

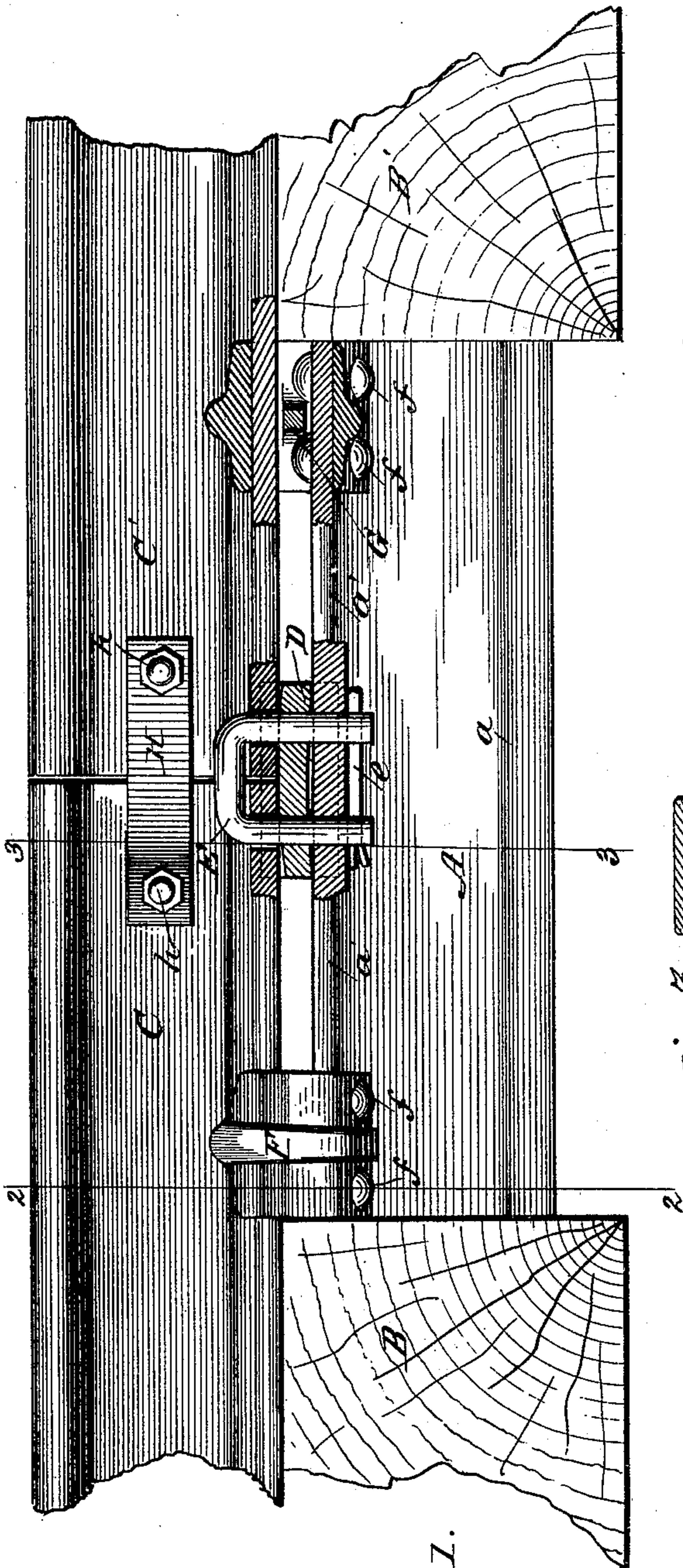
(No Model.)

