Speakman & Hand,

Ship Pump,

No. 51,094. Patented Nov. 21, 1865.

Fig: 2.

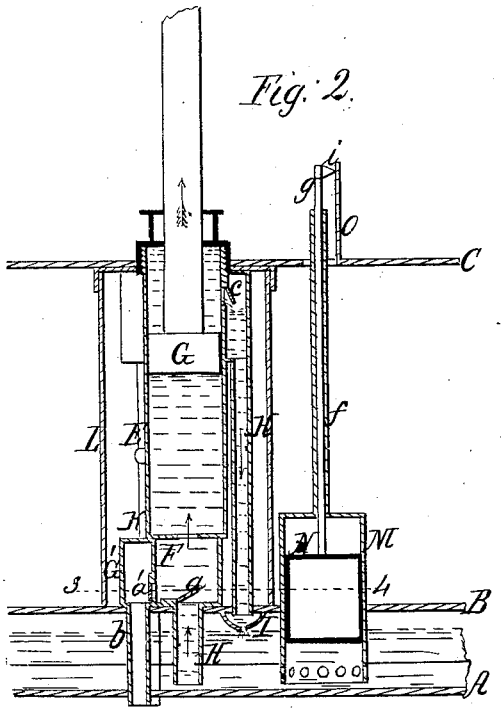


Fig: 1.

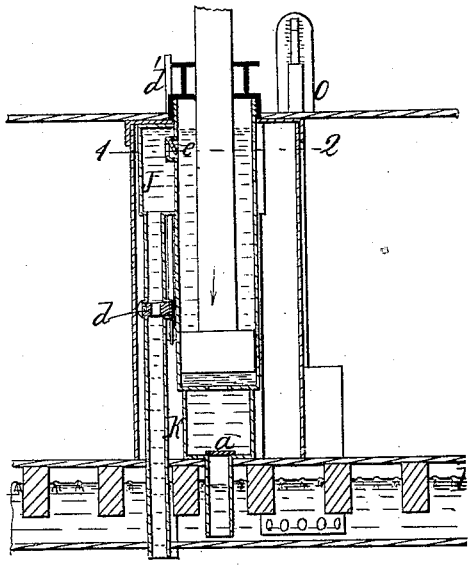


Fig: 3.

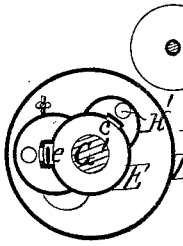
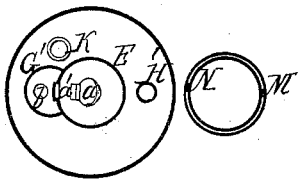


Fig: 4.



Witnesses;
Wm. Albert Steel.
John Parker.

Inventors;
T. Speakman & N. Hand,
by their Attorney,
H. Howson
per C. Foster

UNITED STATES PATENT OFFICE.

THOS. S. SPEAKMAN AND NOAH HAND, OF CAMDEN, NEW JERSEY.

IMPROVEMENT IN SHIPS' PUMPS.

Specification forming part of Letters Patent No. **51,094**, dated November 21, 1865.

To all whom it may concern:

Be it known that we, T. S. SPEAKMAN and NOAH HAND, both of Camden, Camden county, New Jersey, have invented an Improved Ship's Pump; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Our invention consists in a pump-barrel which is provided with the usual piston and combined with certain pipes and valves described hereinafter, and arranged in the hold of a vessel so that the bilge-water will be drawn into the barrel and expelled from the same into the sea at one side of the piston at the same time that fresh sea-water is admitted to the opposite side of the piston and expelled into the hold.

Our invention further consists in certain devices, arranged as described hereinafter, for indicating the depth of water in the hold.

In order to enable others skilled in the art to make and use our invention, we will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figures 1 and 2 are sectional elevations of our improved ship's pump; Fig. 3, a section on the line 1 2, Fig. 1; and Fig. 4, a section on the line 1 2, Fig. 2.

Similar letters refer to similar parts throughout the several views.

A is the bottom of a vessel, B the lower deck, and C one of the upper decks.

On the deck B rests the pump-barrel E, at the lower end of which is a chamber, F, and in which slides the piston G. From the lower part of the chamber F a pipe, H, projects through the deck B into the bilge-water in the hold of the vessel, and at the upper end of the pipe is a valve, *a*, which opens upward, Fig. 2.

At the side of a chamber, F, is a case, G′, which communicates with the chamber F through an opening to which is adapted a valve, *a′*, and from the lower side of the said case a tube, *b*, projects through both the deck B and the bottom A of the vessel.

A pipe, H′, communicates through an opening, to which is adapted a valve, *c*, with the upper end of the cylinder E, the lower end of the pipe projecting into a perforated distributing-pipe, I, which extends along the under side of the deck B.

At the upper end of the barrel E is a case, J, which communicates with the cylinder through an opening, to which is adapted a valve, *e*, and from the under side of the case a pipe, K, projects through the deck B and the bottom A of the vessel, the said pipe being provided with a valve-cock, *d*, which is operated by a rod, *d′*, extending to the upper deck.

Around the barrel E and the pipes connected to the same is a casing, L, and near the latter is a casing, M, open at the lower end, which extends into the bilge-water.

From the upper end of the casing M a tube, *f*, projects through the upper deck, and in this tube slides a rod, *g*, the lower end of which is connected to a float, N. At the upper end of the rod is a finger, *i*, the point of which is opposite an index, O, the position of the finger opposite the index indicating the height of the bilge-water in the hold.

As the piston G is raised, as shown in Fig. 2, the valve *a′* will be closed and the valve *a* opened, so that a quantity of the bilge-water will be drawn through the tube H into the chamber F and into the cylinder, while at the same time the fluid in the cylinder above the piston will be expelled through the tube H′ into the distributing-pipe I, and through the perforations in the latter into the hold. As the piston descends, Fig. 1, the valve *a* will close and the valve *a′* will be opened, so that the bilge-water beneath the piston will be forced into the case G′ and through the pipe *b* into the sea, while at the same time the valve *c* above the piston will be closed, the valve *e* being opened, so that a supply of fresh sea-water may be introduced into the barrel through the pipe K and case J.

It will be apparent that a continuous reciprocating motion imparted to the piston will thus rapidly effect the expulsion into the sea of the foul bilge-water from the hold and at the same time replace the same by an equal quantity of fresh sea-water.

When, in consequence of a leak or from other

causes, it may be desired to diminish the quantity of water in the hold, the cock *d* may be turned so as to close the pipe K, the admission of fresh water being thus discontinued, while the bilge-water only is introduced into and expelled from the pump.

Without confining ourselves to the exact construction and arrangement of the parts shown and described,

We claim as our invention and desire to secure by Letters Patent—

1. The pump-barrel E, with its piston G, arranged in the hold of a vessel and operating in combination with the within-described pipes and valves or their equivalents, substantially as and for the purpose specified.

2. The combination of the case M, tube *f*, float N, rod *g*, finger *i*, and index O, as arranged in relation to the foregoing.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

THOMAS S. SPEAKMAN.
NOAH HAND.

Witnesses:
CHARLES E. FOSTER,
W. J. R. DELANY.