(No Model.)

B. S. HORTON.

SEA COCK.

No. 402,454. Patented Apr. 30, 1889.

Fig. 1.

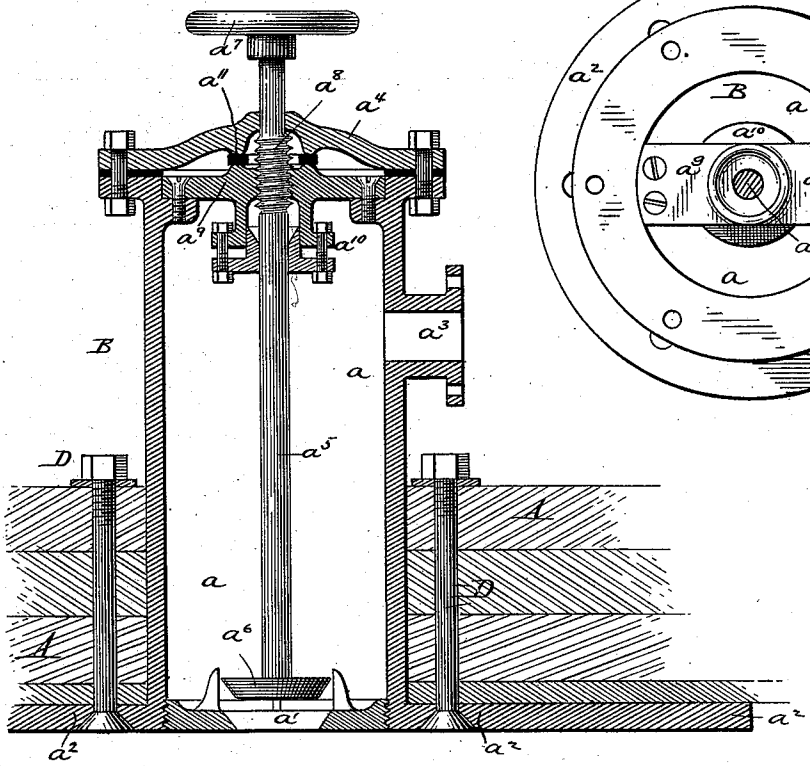
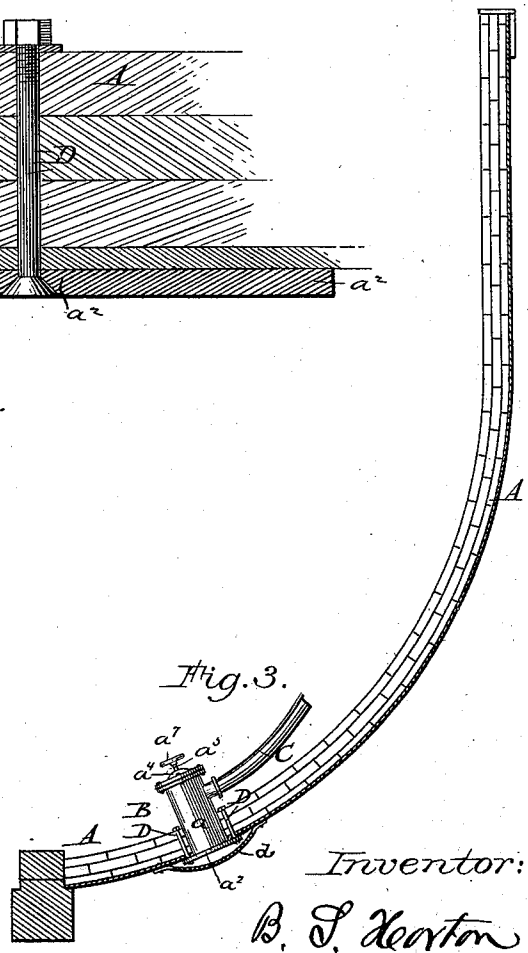


Fig. 2.

Fig. 3.



Attest:
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UNITED STATES PATENT OFFICE.

BENJAMIN S. HORTON, OF VERMILION, OHIO.

SEA-COCK.

SPECIFICATION forming part of Letters Patent No. 402,454, dated April 30, 1889.

Application filed February 17, 1888. Serial No. 264,420. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN S. HORTON, of Vermilion, in the county of Erie and State of Ohio, have invented certain Improvements in Sea-Cocks, of which the following is a specification.

This invention relates to a cock particularly intended for closing the mouths of those pipes which open through the hulls of vessels below the water-line; and the object of the invention is to provide a cock by which these openings may be closed from the interior of the vessel flush with its outer wall or surface, so that when the vessel is laid up for the winter and the cock closed and drained from the interior there is no possibility of the valve being burst by the formation of ice therein, as is the case with cocks which have a space or chamber outside of the valve proper.

My cock comprises as its essential features a body adapted to extend through the planking or sheathing of the hull flush with its outer surface, and an inwardly-opening valve adapted to close the extreme outer end of the body, so that no space is left for the lodgment of water or formation of ice in the body outside of the valve proper. I combine with the valve a spindle or similar operating device by which it may be controlled from the interior of the vessel, and in the preferred form I construct the body with a removable cap in such manner as to give access thereto for drainage purposes while the valve is closed and without disconnecting the pipe.

