

(No Model.)

A. K. CAMPBELL.

Means for Heating and Ventilating Houses, &c.

No. 230,237.

Patented July 20, 1880.

Fig. 1.

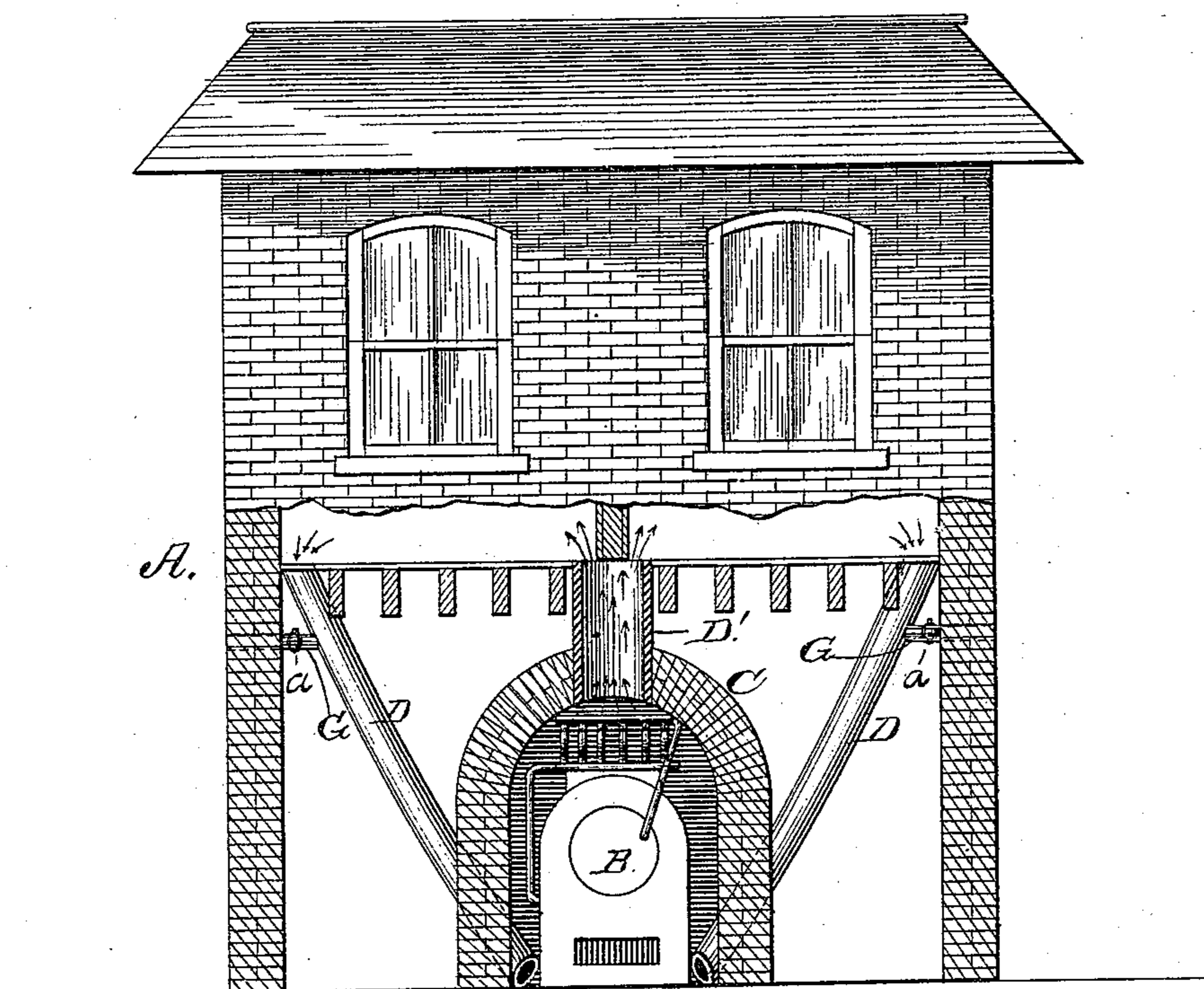
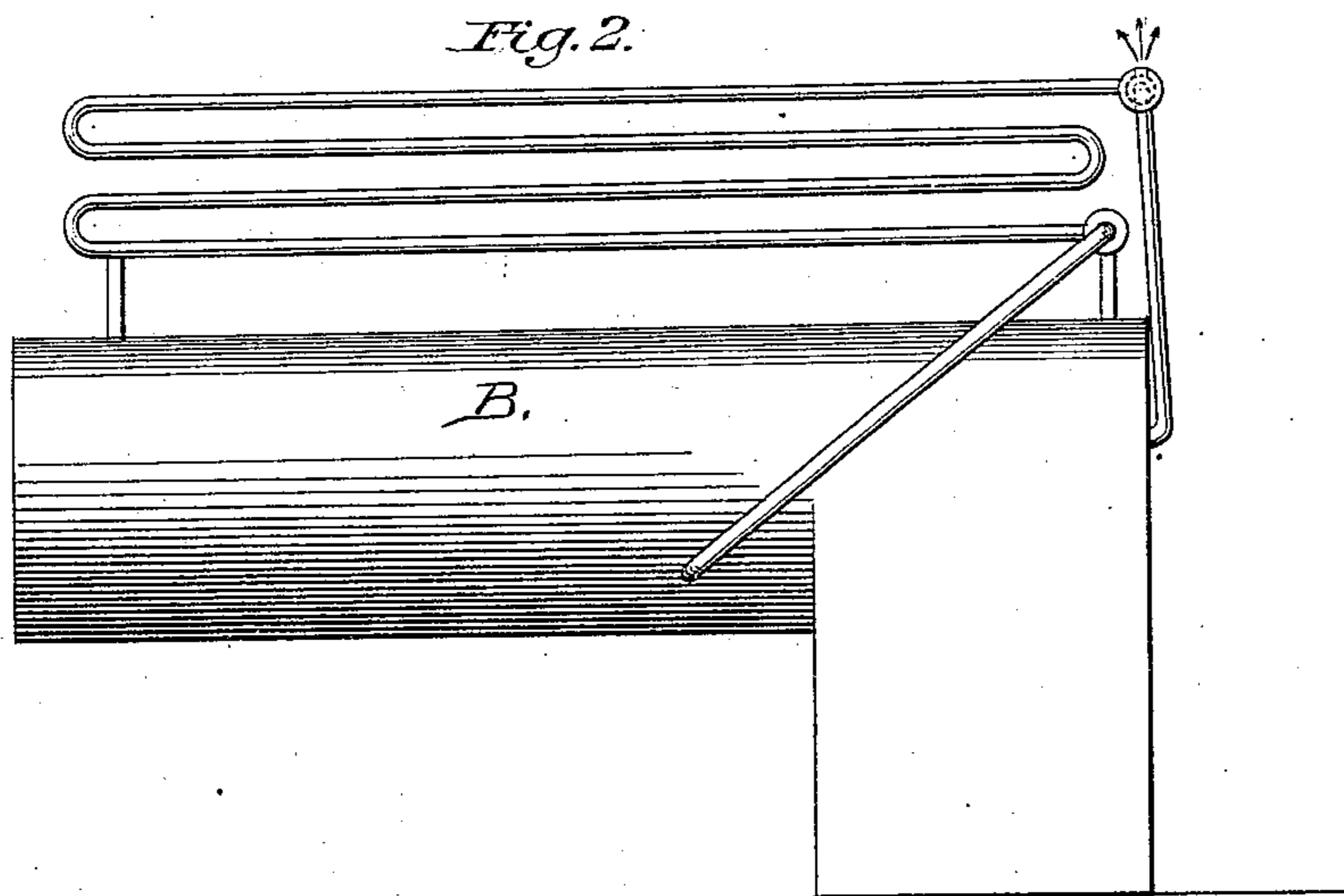


