

(No Model.)

R. H. SOULE.
RAIL JOINT.

No. 408,543.

Patented Aug. 6, 1889.

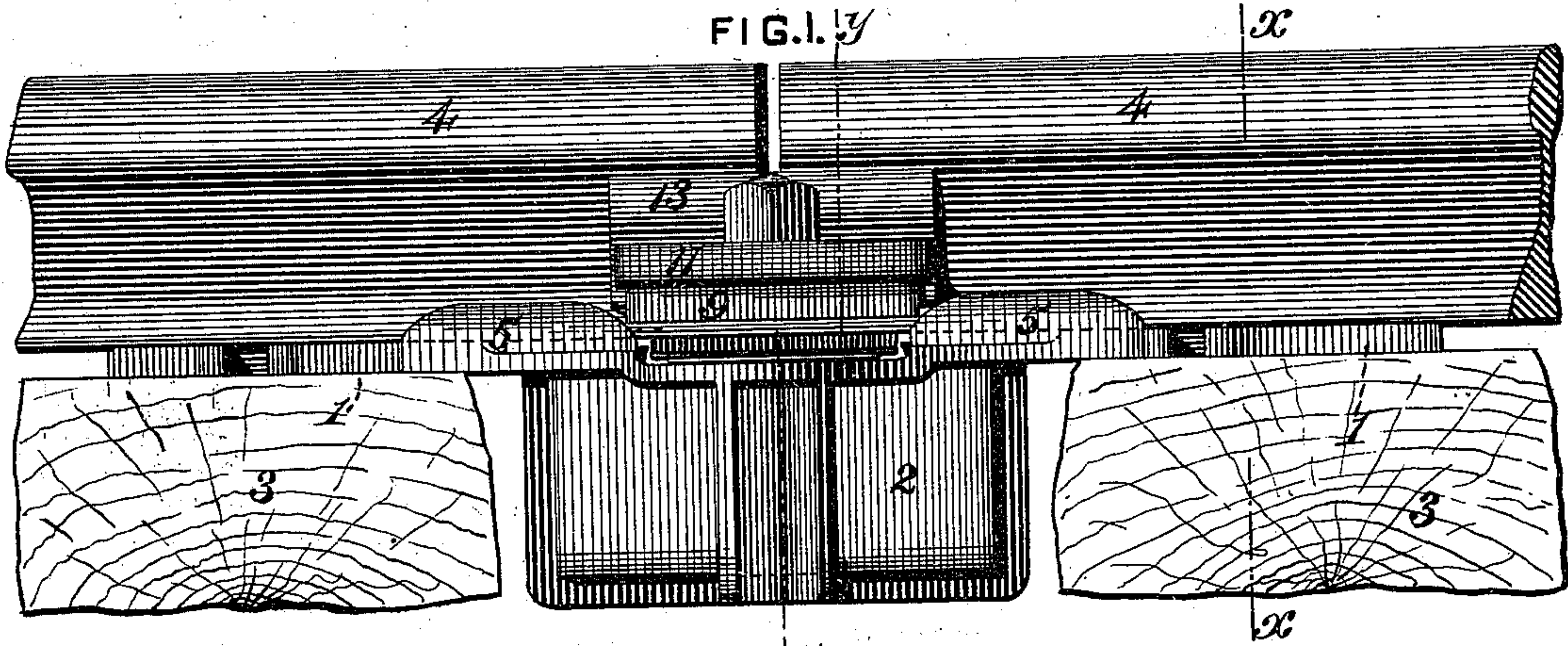


FIG. 2.

