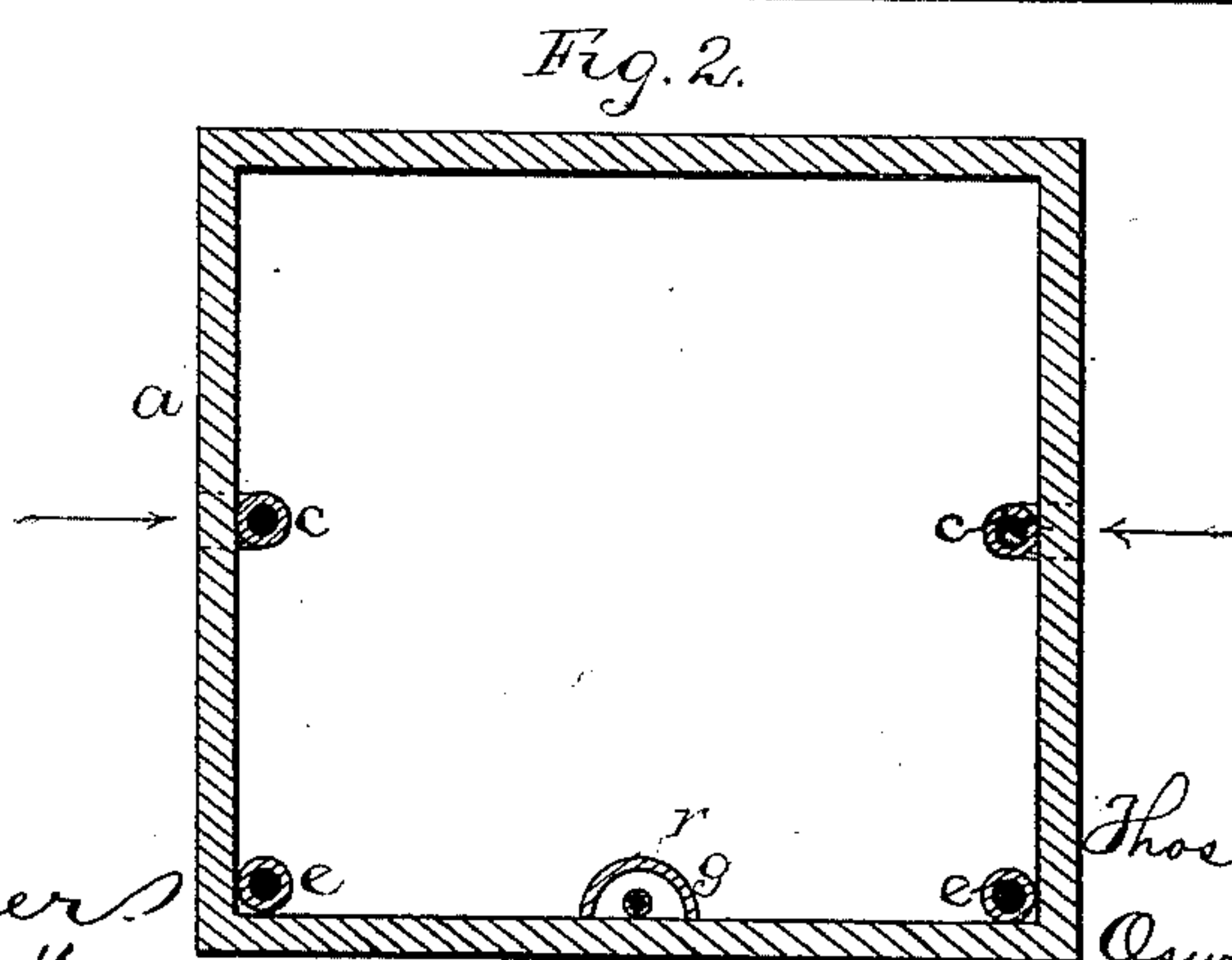
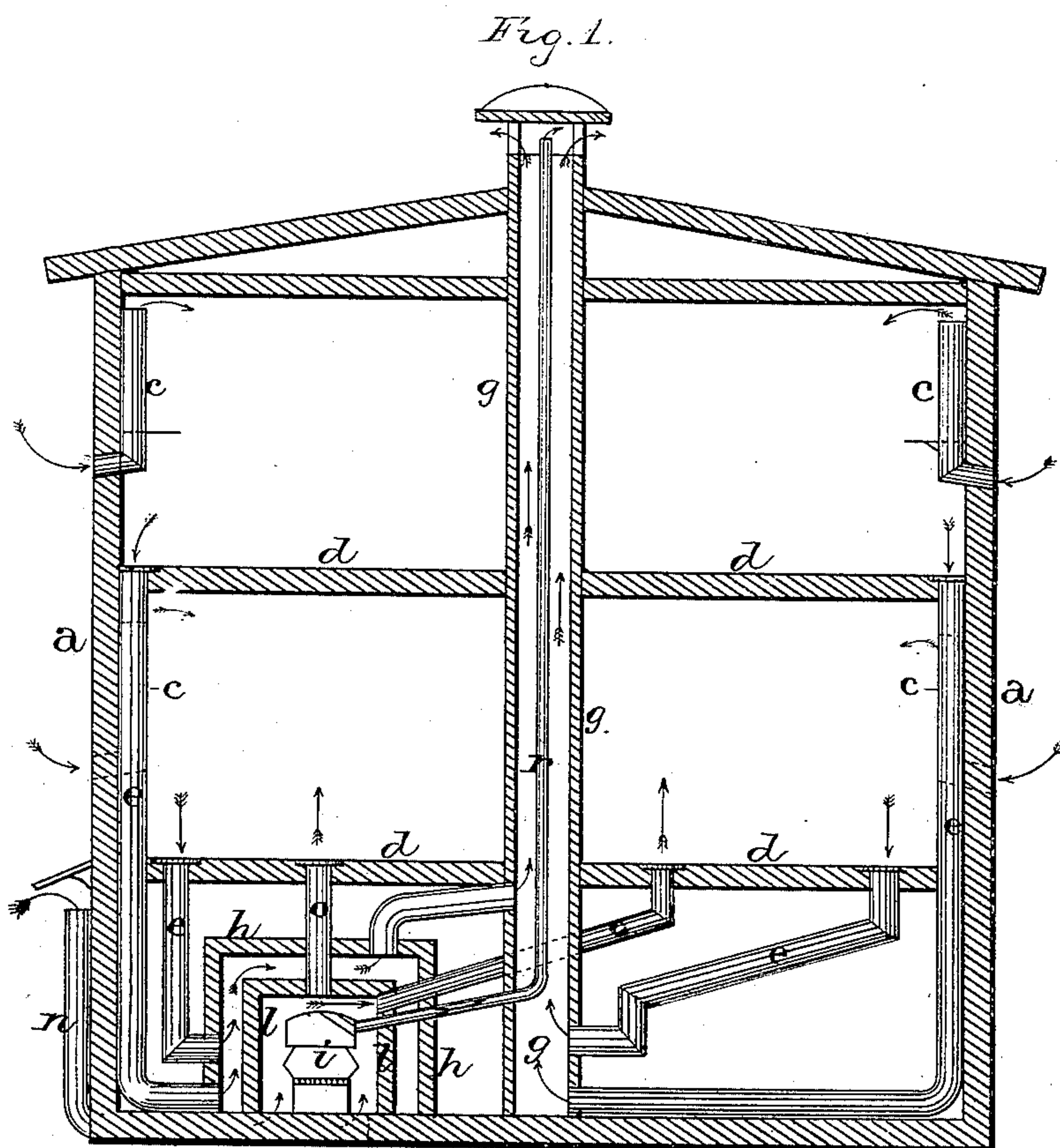


