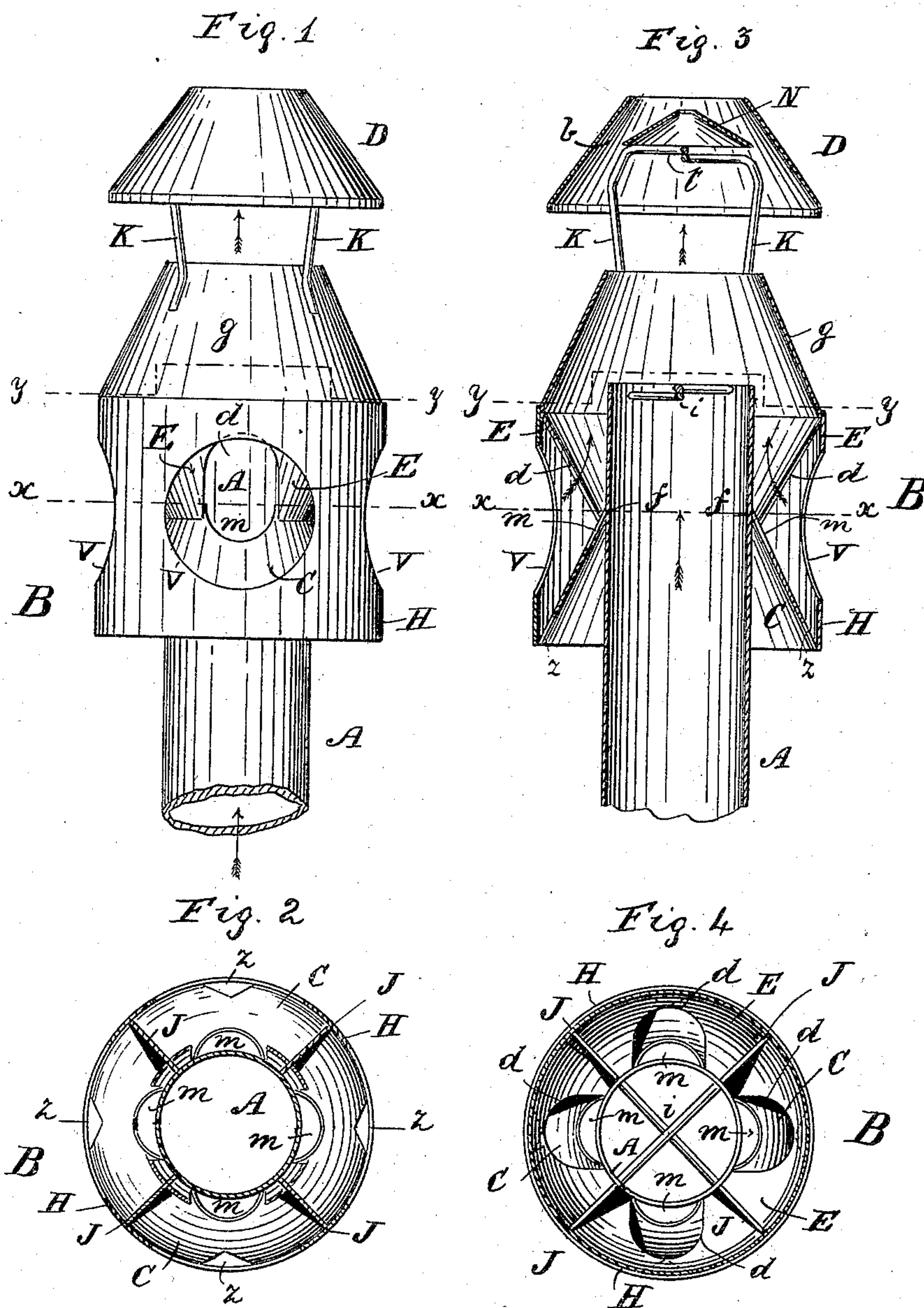


(No Model.)

B. SCARLES.  
VENTILATOR.

No. 335,963.

Patented Feb. 9, 1886.



Witnesses.

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# UNITED STATES PATENT OFFICE.

BENJAMIN SCARLES, OF CLINTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF  
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## VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 335,963, dated February 9, 1886.

Application filed July 30, 1885. Serial No. 173,063. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN SCARLES, of Clinton, in the county of Worcester, State of Massachusetts, have invented a certain new and useful Improvement in Ventilators, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of my improved ventilator, a portion of the body being represented as broken off; Fig. 2, a horizontal section of the same, taken on the dotted line  $x x$  in Fig. 1; Fig. 3, a vertical longitudinal section, and Fig. 4 an irregular horizontal section taken on the dotted line  $y y$  in Fig. 3.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

In the use of many of the ordinary ventilators employed for ventilating bleacheries, breweries, dye-houses, water-closets, &c., it has been found that when the wind blows in certain directions the draft is checked or entirely stopped, and also that sometimes the outer currents of air act to reverse the draft or cause the wind to blow down the ventilator.

