E. M. Deey,

Ventilator.

No. 100,267. Patented Mar. 1. 1870.

Fig. 1.

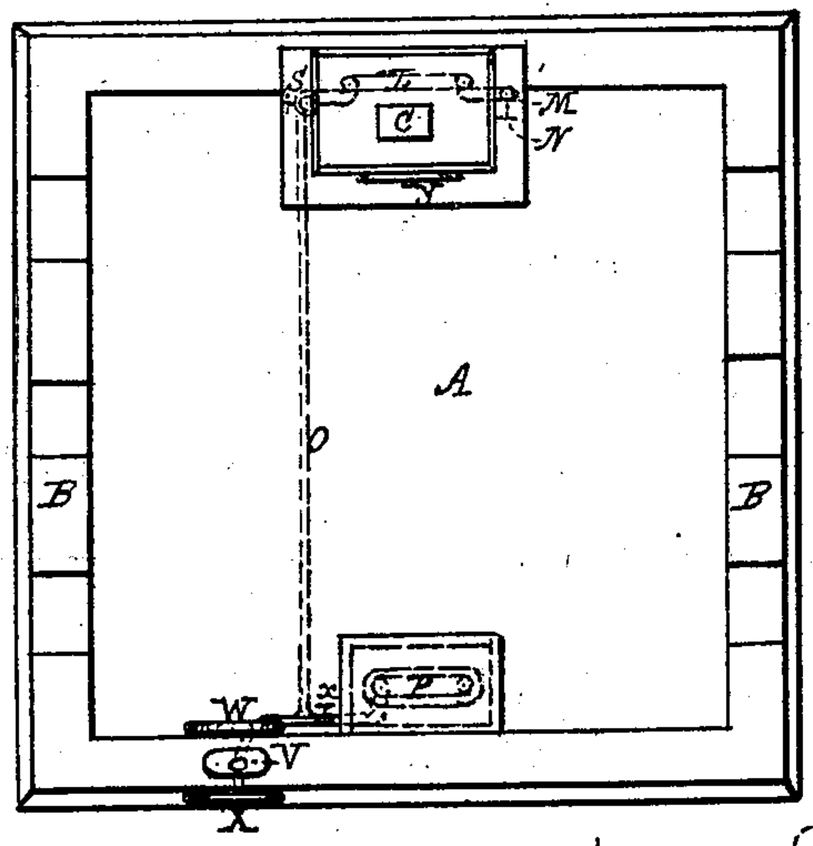
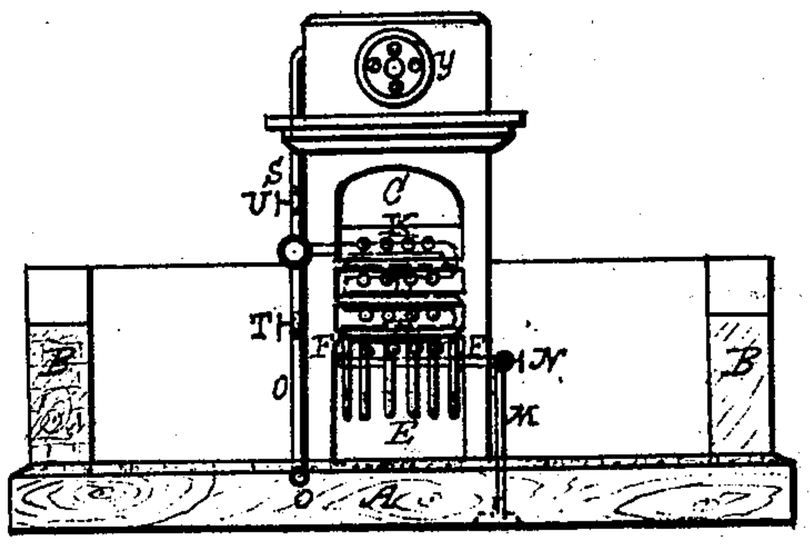


Fig. 2.



