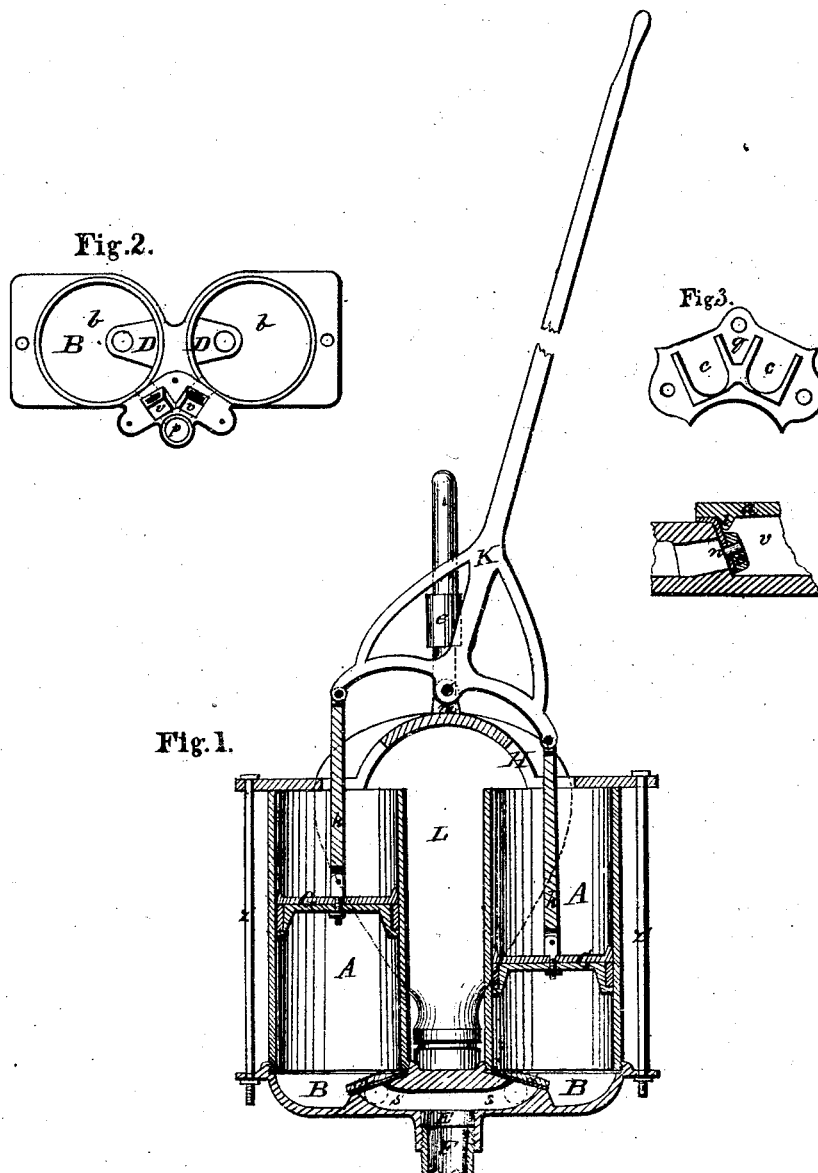


D. O. Holman, 2. Sheets, Sheet 1.

Double Acting Pump.

No. 108,265.

Patented Oct. 11. 1870.



Witnesses:

E. W. Anderson
A. L. Kame

Inventor:

D. O. Holman,
Chipman, Hosmer & Co.
Attorneys

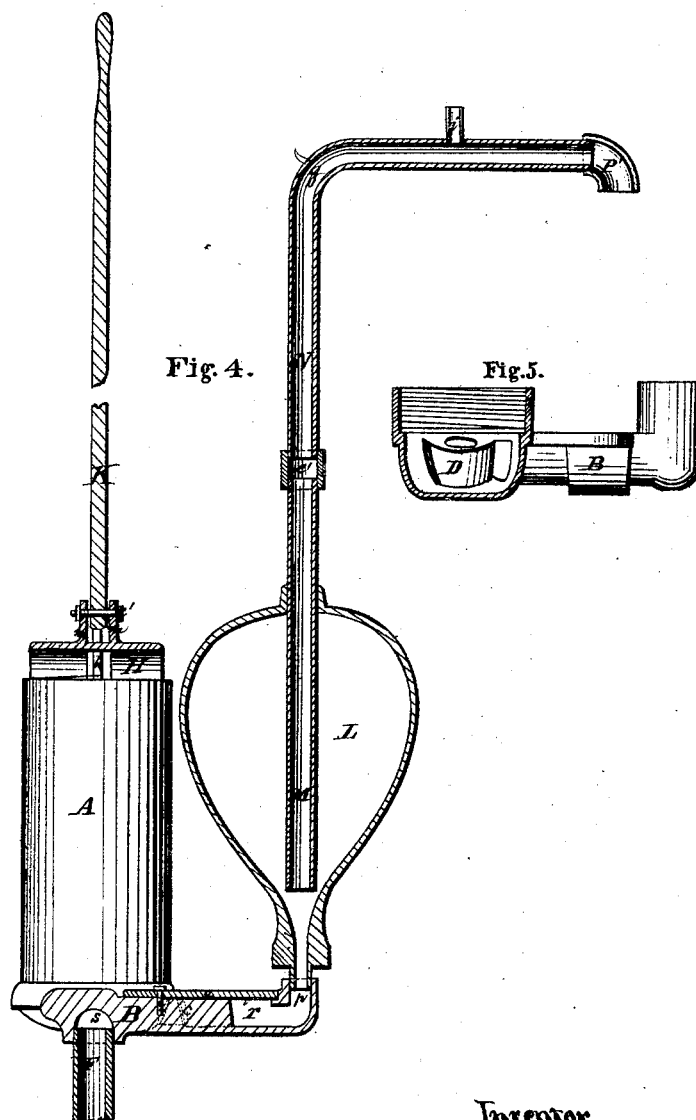
D.O. Holman,

2. Sheets, Sheet 2

Double Acting Pump.

