

(No Model.)

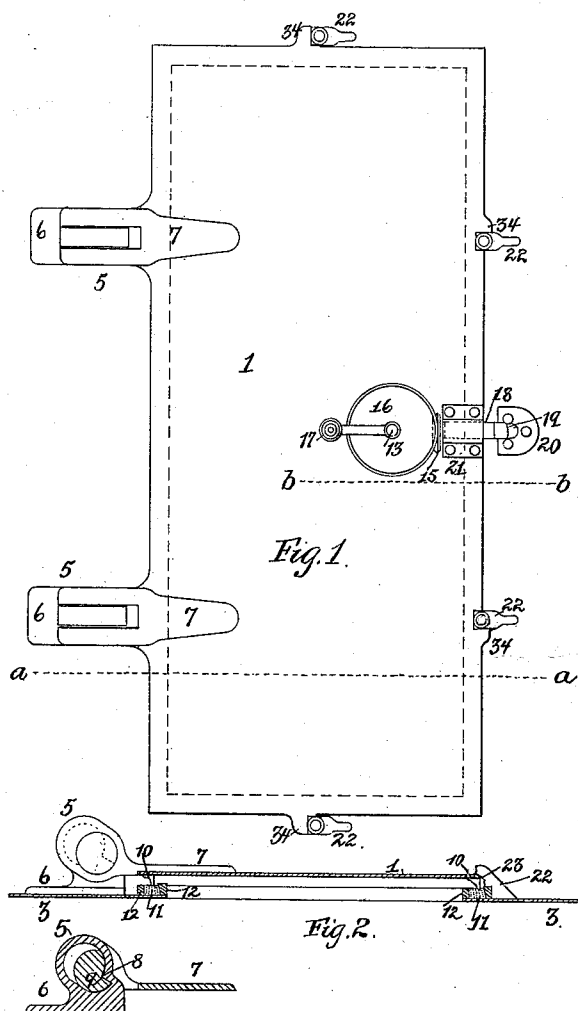
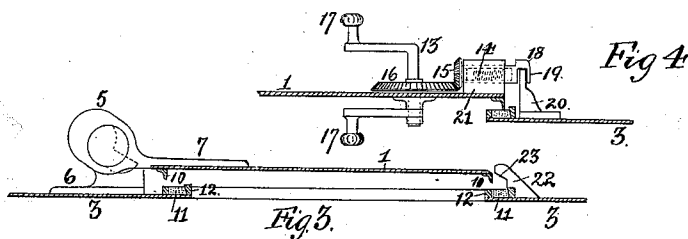
2 Sheets—Sheet 1.

T. J. PETTIGREW.

LOCKING DEVICE FOR HATCHES, DOORS, &c.

No. 375,459.

Patented Dec. 27, 1887.



WITNESSES
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 7.

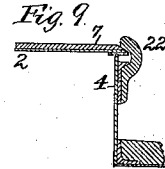
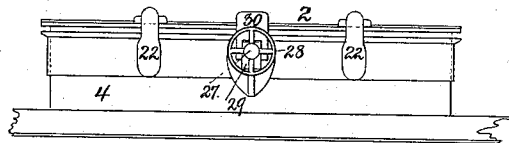


Fig. 6

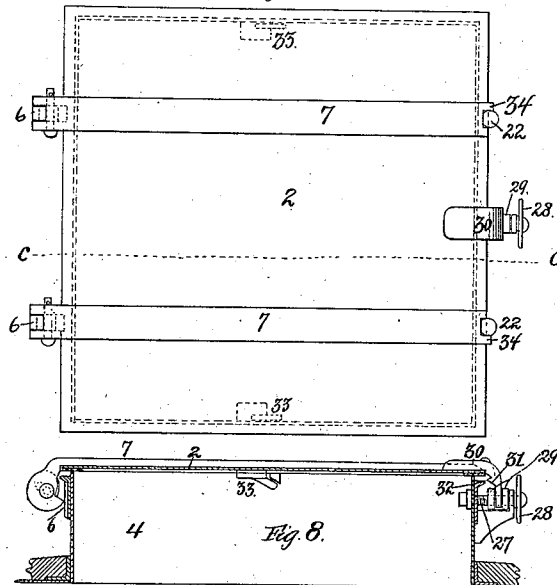


Fig. 8.

