C. K. SCUDDER.

Chimney Cowl.

No. 6,449. Patented May 15, 1849.

Fig. 1.

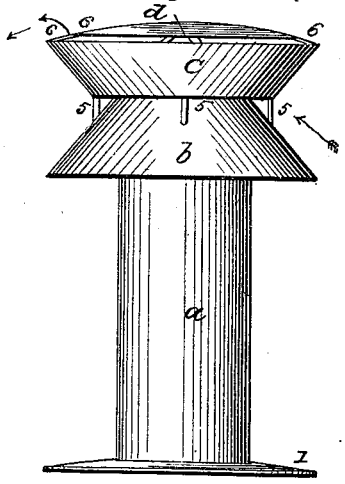


Fig. 2.

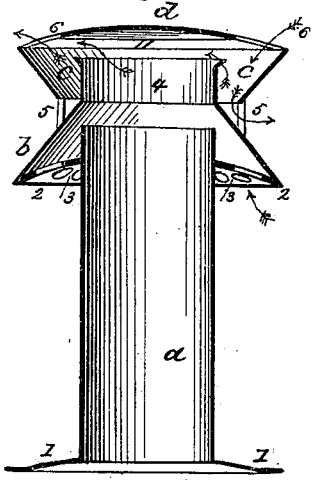


Fig. 3.

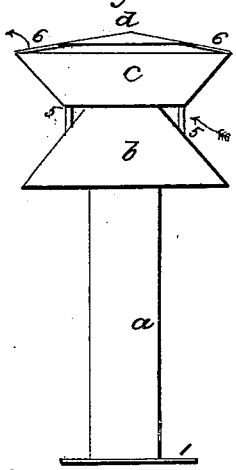
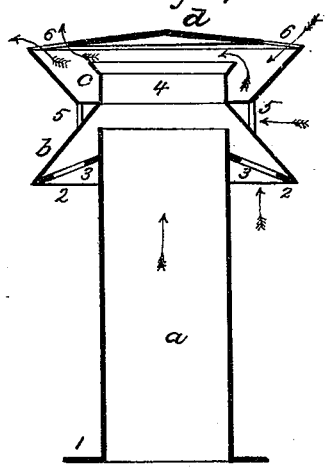


Fig. 4



Witnesses

W. Ferrell

Samuel W. Sorrell

Inventor.

Chas K. Scudder

UNITED STATES PATENT OFFICE.

CHARLES K. SCUDDER, OF BROOKLYN, NEW YORK.

CHIMNEY-CAP.

Specification of Letters Patent No. 6,449, dated May 15, 1849.

To all whom it may concern:

Be it known that I, CHARLES K. SCUDDER, of the city of Brooklyn and State of New York, stove dealer, have invented and made and applied to use certain new and useful improvements in the construction of ventilators for use over buildings or flues from which it is desirable to facilitate the escape of any impure air, such improvements consisting in so applying pyramidal or conical frusta outside a square or circular termination to a flue or other opening that the upward internal current shall be accelerated in nearly vertical lines until when leaving the flue or opening, where the upward current is deflected outward by a cap, serving the twofold purpose of preventing rain and eddy wind entering the flue or opening and of directing any external horizontal current of air so that it shall facilitate the final escape of any noxious air from below, for which improvements I seek Letters Patent of the United States, and that the construction and operation of the said improvements are fully and substantially set forth and shown in the following description and in the drawing annexed to and making part of this specification wherein—

Figure 1 is a full elevation and Fig. 2, a section of a cylindrical ventilator shaft. Fig. 3 is a full end elevation and Fig. 4 a sectional elevation of an oblong ventilator shaft, each fitted with the exterior parts as invented by me; and as these exterior parts correspond, in general shape and action, whether applied to cylindrical or square shafts, the same letters and numbers, as marks of reference, are used to denote the like parts, in all the four figures. In these 1 is the foot flanch, to secure the apparatus, on the top of the building or flue; *a*, is a vertical shaft, near the top of which an obtuse pyramidal frustum 2, is attached, having holes 3, through it, that open into a superior frustum, *b*, having an angle of about 45°, with the horizon, the lower and outer edges of which are secured to the lower and outer edges of the obtuse frustum 2, and at the upper and inner edges the frustum *b*, is connected to 4, a truncated continuation of the shaft *a*, the upper edges of which are slightly flanched, or turned outward and upward.

At 5, 5, are supports sustaining an inverted cone or pyramidal frustum, *c*, formed at an angle of about 45°, with the horizon, the inner and lower edges of which form an annular open ring, or square, around the internal shaft, and the area of this external space may nearly approximate the internal area of the shaft *a*.

Within the mouth of the frustum *c*, a cover plate *d*, formed like an inverted dish, is sustained by supports, 6, 6; when thus constructed, the operation and effects are, that any current of external air striking the shaft *a*, ascends through the holes 3, in the frustum 2, to the interior of the truncated portion 4, and the portion of the same current of external air, that strikes the exterior of the frustum *b*, is deflected upward, to pass between the truncated part 4, and the inner edge of the inverted frustum *c*, and partly under the cap *d*, so that both these currents, and the current in the shaft *a*, pass in the direction of the black arrows on the drawing, to the final exit, on the lee side of the shaft *a*, with a velocity, increased by the form of the spaces they pass through, thereby forming a small and partial vacuum, on the leeward and outer side of the apparatus, into which the heated or noxious air will rush from the interior of the shaft *a*, itself.

Any reverberating eddy of the external current, is arrested, by the cap *d*, and deflected downward, by the interior of the frustum *c*, as shown by the blue arrows in the drawing; and rain cannot fall into the flue *a*, because the cap *d*, is highest in the middle, and any water falls from its outer edge, into the inverted frustum *c*, and thence away by the exterior face and lower edge of the frustum *b*, so that, by these means, the draft of the noxious air is increased, the action of reverberating currents, and the falling of rain into the flue, are both prevented, thereby improving the draft of the flue, or the ventilation of any space below it.

I am aware, that many plans for producing similar effects, have been essayed, and some are patented, and in use; one of which seeks to provide for these objects, by making the shaft conical, with outer frusta, of direct cones, so fitted, that the action of the exterior current is nearly, or entirely lateral, or horizontal, within and across the shaft or flue; but I do not know of any other arrangement, for these purposes, in which, by the application of direct and inverted conical or pyramidal frusta, the exterior current, as it strikes the cones, and enters the shaft, is forced to travel in nearly direct ver-

tical lines, until it arrives at the final exit, on the leeward side of the apparatus; therefore

I claim as new and of my own invention and desire to secure by Letters Patent of the United States—

The application of the obtuse frustum 2, having holes 3, opening under the frustum *b*, to admit the exterior current of air into the truncated continuation 4, of the shaft *a*, when such application is in combination with the inverted frustum *c*, above, and detached from, but surrounding the part 4, to pass the exterior current under the cap *d*, the whole combined, and operating, substantially as described and shown.

In witness whereof, I have hereunto subscribed my name, in the city of New York, this nineteenth day of October, one thousand eight hundred and forty eight.

CHAS. K. SCUDDER.

Witnesses:

W. TERRELL,

LEMUEL W. TERRELL.