

No. 706,374.

Patented Aug. 5, 1902.

H. O. BALDWIN, Dec'd.

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RAIL JOINT.

(Application filed Mar. 1, 1902.)

(No Model.)

Fig. 1.

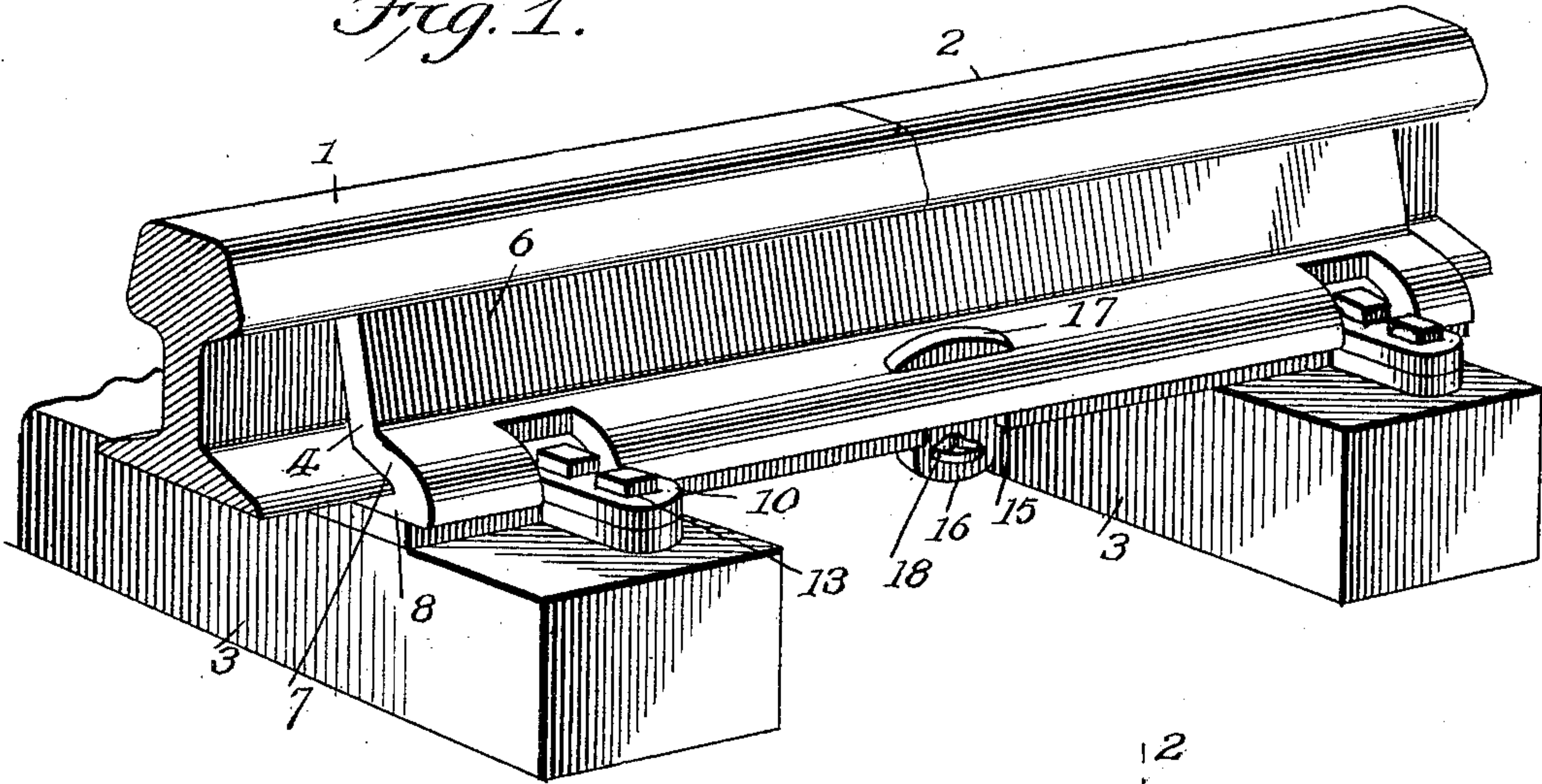


Fig. 2.

