

## Ventilator

Patented March 7, 1846.



# UNITED STATES PATENT OFFICE.

MOSES CHASE, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN CHIMNEY-CAPS.

Specification forming part of Letters Patent No. 4,392, dated March 7, 1846.

*To all whom it may concern:*

Be it known that I, MOSES CHASE, of Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Ventilators and Chimney-Caps for Ventilating Rooms and Increasing the Draft in Chimney-Flues, &c.; and I do hereby declare that the following description, taken in connection with the accompanying drawings hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements, by which my invention may be distinguished from others for the same purpose, together with such parts or combinations as I claim and desire to have secured to me by Letters Patent.

As ventilators have heretofore been constructed they have only served the purpose of discharging the foul air from the apartment or increasing the draft in a flue by the action of the external current of air near their discharging-mouth. By my improvements I effect, in addition to the result above suggested, the introduction of a current of fresh air from the windward end of the horizontal tube of the ventilator, which greatly facilitates ventilation and assists in some degree the discharging operation from the leeward end of said horizontal tube.

The figures of the accompanying plate of drawings represent my improved ventilator.

Figure 1 is a side view of the same. Fig. 2 is a longitudinal vertical section taken through the center of the apparatus, and Fig. 3 is a detail view which will be explained in the sequel.

A B is the vertical discharging-tube of the ventilator, which is made in two parts A B, the lower one A opening at its foot into the apartment near the ceiling or roof C C of the same, while the upper one B at its foot shuts over the top of the lower tube A, so as not to break the upward current, and its top is secured to and opens into the horizontal tube D E on its under side, as shown in the drawings. The horizontal tube D E and parts connected to it turn freely on the vertical pintle or rod *a a*, arranged as usual and as shown in Fig. 2, and said tube D E has a vane *b* on its leeward end E, by which its movements are controlled and by which it is kept longitudinally in the same direction as that in which the

wind blows. The horizontal tube D E has the shape of a frustum of a cone, the apex being truncated therefrom, and the wind blowing in a direction from D to E, as shown by black arrows, Figs. 1 and 2, will disturb the air in front of the mouth at E or create a partial vacuum therein, and thereby cause the foul air, &c., to pass up through the discharging-tube A B and out of the tube D E, as shown by the blue arrows in Fig. 2.

There is no passage through from end to end of the tube D E, but the windward end D is open to the atmosphere, and the mouth of the descending flue or tube *c d e f*, through which fresh air is introduced to the apartment, is fastened to this windward end. The tube or pipe *c d e f* is shaped as shown in Fig. 2 and is of a smaller diameter than the discharging-flue A B, through the center of which its vertical part *d e f* is arranged. This tube, like the tube A B, is also made in two parts, the upper part *c d* being of the elbow shape shown in Fig. 2 and shutting into and breaking joints with the lower part *e f*, so that the descending current of fresh air passing, as shown by red arrows in Fig. 2, may not be interrupted. The vertical part *d e f* of the descending flue is made considerably longer than the discharging-tube A B, its discharging-mouth *f* being some distance below the receiving-mouth A of said tube A B. This arrangement or greater length of the tube *c d e f* is essential to avoid the interference of the two currents of air, &c., and the introduction of the fresh air in the manner described will disturb the air, gases, &c., in the room and create a circulation, the foul air, &c., passing out through the tube A B, as described, and giving place to the fresh air introduced, as specified. The windward end of the horizontal tube D E is provided with a curved protecting-plate *g*, shaped as shown in the drawings, to prevent the rain, &c., from beating down through the descending flue *c d e f*.

Where my apparatus is used to increase or improve the draft in chimney-flues, I carry the descending or fresh-air tube down a proper distance in said flues, as shown in Fig. 3, (which is a detail view of the lower part of such a flue and descending tube,) and I apply to the lower end *f* of the descending tube a reflecting-cap *h i*, having a cylindrical part *h*

larger in diameter than the lower end *f* of said tube, and a conical bottom *i*, which reflects the downward current of fresh air, as shown by the arrows in Fig. 3, and thereby assists the upward current in the tube A B in a manner which will be readily comprehended.

I do not wish to be understood as limiting myself to the shapes of the various parts as I have described them, as they may be varied in numerous ways and my improvement of a descending flue for the introduction of fresh air be just as effectual.

What I claim therefore as my invention, and desire to have secured to me by Letters Patent, is—

1. A ventilator or chimney-cap with a hori-

zontal turning top having a descending flue or tube for the introduction of fresh air opening from the windward end of said horizontal turning top and passing down through the discharging flue or tube and below the bottom of the same, as hereinabove set forth, the whole arrangement being substantially as hereinbefore specified.

2. The combination of the reflecting-cap *h* *i* with the bottom of the descending or fresh-air tube, the arrangement and purpose of the same being substantially as above set forth.

Boston, October 6, A. D. 1845.

MOSES CHASE.

Witnesses:

EZRA LINCOLN, Jr.,

GEORGE LEONARD, Jr.