(No Model.)

A. COOK.

BILGE WATER PUMP.

No. 373,725. Patented Nov. 22, 1887.

Fig. 1.

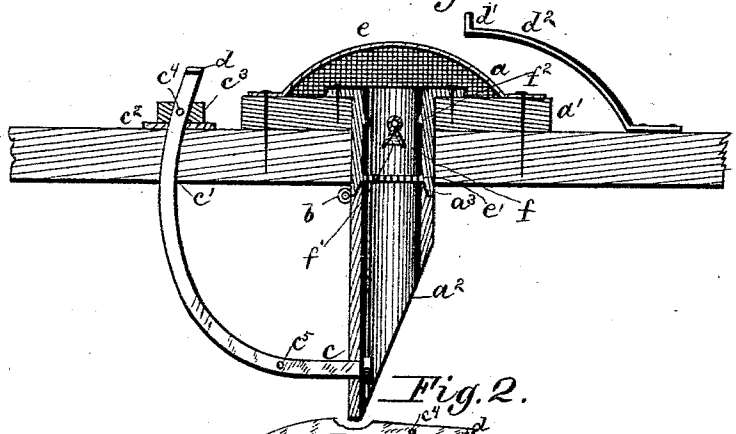


Fig. 2.

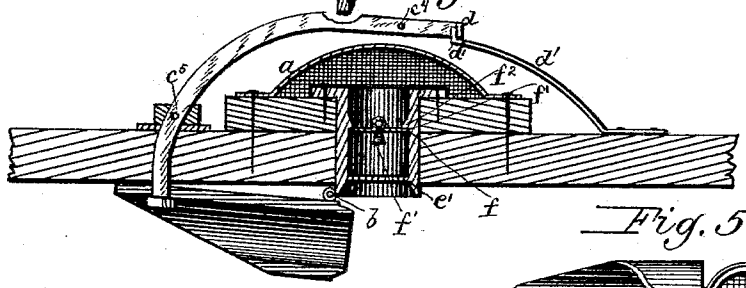


Fig. 5.

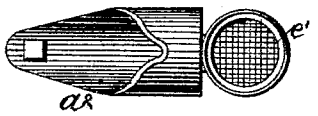


Fig. 3.

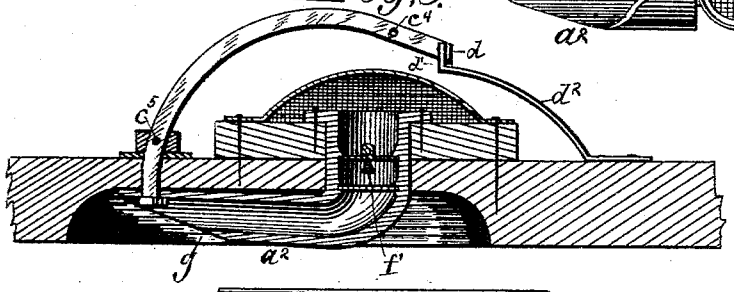
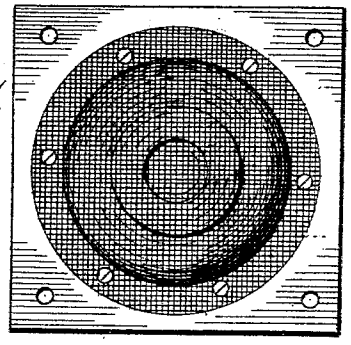


Fig. 4.



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UNITED STATES PATENT OFFICE.

ALONZO COOK, OF ST. PAUL, MINNESOTA.

BILGE-WATER PUMP.

SPECIFICATION forming part of Letters Patent No. 373,725, dated November 22, 1887.

Application filed November 23, 1886. Serial No. 219,646. (No model.)

To all whom it may concern:

Be it known that I, ALONZO COOK, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented a certain new and useful Bilge-Water Pump; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention is a new bilge-water pump; and it consists in the novel construction and arrangement of its parts.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of my invention with the lower point of the pump-pipe set in position. Fig. 2 is a longitudinal sectional view of the same with the lower point of the pump-pipe drawn up against the bottom of the vessel. Fig. 3 is a longitudinal sectional view of the same, showing the manner of protecting the lower point of the pump-pipe in rivers and shallow waters, in which case the lower point of the pump-pipe is made of some flexible material. Fig. 4 is a top view of netting made of iron, steel wire, or other suitable material. Fig. 5 is a view showing the rear face of the lower end of the pump-pipe and of the strainer e'.

Fig. 1 represents the pump in working order when the vessel is passing through the water.

