(No Model.)

J. R. JOBIN.

AUTOMATIC BILGE PUMP.

No. 291,353. Patented Jan. 1, 1884.

Fig. 1.

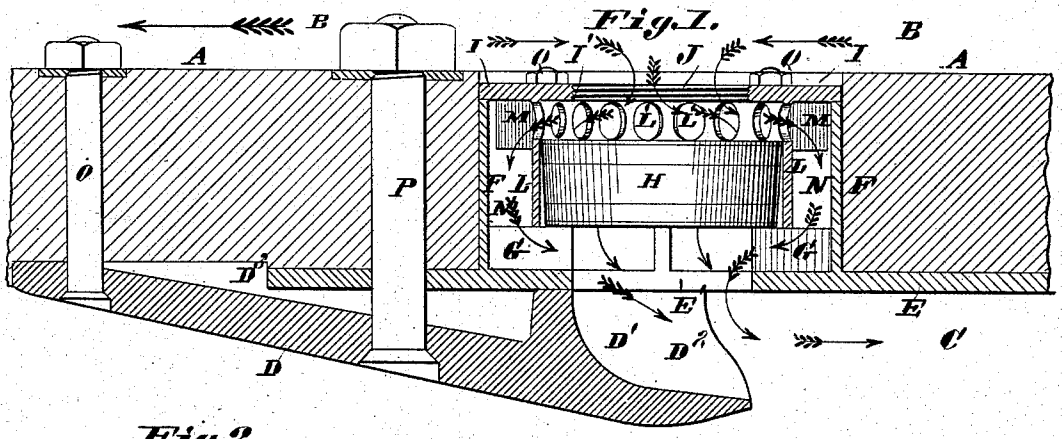


Fig. 2.

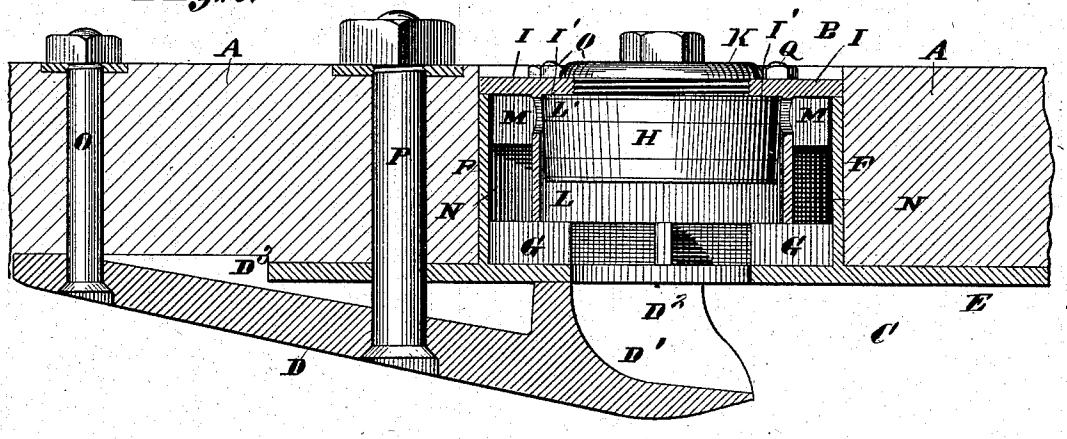
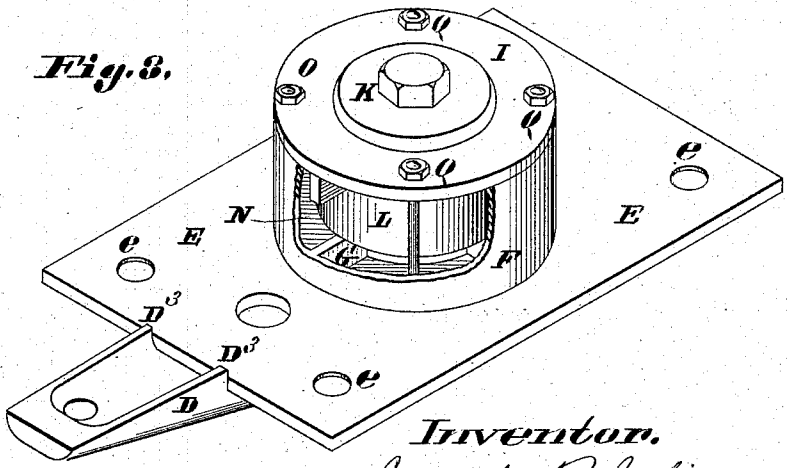


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOSEPH R. JOBIN, OF ST. LOUIS, MISSOURI.