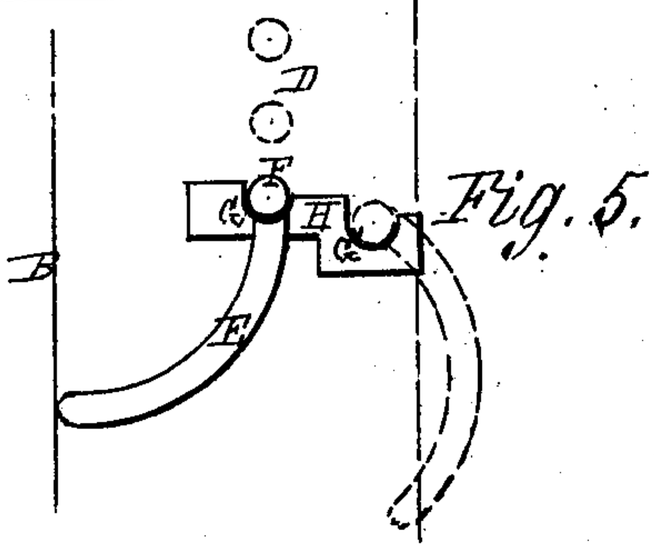


Fig. 5.

Fig. 3.

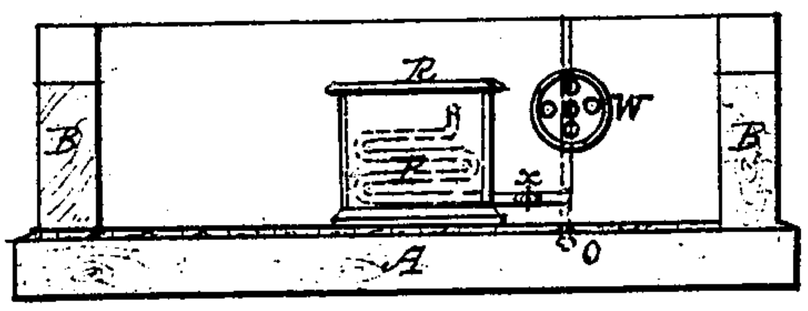
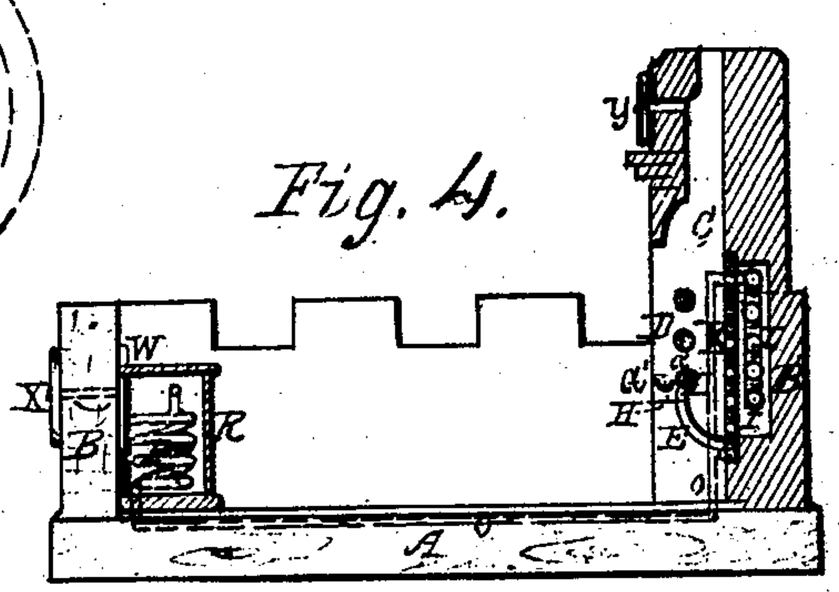


Fig. 4.



Witnesses

Arthur Neill

Emile Moltz.

Inventor

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United States Patent Office.

EDWARD MORTIMER DEEY, OF NEW YORK, N. Y.

Letters Patent No. 100,267, *dated March* 1, 1870.

VENTILATOR.

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 MORTIMER DEEY, of the city, county, and State of New York, have invented an Improved Apparatus for Heating and Ventilating Dwellings; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings making part of this specification—

Figure 1 being a plan of a room or apartment provided with the apparatus.

