2 Sheets--Sheet 1.

E. L. PERRY.

Pump for Raising Heavy Liquids.

No. 168,411. Patented Oct. 5, 1875.

Fig. 1.

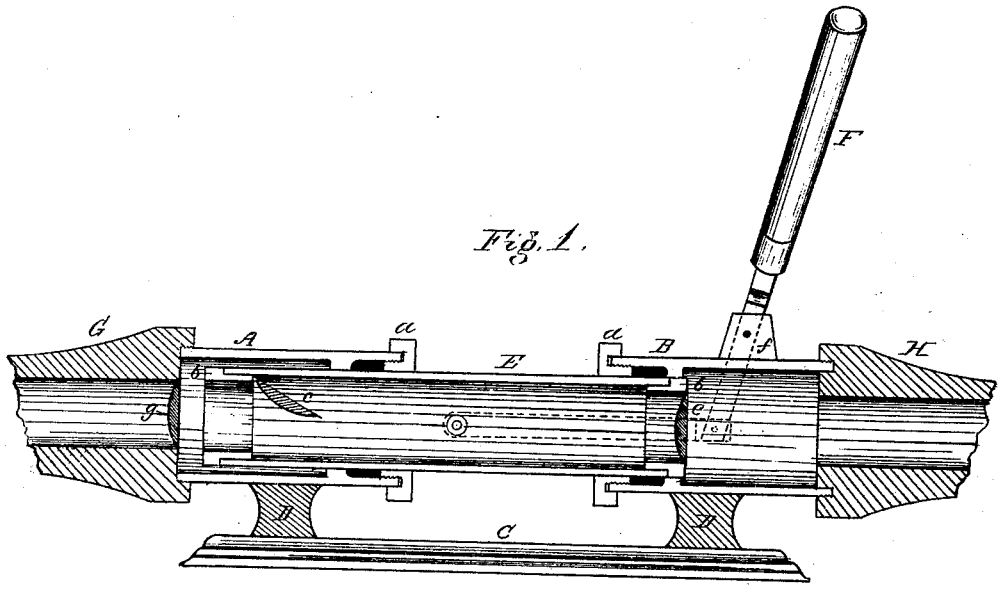
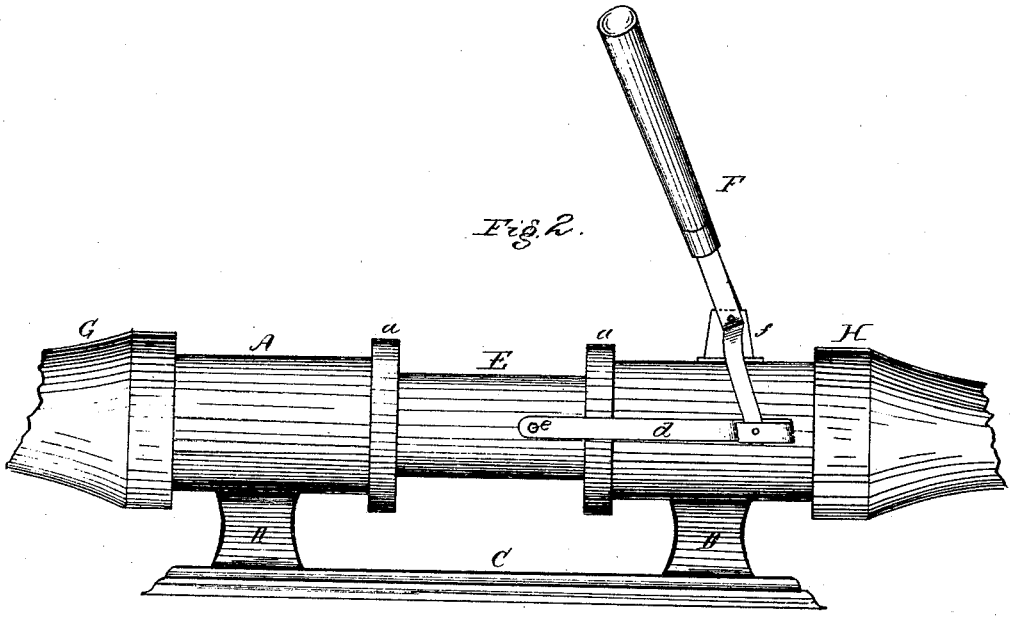


Fig. 2.



