

(No Model.)

G. W. BAIRD.
Ventilating Hatchway.

No. 237,233.

Patented Feb. 1, 1881.

Fig. 2.

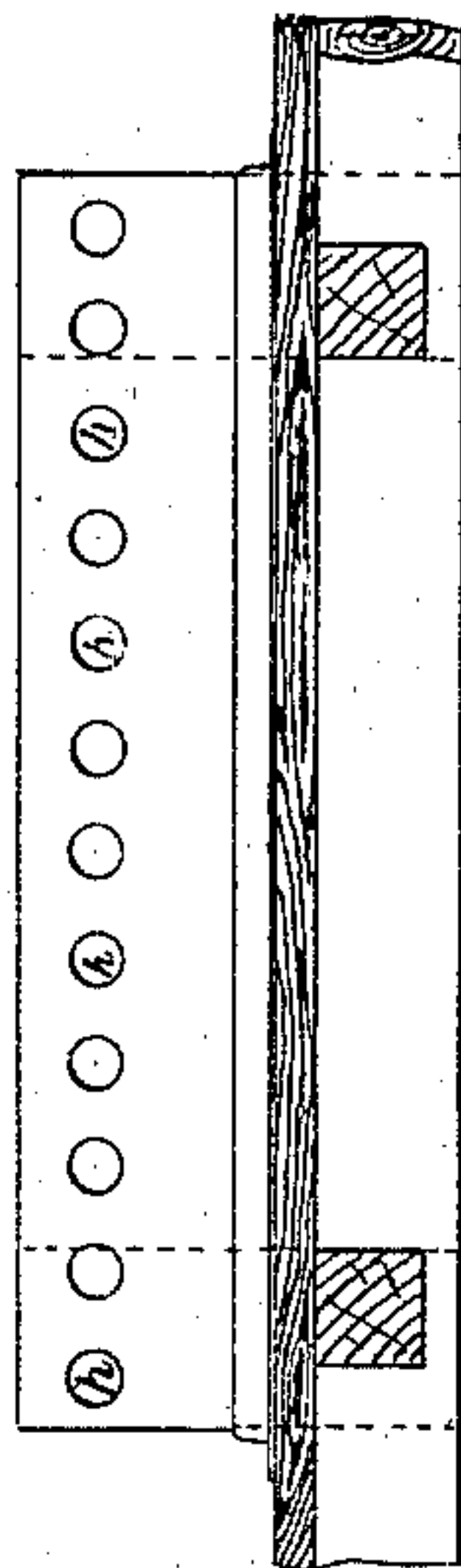


Fig. 1.

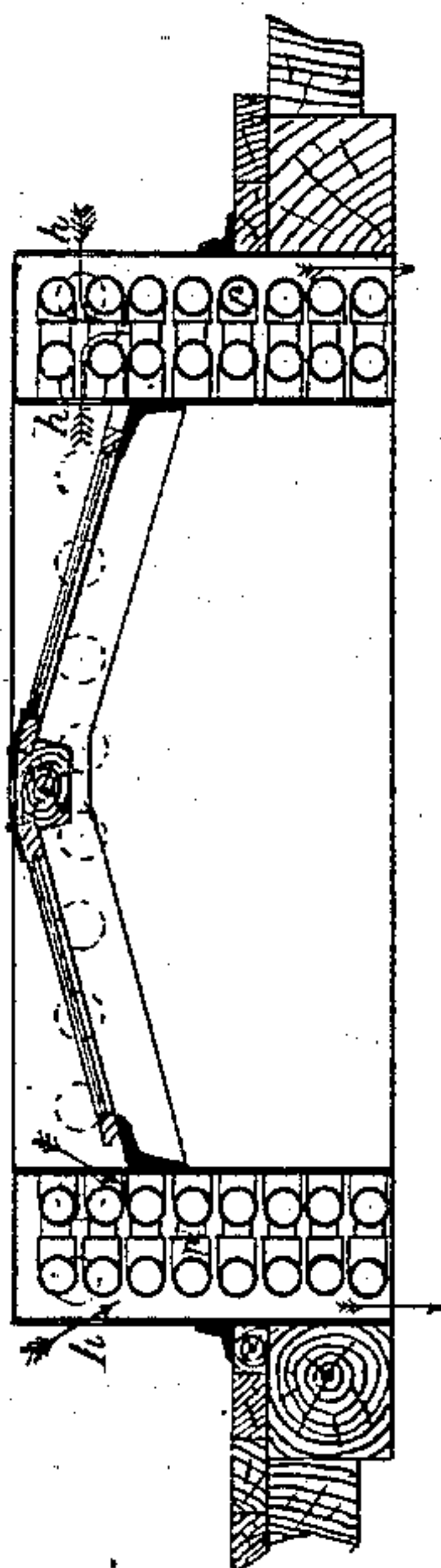


Fig. 6.

