

(No Model.)

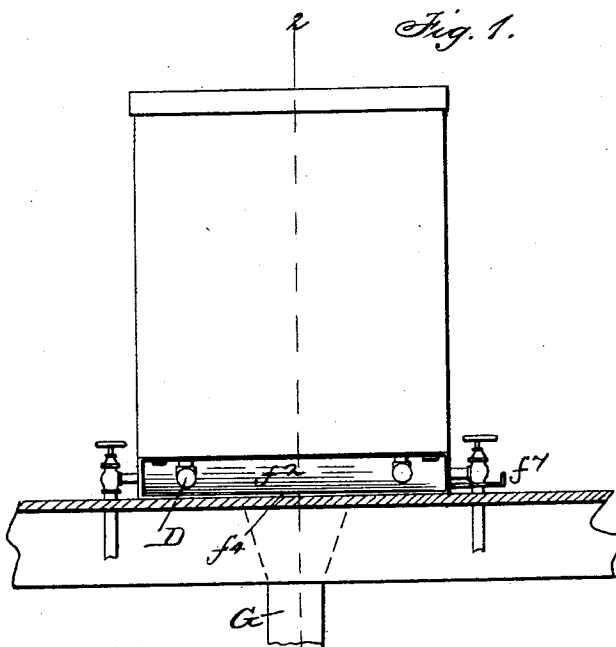
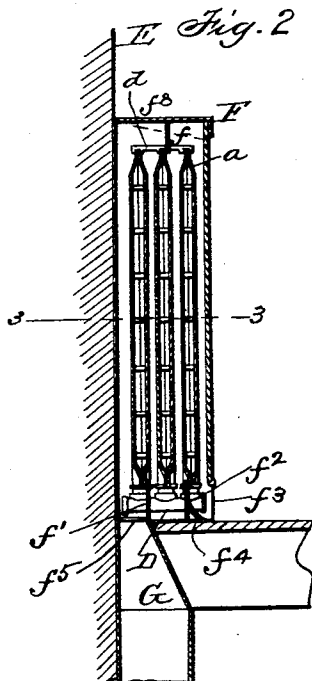
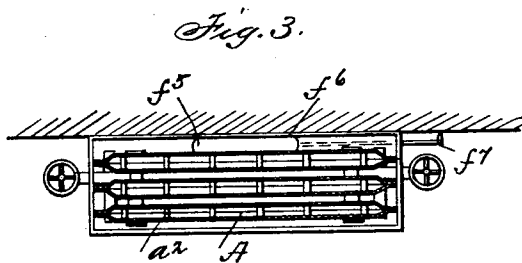
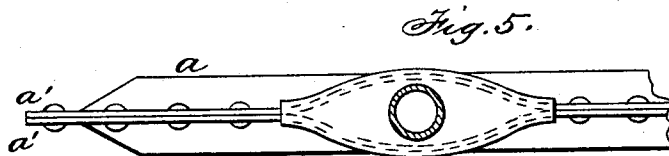
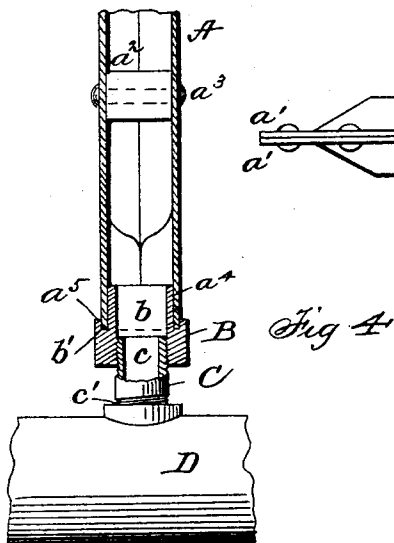
2 Sheets—Sheet 1.

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VENTILATING AND HEATING APPARATUS.

No. 586,364.

Patented July 13, 1897.



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(No Model.)