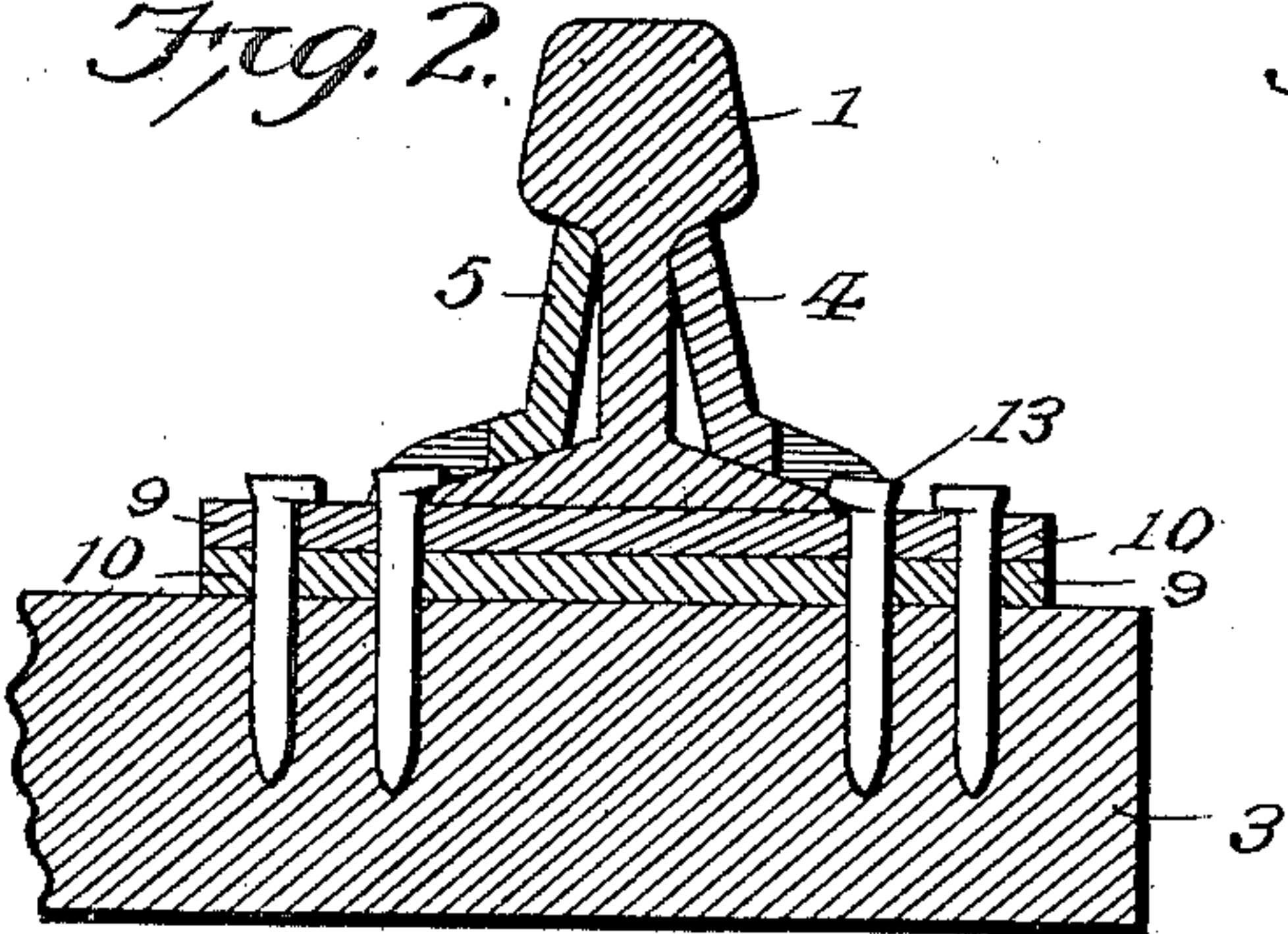


Fig. 3.