3 Sheets—Sheet 1.

J. B. WALKER.
RAILROAD RAIL JOINT.

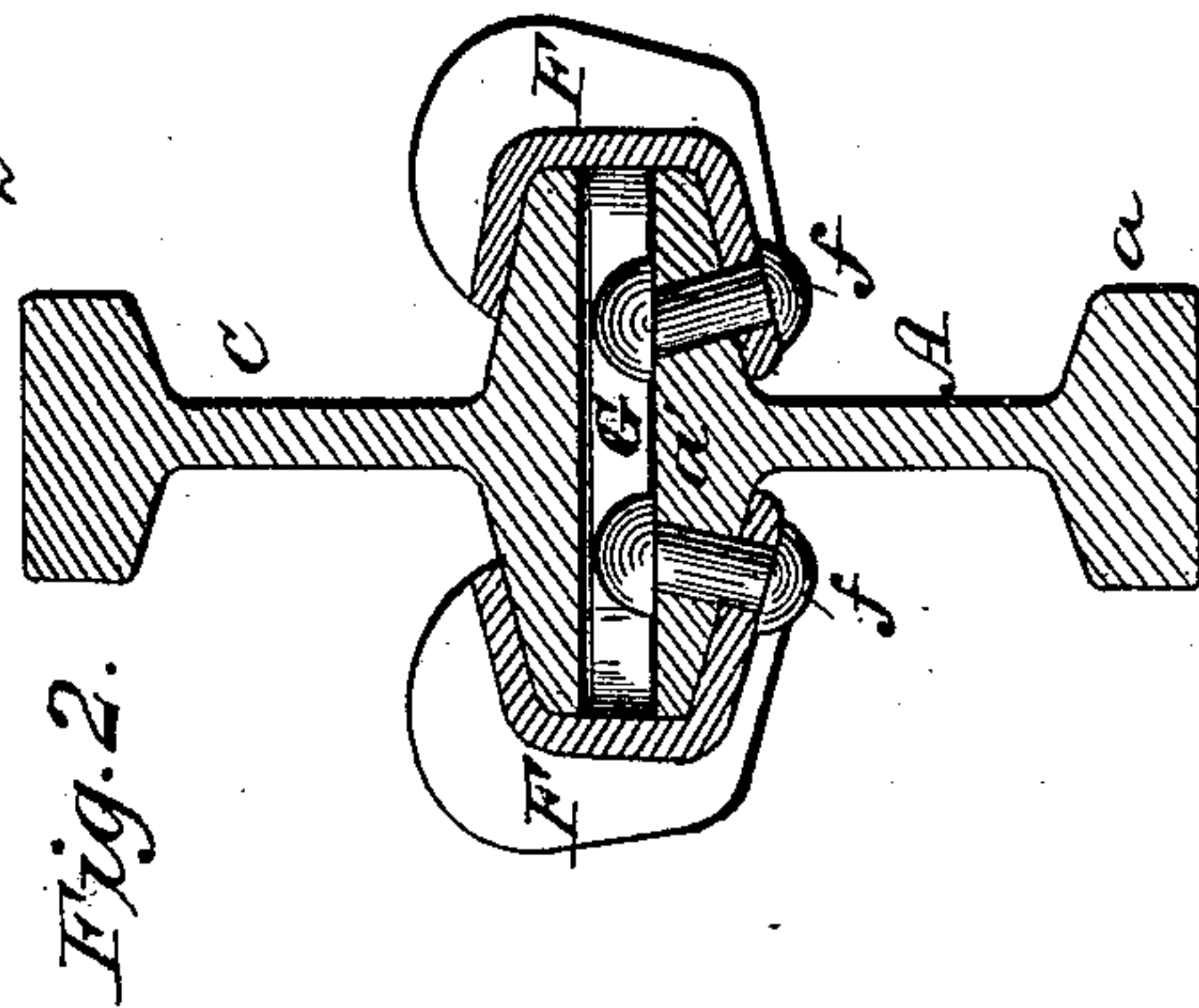