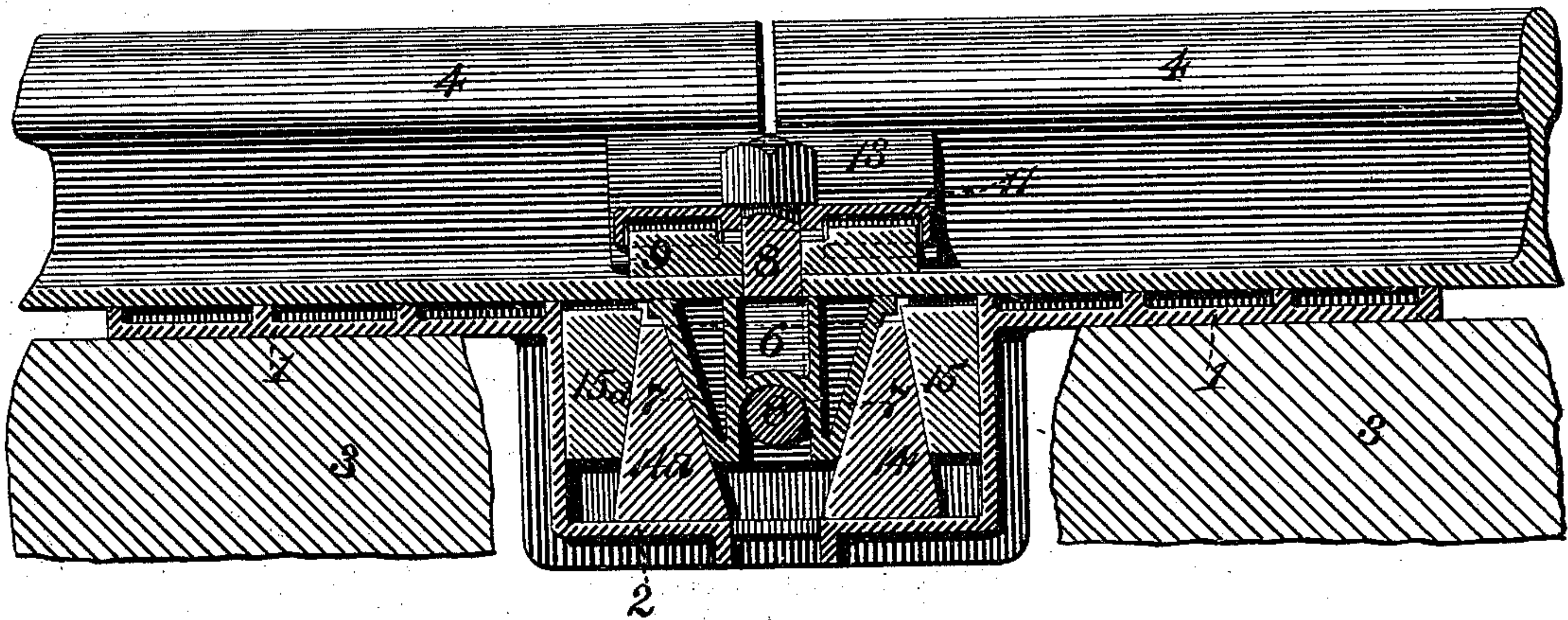


FIG. 3.