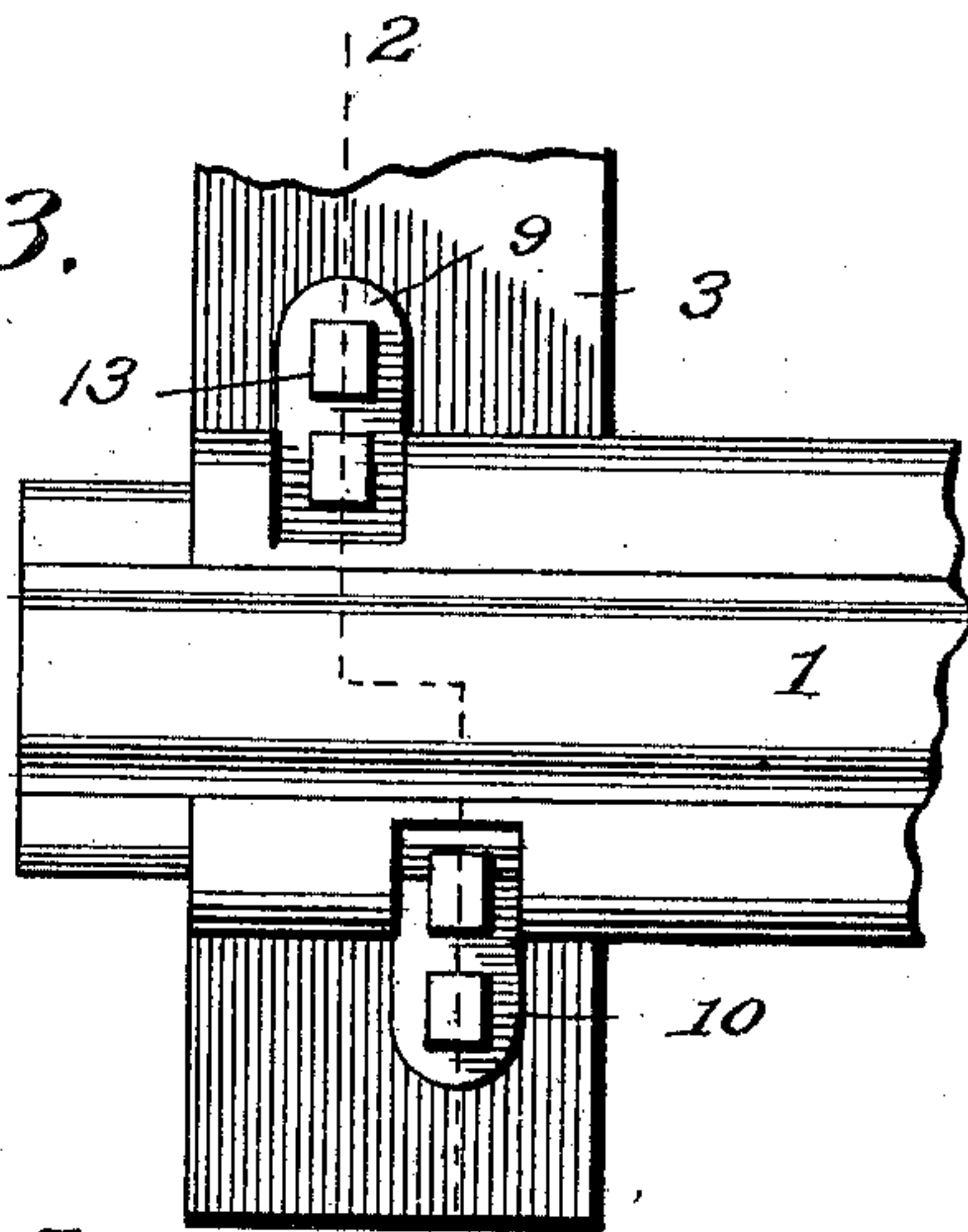


Fig. 4.