The opening of the valve in an inward direction is of importance, in that it permits the valve to remain open in the event of injury thereto or to its operating device, so that the feeding of water to the bodies or the delivery of bilge-water from the condensers, as the case may be, will not be interrupted. The inwardly-opening movement and the closing of the valve flush with the outside are also important, in that the grounding of the vessel, the contact of the valve with piles, docks, boats, or other floating bodies cannot close the valve or prevent it from opening.

In the accompanying drawings I have represented my invention in its preferred form; but it is susceptible of various modifications within the range of mechanical skill, which will suggest themselves to the skilled mechanic after a reading of this specification.

Figure 1 represents a vertical axial section through my improved cock in operative position in the hull of a vessel. Fig. 2 is a top plan view of the cock with the cap-plate and hand-wheel removed. Fig. 3 is a vertical section through one side of a hull with my cock in position therein, the cock being shown in side elevation.

In the drawings, A represents the hull or wall of a vessel, B the cock, and C the pipe connecting with the cock inside of the vessel.

The body of the cock a is made, preferably, of cylindrical form, its outer end being provided with a central valve seat or throat, a', and with an external flange or collar, a^2. Near the inner end the body is provided on one side, or in any other suitable position, with a flanged neck, a^3, to receive the connecting-pipe. A lid or cover, a^4, is bolted firmly upon and closes the inner end of the body. A valve-spindle, a^5, extends centrally through the lid or head of the body and carries at its outer end the valve proper, a^6, adapted to enter the seat or throat a' from the inner side and to close the same flush with the outer face. The valve-spindle is provided at its inner end with a hand-wheel, a^7, and is also provided with a screw-thread, a^8, seated in a bar, a^9, screwed or otherwise fixed in position across the inner end of the valve-body inside of the lid, so that by turning the hand-wheel the valve may be opened and closed.

A gland or stuffing-box, a^{10}, in the form shown or in any ordinary form, is provided on the bar a^9, to prevent leakage around the valve-spindle. As a further prevention of leakage, an elastic washer, a^{11}, is inserted between the lid and the cross-bar around the spindle, as shown in Fig. 1.

In applying my valve an opening is made through the hull of the vessel of suitable size to receive the valve-body, which is passed therethrough in the manner shown and secured firmly in place by bolts D, or in any other suitable manner. The valve is so applied that its inner end and the operating-wheel are exposed within the vessel, while its outer end stands flush or practically flush with the outer surface of the hull.

Under ordinary circumstances the valve remains constantly open while the vessel is in use. At the end of the season, when the vessel is to be laid up, the valve is closed and the water drained from the interior of the valve-body either by disconnecting the pipe C and applying a hand-pump or by removing the lid and inserting the hand-pump, or in any other suitable manner.

It will be perceived that when the vessel is closed a smooth unbroken surface is presented on the outside of the vessel, and that after the valve has been drained there is no danger or possibility of the parts being broken by the formation of ice.

The essence of the invention lies in a valve-seat and an inwardly-opening valve formed and applied to close flush with the outer surface of the hull, and adapted to be operated from the interior of the same, and it is manifest that as regards the valve proper, its seat, and the operating spindle, they may be modified in form at will or made of any known form, provided they are adapted to close flush on the outer side, as described.

In order to prevent the entrance of foreign material to the valve, I place over the throat of the same, if desired, a perforated shield, *d*, as shown in Fig. 3.

I am aware that a sea-cock has been constructed with a casing to extend through the ceiling of a vessel, and with a valve located between the inner and outer faces of the planking, said valve opening in an outward direction and having its spindle guided outside of the valve by stationary cross-arms in the body, as in Letters Patent No. 386,270. To this construction I lay no claim. My invention is restricted to a valve which opens in an inward direction, so that it may not be prevented from opening by contact with external objects, and also limited to a valve which is located at the extreme outer end of and flush with the body or casing, so that its operation cannot be prevented, and so that breakage of the casing may not be caused by the formation of ice outside of the valve proper.

Having thus described my invention, what I claim is—

1. In a sea-cock, the hollow closed body adapted to extend through the hull of a vessel, and provided at its extreme outer end with the valve-seat and at its inner end with a pipe-receiving neck, in combination with an inwardly-opening valve adapted to close against the seat practically flush with the outer end of the body, the valve-operating spindle extended through the inner end of the body, and guides for said spindle located wholly on the inner side of the valve, whereby the formation of ice within the body outside of the valve proper, injury to the valve by contact with external objects, and the closure of the valve by such contact are all prevented.

2. In a sea-cock, the body having the seat at its extreme end, the inwardly-opening valve, the threaded valve-operating spindle, its supporting-bar attached to the body, and the independently-removable cap or cover a^4, combined as and for the purpose described.

In testimony whereof I hereunto set my hand, this 19th day of January, 1888, in the presence of two attesting witnesses.

BENJAMIN S. HORTON.

Witnesses:
W. R. KENNEDY,
ANDREW PARKER.