

No. 772,012.

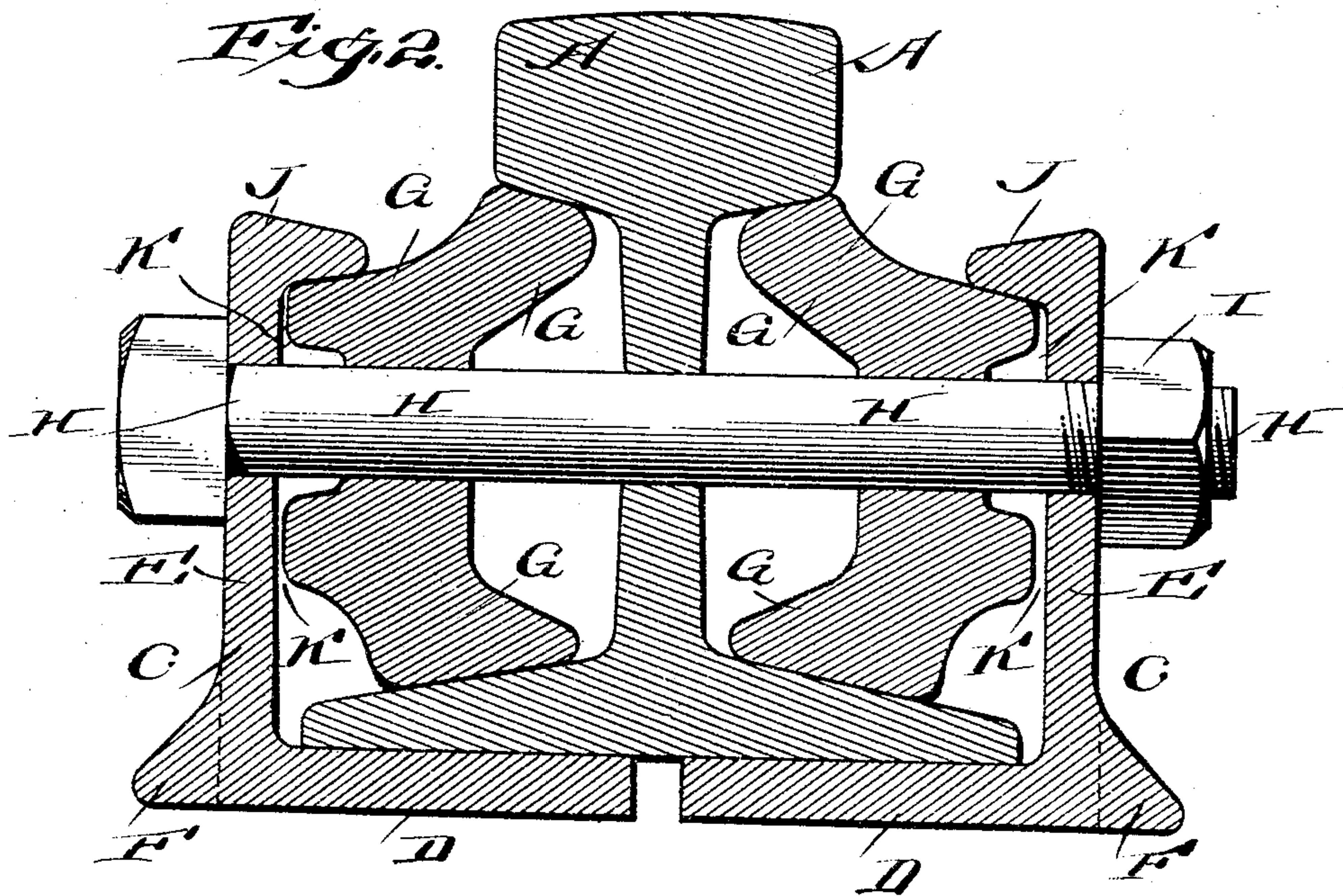
