No. 817,823.

PATENTED APR. 17, 1906.

G. A. WEBER.

RAIL JOINT.

APPLICATION FILED MAR. 31, 1905.

6 SHEETS—SHEET 1.

Fig. 1.

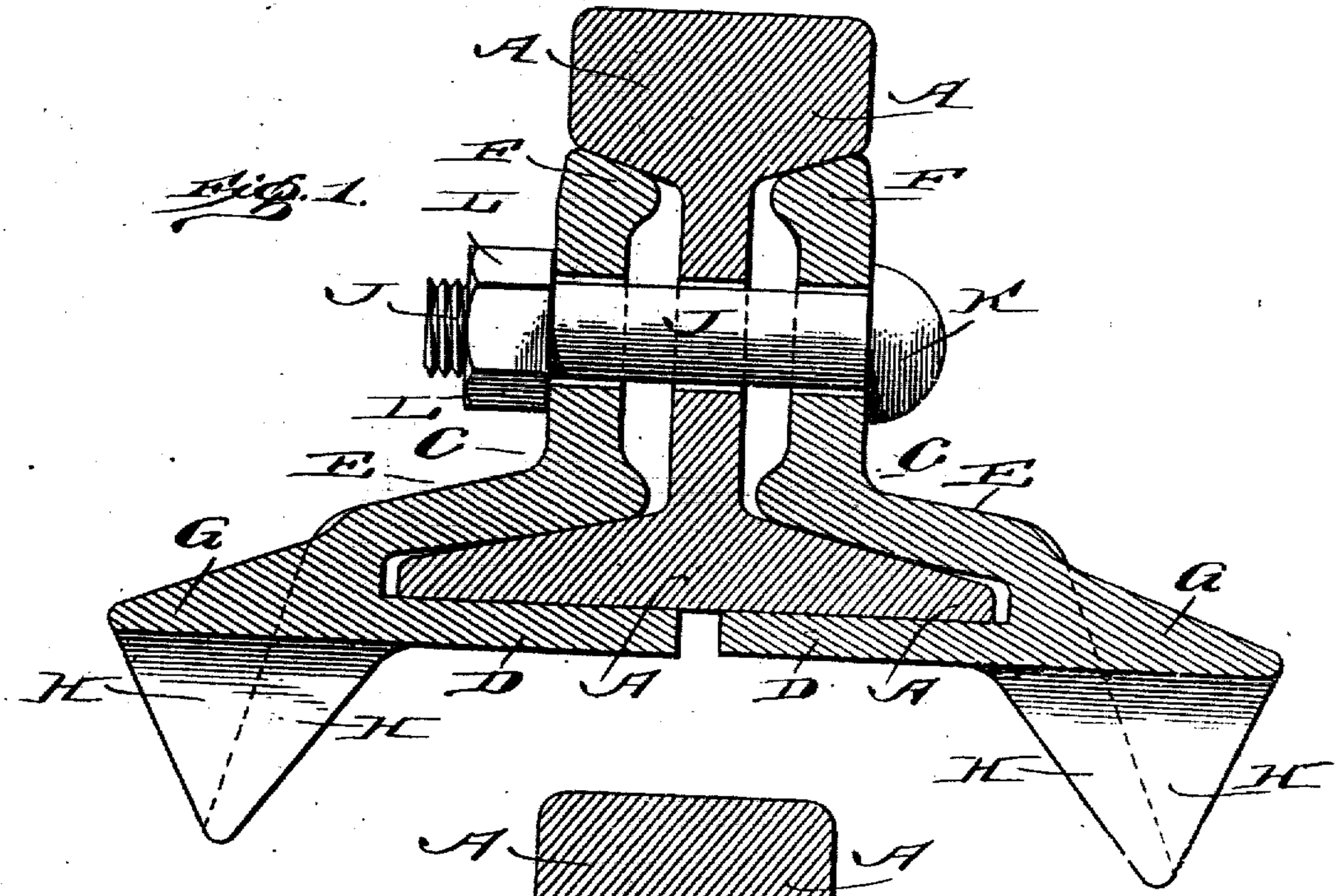
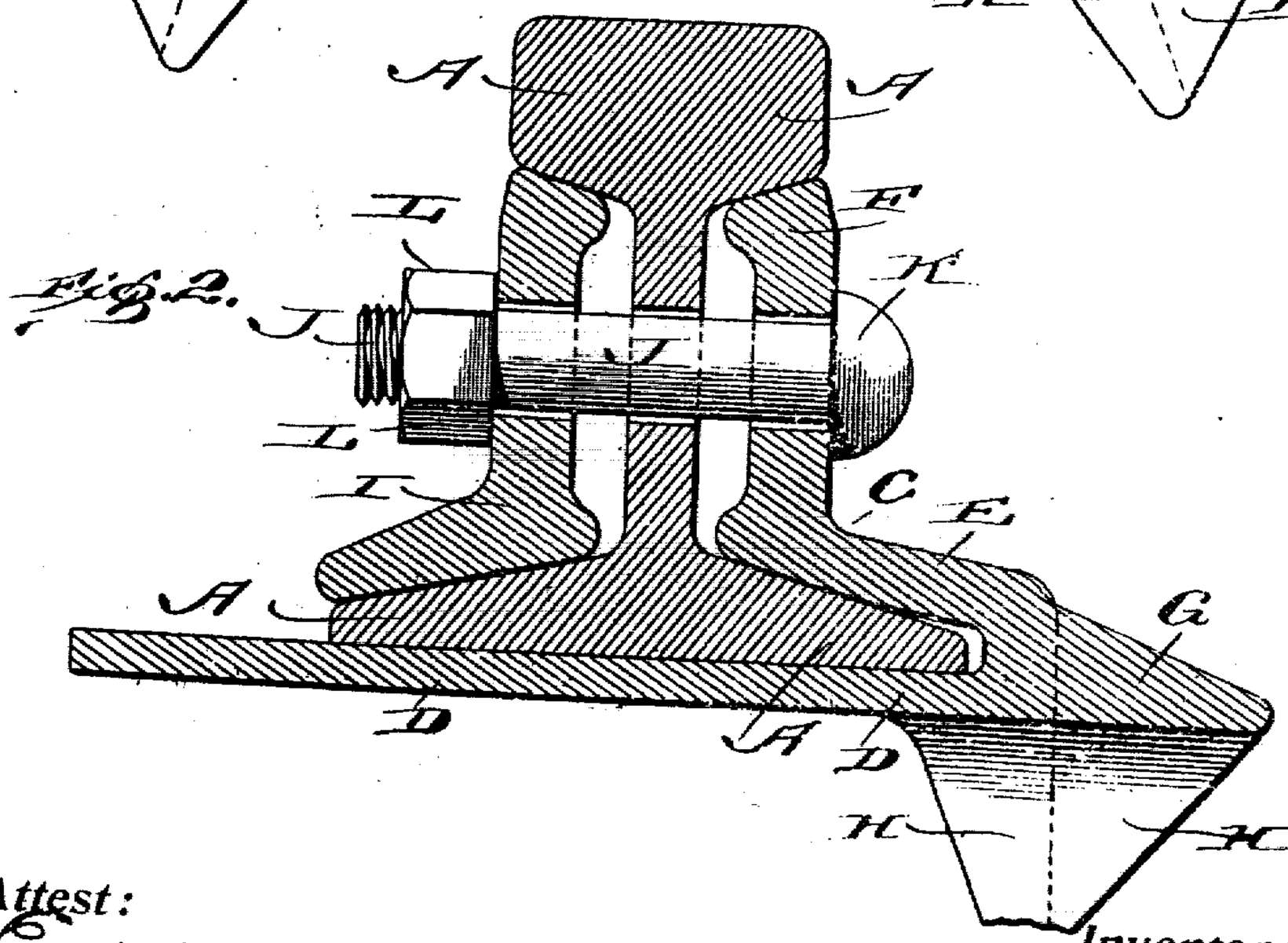


