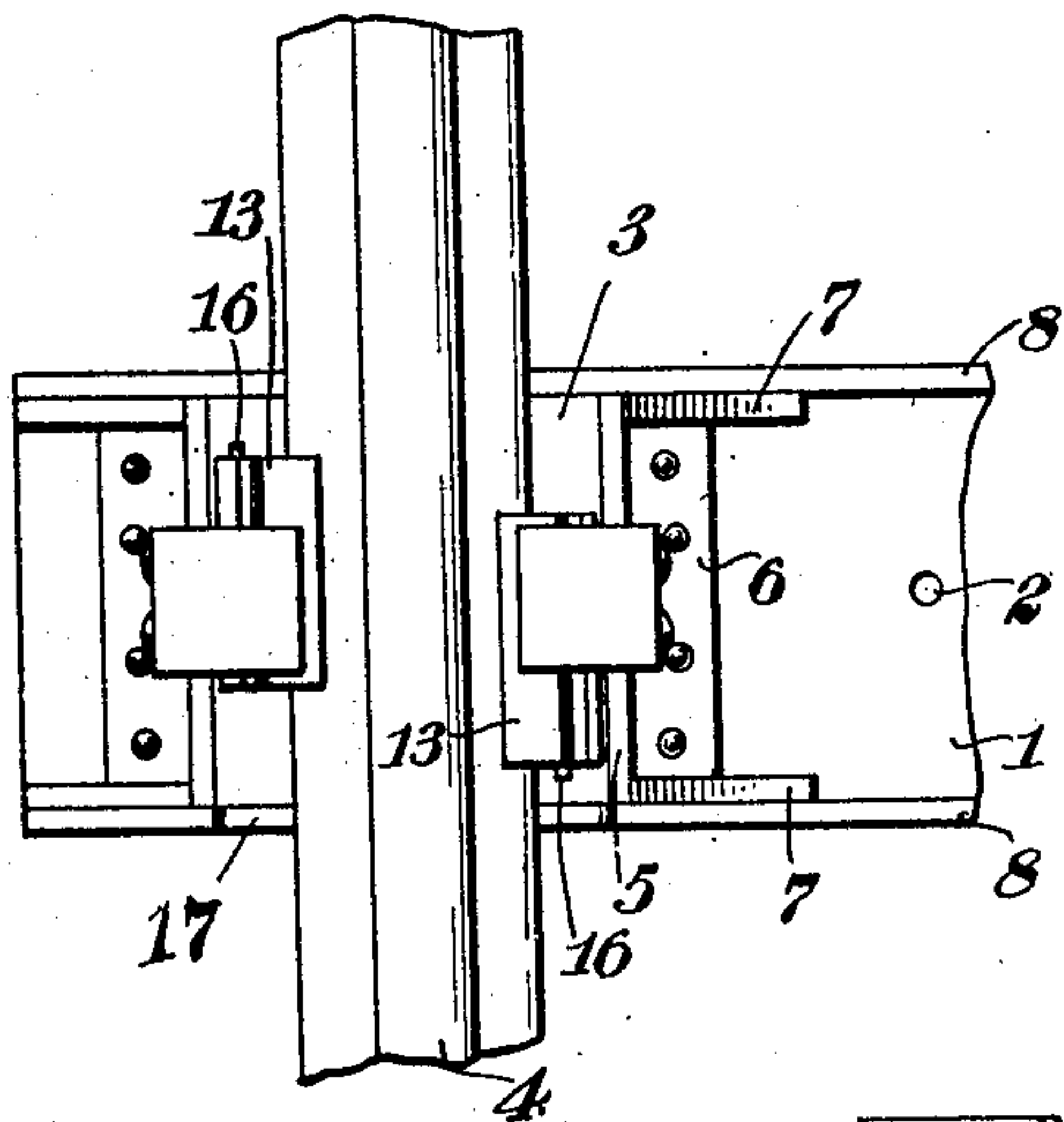