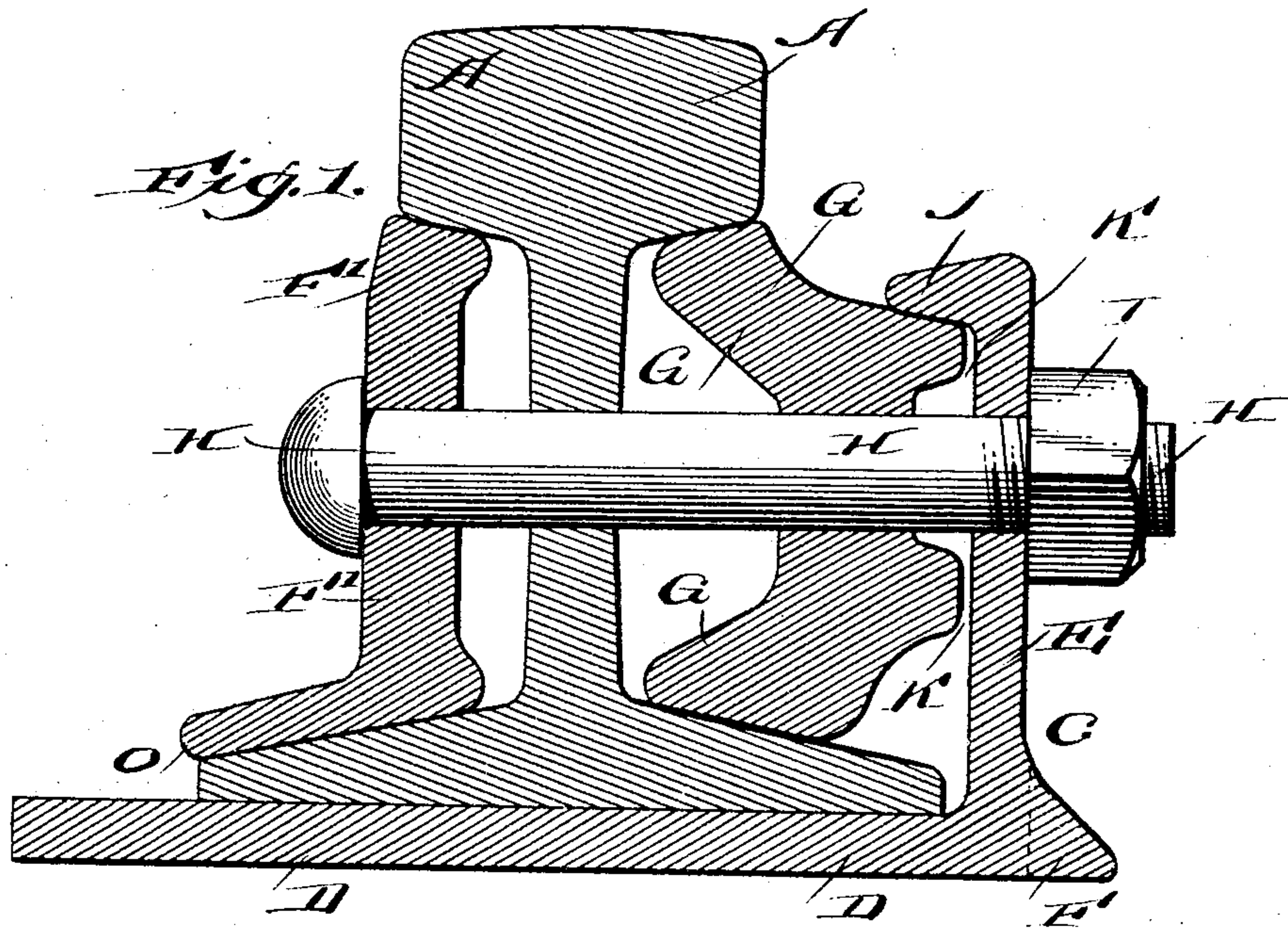
PATENTED OCT. 11, 1904.

