

(No Model.)

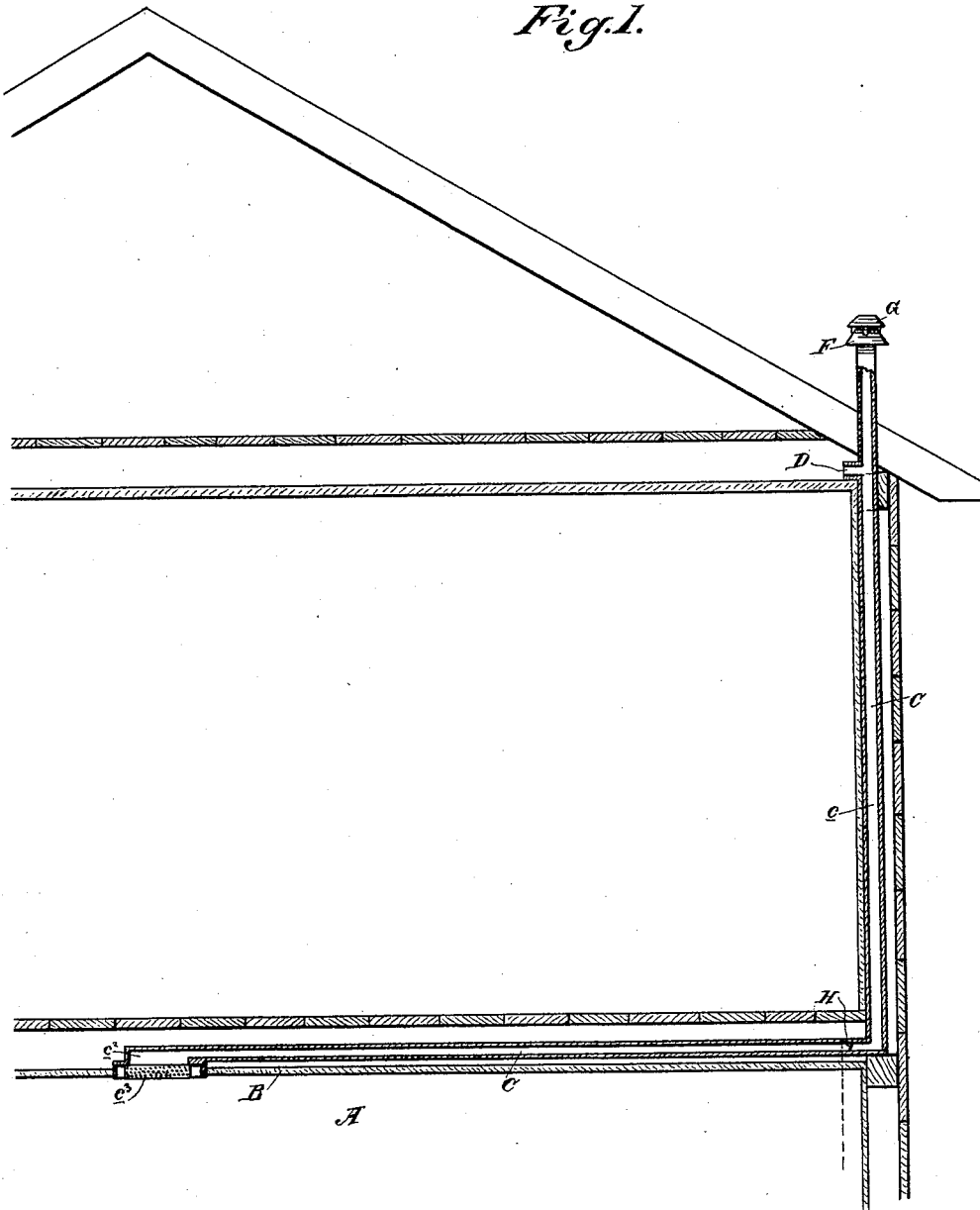
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P. ABRAHAMSON.  
VENTILATOR.

