A. M. RICE.

Ventilator.

No. 7,275. Patented April 9, 1850.

Fig. 1.

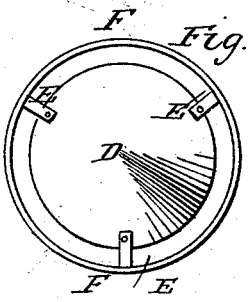


Fig. 2.

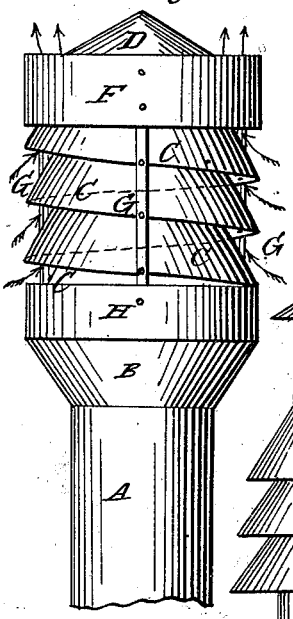


Fig. 3.

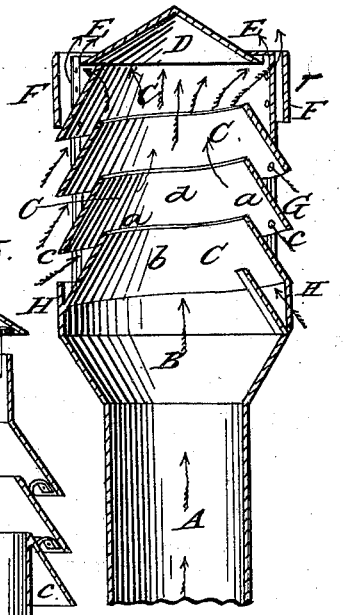


Fig. 4.

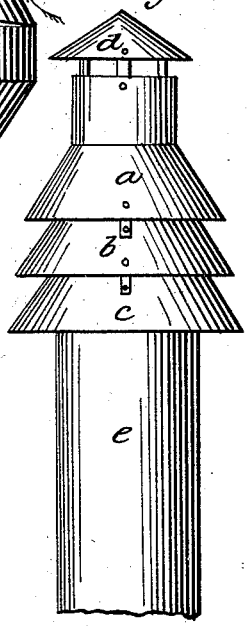
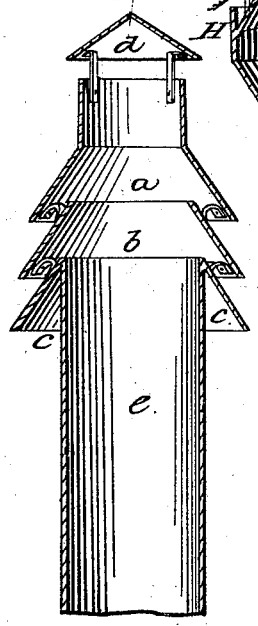


Fig. 5.



UNITED STATES PATENT OFFICE.

AUGUSTUS M. RICE, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO LOMBARD & RICE.

CHIMNEY-CAP.

Specification of Letters Patent No. 7,275, dated April 9, 1850.

To all whom it may concern:

Be it known that I, AUGUSTUS M. RICE, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful or Improved Ventilator to be applied to Chimneys or Flues for Increasing their Draft; and I do hereby declare the same to be fully described and represented in the following specification, and accompanying drawings, figures, letters, and references thereof.

Of the said drawings, Figure 1, denotes a top view. Fig. 2, a side elevation, and Fig. 3, a central and vertical section of my improved ventilator.

In the said drawings, A, represents the main tube or conduit of the ventilator, which (tube) is placed on the end or top of the flue or chimney from which the smoke or rarefied air, or noxious gas is to be extracted. The top of the tube A, terminates in a flare or inverted frustum B, from the top of which a helix, or helical fender or guard C, springs and runs upward, and is joined at its upper end to a conical cap D, which is made somewhat larger in diameter than the internal diameter of the helical fender. This cap is supported in its position by three or any other suitable number of arms E, E, E, which are connected to it, and to a deep cylindrical hoop F, which has a diameter equal to the external diameter of the helical fender, and is supported in the position seen in the drawings by a suitable number of upright bars G, G, which are elevated from another and similar hoop H, united to the upper edge of the frustum B. These bars G, G, also serve to support the helical fender the turns of which are fastened to them (the barb) at or near their lower edges. The helical fender or guard is formed of a long strip of sheet metal, which is bent around a cylinder (whose diameter equals the inner diameter of the fender) in such manner that while one edge of it is in contact with the surface of the cylinder, the surface of each helical turn of the strip shall be inclined to the said surface of the cylinder and outward and downward therefrom; the helix curve having such a rise as it passes around the cylinder as to bring the lower edge of each of the coils or turns somewhat below the upper edge of the coil immediately or next below it; the same being as exhibited in the section in Fig. 3, in which it will be seen that the points *a*, *a*, of the upper edge of the coils *b*, are respectively above the points *c*, *c*, of the lower edge of the coil *d*.

The coils are wound at a suitable distance apart, so as to permit the wind to blow between them, and upward, and toward the cap D. By striking against them the wind is deflected from one to another in such manner that it is not only directed upward, but has a whirling or eddying motion imparted to it in such a manner as to produce a material improvement in the draft, the smoke being in a great measure carried up with the current and discharged just below the cap of the ventilator.

The experiments I have tried with the helical guard ventilator prove it to be much superior to a ventilator composed of a series of hollow conic or pyramidal frusta, arranged one above another, and so that the base of one shall be somewhat below the top of the one next below it, such a ventilator being represented in Figs. 4, and 5, (the former being a side elevation while the latter is a central section of it). In the said figures *a*, *b*, *c*, denote the conic frusta, *d*, the cap, and *e*, the main tube of the ventilator.

I lay no claim to the invention of a ventilator, made with a series of conic or pyramidal guards, fenders, or frusta, as represented in Figs. 4, and 5, but

What I do claim as my improvement is—

One made with the helical continuous fender or guard, applied to the chimney or flue, and having its coils arranged or inclined with respect to one another substantially as herein before specified.

In testimony whereof I have hereto set my signature this twenty-fourth day of January, A. D. 1850.

AUGUSTUS M. RICE.

Witnesses:

R. H. EDDY,

F. GOULD.