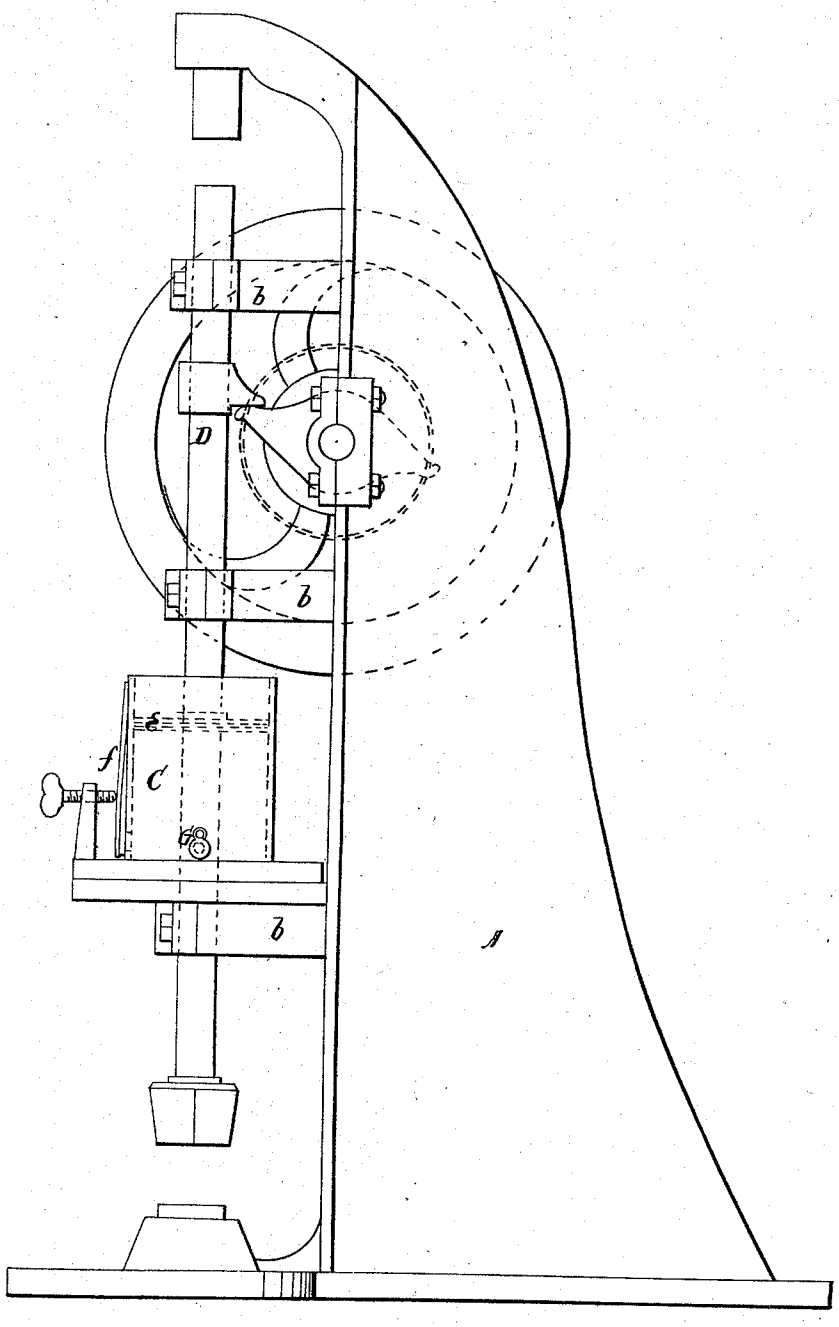
B. Hughes.

Power Hammer.

No. 10,923. Patented May 16, 1854.



THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

BERNARD HUGHES, OF ROCHESTER, NEW YORK.

TRIP-HAMMER.

Specification of Letters Patent No. 10,923, dated May 16, 1854.

To all whom it may concern:

Be it known that I, BERNARD HUGHES, of the city of Rochester, in the county of Monroe and State of New York, have invented a new and Improved Mode of Operating Machine or Trip Hammers; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my invention consists in providing the slide rod of the hammer with a piston head and cylinder in such a manner that the air can be excluded from or admitted into said cylinder and under said piston in such manner and degree as to be able to control the stroke of the hammer at the pleasure of the operator, and by operating the hammer in the exhausted cylinder equilibrium of the atmospheric pressure being destroyed, the stroke of the hammer is greatly increased by the downward pressure of the atmosphere, without an increase of the weight of hammer.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction.

I construct my atmosphere hammer in its general features as other machine or steam hammers are by using for a foundation, a guide frame, pedestal with crane top. I have adopted a device of the last named character as will be seen in the accompanying drawings marked letter A. I use this pedestal for the permanent support of the hammer on which it operates and from which projects brackets marked *b*, *b*, *b*, for the support and guide of the hammer rod. On one of these brackets is permanently fixed the air cylinder C, through which passes the hammer-rod *d*, to which is fixed the piston head E, within the cylinder C.

Letter *f*, is a spring valve covering an aperture in the side and near the bottom of the cylinder through which the passage of the air in its egress is regulated, thereby completely controlling the stroke of the hammer.

Letter *g*, is a cock or valve through which the cylinder is furnished with air which is kept in by a check valve on the inside.

The advantages of my improvement are that machine hammers of this kind are much more easily and cheaply made than any steam trip hammer for the same purposes; they also cost less to work and control them, and are far less liable to get out of order. By the use of atmosphere alone the vacuum is more complete and of course the blow is much more effective than in the use of steam for the same purposes.

What I claim as new and of my invention and desire to secure by Letters Patent, is—

Adding to the stem or rod of the trip hammer a piston working in a cylinder, open on the upper end and closed at the bottom, and provided with regulating cock and valve substantially as described; by which means I am enabled to add the whole or such part of the pressure of the atmosphere as may be desirable to the weight of the hammer in giving the blow.

BERNARD HUGHES.

Witnesses:

JOHN THOMPSON, JR.,

GEORGE G. MUNGER.