T. B. PIERSON & O. J. BURNETT.
House-Ventilation.

No. 223,006.

Patented Dec. 30, 1879.



Witnesses:

J. W. Garner
Wm. H. Mortimer

Inventors:

Thos. B. Pierson,
Oswald J. Burnett,

per
F. A. Lehmann, atty.

UNITED STATES PATENT OFFICE

THOMAS B. PIERSON AND OSWALD J. BURNETT, OF MORRISTOWN, N. J.

IMPROVEMENT IN HOUSE-VENTILATION.

Specification forming part of Letters Patent No. **223,006**, dated December 30, 1879; application filed November 17, 1879.

To all whom it may concern:

Be it known that we, THOS. B. PIERSON and OSWALD J. BURNETT, of Morristown, in the county of Morris and State of New Jersey, have invented certain new and useful Improvements in House-Ventilators; and we 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to an improvement in ventilating and heating buildings; and it consists in supplying each room with fresh air through the side of the building and discharging it into the room at or near the ceiling, and taking off the foul air at the floor, and connecting the pipes which carry off the foul air with a central shaft that extends up through the building, and up through which shaft an upward current is caused, so as to draw the foul air from the rooms, as will be more fully described hereinafter.

Figure 1 is a vertical cross-section of a house to which our system of ventilation is applied; and Fig. 2 is a horizontal section of the same, taken through the second story.

a represents a public or private building of any desired construction, all of the rooms of which have a fresh-air pipe, *c*, leading into them through the side of the house at any suitable distance above the floors *d*. The upper ends of these pipes reach up to very near the ceiling, so as to discharge the fresh air into the top of the room, and the upper ends are covered with a wire-gauze, so as to break the currents of air and prevent a draft through the room. In the pipes *c* are placed valves, near their lower ends, so that the amount of air admitted into the room can be controlled at will.

Leading from the floor of each room is a foul-air pipe, *e*, which has its lower end connected either with the shaft *g* or an outer jacket, *h*, surrounding the furnace *i*. This furnace may be placed in the cellar or lower part

of the house, and be of any desired construction, and inclosed in the usual jacket *l*. Fresh air is supplied to this furnace, through the pipe *n*, from the outside of the building, and after the air is heated it is supplied to the different rooms through the hot-air pipes *o*.

The products of combustion from the furnace pass off through the smoke-pipe *r*, which extends up through the center of the shaft, so as to heat the air in the shaft and cause an upward current. Any other means for heating the air in the shaft may be resorted to, as the object is to cause an upward draft, and thereby form a partial vacuum in the lower part of the shaft, so as to suck the foul air from the foul-air pipes. As long as the upward draft is caused in the shaft the foul air will be sucked into it, and thus the foul air will be carried off from the rooms as soon as it falls to the floor.

The air in the outer jacket, *h*, becomes heated by contact with the inner jacket, *l*, and thus an upward draft is started through it toward the shaft, and this draft causes suction enough to draw the foul air from the rooms above. Thus, while the furnace draws the foul air from the rooms above on one side, the shaft draws it down from the rooms on the other side of the house.

Having thus described our invention, we claim—

1. The combination of the fresh-air pipes *c*, foul-air pipes *e*, shaft *g*, and a means for heating the air in the shaft, so as to cause a partial vacuum therein, substantially as described.

2. The combination of the furnace *i*, and its two inclosing-jackets *h* *l*, with the foul-air pipes, shaft *g*, and smoke-pipe passing up through the shaft, substantially as shown.

In testimony that we claim the foregoing we have hereunto set our hands and seals this 11th day of November, 1879.

THOMAS B. PIERSON. [L. S.]
OSWALD J. BURNETT. [L. S.]

Witnesses:

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