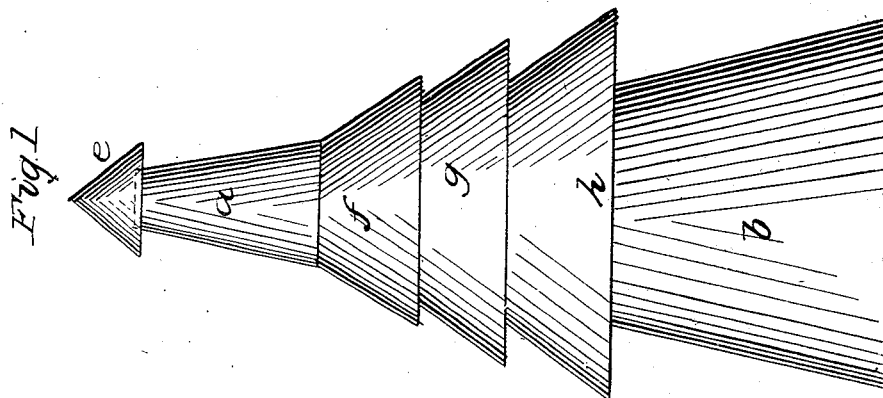
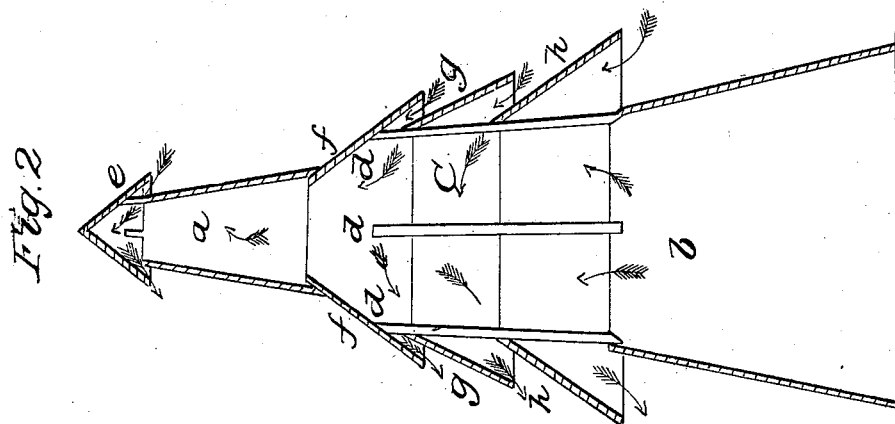


M. COLLINS.
Chimney Cowl.

No. 4,487.

Patented April 25, 1846.



UNITED STATES PATENT OFFICE.

MICHAEL COLLINS, OF BOSTON, MASSACHUSETTS.

VENTILATOR FOR CHIMNEYS.

Specification of Letters Patent No. 4,487, dated April 25, 1846.

To all whom it may concern:

Be it known that I, MICHAEL COLLINS, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Ventilator to be Applied upon the Tops of Buildings or Flues for Discharging Foul Air, Smoke, or Noxious Gases; and I do hereby declare that the nature of my invention and the manner in which it is constructed and operates are fully set forth and represented in the following specification, accompanying drawings, letters, figures, and references thereof.

Of the aforementioned drawings Figure 1 denotes a front elevation and Fig. 2 a central and vertical section of my improved ventilator.

It is made as follows. Two hollow conic frusta *a*, *b*, Figs. 1 and 2 (the superior one of which frusta is smaller in the diameter of its base than the other is in that of its top) are arranged so that the one shall be directly above the other and apart from each other so that there shall be an opening or space *c* (Fig. 2) between them. They are held in position by any suitable number of rods *d*, *d*, &c., which extend from the top of the interior frustum to the bottom part of the other and are suitably fastened thereto. The opening at the top of the frustum *a* may or may not be surmounted by a conical cap or bonnet *e* which when placed over it should be elevated and sustained somewhat above the top of the frustum and so that the plane of the base of the conical bonnet may be somewhat below the plane of the top of the frustum *a* as seen in the drawings. The opening or space *c* before mentioned is to be surrounded by one or more hollow frusta shaped and arranged with respect to it and the lower frustum 3 as seen in the drawings, that is to say, the upper frustum *f* is at top of the same diameter as that of the base of the frustum *a*, and is joined at top to the base of the frustum *a* and spreads downward therefrom as seen in the drawings. The second frustum *g* is secured to the rods *d*, *d*, &c., and has its top arranged in a plane even with or a very little above that of the bottom of the frustum *f*. The third frustum *h* is also secured to the rods *d*, *d*, &c., and so that the plane of its top may be a little above or even with that of the bottom of the frustum *g*. The bottom of the frustum *h* should be in a plane even with or a little below that

of the frustum *b*. Instead of using three or more frusta *f*, *g*, *h*, in connection with the frusta *a*, *b*, but one may be employed that is to say the frusta *f* may be of a length to extend around the opening *c* and down to or a little below the level of the top of the frustum *b*, but I prefer adapting three or more as I find the operation of the ventilator is much improved thereby.

The said ventilator is so constructed as to be placed upon the top of the smoke flue or any passage for the discharge of impure air from an apartment and adapted thereto so as to receive the said air or smoke as it escapes from the said flue or passage. The wind when blowing horizontally from any quarter will impinge against the outside surfaces of the frusta *f*, *g*, *h* and *b* and by them be directed upward through the opening *c* and thence will pass horizontally or be deflected toward the the opposite side of the opening *c* and pass downward and outward between the frusta *f*, *g*, *h*. In so doing the wind will create a powerful draft up the flue and carry away with it the smoke or impure air which may arise in the flue. When the wind or external atmospheric current strikes the frusta in a vertical direction or in any direction inclined to the horizon, the conic form of the frustum *a* deflects it toward and upon the frustum *f* immediately below it and thereby greatly improves the effect or action of the said frustum *f* upon the draft of the flue.

I have found in practice that a series of conic or pyramidal frusta arranged together as above explained operates much better than a series of frusta such as *f*, *g*, *h*, applied upon hollow cylinders or tubes in the place of the conic frusta *a*, *b*.

While a small orifice or opening at the top of the frustum *a* at some times permits the escape of smoke at others it allows the external air to descend through it in such manner as to prevent interruption to the lateral currents passing through the ventilator and by impinging against said lateral currents it aids at times in directing them out of the ventilator.

My improvement, I conceive to consist in a great measure in the employment of the two conic frusta *a* and *b* (in connection with the other conic frusta *f*, *g*, *h*) instead of straight tubes as I find it demonstrated by practice that under the various changes of wind the said frusta *a*, *b* renders the opera-

tion of the ventilator far better than when constructed of cylindric tubes combined with frusta *f, g h*.

Therefore I claim as my invention or improvement—

The employment of the hollow conic frusta *a* and *b* in connection with the hollow frusta *f, g, h*, in the manner and for the purpose of improving the operation of

the ventilator substantially as above described. 10

In testimony whereof, I have hereto set my signature, this twenty-fifth day of October A. D. 1845.

MICHAEL COLLINS.

Witnesses:

R. H. EDDY,
GEO. H. BAILEY.