Fig. 2.



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6 SHEETS—SHEET 2.

Fig. 3.

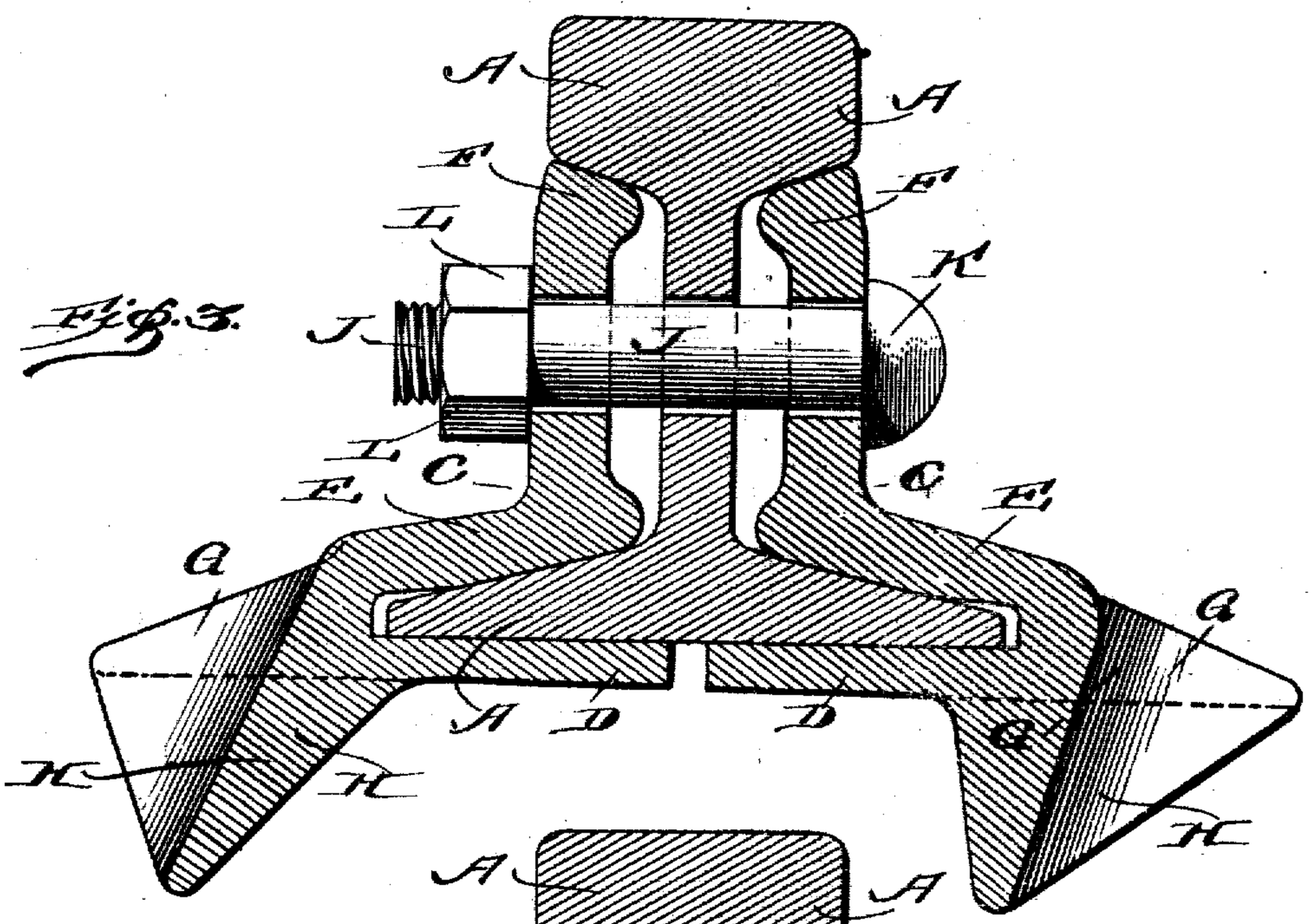
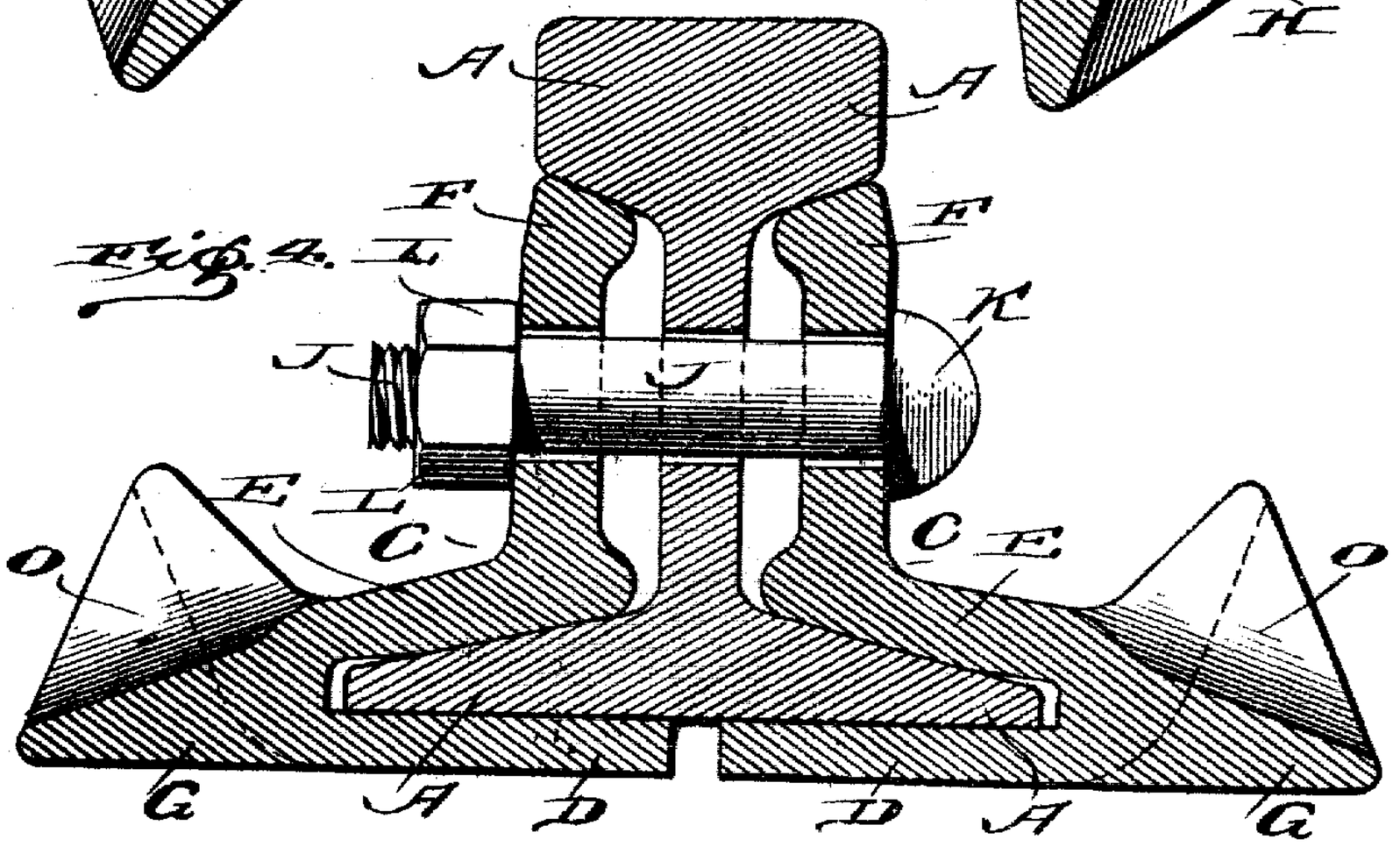