2 Sheets—Sheet 2.

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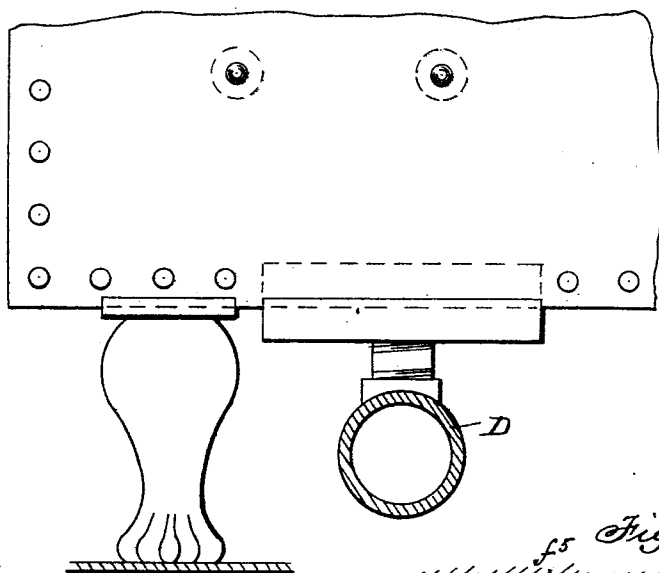


Fig. 9.

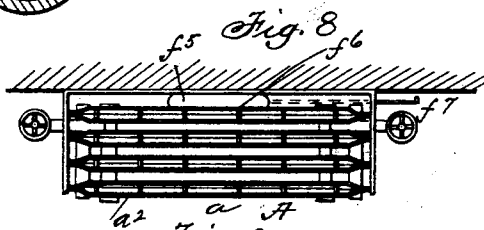


Fig. 8.

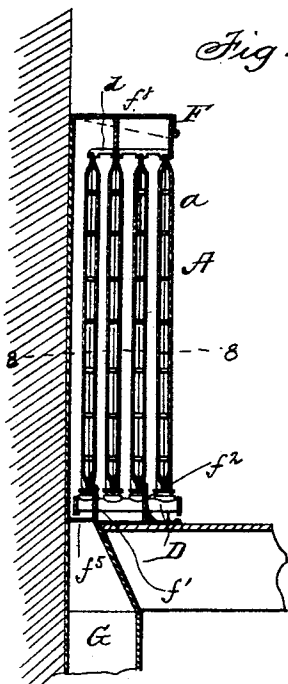


Fig. 7.

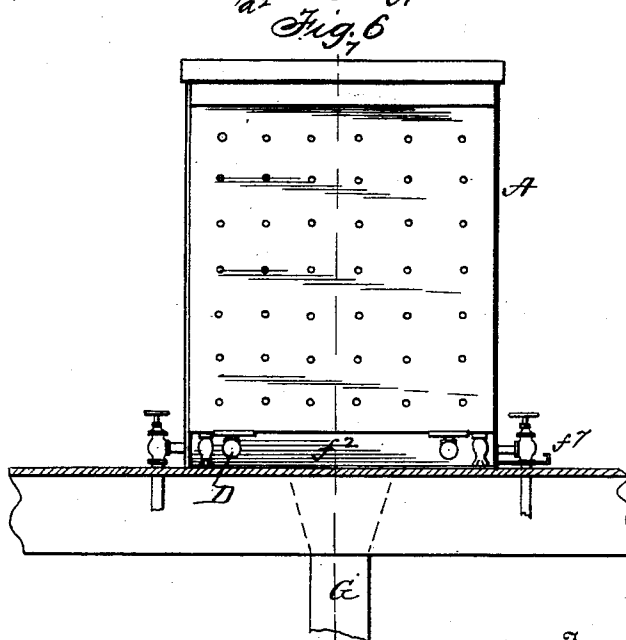


Fig. 6.

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UNITED STATES PATENT OFFICE.

JOSEPH MCCREERY, OF TOLEDO, OHIO.

VENTILATING AND HEATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 586,364, dated July 13, 1897.

Application filed February 17, 1897. Serial No. 623,818. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH MCCREERY, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Ventilating and Heating Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improvement in a combined ventilator and heater to be used in a system of ventilation for furnishing apartments with fresh air, heated or otherwise.

The invention consists in the details of construction hereinafter set forth.

In the annexed drawings Figure 1 represents a face view of a radiator provided with the invention. Fig. 2 represents a transverse vertical section on the line 2 2, Fig. 1. Fig. 3 represents a transverse horizontal section on the line 3 3, Fig. 2. Fig. 4 represents an enlarged detail showing the connection of the steam-pipe with a wing of the radiator. Fig. 5 represents an enlarged detail of one of the wings, looking from below. Fig. 6 represents a face view of a modified form of the radiator. Figs. 7 and 8 represent similar views of this form that Figs. 2 and 3 do of the other form. Fig. 9 represents an enlarged detail of one of the lower corners of the radiator.

