

(No Model.)

J. F. FOLMER.
AIR PORT FOR VESSELS.

No. 292,640.

Patented Jan. 29, 1884.

FIG. 1.

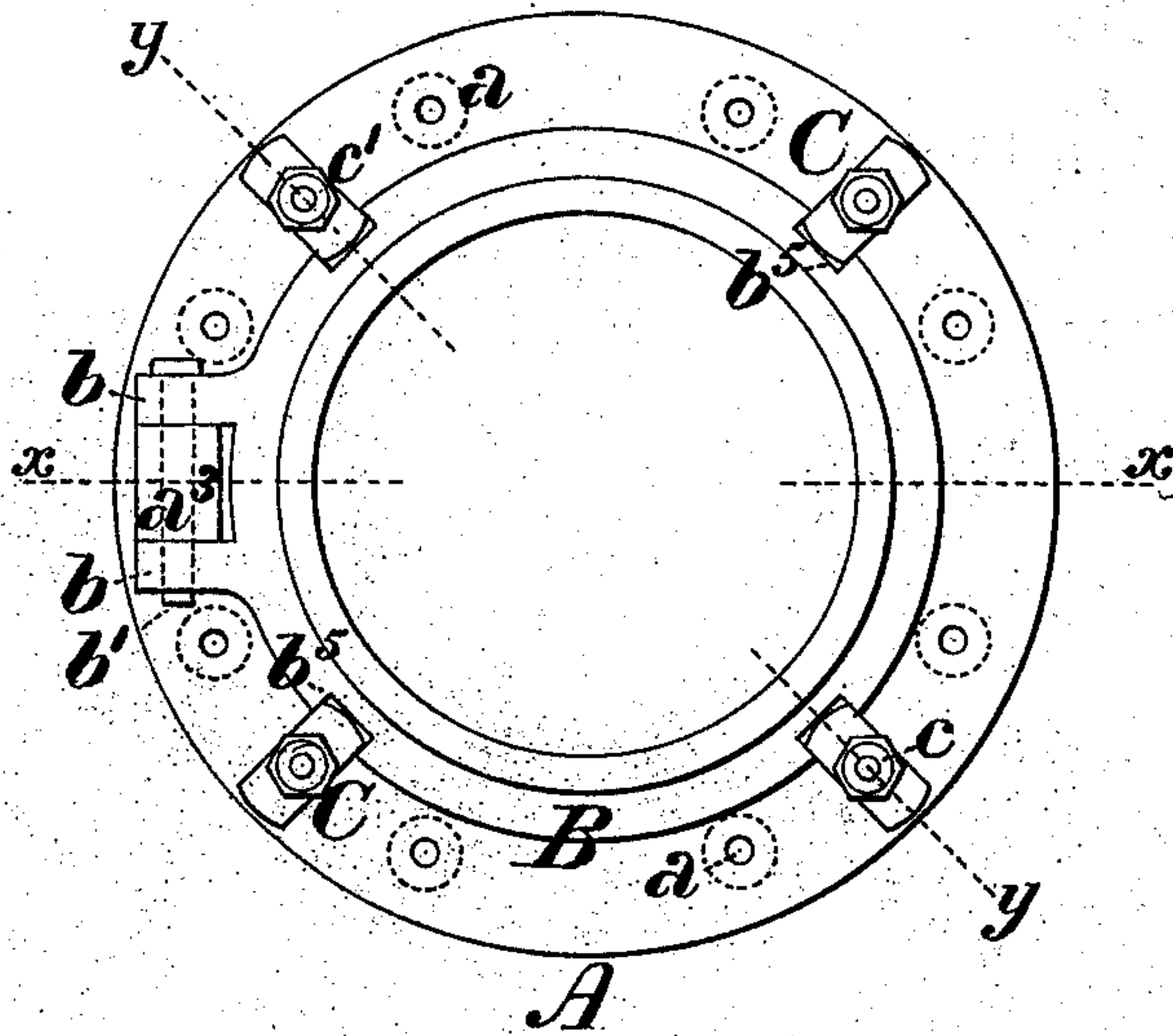


FIG. 4.