Fig. 4.



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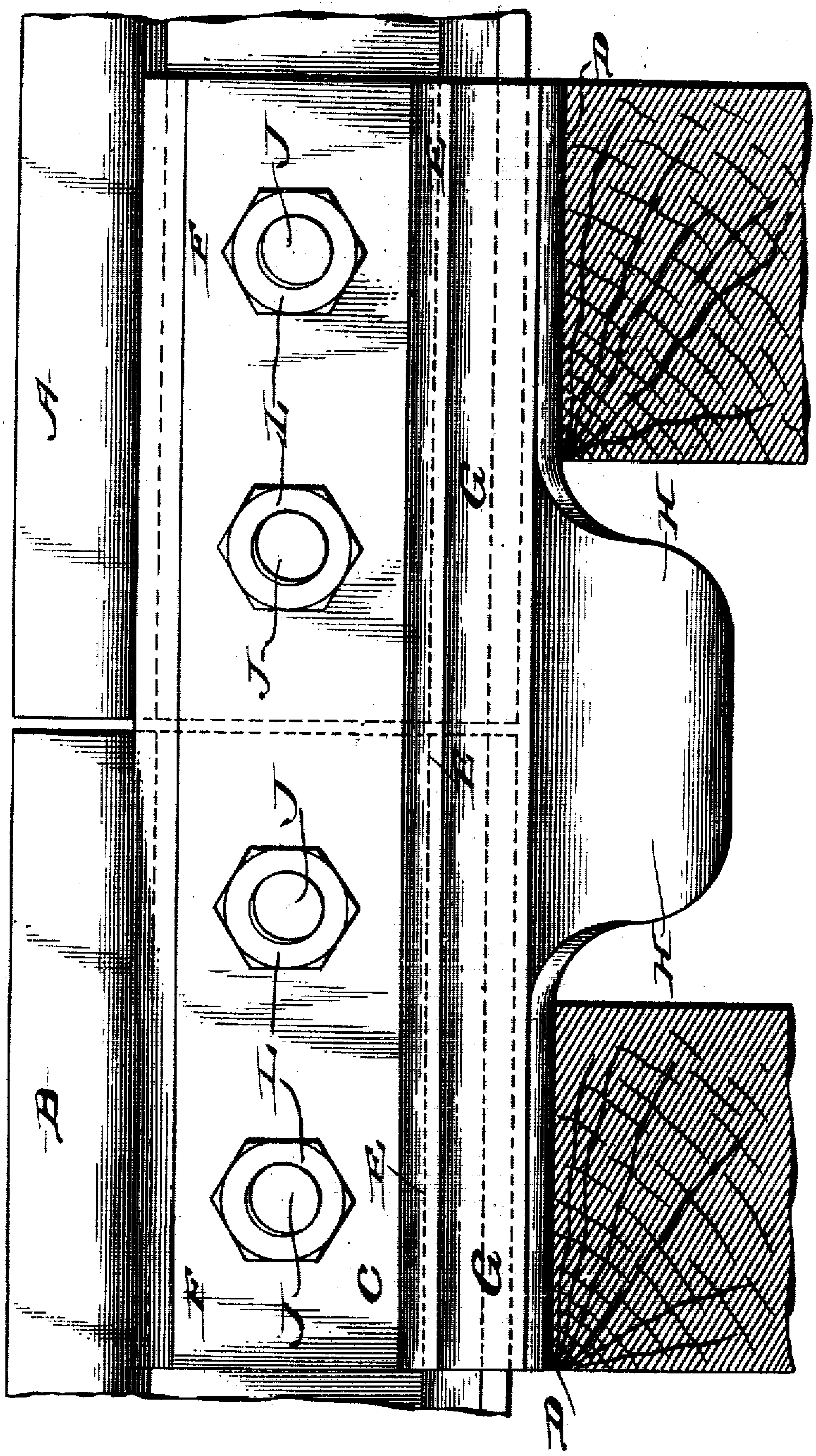
6 SHEETS—SHEET 3.