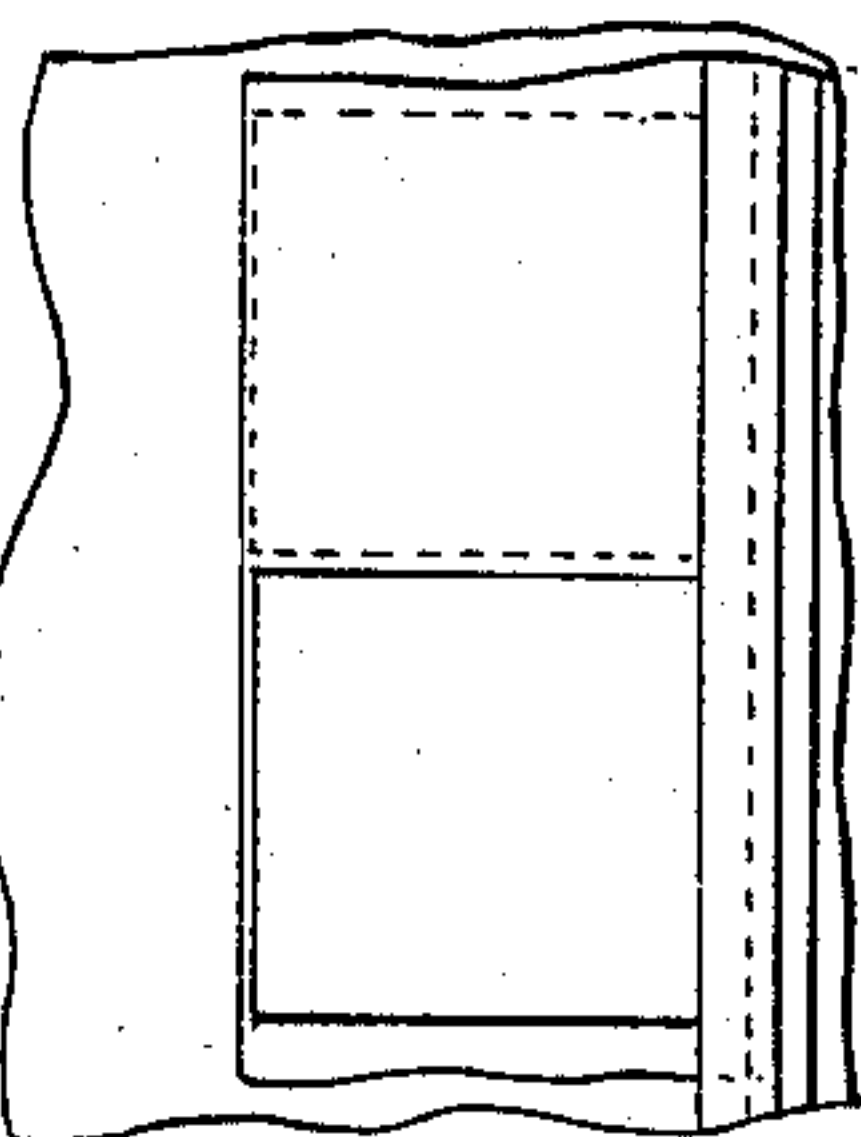


Fig. 7.



Fig. 4.

