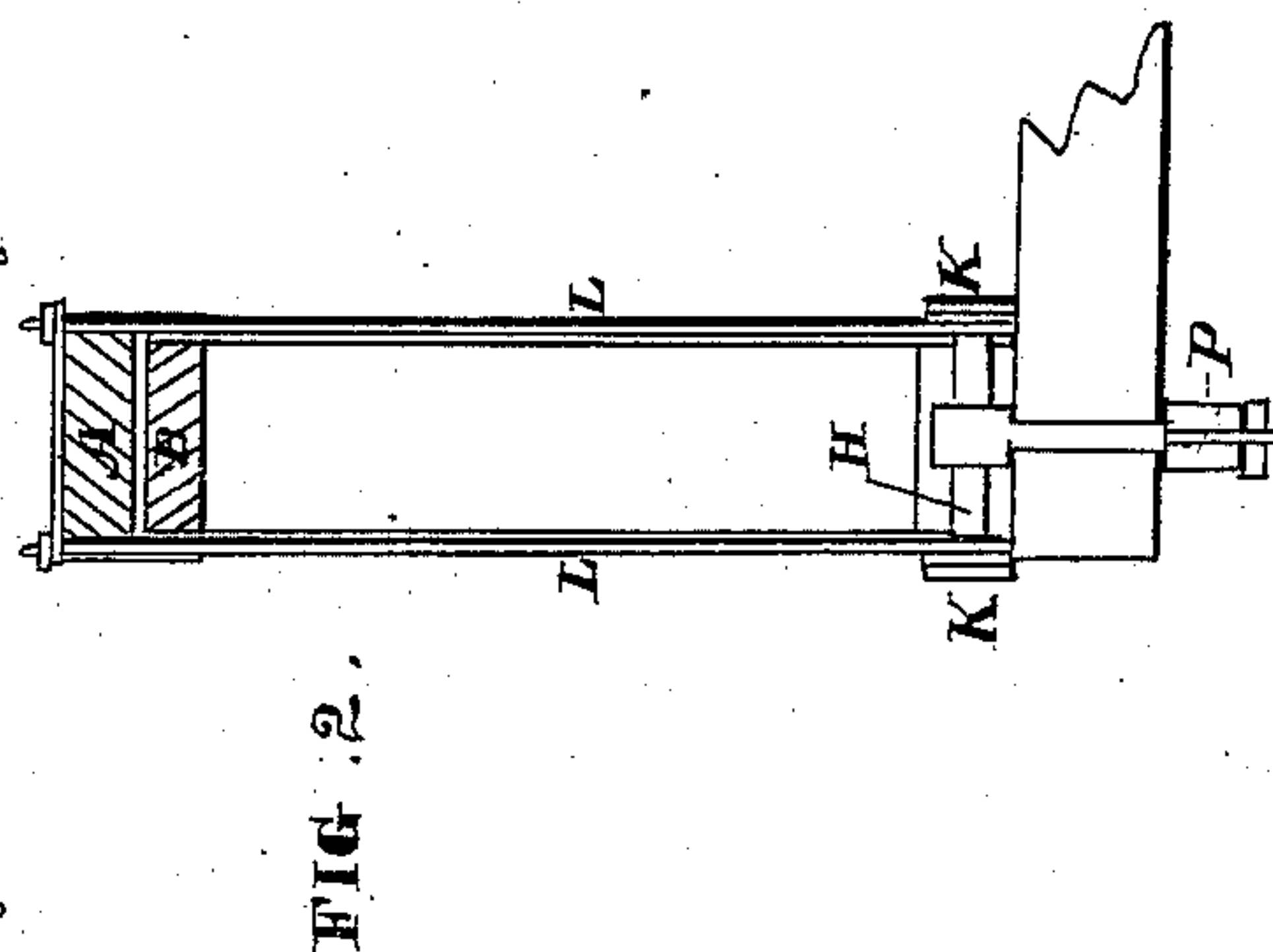
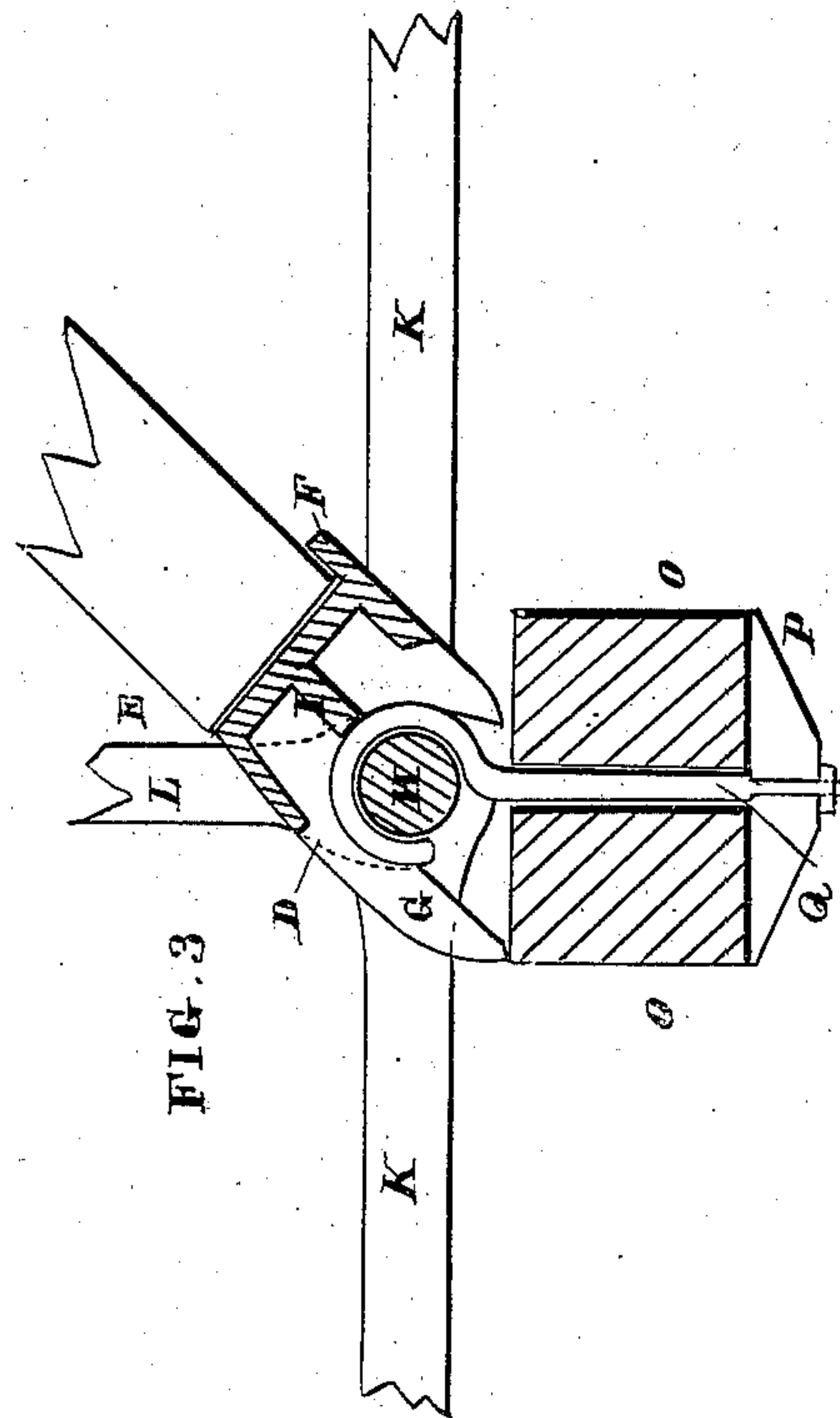
