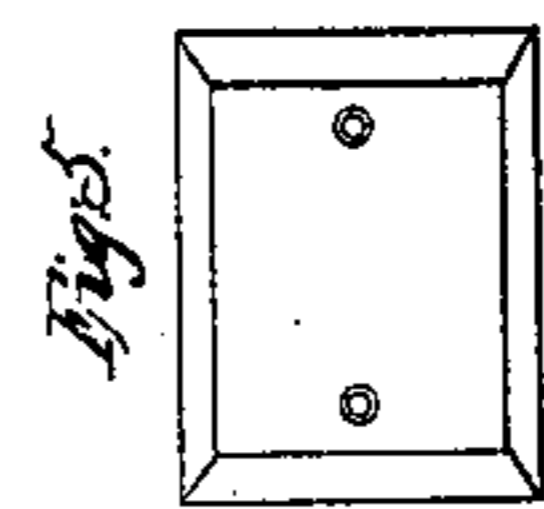
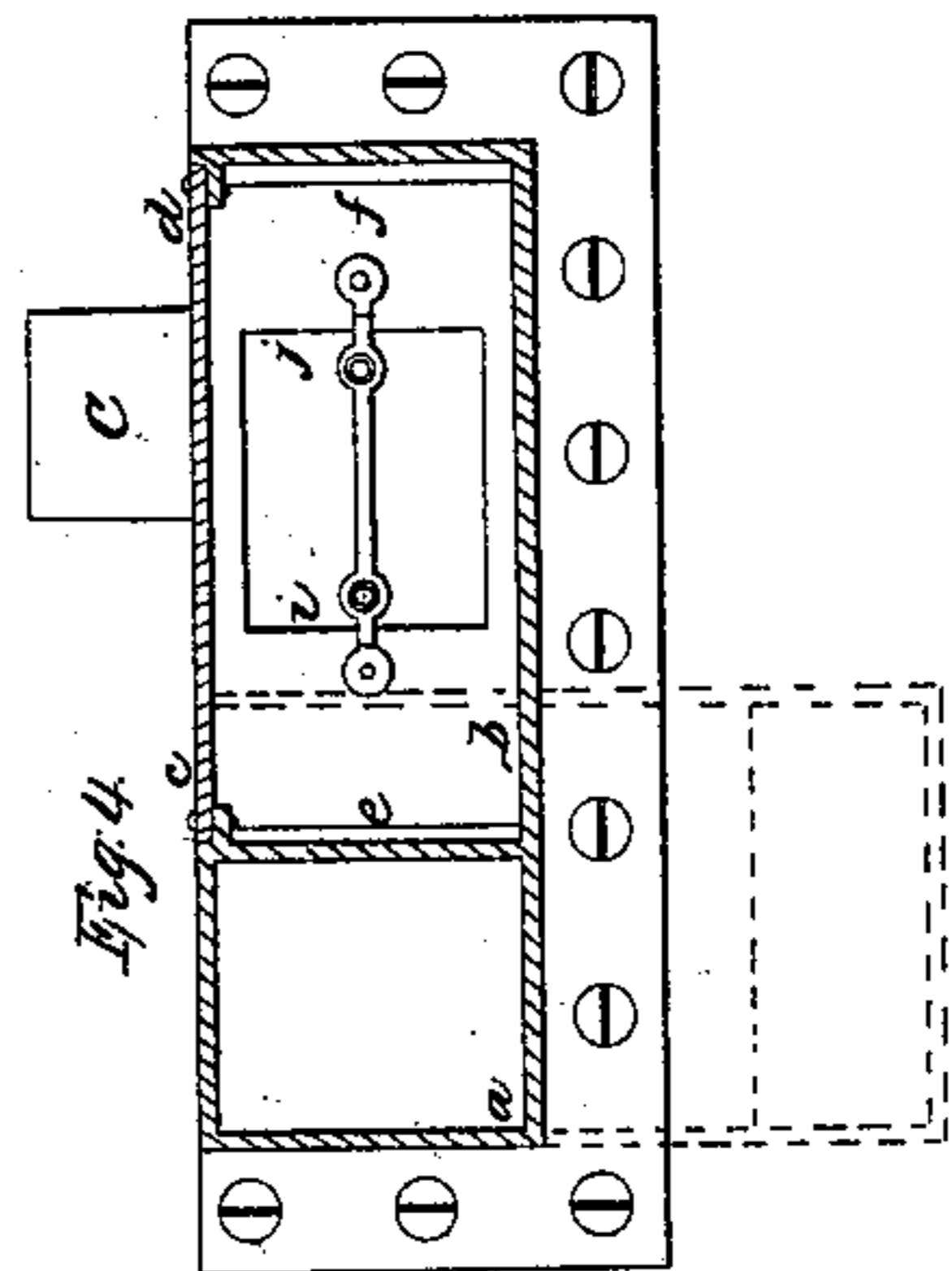
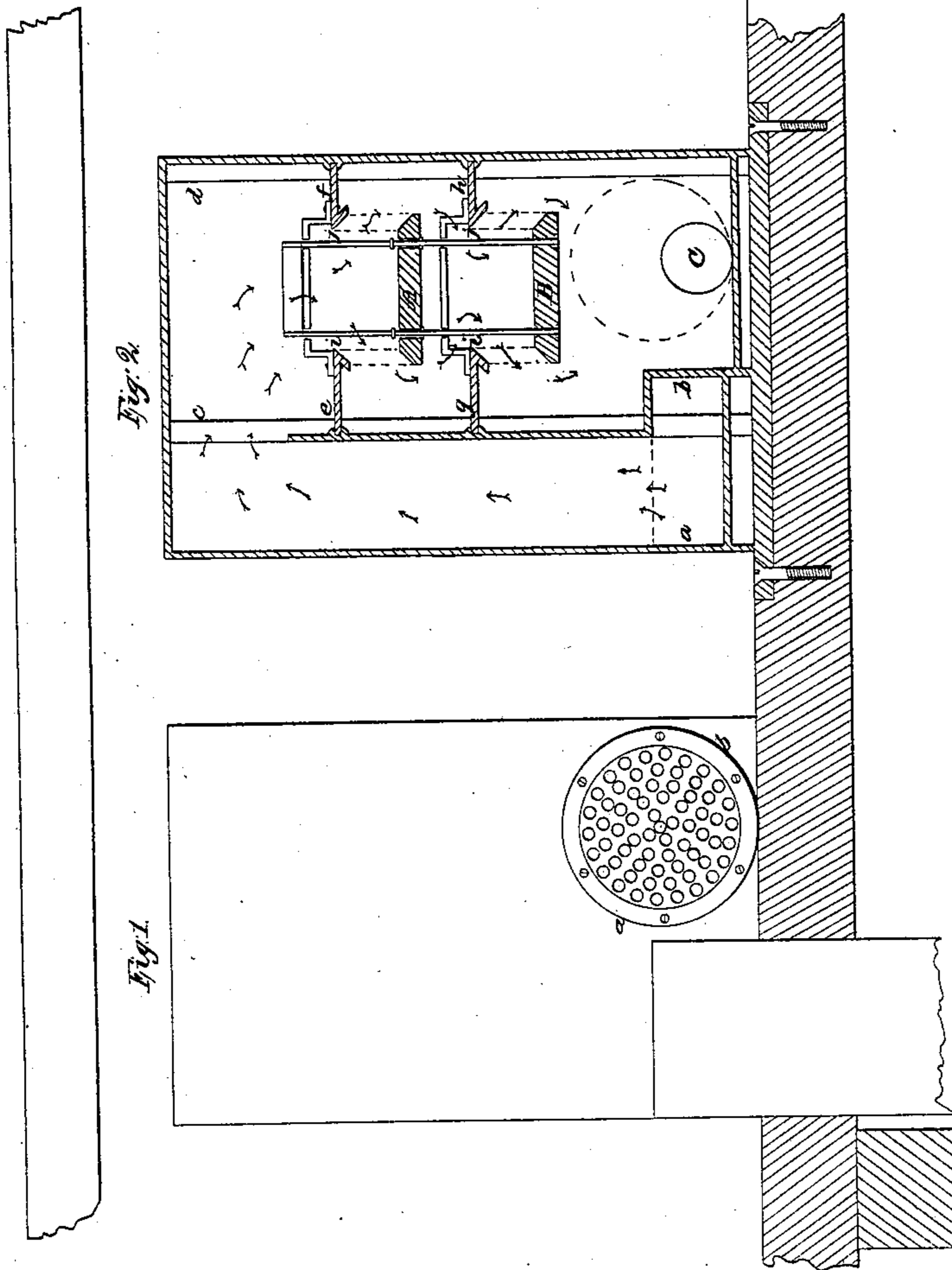
