T. EWBANK.

Ventilator.

No. 2,888. Patented Dec. 17, 1842.

Fig. 2.

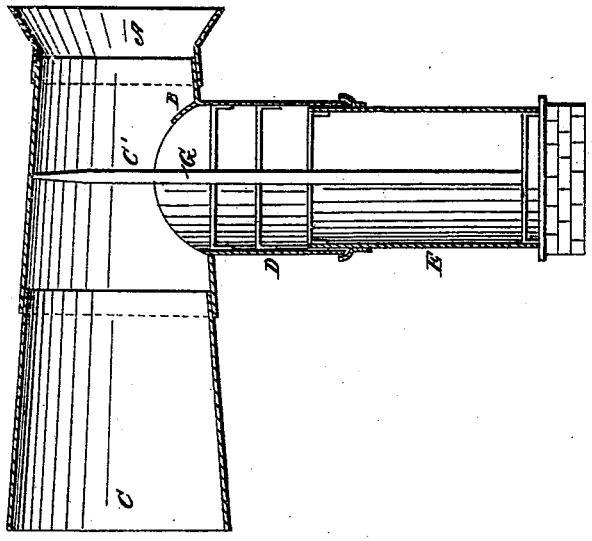
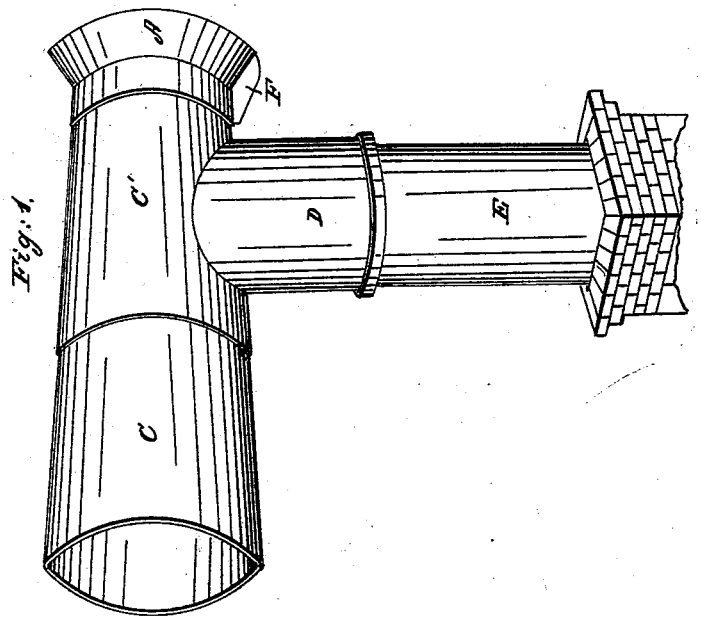


Fig. 3.



UNITED STATES PATENT OFFICE.

THOMAS EWBANK, OF NEW YORK, N. Y., ASSIGNOR TO JORDAN L. MOTT.

CHIMNEY-CAP.

Specification of Letters Patent No. 2,888, dated December 17, 1842.

To all whom it may concern:

Be it known that I, THOMAS EWBANK, of the city of New York, in the State of New York, have invented a new and useful improvement in the manner of constructing a ventilator intended to promote an upward draft in trunks, flues, or chimneys, so as to promote the discharge of foul air, noxious vapors, or smoke from mines, cellars, vaults, or other confined places or apartments; and I do hereby declare that the following is a full and exact description thereof.

My ventilator, or chimney cap, consists of a vertical tube, which is to be placed upon the top of the flue, or chimney, in the ordinary manner; and this vertical tube is surmounted by a tube placed horizontally upon it, and into which it opens; this horizontal tube is open at both ends, and is so combined with the vertical tube as to revolve upon it, and thereby to enable it to take the direction of the wind, as is usually the case with chimney caps, or ventilators.

My improvement consists in the manner in which I form this horizontal tube, by which improved form the action of the wind upon it in producing an upward draft in the flue, or chimney, is rendered much more effective than in the ventilators hitherto known and used. This horizontal tube consists of a conical frustum which is so placed upon the vertical tube as that its larger end shall be at a considerably greater distance from it than the smaller end. There may, also, be a vane attached to this longer end, if preferred, but I have not found this necessary in practice, as its length and form give it the attributes of a vane, and keep its smaller end toward the point from which the wind blows.

In the accompanying drawing, Figure 1 is a perspective view of my ventilator and Fig. 2 a section through the axes of both of the tubes.

E, and D, are two segments of the vertical tube, the upper portion, D, of which is made to revolve on E, the lower portion.

C, C′, is the horizontal, conical frustum, which is represented in the drawing as regularly conical from end to end, but I sometimes make the part C′, cylindrical where it is in immediate contact with the vertical tube; this, however, is merely a matter of convenience in joining the respective parts together, and has no sensible influence on the action of the instrument. To the smaller end I sometimes attach a short, flaring rim, or conical frustum, as shown at A, with a view to the directing a larger portion of wind into the horizontal portion of the cap, but this appendage, although useful, is not essential to the proper operation of the instrument; and when employed, care should be taken that it should not extend so far from the smaller end of the tube as materially to interfere with the sweeping of the wind over the surface of the longer end; as, in this case, it would be productive of injury, and would render the employment of a vane necessary. I sometimes, also, place a piece of sheet metal, sloping forward, as shown at B, at the rear side of the opening from the vertical, into the horizontal tube, with a view to the preventing of the entrance of wind into said opening; but this may be omitted, as the instrument has been found to operate well without it, although it is productive of some advantage.

I do not intend to limit myself to any particular proportion in the dimensions of the respective parts of this ventilator, as considerable latitude may be allowed in this respect without materially interfering with the action of the instrument, but the length of that part of the horizontal tube which constitutes the larger end of the cone should equal from two to three times the diameter of the vertical tube, measuring from the axis of said tube; the shorter end need not extend more than four or five inches beyond the vertical tube. The longer end may be balanced by a weight F, on the shorter end, G, is the shaft upon which the horizontal tube revolves, in the same manner with many other ventilators.

Having thus fully described the nature of my improvement in the manner of constructing ventilators, or chimney caps, I do hereby declare that I do not claim the making of the horizontal portion or tube of such ventilators open at both ends, so as to admit of the passing of a current of air freely through it, this device having been resorted to in chimney caps or ventilators now in use, but

What I do claim as new, and desire to secure by Letters Patent, is—

The giving of a conical form to the horizontal tube, from one end thereof to the other, or through the greater part of its length, as set forth, the longer end of said conical tube extending to a distance beyond

the vertical tube, much greater than that of the shorter end, in the proportion, or nearly in the proportion, hereinbefore designated. I also claim the combining of the flaring, or conical, rim A, with the horizontal tube of my ventilator, constructed as herein described; and I likewise claim the combining of a projecting piece of sheet metal with such horizontal tube, at the rear of the opening of the vertical flue, in the manner shown at B, for the purpose set forth; the whole apparatus being formed arranged substantially in the manner herein fully made known.

THOMAS EWBANK.

Witnesses:
AUG. F. WEEKE,
JOHN L. LAWSON.