

No. 693,788.

Patented Feb. 18, 1902.

H. T. DENSMORE.
RAIL JOINT.

(Application filed Mar. 19, 1901.)

(No Model.)

Fig. 1.

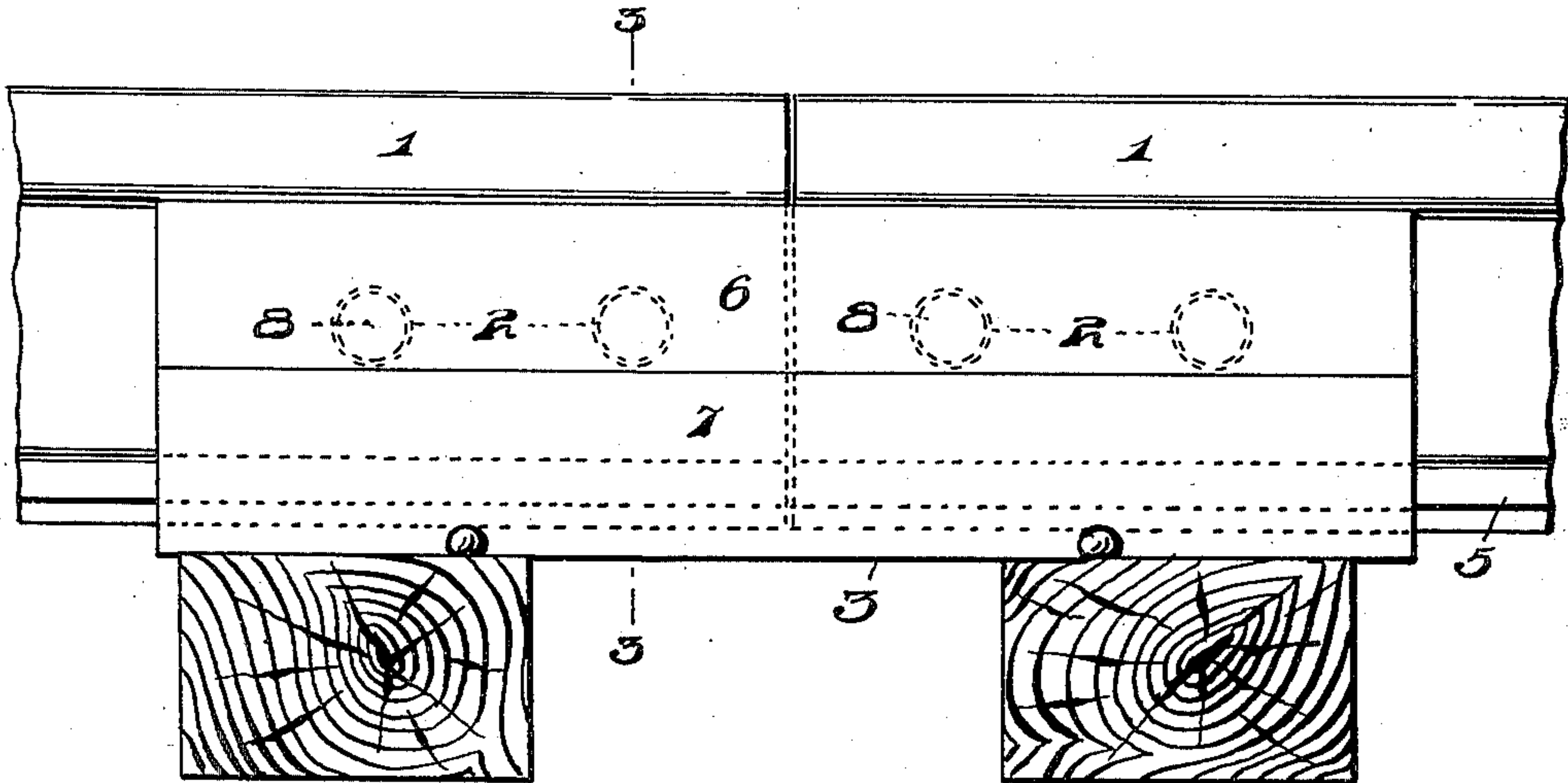


Fig. 2.