Fig. 5.



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6 SHEETS—SHEET 4.

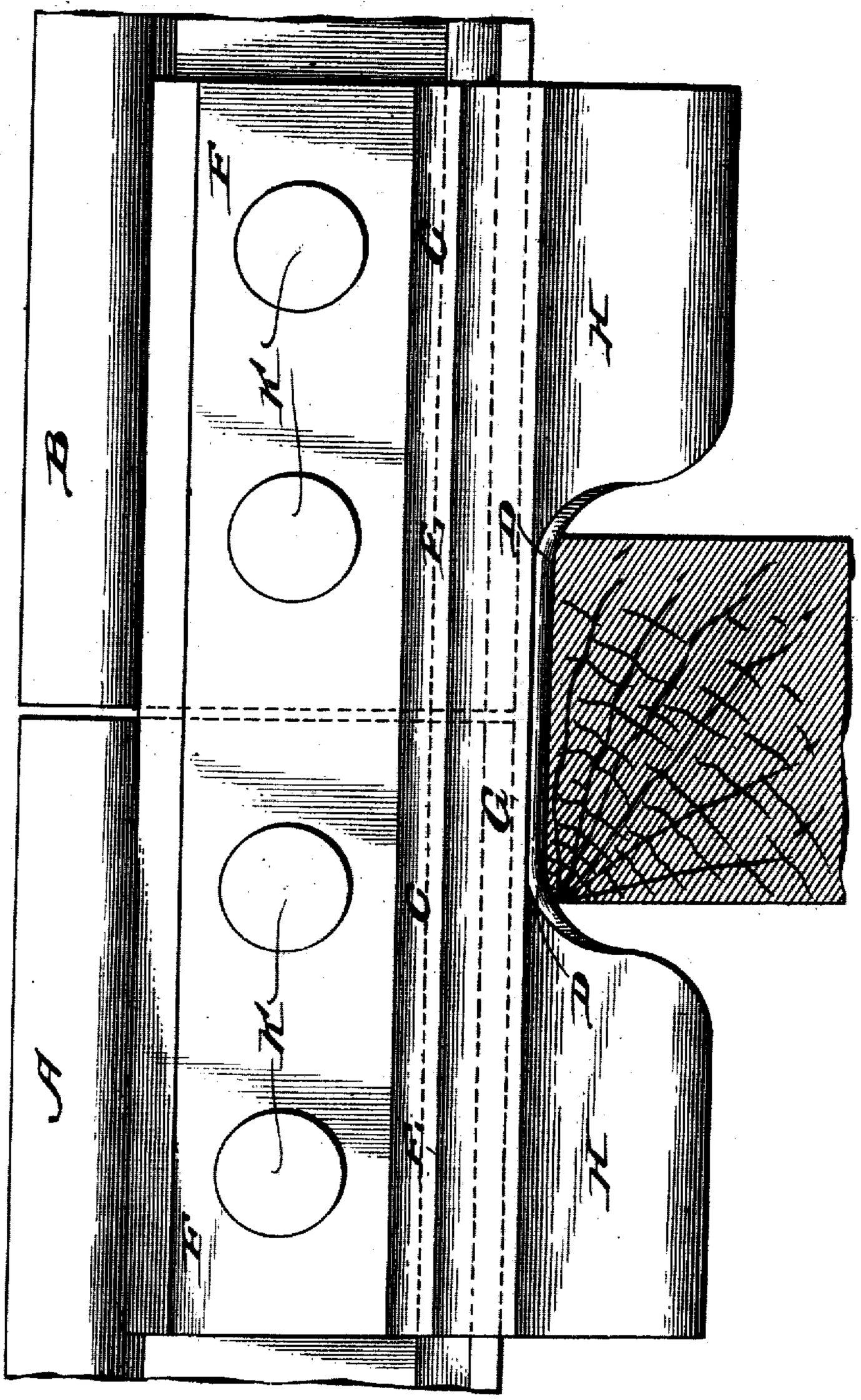

