

J. SMITH.
Ventilator.

No. 217,712.

Patented July 22, 1879.

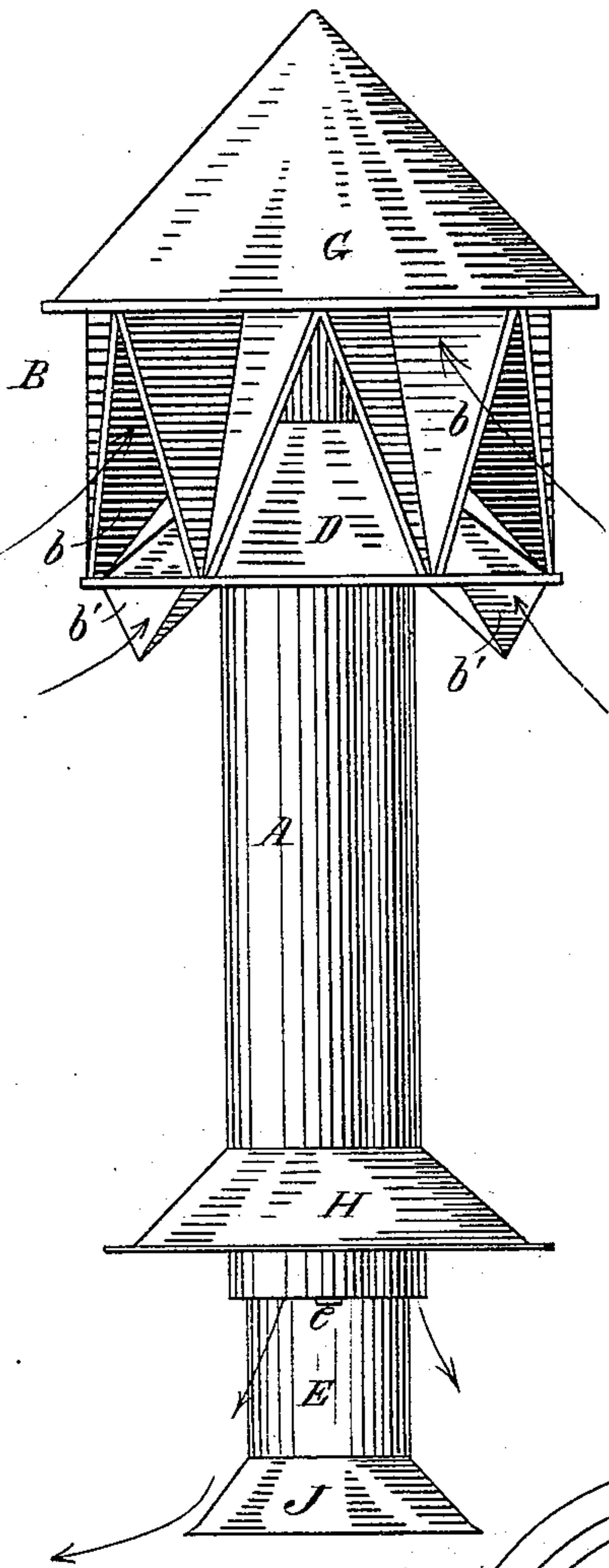


FIG. 1.