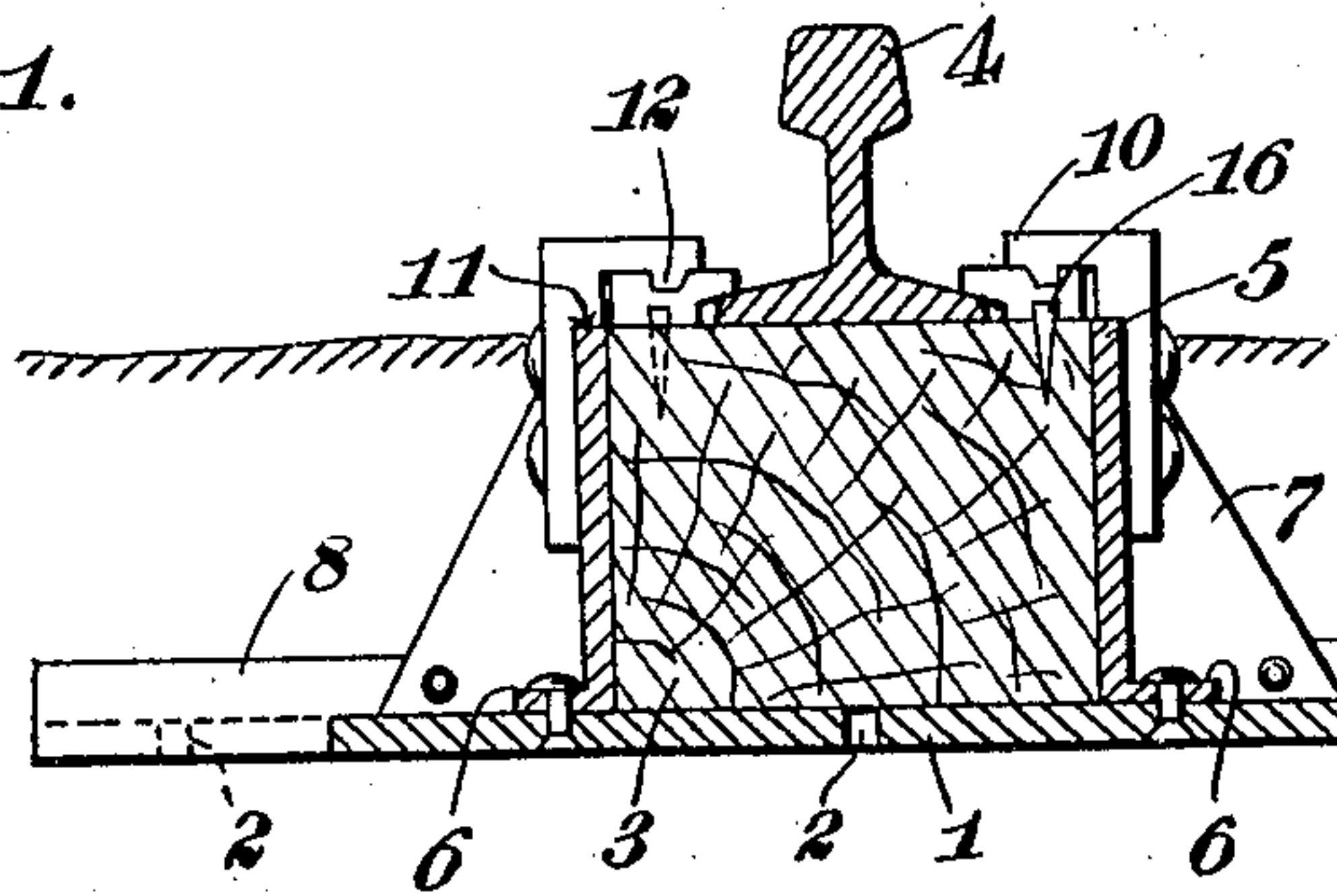


