P. MIHAN.
Ventilator.

No. 196,099. Patented Oct. 16, 1877.

Fig 1.

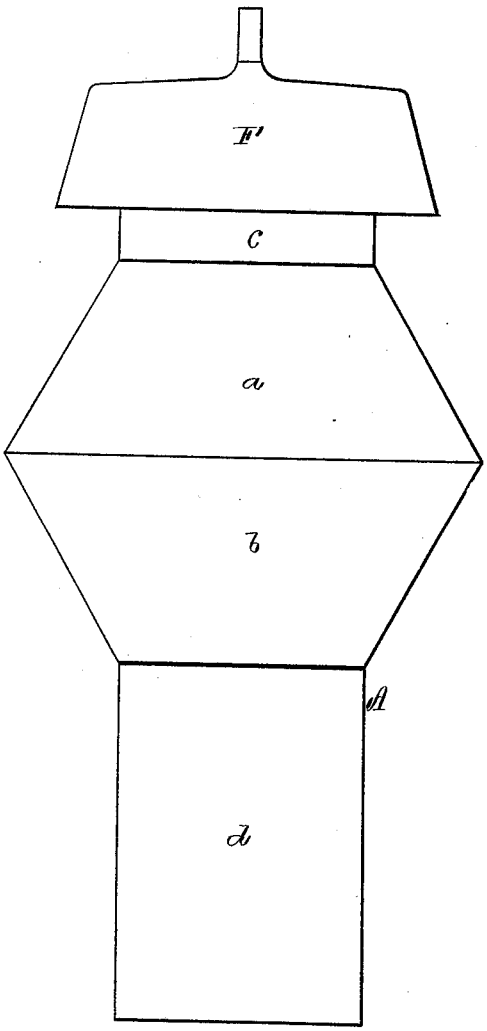
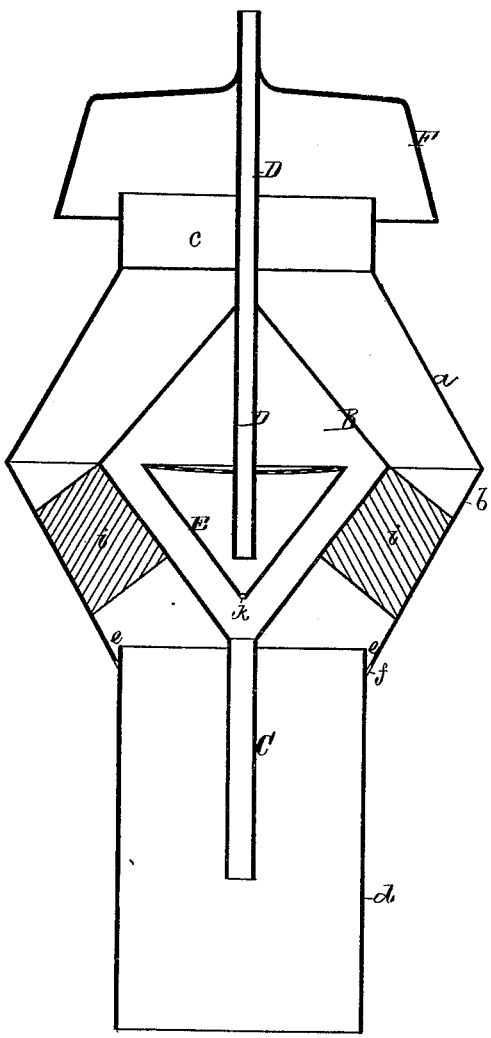


Fig 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

PATRICK MIHAN, OF CAMBRIDGEPORT, MASSACHUSETTS.

IMPROVEMENT IN VENTILATORS.

Specification forming part of Letters Patent No. **196,099**, dated October 16, 1877; application filed September 7, 1877.

To all whom it may concern:

Be it known that I, PATRICK MIHAN, of Cambridgeport, of the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Ventilators; and do hereby declare the same to be described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a side elevation, and Fig. 2 a vertical section, of a ventilator embodying my invention.