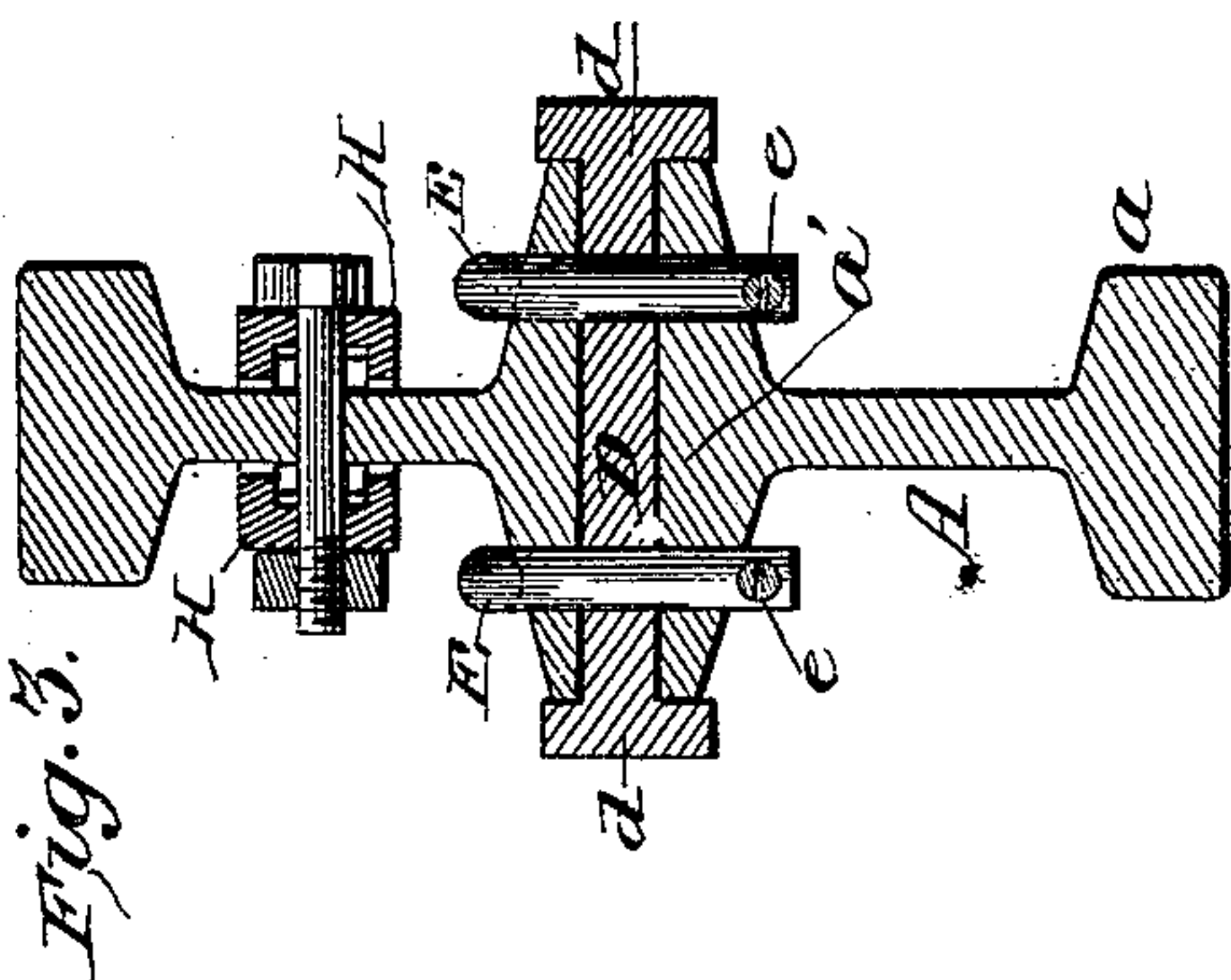
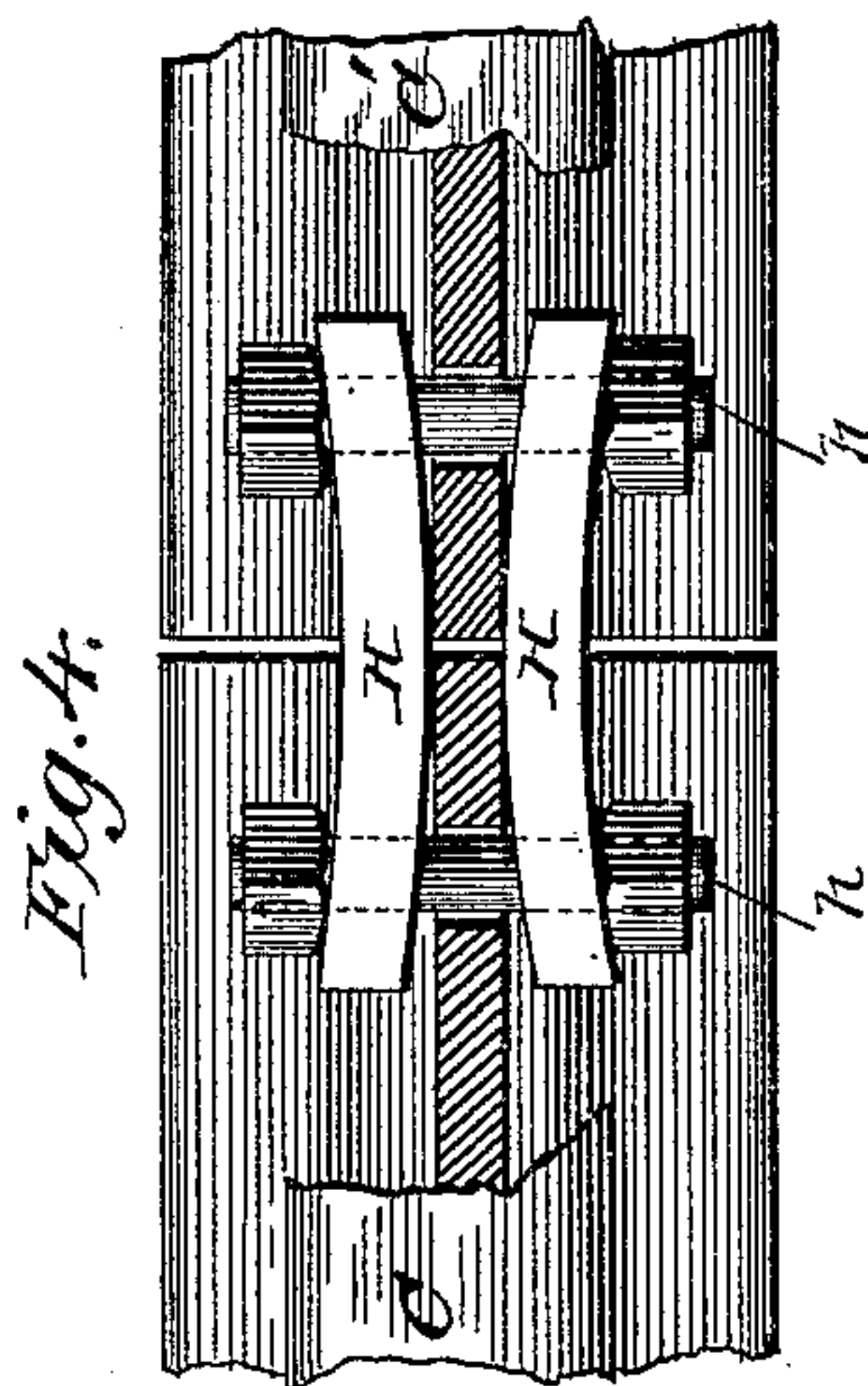
No. 446,763.