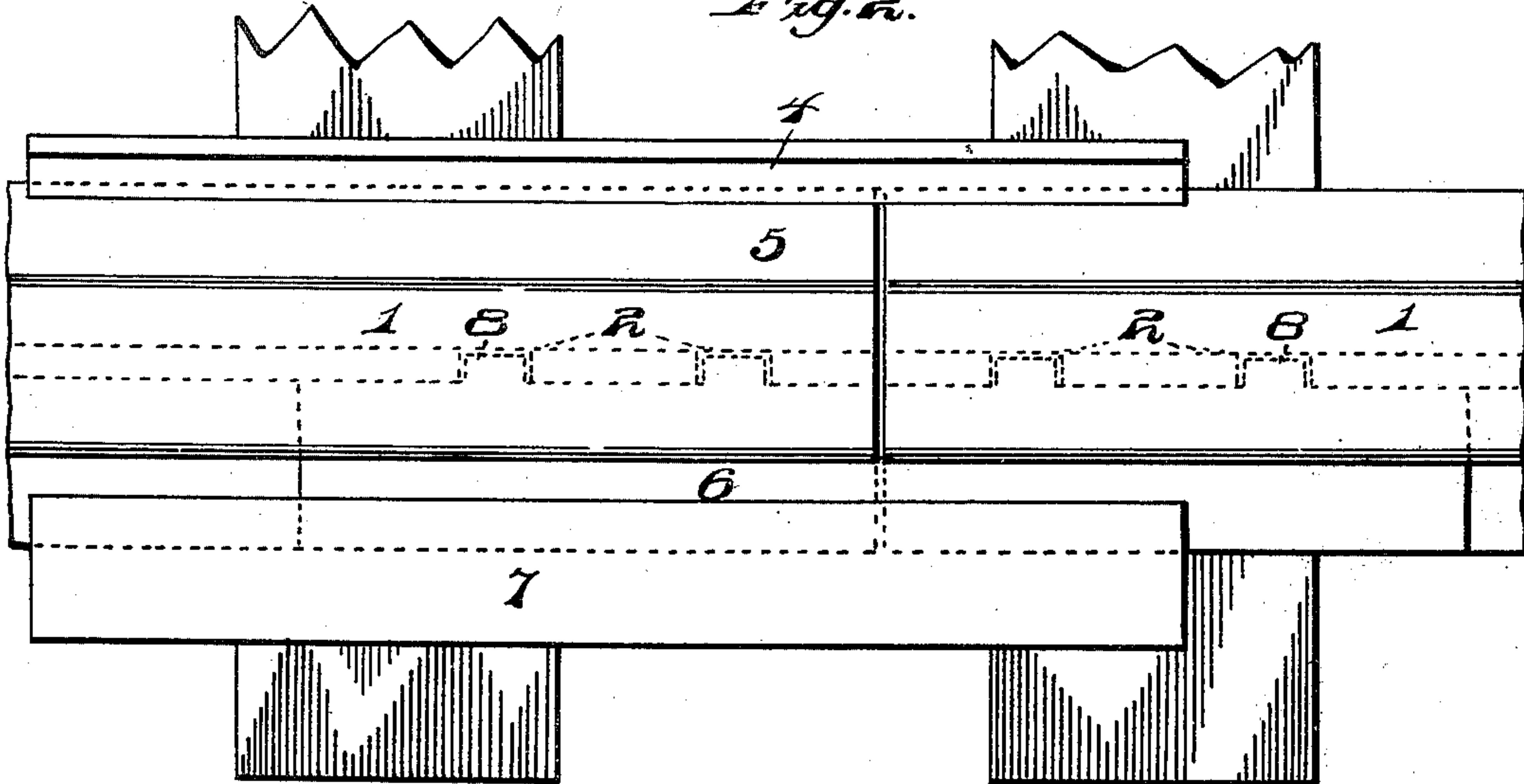