Figure 2, an elevation of the front part of the room, showing the fire-place and part of the apparatus.

Figure 3, an elevation of the back part of the room, showing another part of the apparatus.

Figure 4, a vertical section of the room from front to back, through the fire-place.

Figure 5, a diagram of a part detached.

Like letters designate corresponding parts in all of the figures.

The main feature of my invention consists in the employment of a pipe for the introduction of air from the outside of the dwelling, and the subjection thereof to the heat of the fire, and then the conduction of the same to the opposite or a distant part of the room, or to another room, or a chamber, where the air is liberated into the room in contact with water in an evaporating-cistern or reservoir, the circulation of the air in the pipe being produced by the rarefaction of the column in the same, as in a flue, substantially as hereinafter set forth.

Let A represent the floor;

B, the walls;

C, the chimney; and

D, the fire-place of a room or apartment of a dwelling house.

The air-conducting pipe communicates with the air outside of the dwelling; and in order that the circulation through the same by rarefaction may be as strong as practicable, it should have its outer end below the floor A, or as low down as convenient, as shown at M in fig. 2.

It first extends to the back of the fire-place, where it is located in a hollow back, I, covered by a perforated plate, K, behind the grate.

In order to present as much surface as possible to the heat of the fire-place, the pipe may form coils or bends, L, or otherwise be expanded or extended behind or around the fire-place.

Thence it extends, most conveniently, down under the floor, as at O, to the opposite side, or other convenient distant part of the room, where it enters a cistern or evaporator, R, which is to be kept supplied with water.

Here the pipe is again coiled or extended in surface, as at P, so as to present sufficient surface to the water for warming and evaporating the same. In this evaporator the air is set free, and, mingling with the vapor of the water, it is admitted into the room fresh, warm, and charged with a healthful and agreeable proportion of moisture.

The pipe may continue through the evaporator into a flue or space, V, provided with a register, W, for letting dry air into the room in case too much moisture enters from the evaporator, and with another register, X, for admitting warm air into an adjoining room or hall.

From the fire-place, or other convenient position, also a branch pipe, S, may extend from the main pipe upward through the chimney or wall of the dwelling into a chamber above, for the delivery of air to warm the same.

A valve or damper, T, is employed for directing the air either through the main pipe or through the said branch pipe.

A damper, U, may be added to regulate the ascent of the air through the branch pipe to the chamber or apartment above.

In connection with the said air-heating and circulating pipe a damper or register, Y, is used to conduct the impure air from the upper part of the room into the chimney or other ventilating flue.

By means of this air-conducting pipe, constructed, arranged, and operating as above set forth, not only is fresh air brought into the room, suitably warmed and charged with moisture, and the room well ventilated, but heat is conducted from the fire-place to a distant part of the room, or to another room, and distributed more evenly therein; and more heat is thereby secured and utilized with the same quantity of fuel than without it.

The size of the pipe is to be determined by the size of the room and the amount of air desired to be thus caused to circulate into the room.

In order that access may be more readily gained to the hollow back I behind the fire-place, as may be required with this apparatus, a movable grate, E, is made as follows:

Its upper bar F terminates in projections or journals, which fit into open bearings or recesses, G G, in the side brackets H H, so that the grate can be lifted out entire without hindrance.

A second pair of bearings, G′ G′, are formed in the brackets, a little forward of the bearings G G, and when the grate is shifted to these bearings it will turn down freely and allow the cinders to fall out. It can then be replaced into the bearings G G.

When access is to be had to the hollow back I, the grate is taken out of place and the plate K removed, or swung out if hinged.

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

1. The air-conducting pipe M L O P, constructed and arranged, in combination with the fire-place D and the evaporator R, substantially as and for the purpose herein specified.

2. In combination with the foregoing, the movable grate E, with open bearings G G and G′ G′, for the purpose set forth.

In testimony whereof, I have hereunto set my signature this 16th day of December, A. D. 1869.

EDWARD MORTIMER DEEY.

Witnesses:

ARTHUR NEILL,

EMILE MOLTZ.