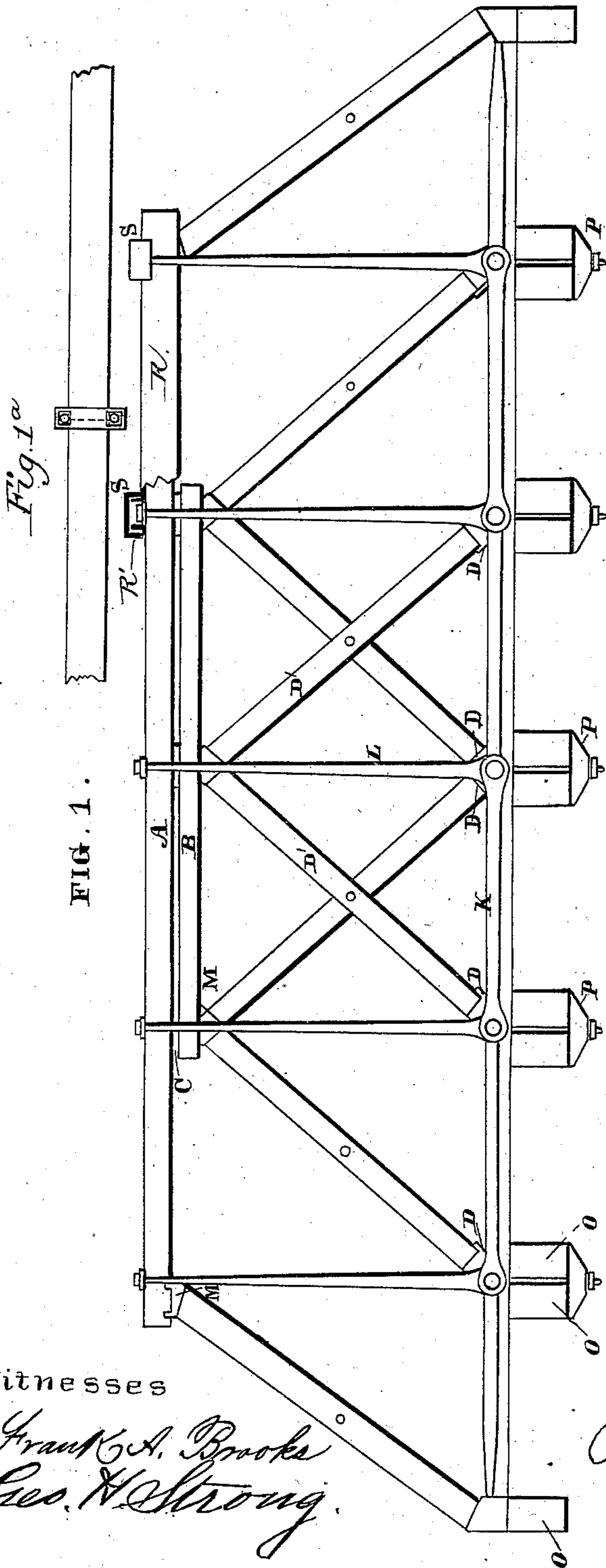