AUTOMATIC BILGE-PUMP.

SPECIFICATION forming part of Letters Patent No. 291,352, dated January 1, 1884.

Application filed March 12, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH R. JOBIN, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Bilge-Pumps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My improvement consists of a pump that acts by the formation of a partial vacuum beneath to suck the bilge-water out at the bottom of the vessel. A valve closes when the inward pressure exceeds the outward pressure, so that no water can pass inward.

In the drawings, Figure 1 is a longitudinal section of the device with the valve open and the pump in operation. The direction of movement of the vessel is indicated by a large arrow, and the current of the bilge-water in leaving the hold of the vessel shown by smaller arrows. Fig. 2 is a similar section with the valve closed and the orifice closed by a screw-cap. Fig. 3 is a perspective view of the pump.

A is the bottom of a steamboat or other vessel, the hold being above at B, and the open water at C.

D is a bustle firmly bolted to the bottom A, and projecting downward therefrom at the rear end, D′. From the rear part the under side of the bustle slopes upward to the under side of bottom A, so that there will be no abrupt projection that can catch against an obstacle. The form and strength of the bustle is such that on coming in contact with any obstacle it will slide over it without injury. The rear end, D′, of the bustle has a cup, D^2, open at the rear and top.

The pump has a metal shell consisting of a flat plate, E, and a cylindrical part, F, and having radial wings G, that form supports for the valve H when in its lower position. This shell E F G is let into the bottom A, so that the under side of the plate E is flush with the under side of the bottom A. The bustle is made with corners D^3, that bear against the front edge of the plate E. The plate has an orifice, E′, in communication with the cup D^2.

I is a top plate that fits the upper edge of the cylindrical part F, and which has a central orifice, J, that is screw-threaded for the engagement of a screw-cap, K, by which the orifice may be closed when desired.

L is a cylindrical flange extending down from the plate I to the wings G.

M are wings extending from the flange L to the shell F, said shell and flange being concentric with each other.

L′ are water-holes in the flange L, through which the water passes in entering the annular water-chamber N outside the valve. The flange L forms the guide of the valve, which works freely in the chamber within and closes, when in its upper position, against the seat I′.

O P are lag-bolts holding the bustle in place. Q are bolts holding the plate or disk I down upon the flange or shell F. The plate E has bolt-holes *e* for bolts screwing into the timber A, or passing through the timber and riveted or fitted with nuts above.

The flanges F and L may be increased in width with increase of thickness in the bottom A. In cases where the bottom A has considerable thickness a ball-valve may be used in place of the flat valve H.

The operation is as follows: As the vessel moves forward a partial vacuum is formed in the recess D^2, that relieves the valve from pressure below, and it drops from its seat, allowing the bilge-water to flow out, as indicated by the arrows. When the vessel ceases to move forward, the pressure of the water beneath the valve immediately closes it. When the pump is not in use, it may be closed by the screw-cap K.

I claim—

1. The combination, with a water-craft, of the inclined projection or bustle on the outside of the side or bottom of the hull, and an aperture at the rear of the salient rear end of the bustle, extending from outside to inside of the hull and provided with an inwardly-closing valve.

2. The combination of metal bustle D, secured to the bottom of a water-craft, with recess at the rear end of the bustle and orifice in the bottom of the craft in communication with said recess, and valve H, closing inwardly against its seat, to close the orifice against entering water.

3. The combination, with the bottom of a water-craft, of bustle D, orifice through the

bottom, in connection therewith inwardly-closing valve H, and screw-cap K, for the purpose set forth.

4. A bilge-pump consisting of a lower plate, E, having an orifice, E′, a cylindrical outer shell, F, and radial wings G, an upper plate, I, having an orifice, J, a cylindrical inner shell beneath said upper plate, having suitable orifices, L′, and concentric with the outer shell, and a float-valve within the inner shell and adapted to be supported by the wings, as set forth.

5. In combination with a bilge-pump having lower plate, E, and orifice E′, the bustle D, gently inclined downwardly from its forward end to its rear end, D′, having cup D^2, open at rear and at top, beneath the orifice of the plate, and corners D^3, to bear against the front edge of the plate, as set forth.

6. The combination of a suitable bustle to cause a vacuum, a lower plate, E, formed with orifice E′, a cylindrical shell, F, surrounding the orifice, radial wings G between the orifice and shell, upper plate, I, formed with orifice J, a cylindrical shell, L, within the outer shell, having openings L′, wings M between the shells, and a float, H, to rest on the radial wings when in operation, as set forth.

JOSEPH R. JOBIN.

Witnesses:
SAML. KNIGHT,
GEO. H. KNIGHT.