The pump consists of a tube, a, which is divided into two parts and hinged together by a hinge, b, just below the bottom of the vessel. The upper part of the tube a has extending from its upper end a flange, by which it is secured to a solid timber, a'; or, in case the bottom of the vessel is strong enough and thick enough, or in case it is made of iron, the said tube a may be secured directly to the inner face of the bottom of the vessel. The lower end of the tube a^2 has its rear side cut off at an angle, leaving the front coming down to a point. The hinged part of this tube a^2 has secured in its front side by any usual method a circular brace, c, the free end of which passes through an opening, c', in the bottom of the vessel, thence through c^2, which is a rubber plate or other suitable stuffing, to keep the vessel from leaking at this point.

c^3 is a sleeve through which said brace c passes, and is secured in place by a pin which passes through the perforation c^4 in said brace and correspondingly through said sleeve. The free end of the brace c has its upper end turned out squarely, forming an arm, d, which is adapted to be hooked over the arm d' of the bar d^2, one end of which is secured to the bottom of the vessel in rear of the pump.

Over the top of the pump and inside of the vessel there is secured a strainer, e, made of suitable material, to prevent any large substances from running into the pump and choking it. At the lower end of the shell or pipe a is secured another net-work, e', to prevent drift-wood or any other large substances from passing up into the pump and choking it. In the said pipe a, near its upper end, is secured two hinged valves, f, which, when the vessel is in motion and the pump is in operation, fall down and rest against the block f', which is large enough to hold them out at a considerable angle, so that when the vessel stops the force of the water will throw them back against the shoulder f^2 inside the pipe.

When I wish to unship the pump, I draw up through the bottom of the vessel the quarter-circle brace c, which brings the hinged end a^2 of the pump up against the bottom of the vessel, so that drift-wood will sheer off. The arm d of said brace is hooked over the arm d' of the bar d^2, which holds the said point a^2 up in place against the bottom of the vessel, and a pin is then put through the perforation c^5 and the sleeve c^3, which makes an additional fastening.

My bilge-water pump, when made for vessels that navigate rivers or other shallow waters, has its lower end, a^2, made of flexible material, and the vessel has in its bottom a recess, g, into which the said flexible end of said pipe may be withdrawn until its rear or lower face is flush with the bottom of the vessel. In all other respects it is like the one above described.

The operation of the pump is as follows: When a vessel moves forward, the lower end of the pipe plowing through the water leaves behind it a track and produces suction, which draws the water from the bottom of the vessel

into the stream. When the vessel stops, the hinged valves *f* are immediately closed by the pressure of the water below, when no water escapes up through them into the vessel, because they are made perfectly water-tight. When I do not wish to operate the pump, I draw the lower end of the pipe up against the bottom of the vessel, as above described. The upper end of the pipe a^2 is adapted to fit in the collar a^3 in the lower end of the pipe *a*, so that it is perfectly strong and water-tight.

When a vessel is standing still, Fig. 2 shows the valves closed, with the same resting against the collar or flange *f'*, stopping all water from coming into the hull. This pump is made of copper, brass, or other suitable material for lakes or seas, and can be hung up in the holds of vessels, to be used on short notice by the help of a diving-armor to make connection with the quarter-circle and with the shell or pump *a*.

These pumps are to be made of a size to comport with the tonnage of the vessel.

In case of derangement of the valve, permitting reflow and inflow of water into the vessel, the opening of the upper end of the pump may be covered with a cap or stopped with a plug or other appliance.

The projecting body of the pump below the hull may be strengthened and secured from accident by guards.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A bilge-water pump consisting of the shell *a*, secured in the bottom of the vessel, having on its interior face the shoulders f^2, and near its lower end screen or strainer *e'*, hinged in the center of said shell *a*, the valves *f*, held open by block *f'* and adapted to shut up against shoulder f^2, the lower pipe, a^2, secured to the lower end of shell *a* and having its rear side cut off at an angle, circular brace *c*, having perforations c^4 c^5 and on its free end arm *d*, one end secured in the lower end and front side of pipe a^2 and its free end working through opening *c'* in the bottom of the vessel, through collar c^2, and sleeve c^3, and bar d^2, one end secured to the bottom of the vessel, its arm *d'* adapted to hold the arm *d* of brace *c*, substantially as shown and described.

2. A bilge-water pump consisting of the shell *a*, secured in the bottom of the vessel, having on its interior face shoulder f^2 and near its lower end strainer *e'*, and hinged in its center, valves *f*, held open by block *f'* and adapted to shut up against said shoulder f^2, lower pipe, a^2, fitted to the lower end of shell *a*, circular brace *c*, having one end secured in the lower end and the front side of pipe *a*, its other end working through opening *c'* in the bottom of the vessel, and sleeve c^3, provided with suitable stuffing, and arm *d*, adapted to fit over arm *d'* of bar d^2, or other equivalent fastening, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

ALONZO COOK.

Witnesses:
WILLIAM A. HANSON,
JOHN K. COOK.