In the drawings, the letter A represents a radiator composed of one or more wings or sections *a*. These wings or sections are composed of two flat sheets of metal spaced apart, but having their edges *a'* meeting and fastened together by rivets and brazed to make a steam-tight fit. The plates of which the wings are composed are held apart by spools *a''*, placed at intervals, bolts *a'''* passing through such spools. In holes *a''* at the bottom of the wing is placed a hollow fitting B, the stem *b* of such fitting passing up through the hole *a''*, and the edge *a'''* of the wing resting snugly into a recess *b'* of the fitting B. The nozzle C is threaded into the fitting B at its upper end *c* and at its lower end *c'* fits into a pipe D. This pipe D is connected with the several fittings B of the several wings *a* and also is connected at both ends to the steam sys-

tem of the building or other edifice to which the device is applied. The several wings of the radiator are not only secured together by the pipe D at the bottom, but may also be held together at the top by the plate or bar *d*.

The radiator, as described, with its connections, is placed in an apartment against the wall E and is surrounded by an air-tight case F. At the top a plate *f* runs entirely across the case and is secured to the wing *a*, which is the second one from the wall E. At the bottom plates *f'* and *f''* are secured to the bottom of the wing *a*, which is next to the wall E, and to the wing *a*, which is next to the outside of the case. At the bottom, on the outside, case F is provided with an outlet *f'''*, which extends the entire width of the case F. The curved deflector *f''''* is placed within the case F, which is inside of the opening *f'''* and between the plate *f''* and the opening *f'''*. Between the wall E and the plate *f'* an opening is made in the bottom of the case F and connecting with an opening *f''''* in the floor of the apartment. This opening *f''''* is governed by a valve *f'''''*, the handle *f''''''* of which extends outside of the case F. Leading to and connecting with the opening *f''''* is an air-duct pipe G, which passes off to the fresh-air supply. Case F is provided with a hinged cover *f''''''*, which fits snugly on top of the plate *f*.

As shown in Figs. 6 and 7, instead of there being three wings to the radiator there may be four, the fourth or outside wing taking the place of the front of the case F and becoming itself the front of the case. In other respects the two modifications are alike, and the detailed description of the second modification is therefore unnecessary.

In use steam or hot air may be admitted into the wings *a* in the usual way. Air is admitted under artificial pressure or otherwise from the pipe G and opening *f''''* into the case F. The air passes up between the wall E and the wing *a* nearest to it to the top of the case F, thence down between the first and second wings, thence up between the second and third wings, thence down between the third wing and front of the case or the fourth wing, as the case may be, and out through the opening *f'''*, being thrown in that direction by the deflector *f''''*. The amount of air admitted will be regulated by the valve *f'''''*.

In warm weather the radiator may be removed and either the valve f^6 be used for regulating the supply of air to the apartment or any of the improved outlet-gates may be substituted in its place; or instead of removing the radiator the cover f^8 may be opened and the air be allowed to pass out of the top of the case, and even when the radiator is used, as in moderate weather, the cover may be opened or partially opened, so as to allow air to pass out of the top.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of a casing having an inlet and an outlet for air, and a radiator therein, consisting of a series of wings or sections spaced apart, and deflectors closing the space between the wings or sections and the casing at top and bottom and so arranged as to cause the air to move circuitously around and between the wings or sections, the space between the sides of the wings or sections and the casing being closed, as set forth.

2. The combination of a casing having an inlet and an outlet for air, and a radiator therein, consisting of a series of wings or sec-

tions spaced apart, and deflectors closing the space between the wings or sections and the casing at top and bottom and so arranged as to cause the air to move circuitously around and between the wings or sections, the space between the sides of the wings or sections and the casing being closed, the casing also being provided with a removable top or cover where- by the air may be allowed to escape at the top of the casing or be caused to pass around and between the radiator-sections before escaping, as set forth.

3. The combination of a casing having an inlet and an outlet for air, and a radiator therein, consisting of several wings or sections placed in such casing and spaced apart, and the deflector-plates, f , f' and f'' , alternately connected at the top and bottom of the casing to the wings or sections and to the casing, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH MCCREERY.

Witnesses:

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Mrs. R. B. BRYANT.