G. A. WEBER.  
RAIL JOINT.

APPLICATION FILED MAR. 25, 1904.

NO MODEL.

4 SHEETS—SHEET 1.



Witnesses

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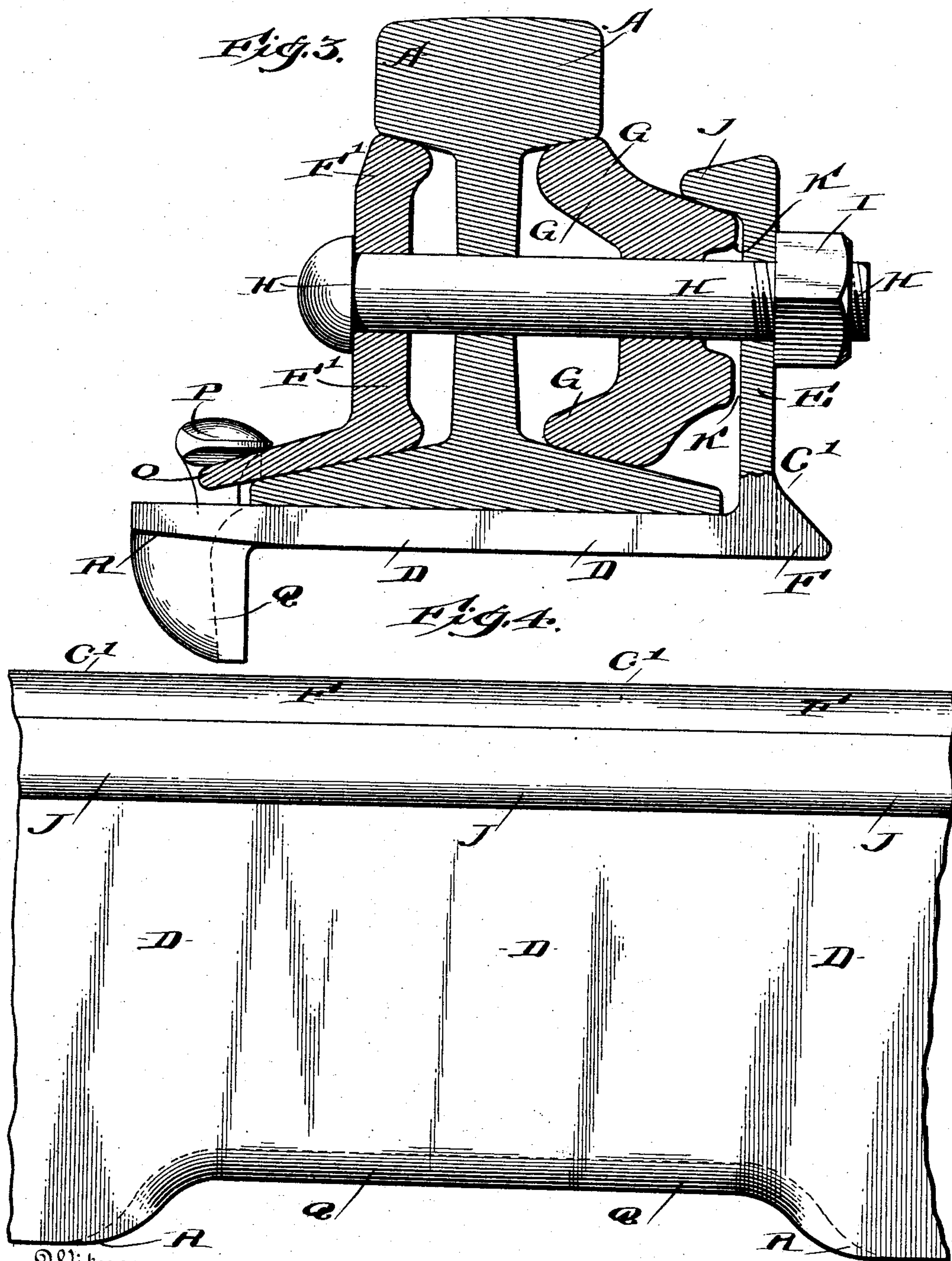
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4 SHEETS—SHEET 2.