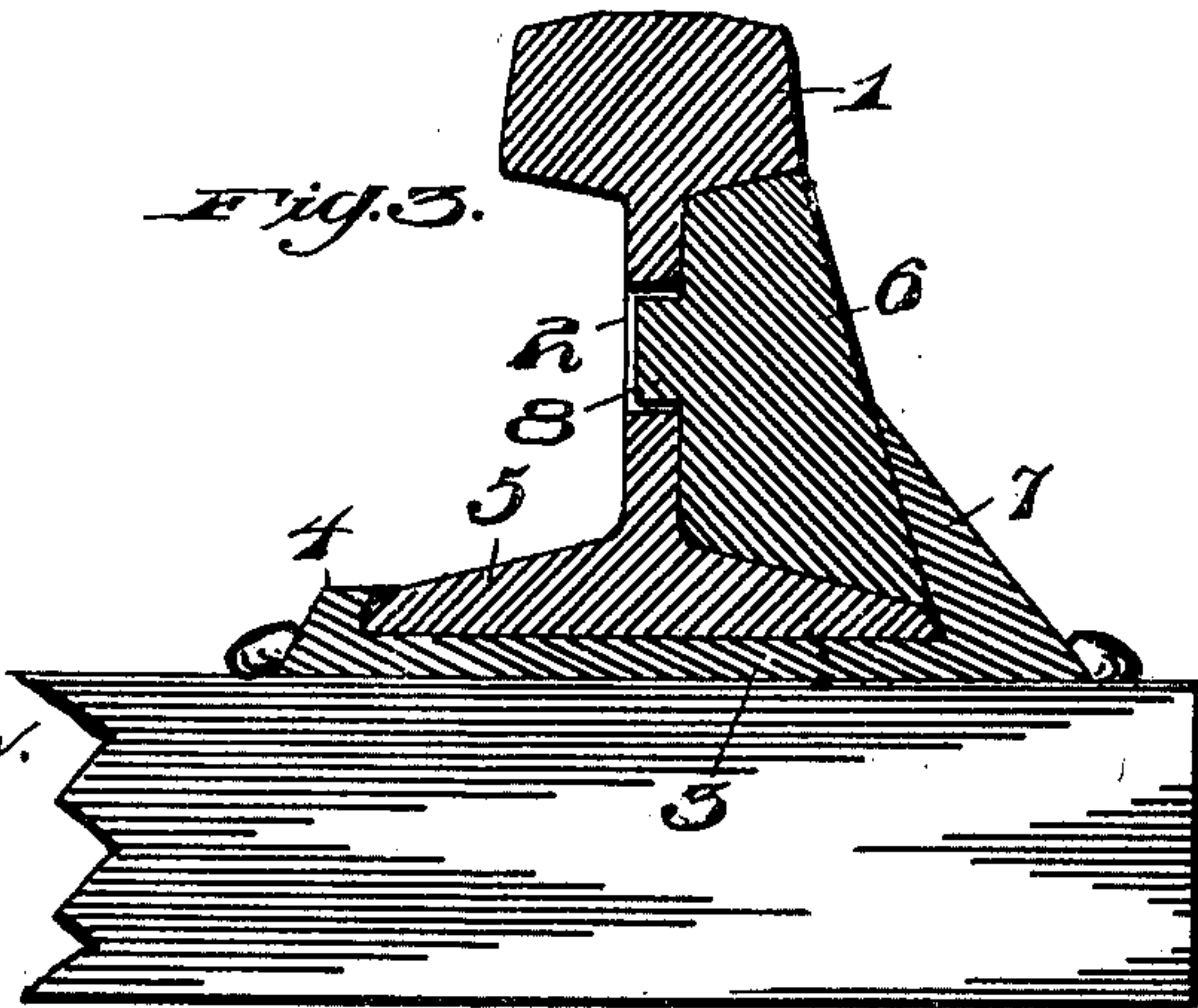