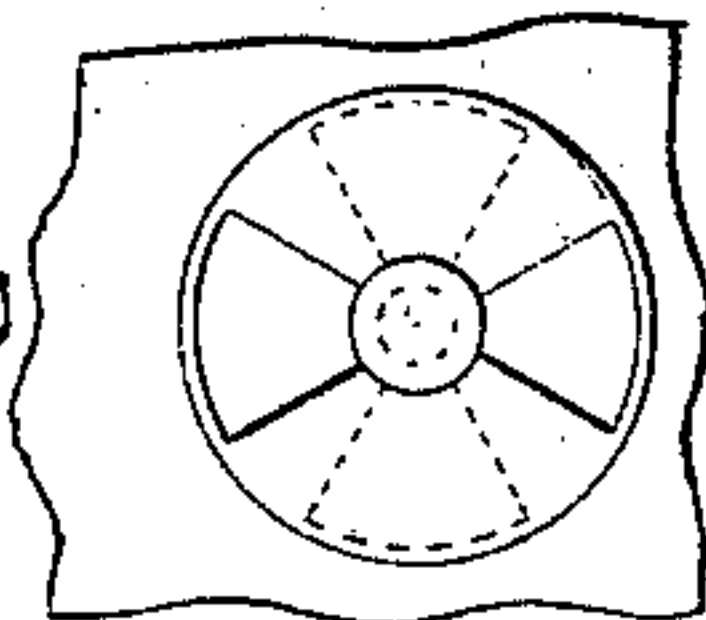
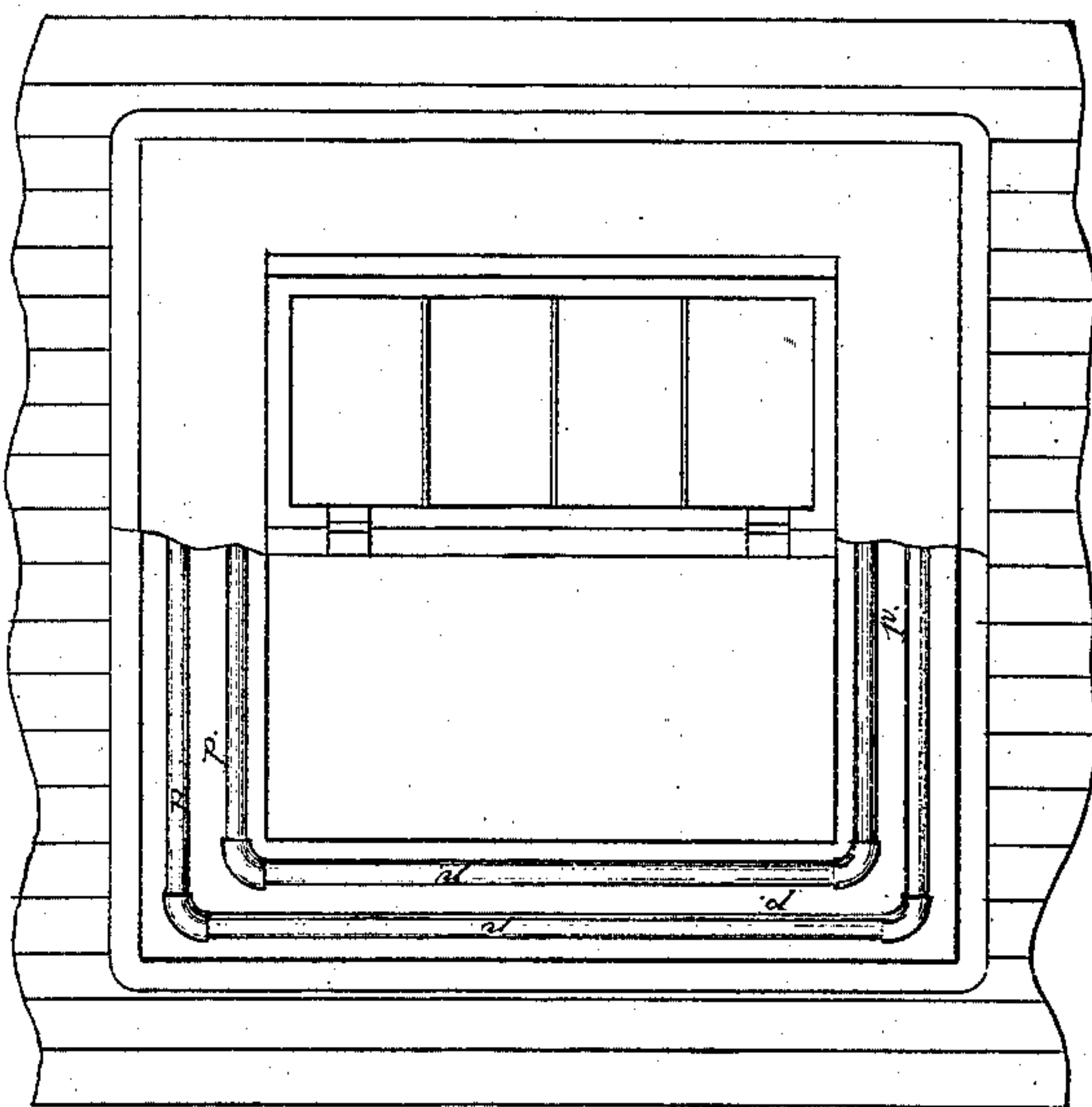


Fig. 5.