WITNESSES

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2 Sheets--Sheet 2.

E. L. PERRY.

Pump for Raising Heavy Liquids.

No. 168,411. Patented Oct. 5, 1875.

Fig. 3.

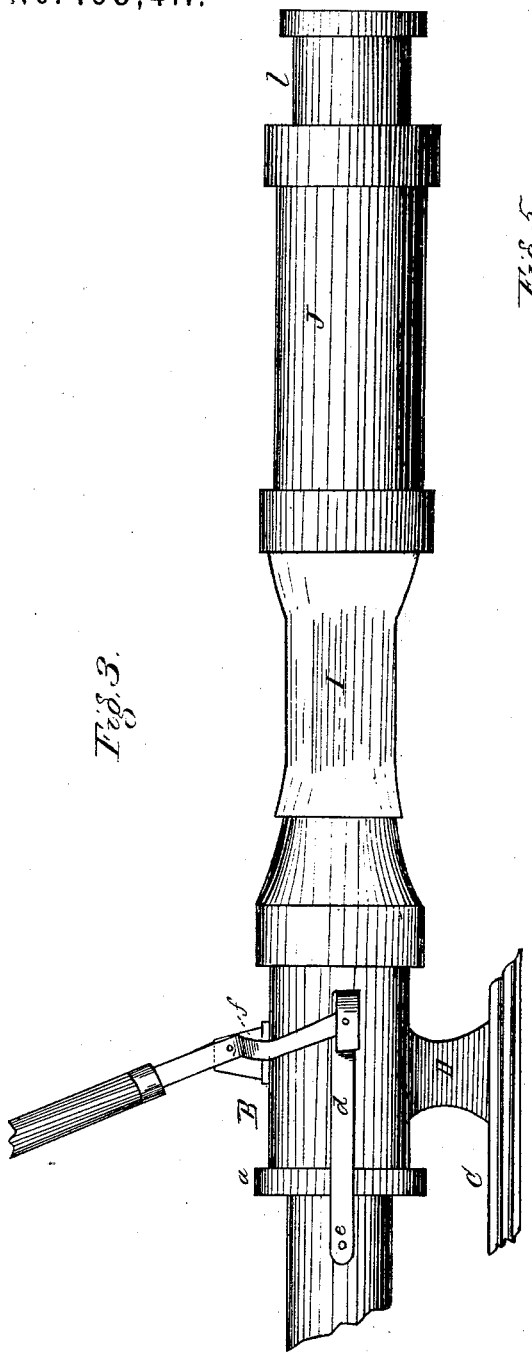


Fig. 5.

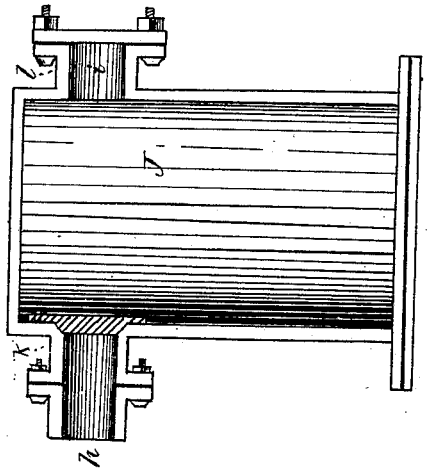
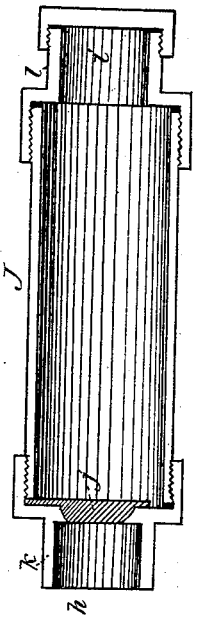


Fig. 4.