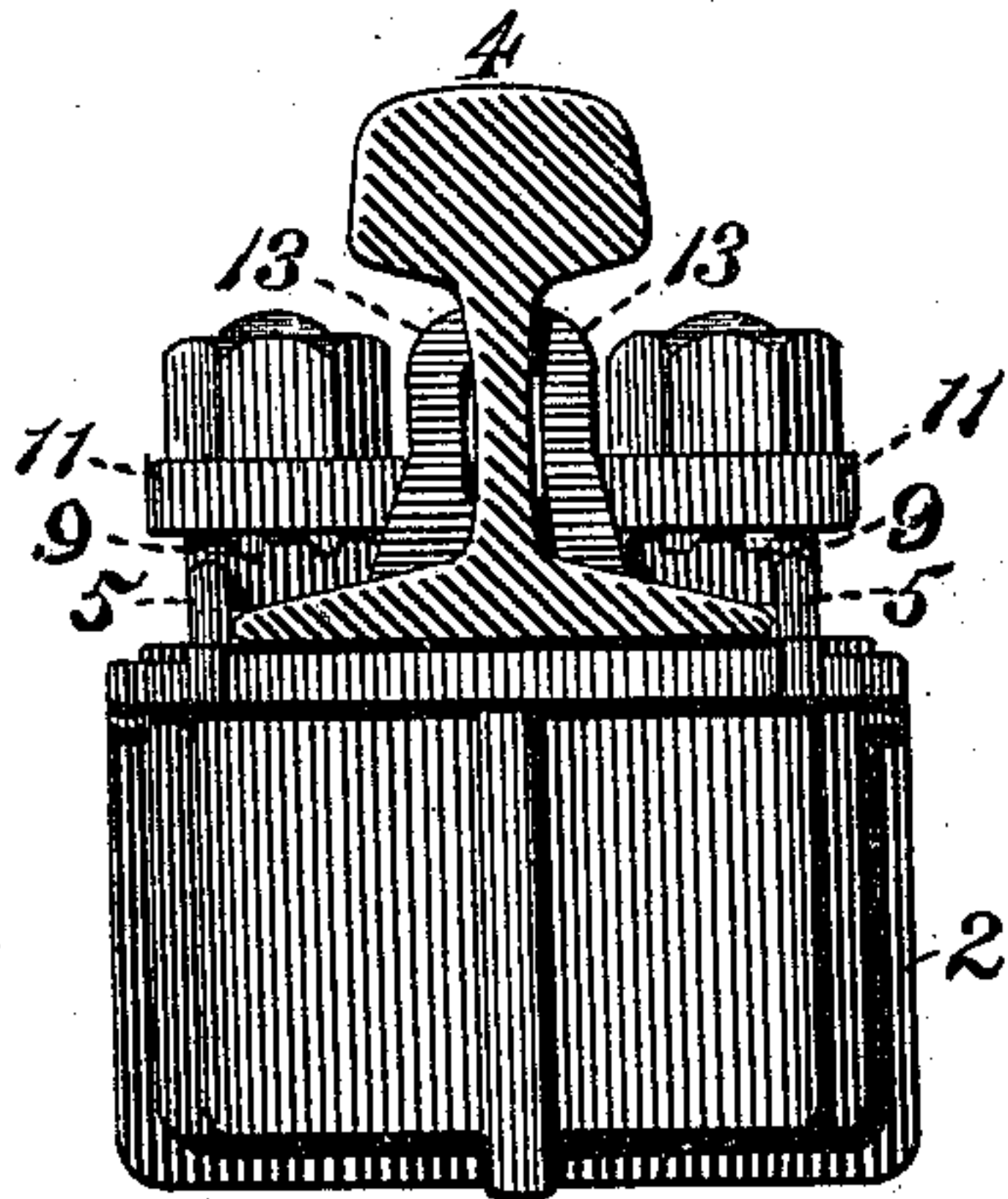
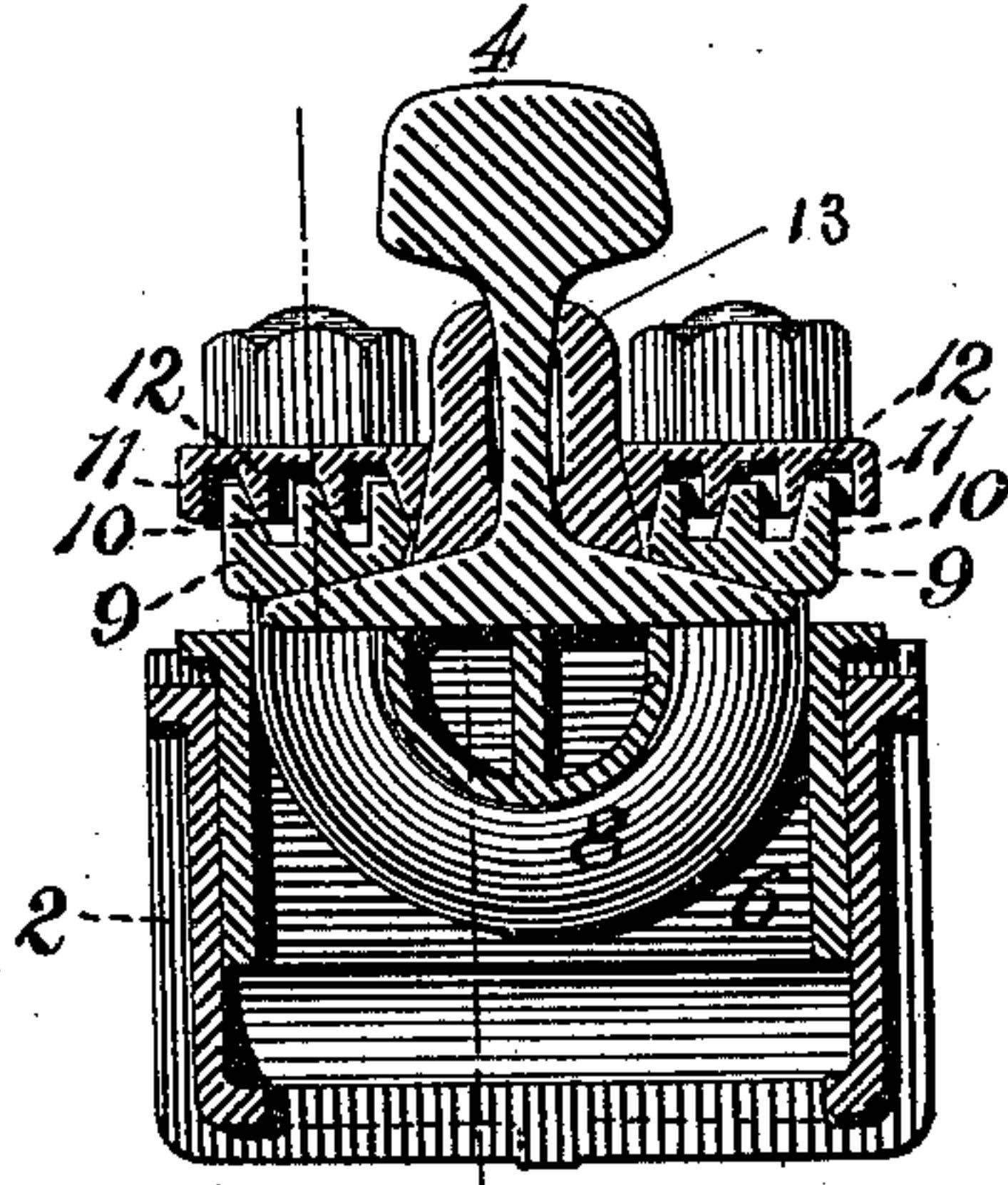