Fig. 6.

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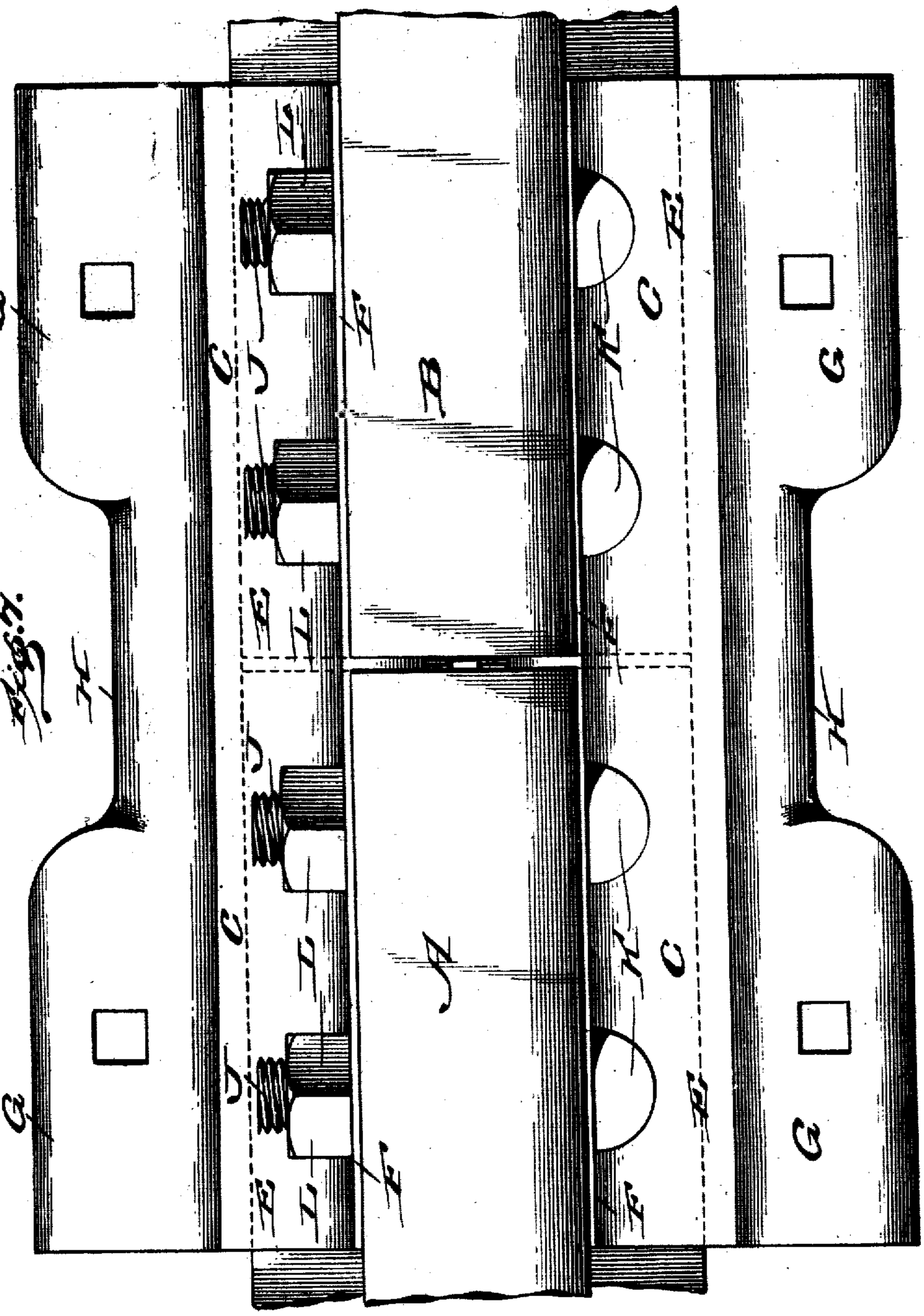
6 SHEETS—SHEET 5.



