J. S. WILSON.

Air-Ports for Vessels.

No. 164,954. Patented June 29, 1875.

Fig. 1.

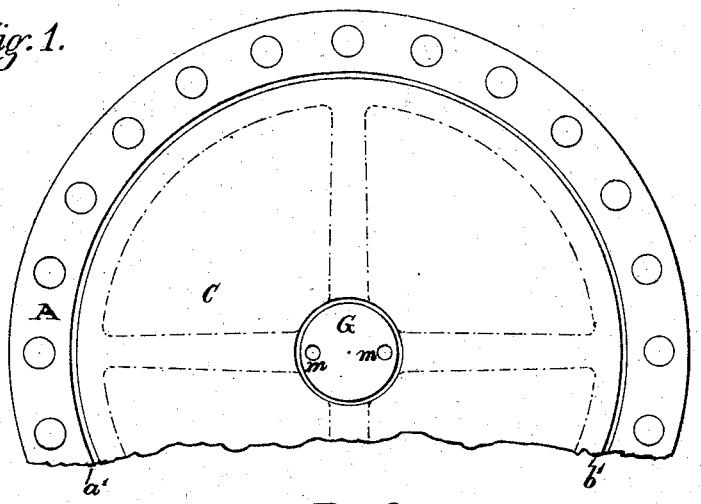


Fig. 2.

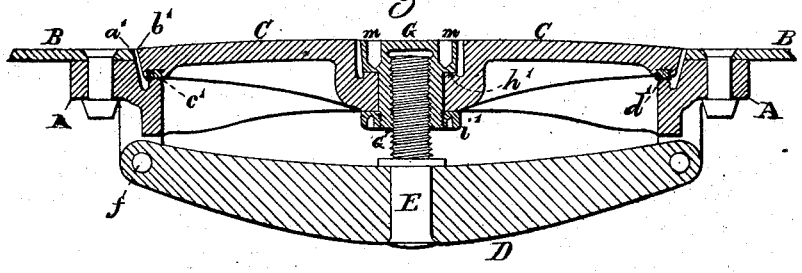


Fig. 3.

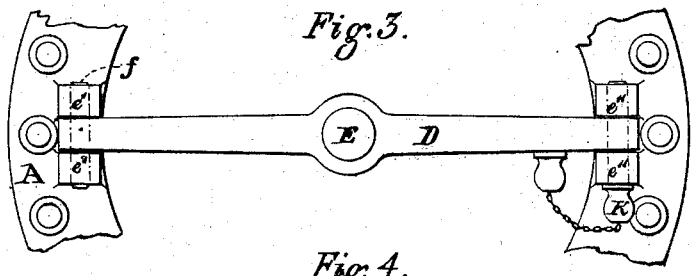
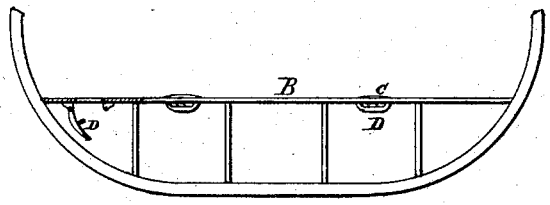


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOSEPH SHIELDS WILSON, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN AIR-PORTS FOR VESSELS.

Specification forming part of Letters Patent No. **164,954**, dated June 29, 1875; application filed April 16, 1875.

To all whom it may concern:

Be it known that I, JOSEPH SHIELDS WILSON, of Philadelphia, Pennsylvania, have invented an Improved Man-Hole Plate and Ring for the Double Bottom of Ships and for Tanks, of which the following is a specification:

The object of my invention is to provide a man-hole cover on the inner shell of a double-bottomed ship, or on a tank of any description, which cover can be securely closed from the outside of the chamber or tank, without any obstruction to the stowing of cargo, and which will permit the unobstructed use of a shovel or other instrument for removing cargo.

My invention consists briefly in the following: The ring of the man-hole cover is riveted to the inside of the tank, and the cover is sunk into the ring, so as to form a flush surface on the outside of the tank. A cross-bar is hinged inside the tank, so that it can be secured across the opening by a pin, while the cover is secured to the cross-bar by a central stud and a sunken flanged nut.

Referring to the drawings, Figure 1 is a plan. Fig. 2 is a cross-section through the cross-bar and man-hole cover. Fig. 3 is a plan looking from the inside of the tank or chamber. Fig. 4 illustrates the application of the man-hole cover to a ship's bottom.

A is a circular man-hole ring, sufficiently large for a man to pass through, riveted to the under side of the inside bottom B of a ship. The mouth of the ring A is recessed at a', to let in a convex plate, C, flush with the outside or top of B. The edge b' of the plate C is conical, with the largest diameter on top, having some clearance between it and a'. On the under side of the plate C, at the edge, a groove is cast, into which a ring, c', of gum, is inserted. d' is a narrow circular projection upon the ring A. It is rounded on the top, and fits against the gum-ring c'. D is a cross-bar for holding down the plate C, provided at the middle with a screw-stud, E. The ends fit in between two pairs of lugs, one e' e', the other e' e''. In e' e' the pin f is riveted, but free in the bar. In e'' e'' the pin K is loose and chained to the bar D. G is a close-ended nut, with a solid collar, h, at the upper or outside end, and a screwed collar, i', at the lower or inside end, the whole let flush into the plate C at the center, to which it fits freely between the collars h' and i'. Into the nut G, near the outer edge on the upper side, two holes, m m, are drilled to suit a double-teat wrench.

The nut and pin may be in one piece, and screw into the cross-bar with the same result.

When the man-hole is ready for entering, the bar D hangs down from the pin f, allowing a free and unobstructed passage to the inside.

In closing up the hole, the bar D is swung up between the lugs e'' e'', and the pin K inserted.

The plate C is placed over the hole, the stud E entered into the nut G; then the plate C is turned around until the gum-ring c' comes in contact with the projection d'. The teat-wrench is now applied to the nut G at the holes m m, and turned around until the joint is made tight at the projection d'.

The shape of the plate C at its edge b' is made so as to clear itself when removing it, even if dirt should pack in between it and the recess a' of the ring A.

With this arrangement an unobstructed passage is permitted to the inside of the double bottom or tank, when the plate is removed and the cross-bar let down.

When the plate is screwed down everything is flush on top. No obstruction is offered to the stowage of cargo, or to the removal of such cargo as coal by the use of the shovel or other instruments.

The construction of the parts forming the joint at the mouth, and the nut at the center of the plate, make a tight joint.

The plate can be quickly removed, it being only necessary to start it with the wrench, when a few turns with the hand will run it off the stud.

With the nut, stud, and pins made of non-corrosive material, they are always free to work.

I claim—

The combination of the recessed ring A, the flush-cover C, the hinged cross-bar D, the bolt E, and sunken nut G, for the purpose of closing the man-hole on the opposite side to the cross-bar, substantially as herein described.

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Witnesses:

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