R. W. GORRILL.
Truss-Bridge.

No. 224,677.

Patented Feb. 17, 1880.



Witnesses

Frank A. Brooks
Geo. H. Strong.

Inventor

Richard W. Gorrell
By Dewey & Co.
Attys

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FIG. 4

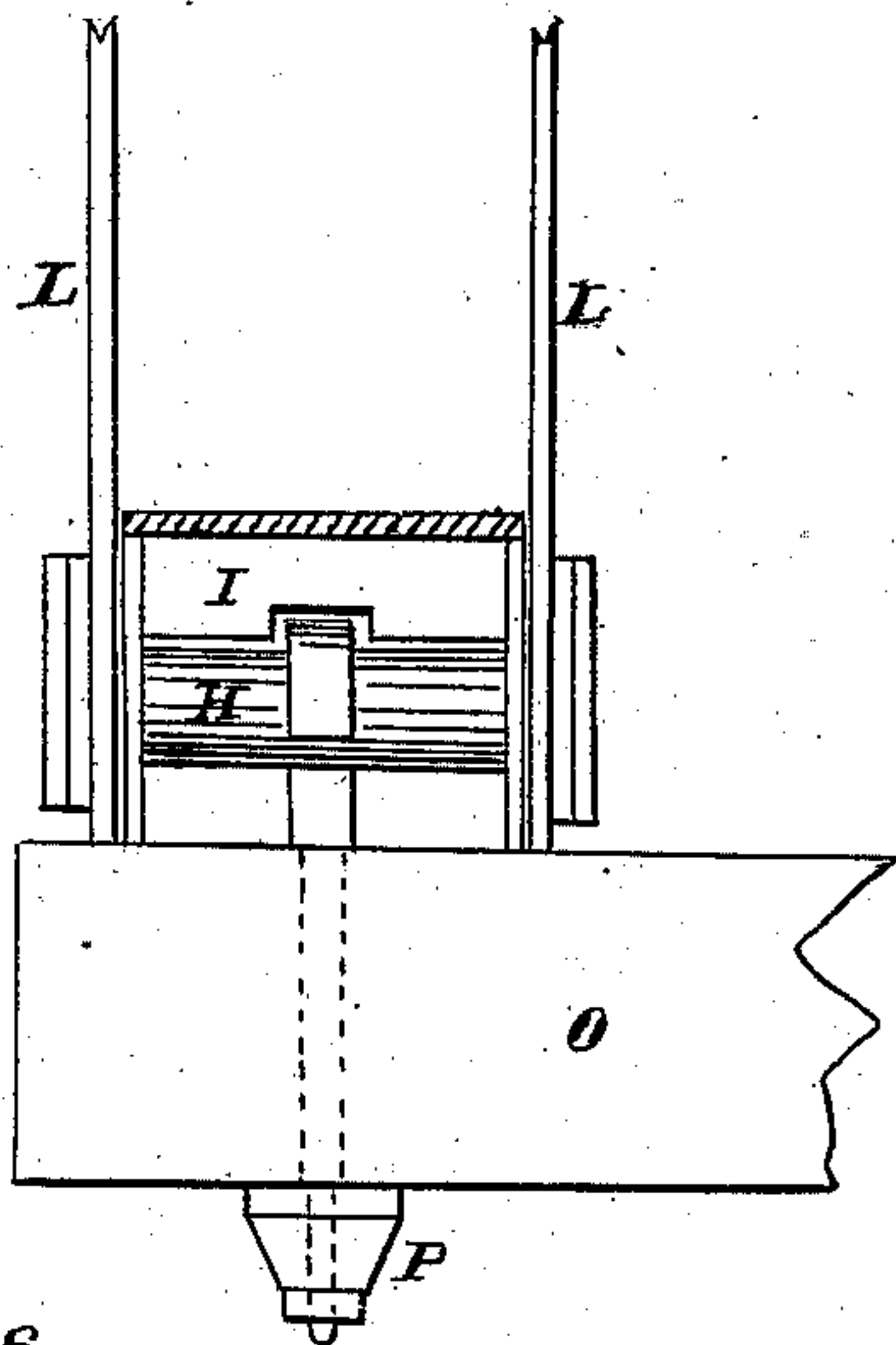


FIG. 5.