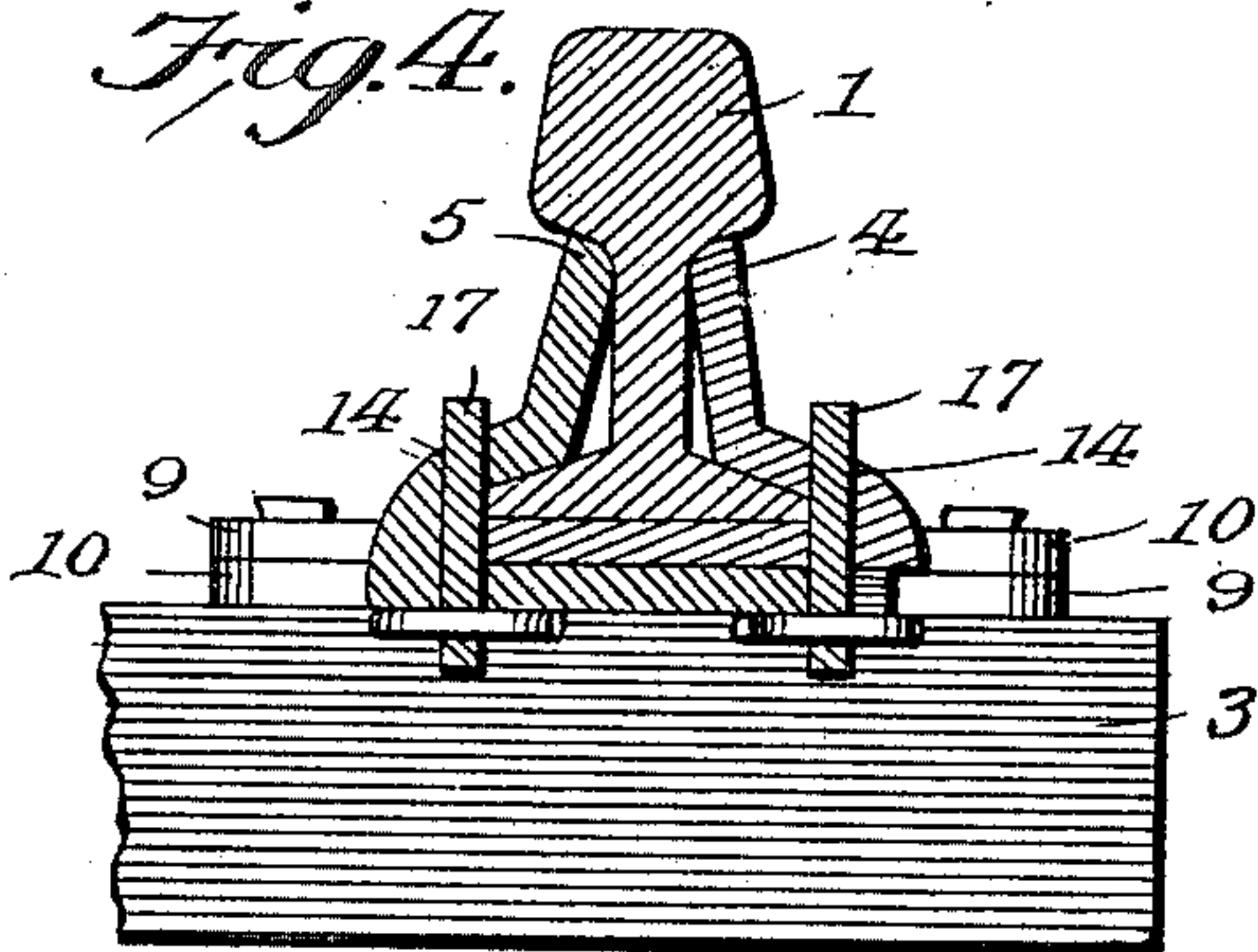
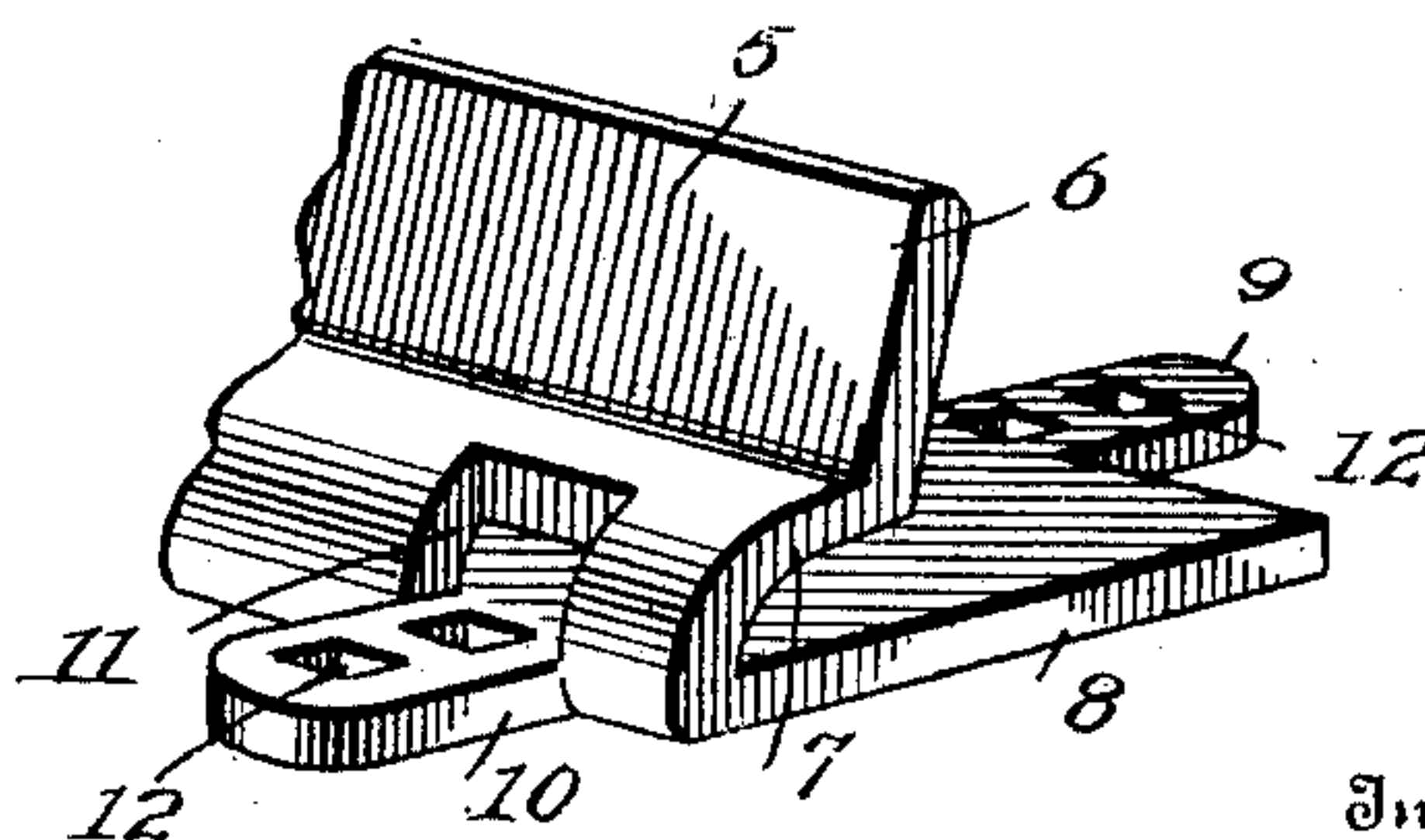