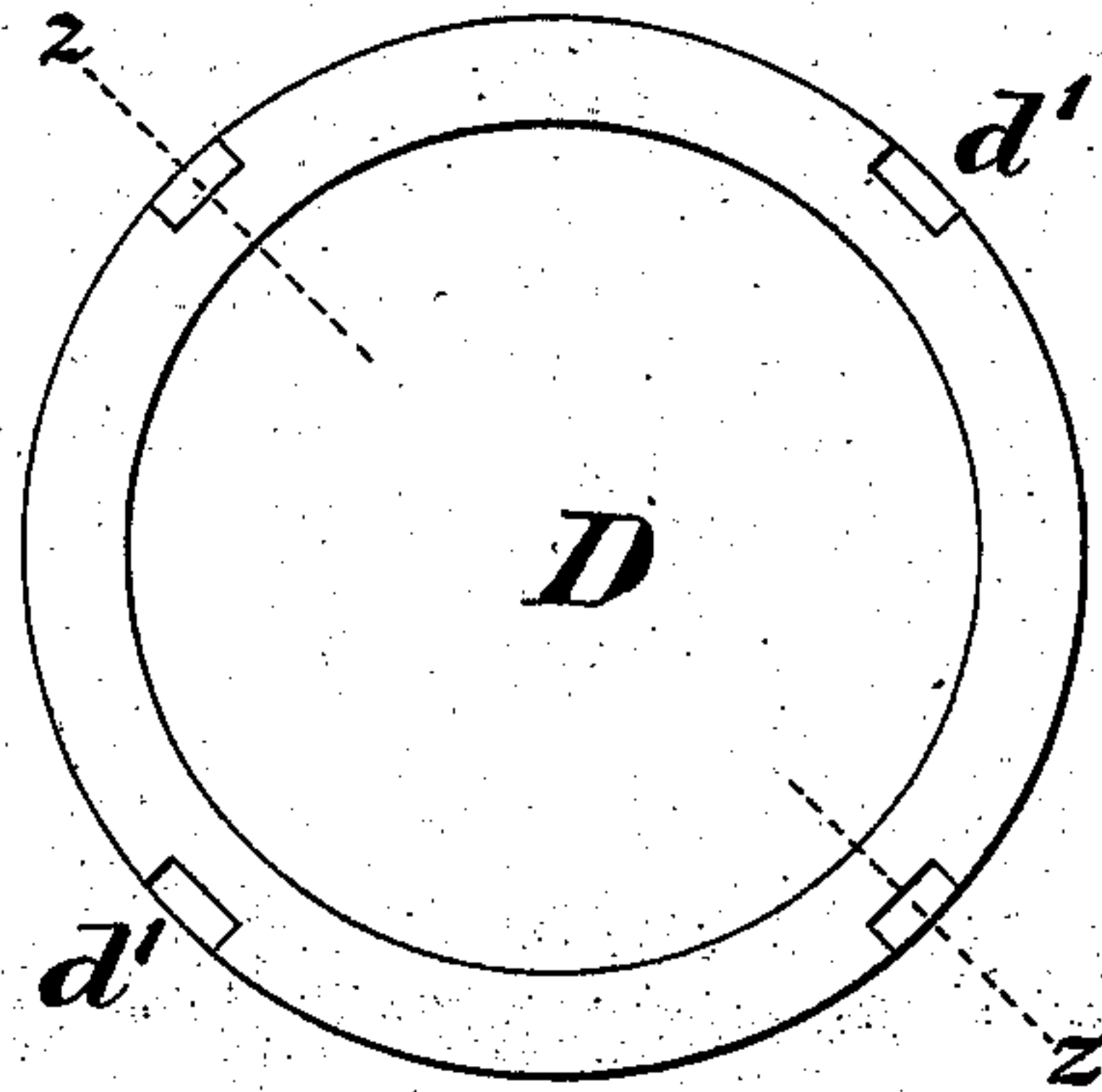


FIG. 2.

