

(No Model.)

2 Sheets—Sheet 1.

W. F. WOLFE.

HEATING AND VENTILATING APPARATUS.

No. 571,423.

Patented Nov. 17, 1896.

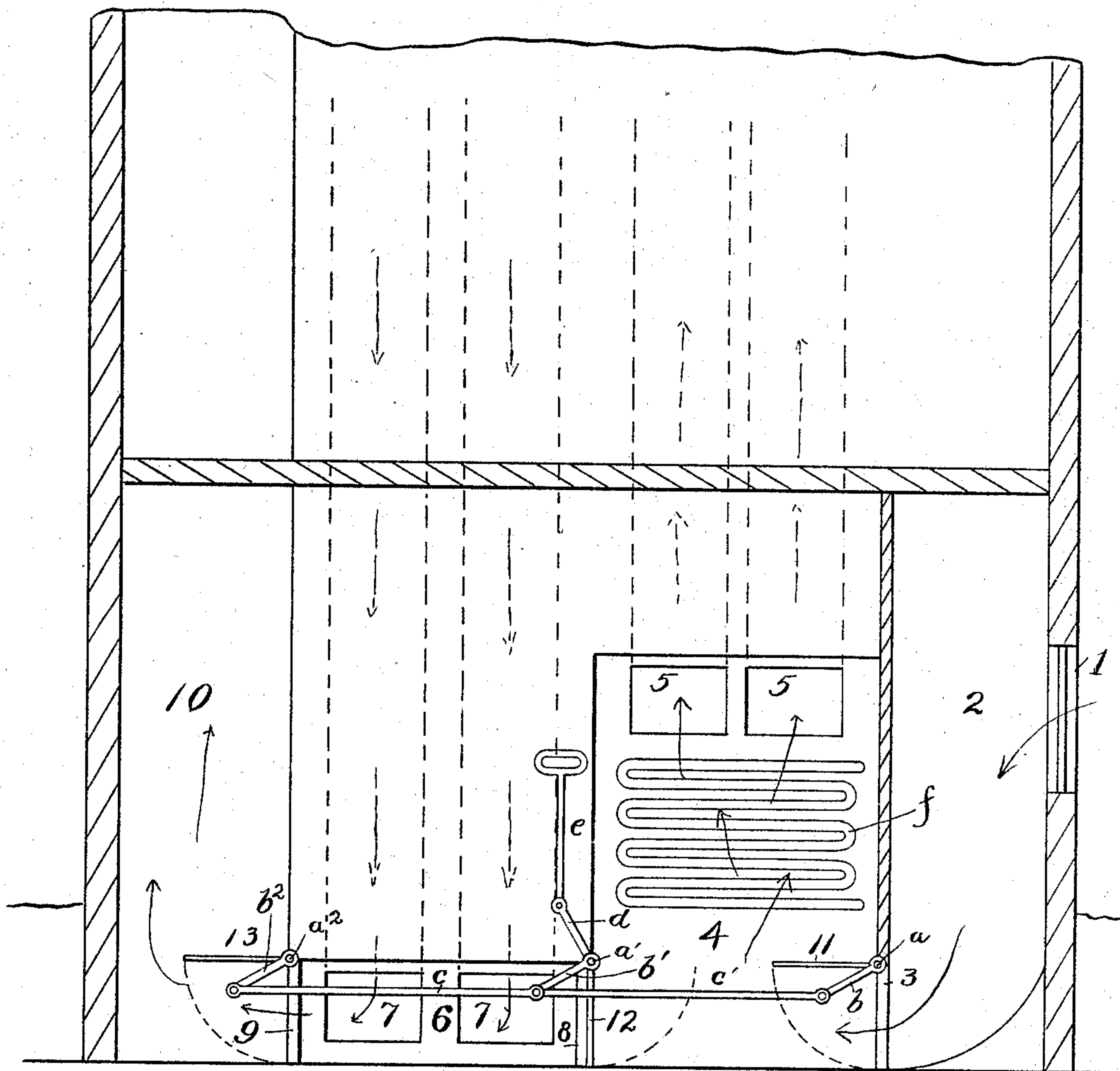


Fig. 1.

Witnesses.

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J. W. Montgomery.

Inventor.

Wittsie F. Wolfe,
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attys.

