

J. J. STUART.
PUMP.

No. 188,692.

Patented March 20, 1877.

Fig. 1.

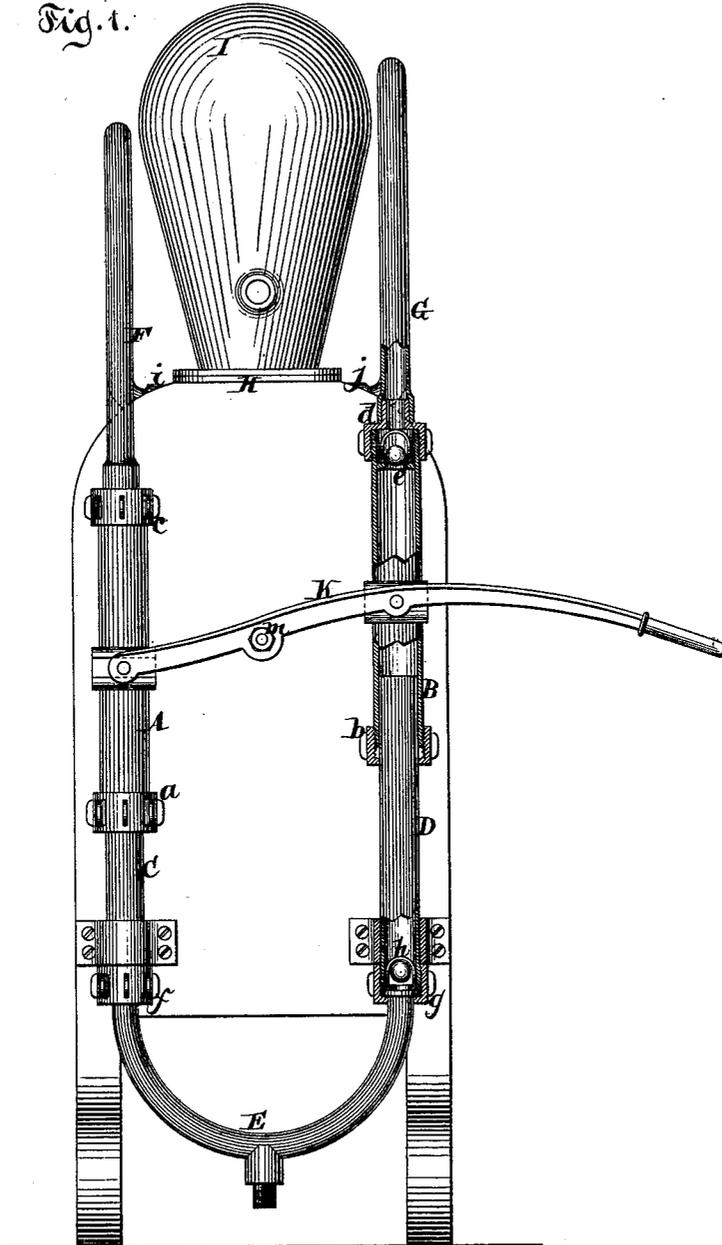
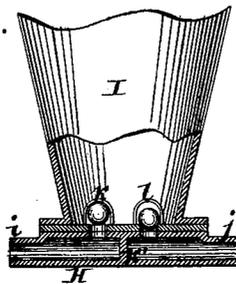


Fig. 2.



Witnesses.
Chas. Wahler.
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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. **188,692**, dated March 20, 1877; application filed February 22, 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 drawing, in which—

Figure 1 represents a front view, partly in section. Fig. 2 is a sectional view of the air-chamber.

Similar letters indicate corresponding parts.

This invention consists in the combination of two movable pump-barrels with the suction-pipe, which is bent to form two branches, one for each of the barrels, and with suitable valves in the barrels and suction-pipes, and with flexible ascension-pipes, which connect with an air-vessel in such a manner that by imparting to the pump-barrels a reciprocating motion in opposite directions a double-acting pump is obtained, which can be operated by hand or other power, and which gives a very good effect.

In the drawing, the letters A B designate the two pump-barrels, which are fitted to the ends of two pipes, C D, that may either branch off from a common suction-pipe, E, or each of which may be carried down, one independent of the other, into the well or reservoir containing the liquid to be pumped. On the bottom ends of the barrels A B are formed stuffing-boxes *a b*, which are provided with suitable packing to hug the pipes C D closely, and in the upper ends of said barrels are formed chambers *c d*, each of which contains a valve, *e*. The pipes C D are open at the top, and they rise from chambers *f g*, each of which contains a valve, *h*. The valve-chambers *f g* connect with the suction-pipe E, as shown. The ascension-valve chambers *c d* are provided with nipples, which connect, by means of flexible pipes F G, with nipples *i j*,

extending from a chamber, H, on which rests the air-vessel I. The chamber H is divided, by a transverse partition, *k'*, in two compartments, and in its top are two valves, *k l*, which lead into the air-vessel. The liquid which has entered the air-vessel discharges therefrom through a suitable ascension-pipe.

In the example shown in the drawing, the air-vessel I is common to both pump-barrels; but separate air-vessels—one for each barrel—may be substituted therefor. The two barrels A B are operated by a hand-lever, K, which has its fulcrum on a stud, *m*, situated between the two barrels, so that by operating said hand-lever a reciprocating motion is imparted to the barrels in opposite directions. The lever K may, however, be operated by steam or any other power; or any other suitable mechanism may be employed to impart to the barrel the required motion.

When the barrels are set in motion, they alternately fill and discharge, the liquid discharging therefrom being forced into the air-vessel, and by these means a double-acting pump is produced, which throws a continuous stream, and which can be easily kept in repair.

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

The combination of two barrels, A B, with pipes C D, fitting said barrels, with valves *e* and *h*, flexible pipes F G, air-vessel I, and with mechanism for imparting to said barrels a reciprocating motion in opposite directions, all constructed and operating substantially as herein shown and described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 14th day of February, 1877.

JOHN J. STUART. [L. S.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.