Fig. 10.

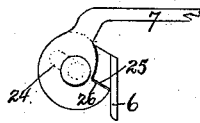


Fig. 11.

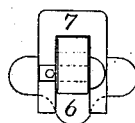


Fig. 12.



WITNESSES

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UNITED STATES PATENT OFFICE.

THOMAS J. PETTIGREW, OF KITTERY, MAINE.

LOCKING DEVICE FOR HATCHES, DOORS, &c.

SPECIFICATION forming part of Letters Patent No. 375,459, dated December 27, 1887.

Application filed February 9, 1887. Serial No. 227,024. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. PETTIGREW, a citizen of the United States, residing at Kittery, in the county of York and State of Maine, have invented certain new and useful Improvements in Doors or Hatches; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My improvements relate to doors or hatches. My invention is more particularly designed, however, for making water-tight the doors and hatches aboard ship.

The objects of my invention are to provide a storm or water proof door or hatch which may be easily and quickly adjusted in a closed or opened position, and be operated from either side of the door or hatch. These objects I attain in a simple and effective manner; and for which purpose my invention consists in the following construction and combination of parts, which will be first fully described, and the points of novelty then set forth in the claims.

Figure 1 is a front elevation of a door to which my improvements have been applied. Fig. 2 is a cross section on the line *a a* of Fig. 1, showing the door tightly closed or locked. Fig. 3 is a detail cross-section on the line *b b* of Fig. 1. Fig. 4 is a cross section also on the line *a a* of Fig. 1, but showing the door unfastened, so that it may readily be opened or closed. Fig. 5 is a detail section of one of the hinges. Fig. 6 is a plan view of a hatch embodying my invention. Fig. 7 is a side elevation of the same. Fig. 8 is a cross-section through line *c c* of Fig. 6. Fig. 9 is a detail section of the hatch and hatchway hereinafter referred to. Figs. 10, 11, and 12 are details of the hatch-hinge, to which further reference will be made.

In the drawings, 1 represents a door. 2 is a hatch, and 3 represents a door-jamb or frame, and 4 a hatchway.

Sheet 1 of the drawings represents the door 1 and door-frame 3, and Sheet 2 represents the hatch 2 and hatchway 4.

5 5 are the hinges of the door.

6 is that part of the hinge which is secured to the door-frame 3 or wall. It is provided with a peculiar-shaped elongated opening, as shown, within which the male part 7 of the hinge works. The bearings of both parts of the hinge 5 are similarly formed, so that the part 7 has a limited reciprocating movement within part 6, at about an angle of thirty degrees from the plane of the door, independent of the rotary movement of the hinge.

8 is an angular projection within the opening of the hinge, and 9 is a corresponding angular depression on the pintle of the part 7 thereof.

10 is a ledge secured along the inner edges of the door and arranged to lie against a packing-strip, 11, which surrounds the door-jamb. This packing-strip may be of rubber or other elastic material, and is held in place by strips 12.

13 represents the locking device of the door.

14 is the locking screw-bolt.

15 is a bevel-pinion on bolt 14.

16 is a bevel-gear meshing with pinion 15. The shaft of gear 16 projects on both sides of the door, and is provided with hand-cranks 17 17, by means of which the screw locking-bolt is operated from either side of the door. Bolt 14 has a rotary, but no endwise, movement.

18 is an interiorly-threaded sleeve-bolt having a catch or lip, 19, at one end, adapted to engage a projection, 20, which is rigidly bolted to the door-jamb or wall 3. Screw-bolt 14 screws within the threaded sleeve of bolt 18.

21 is a bearing bolted to the door and carries the bolts 14 and 18.

22 is a series of projections having beveled under edges, 23. There may be any number of them. In Fig. 1 I have shown four of them. The portions of the door-edge next to these beveled projections are preferably beveled. The purpose of this construction will be hereinafter explained.

In Sheet 2 of the drawings the construction of the hinge is slightly modified. The part 7 extends across the hatch and has its end beveled, preferably, so as to impinge against the beveled projections 22. A simple angular slot, 24, is made in the part 6 of the hinge, within which the ordinary pivot works.

25 is an angular bearing-face lying in the

same direction as the slot 24, its upper end terminating in an angular projection, 8, corresponding to that shown on Sheet 1. Part 7 of the hinge carries a corresponding angular recess, 9, and an angular bearing-face, 26, conformable to bearing-face 25.