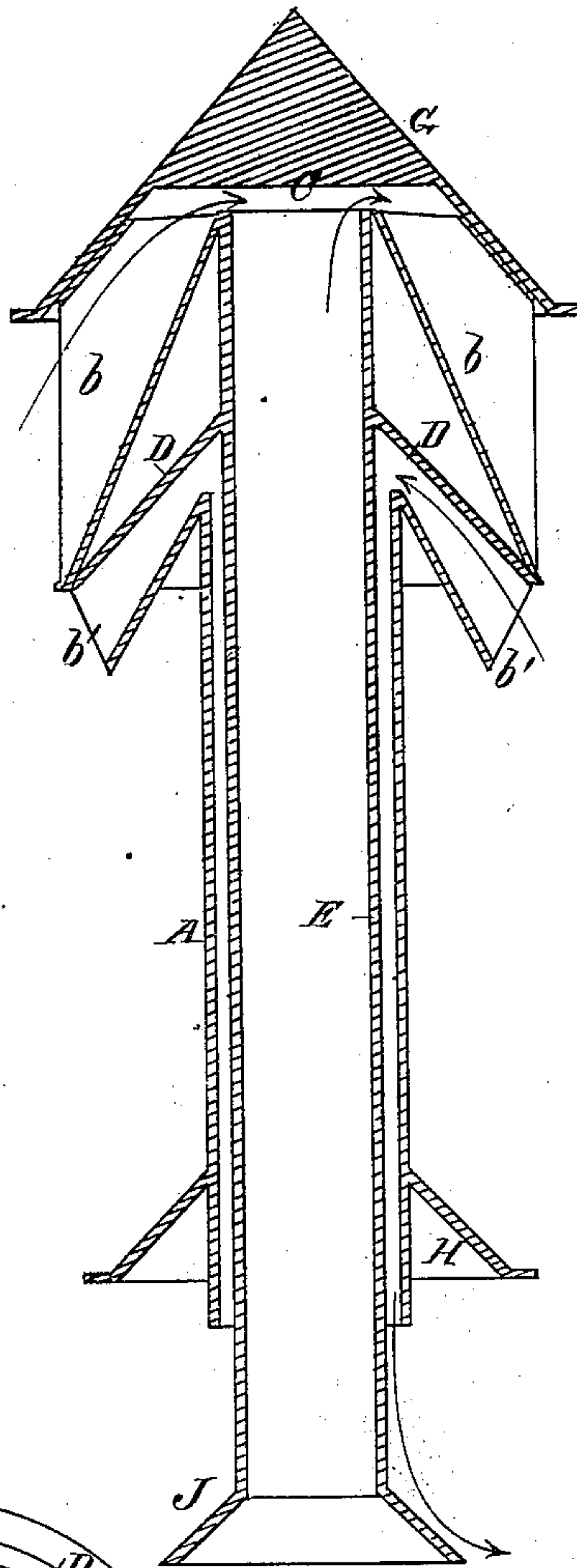


FIG. 2.

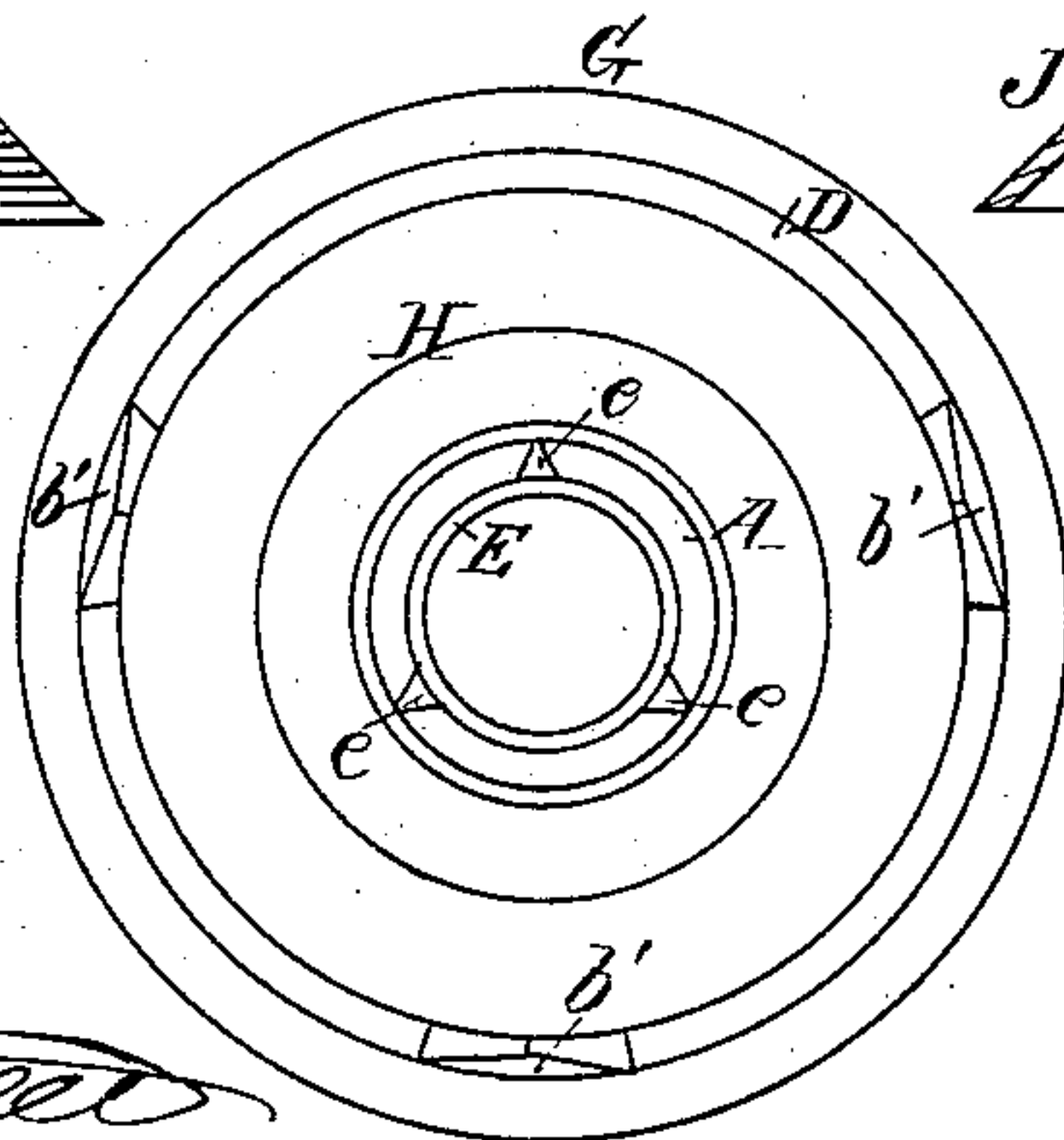


FIG. 3.