No. 108,265.

Patented Oct. 11. 1870.



Witnesses:
E.W. Anderson
L. B. Kaner

Inventor
D. O. Holman,
Chipman Hornet & Co
Attorneys.

United States Patent Office.

DAVID O. HOLMAN, OF ADAMS, NEW YORK.

Letters Patent No. 108,265, dated October 11. 1870.

IMPROVEMENT IN PUMPS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, DAVID O. HOLMAN, of Adams, in the county of Jefferson and State of New York, have invented a new and valuable Improvement in Pumps; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a vertical section of my invention, taken through the axes of the cylinders.

Figure 4 is a central vertical section taken at right angles to the above.

Figures 2 and 3 are details.

My invention relates to pumps, and consists, mainly, in the construction and novel arrangement of devices, whereby a force and suction-pump is made to produce a continuous and equable flow of water.

By means of this pump water can be easily drawn from cisterns or wells, and forced, if necessary, into the upper stories of houses.

It is a double-action pump, and may be thus described.

The letters A A of the drawing designate the two cylinders or piston-chambers. They are cast separately and open at each end.

A screw-thread is turned on the lower end of each cylinder, and they are fastened to the bed-piece or foundation casting B, by screwing them into the two circular openings *b b*, in the top of the bed-piece, shown in fig. 2.

B represents the foundation casting.

It is made hollow, and contains the four valves of the pump.

The inlet-valves *d d* are seated on the slanting tops of the shoulders D D, cast on the interior of the bed-piece B.

E represents the receiving-pipe, into which the conducting-pipe F is screwed.

c c represent the outlet-valves, which hang nearly vertically against their seats *n n*, shown in fig. 2.

In fig. 3—

g represents the leather piece to which the valves are attached, and which forms the packing between the upper surface of the bed-piece and the plate *a*.

G G are the plungers, packed suitably, and attached by the pitmen *h h* to the arms of the lever K, by which the pump is operated.

H designates a casting, which forms a cover to the cylinders, and from which project the lugs *m*, forming a support for the fulcrum-pin *e* of the lever.

L designates an air-chamber, the lower end of

which is screwed into the opening P in the bed-piece shown on fig. 2.

From the lower part of this air-chamber, the pipe M passes upward through the orifice in the top of the air-chamber, and is connected by the tie-ring *e* to the pipe N, which forms an elbow at *g*, and ends in the spout P'.

i designates a tube, opening into the pipe N, and to which a pipe or hose may be fastened, for the purpose of conveying the water to the upper stories of buildings, when so desired.

Instead of allowing the water to escape at *p'*, a section of pipe may be attached thereto, and water conveyed wherever necessary.

In operating this pump, the upright lever K is worked from side to side, raising and depressing the plungers alternately.

Water is admitted by the opening E and valves *d d*, and forced through the valves *c c* into the air-chamber L, and thence through the outlet-pipes M and N, wherever desired.

The flow of water through the pipes M and N is continuous and equable, this effect being produced by the double action of the plungers in the cylinders A A, aided by the elastic force of the air confined in the air-chamber L.

The water entering by the main inlet E is received into the forked conduit *s s*, which conducts it to the inlet-valves.

This conduit is cast in the bed-piece.

The opening *p* communicates with the outlet-valves *c c* by means of the forked conduit *s s*, cast in the bed-piece, and covered by the plate *a*.

The handle K is braced at bottom by the curved bars *r r*.

The bed-piece is fastened to the casting H, covering the tops of the cylinders A A, by the bolts and nuts *z z*.

The valves *c c* are bent downward, and kept in position by means of the lugs *l l*, cast on the plate *a*, and arranged to force the leather flaps downward over the valve-seats *n n*.

I do not claim a pump such as is shown and described in the patent of W. H. Davis, dated July 19, 1859.

I do not claim the invention of the cylinders A A, or of the levers by which the pistons and valves are actuated, or of any peculiar arrangement of the valves, levers, and pistons; but

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

1. The force-pump, herein described, having removable cylinders A A, connecting-plate H, flanges G G, air-chamber L, forked conduits *s* and *s*, cap *a*, provided with lugs *l*, leather piece *g* and valves *c*,

when the same are constructed, arranged, and combined substantially as specified.

2. In combination with the valve-seats *n n* and the leather plate *g*, bearing the valve-blocks *c c*, the plate *a*, provided with the lugs *l l*, constructed and arranged to operate as specified.

In testimony that I claim the above, I have here-

unto subscribed my name in the presence of two witnesses.

D. O. HOLMAN.

Witnesses:

D. D. KANE,

C. KENYON.