Witnesses

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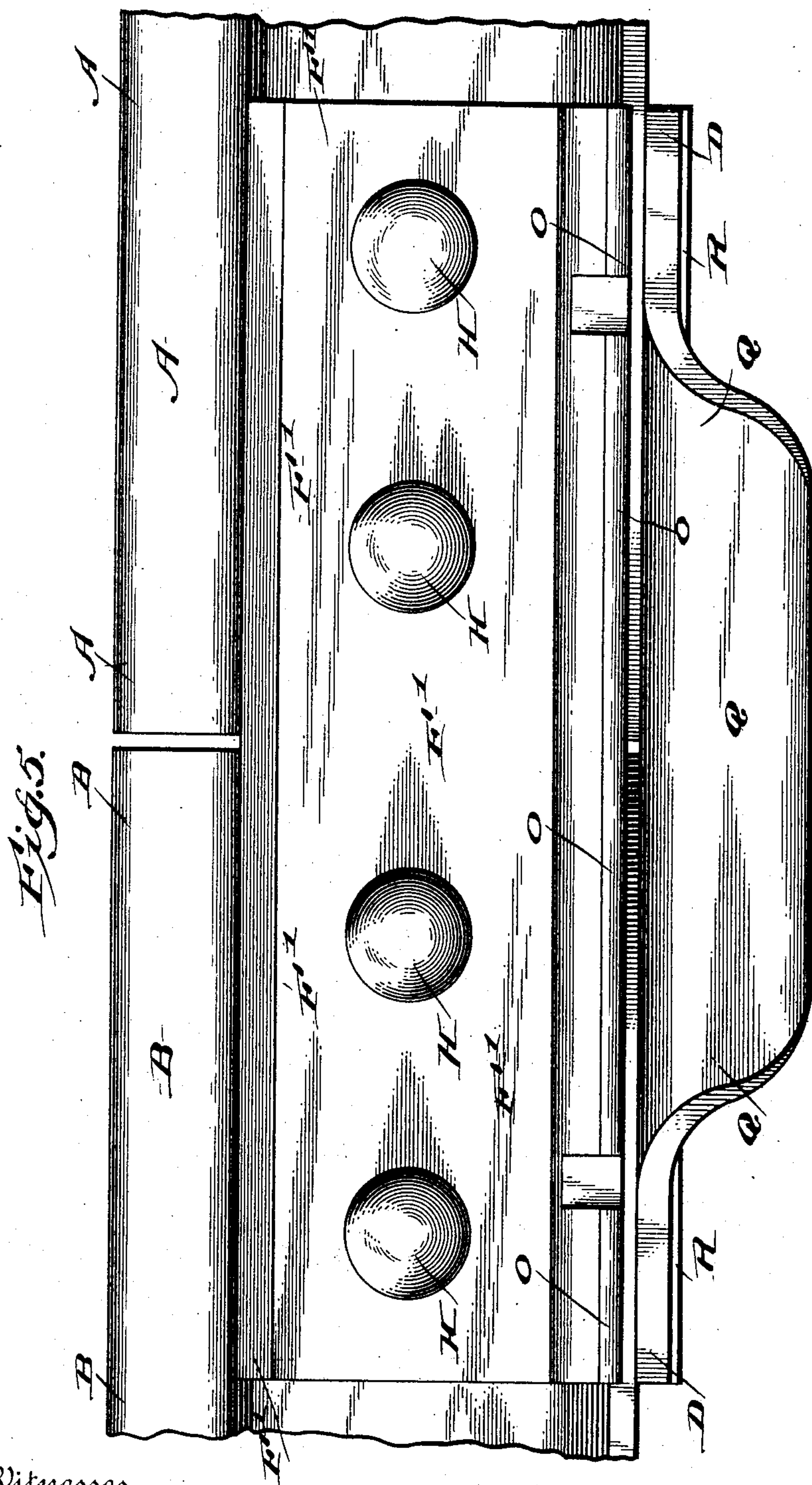
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NO MODEL.

4 SHEETS—SHEET 3.



Witnesses

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G. A. WEBER.

