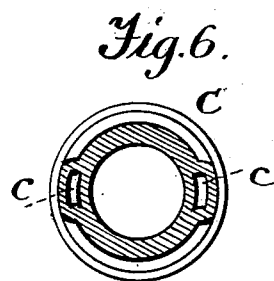
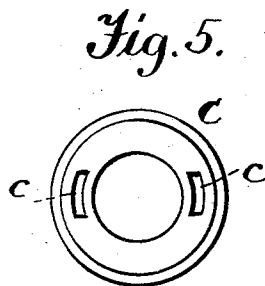
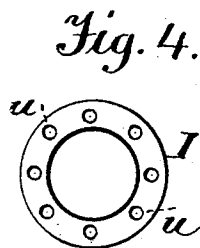
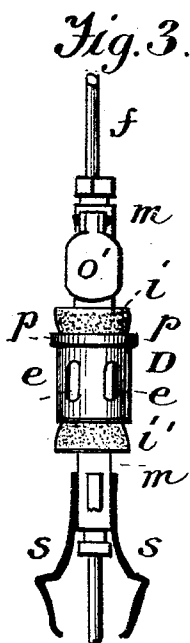
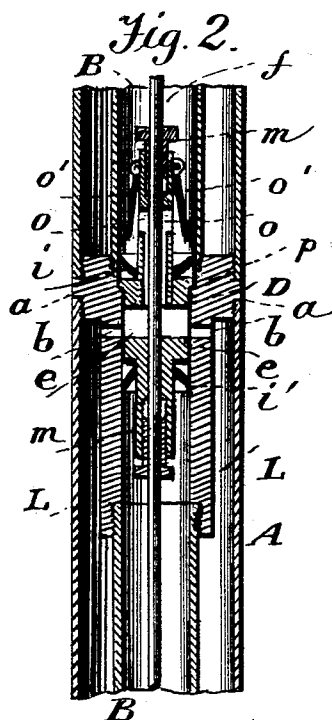
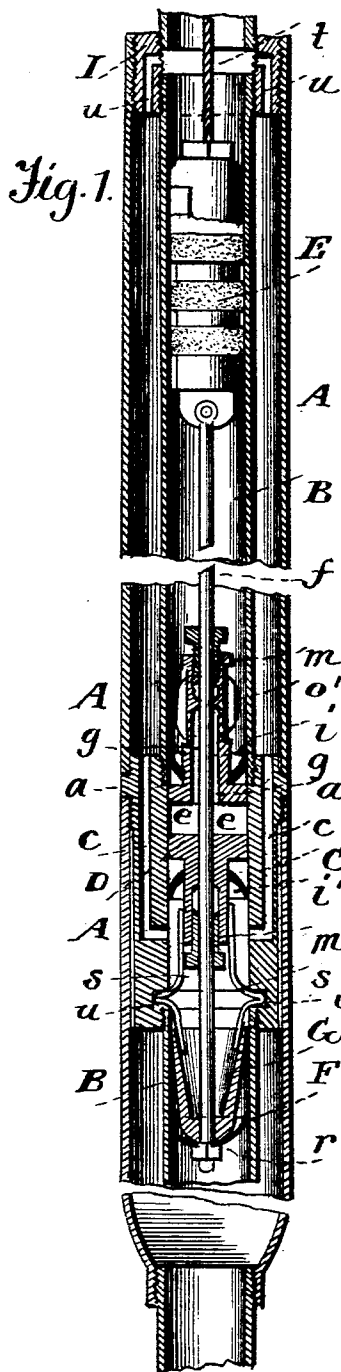


(No Model.)

J. O'NEIL.
PUMP.

No. 535,073.

Patented Mar. 5, 1895.



Witnesses.
A. Ruppert,
H. A. Daniels

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UNITED STATES PATENT OFFICE.

JOSEPH O'NEIL, OF TAYLORSTOWN, PENNSYLVANIA.

PUMP.

SPECIFICATION forming part of Letters Patent No. 535,073, dated March 5, 1895.

Application filed December 1, 1894. Serial No. 530,595. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH O'NEIL, a citizen of the United States, residing at Taylorstown, in the county of Washington and State of Pennsylvania, have invented certain new and useful Improvements in Pumps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to pumps and consists in certain improvements in the construction of the same, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 illustrates my improved pump in vertical section. Fig. 2 is also a section of certain parts, being a vertical central section taken at right angles to that shown in Fig. 1, parts being removed. Fig. 3 is a side view of a standing valve. Fig. 4 is a plan view of the under side of a collar provided with fluid passages. Fig. 5 is a top view of a fluid distributing device. Fig. 6 is a transverse section of said distributing device.

