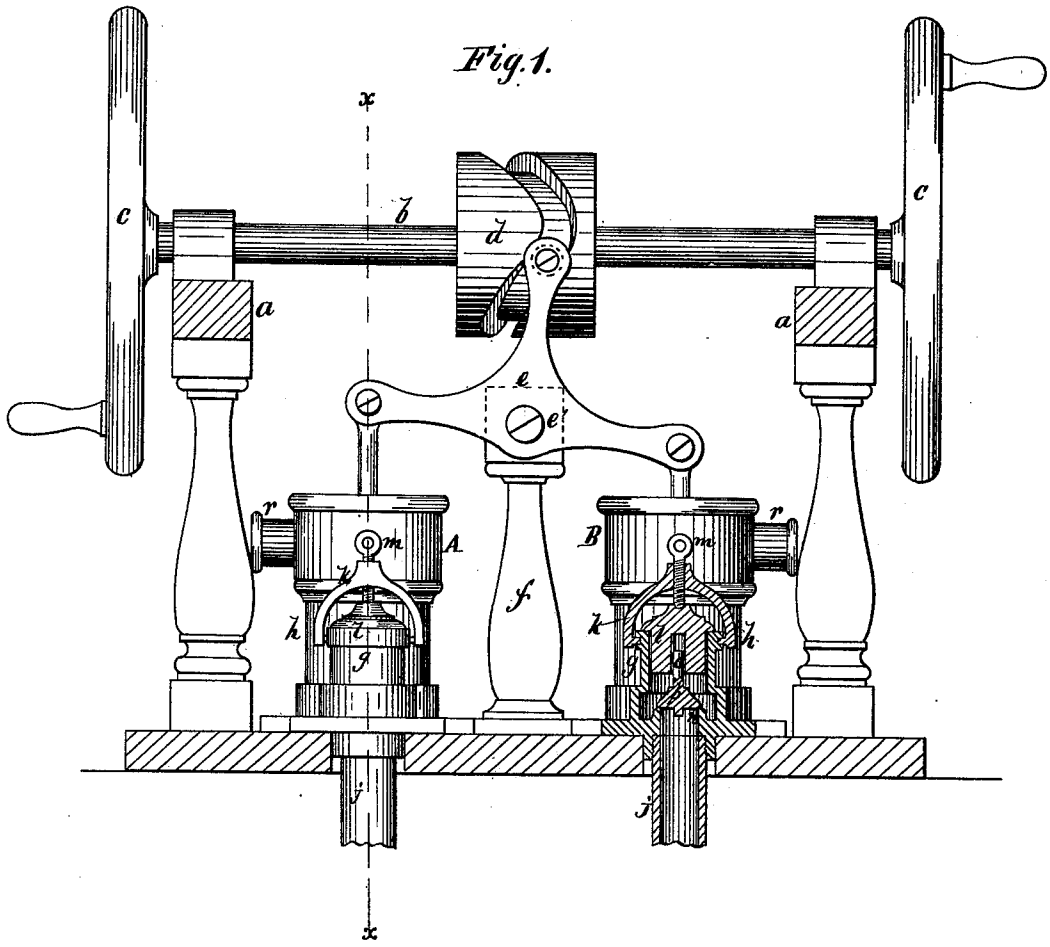
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J. L. DeWOLFE.
Ship's Pump.

No. 214,115. **Patented April 8, 1879.**

Fig. 1.



WITNESSES:

Henry N. Miller

C. Sedgwick

INVENTOR:

J. L. DeWolfe

BY Munn & Co

ATTORNEYS.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

2 Sheets—Sheet 2.

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Fig. 2.

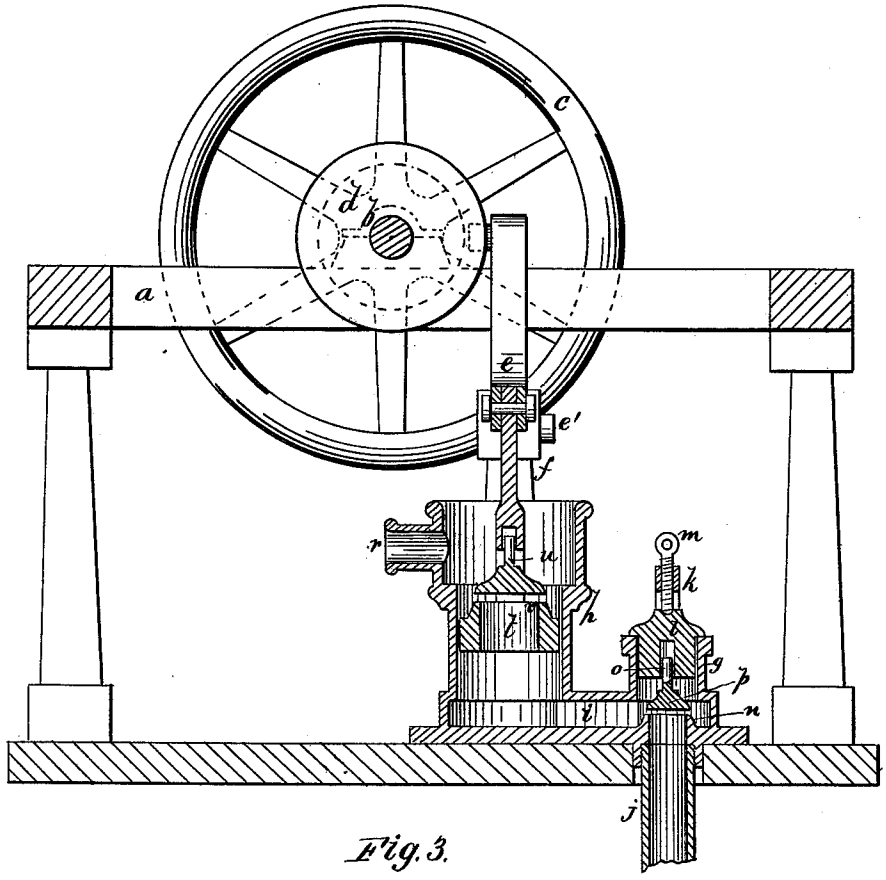
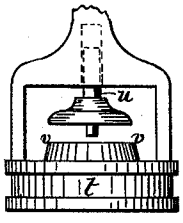