Fig. 2.

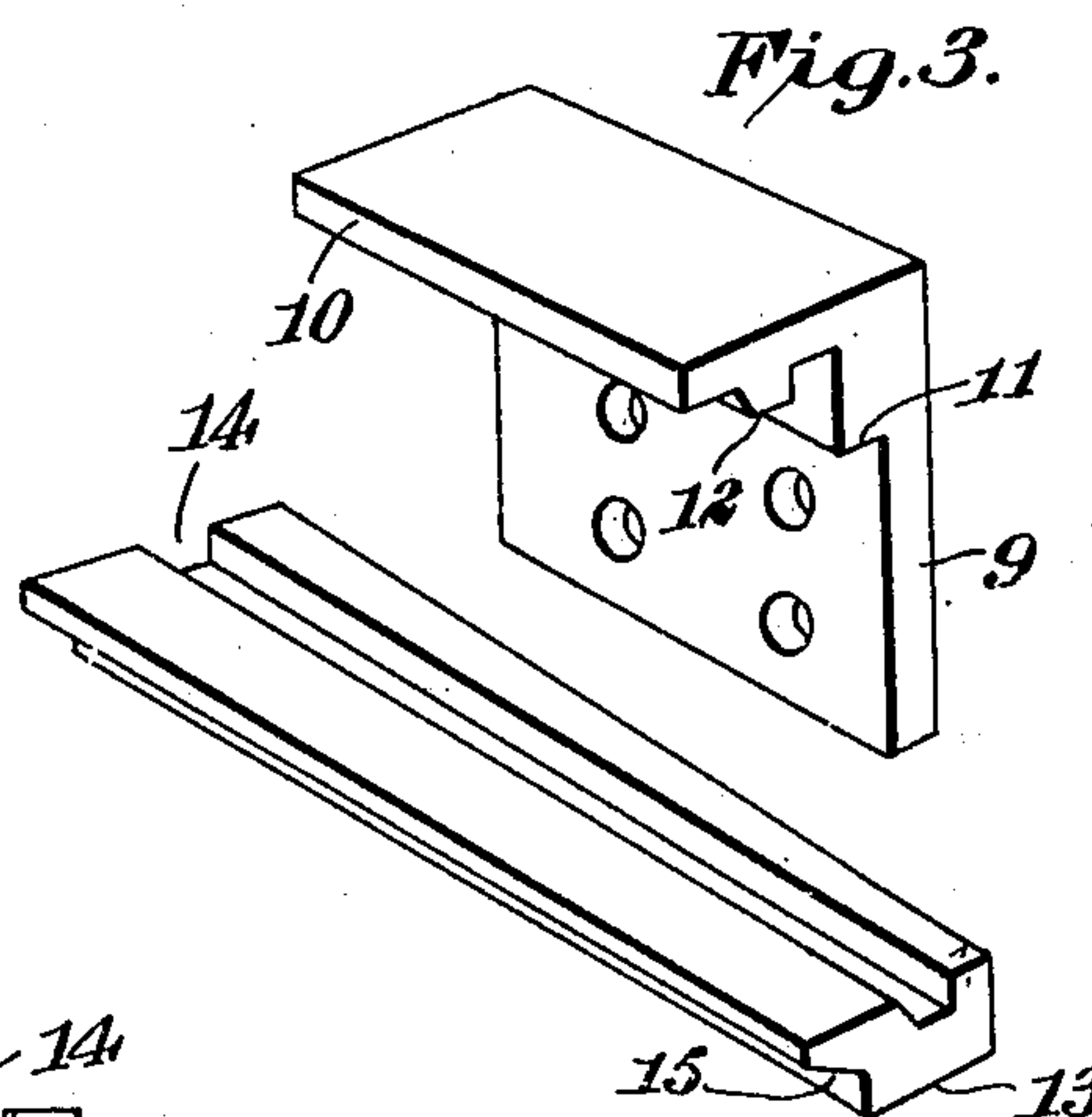


Fig. 4.

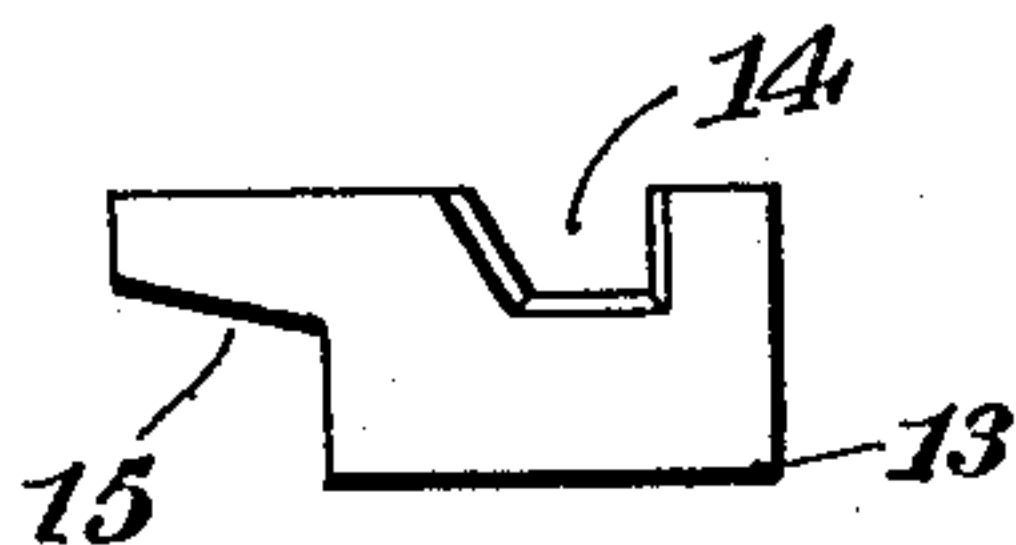


Fig. 5.