Patented Feb. 17, 1891.



WITNESSES:

Fred G. Dieterich
Amos W. Harp



INVENTOR:

J. B. Walker

BY *M. L.*

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(No Model.)

3 Sheets—Sheet 2.

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Fig. 5.

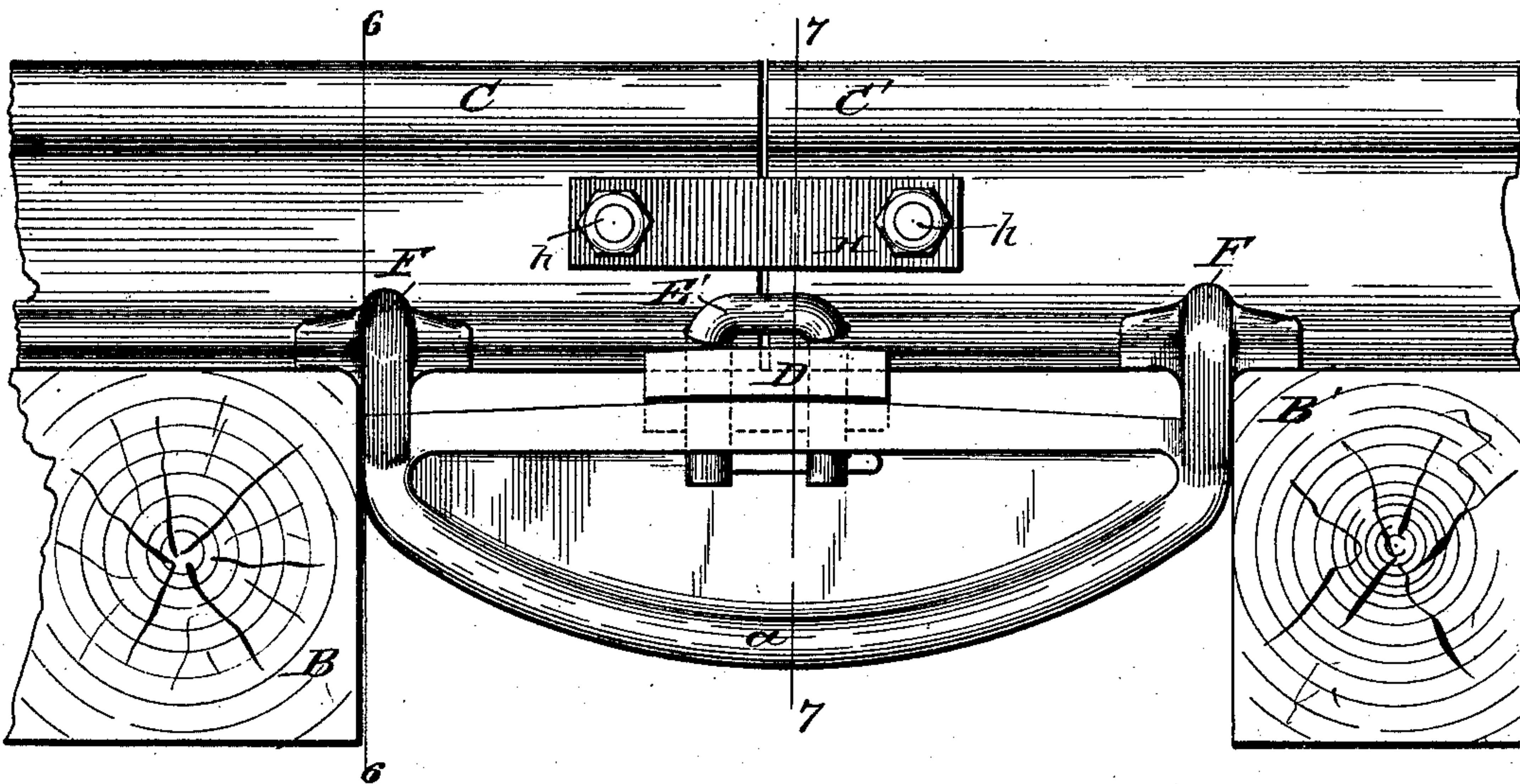


Fig. 6.

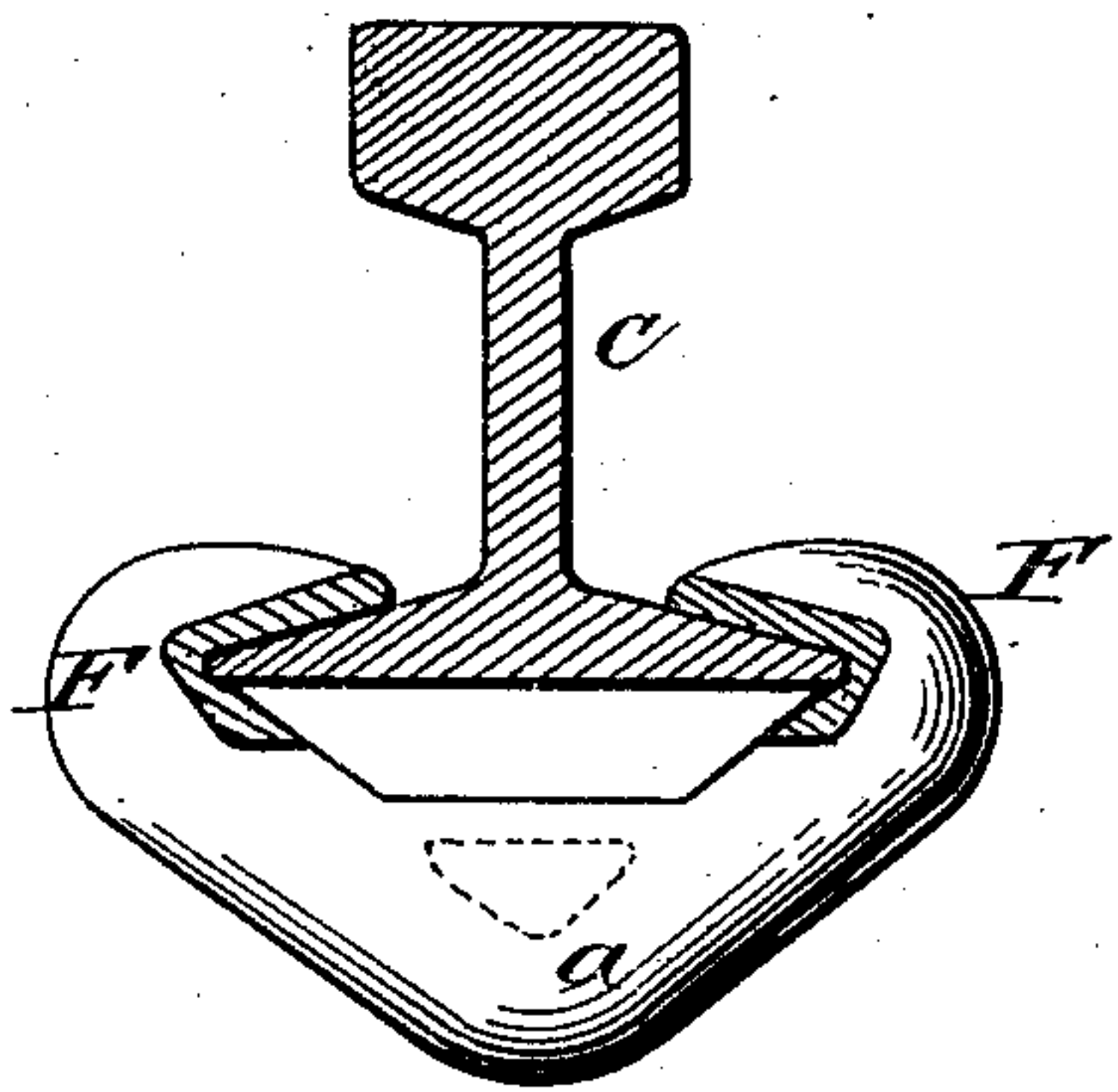
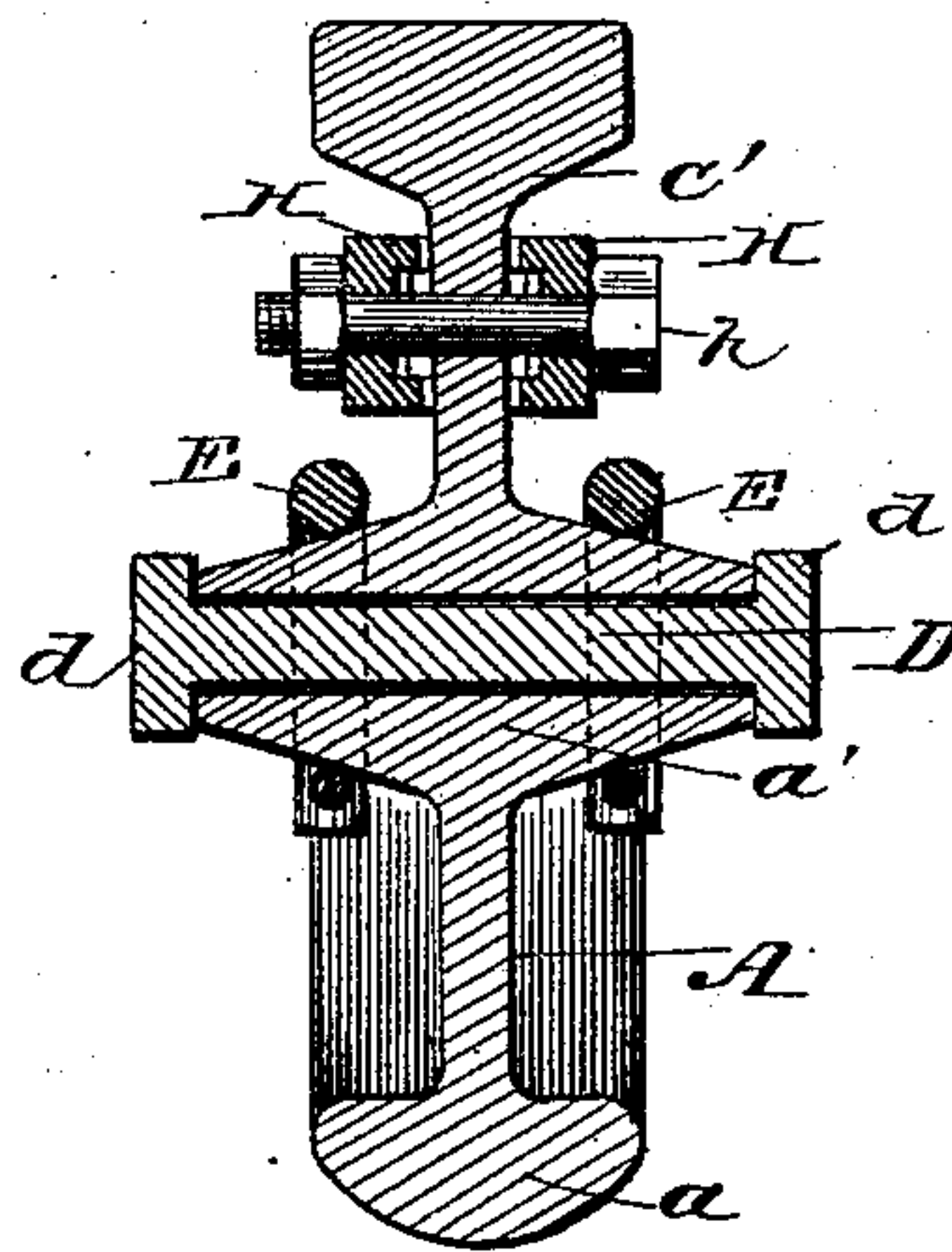


