

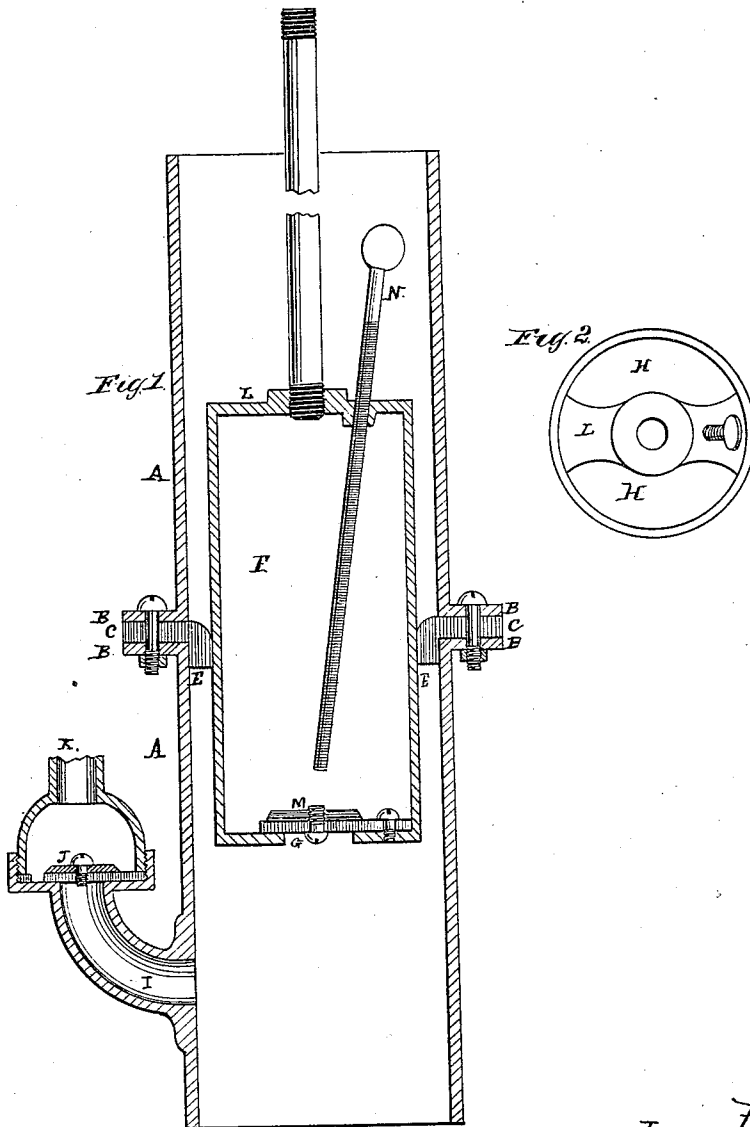
(No Model.)

2 Sheets—Sheet 1.

J. A. PEASE.
PUMP.

No. 247,401.

Patented Sept. 20, 1881.



Witnesses
E. C. McCormick
Thos. Henderson

Inventor
Julius A. Pease

(No Model.)

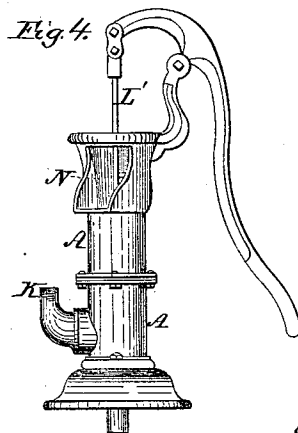
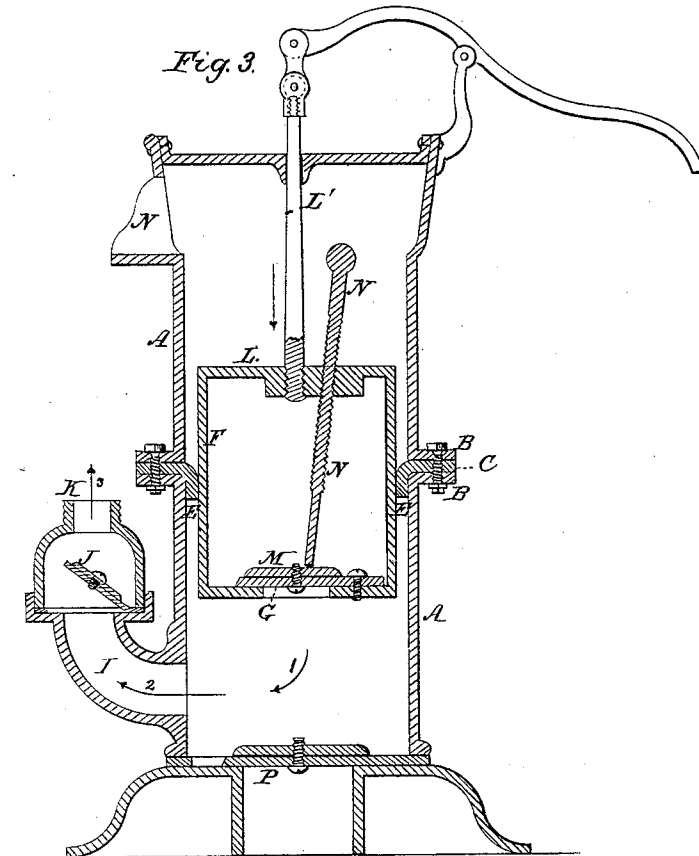
2 Sheets—Sheet 2.