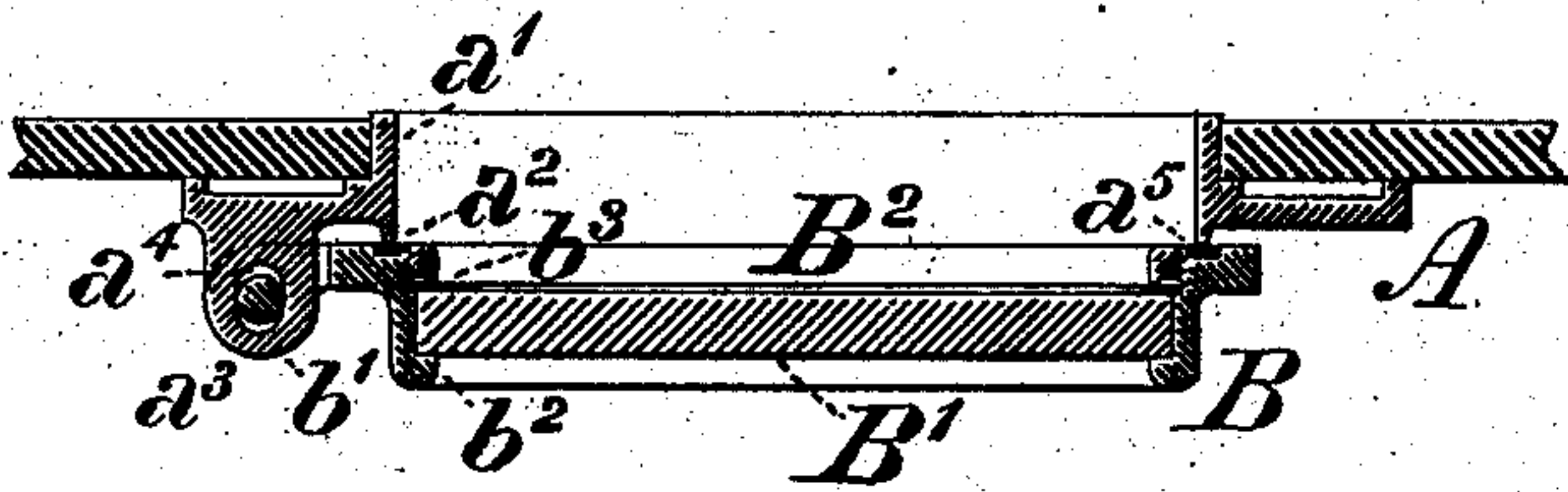


FIG. 5.



FIG. 3.