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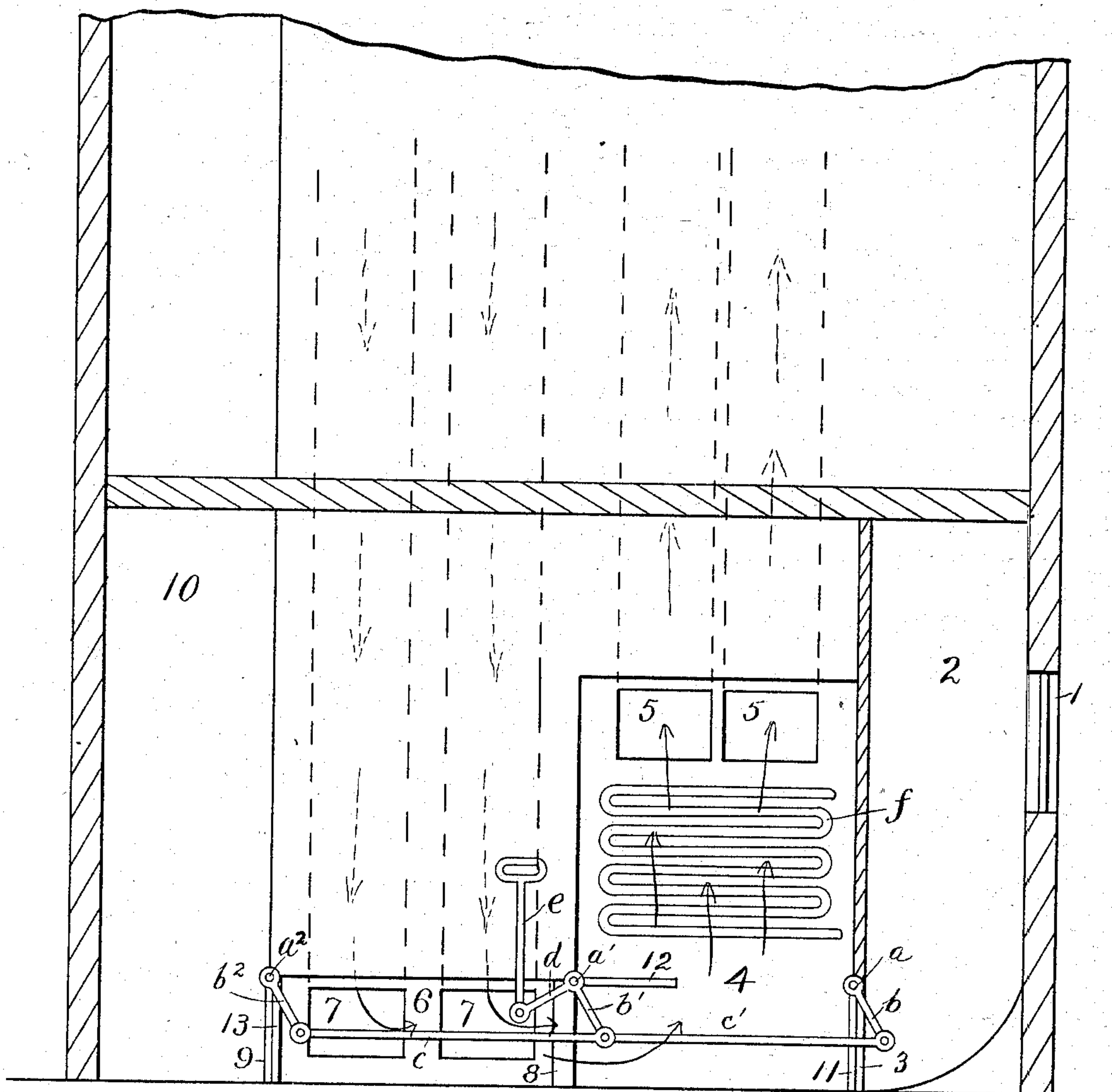


Fig. 2.

Witnesses.

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UNITED STATES PATENT OFFICE.

WILTSIE F. WOLFE, OF NEWTON, MASSACHUSETTS.

HEATING AND VENTILATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 571,423, dated November 17, 1896.

Application filed May 16, 1895. Serial No. 549,524. (No model.)

To all whom it may concern:

Be it known that I, WILTSIE F. WOLFE, a citizen of the United States, residing in Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Heating and Ventilating Apparatus, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to improvements in that class of heating and ventilating apparatus for buildings in which fresh air is admitted through suitable ducts to a heating-chamber, and from thence, after being properly heated, is distributed through the building, and suitable ducts provided for conducting the vitiated air outside the building; and it consists in a novel construction of such apparatus and of valves and valve-operating mechanism acting in connection therewith.