A designates the outer casing of the pump and B indicates an inner tube which is the pump tube proper. Fitting within the casing A, is a hollow body C, which is formed with a flange *a*, against which the ends of the sections A, set, said sections being screwed to said body C. The tube B is also made in sections which are screwed, one to the upper end and the other to the lower end of said body C as shown.

The body C, is a fluid-distributing device and has fluid passages *c*, extending from the top some distance downward and then turning inward to the interior of said hollow body. Passages *b*, are also made in the body C, which passages connect with passages *e*, in a standing valve D, fitted in the said body, and with the spaces outside of said body between it and the outer casing A.

The standing valve D, is provided with a central passage for a rod *f*, which is connected with a bucket-plunger E, and with a draft-head F, at the lower end of said rod, said central passage being somewhat enlarged at *g*, to form a passage for fluid upward from the passages *e*. The upper and lower parts of the

standing valve D, are reduced and cup-leathers *i*, *i'*, are placed on them; and in such reduced portions are placed stuffing boxes *m*, about the rod *f*. Fluid passage *g*, is formed about said rod, said passage extending from the passages *e*, in valve D, to the lateral passages *o*, in the upper part of valve D. The passages *o*, are provided with flap valves *o'*.

The valve D, rests on an annular shoulder *p*, on the head C, so that the said valve cannot sink any lower, but may be drawn out upward when the plunger is pulled out by means of a cord *t*.

G indicates a head secured to the lower end of the rod *f*, and provided with packing or cup leather *r*, the said head being preferably in the form of an inverted hollow cone as shown.

To the lower end of the valve D, are secured the springs *s*, which are bent so as to extend laterally into an annular recess *u*, in the head C, and then converge downward, so that the ends of said springs may be pressed inward by the upward movement of the head G, when the rod *f*, is drawn out to remove the standing valve D, for any purpose.

The bucket-plunger E, may be provided with a rod, wire, or flexible cord *t*, to raise it, in operating the pump, the downward movement of said valve being effected by the weight and pressure of fluid on the head F.

I indicates a collar placed in the casing A, above the working valve and fitting about the tube B, said collar being provided with fluid passages leading to the spaces between the outer casing and the tube B, for the passage of fluid from the tube B, into said spaces. The cord *t*, being drawn upward, the working valve E, is raised and the fluid rises into the spaces L about the head C, and passes through passages *b*, and *e*, to vertical passage *g*, and thence upward, through passages *o*, the valves *o'*, being opened; and the fluid rising through the working valve passes through the passages *u*, in the collar I, into the space between the casing A, and the tube B, and passing downward through the passages *c*, in the head C, rests on the draft-head F, and the volume of fluid, being of sufficient weight, bears downward on said draft head and thus produces the downward stroke of the working valve E. This it will be seen is effected only by draw-

ing the cord *t*, and the downward stroke is produced by the weight and pressure of fluid on the head *F*, and such additional pressure as is caused by the descent of the working valve. The advantage in using a flexible cord *t*, is that said cord may be passed over a pulley or rotary cylinder to produce the upward movement.

I claim—

- 10 1. The combination, with the outer casing of a pump, of an inner tube within which is a working valve and a draft head connected therewith, a hollow head which is seated in said outer casing and provided with fluid pas-
15 sages, a standing valve, fitted in said hollow head and provided with fluid passages, packing and side valves, a working valve, or piston, and a draft head connected therewith, and passages for fluid, above the working

valve, from the inner tube to the space be- 20
tween the inner tube and the outer casing, substantially as set forth.

2. The combination, with a pump tube, of a piston and working valve and a draft-head 25
connected by a rod with said piston, a stand-
ing valve in position to be drawn out from
said pump tube, springs, secured to said stand-
ing valve and adapted to be compressed by
said draft-head on its upward movement, so
that the standing valve may be withdrawn, 30
substantially as set forth and described.

In testimony whereof I have affixed my signature in presence of two witnesses.

JOSEPH O'NEIL.

Witnesses:

C. C. CHAMBERLIN,
H. A. DANIELS.