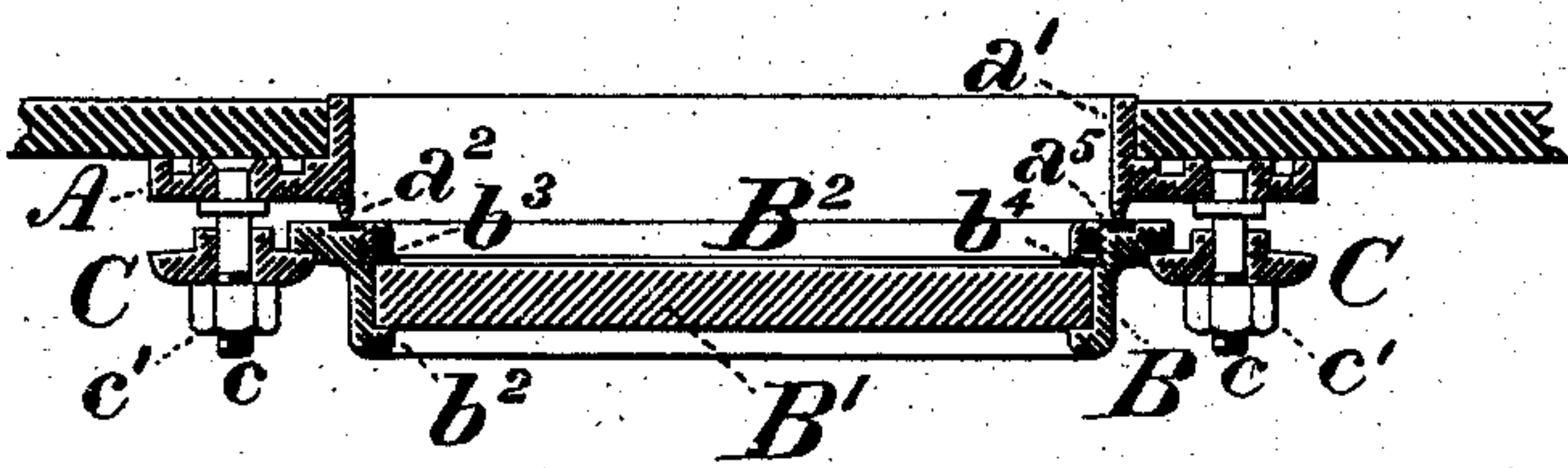
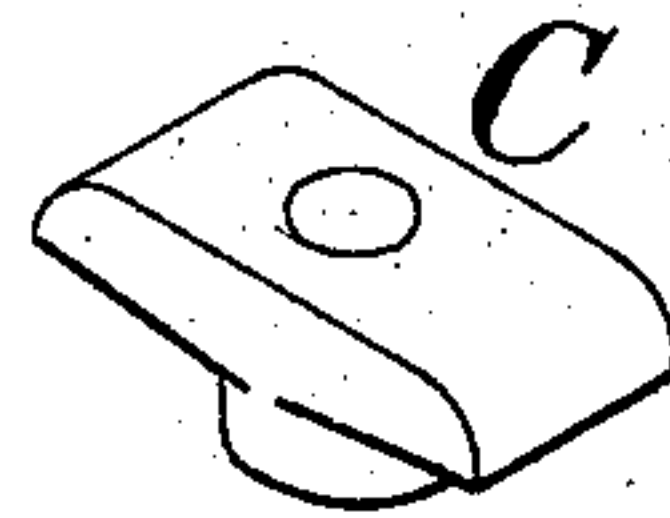


FIG. 6.



WITNESSES:

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JOHN F. FOLMER, OF PHILADELPHIA, PENNSYLVANIA.

AIR-PORT FOR VESSELS.

SPECIFICATION forming part of Letters Patent No. 292,640, dated January 29, 1884.

Application filed May 1, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. FOLMER, of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain
5 new and useful Improvements in Air-Ports for Vessels, of which improvements the following is a specification.

The object of my invention is to provide an
10 air-port of simple and inexpensive construction, which can be readily and conveniently opened and closed, and which, when closed, will effectually prevent the entrance of water,
15 and be exempt from liability to accidental displacement or to be tampered with by unauthorized persons.

To this end my improvements consist in certain novel devices and combinations, including a fixed frame having an inwardly-projecting flange, a sash or glass-support
20 hinged thereto, and having a packing or facing abutting against said flange, and a series of circumferential recesses, a sash-pivot passing through lugs upon the sash and through a slotted or oblong hole in a standard upon the
25 frame, a circumferentially-recessed dead-plate or shutter, and a series of balanced clamps adapted to fit and be secured upon studs on the frame and to enter the circumferential recesses of the sash or the dead-plate, as the
30 case may be. The improvements claimed are hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a view in elevation of an air-port embodying my invention, as seen from the inside of a vessel;
35 Figs. 2 and 3, sections through the same at the lines $x x$ and $y y$, respectively, of Fig. 1; Fig. 4, a view in elevation of the dead-plate; Fig. 5, a section through the same at the line $z z$ of Fig. 4; and Fig. 6, an isometrical view, on an enlarged scale, of one of the
40 clamps detached.