Fig. 7.



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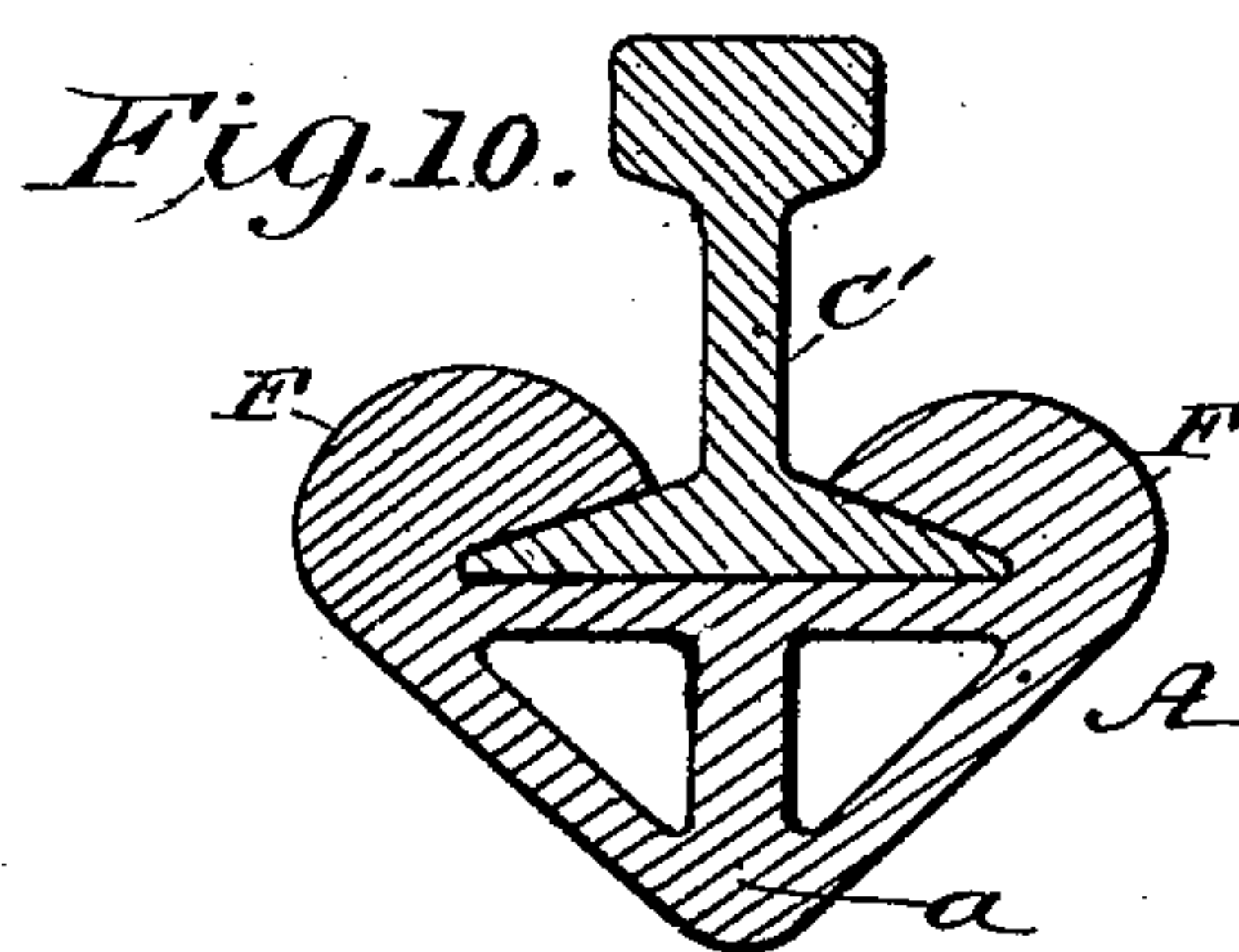
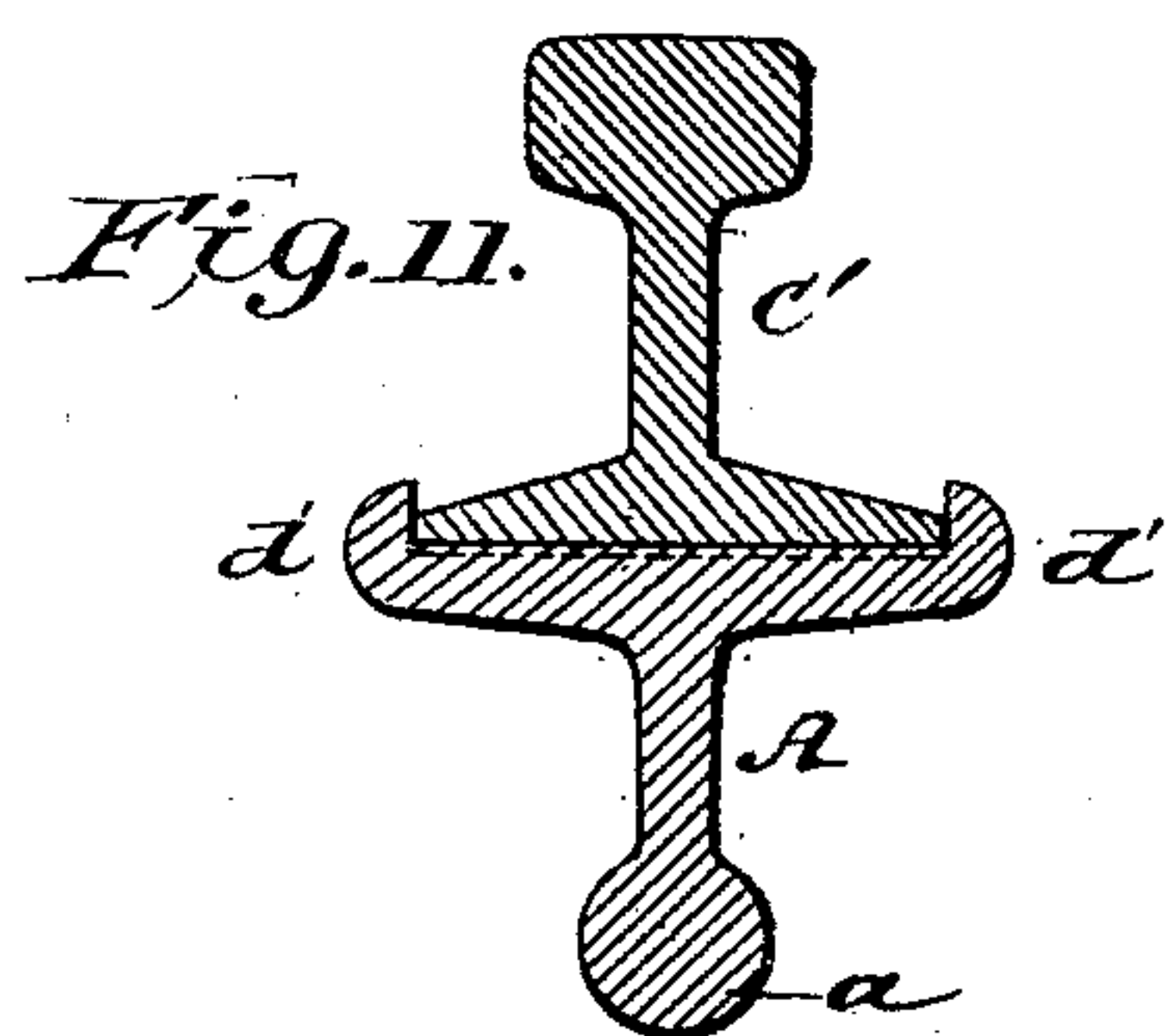