The locking mechanism which is applied to the hatch is slightly modified in its construction from that shown applied to the door.

27 is the locking-bolt. It is a rotary threaded bolt having no endwise movement. 28 is a hand-wheel on its outer end, and it may have, if desired, a similar wheel within the hatchway at the other end of the bolt.

29 is a nut on bolt 27, adapted to be advanced or receded by the revolution of the bolt.

30 is a projecting lip or catch bolted to the hatch 2. The outer end is preferably bifurcated, so that it straddles the nut 29, it being received into ways or slots in the vertical sides of the nut.

31 is an angular bearing on catch 30, and 32 is a stud on the hatchway against which it bears when the hatch is opened. Similar angular bearings, located on opposite sides of the hatch, are shown at 33 for the same purpose. A packing-strip is employed also upon the hatch, it being secured to the hatch itself, while in the door it is attached to the jamb.

The method of opening and closing the door or hatch is as follows: In the case of the door we will assume that it is open, and it is desired to close it. The door swings upon its hinges to the position shown in Fig. 3, and the sleeve-

bolt 18 has been adjusted so that its catch 19 has engaged the projection 20. By rotating the crank-handles and screw-bolt 14, the bolt 18 will cause the door to be pulled toward the projection 20. During this movement the male part 7 of hinge 5, carried by the door, is moved through the angular slot and the bearing 10 firmly pressed against the door-jamb packing 11. The sealing of the door is further effected and facilitated by the beveled edges

of the door impinging the beveled projections 22, which forces the door against the jamb. The stronger the pull upon the locking-bolts the tighter the door is closed. The movement of the locking-bolts in releasing the door first causes an outward movement of the door from the jamb, and until the angular plane bearing on the hinge-pintles has passed beyond the projecting edges 8 no rotary movement of the hinges can take place to open the door. In

like manner the battening down of the hatch is effected, as shown by Sheet 2 of the drawings, by rotating the screw-bolt 27 and moving the nut 29 outwardly, carrying with it the lip 30 and pulling the hatch 2 to the right.

The angular slotted hinge and its bearing-faces 25 and 26 cause the hatch to bear tightly down upon the hatchway, making it perfectly

storm-proof. The hatch is also provided with the beveled projections 22. In opening the hatch, by moving in the opposite direction the projection 31 strikes against the stud 32, and (together with the beveled bearings 33 and like bearings of the hinges) lifts the hatch upwardly until the bearing 26 passes bearing 25, when the hatch may be thrown open upon its hinges.

The shoulders 34 on the door or hinge rest against the projections 22 when the door or hatch is closed and prevent any lateral wrenching. The bearings 33 effect the same purpose.

I. claim—

1. The combination of a door or hatch, an angularly-slotted hinge located thereon, and a catch or lock having a rotating screw for moving the door endwise in opposite directions, whereby the door is released and fastened.

2. A door or hatch provided with a pivotal hinge comprising two parts, one of which is provided with a slot disposed at an angle from the plane of the door and the other provided with a pintle adapted to slide in the slot.

3. A door or hatch provided with a hinge comprising two parts, one of which is provided with a slot disposed at an angle from the plane of the door and having a bearing-face located adjacent to the slot and the other provided with a pintle having also a bearing-face whereby the pintle is adapted to slide within the slot and to be locked against rotary movement when the bearing-faces are in engagement.

4. A door or hatch provided with a pivotal hinge comprising two parts, one of which is provided with a slot disposed at an angle from the plane of the door and the other provided with a pintle adapted to slide in the slot, in combination with a lock having a rotating screw adapted to slide the door in opposite directions.

5. The combination of a door or hatch provided with a slotted hinge, one or more beveled projections carried by the door or jamb, and a lock for closing the door or hatch.

6. A door or hatch lock comprising a screw-bolt, a bevel-pinion thereon, and a bevel-gear journaled in the door having an operating handle or handles, the parts in combination, substantially as set forth.

7. The combination of a door or hatch lock provided with a rotating screw, a nut or sleeve carried by the screw, and a catch adapted to engage the nut or sleeve and be locked thereby.

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

THOMAS J. PETTIGREW.

Witnesses:

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F. B. BROCK.