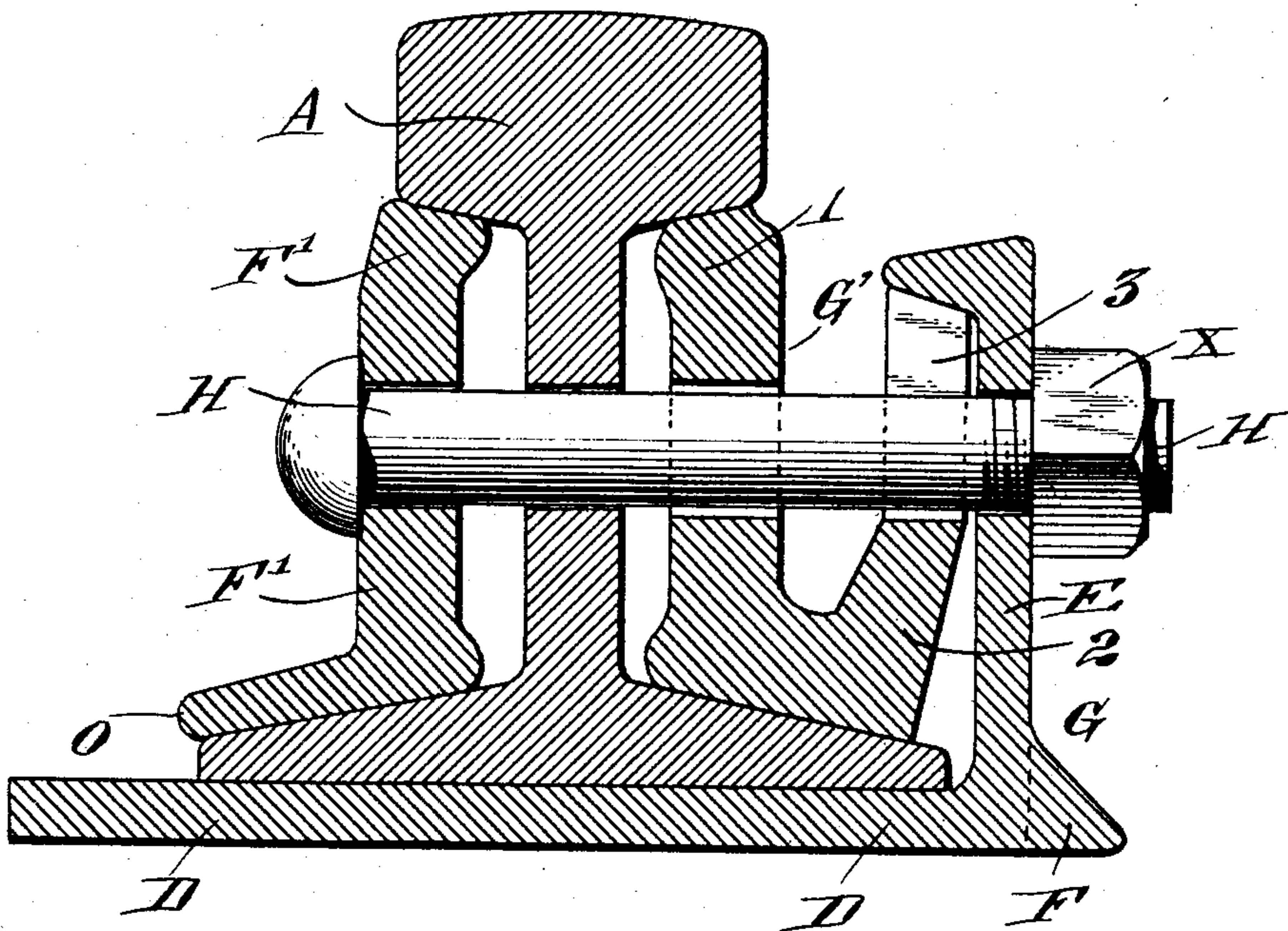
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