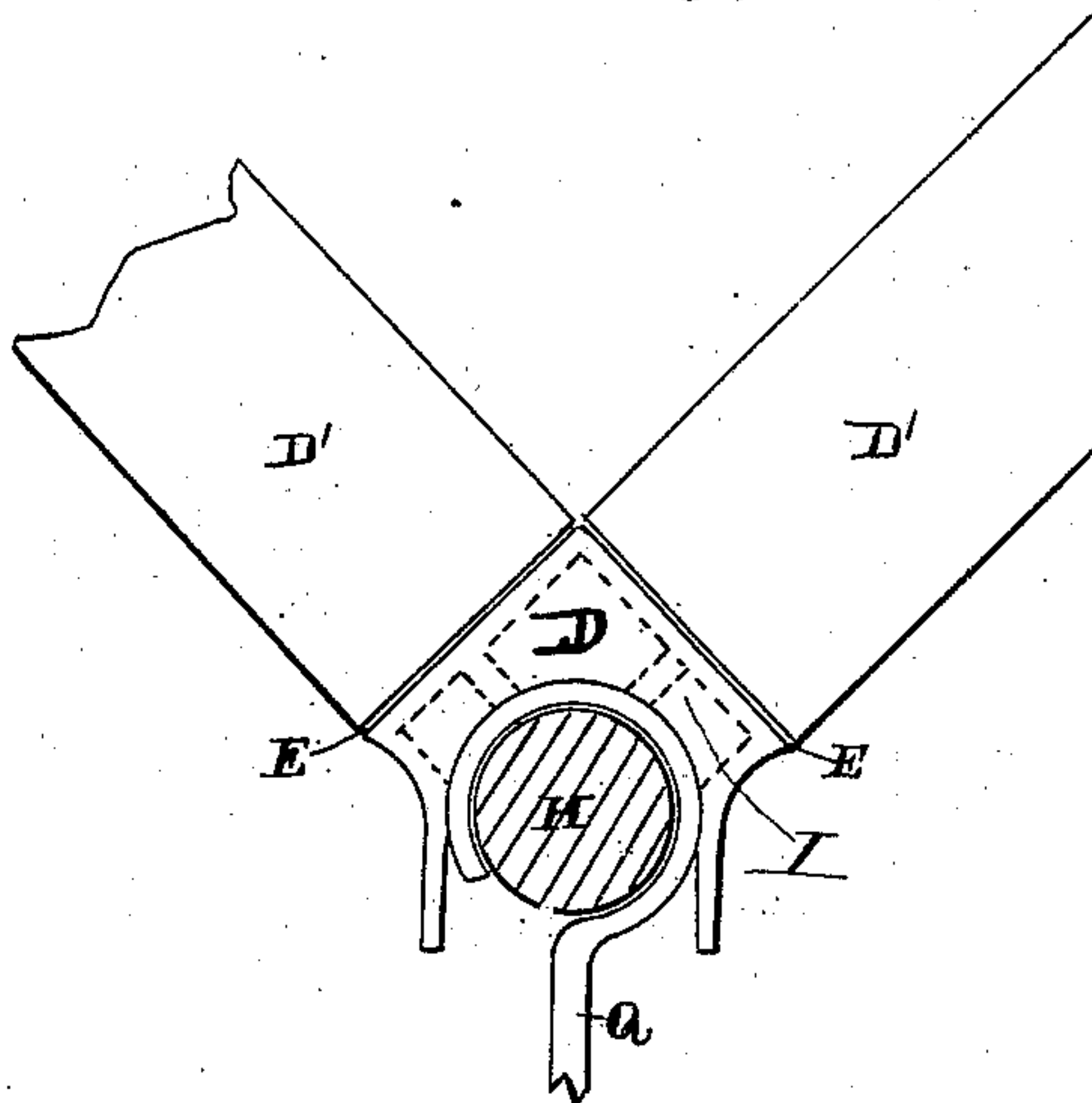


FIG. 6