Fig. 5.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 706,374, dated August 5, 1902.

Application filed March 1, 1902. Serial No. 96,334. (No model.)

*To all whom it may concern:*

Be it known that I, HORACE O. BALDWIN, a citizen of the United States, residing at New Brighton, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification.

This invention relates to a rail-joint, and particularly to means for firmly securing the same.

In the construction of railroads it is imperative that the conterminous ends of adjacent rails be connected in such manner as to prevent relative independent vertical and lateral play and at the same time provide adequate support for the ends of the rails which will permit longitudinal movement due to the expansion or contraction of the rails and also to avoid annoyance and discomfort to passenger traffic as well as cost in the repair and maintenance of rolling-stock. It is deemed a material advantage to dispense with the use of transversely-extending connecting-bolts having securing-nuts, and thereby reduce the cost of construction and also the inconvenience arising from the nuts loosening under the vibration of the rails and avoid the constant vigilance usually required to keep the nuts tightened. The improved construction and arrangement of parts, which will be hereinafter more fully set forth, have for their object the accomplishment of the advantages just set forth and the avoidance of the disadvantages also specified.

In the drawings, Figure 1 is a perspective view of a rail-joint embodying the features of the invention. Fig. 2 is a transverse vertical section on the line 3 3, Fig. 3. Fig. 3 is a top plan view of a portion of the improved joint. Fig. 4 is a central transverse vertical section through the joint. Fig. 5 is a detail perspective view of a portion of one of the clamping members.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numerals 1 and 2 designate rail-sections which are arranged to conterminally abut and are disposed on ties 3 in the usual manner. The improved structure or organization comprises complementary clamping

