

A. F. ELLS & S. C. LOUD.
SHIP'S PUMP.

No. 180,757.

Patented Aug. 8, 1876.

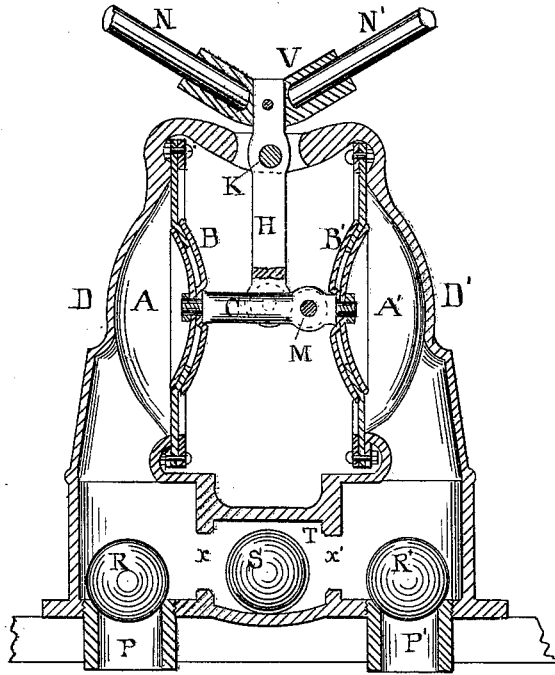


Fig. 1.

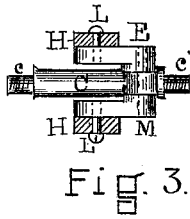


Fig. 3.

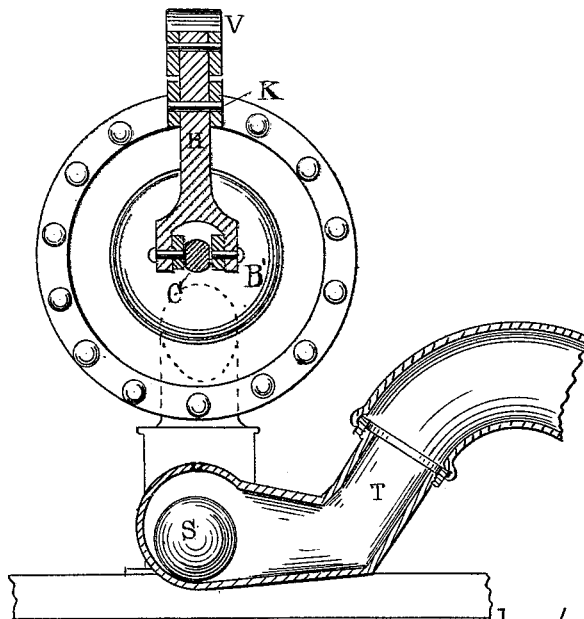


Fig. 2.

WITNESSES

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UNITED STATES PATENT OFFICE.

ALBERT F. EELLS AND SAMUEL C. LOUD, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN SHIPS' PUMPS.

Specification forming part of Letters Patent No. **180,757**, dated August 8, 1876; application filed July 8, 1876.

To all whom it may concern :

Be it known that we, ALBERT F. EELLS and SAMUEL C. LOUD, both 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 :

The nature of our invention consists in the peculiar construction and arrangement of a double-acting diaphragm-pump, which may be best understood by reference to the drawings and description.

Figure 1 is a longitudinal vertical section of our invention. Fig. 2 is a cross vertical section of the same. Fig. 3 shows in plan the connection between the rod to which the diaphragms are attached and the lever for operating the same.

Let A and A', Fig. 1, represent the two diaphragm pump-chambers, formed on the outside by the metal D D', and on the inside by the flexible diaphragms B B'. The two diaphragms B and B' are connected together by a single rod, C, the ends *c* and *c'*, Fig. 3, being connected to the diaphragms B and B' by a screw, or by any other suitable device. We operate the rod C by the vertical lever H, which swings on the pivot K, Figs. 1 and 2,

the lever H being connected to the rod C by the yoke-link E, (see Fig. 3,) and pins L and M. A double socket-piece, V, Fig. 1, is attached to the top of the lever H, into which we insert the working handles or brakes N N'. P and P', Fig. 1, are the inlet-pipes, and are governed by the valves R and R'. T, Figs. 1 and 2, represents the outlet or discharge pipe, which may be of any desired form and length. The valve S acts as a check alternately for the openings X and X', Fig. 1.

It may be desirable, in some cases, to have openings in the outside of the pump-chambers A and A' for the purpose of letting out the confined air, or for admitting water for starting the pumps.

We claim as our invention—

The combination of the operating-lever H, the yoke-link E, and the rod C, with the diaphragms B and B', all operating together with the valves R, R', and S, substantially as described, and for the purpose set forth.

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Witnesses :

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