

(No Model.)

2 Sheets—Sheet 1.

C. L. FOUTS.

PUMP.

No. 289,079.

Patented Nov. 27, 1883.

FIG. 1.

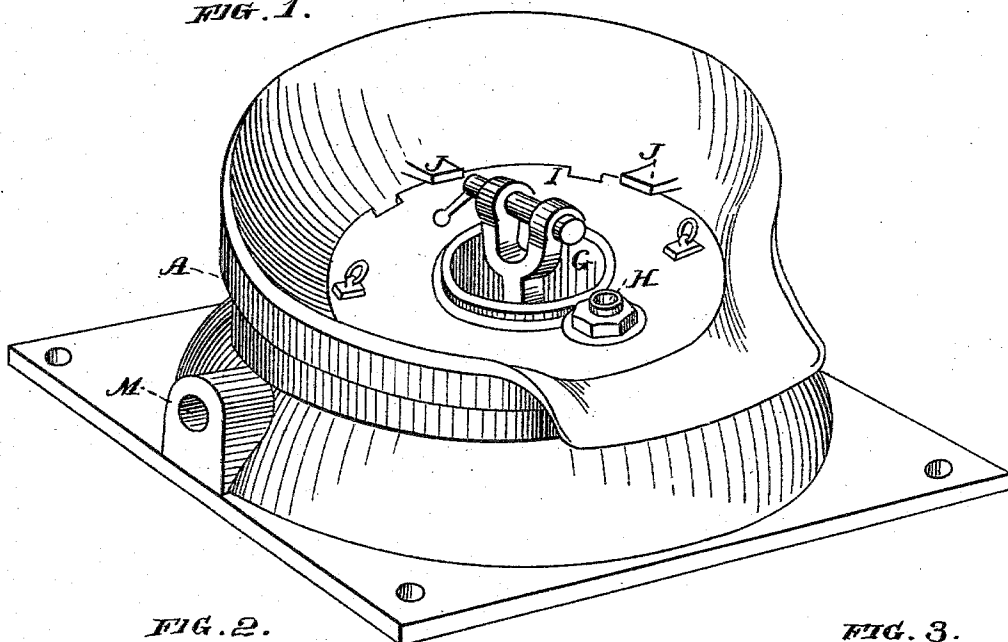


FIG. 2.

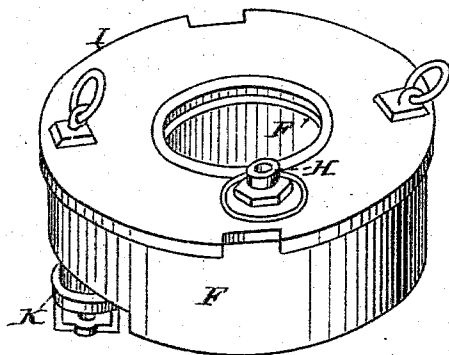


FIG. 3.

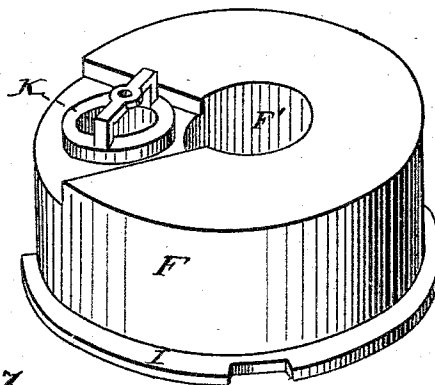
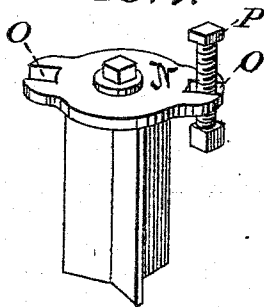


FIG. 7.



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2 Sheets—Sheet 2.

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FIG. 4.

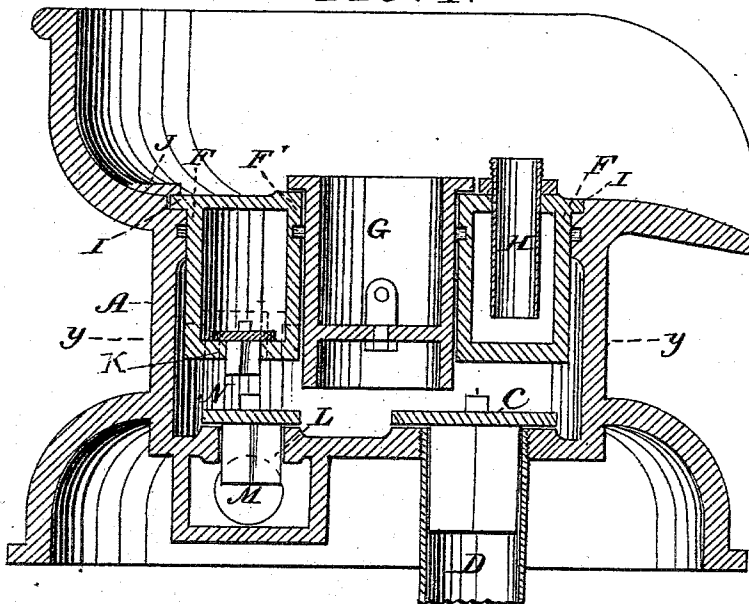
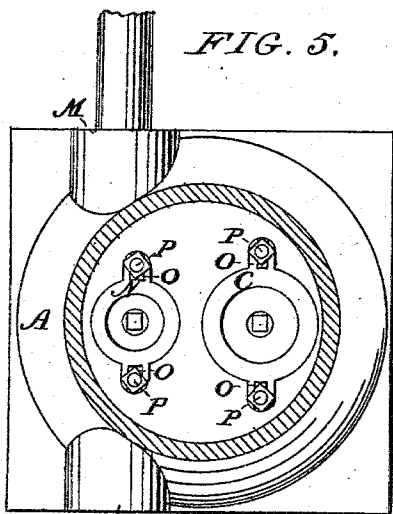
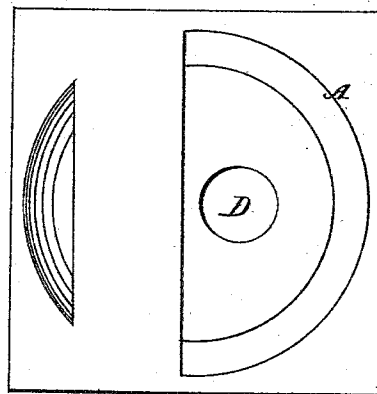


