

C. A. CURRY.
BILGE WATER DISCHARGER.
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933,891.

Patented Sept. 14, 1909.

Fig. 1.

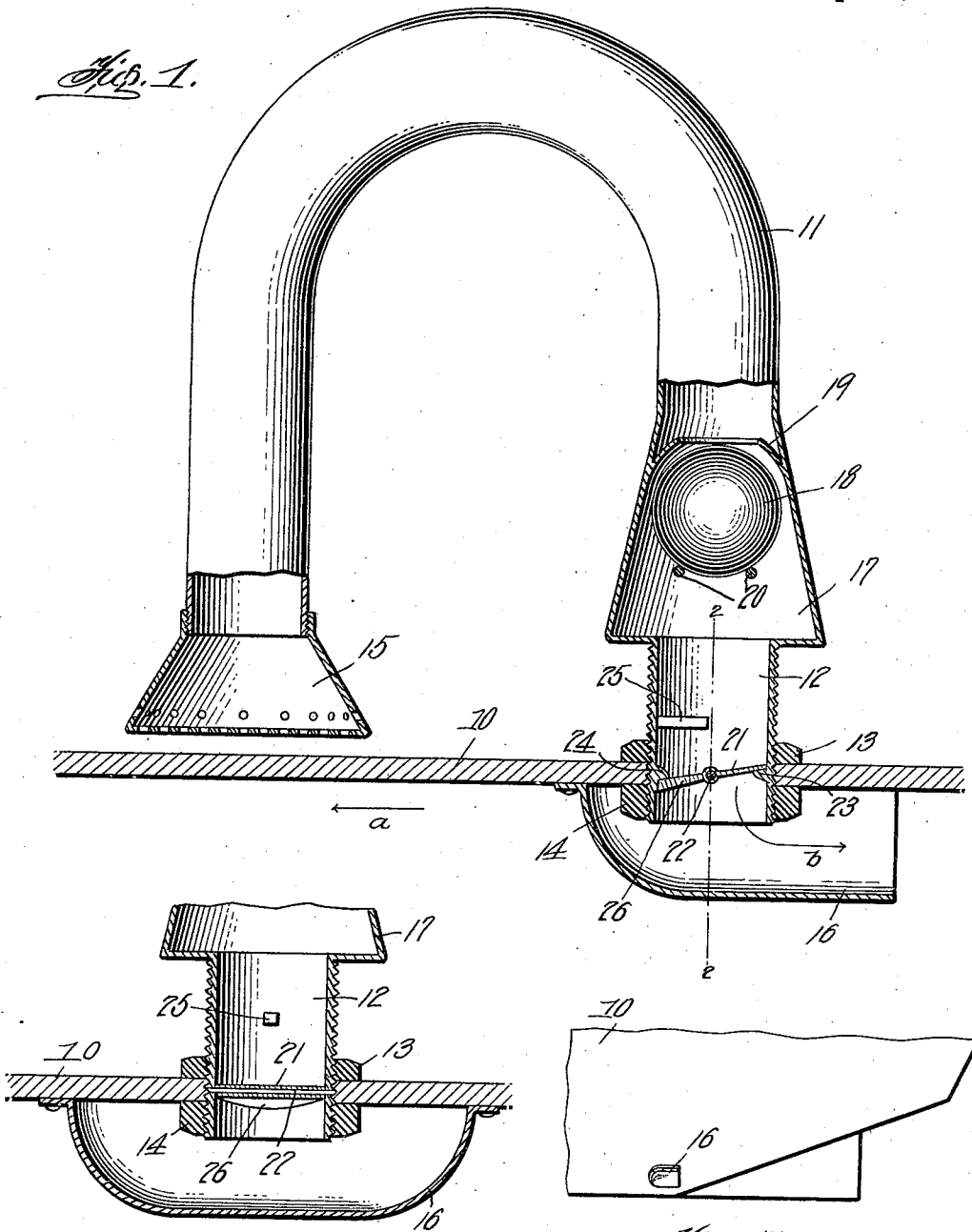


Fig. 2.

Fig. 3.

Witnesses

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BILGE-WATER DISCHARGER.

933,891.

Specification of Letters Patent. Patented Sept. 14, 1909.

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To all whom it may concern:

Be it known that I, CHARLES A. CURRY, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Bilge-Water Dischargers, of which the following is a specification.

This invention relates to apparatus for discharging bilge water or the like, from the holds of vessels, and is directed especially to a device of the above character which is designed to operate automatically and to eject the water by means of suction created by movement of the vessel through the water. In devices of this kind it is of extreme importance that there shall be no leakage into the vessel through such discharge apparatus, this being a source of failure in many devices in this art.

For a full understanding of the invention, reference is to be had to the following detail description and to the accompanying drawings, in which—

Figure 1 is a vertical sectional view of a preferred embodiment of this invention, portions of the device being in elevation; Fig. 2 is a detail transverse section on the line 2—2 of Fig. 1, and Fig. 3 is a diagram of the exterior of the ship's hold indicating the position the suction member may assume thereon.