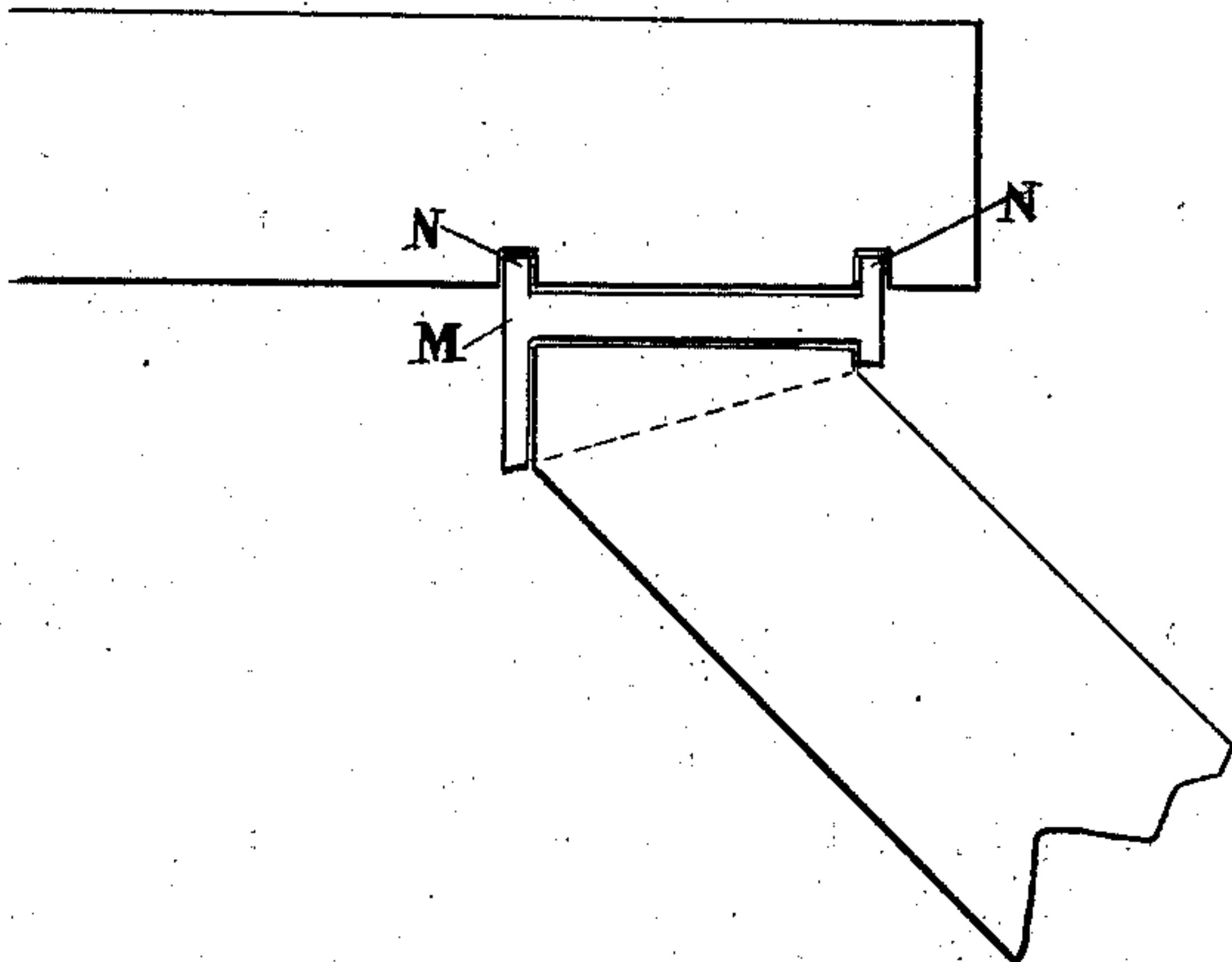


FIG. 7

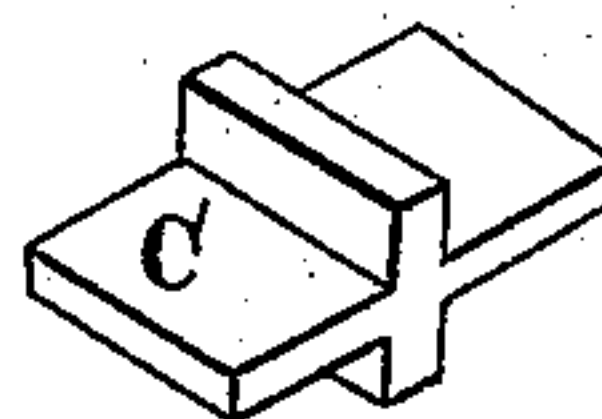