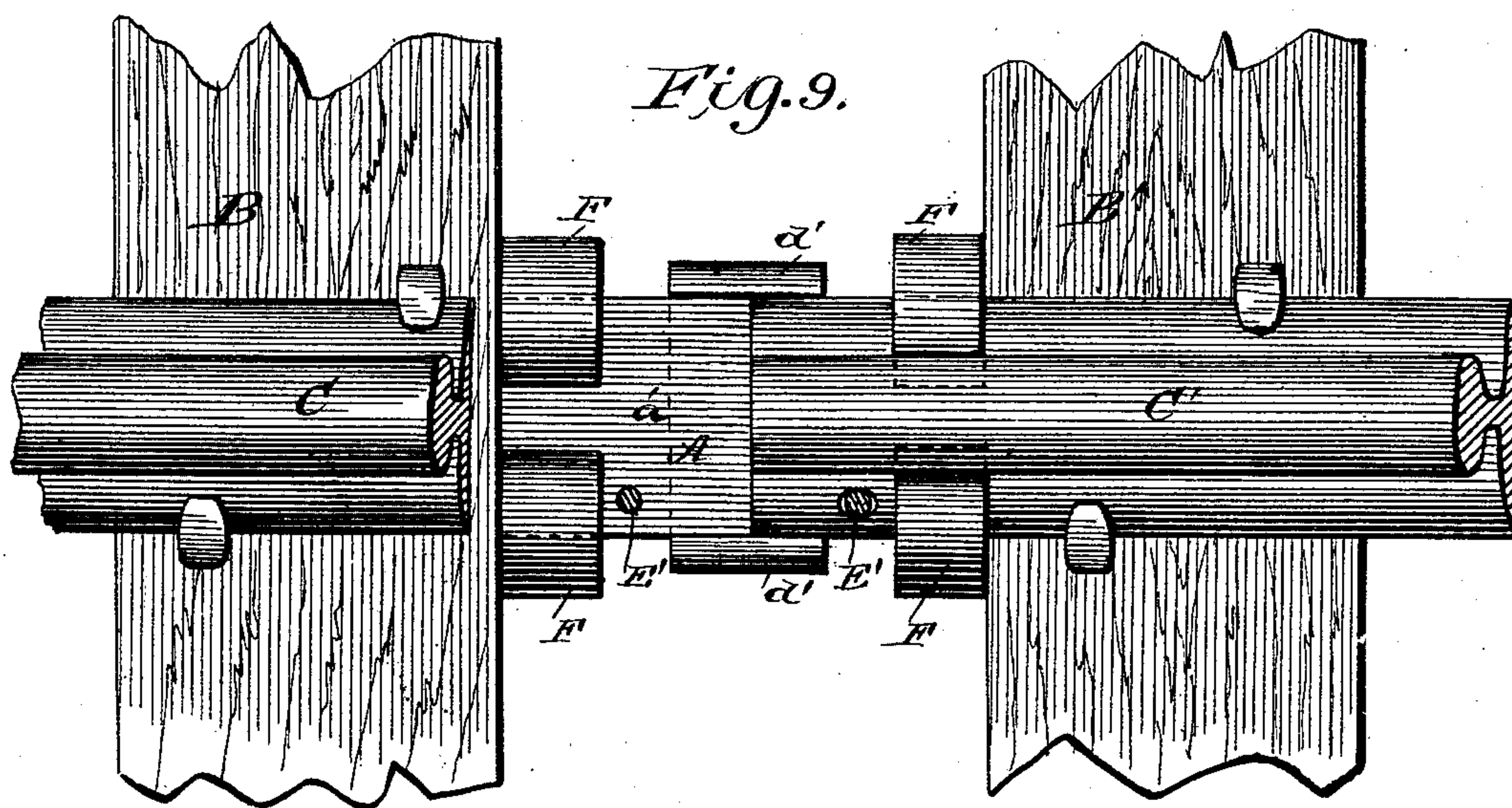
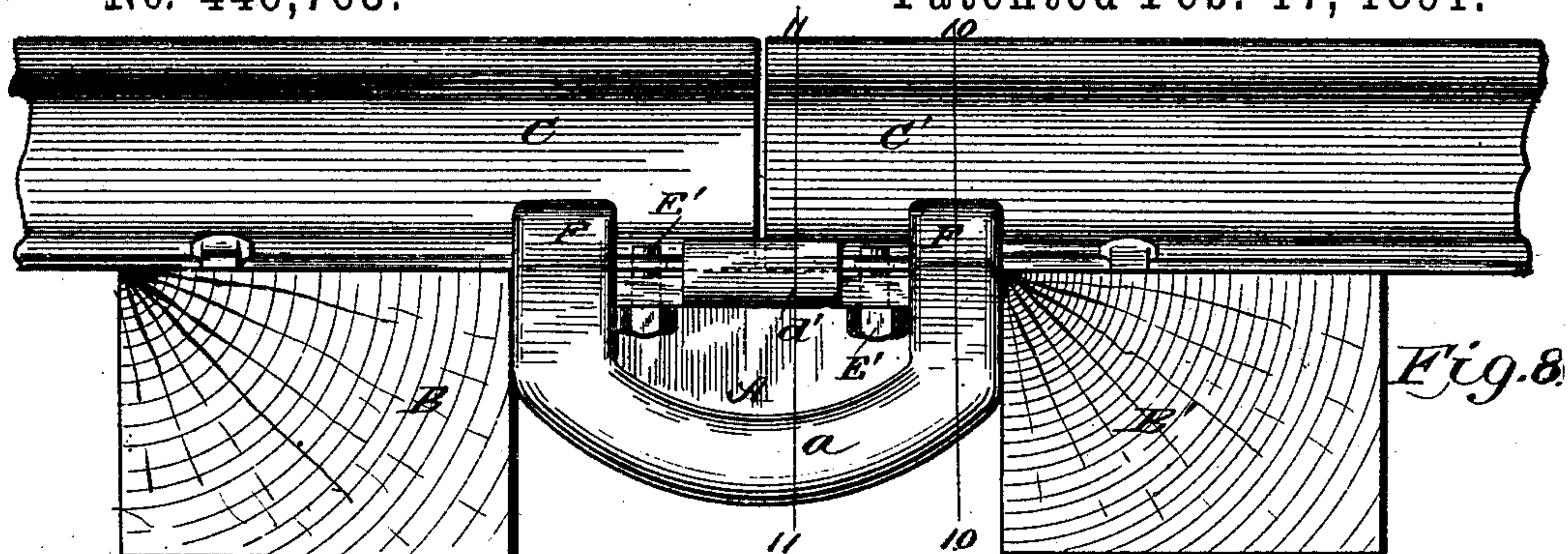
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RAILROAD RAIL JOINT.