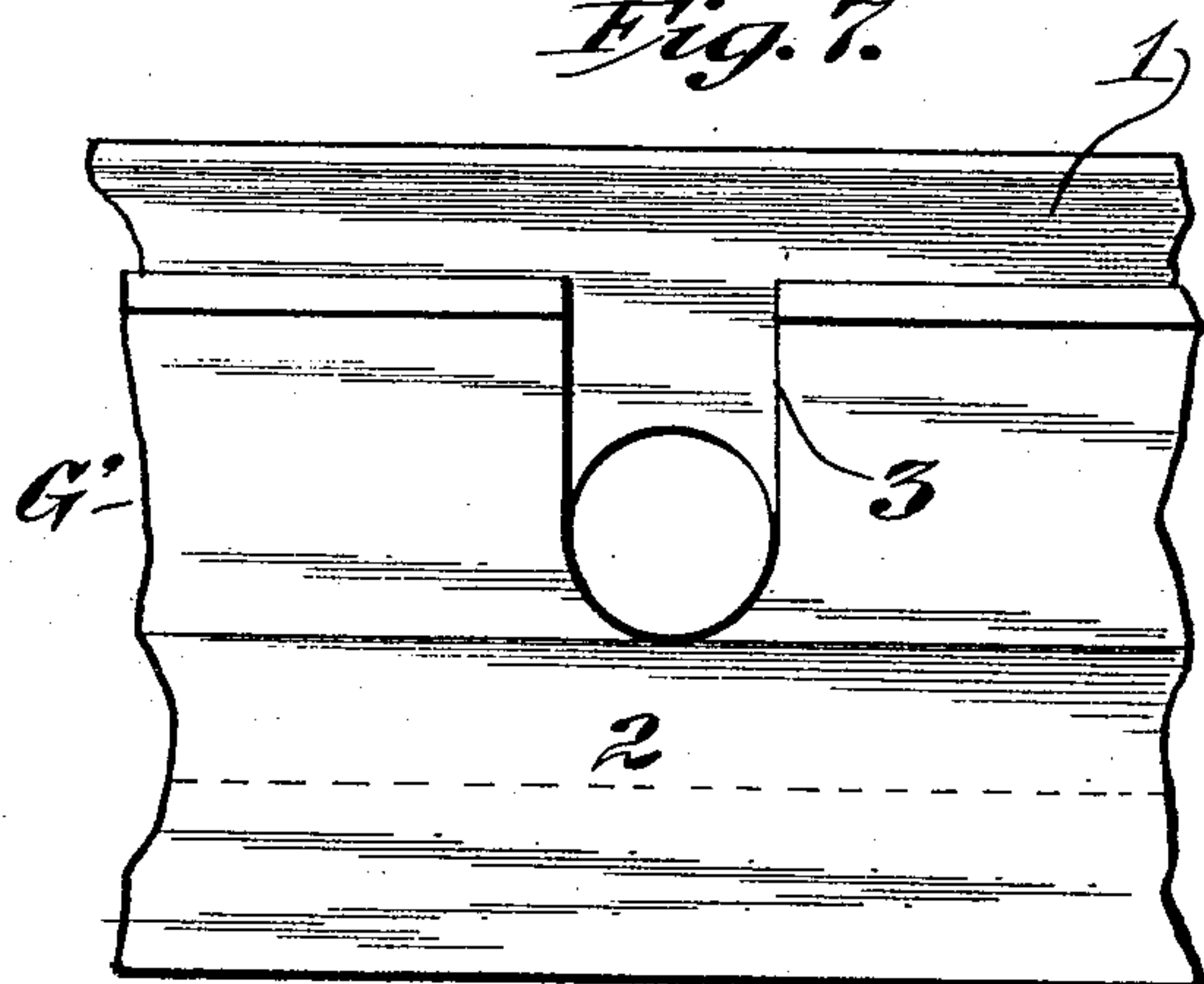
NO MODEL.