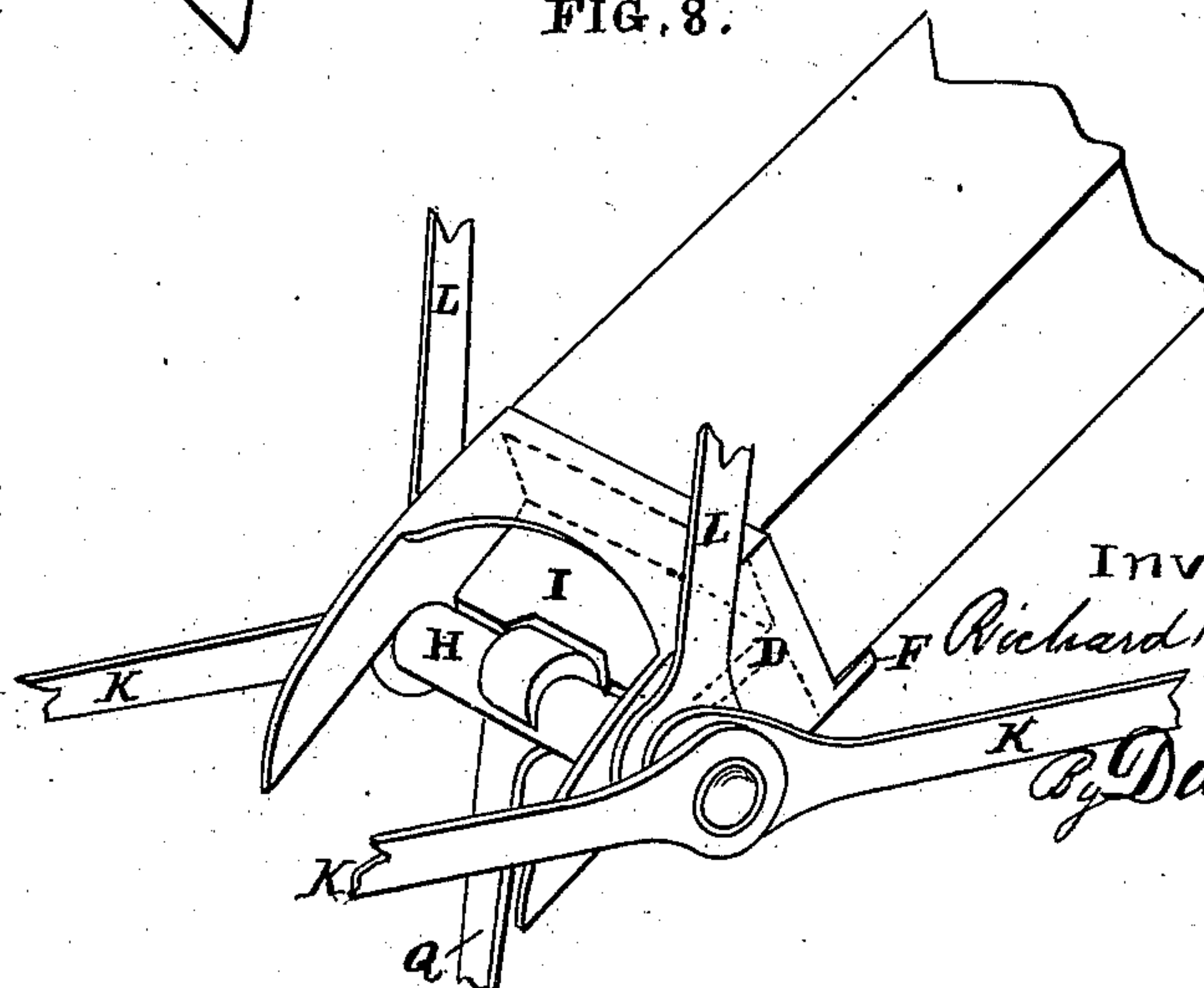