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Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

JULIUS A. PEASE, OF WEST MEDFORD, MASSACHUSETTS.

PUMP.

SPECIFICATION forming part of Letters Patent No. 247,401, dated September 20, 1881.

Application filed May 21, 1881. (No model.)

To all whom it may concern:

Be it known that I, JULIUS A. PEASE, of West Medford, county of Middlesex, and State of Massachusetts, have invented a new and useful Improvement in Pumps, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a sectional view, showing the improvements; and Fig. 2 is a top view of the piston.

My invention relates to pumps adapted to be converted from lift to force pumps; and my improvements involve matters of construction and combinations which are specifically pointed out in the claims, the object being to produce a convertible lift and force pump by the simplest mechanical combinations and of the most economical construction.

I form my pump of two cylinders, A A. On the upper end of the lower cylinder and on the lower end of the upper cylinder I have flanges B B, between which I place a leather packing, C, which is formed by cutting the leather the size of the flanges, and cutting a hole in its center and forcing down the leather to form a bearing, E, through which the piston F works.

In making my packing for large or heavy work I form it from rawhide and tan it in the shape and with the length of bearing desired.

My piston F is smooth on its outside. In its bottom I have an opening with a valve, G, and in the top openings H H, as shown in Fig. 2, through which the water passes when operated as a lift-pump. On the lower cylinder I have an opening, I, with a valve, J, and pipe K. In the cross-bar L of the piston, to which the piston-rod is fastened, I have a screw-rod, N, running through said cross-bar, by the screwing of which down onto the valve weight M converts the lift-pump into a force-pump, and by unscrewing said rod an inch it is changed to a lift-pump.

It will be seen that by this arrangement of cylinders and packing I obviate the boring and smoothing of the cylinders, which is the most expensive part of pump-manufacturing, and that I convert a simple lift-pump for cis-

terns, &c., into a force-pump for forcing water into upper rooms in a house or other places.

In Fig. 1 of the drawings the piston-valve G is shown as being free to open and close in using the pump as a lift, the water passing through the open top H H of the hollow piston and discharging at the top of the upper cylinder.

In Fig. 3 the piston-valve is shown as being fastened in a closed position by the screw-stem N, to convert the pump into a force-pump, the water passing out through the side valved pipe I upon the descent of the piston, as indicated by the arrows 1, 2, and 3, while Fig. 4 shows, in elevation, the pitcher-pump, to which my improvement is applied.

Figs. 1 and 3 represent vertical sections of the pump with the force attachment, and Fig. 2 the top of the hollow piston. In Fig. 3, I have shown the top discharge and the foot-valve P as used in the pitcher-pump; and it will be understood that the stroke of the hollow piston is always within the self-sealing packing E, and is operated by the piston-rod L' and handle.

The force discharge-pipe is preferably cast with the lower cylinder, and the latter is bolted by projections to the base, with a packing and valve preferably of one piece.

I am aware of a convertible lift and force pump, designed with special adaptation to its use for ships, which involves a number of communicating cylinders having separate inlets and a common discharge; but, so far as I know, I have produced the only common pitcher-pump with force attachment in existence.

What I claim is—

1. A pump-cylinder having a lift-discharge, a force-discharge, and an intermediate hollow piston, provided with discharge-openings at its top and an inlet-valve at its lower end, and having an adjustable stop-rod adapted to close the said piston valve, substantially as described, for the purpose specified.

2. The combination, in a pump having a lift-discharge above the piston and a force-discharge below the piston, of the hollow cy-

lindrical piston F, open at its upper end and having a valve at its lower end, with an adjustable stop-rod, N, carried by said piston, and having the relation to its valve substantially as described, for the purpose specified.

5 3. The combination, in a pump, of the cylinder-sections A A, the hollow piston F, open at its top and valved at its lower end, and a packing for said piston, with the adjustable

stop-rod N, a lift-discharge at the top of said cylinder, and a valved force-discharge below said piston, substantially as described, for the purpose specified.

JULIUS A. PEASE.

Witnesses:

E. C. McCORMICK,
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