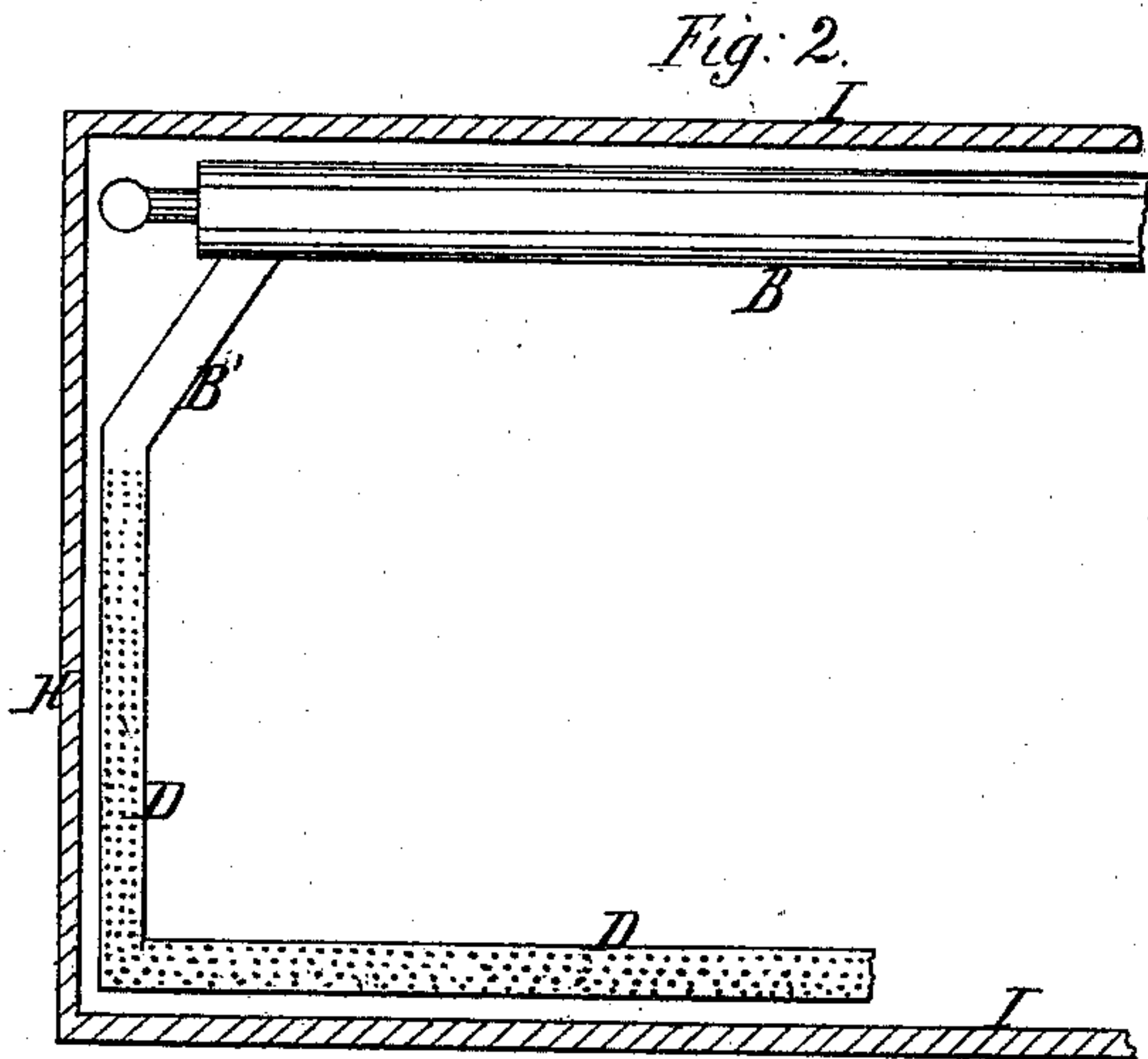
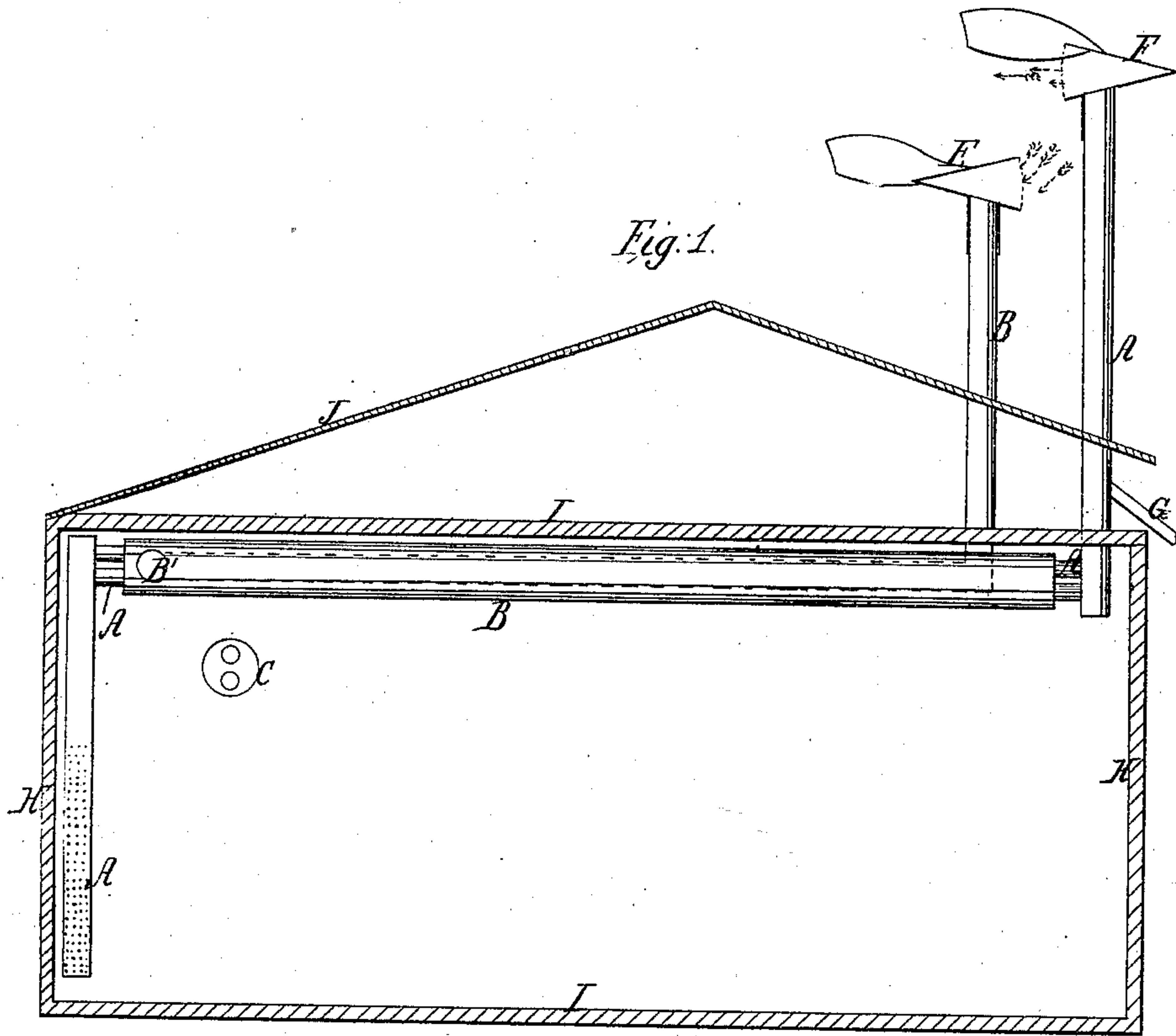