My invention is designed to obviate this objection and produce a ventilator which will effectually prevent the draft from being reversed or a downward draft from being formed within the body of the ventilator by any ordinary cause; and to that end I make use of means which will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the body, B the head, and D the cap. The body is hollow and preferably cylindrical in form, and may be of any required length according to the position in which it is used. The head consists in part of a petticoat, C, attached at  $f$  to the body A, and provided with four holes or openings,  $m$ , preferably arranged at regular intervals and opening upwardly adjoining said body. Resting on the upper portion of said petticoat, and flaring outwardly, there is an annular guard, E, also forming a part of the head B, said guard

being provided with four holes or openings,  $d$ , which are arranged to register with the holes  $m$  in the petticoat, the size or diameter of said guard at its top and said petticoat at its bottom corresponding. The cover of the head consists of a detachable cylindrical case, H, which is open at the top and bottom, and adapted to be passed on over the petticoat C and guard E, said case having a conical top,  $g$ , the bottom of which rests on the top of the guard E when the cover is in position for use. There are four large round holes or openings,  $v$ , through the sides of the case A, these openings being so disposed or arranged as to register with or stand opposite the holes  $m$  in the petticoat C and holes  $d$  in the guard E, as best seen in Fig. 1, each of the holes  $v$  extending downwardly somewhat lower than the bottoms of the holes  $m$  and upwardly as high or nearly as high as the top of the holes  $d$ . A vertically-arranged triangular partition or wall, J, is disposed within the case H, between each pair of the holes  $d$ , said partitions being attached by their inner edges to the outer sides or walls of the petticoat C and guard E, but not connected to the case H, the object of said partitions being to prevent a current of air, after it enters either of the holes  $v$ , from passing laterally around the outer sides of the petticoat C and guard E, and to direct it through the hole  $d$  into the top  $g$  of the case H. Four small triangular holes,  $z$ , are formed in the lower edge of the petticoat C, one immediately below each of the holes  $v$ . The cap D is shaped like the frustum of a hollow cone, being open at the top and bottom and supported on the standards K, to which it is attached. The upper ends of the standards K are bent inwardly, as shown at  $t$ , and mounted thereon is an auxiliary cap or guard, N. This guard is conoidal in form and less in diameter than the diameter of the cap D at the point where the guard is disposed, but greater in diameter than the opening in the top of said cap, thus leaving an annular draft-space around it, as shown at  $b$  in Fig. 3. A cross-brace,  $i$ , is disposed in the top of the body A opposite the partitions J, to strengthen said body.

My improved ventilator is designed to work on the vacuum principle, the currents of air which enter the head B or attempt to pass



down into the body A through the cap D tending to produce a vacuum above said body in the top *g*, and thereby increasing instead of diminishing the draft. For instance, when a  
 5 current of air enters the head B through one of the holes *v* from any point, either above, below, or to the right or left of said hole, said current will strike the petticoat C, guard E, and partition J at either side of the hole *d*  
 10 and be directed through said hole against the body A, thence passing upwardly between said body and the guard E, and out of the ventilator through the open top *g* of the casing H, the force of said current upwardly as it passes the  
 15 top of the body A tending to create a vacuum at that point, and thereby causing the air within the body to be drawn upwardly to fill said vacuum or creating a draft in a manner which will be readily obvious without a more  
 20 explicit description. A current of air entering beneath the petticoat C will also pass upwardly through the holes *m* and *d* by the side of the body A and create a draft within said body in substantially the same manner as the  
 25 currents which enter the holes *v*. A current of air moving horizontally, or nearly so, and striking the inclined or conical top *g* of the case B, will be deflected upwardly and tend to produce a vacuum within said top, thus causing a draft within the body A, while a downward current, entering the top of the cap D, will strike the guard N and be deflected in  
 30 such a manner as to pass outwardly over the top *g* and produce a vacuum within said top.  
 35 From the foregoing it will be obvious that when a current of air moving in any direction strikes the head of the ventilator the upward draft within the body A will be increased instead of diminished or reversed, as frequently  
 40 occurs with ventilators of the ordinary construction. The holes *z* are to permit the escape of the dust, dirt, cinders, &c., which may

enter the holes *v* and lodge in the chambers between the partitions J. They also subserve the purpose of draft-flues to aid in the proper  
 45 action of the ventilator, but may be omitted, if desired.

It will be obvious that the ventilator may also be used as a chimney-cap, to prevent a chimney from smoking or the entrance of wa-  
 50 ter into the flue, if desired.

The case H may be permanently attached to the petticoat C and guard E, if desired, and, instead of being attached to the body A, said guard and petticoat may be permanently se-  
 55 cured to the case H and not attached to said body, proper means being employed to keep the head in position.

The braces *i* may be omitted, if desired, and the standards K may also be substituted by  
 60 any suitable device for supporting the cap D and guard N.

Any desired number of openings or holes *v* may be made in the case H, a corresponding number of holes *m* *d* being of course made in  
 65 the petticoat C and guard E.

Having thus explained my invention, what I claim is—

In a ventilator, the body or pipe A, the petticoat C, disposed near the top of said body  
 70 and provided with openings *m*, the inverted cone-shaped guard E, disposed above said petticoat and provided with openings coinciding with the openings *m*, the case H, surrounding said petticoat and guard and provided with  
 75 the openings *v*, conical top *g*, and partitions J, the conical cap or hood D, supported above the conical top *g*, and the guard N, disposed within said cap or hood, combined and arranged to operate substantially as described.  
 80 BENJAMIN SCARLES.

Witnesses:

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 HENRY P. SANGER.