In this ventilator there is combined, with a flue in its upper part, a close heat-radiator or steam receiver or vessel, an induct for supplying it with steam, and an educt for discharging the steam from it, (the said vessel,) and there is also within the said radiator or steam-receiver a foraminous vessel or deflector, which is so constituted and so applied to the eduction-pipe as to cause the steam that may be received into the radiator to escape therefrom into the deflector, and thence into and through the educt.

There is also to the flue and its auxiliaries, as mentioned, a frusto-conical or other proper shaped hood or cap, which, in this instance, is represented as fixed concentrically to and is supported by the educt.

In the drawings, the flue or tube A, where it is to receive the radiator, is represented as enlarged or composed of two hollow conic frustums, *a b*, united at their larger bases, the remaining portions *c d* of the flue being cylindrical. The lower part, *d*, extends a short distance up within the frustum *b*, in order to form between the two a trough, *e*, which I provide with an opening, *f*, in its side, for the discharge from it of any water that may be caught in or by the trough. This trough is to prevent any water that, dropping on the radiator, may be deflected from it and gather on or pass down the inner surface of either of the frustums *a b* from passing into and down the flue part *d*.

Within the enlarged part of the flue is the close heat-radiator B, which, as shown, is formed of two hollow cones, united at their larger bases. An induction-pipe, C, leads into the lower part of the vessel B. Another or eduction pipe, D, extends upward from and downward within the vessel B, and into another or conical vessel, E, arranged in the said vessel B, in manner as represented. The top of the vessel E is perforated with numerous holes or is foraminous.

The vessel B is supported within the flue by radial wings *i i*, and there is over the top of the flue an open cap or bonnet, F, arranged therewith, and supported by the steam-eduction pipe, in manner as represented.

Furthermore, there is at the apex of the deflector E a small hole, *k*, for the discharge from such vessel of any condensed steam.

This ventilator is particularly designed for use on buildings provided with steam-engines or other means of producing what is termed "waste steam," generally discharged into the atmosphere. My object is to utilize this steam—in other words, intercept more or less of its heat and cause it to aid in producing a current of air within and up through a ventilating-flue. To this end, I place within the upper part of such flue a radiator, into and through which the steam shall be caused to pass before flowing into the atmosphere, and within this radiator I employ a deflector, as described, into and through which the steam passes after being caused by such deflector to flow uniformly against the inner surface of the radiator. Were the escape-pipe to open directly out of the upper end of the radiator, the steam in passing through the said radiator would be liable to rush in a current through it with little or no impingement against its sides. The deflector prevents this, and spreads or deflects the steam against the inner surface of the radiator.

By arranging the radiator within the upper part of the ventilating-flue of a building, the column of air within such flue becomes heated at top by said radiator, when receiving steam. This induces a draft or current of air up the flue, and prevents any downward draft therein, such as often takes place when the air receives heat at the bottom of a flue.

The advantages of my ventilator are the prevention of descending currents of cool air in the flue and the utilizing of waste steam, as set forth.

I claim—

1. In combination with a ventilating-flue, A, a steam heat-radiator, B, substantially as described, and its induct C and educt D, arranged

in the upper part of said flue, as and for the purpose set forth.

2. The combination of the foraminous deflector E, substantially as described, with the heat-radiator B and its induct C and educt D, placed in the upper part of a ventilating-flue, A, all being arranged and to operate as set forth.

3. The combination of the cap or hood F, ventilating-flue A, steam heat-radiator B, as explained, and its induction and eduction pipes C D, all arranged and applied substantially as set forth.

4. The combination of the cap or hood F, ventilating-flue A, radiator B, deflector E, and the induction and eduction pipes C D, all being arranged and applied essentially as shown and described.

5. The ventilating-flue A, provided with the radiator B and its induction and eduction pipes C D, and with the trough *e* and its educt *f*, arranged as specified.

PATRICK MIHAN.

Witnesses:
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