P. MIHAN.

VENTILATING HALLS, &c.

No. 186,053. Patented Jan. 9, 1877.

Fig. 1

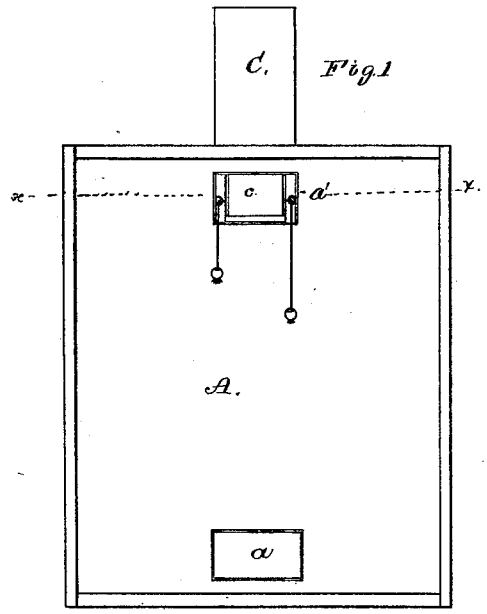


Fig. 2.

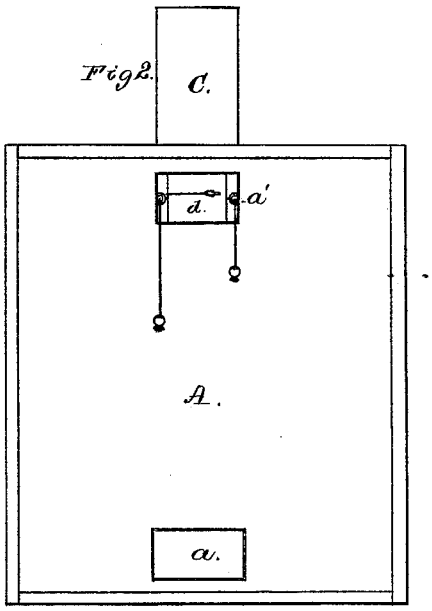


Fig. 3.

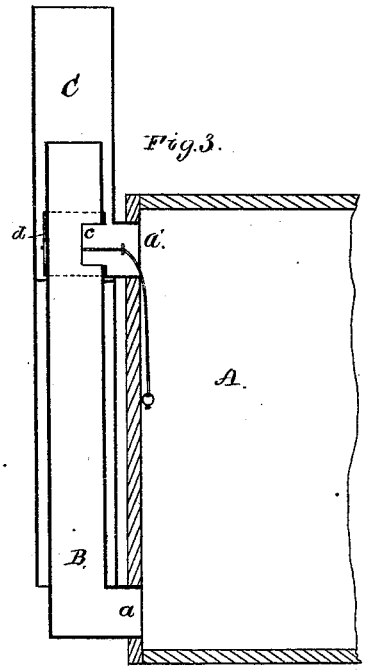
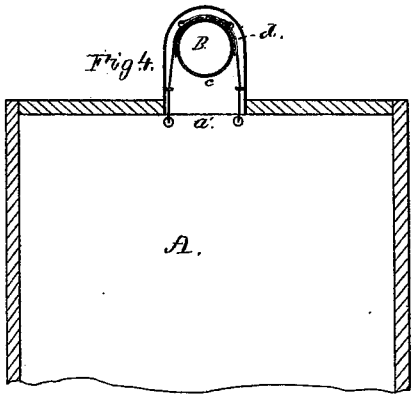


Fig. 4.



Witnesses.
Geo Gray.
F. C. Hale.

Patrick Mihan
by his attorney.
F. P. Hale.

UNITED STATES PATENT OFFICE.

PATRICK MIHAN, OF CAMBRIDGEPORT, MASSACHUSETTS.

IMPROVEMENT IN VENTILATING HALLS, &c.

Specification forming part of Letters Patent No. **186,053**, dated January 9, 1877; application filed March 28, 1876.

To all whom it may concern:

Be it known that I, PATRICK MIHAN, of Cambridgeport, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Ventilating Halls, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

In such drawing, Figure 1 denotes a front elevation of my invention as applied to a hall or room of a building, as arranged for summer ventilation. Fig. 2 is a similar view, as arranged for winter ventilation. Fig. 3 is a central and vertical section of Fig. 1. Fig. 4 is a transverse section taken on line *x x* of Fig. 1.

My invention has for its object the production of a simple and effective means or apparatus for ventilating a hall or building, or both, in summer and winter.

It is well known to those conversant with the best systems of ventilation that in order to produce the most desirable temperature of a room in the summer or warmer part of the year, the greater amount of air drawn from the room should be by a register or exhaust disposed near the upper part of the room; while in the colder or winter season, when it is desirable to retain the heat, the greater amount of air should be withdrawn or exhausted through a register arranged in or near the floor. My apparatus is adapted to meet both of the conditions, and enable the amount of air drawn from either the upper or lower register or opening to be regulated at pleasure; and my invention consists in the peculiar construction, combination, and arrangement of parts, as hereinafter described and claimed.

In the drawings, A may be supposed to represent a hall or room of a building; *a*, the lower register or opening; and *a'*, the upper register or opening, such being disposed, respectively, near the floor and the ceiling of the room. The lower register or opening, or its case, extends through the wall or side of the room, and has a foul or cold air pipe, B, connected therewith, which extends upward into a warm-air duct, C, connected with the upper register or opening *a'*, the eduction end of the pipe B extending to a plane above said register or opening *a'*. The pipe C may be connected with any suitable pipe leading to the atmosphere or top of a building. The pipe B is furnished with an opening, *c*, directly opposite the mouth of the upper register, as shown in Figs. 1 and 3. This opening *c*, is provided with a door or slide, *d*, having chains or other suitable devices applied thereto, so as to enable the door to be opened or closed, as may be desirable, these chains being applied as shown in Fig. 4. The outer ends of each of these chains is provided with a knob, which extends down to any convenient position, to enable the door to be operated or opened and closed. By taking hold of one of the knobs and pulling downward the door may be closed; while grasping the other knob and pulling it downward, the door will be readily opened.

Having described the construction of my apparatus its operation is as follows: If we desire to arrange the apparatus for summer ventilation, when it is desired to obtain the greatest amount of exhaust from the upper part of the room, we open the door in the pipe B to its fullest extent, which allows the air from the upper register or opening to rush in and fill the same, thereby checking or cutting off the exhaust from the lower register or opening. If the temperature should not require the maximum amount of air to be drawn from the top of the room, we can readily close the door in the pipe B to a greater or less extent, which will serve to regulate the exhaust from both the upper and lower register or opening, as may be desirable.

In case we desire to arrange the apparatus for winter use, we close the door in the pipe B, whereby all the exhaust of the said pipe B is effected through the lower register or opening *a*. A small amount of heated air passing through the upper register or opening *a'* and into the air-pipe C, in its passage up around the upper end of the pipe B, heats the latter, thereby causing a rarefaction of the air in such latter pipe, which, with the combined action of such heated air in the pipe C upon

the eduction end of the pipe B, serves to create a rapid exhaust of the cold or foul air through the lower register or opening *a*.

Having described my invention, what I claim is—

1. The combination of the register or opening *a* and its flue or pipe B with the register or opening *a'* and its pipe C, substantially as shown and described.

2. The combination, with the pipe B, of the door or slide *d*, arranged with respect to the register or opening *a'*, as shown and described, and for the purpose set forth.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

PATRICK MIHAN.

Witnesses:

F. P. HALE,

F. C. HALE.