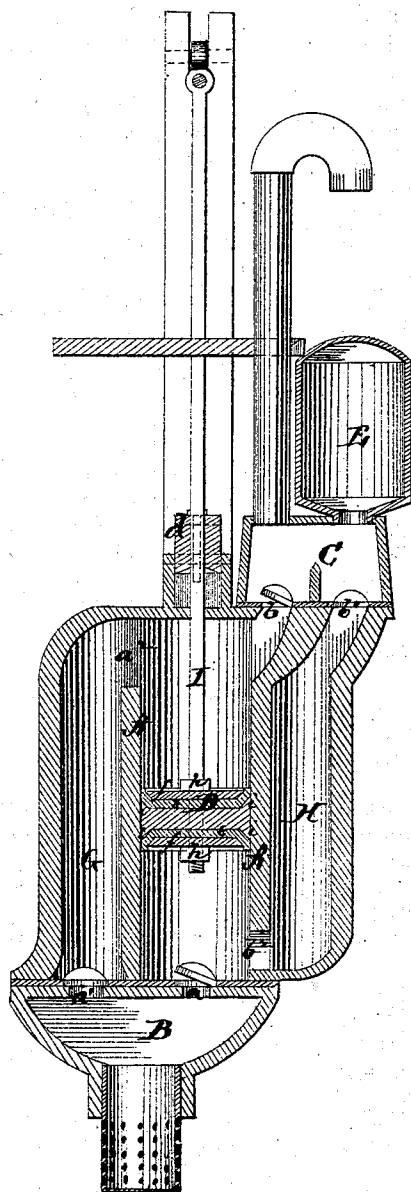


Dan^y J Gorton's Pump.

116703

PATENTED JUL 4 1871



Witnesses.

Chas. L. Evers,
Jas. E. Neutchenam

Inventor.

Daniel J. Gorton
per
Alexander Massey
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*¹, with the valve-chamber B, and has an opening, *a*², at its upper end leading into the cylinder A. The discharge-pipe H has an opening, *b*², at its lower end leading into the lower end of the cylinder, and at its upper end it communicates through port *b*¹ 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*¹ and *b b*¹ 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*¹ and *b b*¹, openings *a*² *b*², 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.