In the practice of my invention I form of cast metal an annular plate or frame, A, adapted to be secured to the planking or hull-plates
45 of a vessel by bolts passing through holes a , and having a central opening surrounded by a cylindrical flange, a' , which enters a corresponding opening in the hull. A short cylindrical flange, a^2 , surrounds the central opening on the opposite side of the plate A, the
50 inner surface of said flange being either con-

tinuous with or of less diameter than that of the flange a' , so as to prevent the formation of a shoulder or recess for the lodgment of water. An annular sash, B, having a pair of
55 lugs, b , at one side, is hinged to a standard, a^3 , on the frame A by a pin or bolt, b' , which passes through the lugs b and through an oblong or slotted hole, a^4 , in the standard a^3 , the hole a^4 being elongated at a right angle to the
60 face of the frame A, for a purpose presently to be described. The opening of the sash B is closed by a circular plate of heavy glass, B' , which is clamped against a lip or flange, b^2 , by a ring, B^2 , screwed into the sash B on
65 the opposite side of the glass, said ring having a flange, b^3 , which bears against a ring of rubber or other packing, b^4 , when the ring B^2 is screwed to the tight bearing necessary to confine the glass. A packing-ring, a^5 , is let
70 into the face of the sash B adjacent to the frame A, said packing-ring abutting against the flange a^2 of the frame when the sash is swung into position to close the opening of the port. The sash is secured, when closed, by
75 a series of balanced clamps, C, each having two arms of equal weight and dimensions projecting from a central hub or boss, in which is formed an opening of such diameter as to fit freely around a stud, c , secured in the frame. 80
A series of circumferential recesses, b^5 , is formed in the sash B in such relation to the studs c that one of the arms of each of the clamps C may enter the recess adjacent to the stud on which said clamp is placed, and, when
85 the clamps are so placed, they are brought to a tight bearing upon the sash by nuts c' engaging threads on the several studs. The freedom of movement of the pivot of the sash toward and from the frame A in the slotted
90 hole a^4 enables a uniform bearing to be obtained entirely around the sash when the clamps are tightened thereon by the nuts, and by the engagement of the clamps with the recesses they are prevented from being slack-
95 ened by jarring or blows, or without the use of a wrench suited to the nuts c' . The arms of the clamps being of equal dimensions and weight, the clamps are balanced upon the studs, and hence can be readily swung into
100 and out of the recesses.

For the purpose of providing for such con-

tingencies as the breakage of the glass or the prevalence of exceptionally heavy weather, in which its use might not be deemed prudent, I provide a separate metallic dead-plate or shutter, D, adapted to fit into the central opening of the frame A, said plate having on its side adjacent to the frame a packing-ring, d , which can abut against the flange a^2 , and on its opposite side a series of circumferential recesses, d' , for the engagement of the clamps C, by which and by the nuts c' the dead-plate may be secured to the frame when required, the sash B being previously swung out of the way to admit of its insertion. The dead-plate may be provided with a ring or eyebolt, by which it can be suspended in any convenient position adjacent to the port when not in use.

I claim as my invention and desire to secure by Letters Patent—

1. The combination of a plate or frame having a central opening and adapted to be secured to the side of a vessel, a flange surrounding and continuous with or of less diameter than the inner surface of said opening, and a movable sash having a packing-ring which abuts against the inner flange of the frame, said sash being coupled to the frame by a hinge pin or bolt, and secured thereto by a series of circumferential clamps, these members being combined for joint operation, to admit of the swinging aside of the sash by the slackening of the clamps without removing the same, and the insertion of a dead-

plate which is adapted to be similarly secured and packed at its joint with the inner flange of the frame, substantially as set forth.

2. The combination, substantially as set forth, of a plate or frame having a central opening and adapted to be secured to the side of a vessel, a movable sash or dead-plate closing said opening, and a series of clamps, each secured by a nut upon a stud in the frame and entering a circumferential recess in the sash or dead-plate.

3. The combination, substantially as set forth, of a plate or frame having a central opening and adapted to be secured to the side of a vessel, a swinging sash or glass-support having a series of circumferential recesses, and hinged to said plate or frame by a pin or bolt passing through an oblong or slotted hole in a standard thereon, and a series of clamps, each entering one of the recesses of the sash, and secured against the same by a nut engaging a stud upon the frame.

4. A balanced clamp for securing an air-port, sash, or shutter, having a central hub or boss and an opening therein for the passage of a supporting-stud and two clamping-arms, projecting one upon each side of the central hub, substantially as set forth.

JOHN F. FOLMER.

Witnesses:

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