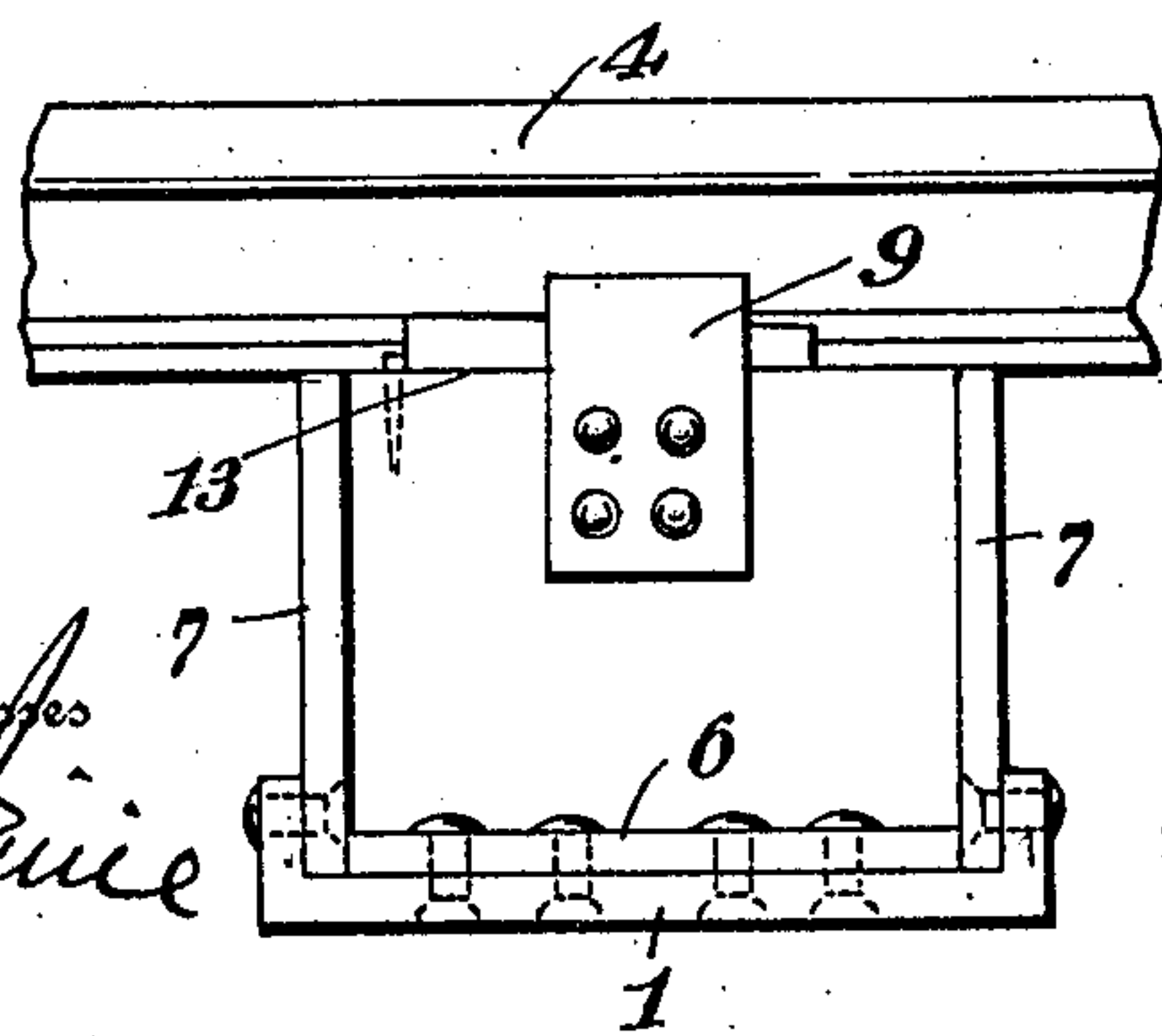


Fig. 6.

Witnesses

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FRANCIS MARION WEAVER, OF PHILADELPHIA, PENNSYLVANIA.

RAILWAY-TIE.

No. 913,246.

Specification of Letters Patent.

Patented Feb. 23, 1909.

Application filed October 29, 1908. Serial No. 460,099.

To all whom it may concern:

Be it known that I, FRANCIS MARION WEAVER, citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Railway-Ties, of which the following is a specification.