W. C. Grimes.

House Ventilation.

N^o 86,663.

Patented Feb. 9, 1869.



Witnesses;

Mr. Hibbard
Thomas W. Hughes

Inventor,
Wm. C. Grimes

United States Patent Office.

WILLIAM C. GRIMES, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 86,663, dated February 9, 1869.

IMPROVEMENT IN VENTILATING HOUSES, HALLS, &c.

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, WILLIAM C. GRIMES, of Philadelphia, in the county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in the Mode of Ventilating Rooms, Halls, or Buildings; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in passing reversely two currents of air through two or more tubes, placed the one within the other, so that the incoming air shall be warmed by the outgoing, and in giving to the tubes such a position as to insure a natural draught through them, and in discharging the fresh air into the room from finely-perforated tubes or other-formed chambers.

Reference to the Figures.

Figure 1 is a vertical section of a room or part of a building, showing the position of the ventilating-tubes.

Figure 2 is a plan or top view of the tubes in a room.

Similar letters refer to like parts in all the figures.

A A, eduction-tubes for discharging the air from the room.

B B, induction-tubes.

C, transverse section of the induction and eduction-tubes.

D D, a finely-perforated part of the induction-tube.

E and F, cowls upon the tubes above the building.

G, section of a pipe from a stove or furnace.

H I, walls and floors of the room.

J, roof.

The object of placing the tubes, the one within the other, is for the transfer of temperature and consequent economy, and to have the incoming air of the same temperature as that of the room, or nearly so.

The part of the eduction-tube that passes through

the induction-tube is divided into two or more tubes, so as to present a greater amount of surface, and thereby the more readily transfer the heat of the outgoing to the incoming air, or rather to effect, the more perfectly, the transfer of temperature.

A part of the induction-tube is finely perforated, so that the air shall enter the room without a perceptible current. The perforated tube may run quite around the room, presenting too great an extent of surface for the current of the incoming air to be perceptible.

The eduction-tube or tubes may run down the corners of the room, near to the floor, and have the lower part of the tube perforated.

This vertical tube, or tubes, will tend to aid or increase the draught when the air in the room is warmer than the external air.

The cowls upon the upper and outer ends of the tubes are to aid the draught. They are so arranged that the currents in the external air will tend to force the latter into the one while it draws it from the other.

The pipe G is to connect with a stove or furnace, so that the heat therefrom may be made to produce an artificial draught through the tubes, when desired.

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

1. The mode of ventilating and regulating the temperature of rooms, halls, and buildings, by incoming and outgoing currents of air, passing, after the manner as herein specified, through tubes, arranged substantially as hereinbefore described, and for the purpose set forth.

2. The pipes A and B, combined and arranged as described, and for the purpose shown.

3. In combination with the pipes, so arranged, the cowls and perforated tubes, as herein set forth.

WM. C. GRIMES.

Witnesses:

C. H. MILLAR,
ROBT BUCKMAN.