FIG. 8.



Witnesses

Frank A. Brooks
Geo. H. Strong

Inventor

Richard W. Gorrell
By Dewey & Co.
attys

UNITED STATES PATENT OFFICE.

RICHARD W. GORRILL, OF SAN FRANCISCO, CALIFORNIA.

TRUSS-BRIDGE.

SPECIFICATION forming part of Letters Patent No. 224,677, dated February 17, 1880.

Application filed August 14, 1879.

To all whom it may concern:

Be it known that I, RICHARD W. GORRILL, of the city and county of San Francisco, and State of California, have invented an Improved Truss-Bridge; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in the construction of truss-bridges; and it consists, first, in a novel formation of the brace-blocks and counter brace-blocks, so that they are greatly strengthened to resist the thrust of the braces. They are also so constructed as to allow an independent exterior arrangement of the suspension-rods, which will permit of the blocks being readily removed at any time.

My invention further consists in a novel construction of the top chord in three pieces with an improved brace-block and packing, and in certain other details of construction, which will be more fully described by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of one side of my bridge, and Fig. 1^a is a top view, showing the joint midway of the upper chord. Fig. 2 is a transverse section through one side. Fig. 3 is a view of a brace-block, showing a portion of the floor-timbers and lower chords. Fig. 4 is an inside view of my brace-block. Fig. 5 is a view of the counter brace-block. Fig. 6 is a view of the top-chord brace-block. Fig. 7 is a view of the packing. Fig. 8 is a perspective view of the block D.

A is the top chord of my bridge. Instead of making it in two or more pieces standing vertically edgewise side by side, and having packing between them, in the usual manner of forming this class of bridges, I form my chord of a single timber in width, but divide it midway of its length, or rather form it of two pieces placed end to end, as shown. Below the meeting ends of these timbers A is a timber, B, which extends to a considerable distance upon each side of this joint, so as to include two panels or more of the bridge. Between the timbers A and B are placed the packing-plate C, which are formed, as shown in Fig. 7, so as to be let into the timbers, and thus be held in place. These plates lie just

over the junction of the panels and the top-chord brace-blocks.

