W. S. LANEY.
Pump.

No. 219,958. Patented Sept. 23, 1879.

FIG. 3.

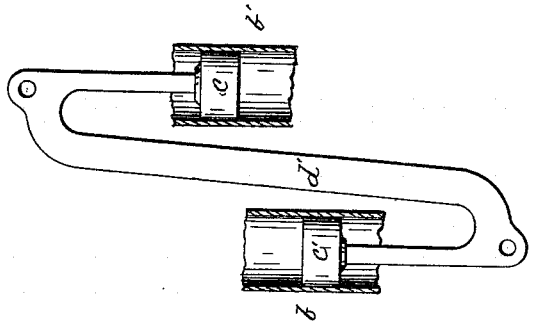


FIG. 2.

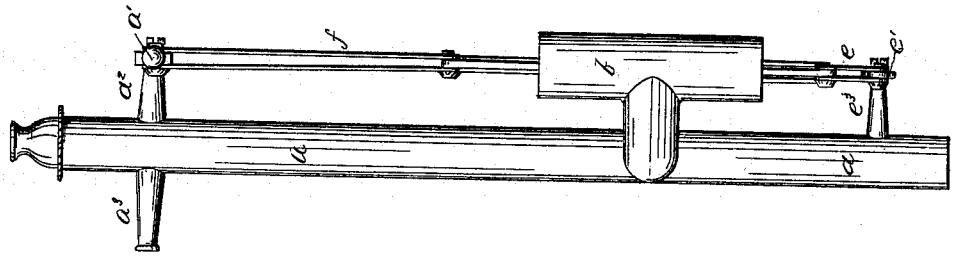
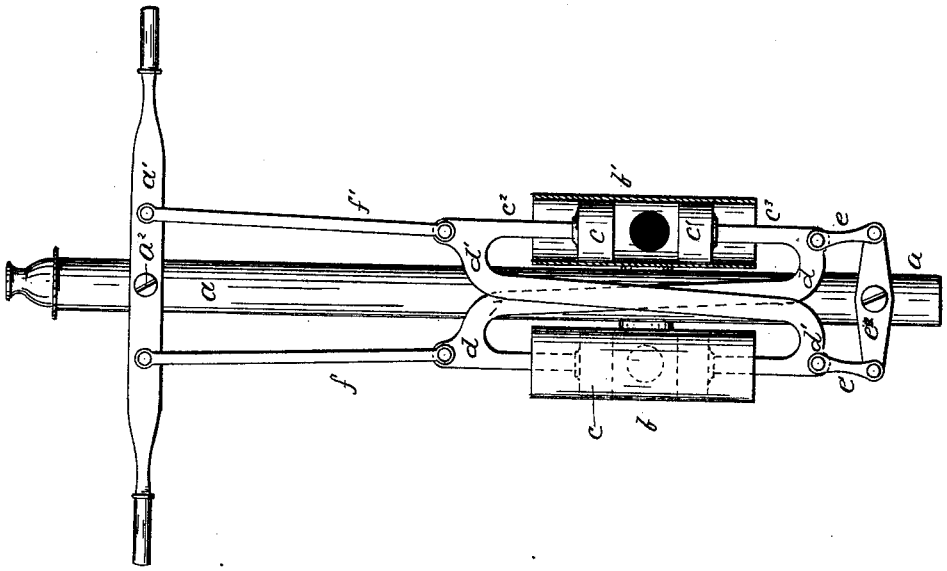


FIG. 1.



Witnesses:
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J. B. Holderly

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Attys

UNITED STATES PATENT OFFICE.

WILLIAM S. LANEY, OF BALTIMORE, OHIO.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **219,958**, dated September 23, 1879; application filed July 18, 1879.

To all whom it may concern:

Be it known that I, WILLIAM S. LANEY, of Baltimore, in the county of Fairfield and State of Ohio, have invented certain new and useful Improvements in Pumps; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to the manner of uniting and operating the pistons in a double-acting force-pump; and it consists in the peculiar construction and arrangement of the piston-rods with their pistons, as will be hereinafter fully explained, and pointed out in the claims.

In the drawings, Figure 1 is a side elevation, showing the arrangement of the piston-rods and pistons. Fig. 2 is an edge view of the same, and Fig. 3 is a detail view.

a is the pump-stock, of ordinary form. a^1 is the operating-lever, pivoted at its center to a stem or arm, a^2, placed near the top of the stock *a*.

Near the lower end of the stock *a*, I place the two cylinders *b b'*, which are connected to the stock *a*, and provided with suitable valves of well-known form and arrangement, so that the water will be drawn into them from the well below, and will again be forced out of them upward through the stock *a* to the discharge-spout a^3.

Within the cylinders I put two pistons, *c* c^1, supported on the piston-rods c^2 c^3. The end of the piston-rod of the upper piston, *c*, in the cylinder *b* is connected with the end of the piston-rod c^3 of the lower piston *c* in the cylinder *b* by a curved bar, *d*, and the upper piston, *c*, in the cylinder *b'* is similarly connected to the lower piston, c^1, in the cylinder *b* by the curved bar *d'*.

The bars *d d'* cross each other between the cylinders, and in the operation of the pump slide one upon the other, and thus give greater steadiness to the action of the pistons. The lower ends of the bars *d d'* are connected by links *e* e^1 to the outer ends of a rocking bar, e^2, pivoted at its center to an arm, e^3, projecting from the stock *a*. The upper ends of the bars *d d'* are connected by rods *f f'* to the lever or handle a^1, as shown.

The several parts being arranged as described, and the handle a^1 being raised, the pistons *c* c^1 in the cylinder *b'* will move away from each other, while the pistons in the cylinder *b* will be forced together. A reverse movement of the handle will cause a reverse movement of the pistons in the cylinders. By these opposite movements of the pistons the water is first drawn into one cylinder, and when being forced out into the upper part of the stock *a* water will be drawn into the other cylinder. Thus there will be maintained a constant flow of water upward through the stock and out of the spout a^3.

A good result would be obtained in this pump if but one bar, *d* or *d'*, were employed, with its pistons *c* c^1. In this arrangement one end of each of the cylinders *b b'* would be closed by a rigid stopper; but where the two pistons are operated in each cylinder a much better result is obtained.

What I claim as my invention is—

1. In a force-pump having two cylinders, *b b'*, the bar *d*, attached to the valve *c* in the upper end of one cylinder and to the valve c^1 in the lower end of the other cylinder, and operated substantially as set forth.

2. In a double-acting force-pump having the two cylinders *b b'*, the combination, with the pistons *c* c^1, placed in the upper and lower ends of said cylinder, of the bars *d d'*, arranged and crossed between the cylinders and attached to the pistons in the upper and lower ends of said cylinders, and operating substantially as set forth.

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

WILLIAM S. LANEY.

Witnesses:

GEORGE RICHARDS,

E. F. HOLLAND.