S. C. LOUD.
Ship's Pump.

No. 208,529. Patented Oct. 1, 1878.

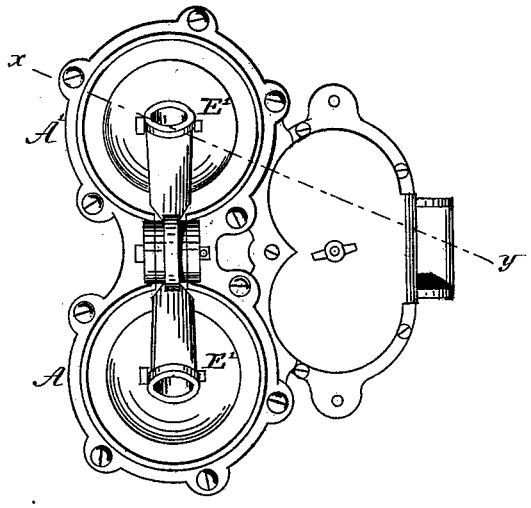

Fig. 1.

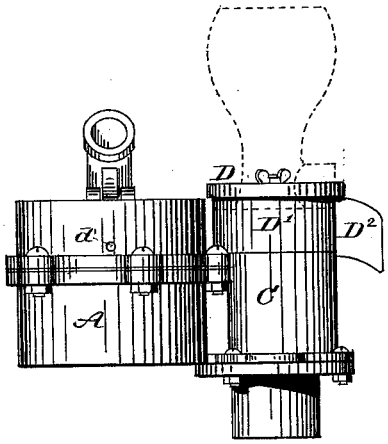

Fig. 2.

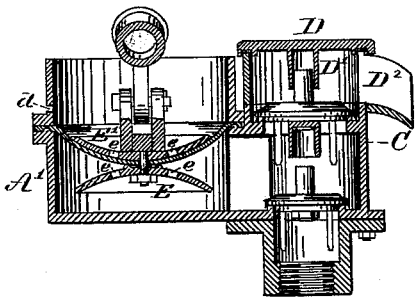

Fig. 3.

WITNESSES
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SAMUEL C. LOUD, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN SHIPS' PUMPS.

Specification forming part of Letters Patent No. **208,529**, dated October 1, 1878; application filed April 5, 1878.

To all whom it may concern:

Be it known that I, SAMUEL C. LOUD, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Ships' Pumps, of which the following is a specification:

My present invention relates to an improvement on the invention for which Albert F. Erlls and myself obtained Letters Patent, dated March 27, 1877, numbered 188,879, and entitled "ships' pumps;" and consists in combining with a flexible diaphragm perforated concave disks. The perforations in the lower disk prevent the accumulation of air under said disk, while the perforations in the upper disk prevent the accumulation of waste water.

Referring to the drawings, Figure 1 is a plan of my improved pump. Fig. 2 is a side elevation, in which the dotted lines represent an air-chamber, which may be applied when it is desirable to use the pump as a force-pump. Fig. 3 is a vertical section taken on line *x y*, Fig. 1.

As the pumps A A′, the uptake B, and the head of the uptake C are all made as described in the specification of the patent above referred to, I shall make no further description of them.

The new feature consists in perforating the concaved disks E and E′, Fig. 3, said perforations being indicated by *e e e e*. The perforations in the lower disk, E, prevent any accumulation of air beneath said disk, which would happen if this disk was not perforated, and which would prevent the full action of the pump, as it is well known that, as air is elastic, it, by expanding on the upward stroke, would greatly lessen the amount of vacuum produced, and thus lessen the amount of water which would arise in the uptake. Again, on the downward stroke this elasticity of the imprisoned air would allow it to be condensed, and thus lessen the amount of water to be forced out of the pump.

The perforations *e e* in the upper disk, E′, serve to allow the escape of any waste water that may accumulate in said disk, which will be free to escape during the upward stroke through openings *d d*, Figs. 2 and 3.

For convenience in converting the pump into a force-pump, I make the upper part, D^1 D^2, detachable from the head of the uptake C, so that it may be readily removed and an air-chamber put in its place, as indicated by dotted lines in Fig. 2.

I claim as my invention—

In a pump, the combination of the non-perforated diaphragm with the perforated concaved disks E E′, substantially as described, and for the purpose set forth.

SAMUEL C. LOUD.

Witnesses:

FRANK G. PARKER,

CHARLES H. FOGG.