FIG. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

RICHARD H. SOULE, OF PITTSBURG, PENNSYLVANIA.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 408,543, dated August 6, 1889.

Application filed May 15, 1889. Serial No. 310,836. (No model.)

To all whom it may concern:

Be it known that I, RICHARD H. SOULE, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered a certain new and useful Improvement in Rail-Joints, of which improvement the following is a specification.

The invention described herein relates to certain improvements in railroad-rail joints, and has for its object the provision of a firm and solid support or foundation for the abutting ends of rails, thereby securing the maintenance of the tread-surfaces of the rails in practically the same plane, and in consequence thereof avoiding all liability of the heads of the rails being battered by the passage of wheels over the joints.

In the accompanying drawings, forming a part of this specification, Figure 1 is a view in elevation of a rail-joint having my invention applied thereto. Fig. 2 is a view of the same, partly in section and partly in elevation. Fig. 3 is a sectional elevation on the line *x x*, Fig. 1; and Fig. 4 is a similar view on the line *y y*, Fig. 1.

In the practice of my invention the wings 1, formed on opposite sides of the box 2, are supported by adjacent cross-ties 3, the box hanging, as it were, between the ties, as shown in Figs. 1 and 2. The adjacent ends of rails 4 are arranged on the wings 1, the plane of contact of the rail ends coinciding, approximately, with a plane passing transversely through the middle of the box 2, which, as shown in Figs. 2 and 4, is open on its upper side, the rails being guided into line with each other by flanges 5, formed on the edges of the wings 1, at or adjacent to the points of junction with the box 2, as shown in Figs. 1 and 3, said flanges also serving to strengthen the wings at that point.

