E. BARNES.
Lifting-Pump.

No. 221,494. Patented Nov. 11, 1879.

Fig. 1

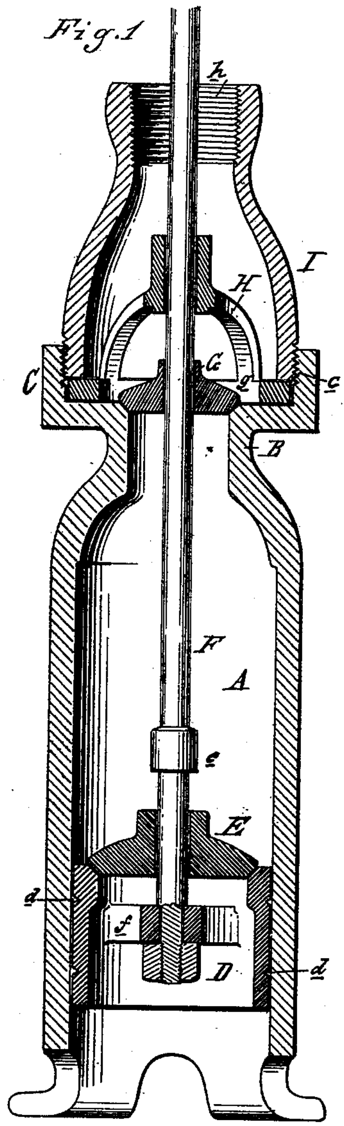


Fig. 2

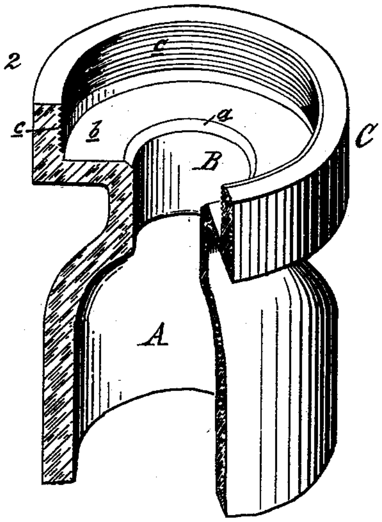
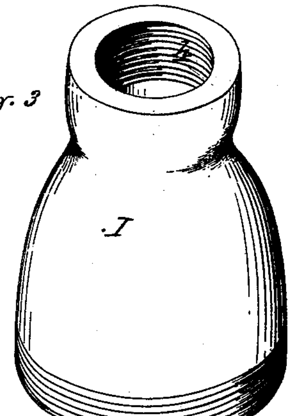


Fig. 3



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UNITED STATES PATENT OFFICE.

EMORY BARNES, OF MOUNT PLEASANT, MICHIGAN.

IMPROVEMENT IN LIFTING-PUMPS.

Specification forming part of Letters Patent No. **221,494**, dated November 11, 1879; application filed September 2, 1879.

To all whom it may concern:

Be it known that I, EMORY BARNES, of Mount Pleasant, in the county of Isabella and State of Michigan, have invented an Improvement in Lifting-Pumps, of which the following is a specification.

The nature of my invention relates to certain new and useful improvements in the construction of that class of pumps which are placed in the bottom of wells and cisterns, and called "lifting-pumps."

The invention consists in the peculiar construction, arrangement, and combination of parts, by means of which a cheap, durable, and effective pump is secured.

In the drawings, Figure 1 is a vertical central section, showing all the parts in place and the pump ready for operation. Fig. 2 is a perspective view of the barrel, with a portion broken out to show the valve-seat and device for securing the top chamber to the barrel. Fig. 3 is a like view of the valve-chamber detached.

Like letters indicate like parts in each figure.

In the accompanying drawings, which form a part of this specification, A represents a pump-barrel, with an open or perforated bottom, as may be desired. This barrel is bored smoothly from the bottom the whole length of its straight part, and this straight part is contracted in an arch form, as shown, to a short neck, B, in the upper end of which is formed a valve-seat, *a*. This neck terminates in an annular flange, *b*, which is provided with the annular ring C. The barrel, neck, flange, and ring are all cast in one piece, to secure economy of construction and great durability.

The interior of the ring C is provided with a female thread, *c*, and the top of the flange *b* is turned or ground smooth.

D is a hollow piston, provided with one or more annular recesses, *d*, to form a water-packing. E is a valve, seated upon the top of a hollow piston and sleeved upon the piston-rod, and has a throw confined between its seat and the stop *e* upon the rod F, the lower end of which latter is secured to the center of the spider *f* within the hollow piston. G is a valve, seated upon the seat *a* and centrally sleeved upon the piston-rod F, which also passes through the center of the spider H, the foot-ring *g* of which is turned or ground smooth upon its upper and under surfaces. This spider is placed over the valve G, resting in the recess formed by the annular flange *b* and the annular ring C.

I is a dome-shaped shell, provided with a male thread, and is screwed, when in place, into the annular ring C until the lower end of said shell rests upon the top of the foot-ring of the spider H, and thereby the latter is held firmly in place, and the joint is water-tight without the necessity of packing. The upper end of this shell terminates in an internally-threaded neck, *h*, into which the usual discharge-pipe is screwed. Upon the upper end of this discharge-pipe (not shown) there may be placed an air-chamber, if desired, although it is not necessary unless it is designed to convert the pump into a force and lifting pump.

I am aware that there are many lifting-pumps patented and in use, all involving the same, or nearly the same, principles of operation; consequently I do not, broadly, claim a lifting-pump, but confine myself to the precise construction and combination of parts, as follows.

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

1. In a lifting-pump, the barrel with open or perforated bottom, with a contracted neck and valve-seat, with spider-seat and annular ring, all cast in one piece, substantially as described.

2. In combination with the recess formed by the flange *b* and ring C, the latter of which is internally threaded, and above the valve at the upper end of a pump-barrel, the valve G, spider H, and shell I, as and for the purposes set forth.

3. In a lifting-pump, the barrel, neck, valve, and spider-seat and holding-ring of which are cast in one piece, and in combination therewith, the hollow piston D, valve E, piston-rod F, provided with stop *e*, valve G, spider H, and shell I, constructed, arranged, and operating substantially as specified.

EMORY BARNES.

Witnesses:
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