Fig. 3.



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UNITED STATES PATENT OFFICE.

JAMES L. DE WOLFE, OF WINDSOR, NOVA SCOTIA.

IMPROVEMENT IN SHIPS' PUMPS.

Specification forming part of Letters Patent No. **214,115**, dated April 8, 1879; application filed December 17, 1878.

To all whom it may concern:

Be it known that I, JAMES LORAN DE WOLFE, of Windsor, in the county of Hants and Province of Nova Scotia, have invented new and useful Improvements in Ship-Pumps, of which the following is a specification.

The invention relates to an improved gear for operating the pumps, and a novel construction of the pump chambers and valves, to prevent choking and permit the ready use of a sounding-rod.

The invention will be first described in detail in connection with the drawings, and then pointed out in the claims.

In the drawings, Figure 1 is an elevation of the pumping apparatus, with one valve-chamber in section. Fig. 2 is a sectional elevation on line *x x* of Fig. 1. Fig. 3 is an elevation of one pump piston and valve detached.

Similar letters of reference indicate corresponding parts.

The frame *a* is secured to the deck of the vessel, and carries in suitable bearings a cross-shaft, *b*, upon the end of which are secured the hand-wheels *c c* for operating the pumps. *d* is a wheel, having a cam-groove in its surface, and keyed to shaft *b*. *e* is a lever, having one vertical and two horizontal arms, and fulcrumed at *e'* to a standard, *f*, that is bolted to the deck of the vessel. The vertical arm of lever *e* carries a friction-roller that enters the cam-groove of wheel *d*, and the horizontal arms are connected to the plunger or piston rods of the two independent pumps A B, so that by turning the shaft *b* by the hand-wheels the lever is rocked and the plungers operated.

I prefer that the shape of the cam-groove be such as to give two strokes to each pump during one revolution of shaft *b*, thereby obtaining the effect of a double-acting pump as to quantity of water discharged, while the pumps lift but one at a time.

g is the inlet-cylinder of the pump, and *h* the outlet-chamber, connected with *g* by a passage, *i*. The chamber *g* is above the well-tube *j*, and has a removable top, *l*, that is held in place by a swinging shackle, *k*, and screw *m*, that permits the ready removal of top *l*, to give access to chamber *g* and pipe *j*, and permitting the insertion of a sounding-rod.

The inlet-opening in the bottom of chamber *g* is of the full size of pipe *j*, and is formed with a raised annular rim, *n*, that tapers at its upper part to a thin edge, to prevent lodgment of floating substances, and forms an elevated valve-seat for the plate-valve *p*. The chamber *g* is enlarged around the inlet-passage *i*, to prevent floating matter from jamming therein.

The top *l* projects down into the chamber *g*, and the stem *o* of valve *p* enters loosely into a socket in the cover, which cover thereby retains the valve in position and acts as a guide for the valve *p* as it rises and falls vertically. By this construction the whole inlet-passage is opened when the valve rises, and, there being no projections of any kind, floating matter is not impeded and the pump will not be choked. This is an important advantage in a ship-pump.

The pump-plunger *t* is formed with a raised valve-seat, *v*, that tapers at the top for a flat valve, which has a stem, *u*, that enters into the plunger-head, so that the valve is guided thereby and choking prevented, as mentioned in connection with valve *p*. The water discharges through the outlet *r*.

It is to be understood that the description applies to both pumps, they being the same in construction. This pump is substantial, efficient, easily operated, and of large capacity compared with the power required to operate it. It readily frees itself from corn, chips, and other matters which usually disarrange ship-pumps, and permits sounding of the well-tubes.

I am aware that a pump-piston has been reciprocated by a right-angled lever, one end of which is connected with the piston-rod and the other with a grooved cam; but

What I claim as new and of my invention is—

The lever *e*, centrally pivoted to a post, *f*, and having three arms, the two aligned ones connecting with the pistons of two independent pumps, and the one at right angles thereto operated by a cam-groove, as described.

JAMES LORAN DE WOLFE.

Witnesses:

HENRY W. DIMOCK,

CLARENCE H. DIMOCK.