Fig. 3.



Witnesses:
J. P. Appleman.
E. C. Cottle

Inventor
H. T. Densmore.
By
W. C. Evert
Att'y's

UNITED STATES PATENT OFFICE.

HARRY T. DENSMORE, OF KNOXVILLE, PENNSYLVANIA.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 693,788, dated February 18, 1902.

Application filed March 19, 1901. Serial No. 51,849. (No model.)

To all whom it may concern:

Be it known that I, HARRY T. DENSMORE, a citizen of the United States of America, residing at Knoxville borough, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in rail-joints, and has for its object to construct a rail-joint in which the nuts and bolts, together with the employment of two fish-plates as ordinarily used, are
15 dispensed with and the joint effected by the aid of a single fish-plate having studs or pins to engage the rails and a chair-plate upon which the rails rest at their ends, which chair-plate is supported upon the cross-ties of the
20 track.

My invention will be more fully described hereinafter, and in such description reference will be had to the accompanying drawings, forming a part of this specification, wherein
25 like numerals of reference will be employed for indicating corresponding parts throughout the several views, and in which—

Figure 1 is a side elevation of a rail-joint constructed in accordance with my invention, the rails being broken away. Fig. 2 is a top
30 plan view thereof. Fig. 3 is a transverse vertical sectional view taken on the line 3 3 of Fig. 1.

In the accompanying drawings the reference-numeral 1 indicates the rails, which require no especial construction to effect a joint in accordance with my invention, they being provided with the usual holes 2 near the ends thereof.

40 To form the joint, I employ a chair-plate 3 of sufficient length to engage two of the cross-ties of the track, and this chair-plate is provided along one edge with an upwardly-extending flange 4, the inner wall of which is
45 substantially concave in cross-section and receives the one edge of the rail-base 5. At its opposite edge this chair-plate carries an upwardly-extending brace-bar 7, which is at an incline and in cross-section is substantially
50 triangular. This brace-bar impinges upon a

ing pins or studs 8 on its inner face, that engage in the apertures in the rails near the ends thereof. The fish-plate 6 is somewhat wedge-shaped in cross-section, being wider
55 along the lower edge than along the top edge, the lower edge being at an incline to conform to the top of the rail-base and the upper edge of said plate being shaped to conform to the under face of the rail-tread, against which it
60 impinges.

To place the fish-plate and chair in position, the fish-plate is placed against the web of the rails after the two rails have been placed in position, with the pins or studs 8
65 inserted in the apertures in the web of the rails. The one rail having been previously placed in the chair-plate, the latter is then moved longitudinally, so as to bind the fish-plate to the rails. This operation of effecting
70 the joint is shown in Fig. 2, wherein the chair-plate is shown moved only partially into position to embrace the fish-plate and rails. It will be observed that with this construction the rail-base is securely clasped by the flange
75 4 and the upwardly-extending brace-bar 7, the latter also binding the fish-plate securely in position, and lateral movement of the rails is absolutely prevented. The apertures in the rails are preferably made of a size suffi-
80 cient to permit expansion and contraction of the rails. After the chair-plate has been moved to the position it is to occupy the same is securely fastened to the cross-ties by spikes, as shown, or other desired means. It will be
85 observed that the brace-bar extending upwardly along the outer face of the fish-plate will securely hold this plate in engagement with the web of the rails and add strength to the joint. Should it be desired, the fish-plate
90 may be formed integral with the brace-bar, and the pins or studs could be dispensed with.

In lieu of the flange 4 I may provide apertures through the chair-plate along this edge and spike the same through these apertures
95 to the cross-ties, as will be apparent. It will also be evident in the practice of the invention that as may be required for especial shapes of rails such details may be changed in the construction as may be necessary with-
100 out departing from the general spirit of the invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

5 In a rail-joint, the combination of rails having apertures formed in the web thereof, of a chair comprising an integral flat base, an upwardly-extending flange made integral with one side of said chair, the inner wall of said flange being concave and adapted to engage
10 the top and sides of the rail-base and lie flush therewith, a brace-bar substantially triangular in cross-section made integral with the other side of said chair, the inner wall of said brace-bar being at an angle to the base of the
15 chair, and adapted to engage the other side of the said rail-base, the said brace-bar extending to a point beneath the center of the rail-web, a fish-plate, inwardly-extending lugs or pins formed integral with the inner
20 face thereof and adapted to engage in the said apertures of the rail-web, said inner face being flat and engaging the entire surface of the

rail-web, the upper and lower faces of said fish-plate converging, said upper face being of less width than the lower face and adapted 25 to engage the under face of the tread throughout the entire surface thereof, the said lower face of said fish-plate adapted to engage the entire surface of the upper face of the rail-base, the outer face of said fish-plate being flat 30 throughout the entire surface thereof, and in alinement with the outer face of the rail-tread and adapted to be engaged by the entire inner surface of the brace-bar, the outer lower faces of the said flange and brace-bar being at an 35 acute angle to the chair-base, and spikes adapted to engage said faces and the rail-ties, substantially as described.

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

HARRY T. DENSMORE.

Witnesses:

JOHN NOLAND,
A. M. WILSON.