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EDWARD L. PERRY, OF RIDGEWOOD, NEW JERSEY.

IMPROVEMENT IN PUMPS FOR RAISING HEAVY LIQUIDS.

Specification forming part of Letters Patent No. **168,411**, dated October 5, 1875; application filed January 12, 1875.

To all whom it may concern:

Be it known that I, EDWARD L. PERRY, a resident of Ridgewood, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Pumps; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 represents a sectional view of a pump; Fig. 2, a side view of the same; Fig. 3, a similar view of one end of the pump, with the charging-chamber attached; Fig. 4, a detached sectional view of the charging-chamber; Fig. 5, a sectional view of a modification of the charging-chamber.

My invention has relation to an apparatus adapted to be used in pumping or raising heavy liquids, vault-secretions, mud, &c.; and consists of a charging-chamber provided with a valve at its receiving end, and a suitable opening to admit of its being emptied of its contents after being detached from the pump, such chamber connected to the discharging end of a suitable pump by a flexible tube, as will be hereinafter described.

In the drawings, A and B represent the receiving and delivery cylinders of a pump, which I consider best adapted to the purpose, and may be connected, if desired, to a suitable bed or platform, C, by braces or supports D. The inner ends of these cylinders are provided with the ordinary stuffing-boxes *a a*, to make a water or air tight joint between the intermediate plunger or piston E and said cylinder. This plunger or piston E works telescopically in the cylinders, and is provided at either end with removable valve-boxes *b b*, having connected thereto suitable valves *c c*, which may be constructed similar to the ordinary flap-valve, and made of vulcanized rubber, metal, or other suitable material, and turned, molded, or cast to fit an annular seat; or other form of valves may be used, if desired.

The hollow plunger or piston E is slightly smaller in diameter than the cylinders A B, and is made to reciprocate therein by a mechanism consisting of links *d d*, the inner ends of which are secured to lugs or pins *e e* upon either side of the cylinder, and the other ends pivoted to a bifurcated hand-lever, F, the arms of which are bent outward to pass around the upper part of the cylinder B, and is pivoted or bolted to a standard, *f*.

To the outer ends of the receiving and delivery cylinders A B are secured supplemental cylinders G H, of a form slightly conical upon their exteriors, the purpose of which is to allow the ready attachment of the rubber or other elastic or flexible hose. Between the ends of the cylinders G A, the cylinder G is provided with a valve, *g*, operating to admit the supply to the cylinder and check its backward flow.

J, in the drawings, Figs. 3, 4, and 5, Sheet 2, represents my charging-chamber, which may be of any desired shape, and cast or otherwise formed of metal or other suitable material. This charging-chamber has inlet and outlet openings *h i*, the inlet-opening *h* being provided with a suitable valve, *j*, and has an annular flange, *k*, to which the flexible tube I is attached, the other end of said tube I being secured to the cylinder H. The outlet-opening *i* is also provided with an annular flange, *l*, to which a cap or cover may be secured.

The charging-chamber, as above described, may be filled and afterward removed, and another put in its place, by simply slipping the end of the flexible tube I over the flanged end *k* of the charging-chamber, when the pump is again put in operation.

I am aware that a receptacle provided with inlet and outlet openings, and an inwardly-opening valve, for the purpose as hereinbefore described, is not new, and I, therefore, lay no claim to such device broadly; but

What I do claim, and desire to secure by Letters Patent, is—

An apparatus for raising and removing heavy liquids, consisting of the pump constructed substantially as shown and described,

and provided at its end with the externally-tapering supplemental cylinder H, for attaching the elastic tube L, and the charging-chamber J, having inlet-opening *h*, flange *k*, and inwardly-opening valve *j*, and outlet-opening *i*, the whole constructed to operate as specified.

In testimony that I claim the foregoing as my own invention, I affix my signature in presence of two witnesses.

EDWARD L. PERRY.

Witnesses:

T. V. TERHUNE,

J. FRANK MASTERS.