Fig. 3.



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Witnesses.

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UNITED STATES PATENT OFFICE.

GEORGE W. BAIRD, OF THE ENGINEER CORPS, UNITED STATES NAVY.

VENTILATING-HATCHWAY.

SPECIFICATION forming part of Letters Patent No. 237,233, dated February 1, 1881.

Application filed December 2, 1880. (No model.)

To all whom it may concern:

Be it known that I, G. W. BAIRD, an officer in the Engineer Corps of the United States Navy, residing in the city of Washington, District of Columbia, have invented certain new and useful Improvements in a Ventilating-Hatchway for Ventilating and Warming Ships; and I do hereby 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 letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to the warming apparatus for vessels, ships, &c.; and the object is to warm the air as it enters, and thus warm the interior of a vessel in a more uniform and economical way than heretofore; and the invention consists in the arrangement and construction of parts, as will be more fully described hereinafter, reference being had to the accompanying drawings and letters of reference marked thereon.

When the aspirating system of ventilation is employed—*i. e.*, when by some mechanical means the foul air is exhausted from the interior of a ship—the fresh air is induced through the hatchways, companion-ways, ladder-ways, air-ports, &c., and these various currents of air follow the direction of least resistance—*i. e.*, to the nearest opening of the exhaust-conduit—and escape. Any person or object between one of the fresh-air openings and a conduit-opening will be necessarily in a draft of air at or near the temperature of the external atmosphere, even though the interior of the ship may be provided with the usual steam-radiators.

In order to warm the interior of a vessel with the usual radiators during cold weather, the vessel being provided with mechanical aspirating machinery, a large number of radiators would be essential and much room would be taken up by them. Therefore, to obviate these difficulties, I have invented hollow hatch-coamings which shall contain and inclose, either wholly or partially, a steam-heater.

Figure 1 is a transverse section of the skylight, with its heater inclosed in the metallic hollow coamings of the hatch, and the arrows show the direction of the air as induced by the aspirating machinery in the ship through

the holes in the coamings. These holes are placed either on top, or near the top, of the coamings, in order to be more readily covered by a tarpaulin in battening down, and also to be removed from the swash of the water in washing down the deck. The ordinary glass window is used in this skylight. In this figure I have shown a fragment of the deck and deck-beams of a ship with the skylight in place. Fig. 2 is a longitudinal elevation of the skylight, showing the inlet air-holes and its arrangement on deck. Fig. 3 is a plan of the skylight. The left-hand portion of Fig. 3 shows the top of the coamings removed, displaying the heater-pipes, while the right-hand portion shows a real plan with the skylight closed. Fig. 4 is a register for regulating the size of the inlet air-holes, and Fig. 5 is a vertical cross-section of Fig. 4. Fig. 6 is a sliding gate for the same purpose, and Fig. 7 is a vertical cross-section of Fig. 6.

Having described each of the figures in the drawings I will describe the operation of the arrangement.

The exhausting machinery in the ship being started, currents of air are induced through the holes *h h h*, Figs. 1 and 2, while steam from the boiler is forced into the pipes *p* or heater, the hot surfaces of which will warm the passing air.

Having thus described the invention and its uses, what I claim and desire to secure by Letters Patent, is—

1. A steam-heater inclosed in the coamings of a hatchway, companion-way, or ladder-way, or in the lining of an air-port or other orifice in the deck or side of a ship, by which air induced by a method of aspiration will be warmed as it enters the vessel, substantially as specified.

2. The combination of a hatch having hollow coamings with a glass skylight, substantially as specified.

3. The combination of a skylight having air-holes in its hatch-coamings with registers for the regulation of the admission of air, substantially as specified.

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

G. W. BAIRD.

Witnesses:

GEO. M. LOCKWOOD,
AND W. V. SMITH.