Fig. 2.



WITNESSES

John A. Ellis.
Frank J. Massi.

INVENTOR

A. K. Campbell,
by E. W. Anderson

his ATTORNEY

UNITED STATES PATENT OFFICE.

ANGUS K. CAMPBELL, OF NEWTON, IOWA.

MEANS FOR HEATING AND VENTILATING HOUSES, &c.

SPECIFICATION forming part of Letters Patent No. 230,237, dated July 20, 1880.

Application filed March 25, 1880. (No model.)

To all whom it may concern:

Be it known that I, ANGUS K. CAMPBELL, of Newton, in the county of Jasper and State of Iowa, have invented a new and valuable Improvement in Means for Heating and Ventilating Houses, &c.; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a sectional view of my heating and ventilating device applied, and Fig. 2 is a detached side view of the heat-generator.

This invention has relation to improvements in means for heating and ventilating buildings; and it consists in the construction and novel arrangement of parts, as hereinafter shown and described.

In the annexed drawings, the letter A designates a building having located in its cellar, sub-cellar, basement, or other available place, a steam-heater, furnace, stove, or other suitable generator, B. This generator is placed within a close chamber, C, usually of brick, and having no communication with the outside air otherwise than as hereinafter set forth.

Extending through the various floors of the house, or, if desired, through its walls near the floor, are pipes D D', opening at their lower ends into chamber C.

When the furnace-fire is lighted, chamber C being closed, the draft created exhausts the air from the lower part of the room through pipes D and delivers it into the lower part of the chamber, where its impurities—carbonic acid and oxide—settle until drawn into the furnace and are there consumed. The purified air remaining in chamber C, and heated therein by contact with the generator, then passes up pipe or pipes D' into the rooms, and, acting by displacement, after rising to the top of the room, drives out the impure and heavier cold-air strata near the floor, which pass down into chamber C, to be again purified and heated and redistributed.

Connected with the exhaust-pipes D are small pipes G, leading to the open air, and pro-

viding a fresh supply of oxygen to make up the consumption in the rooms, the quantity of air thus admitted being regulated by suitable cocks *a*, arranged outside of the chamber C, but inside of the furnace-room.

The pipes D' open into the top of chamber C, to which hot air naturally rises, while pipes D deliver the cold air at its bottom, where it naturally remains until heated. The hot air hence passes, in preference, up pipes D', and, by the partial vacuum created at the top of the chamber, exhausts the colder and impure air from the room, thus creating a perfect and equable circulation of air.

Access is had to chamber C for the replenishing of the generator through a tight door in its front.

This device secures perfect ventilation of the room, and is easily controlled. It produces a perfectly equal temperature in all parts of the room, and, giving perfect control of the air, allows the heating medium to be tempered with moisture at pleasure.

It will be observed that this device requires no extensive and costly ramifications of pipes, dispenses with radiators, and simplifies the heating of houses generally.

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

1. The combination, with the air-tight furnace-chamber C and generator B, of the distributing-pipes D', leading into the apartments of a building, the exhaust-pipes D, leading from said apartments, and valved cold-air inlets, leading from outside the building and communicating with the air-supply of the furnace, substantially as specified.

2. The combination, with the furnace B, an air-tight chamber, C, inclosing the same, and the distributing pipe or pipes D', of the exhaust-pipes D, having branch pipes G, leading to the outside air, and provided with regulating-valves *a*, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ANGUS K. CAMPBELL.

Witnesses:

M. GREMHOF,

GEO. W. LEDYARD.