

E. J. Durant, *2. Sheets. Sheet 1.*

Ventilator.

No. 108464.

Patented Oct. 18. 1870.

Fig. 3.

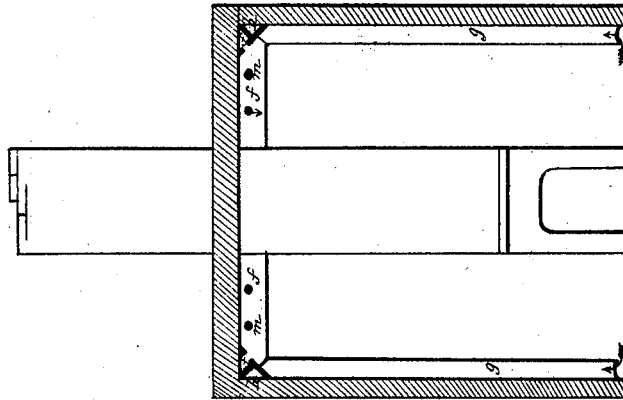


Fig. 6.

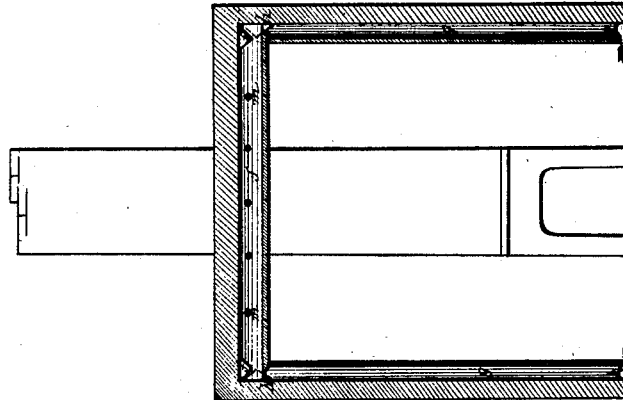
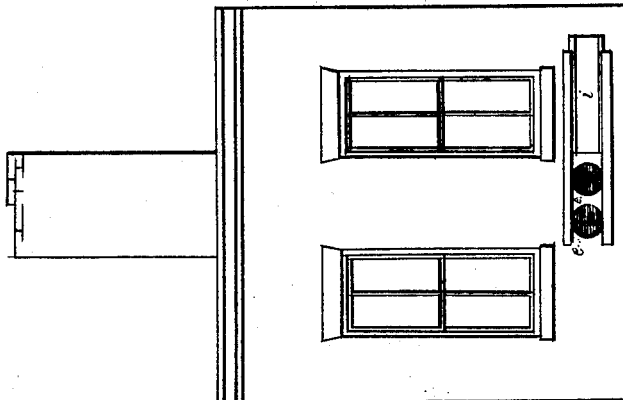


Fig. 1.



Witnesses,

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Inventor,

Edward J. Durant
By his attorney J. C. Robbins

E. J. Durant,

2, Sheets, Sheet 2.

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Fig. 2.

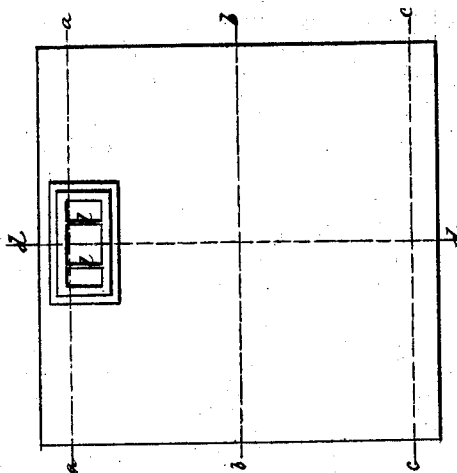


Fig. 5.

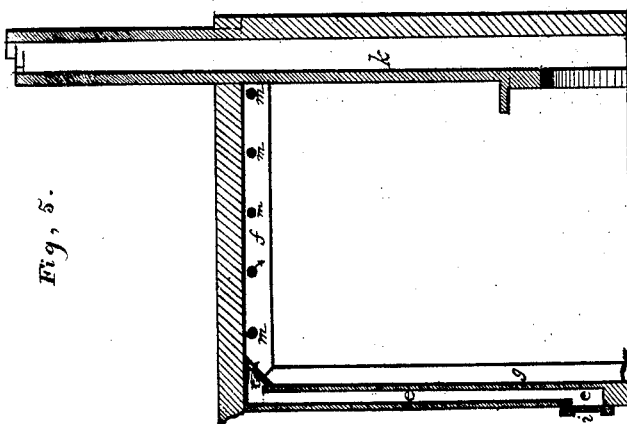
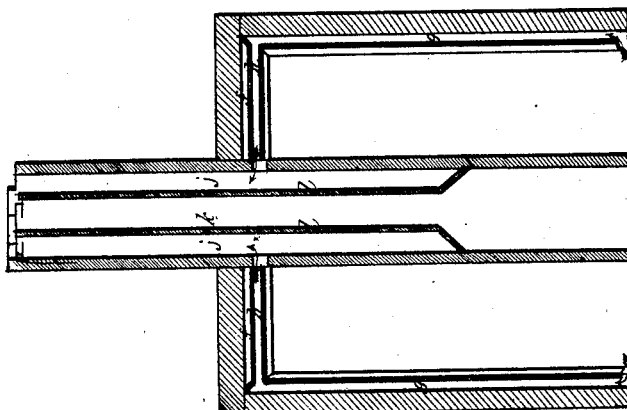


Fig. 4.



