A. B. BROWN.

SYSTEM OF VENTILATION.

No. 182,746. Patented Oct. 3, 1876.

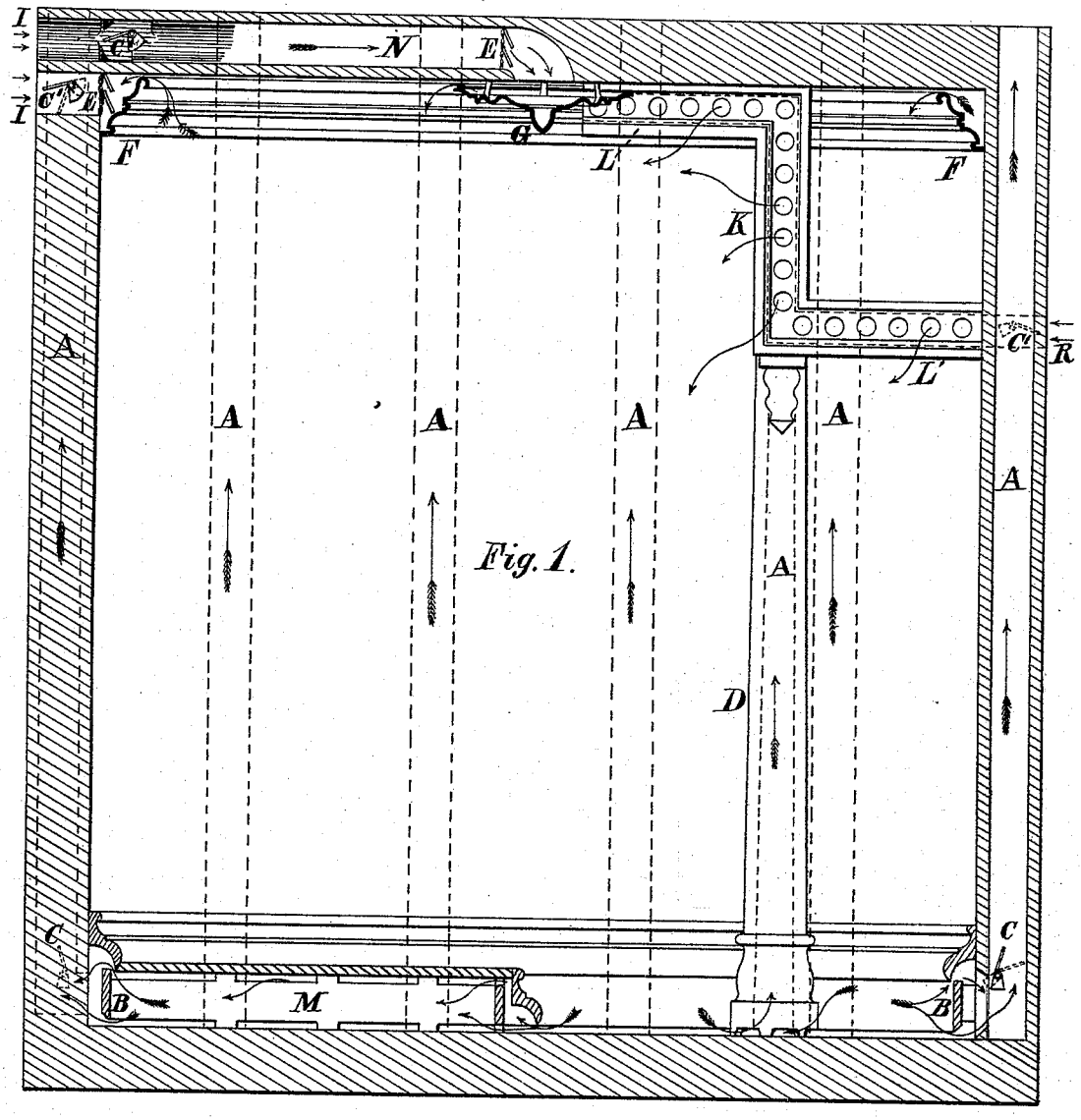

Fig. 1.

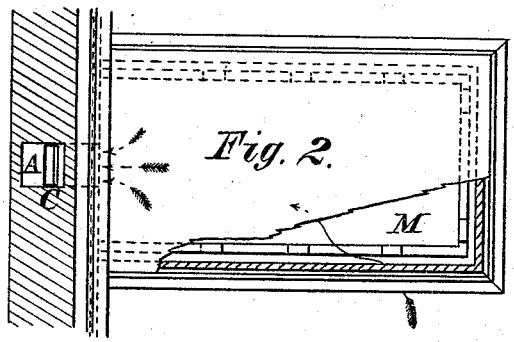

Fig. 2.