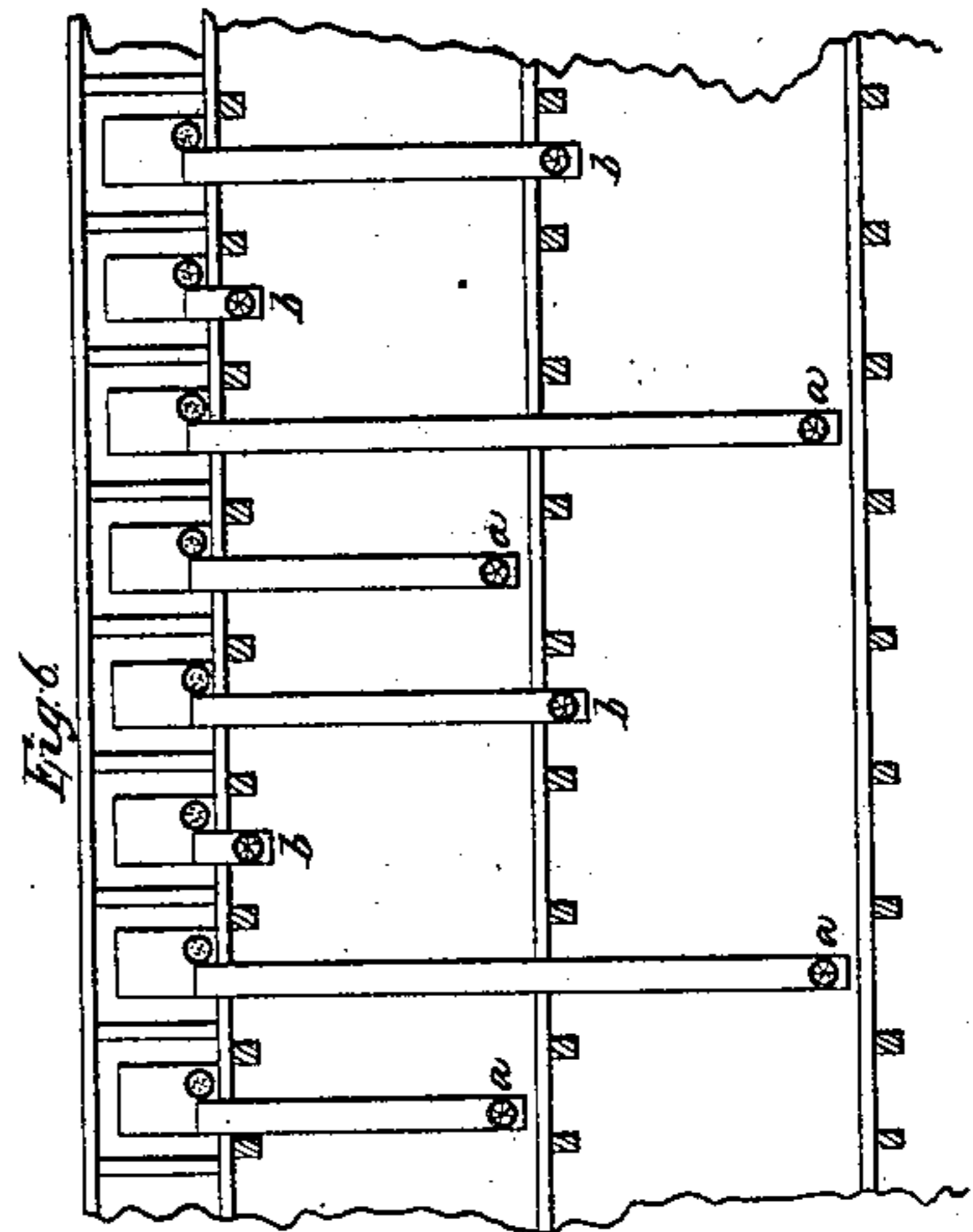