No. 446,763.

Patented Feb. 17, 1891.



WITNESSES:

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INVENTOR:

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UNITED STATES PATENT OFFICE.

JOHN B. WALKER, OF CORVALLIS, OREGON.

RAILROAD-RAIL JOINT.

SPECIFICATION forming part of Letters Patent No. 446,763, dated February 17, 1891.

Application filed July 7, 1890. Serial No. 358,011. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. WALKER, of Corvallis, in the county of Benton and State of Oregon, have invented a new and useful
5 Improvement in Railroad-Rail Joints, of which the following is a specification.

My invention is an improvement in that class of rail-joints in which a joint-piece or girder is applied beneath the abutting ends
10 of the rails and secured to them by claws or flanges that embrace their bases, thus forming a bridge and support for the rail ends, and also holding them in due alignment.

My joint-piece or girder is so constructed as
15 to be superior for its purpose.

In the drawings, three sheets, Figure 1 is a side view, a portion being in section, showing my improved joint-piece applied to abutting rail ends. Fig. 2 is a vertical cross-section on line 2 2 of Fig. 1. Fig. 3 is a vertical
20 cross-section on line 3 3 of Fig. 1. Fig. 4 is a plan view of the rails and curved fish-plates, part being broken away. Fig. 5 is a side view of a modification of the joint shown in
25 foregoing figures. Figs. 6 and 7 are respectively vertical cross-sections on lines 6 6 and 7 7 of Fig. 5. Fig. 8 is a side view of another modification. Fig. 9 is a plan view of the same, part of one of the rails being broken
30 away. Figs. 10 and 11 are vertical cross-sections of Fig. 8 on lines 10 10 and 11 11, respectively.

I will first describe the construction of the joint as exhibited in Figs. 1, 2, 3, and 4. I
35 employ what may be termed a "joint-piece" or "girder" A, which is substantially T-shaped in cross-section, as shown in Figs. 2 and 3, its upper edge being slightly curved longitudinally, and its lower edge *a* being preferably
40 thickened for sake of greater strength and rigidity. The length of said girder A is intended to be the same as the distance apart of the two ties B B', between which it is located, as shown in Fig. 1. Instead of the abutting
45 rail ends C C' being directly in contact with the broad flat top *a'* of the girder A, they rest on an interposed spring-seat D, which consists of a steel plate having a slight upward curve and provided with flanges or lips *d* on each
50 side edge, which project upward and downward and abut the edges of the girder and

base-flanges of the rails C C'. The spring-seat D, the rail ends C C', and the girder A are securely connected by U-shaped bolts E, which pass down through said parts, and are
55 held in place by means of split spring-pins *e* inserted through holes in their ends.

At points adjacent to the ties B B' the rails C C' and girder A are connected by clips F, whose jaws embrace the adjacent flanges
60 of both rails and girder, as shown in Fig. 2. In this case the clips F are permanently attached to the girder A by means of rivets *f*, that pass through the lower portions of the clips. Each two opposite clips F are con-
65 nected by a tie or cross piece G, which is constructed in one piece with them.

Fish-plates H, Fig. 4, having a slight lengthwise curvature, are secured by means of connecting-bolts *h* on opposite sides of the web
70 of the rails C C' and arranged to span the joint between the latter, so that the convex portion of the plates bears with an elastic pressure against the rails at that point and aids materially in holding them aligned. The
75 elasticity of the plates enables them to lock the nuts by pressure against them.

In the modification shown in Figs. 5, 6, and 7 the construction and arrangement of parts are as above described, save that the lower
80 edge of the girder A is curved longitudinally and the clips F are formed in one piece with the girder instead of being constructed independently.

In Figs. 5, 6, 8, 9, and 10 the clips are made
85 in one piece with the girder, and in the modification shown in Figs. 8 to 11, inclusive, the seat *a'* for the rail ends is made in one piece with the girder A, and in place of the U-bolts screw-studs E' are employed, the same being
90 screwed up through the flat top of the girder A, so that their ends project into elongated holes in the rail flanges. To aid in holding the rail ends aligned, the girder is provided with vertical ears *d'*, one on each side, the
95 same being located at the middle of the length of the girder, so as to be opposite the joint between the rails. The jaws F are formed in one piece with the girder and the diagonal braces.

In practice suppose track-laying is proceeding from right to left and the rails C C', but

not the ties B B', to have been laid in position. The spring-seat D is laid on the girder close to the right-hand clip, and then the girder is slid along the flange of the right-hand rail until clear of the end of the latter. The other or left-hand rail is next laid and the girder slid back upon it until the joint between the rail ends is in the center of the girder. The spring-seat D is then driven to place in the center and the U-bolts dropped into place and secured by the split pins *e*. The ties B B' are then brought into position and the rails spiked to them, which completes the operation. It will be perceived that while the clips F hold the rails down the spring-seat tends to press their ends upward, but yields when a train passes so that the objectionable "hammering" of the joint is avoided.

In the case of the joint-piece or girder shown in Fig. 8, the elasticity of the girder as a whole tends to the same result. Further, the lateral flanges or lips *d* formed on the spring-seat or the girder proper coact with the clips F, the U-bolts, and the curved fish-plates in holding the rail ends rigidly aligned, yet permitting due longitudinal movement due to expansion. In respect to one of their functions the clips are in effect hangers, since the weight of the passing load borne by the girder is by them transferred to and thus hung on the flanges of the two rails. Thus the rolling load "levels up," as it were, the

rail ends as it approaches them, which is an important feature of my invention.

What I claim is—

1. The combination, with abutting rail ends, of the girder placed beneath the same and having clips that embrace the rail-flanges, and bolts passing through the latter and said girder for locking them together, as shown and described.

2. The combination, with the rails and the T-shaped joint-piece or girder arranged beneath the rail ends and having upwardly-projecting end clips F, which embrace the rail-flanges, of the detachable central seat D, resting on said girder and having vertical lips *d* along its lateral edges, as shown and described.

3. The combination, with the joint-piece or girder and abutting rail ends, of a detachable seat for the latter, having lateral flanges abutting the rail-flanges and curved, as described, to give it a certain degree of elasticity, as shown and described.

4. The combination of the curved fish-plates, the girder having end clips, the central seat, and side lips or flanges, and the U-bolts, all as shown and described, for the purpose specified.

JOHN B. WALKER.

Witnesses:

E. E. WILSON,
J. H. WILSON.