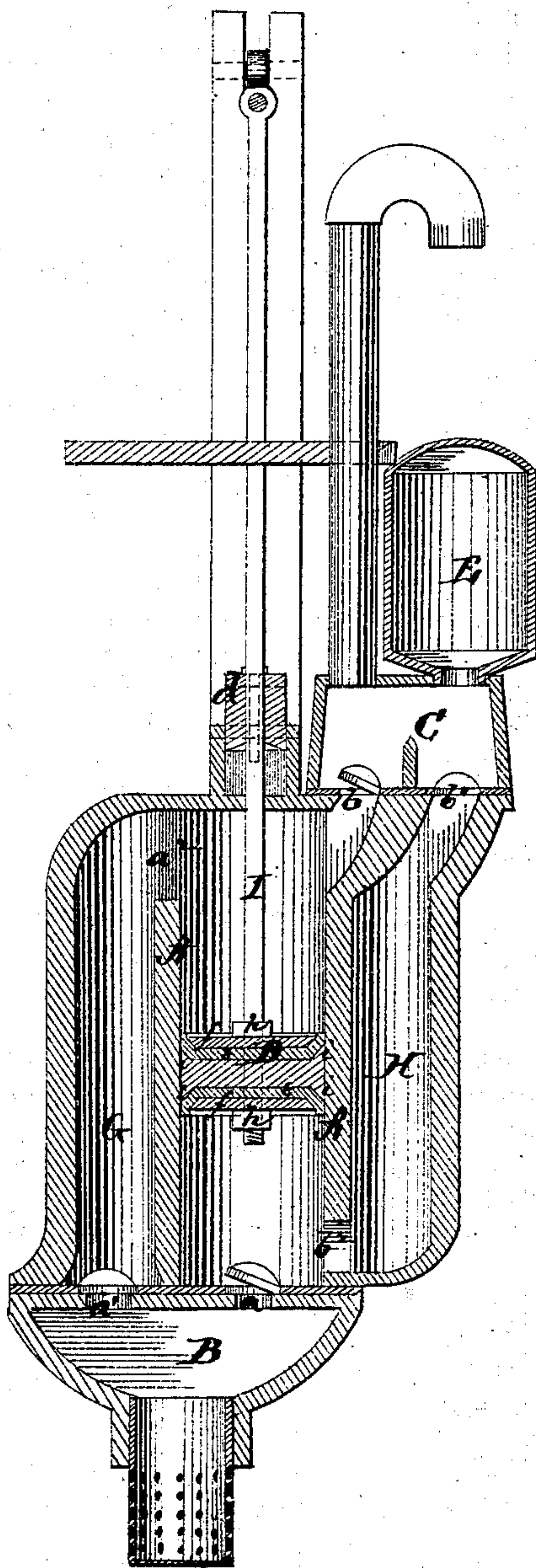


# *Dan<sup>l</sup> J Gorton's Pump.*

116703

PATENTED JUL. 4 1871



Witnesses.

*Chas. L. Evers,*  
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Inventor.

*Daniel J. Gorton*  
*per*  
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*attys.*



# UNITED STATES PATENT OFFICE.

DANIEL J. GORTON, OF QUINCY, ILLINOIS.

## IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. 116,703, dated July 4, 1871.

*To all whom it may concern:*

Be it known that I, DANIEL J. GORTON, of Quincy, in the county of Adams and in the State of Illinois, have invented certain new and useful Improvements in Pumps; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the construction and arrangement of a combined suction and force-pump, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, which represents a longitudinal vertical section of my pump.

My pump consists of a cylinder, A, with two ports or water-passages, one *a* for filling the cylinder and the other *b* for discharging; two valve-chambers, B C, plunger D, and air-chamber E; also, stuffing-box *d*, through which the plunger-rod passes, all made of cast metal. There is also a suction-pipe, G, and discharge-pipe H, for which gas-pipe may be used, either galvanized or not, as preferred. The suction-pipe G communicates, through port *a*<sup>1</sup>, with the valve-chamber B, and has an opening, *a*<sup>2</sup>, at its upper end leading into the cylinder A. The discharge-pipe H has an opening, *b*<sup>2</sup>, at its lower end leading into the lower end of the cylinder, and at its upper end it communicates through port *b*<sup>1</sup> with the valve-chamber C. The cylinder is turned on the inside so that the plunger packs perfectly tight with the least possible friction. The plunger D is turned smooth so as to move perfectly easy, with a flange, *i*, projecting from its upper and lower surface in the form of a double cup. This is packed with pieces *e e*, either of rubber or sole-leather, cut round, from one-half to three-quarters of an inch larger than the inside of the cylinder, and drawn down into the cups by means of two

followers, *f f*, having beveled edges, with nuts *h h*, and screw-threads on the plunger-rod I, throwing the edges of the packing up and down the surface of the cylinder, making it self-adjusting and self-packing. This makes the plunger very strong and very durable, for it will fill until it is worn down to the iron. The ports *a a*<sup>1</sup> and *b b*<sup>1</sup> are provided with valves arranged in pairs in such a manner that either pair is secured by two bolts, making them easy of access when needing repacking. They may be packed with sole-leather or rubber. The valves are all direct-acting, and, the water-channels being large and no sharp angles, there is but little friction, so that the operation of pumping water is simply raising the weight of it by leverage. The air-chamber E is placed in close proximity to the discharge-valves, so that the strain or jar on the valves when they shut is thrown to the air-chamber, not only assisting in the operation of the pump but making the durability much greater. The plunger-rod above the stuffing-box may be of wood, and connected by means of a stirrup bolted to the part that goes through said stuffing-box into the cylinder.

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

The within-described pump, consisting of the cylinder A, valve-chambers B C, air-chamber E, suction and discharge-pipes G H, ports *a a*<sup>1</sup> and *b b*<sup>1</sup>, openings *a*<sup>2</sup> *b*<sup>2</sup>, and the plunger D formed in double-cup shape by means of the flanges *i i*, and provided with packing *e e*, followers *f f*, and nuts *h h* on the plunger-rod I, all of said parts being constructed, combined, and arranged substantially in the manner and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 6th day of May, 1871.

DANIEL J. GORTON.

Witnesses:

J. M. CYRUS,  
C. L. EVERT.