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6 SHEETS—SHEET 6.

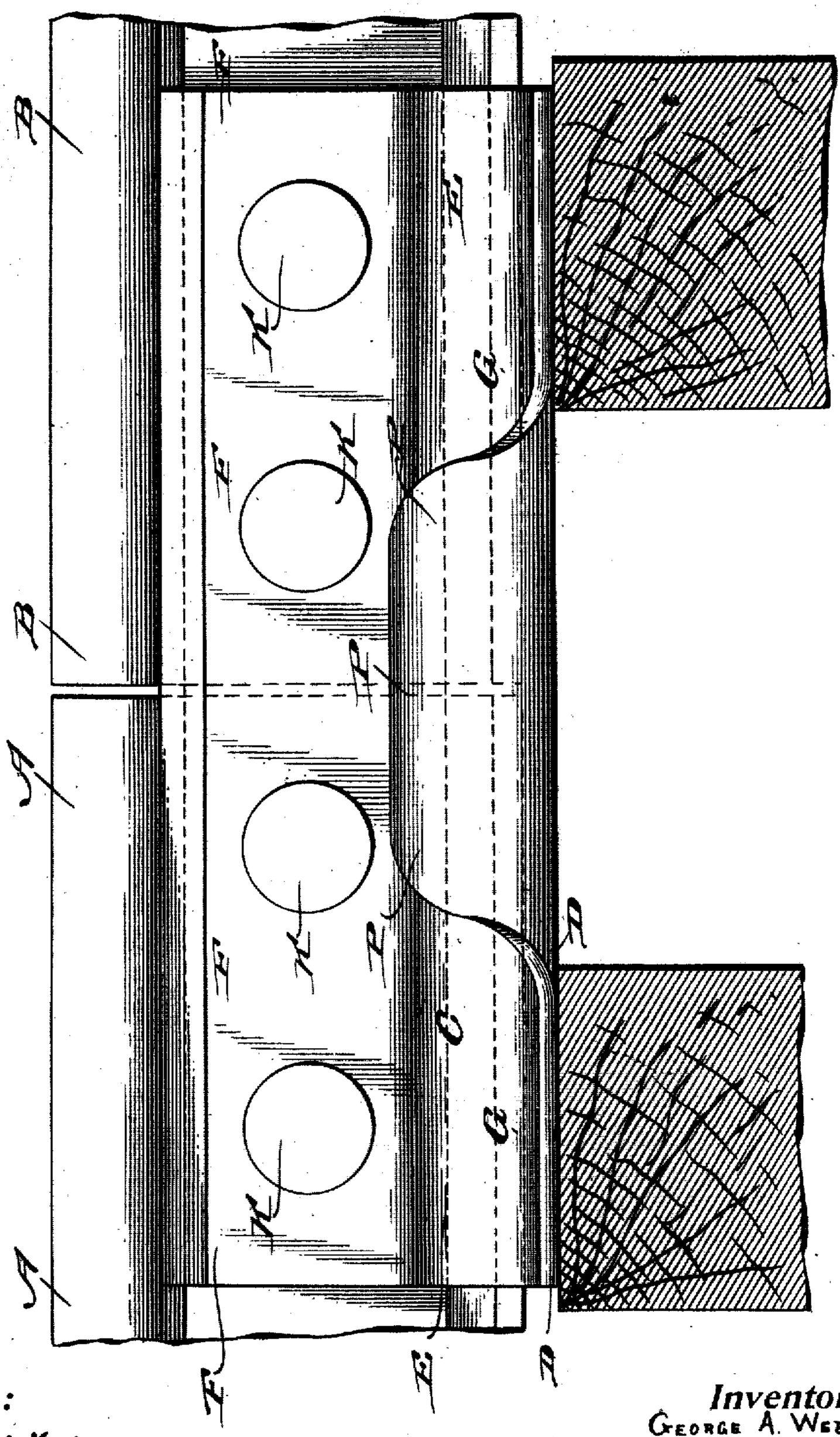

Fig. 8.

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UNITED STATES PATENT OFFICE.

GEORGE A. WEBER, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE RAIL JOINT COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

RAIL-JOINT.

No. 817,823. Specification of Letters Patent. Patented April 17, 1906.

Application filed March 31, 1905. Serial No. 253,124.