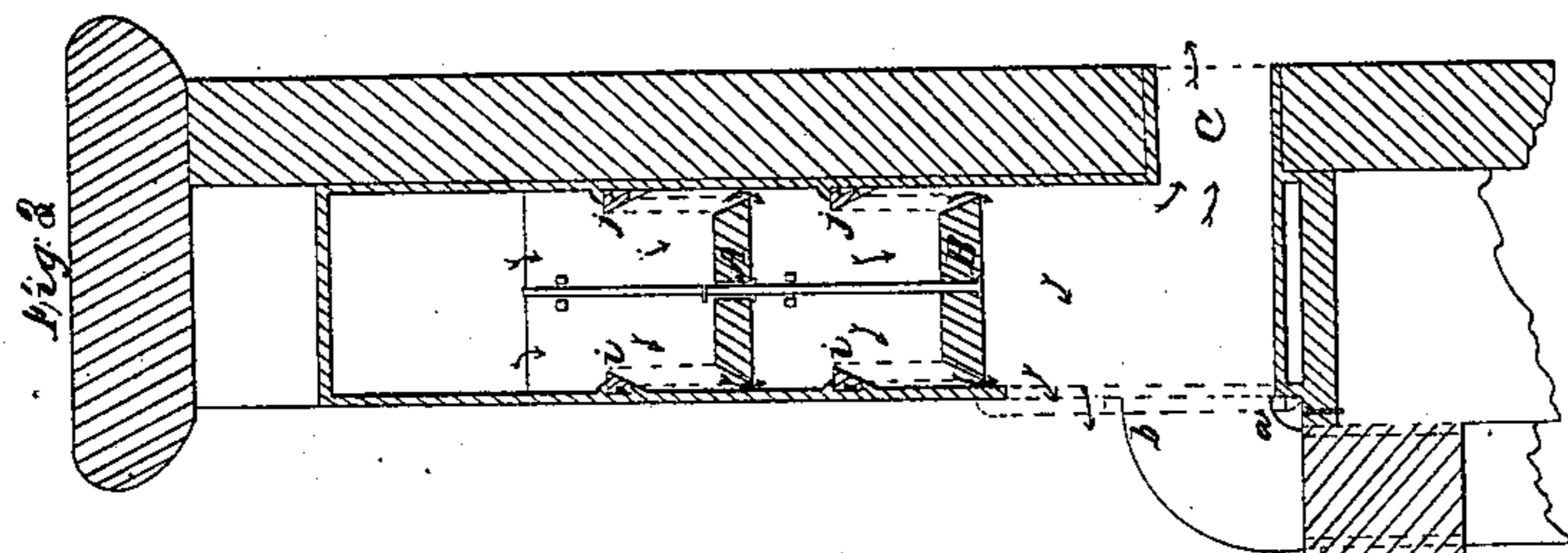