4 SHEETS—SHEET 4.

*Fig. 6.*



*Fig. 7.*



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# UNITED STATES PATENT OFFICE.

GEORGE A. WEBER, OF NEW YORK, N. Y., ASSIGNOR TO WEBER RAIL-WAY JOINT MANUFACTURING COMPANY, OF NEW YORK, N. Y., A CORPORATION OF WEST VIRGINIA.

## RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 772,012, dated October 11, 1904.

Application filed March 25, 1904. Serial No. 199,979. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE A. WEBER, a citizen of the United States, and a resident of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification accompanied by drawings.

This invention relates to rail-joints; and one of its objects is to hold the rails in position under the passage of the train and prevent the ends of the rails from moving upward when the wheels are passing from one rail to another.

Another object of the invention is to secure a downward hold upon the base-flanges of the rails, but at the same time take a firm upward pressure under the heads.

Further objects of the invention will hereinafter appear; and to these ends the invention consists of a rail-joint for carrying out the above objects embodying the features of construction, combinations of elements, and arrangement of parts having the general mode of operation substantially as hereinafter fully described and claimed in this specification and shown in the accompanying drawings, in which—

Figure 1 is a transverse sectional view of a joint embodying the invention having one rail-chair. Fig. 2 is a transverse sectional view of a joint having two rail-chairs. Fig. 3 is a transverse sectional view of a joint having a modified form of rail-chair. Fig. 4 is a partial plan view of the rail-chair used in Fig. 3. Fig. 5 is a side elevation of a joint such as shown in Fig. 3. Fig. 6 is a transverse sectional view of a joint having another form of side bar. Fig. 7 is a detail side elevation of the side bar used in Fig. 6.

Referring to the drawings, A and B represent the meeting ends of rails supported upon a rail-chair C in Fig. 1, having a base D, an upright E, and a projection or rib F for strengthening purposes and for spiking the chair to the ties. Suitable side bars are provided for maintaining the rails in alinement, as shown, there being an angle-bar F' on the

inside of the joint and a bar G, substantially in the form of a channel, between the webs of the rails and the upright E of the chair. Suitable bolts H, provided with nuts I, secure the parts of the joint together.

One of the features of this invention resides in the fact that a downward pressure is obtained upon the bases of the rails when the parts of the joint are tightened up, while at the same time a firm upward pressure is obtained under the heads of the rails. The downward pressure upon the bases of the rails tends to prevent the rail ends from rising under the action of the wheels, while the upward pressure under the heads of the rails prevents the ends of the rails from sinking.

These ends are obtained by the construction of this improved joint in accordance with my invention.

As shown, an inwardly-turned hook or projection J is provided at the upper end of the upright E of the chair, which projection is adapted to bear upon a portion of the side bar G, so that when the joint is tightened the projection J not only forces the bar G toward the rails, but at the same time presses it downwardly upon the bases of the rails. It will be seen that the action of the rail-chair constructed as described is also to lock the side bar G and the bases of the rails together, and as the side bar is forced toward the rail-webs a strong upward pressure is obtained underneath the heads of the rails. As shown in Fig. 1, clearance-spaces K are provided between the outer faces of the side bar G and the upright of the chair E to afford means for taking up the parts and tightening the joint. When the bolts are tightened up, the side bars G and F' are also tightened in the fishing-spaces in the rails, as in an ordinary joint, so that the fit of the side bars in the fishing-spaces of the rails is insured. Furthermore, with a joint constructed in accordance with this invention a fit is obtained between the parts of the joint and the three bearing sides of the rails—that is, under the heads, on top of the base-flanges, and underneath the bases of the rails.



In Fig. 2 a joint substantially like Fig. 1 is shown, but provided with two rail-chairs C instead of one. In this instance the side bars G are provided at each side of the webs of the rails, and the projections J of the uprights of the chairs bear upon said bars, pressing them firmly on the bases of the rails when the joint is tightened, while a strong upward pressure is obtained at the same time under the heads of the rails, as described.

In Fig. 3 the inside angle-bar F' is provided with a projecting toe O, in which the slots or holes for the spike P are provided. This construction prevents creeping or longitudinal movement of the angle-bar. The central portion of the base D of the chair C' in Fig. 3 is strengthened by pressing a portion of the base downwardly and outwardly to form the web Q, and the under surface of the inner edge of the base is beveled, as at R, to prevent said inner edge of the base from digging into the ties. By providing the beveled portion R on the base it will be seen that when the joint is tightened up the chair may slide longitudinally of the ties, because there will be no ridge in the wood of the ties to anchor the inner end of the chair. In other words, the beveled portion R will ride up over any slight depression in the ties, and thus the joint may be tightened without in any degree throwing the rails out of alinement.