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IMPROVEMENT IN VENTILATORS.

Specification forming part of Letters Patent No. 217,712, dated July 22, 1879; application filed June 5, 1879.

To all whom it may concern:

Be it known that I, JOHN SMITH, of the city of Boston, county of Suffolk, and State of Massachusetts, have invented a new and useful Improvement in Ventilators, for removing impure air from and supplying pure air to the interior of buildings, which invention I will describe as follows, reference being had to the accompanying drawings, which form part of this specification, like letters indicating like parts in the different figures thereof.

Figure 1 of the drawings shows my ventilator in full working order. Fig. 2 is a sectional view of the appliance, and Fig. 3 a plan view.

B in Fig. 1 illustrates the round top of my ventilator, with conical-shaped roof or top G, which roof effectually prevents water or snow from entering the ventilator and thence passing into the building. E shows what I will call the "impure-air pipe," connecting the interior of the building or apartment to be ventilated with the top B and with the disseminator J, at the bottom of said pipe E, and, of course, within the building, which disseminator may be of the same piece with the pipe E and bent into the shape shown in the drawings, or it may be made separately and soldered or otherwise fastened thereto.

The pipe E extends into the top B, through the center thereof, nearly to the surface of the round flat plate C, as shown in Fig. 2 of the drawings, leaving a suitable air-space between the top of said pipe or tube and the surface of the plate C, the diameter of the tube E and that of the plate C to be the same. The pipe E is, of course, open at both ends.

Passages for taking air from the outside for the purpose of producing a draft in the impure-air pipe E are fully illustrated by *b* in Figs. 1 and 2.

H illustrates the base of the ventilator, which base rests upon the top of the building or apartment to be ventilated.

A shows what I will call the "pure-air pipe or tube," said tube being constructed around the impure-air tube E, and made of sufficient diameter to leave a suitable air-space between the outside circumference of the tube E, and the inside circumference of the tube A, which air-space shall extend throughout the entire length of the tube A.

The circular semi-conical plate D is and forms a part of the top B. The air-passages *b* rest upon this plate, as shown in Fig. 1 of the drawings. The tube E passes through the center of said plate, and is soldered or otherwise sealed thereto.

The top of the tube A is soldered or sealed to the under side of the plate D between the three air-passages *b'*, and extends down to a point a short distance below the base H, so that the lower end of the tube A, which end is left open, shall be a little below the line of the bottom of the base H, so that said open end of the tube A shall be inside the building or apartment to be ventilated.

Figs. 1 and 2 fully show the relative positions of the base H and the lower open end of the tube A.

The air-space formed between the outside circumference of the tube E and the inside circumference of the tube A, before described, is divided longitudinally and throughout its entire length by the three partitions *e*, all of which partitions are shown in Fig. 3 of the drawings, and the lower end of one is seen in Fig. 1.

The three air-passages *b'* (two of which are shown in Figs. 1 and 2, and the positions of all three are designated in Fig. 3) are soldered or sealed to the under side of the plate D in the manner shown in Fig. 1. These three air-passages *b'* are so arranged that one air-passage enters each of the three subdivisions of the air-space formed by the partitions *e*, as before described and shown. The positions of the air-passages *b'* are fully shown in Fig. 3.

I will describe the operation of my invention as follows: Currents of air from the outside pass up through the passages *b* into the air-chamber formed above the tube E, and strike the surface of the plate C near the center thereof. These currents of air create a powerful draft through the interior of the impure-air pipe E, by means of which the bad air from the building below is drawn up through the tube E, out of the top of the same, and escapes.

Arrows in Fig. 1 show the direction of the currents of air entering the passages *b*, and in Fig. 2 the direction of the currents of air through the passages *b* is shown as in Fig. 1;

and also the direction taken by the bad air in escaping from the tube E is shown in like manner.

Air from without enters each of the passages *b'* and passes into each of the three subdivisions of the air-space before described, and as there is no other outlet to these subdivisions except at the bottom of the tube A, this pure air passes down and out therefrom, strikes the disseminator J, and is disseminated or distributed throughout the surrounding space. The course of these currents of air is shown by arrows in Figs. 1 and 2; and thus the impure air is withdrawn from a building, and pure air supplied therein simultaneously and automatically.

Ordinary dampers may be placed in the air-passages *b'*, so that the outside air may be cut off from the building entirely or partially, if desired.

I claim as my invention—

1. In combination, the pipe E, the top B, with conical roof G, plate C, air-passages *b*,

and plate D, constructed and arranged substantially in the manner described, and for the purpose specified.

2. In combination, the pipe A, with partitions *e*, forming air-passages, as described, the air-passages *b'*, the plate D, the disseminator J, and the base H, constructed and arranged substantially in the manner described, and for the purpose specified.

3. In combination, the pipe E, the top B, with conical roof G, plate C, air-passages *b*, and plate D, the pipe A, with partitions *e*, the air-passages *b'*, the disseminator J, and the base H, constructed and arranged so as to withdraw bad air from and supply pure air to a building simultaneously and automatically, substantially in the manner herein described and shown.

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Witnesses:

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