FIG. 5.



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FIG. 6.



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UNITED STATES PATENT OFFICE.

CLARENCE L. FOUTS, OF SAN FRANCISCO, CALIFORNIA.

PUMP.

SPECIFICATION forming part of Letters Patent No. 229,079, dated November 27, 1883.

Application filed January 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE L. FOUTS, of the city and county of San Francisco, State of California, have invented an Improved Pump; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in force-pumps; and it consists in an improved force-pump, the air-chamber, ingress and egress valves, and plunger of which are located within a containing case or chamber of larger diameter.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is an exterior view of the pump. Fig. 2 is a view of the supplemental cylinder. Fig. 3 is a view of this cylinder reversed to show the bottom. Fig. 4 is a vertical section of the pump. Fig. 5 is a plan taken on line *yy*, Fig. 4, and showing the valves N and C. Fig. 6 is a plan of the bottom of the chamber A, and showing the suction-pipe D. Fig. 7 is an enlarged view of the valve N.

A is a casing or chamber closed at bottom, provided with an inlet-valve, and arranged to receive a cylinder, F, containing a plunger, G, which may be operated by a lever or a direct piston-rod. A valve, C, in the bottom of the chamber admits water from the suction-pipe D. I construct a cylinder, F, having a diameter sufficient to allow it to slip into the chamber A. A flange, I, with locking-lugs J, holds it in place. This cylinder is formed of two short concentric shells, the outer one, F, fitting the chamber A, as described, while the inner one, F', receives the small plunger G, which is employed for the force-pump. The top and bottom of the annular space between the outer and inner cylinders, F F', are closed, and a pipe, H, passing through the top, extends nearly to the bottom. This is the discharge-pipe of the force-pump, and the space around it within the closed annular chamber serves as an air-chamber.

K is a valve, opening upward through the bottom into this chamber and admitting the water, which is drawn into the lower part of the chamber A, and is forced through this valve-opening by the action of the piston G. I form a second opening, L, in the bottom of

the chamber A, and this connects with a separate suction-pipe, M, and is provided with a valve, N. The pipe D extends to the bilge of a vessel. (when the pump is used on shipboard,) while the pipe M extends (in a similar case) to the body of water upon which the vessel is floating. For convenience, this suction-pipe M is made to extend transversely beneath the bottom of the chamber with an opening upon each side. Either of these openings may be closed and the suction hose or pipe attached to the other side to suit the position of the pump or the convenience of the operator. When this second suction pipe and valve is used, the valve C may be closed and secured, or the valve N is closed, and the valve C allowed to act. In order to regulate the opening of these valves, and also to provide a convenient and ready means for closing and securing them, I form openings or slots O upon opposite sides of each valve, and screw-bolts P pass through these openings into the valve-seats or bottom of the chamber, the valves moving loosely upon the bolts. The bolts have heads large enough to act as stops, and prevent them from opening too far, and elastic washers may be fitted to them to relieve the shock. These bolts P may be screwed out so far as to allow the valve to open as much as desired without rising too high, and when it is desired to close either valve the bolts of that one are screwed down close, while those of the other are loosened.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a pump-chamber having an open top and an inlet-valve in the bottom, of a supplemental cylinder fitted to the chamber, and having a smaller central cylinder to receive a plunger, the annular space between the outer and inner walls of the cylinder being closed to form an air-chamber, substantially as herein described.

2. The combination, with a pump-chamber having a closed bottom and an inlet-valve, of an annular cylinder fitted to the chamber and having its smaller central portion adapted to receive a plunger, and its closed annular portion provided with an inlet-valve from the

pump-chamber, and a discharge-pipe, substantially as herein described.

3. The combination, with a pump-chamber of large diameter having an open top and an inlet-valve in the bottom, of an inner cylinder of smaller diameter provided with a plunger fitting therein, and having a surrounding annular closed compartment and a discharge-pipe opening above the top of the annular chamber, and extending to near its bottom, substantially as herein described.

4. The combination, with a pump-chamber, of large diameter and a plunger working in an interior cylinder of smaller diameter, and having an annular surrounding air-chamber fitted to the exterior pump-chamber, of inde-

pendent vertical and horizontal suction-pipes and independent valves leading to the main pump-chamber, substantially as herein described.

5. The combination, with a pump-cylinder having an inlet-passage and valve in its bottom, of a transverse pipe or passage crossing the inlet-passage and communicating with it, the opposite ends being extended to connect with a hose or receive a closing-cap, substantially as herein described.

In witness whereof I hereunto set my hand.

CLARENCE L. FOUTS.

Witnesses:

WM. W. MILLER,
J. H. BLOOD.