Throughout the following detail description and on the several figures of the drawings similar parts are referred to by like reference characters.

In carrying out this invention in practice I apply to the keel or bottom 10 of the vessel a siphon-like ejector pipe 11. The lower end 12 of said ejector may preferably be screw-threaded, whereby the same may be tapped into and through said bottom 10, the extreme lower end of said threaded portion being extended slightly below the bottom of the vessel. Any suitable form of locking means, such as lock nuts 13 and 14, may be applied to the threaded member 12 on the respective upper and lower surfaces of the member 10, whereby the ejector will be securely locked in position. The inner extremity of the ejector pipe 11 is preferably curved over and downwardly, terminating in close proximity to the bottom of the hold just above the inner surface of the bottom plate 10. In order to prevent large particles of matter being drawn into and through

the ejector, and which would tend to render inoperative the devices described below, there should preferably be attached to said inner end of the ejector some suitable form of screen, indicated in this instance by the numeral 15, the same being connected to said inner end of the ejector in any suitable and permanent manner, as by screw threads.

A suction member or cup 16, of considerable breadth with respect to its depth, is secured to the bottom of the vessel 10 in such a manner as to embrace the exit opening of the ejector pipe projecting through the bottom of the vessel and having an open mouth directed rearwardly toward the stern. The cup 16 constitutes also an effective guard preventing likelihood of obstruction from damaging the outer extremity of the ejector pipe. It may be understood that this member 16, made preferably of some suitable rigid and strong metal, will be secured about three sides of the exit end of the ejector, such connection with the bottom of the vessel being of course hermetic. The line of connection between the suction cup 16 and the bottom of the vessel is preferably substantially horseshoe-shaped. As a vessel equipped with this ejector is moving forwardly normally through the water in the direction indicated by the arrow A, a strong suction will be set up through the suction cup 16 in the direction, relatively to the vessel, indicated by the arrow B, such suction being operative through the entire ejector pipe 11. Any bilge water, therefore, that may be in the bottom of the vessel in contact with the screen 15 will be drawn into and through the ejector and outward through the cup 16 automatically.

In order to prevent the sea water from entering the vessel in a reverse direction from that just described when the vessel is either stationary or moving rearwardly or at a slow rate, valve mechanism must be employed to prevent the same. At any suitable location in the ejector pipe 11 may be formed an enlargement 17, constituting a valve casing. This enlargement will contain a movable valve which may be in the form of a ball 18 adapted to seat itself inwardly against a valve seat 19 secured to the inner wall of the casing 17. The ball 18 may be made of any suitable material, but for the sake of promptness of operation it should be of some material not heavier than the specific gravity

of water. The ball may be held from too great downward or outward movement by cross bars 20, so as not to permit the ball to obstruct the passage of water through the neck 12 of the siphon. Located preferably near the exit end of the neck 12 is a butterfly valve 21, pivoted on an axis 22 and movable thereon through approximately ninety degrees. Said valve 21 is adapted to rest upon or against stop lugs 23 and 24 when closed. When suction is set up through the device as above set forth, the valve 21 will turn on its pivot and come into contact with a stop 25 whereby the amount of the pivotal movement thereof is limited in that direction. If desired one end of the valve may be weighted to insure prompt action, as indicated at 26. By constructing and mounting the butterfly valve in the manner indicated great delicacy of operation is assured, both as to opening and closing.

Having thus set forth the preferred embodiment of this invention but not desiring to be limited to the exact form shown, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In a bilge-water discharger, the combination with the bottom of a vessel, of an ejector pipe tapped into and through said bottom, locking means secured to said pipe above and below said bottom and securing the same rigidly thereto, said ejector pipe being extended upward and curved downwardly adjacent to the inner surface of said bottom, an ejector cup embracing the outer extremity of said ejector pipe and secured to the exterior surface of the bottom of the vessel, and automatic valve mechanism within

the ejector pipe serving to prevent inflow of water therethrough.

2. In a bilge-water discharger, the combination with the bottom of a vessel, of an ejector pipe secured therein and extending therethrough, the outer end of said pipe terminating below the outer surface of said bottom, valve mechanism to prevent the entrance of water through the pipe, and a horse-shoe-shaped broad and flat ejector cup embracing said outer end of the ejector pipe and connected to the exterior surface of the bottom of the vessel independently of the ejector pipe and its securing means, substantially as set forth.

3. In a bilge-water discharger, the combination with the bottom of a vessel, of an ejector pipe secured thereto and extending therethrough, the inner end of said pipe being curved downwardly and terminating closely adjacent the inner surface of the bottom, a screen guarding the said inner end of the pipe close to said bottom, valve mechanism within said ejector pipe, serving to prevent entrance of water therethrough into the vessel, and an independent suction cup embracing the outer end of the ejector pipe, the same being connected to the entrance surface of the bottom of the vessel and serving to guard said outer end of the ejector pipe.

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

CHARLES A. CURRY.

Witnesses:

JOSEPH MARTIN,
CHESTER MARTIN.