W. Robinson,
Ventilating Ships,

N^o 7,569.

Patented Aug. 13, 1850.



UNITED STATES PATENT OFFICE.

WARREN ROBINSON, OF LEBANON, CONNECTICUT.

IMPROVEMENT IN SHIP-VENTILATORS.

Specification forming part of Letters Patent No. 7,569, dated August 13, 1850.

To all whom it may concern:

Be it known that I, WARREN ROBINSON, of Lebanon, in the county of New London and State of Connecticut, have invented a new and Improved Mode of Ventilating Ships and other Boats; and I do hereby declare that the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

The nature of my invention consists in placing a number of tubes or other air-ducts along the inside of the hull of a vessel in a vertical position, running from that part of the vessel which it is proposed to ventilate up to the bulwarks above the upper deck, and there discharging into a chamber, said chamber being so arranged with a register and valves that a free egress or ingress of air is permitted, while at the same time the water is effectually excluded.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation, referring to the accompanying drawings.

Figure 1 is an elevation of the ventilating-chamber. It consists of a box of iron or other metal of any convenient form having a tube communicating from between or under the decks, entering its lower part and proceeding upward and opening into it near the top. Fig. 2 is a longitudinal vertical section of the ventilating-chamber. Fig. 3 is a transverse vertical section of the same. Fig. 4 is a ground plan of the same. Fig. 5 is a plan of one of the valves. Fig. 6 is a longitudinal vertical section of part of a vessel, showing the position of the ventilators and tubes when they are applied to ventilate two decks.

In the last figure (6) the lower ventilators or registers, *a*, admit fresh air, and the lower ones, *b*, discharge the vitiated air.

At *a b*, Figs. 2, 3, and 4, is shown the manner of the tubes entering the ventilating-chamber. A part of the back *c d*, Figs. 2 and 4, is arranged to be taken off at pleasure, and the plates *e f* and *g h* are slid into their places when the back is off. In the middle of these plates there is an opening, *i j*, through which the air passes, and thence out the register *a b*, Fig. 1, or, taking a contrary course, enters by the same openings. In order to exclude the water, one or more valves, *A B*, Fig. 2, are suspended upon rods resting at the top upon cross-beams, in which they are allowed to slide freely up or down. These valves being con-

structed of a light material—as wood or cork—(cased with copper or not) are carried up by the water and close the openings *i j*. As the water subsides, the valves fall to the position shown in Fig. 2 by their own weight. The lower valve, *B*, is fixed to the suspending-rods. The upper one, *A*, is allowed to slide freely a short distance up and down the rods, so that should any water, in consequence of any accident or obstruction escape the lower valve, *B*, it would set the upper, *A*, tight. When circumstances will admit of it, the ventilating-chamber may be cylindrical and the valves circular; also, the tube from below may enter the bottom of the chamber instead of the front, when this can be done without injury to the vessel's timbers. The water which enters the register *a b*, Fig. 1, from a wave dashing upon the ship's deck is carried off by the pipe *c*, Figs. 2, 3, and 4. This apparatus is secured to the deck only so that should the bulwarks be carried away this may stand; but in order to prevent the water entering the tubes when the apparatus above is carried away, it is proposed to shut off the tubes below the deck by a valve worked by hand. The ventilating-chamber it is proposed to make of cast-iron, the tubes of lead, copper, or other metal.

Having described my invention, I will proceed to state what I claim as new and useful.

1. The ventilating-chambers constructed in the manner substantially as above described, having a tube or air-passage communicating with the cabin or "between decks" of a ship or other vessel, entering it at *a b*, Figs. 2, 3, and 4, and provided with a register, (represented by *a b* in Fig. 1,) either for the purpose of admitting pure air by long tubes to the lower parts of the cabin or between decks or for carrying off the vitiated air by short tubes from their upper parts.

2. I do not claim the use of a float-valve in the ventilating-tube irrespective of the manner of applying it, but I claim having the two float-valves *A* and *B* attached together in the manner substantially as described, and each acting independently of the other upon a separate seat in the ventilating-chamber, so that any water passing one valve may be shut off by the other.

WARREN ROBINSON.

Witnesses:

ROYAL O. NETTLETON,
ALWIN L. BICKFORD.