No. 454,195.

Patented June 16, 1891.

*Fig. 1.*



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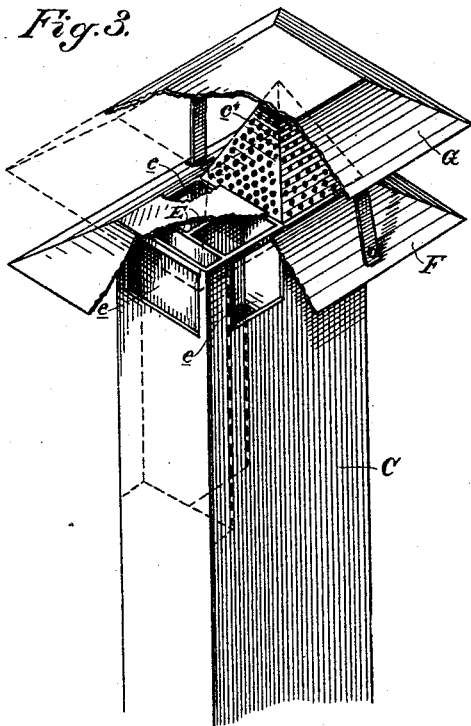
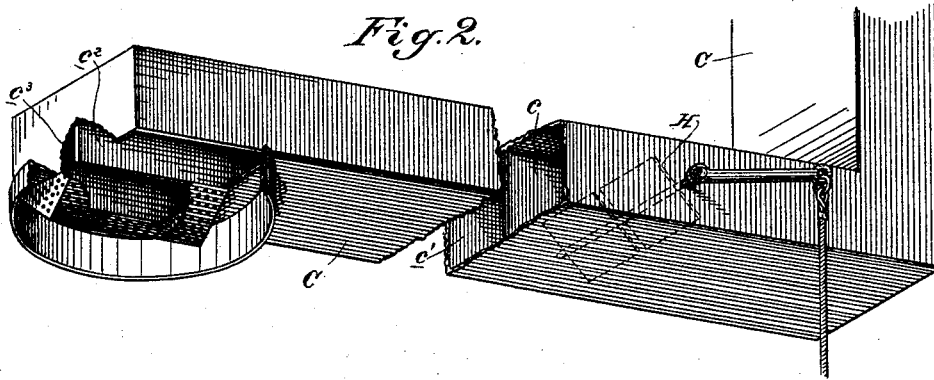
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2 Sheets—Sheet 2.

P. ABRAHAMSON.  
VENTILATOR.

No. 454,195.

Patented June 16, 1891.



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# UNITED STATES PATENT OFFICE.

PETER ABRAHAMSON, OF SAN FRANCISCO, CALIFORNIA.

## VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 454,195, dated June 16, 1891.

Application filed December 2, 1890. Serial No. 373,365. (No model.)

*To all whom it may concern:*

Be it known that I, PETER ABRAHAMSON, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Ventilators; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of ventilators in which separate passages are employed for the incoming and outgoing currents.

My invention consists in the novel construction of the outer or exterior end of the ventilator, the general object of which is to adapt the device for ventilating apartments from above by effecting an entrance of the ventilator into said compartments in the top portion thereof, thus using it for sidewalk and basement apartments, ceilings, gables, and the roofs or tops of other apartments.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a section of my ventilator in a house. Fig. 2 is a perspective view of the inner end of my ventilator. Fig. 3 is a perspective view of the outer end, portions being broken away to show interiors.

A represents an apartment, which may be a basement, an ordinary room, or a gable apartment. (Here shown as an ordinary room.) The entrance of the ventilator thereto is made in the ceiling B, and preferably around the center-piece thereof.

The ventilator consists of a suitable box or casing C, which extends along the ceiling to the wall and thence upwardly through the wall to the roof of the building, where it is exposed to the outer air; or this exposure may be made at points other than on the roof—as, for example, on the side of the building.

This ventilator is divided into two passages  $c$  and  $c'$ , which are formed, when the box is a rectangular one, as shown in Fig. 2, by a transverse partition.