Witnesses,

H. A. Daniel,
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United States Patent Office.

EDWARD J. DURANT, OF LEBANON, NEW HAMPSHIRE.

Letters Patent No. 108,464, dated October 18, 1870.

IMPROVEMENT IN VENTILATORS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, EDWARD J. DURANT, of Lebanon, in the county of Grafton and State of New Hampshire, have invented an Improved Method of Ventilating Public Halls, Apartments, &c.; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, which forms a portion of this specification—

Figure 1 being an outside view of one side of an apartment which is ventilated by my improved method of ventilation;

Figure 2, plate 2, a top view of said apartment;

Figure 3, a vertical section in the line *b b* of fig. 2;

Figure 4, a vertical section in the line *a a* of fig. 2;

Figure 5, a vertical section in the line *d d* of fig. 2; and

Figure 6, a vertical section in the line *c c* of fig. 2.

Similar letters of reference indicate the same parts in each drawing.

Within the chimney, which communicates with the apartment to be ventilated by my improved method and apparatus, vertical ventilating flues *j j* are located on each side of the smoke-flue *k*, and from which they are separated by thin partition plates or walls *l l*.

The space within the cornice of said apartment is divided into two horizontal conducting air-passages *f* and *h*.

The conducting air-passage *h* communicates with the ventilating-flues *j j*, within the chimney, and also with the vertical air-tubes *g g*, which are located in each corner of the apartment, and in as many other positions on or within the walls of the same as the size of the apartment may require to produce perfect ventilation within the same.

The said vertical air-tubes *g g* communicate freely at their lower ends with the atmosphere near the floor of the apartment.

The contiguity of the chimney ventilating-flues *j j* to the heated products of combustion ascending in the smoke-flue *k*, will rarefy the air within the said ventilating-flues, and thereby cause a continuous ascending atmospheric current within the same, which atmospheric current will be drawn from the apartment through the series of vertical air-tubes *g g* and the horizontal air-passages *h h*.

The horizontal air passages *f f* communicate freely with the outer atmosphere by means of the vertical air-tube *e* within one of the outer walls of the apartment, as shown in fig. 5.

Apertures *m m*, or other suitable openings in the exposed surface of the air-passages *f f*, allow the pure air that enters the same to be freely discharged into the apartment to supply the place of the impure air that is being constantly drawn from the floor portion of the same through the vertical air-tubes *g g*, the horizontal air-passages *h h*, and the chimney ventilating-flues *j j*.

Halls, and other large apartments, may be furnished with as many vertical induction air-tubes, *e e*, as may be required to fully supply the same with pure air.

The volume of air entering the said induction air-tubes *e e* may be regulated by a valve or valves, *i*, substantially as shown in figs. 1 and 5.

If deemed preferable, the lower ends of the vertical air-tubes *g g* may be so arranged as to communicate with registers either in the wall or the floor of the ventilated apartment.

By my said ventilating apparatus, the pure air being admitted to the extreme upper portion of an apartment where the temperature within the same is the highest, the said pure air mingles with the warmest air in the apartment before it descends to the lower portion of the same, thereby utilizing the higher temperature in the upper portion of an apartment, and preventing any injurious currents of cold air from reaching the persons seated upon the floor of the same.

If deemed preferable, the ventilating air-tubes *g g*, and the horizontal air-passages *f h*, employed in my method of ventilation, may be so located as not to be visible to any person within the ventilated apartment.

In repeated instances, where my said improved method of ventilation has been tested, the results have been perfectly satisfactory.

A perfectly pure atmosphere has been preserved in apartments of various sizes, and under the most trying circumstances, and said experiments have also been attended by a considerable saving of fuel in the warming of said apartments.

Having thus fully described my improved method of ventilating public halls, dwelling apartments, &c.,

What I claim therein as my invention, and desire to secure by Letters Patent, is—

The withdrawal of the impure air from the floor portion of a hall or apartment, and at the same time letting pure air into the upper portion of the same by means of the combined use of the vertical air-tubes *g g* with the horizontal air-passages *h h*, and the chimney ventilating-flues *j j*, acting conjointly with the vertical air-tube *e*, and the horizontal air-distributing passages *f f*, substantially in the manner herein set forth; but this I only claim when the apparatus for warming an apartment forms a portion of my said combination for ventilating the same.

In testimony that the foregoing is a full and clear description of my improved method of ventilating public halls, apartments, &c., I do hereby subscribe my name.

EDWARD J. DURANT.

Witnesses:

J. M. PERKINS,
G. E. DURANT.