This invention pertains to the construction of railways and more particularly to the road bed and is designed to provide a tie and rail fastening means of novel formation, the tie being essentially of metal such as steel and provided at its ends with elastic seats, such as wooden blocks to absorb vibration and thereby prevent wear and tear upon rolling stock instead of the use of unyielding ties wholly of metal, concrete, or the like.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof still the preferred embodiment of the invention is shown in the accompanying drawings.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a transverse section of a railway embodying the invention, the intermediate portion being broken away. Fig. 2 is a top plan view of an end portion of a tie, a portion of the rail and the fastening means securing the rail to the tie. Fig. 3 is a detail perspective view of a bracket. Fig. 4 is a detail perspective view of a key cooperating with the bracket and serving to secure the rail upon its seat. Fig. 5 is an end view of the key. Fig. 6 is an end view of a tie showing a portion of a rail mounted thereon and the relation of the rail fastening means.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

In accordance with this invention, a metal tie 1 is provided, the same being channeled in its upper side and comprising a base plate and upwardly extending flanges at the longitudinal edges of the base plate. Openings 2 are provided at intervals in the bottom of the tie and serve as outlets for water, thereby

preventing rusting of the tie and rapid decay of the fibrous or elastic seats. The tie may be rolled, cast or formed in any desired way.

A block 3 is mounted upon each end of the tie and constitutes a seat for the rail 4. Said blocks are of wood and are arranged with the grain at a right angle to the length of the rails so as to prevent splitting and insure a long period of service. A clamp is placed against each end of the blocks and is secured to the tie. The clamp comprises an upright portion 5, a base 6 and end pieces 7, the latter lying against the inner sides of the flanges 8 of the tie, and the upright 5 touching the block, whereas the base 6 is fastened to the base or bottom of the tie. The end pieces 7 are upwardly deflected and constitute braces to strengthen the uprights 5, thereby preventing any possible movement of the blocks 3 or the rails mounted thereon. A bracket is secured to each clamp and comprises angularly disposed members 9 and 10. The member 9 is riveted, or otherwise secured to the upright 5 of the clamp, and is shouldered at 11 to overhang the upright 5 whereby a substantial structure is provided. The member 10 overhangs the block or rail seat 3 and is provided upon its under side with a longitudinal rib 12. A key 13 coöperates with each bracket and is gradually tapered throughout its length and is formed in its top side with a longitudinal groove 14 corresponding to the rib 12 to receive the latter. The edge portion of the key adjacent to the foot of the rail is rabbeted as indicated at 15 to receive the edge portion of the base or foot of the rail, with the result that a portion of the key overhangs the foot of the rail as clearly indicated in Fig. 1, thereby preventing vertical displacement of the rail. The keys 13 are preferably driven under the overhanging portions 10 of the brackets upon opposite sides of a rail in opposite directions, as indicated in Fig. 2. When the keys are driven home, they bind by a wedging action. To prevent outward displacement of the keys pins 16 are driven into the blocks and engage with the outer ends of the keys.

It is not necessary to secure the blocks or rail seats 3 to the clamps, since when the parts are assembled the weight of the rails and the coöperation of the keys and brackets serve to hold the parts 3 in place. When it is required to renew the blocks at any time the same may be quickly accomplished, it

being necessary only to remove the keys 13 and force the block out through an opening formed by cutting away a portion of a flange 8 as shown at 17. The construction is such
5 that the tie may be embedded thereby preventing appreciable contraction and expansion. The wooden blocks forming the rail seats 3 may be cheaply replaced without
10 entailing the expense incident to the supplanting of a wooden tie. If the blocks of a tie wear unequally, it is necessary only to replace the block that has become worn. The construction is such as to admit of the
15 gage of the track being easily maintained, this being accomplished mainly by the position of the clamps and brackets when first attached to the ties, any slight adjustment
20 being effected by proper manipulation of the keys 13, it being understood that one key may be loosened upon one side of a rail and the key upon the opposite side tightened.

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

1. In combination a metal tie, a fibrous
25 rail seat mounted thereon, clamps secured to the tie and engaging opposite portions of the rail seat, brackets attached to the clamps and comprising portions overhanging the rail seat and having longitudinal

ribs on their under sides, and keys located 30 between the overhanging portions of the brackets and engaging opposite edge portions of the foot of the rail mounted upon the rail seat, said keys having longitudinal
35 grooves in their upper sides to receive the aforementioned ribs.

2. In combination, a metal tie, a fibrous rail seat mounted thereon, clamps secured to and engaging opposite portions of said rail seat, brackets, each consisting of a
40 vertical and horizontal member, the vertical members of the brackets being attached to the clamps and shouldered near their upper ends to extend over the upright portions of said clamps, the horizontal portions of the
45 brackets having longitudinal ribs on their inner sides and keys engaged under the overhanging portions of the brackets, and grooves in their upper sides and rabbeted in their inner edges to receive the edge por-
50 tions of the foot of the rail.

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

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Witnesses:

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