The many features of construction shown in a joint like Fig. 3 all combine to increase the effectiveness and efficiency of the joint. The base is strengthened, the angle-bar F' is prevented from creeping, the chair may move freely on the ties when the joint is tightened, and the downward pressure upon the rail-base and the upward pressure under the rail-heads is obtained by the construction of the upright of the chair in combination with the form and arrangement of the side bars.

In Fig. 6 a side bar G' is used which has a leg 1, arranged between the upper portions of the bases of the rails and the under sides of the heads, while another leg, 2, is arranged outwardly from said first-named leg and abuts under the projection J of the upright E of the chair. Preferably the leg 2 is slotted, as at 3, for the reception of the bolts H, while the inner leg 1 is provided with bolt-holes.

The construction shown in Figs. 6 and 7 carries out the same objects attained by the construction shown in the other figures, although the form of the side bar is somewhat different. Its functions, however, are substantially the same as those of the side bar G.

Obviously some features of this invention may be used without others and the invention may be embodied in widely-varying forms.

Therefore, without limiting the invention to the constructions shown and described nor enumerating equivalents, I claim, and desire to secure by Letters Patent, the following:

1. A rail-joint, comprising the rails and side bars, and a rail-chair comprising a base and an upright, said chair being constructed to bear upon the upper portion of one of the side bars and produce a downward pressure thereon when the joint is tightened, for substantially the purposes set forth.

2. A rail-joint, comprising the rails and side bars, and a rail-chair comprising a base and an upright, said chair being constructed to bear upon the upper portion of one of the side bars and secure a downward and inward pressure thereon when the joint is tightened, for substantially the purposes set forth.

3. A rail-joint, comprising the rails and side bars, and a rail-chair at each side of the joint, said chairs being constructed to bear upon the upper portions of the side bars and secure downward pressure upon the side bars, for substantially the purposes set forth.

4. A rail-joint, comprising the rails and side bars, and a rail-chair having a base upon which the rails rest, an upright, and an inward extension from said upright adapted to bear upon the upper portion of one side bar, whereby the rails and one of the side bars are clamped between the base and the extension of the upright of the chair, for substantially the purposes set forth.

5. A rail-joint, comprising the rails and side bars, and a rail-chair at each side of the joint, said chairs each having a base, an upright, and an inwardly-extending portion adapted to bear upon the upper portions of the side bars, for substantially the purposes set forth.

6. A rail-joint, comprising the rails and side bars, and a rail-chair having an inwardly-extending head on the upright adapted to bear upon the upper portion of one side bar, and a strengthening-web arranged on the inner portion of the base of the chair, for substantially the purposes set forth.

7. A rail-joint, comprising the rails and side bars and a rail-chair, constructed to bear upon the upper portion of one side bar and produce a downward pressure upon the base-flanges of the rails when the joint is tightened, and at the same time cause an upward pressure under the heads of the rails, for substantially the purposes set forth.

8. A rail-joint, comprising the rails and side bars and a rail-chair, constructed to bear upon the upper portion of the side bar and secure a fit between the parts of the joint and the three bearing sides of the rails, comprising the under portions of the heads, the tops of the base-flanges, and the under portions of said flanges, whereby one of the side bars is locked to the base-flanges and produces a pressure thereon, while at the same time an upward pressure is produced beneath the heads of the rails, for substantially the purposes set forth.

9. A rail-joint, comprising the rails and side

bars, and rail-chairs at each side of the joint,  
said chairs being constructed to bear upon the  
upper portions of the side bars and thereby  
secure a fit between the parts of the joint and  
5 the three bearing sides of the rails, compris-  
ing the under portions of the heads, the tops  
of the base-flanges, and the under portions of  
said flanges, whereby both side bars are locked  
to the base-flanges and produce pressure there-  
10 on, while at the same time an upward pres-

sure is produced beneath the heads of the  
rails, for substantially the purposes set forth.

In testimony whereof I have signed this  
specification in the presence of two subscrib-  
ing witnesses.

GEORGE A. WEBER.

Witnesses:

E. VAN ZANDT,  
A. L. O'BRIEN.