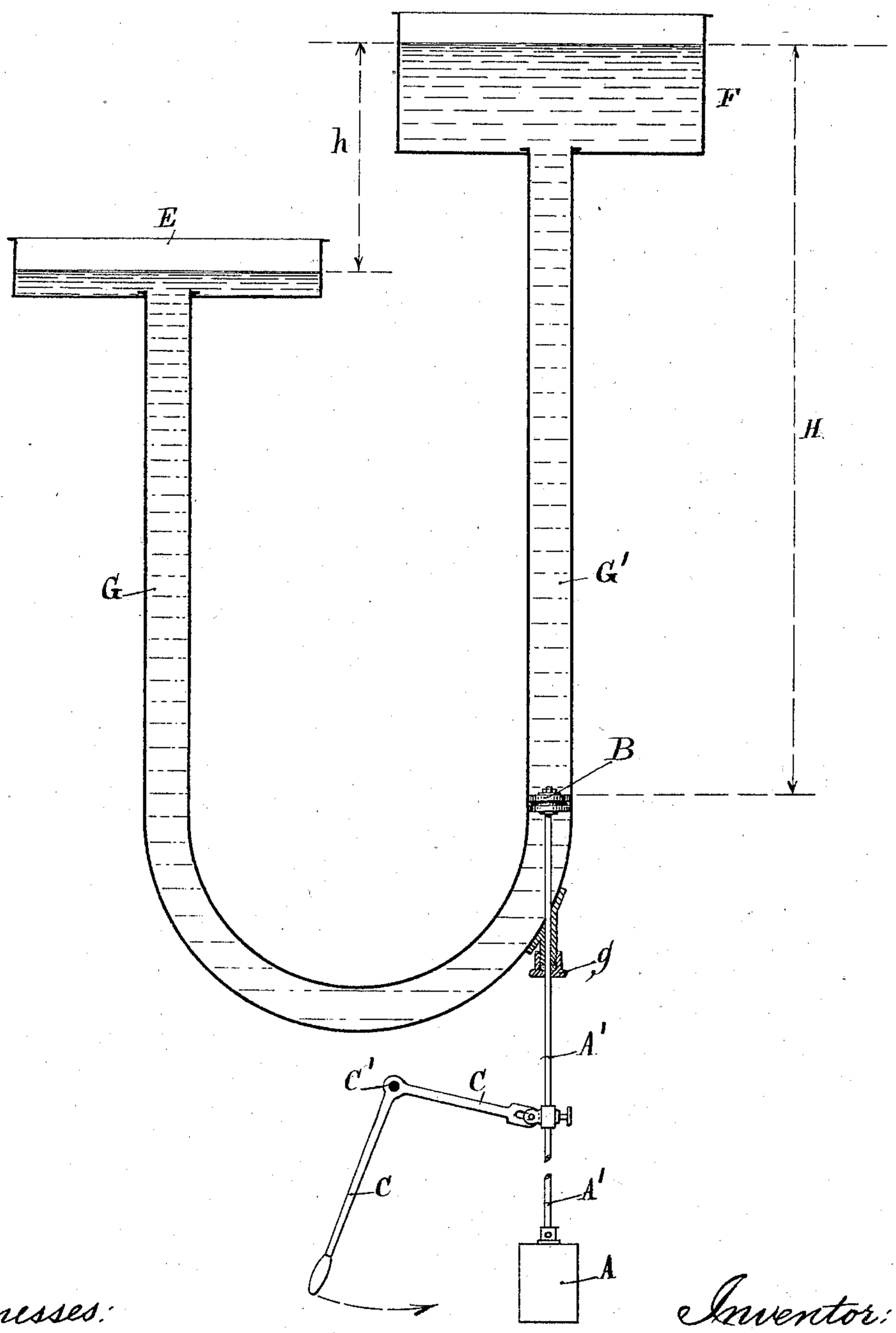
No. 607,910. Patented July 26, 1898.

H. BEAU.

HYDRAULIC HAMMER OR STAMP.

(Application filed Dec. 27, 1897.)

(No Model.)



Witnesses:

J. K. Boulter

C. Thornbrugh

Inventor:

Henry Beau,

By Wm. E. Boulter,

Attorney

UNITED STATES PATENT OFFICE.

HENRI BEAU, OF PARIS, FRANCE.

HYDRAULIC HAMMER OR STAMP.

SPECIFICATION forming part of Letters Patent No. 607,910, dated July 26, 1898.

Application filed December 27, 1897. Serial No. 663,633. (No model.) Patented in France May 6, 1897, No. 266,671.

To all whom it may concern:

Be it known that I, HENRI BEAU, a citizen of the Republic of France, and a resident of Paris, France, have invented certain new and useful Improvements in Hydraulic Hammers or Stamps, (for which Letters Patent have been obtained in France, No. 266,671, dated May 6, 1897,) of which the following is a full, clear, and exact description.

This invention relates to hydraulic hammers or stamps; and it consists in the novel arrangement and combination of parts, as hereinafter fully described, illustrated in the drawing, and pointed out in the appended claims.

In the drawing I have shown the invention by a sectional elevation.

The invention will be best understood by reference to the accompanying drawing, in which the principle thereof is shown, by way of example only, as applied to a stamp-hammer constructed as follows:

Two columns or pillars G G′ of unequal height, each terminating at the top in a chamber E F, respectively, communicate with each other at the bottom thereof, the said columns being filled with water. In the column G′ there is adapted to move a tightly-fitting piston or plunger B, connected with the stamp-hammer A by the rod A′. These three parts may receive upward motion from a lever C, pivoted at C′. The rod A′, which connects the piston B to the stamp-hammer A, is arranged in the axial line of the column G′, through which it passes, entering it through an aperture provided for the purpose at its base. Suitable packing *g* insures tightness of the joint.

Assuming that the piston is at its dead-point, the stamp-hammer having descended, if an impulse be given to the lever C in the direction of the arrow there will be obtained an upward movement of the hammer and also, consequently, of the tightly-fitting piston. To this end a comparatively slight strain only is required, since it is represented by the product of the piston-section, the distance traveled, and the difference *h* between the levels of the two columns, respectively. This difference of level, whatever the height of the two columns may be, must therefore in all cases be slight. If when the piston has ascended to a certain point it be left to itself, it will redescend at first under the pressure of the column *h;* but when it has reached the end of its stroke, at the precise moment when the hammer comes to touch the article operated upon, there will necessarily take place a sudden stoppage, and the water in the column G, continuing in motion by virtue of the impact received, will momentarily release the piston B, which will at that moment be sustaining the total pressure of the column H, to which will then be added the impact of the said column. Thus we obtain a considerable power, which will vary according to the height of the tall column.

It will be understood that the hammer proper may be replaced by any other tool or mechanical appliance acting by percussion.

I claim—

1. The combination with two columns differing in height and communicating with each other at the base, of a piston or plunger arranged within the longer column, a rod connected with said piston and extending exteriorly of the said column, and means for moving the plunger and rod upwardly, as and for the purpose specified.

2. The combination with two columns differing in height and communicating with each other at the base, and a receptacle at the upper end of each column, of a piston or plunger arranged within the longer column, a rod connected with said piston and extending exteriorly of said column in the axial line thereof, a stamp connected with said rod, and means for moving the plunger, rod and stamp upwardly, as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 15th day of December, 1897.

HENRI BEAU.

Witnesses:

EDWARD P. MACLEAN,

VICTOR MATEUX.