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 railroad-rail joints; and the object of the invention is to improve upon the construction of the rail-chairs or shoe-angles, thus increasing their strength and efficiency and the strength of the joint.

Further objects of the invention will hereinafter appear; and to these ends the invention consists of a rail-chair embodying the features of construction, combinations of elements, and arrangement of parts, substantially as hereinafter fully described and claimed in this specification and shown in the accompanying drawings, in which—

Figures 1, 2, 3, and 4 are transverse sectional views of rail-joints embodying the invention. Fig. 5 is a side elevation of Fig. 3. Fig. 6 is a side elevation of Fig. 1. Fig. 7 is a plan view of Figs. 3 and 6. Fig. 8 is a side elevation of a modification.

Referring to Figs. 1, 2, and 6, A and B represent the meeting ends of rails, and C is a rail-chair having a base D and an inwardly-turned portion E, connected to an upright portion F, forming a bolt-plate or side bar. As shown, the upright or side bar F bears under the rails and on top of the flanges of the rails, and in this instance the inwardly-turned portion E does not bear upon the bases of the rails for its entire surface, but for only a portion of the surface, so that a snug fit is obtained upon the rail-flanges. At the juncture of the inwardly-turned portion E of the chair and of the base D is a spiking rib or nose G, and in Figs. 1, 2, and 6 portions H of this spiking-rib are bent downwardly at each end of the rail-chair to increase the strength of the chair. The hollowed or concave flanges H form downwardly-bent wings, which increase the total height of the chair. In Fig. 1 two coöperating rail-chairs are shown, one at each side of the joint, while in Fig. 2 one rail-chair is shown at one side of the joint, while there is an angle-plate I at the other side of the joint. In both instances suitable bolts J, provided with heads K and nuts L, secure the parts of the joint together.

In Figs. 3 and 5 the downwardly-bent wing or hollowed flange is provided at the central portion of the length of the rail-chair instead of at each end. In Fig. 4 the wings O are bent upwardly at each end of the rail-chair instead of downwardly. In Fig. 8 the wing P is bent upwardly at the center of the length of the rail-chair to increase the strength of the chair.

The webs or wings H, whether bent down or up, may be formed at an angle either extending outwardly or inwardly from the vertical or else they may be bent to a substantially vertical position. The position of the central portion of the hollow of a wing determines the angle of the wing. In Fig. 3 the left-hand chair has the wing extending outwardly from the vertical, while the right-hand chair shows the wing extending inwardly. Thus two different chairs may be provided for one joint, or else chairs having similarly-bent wings may be used, and either chair may be used with an upright or bolt plate of any suitable character at the opposite side of the joint.

In Fig. 2 a rail-chair is shown with the web or wing H arranged substantially vertically, and, if desired, two chairs of this character may be used.

It is preferable to have the webs or wings bent either up or down and at an angle to the vertical, like Figs. 1, 3, and 4, because such construction seems best to meet the combination strains in the joint due to the oscillating sidewise action of the train on the rails and firmly holds the rails up as well as prevents the rail ends from rising. It is important to take care of the resultant side strains in a joint due to the action of the wheels which exert both a downward and outward force.

The turned-up webs or wings, like Fig. 4, are advantageous in that they may be formed at the center of the joint without interfering with the tamping, and the center of the joint may be placed on a tie, if desired, instead of between the ties. The upturned webs are also preferable for electrically-conducting joints, since there is no liability of the wings touching any metal under the joint on the ground, for instance, and causing short circuits. With this form it is not necessary to

displace any of the road-bed for the webs, so that the danger of snow and water freezing in such hole is obviated.

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

Therefore, without limiting myself to the constructions shown and described or enumerating equivalents, I claim, and desire to secure by Letters Patent, the following:

1. A rail-joint comprising the rails, a side bar at one side of the joint, and a rail-chair at the other side, said chair comprising a base, an upright, and a spiking-rib bent out of the plane of the base to form a hollowed strengthening-web and having the central portion of the hollow of the web at an angle to the vertical.

2. A rail-joint comprising the rails, a side bar at one side of the joint, and a rail-chair at the other side, said chair comprising a base, an upright, and a spiking-rib bent downwardly out of the plane of the base to form a hollowed strengthening-web and having the central portion of the hollow of the web at an angle to the vertical.

3. A rail-joint, comprising the rails, rail-chairs at each side of the joint, each chair having a base-plate, a fishing-plate and a spiking-rib, a portion of said rib being bent out of the plane of the base-plate to form a hollowed strengthening-web and having the central portion of the hollow of the web at an angle extending outwardly from the vertical.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GEORGE A. WEBER.

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