members 4 and 5, each having an upwardly and inwardly inclined flange 6, which bears against the under side of the heads of the rails and continues at its lower terminal in an outwardly-extending angle-flange 7; from which a horizontal base-flange 8 projects inwardly, the flanges 8 of the two members overlapping when applied to the joint of the rails, as clearly shown by Fig. 4. To accommodate the overlapping arrangement of the flanges 8, the angle-flange 6 of the member 5 is deeper and has a groove therein as much larger than the angle-flange 7 of the member 4 as the thickness of the base-flange 8 of said latter member. The base-flange 8 of the member 5 has oppositely-extending arms 9 and 10, the arm 10 extending outwardly through a slot 11 in the angle-flange 7 and the arm 9 projecting from the opposite side edge of the said base-flange. The member 4 is also provided with similar arms 9 and 10 and slots 11 in its angle-flange 7, through which the arms 10 project. The arms 9 and 10 of the base-flange 8 of the member 5 respectively coincide with and are disposed under the arms 10 and 9 of the base-flange 8 of the member 6, and all of the arms are formed with vertical apertures 12, a pair of said apertures being provided in each arm, and when the members are assembled to form the joint and hold the rail-terminals spikes or analogous devices 13 are driven through the apertures 12 of the opposite pairs of arms to secure the members in immovable position on the ties 3 and in close relation to the rail-sections. To produce a stronger construction and to preserve the ties into which the spikes or like devices 13 are driven, the oppositely-disposed arms, located on reverse sides of the rail-sections, are out of alinement, as clearly shown by Fig. 3, and it will be understood that sufficient play of the joined parts will be permitted to compensate for the contraction and expansion of the rail-sections. It will be seen also that the arrangement of the arms 9 and 10 in unalined positions will prevent the spikes or analogous devices 13 from splitting the tie, and said spikes or other devices 13 will thereby be prevented from working loose. The members 4 and 5 are also further secured to avoid undue movement at a point intermedi-



ate the ties, the angle-flanges of both members having slots 14 therethrough, and the edge portions of the base-flanges 8 at points opposite the formation of the said angle-flanges are also provided with slots 15, which open outwardly therefrom and will be disposed in vertical alinement with the slots 14 when the members are properly assembled. Through the alined slots 14 and 15 keys 16 are vertically inserted and are provided with heads 17, which rest on the upper surfaces of the angle-flanges 7, and after the keys are inserted they are held against accidental vertical disconnection by cotter or linch pins 18, transversely inserted through the lower extremities thereof. The purpose of these keys is to obstruct unusual or irregular longitudinal movement of the members on each other, and thereby avoid a drag or strain on the arms 9 and 10 and the fastenings therefor. The rail-sections 1 and 2 are free to longitudinally move in the members 4 and 5 to compensate for expansion or contraction, and it will be seen that the ordinary transversely-extending fastening-bolts are dispensed with, as well as fish-plates and the usual openings in the webs of the rails. The improved joint will materially save labor in railroad construction, as well as provide means for preventing the lateral displacement of the rail ends, and the keys 16 at the center and between the fastenings for the members in relation to the ties overcome any tendency toward lateral bulging of the members at the center and insure a level joint between the rail-heads and obstruct a depression of one head end below the other. This will prevent hammering or flattening a car-wheel and also overcome the noise and disagreeable vibration encountered in the usual methods of connecting rail ends or forming rail-joints. The double thickness of material provided by the flanges 8 at the base of the rail is also important in preventing the rail ends from being depressed, and this arrangement is especially advantageous in relieving trestles and bridges from injurious vibrations which

are experienced in the common or ordinary methods of attaching rail lengths and connecting rail ends.

Having thus fully described the invention, what is claimed as new is—

1. The combination with railroad rails and ties, of complementary clamping members having overlapped base-flanges and oppositely-extending pairs of overlapped arms, the members having upwardly and inwardly extending flanges bearing against the opposite sides of the rails and one provided with slots therethrough above its base-flange and the other having openings in alinement with its base-flange through which a portion of the arms projects, and fastenings passed through the opposite pairs of overlapping arms and driven into the ties.

2. In a device of the class set forth, the combination with railroad rails and ties, of complementary clamping members having overlapping base-flanges with outwardly-extending pairs of overlapping arms, the arms at one side of each base-flange extending through openings in the other member, and fastening devices passed through the overlapping arms and extending into the ties.

3. In a device of the class set forth, the combination with railroad rails and ties, of complementary clamping members having overlapped base-flanges and oppositely-extending pairs of arms, the flanges having openings therein for the insertion thereof through of a portion of the arms, said openings being located above the base-flange of one member and in alinement with the similar flange of the other member, fastenings passed through the overlapped arms, and a key removably inserted through the base-flanges at one side at a point between the ties.

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

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Witnesses:

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