The openings of the ventilator into the apartment A are represented by  $c^2$  and  $c^3$ , the former being for the hot air and fully exposed, and the latter being for the cold or fresh air and covered by a wire-gauze or perforated shield to reduce the capacity of the opening. The part D, connected with the up-

right trunk of the ventilator-box, represents a place where the connection can be made for the ceiling of an upper apartment, so that the same trunk can supply a vertical series of rooms. The outer or exposed upper end of the hot-air passage  $c$  is covered with a cone-shaped perforated sheet or wire-gauze  $c^4$ . The upper end of the cold or fresh air passage is covered, as by a hood  $f$ , and is divided by internal right-angled partitions E into three separate passages, each of which has a separate opening  $e$  in the sides of the box or casing near the top.

F is a hood which is fitted over the top of the ventilator in such a position that the conical-shaped cover  $c^4$  of the hot-air passage projects above it, while the openings  $e$  into the cold-air divisions are below the hood and under its walls.

G is a second hood forming a cover over the entire top of the ventilator to prevent the entrance of rain.

In case a damper be needed—as, for example, where it is desired to allow the room to become heated without interference from the ventilator—I provide a suitable one, such as is represented by H.

The main object I have in view is to ventilate the room from above. The heated air ascends, and seeking the passage having the opening of greatest capacity—namely, the free passage  $c$ —passes out through said passage and escapes through the upper end of the ventilator. This outgoing current naturally creates by exhaustion an incoming current of fresh air, which, seeking the freer openings at the top of the ventilator—namely, the openings  $e$  rather than the perforated covered opening  $c^4$ —will enter the cold-air passage  $c'$  and pass down through the ventilator into the upper portion of the room, and falling will seek the lowermost portion, thereby creating an effective circulation of air in the apartment, but without any drafts. The hood F tends to invite the cold air to the openings  $e$ ; but to prevent any interference of the cold-air current and yet to obtain the largest entrance capacity therefor I have the divisional walls E in the upper end of the cold-air passage, which by breaking up the passage into several smaller ones prevents interference

with the currents in entering the openings *e*, and also induces by their decreased capacity separately stronger currents into the general body of the cold-air passage.

- 5 Where basement and sidewalk apartments have to be ventilated the ventilator is properly located to introduce the air to and take it from the apartment at the top, while its outer end runs up to the external air in the most  
10 convenient position.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

- 15 1. In a ventilator, a casing square in cross-section having separate passages for the incoming and outgoing currents and having its upper end formed with openings in three of its sides, the right-angled partition in the upper end of one of the passages in said casing  
20 dividing said passage into sub-passages, each of which communicates with one of the openings in the three sides of the casing, and the hood *F* over said openings, substantially as herein described.

- 25 2. A ventilator consisting of a casing having a partition dividing it into two passages, one for the incoming and the other for the outgoing currents, a right-angled partition vertically disposed in the outer or upper end  
30 of the casing, forming a plurality of sub-pas-

sages, each of which communicates with a separate opening through the walls of the casing, a screen covering or cap over the outer end of one of the main passages, and a perforated or screen cover at the inner end of the  
35 other main passage, the opposite ends of said main passages having a free opening and the two passages being relatively reversed, substantially as herein described.

3. A ventilator consisting of a casing hav-  
40 ing separate passages for the incoming and outgoing currents, one of said passages at its outer end having a perforated cap and at its inner end a free opening, and the other of said passages having at its inner end a per-  
45 forated cover and at its outer end the right-angled partitions *E*, forming separate sub-passages, each of which has a separate opening through the walls of the casing to the ex-  
50 ternal air, the hood *F* over said openings and through which the said perforated cap projects, and the hood *G* over the whole top of the ventilator, substantially as herein described.

In witness whereof I have hereunto set my  
55 hand.

PETER ABRAHAMSON.

Witnesses:

S. H. NOURSE,  
J. A. BAYLESS.