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By his Atty.
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UNITED STATES PATENT OFFICE.

AARON B. BROWN, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN SYSTEMS OF VENTILATION.

Specification forming part of Letters Patent No. **182,746**, dated October 3, 1876; application filed June 11, 1875.

To all whom it may concern:

Be it known that I, AARON B. BROWN, of the city and county of Worcester, State of Massachusetts, have invented an Improved System of Ventilation, of which the following is a specification:

The object of my invention is to ventilate any inclosed space where the air is more or less impure or confined, and more particularly to do this by withdrawing from the bottom, or near it, all the impure air, and drawing in the fresh air at the upper part, and doing both in a diffused manner that shall obviate the forming of perceptible currents, and the production of injurious drafts, or, in other words, make a complete change of air as often as may be desired. It can be used with either radiated heat or heated air, or both, as a means of warming, and is applicable to any space needing ventilation. Its nature is shown in the subjoined description of its application to various rooms.

In the accompanying drawings, Figure 1 shows a section of a room fitted with devices illustrating the application and working of my invention, Fig. 2 showing a plan of the bed-frame or draft-chamber adapted to hospitals, the same letters indicating similar parts wherever they occur.

A A A are the draft or exhaust flues, connecting with the base-chamber B. This chamber is made back of the common base-board, which I raise a little from the floor to make a passage into the chamber all along the base, or by using a cap-molding a little above the base, as shown, I accomplish the same end—opening a general draft near the bottom of the room—and in large rooms I make use of the pillars D by making them hollow, and connected at the top to the exhaust or draft, and forming openings at their bases, and thus make the exhaust general.

In each of the exhaust-flues A I put a reverse-valve, C, hung on a pivot to turn easily, and weighted on one side so as to remain open, as shown, during the regular draft outward, and on any change or reversal of the current to close at once, (as shown in broken lines,) preventing any inward flow through these flues.

At M is shown a platform with chamber under it, upon which, in hospitals, a cot may be placed; the chamber under the platform to have free opening round it, and a connection with the exhaust-flue A, Fig. 2 showing a plan of the same, with a portion of the top removed.

By flue A a gentle draft will be established at the lower part of the room sufficient to draw off as much air as may be necessary. I feed in the fresh air at or near the top, making a chamber in the cornice F, extending round the room, with a continuous or multiplicity of openings into the room, giving a diffused discharge from the chamber, which is supplied by the feed-flues I. These flues I provide with reverse-valves E, to prevent any outflow, making the valves of strips of thin rubber and wire cloth, or any other light materials which operate quickly and offer but little obstruction to the feed. I also put a gust-valve, C′, into each feed-flue, to prevent the entrance of gusts or sudden currents, hanging the valves on pivots to turn easily, and weighting one side so as to hang, as shown, during the regular draft inward, and on any sudden flow to close, as shown in broken lines, and remain so until the gust or pressure passes, when they open of their own accord, working automatically. Should the closing of the valves be noisy they may be cushioned with rubber or other soft substance. The valves E serve as safety-valves, preventing any outflow when the valves in A A are shut.

In large rooms I put a feed-flue, N, leading to the center-piece G, and give free discharge all round its edge. For halls, churches, &c., I make a passage along the beams, king-posts, or moldings, as L, L′, and K, connecting it to feed-flues, as at R, and making numerous feed-apertures its entire length. By these means I am enabled to give a diffused distribution to the infed fresh air, and admit it in a large quantity, if necessary, imperceptibly, and in accord with the exhaust on the lower part.

In ventilating large rooms, or where a strong draft is necessary, the flues A A A may connect to one, and the draft be increased by heat or mechanical action, the entrance of the fresh air being controlled by the exhaust of the foul.

I am aware that draft-flues opening directly

to different parts of a room are in use. These I do not claim.

What I claim as my invention is—

1. The arrangement and combination of the flues A A, drawing the air from the bottom of the room through the chamber behind the base-board B, said chamber having a general open connection to the room, and the direct inlet-flues I K with their diffused distribution, as above set forth and described.

2. The direct inlet-flues I K, having the gust-valves C′, in combination with the chamber behind the cornice F, or passages L, L′, and K, through beams, &c., of large rooms, as in churches and halls, for diffusing the inflowing air in the manner and for the purposes described.

3. The chambered platform M, with its openings, in combination with the exhaust-flues A and feed-flues I, substantially as described.

4. The combination of the gust-valves C′ with the feed-flues, substantially as described.

AARON B. BROWN.

Witnesses:

DANL. GREEN,

GEO. BROWN.