J. J. STUART.

Pumps.

No. 199,596. Patented Jan. 22, 1878.

Fig. 1.

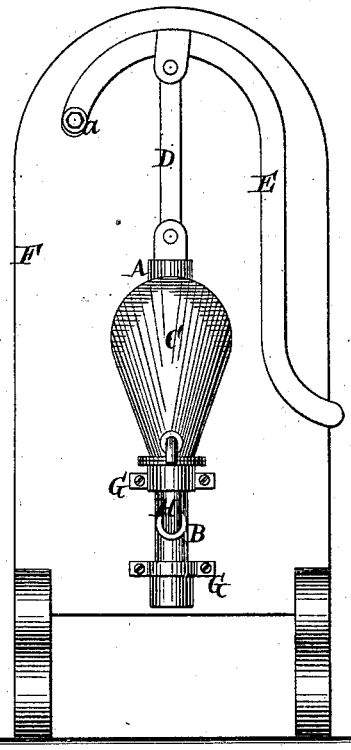


Fig. 2.

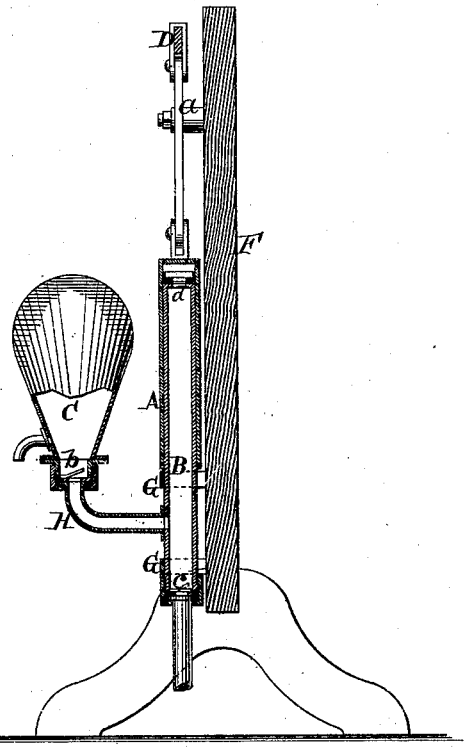
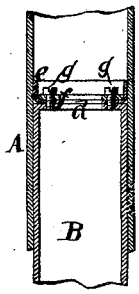


Fig. 3.



Witnesses.
Otto Hufeland
Chas. Wahlers.

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John J. Stuart.
by
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his attorneys

UNITED STATES PATENT OFFICE.

JOHN J. STUART, OF NEW YORK, N. Y.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **199,596**, dated January 22, 1878; application filed July 25, 1877.

To all whom it may concern:

Be it known that I, JOHN J. STUART, of the city, county, and State of New York, have invented a new and useful Improvement in Pumps, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, forming part thereof, in which—

Figure 1 represents a front view of a pump containing my improvement. Fig. 2 is a vertical cross-section thereof. Fig. 3 is a vertical section of a portion of the movable barrel and suction-pipe.

Similar letters indicate corresponding parts.

My improvement relates to that class of pumps for which Letters Patent of the United States were granted to me March 20, 1877, No. 188,692; and it has for its object to dispense with the flexible ascension-pipes, and also to provide a simple and cheap packing between the suction-pipes and the movable pump-barrels mentioned in said patent.

It consists in the combination of one or more movable pump-barrels, closed at the upper end, with one or more stationary suction-pipes fitted within said barrel or barrels, and an air-chamber, which is connected to the suction pipe or pipes, the air-chamber and said pipe or pipes being each provided with a suitable valve, so that when a reciprocating motion is imparted to the pump barrel or barrels, and the suction pipe or pipes are connected to a liquid-supply source, the liquid is drawn into said pipe or pipes and ejected therefrom into the air-chamber, whence it may be conducted to any desired spot; also, in the combination of one or more movable pump-barrels, closed at the upper end, with an air-chamber and one or more suction-pipes fitted within said barrel or barrels, and having an inwardly-projecting flange on the upper edge thereof, for the attachment of a packing-ring of leather or other suitable material, so that when this ring is put in place a very close joint is produced between the suction pipe or pipes and said pump barrel or barrels, as hereinafter more fully described.

In the drawing, the letter A designates the movable barrel. B is the stationary suction-pipe, and C is the air-chamber, of my pump, a single barrel and pipe being in the present example used, but which may be duplicated, if desired.

The barrel A is closed at its upper end, and connected by means of a rod, D, to a hand-lever, E, which has its fulcrum on a stud, *a*, projecting from a frame, F, which serves to support the parts of my pump, so that a reciprocating motion can be given to the barrel.

The suction-pipe B is fitted in the barrel A, and it is secured to the frame F by means of straps G, or in any other suitable way.

The air-chamber C is connected to the suction-pipe B at the side of said pipe by means of a branch pipe, H, which is curved at the end where it is secured to the air-chamber, so as to permit of bringing the latter in a vertical position.

In the lower part of the air-chamber C is arranged a clack-valve, *b*, and in the suction-pipe B is placed a similar valve, *c*, the latter being situated below the point where the branch pipe H is secured to the suction-pipe, and both said valves *b* and *c* being arranged to open upward. Thus, when the barrel A is moved upward the valve *c* is opened and the valve *b* is closed, and vice versa, so that by the upward movement of said barrel the suction-pipe B is filled, while by the downward movement thereof the contents of said pipe are discharged into the air-chamber C.

On the upper end of the suction-pipe B is formed or secured a flange, *d*, projecting inward, (best seen in Fig. 3,) and to this flange is attached a packing-ring, *e*, of leather or other suitable material, a metallic ring, *f*, of equal width to the flange *d*, or nearly so, being placed above said packing-ring *e*, and being secured to the flange by means of screws *g*, or in any other suitable way. The packing-ring *e* is made of such width that it projects beyond the outer edge of the suction-pipe B; and hence, if the outer edge of said packing-ring is bent upward, it is pressed against the inner surface of the barrel A at all times by the action of the liquid, and especially during the downward movement of the barrel A, and hence the liquid is effectually prevented from escaping.

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

1. The combination, in a pump, of a mov-

able pump-barrel, closed at the upper end, and a stationary suction-pipe fitted within said pump-barrel, and an air-chamber connected with the suction-pipe, the suction-pipe and air-chamber being provided with suitable valves, and the whole adapted to operate substantially as described.

2. In combination with the movable pump-barrel, the stationary suction-pipe, provided with an inwardly-projecting flange on its upper edge, to which is attached a packing-ring of leather or other suitable material, substantially as specified.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 7th day of July, 1877.

JOHN J. STUART. [L. S.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.