The main objects of the invention are to materially reduce the cost of construction and to provide a simple and efficient mechanism for operating the valves simultaneously for the purpose of shutting off the the fresh-air supply from the heating-chamber when desired and admitting thereto the air from the ventilating-ducts. I accomplish these results by means of the apparatus illustrated in the accompanying drawings.

Figure 1 is a vertical sectional view of a part of a building containing my improved construction and apparatus, the valves being shown as in position to fresh air from the fresh-air chamber to the heating apparatus and to carry the air from the rooms to the ventilating-shaft. Fig. 2 is a similar view, but showing the valves in position to admit the air from the rooms through the chamber 6 to the heating apparatus, communication between the fresh-air chamber and the chamber 6 and between the chamber 6 and the ventilating-shaft being cut off.

Referring to the drawings, 1 is the entrance to the fresh-air chamber 2.

3 is the communication from the fresh-air chamber to the heating-chamber 4, which contains the heating apparatus *f*, which is shown as a coil of steam-pipe, although a furnace or other suitable apparatus may be used, as desired.

5 5 are the hot-air supply-pipes to the various rooms.

7 7 are the ventilating-ducts from the rooms, and which terminate in the chamber 6. This chamber has an outlet 9 to the ventilating-shaft 10, by means of which the foul air is conducted outside the building. The chamber also has another outlet 8 to the heating-chamber, so that the air from the various rooms may be rewarmed and used over again, as it may be to advantage when the rooms are not occupied.

The openings 3, 8, and 9 are provided with valves 11, 12, and 13, respectively, so arranged and connected that when fresh air is taken from the fresh-air chamber the openings 3 and 9 are open and the opening 8 is closed, as shown in Fig. 1, allowing the fresh air to pass into the heating-chamber and to the rooms and the vitiated air to pass from the rooms to the chamber 6 and through the opening 9 into the shaft 10 and thus outside the building.

If it is desired to use the air from the rooms over again, which can be done when the rooms are not occupied, the openings 3 and 9 are closed and the opening 8 opened, when the air from the rooms will pass from the chamber 6 to the heating-chamber 4 and thus back to the rooms. (See Fig. 2.)

The mechanism for operating the valves is fully shown in the drawings. The valves 11, 12, and 13 are pivoted, respectively, at *a*, *a'*, and *a''*. Attached to each valve is a lever *b b' b''*, and these levers are connected by connecting-bars *c c'*. The lever *b'* is a bell-crank lever, and to the free end *d* is attached the handle *e*. The manipulation of this handle causes the simultaneous movement of the three valves. When the handle is pulled up, the valves 11 and 13 are open and the valve 12 is closed, as shown in Fig. 1. When the handle is pushed down, the valves 11 and 13 are closed and the valve 12 is open, as shown in Fig. 2. This method of construction has the advantage of being cheap and of being easily and surely operated, it being impossible to leave any valve in a wrong position.

By constructing and locating the cold-air chamber and the means of admitting the cold air thereto, as shown in the drawings, as well as by the improved means for directing the

previously-warmed air from the ventilating-ducts to the heating-chamber for further use when desired, the apparatus is much simplified, and the cost of construction, particularly in the matter of expensive piping for these purposes as heretofore required, will be greatly diminished. It will also occupy less space than the other forms of construction.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a heating and ventilating apparatus, the combination with a heating-chamber and ventilating chamber, provided with an intermediate communicating opening and with openings in their outside walls, of valves controlling said openings, and mechanism connecting said valves in such manner as to open the valves in the outside openings and to close the valve controlling the intermediate opening and vice versa, flues communicating with the heating-chamber and ventilating-chamber, respectively, and heating means within the heating-chamber.

2. The combination with a heating-chamber, and a ventilating-chamber, and an intermediate partition, of valve-openings in the intermediate partition and in the outside walls of the chambers, respectively, valves controlling said openings, levers secured to said valves, and a connecting-rod pivotally secured to each of said levers, the valves, levers and rod being so related that the valves controlling the openings in the outside walls will be opened simultaneously with the closing of the intermediate valve and vice versa, flues communicating with each of said chambers and designed to communicate with a compartment and heating means within the heating-chamber.

In testimony whereof I have hereunto subscribed my name this 3d day of May, A. D. 1895.

WILTSIE F. WOLFE.

Witnesses:

A. SOL. CHIPMAN,
CHAS. A. KELLOGG.