By this construction I am enabled to use shorter timbers for the top chord, and I make a stronger structure by the use of the joint-timber B, while the plates C prevent the timbers from touching.

The brace-blocks D are of a peculiar shape and construction, as shown in Figs. 3, 5, and 8. The face E, upon which the brace D rests or abuts, is flat and fitted to receive the end of the brace, while projecting lugs F serve to hold it from slipping off the lower edge. The side G is curved, as shown, and is open. The ends are made forked or open, the upper part of the fork forming a curve which fits the pin H. Extending from end to end of the brace-block, and filling the space radially from the pin H to the face E, is the flange or plate I, which is cast with the block, and it forms an important feature, because it forms a continuous and direct support for the brace from the pin H itself. As this support is from end to end of the pin, it will be seen that I am enabled to place the suspension-rods and chords entirely outside the brace-block without any undue strain upon it. These flanges are cut away just in the center to admit the beam-hangers being hooked over the pin from which they depend, as shown.

The counter brace-block D at the center of the bridge has two faces, E E, to receive and support braces from opposite directions, and the plates or flanges I extend, as before described, from the faces radially to the pin, so that the braces are sustained and bear directly upon the whole length of the pin. These brace-blocks are formed without slots or openings to receive the lower chords or suspension-rods, and are consequently easily removed if broken, or for other cause, by simply lifting them off the pin without disturbing the suspension-rods at all.

The chords K and suspension-rods L are entirely outside the brace-blocks, and the pins H are long enough to pass through them. Instead of boring a transverse hole at the ends of the pins to receive a fastening-pin in the usual manner, I countersink the ends of the pins, so that they may be easily headed down,

and thus retained permanently in place. This is rendered possible from the fact that I am not obliged to withdraw my pin and remove the suspension-rods when the blocks are to be removed. I also avoid all rattling from loose joints.

The top-chord brace-blocks M are formed, as shown in Fig. 6, with a socket below, which receives the upper end of the brace and protects it from wet. Flanges N upon the upper face are let into the top-chord timbers, and thus hold the blocks securely in place. The floor-beams O O are supported by the transverse shoes or blocks P, suspended by the links Q from the pins H, in the usual manner.

I protect the top chords of my bridge from all action of the weather by means of a covering of galvanized iron, which is fitted to the timber between the suspension-rods, having its ends turned up at these points. Caps S fit these turned-up ends and cover the upper ends of the suspension-rods and the uniting-plates. These caps are removable and enable me to have access to these parts without disturbing the main portion of the covering for adjustment.

By my construction it will be seen that there is no contact of wood to wood at bearing-points, where there is liability to decay, and this is an important desideratum.

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

1. The improved brace-block D for bridges, having one or more flat imperforate faces, E, and provided with one or more continuous plates, I, extending longitudinally with and resting upon the pin, whereby the face E is supported and the thrust of the brace resisted longitudinally upon the pin, substantially as herein described.

2. The brace-block D, forked at the ends to receive the pin H, and having the continuous flat face or faces E for the braces and longitudinally-placed bearing plate or plates I, as shown, in combination with the suspension-rods L and chords K, when said chords and rods extend outside of the brace-blocks, substantially as herein described.

3. The combination of the continuous unperforated brace-blocks D, with the faces E, and radial supporting-flange I, with the exterior chords and suspension-rods K L, and the pins H, when said pins are headed down upon the outside, so as to be permanent and prevent rattle, substantially as herein described.

4. The top chord consisting of the timbers A A, placed horizontally above the timber B, and meeting midway of its length, as shown, in combination with the packing-plate C, braces and truss-rods L, and the lower chord, K, the whole constructed to operate substantially as herein described.

5. In combination with the top chords of a bridge, as shown, the independent coverings R and removable caps S, substantially as and for the purpose herein described.

6. The improvement in the construction of bridges consisting in uniting the top chords, A B, the braces and the lower chords, and suspension-rods K L by means of the brace-blocks D and M and the metallic packing-plates C, so that there will be no contact of wood at the bearing-points, substantially as herein described.

In witness whereof I have hereunto set my hand.

RICHARD WINFIELD GORRILL.

Witnesses:

S. H. NOURSE,

FRANK A. BROOKS.