Beneath the ends of the rails is arranged a block 6, having inclined outer faces 7 and a curved seat for the reception of the U-shaped bolt 8, whose threaded ends project up through suitable notches in the flanges of the rails on opposite sides of the web. On top of the rail-flanges I place plates 9, having upwardly-projecting teeth or ribs 10, with inclined inner faces, as shown in Fig. 4, and on top of the plates 9, I place plates 11, provided with down-

wardly-projecting ribs 12, having inclined outer faces, the ribs 12 alternating with the ribs 10. The plates 11 are made of such a width that when the inclined faces of the ribs 10 and 12 partially engage each other the inner edges of the plates 11 will bear against the splice-bars 13, arranged against the webs of the rails and overlapping the ends thereof, as shown in Figs. 1 and 2, and as the plates 11 are pressed down by the nuts on the U-shaped bolts 8 said plates and the splice-bars will be forced tightly against the webs of the rails, holding the latter in perfect alignment. Within box 2 and on opposite sides of the block 6 are placed the oppositely-arranged wedge-blocks 14 15 and 14^a 15^a, as shown in Fig. 2, the inner faces of the blocks 14 14^a coinciding as to inclination with the faces 7 of the blocks 6 and the adjacent faces of the blocks 14 15 and 14^a 15^a also coinciding as to inclination, while the outer faces of the blocks 15 15^a are made straight, fitting the sides of the box 2. As shown in Fig. 2, the adjusting wedge-blocks 15 15^a, operating by gravity, tend to force the blocks 14 14^a inwardly against the rail-supporting block 6, and also hold said blocks 14 14^a as against any outward movement when operated on by the block 6, the taper of the adjusting-blocks being such as will not render them liable to be raised when pressed upon by the adjustable blocks 14 14^a. It will be observed that the adjusting-blocks 15 15^a operate solely through gravity, the flange of the rails not having any bearing on their ends.

In adjusting my improved joint to the rails the adjustable block 14 14^a are first placed in position, then the supporting-blocks is arranged between them, and the adjusting-blocks 15 15^a are finally pressed between the sides of the box and the blocks 14 14^a. The rails are then placed and secured in position by the U-shaped bolt, the plates 9 and 11, and splice-bars 13, as hereinbefore described. As a load passes along a rail having its ends supported by my device, the weight will cause a slight depression of the middle portion of the rail and a corresponding elevation of the ends of said rail. As the ends of the rails rise, the block 6 will be lifted up away from the adjustable blocks 14 14^a, which will then be moved inward against the block 6 by the adjusting-blocks 15 15^a, thereby preventing any

downward movement or deflection of the rail ends when the load comes upon them. This automatic adjustment of the rail ends will continue until said ends have been raised to
5 a normal level, no further elevation occurring, except such as may be necessary to compensate for the settling of the cross-ties.

I claim herein as my invention—

10 1. In a rail-joint, the combination of a supporting-block arranged beneath adjacent rail ends, plates having inclined engaging-ribs, fish-plates arranged along the webs of the rails, and a U-shaped bolt, substantially as set forth.

15 2. In a rail-joint, the combination of a box having supporting-wings, a wedge-shaped block supporting adjacent rail ends and projecting down into the box, adjustable blocks

arranged on opposite sides of the supporting-block, and adjusting-blocks interposed between the adjustable blocks and the sides of the box, substantially as set forth. 20

3. In a rail-joint, the combination of a block supporting adjacent rail ends and automatically-operating devices for supporting said 25 block and rail ends at a height to which the rails are raised by the passage of a normal load over the middle portion of the rail, substantially as set forth.

In testimony whereof I have hereunto set 30 my hand.

RICHARD H. SOULE.

Witnesses:

DARWIN S. WOLCOTT,

R. H. WHITTLESEY.