

(No Model.)

W. J. KAYSER.
CHIMNEY CAP AND VENTILATOR.

No. 559,388.

Patented May 5, 1896.

Fig. 1.

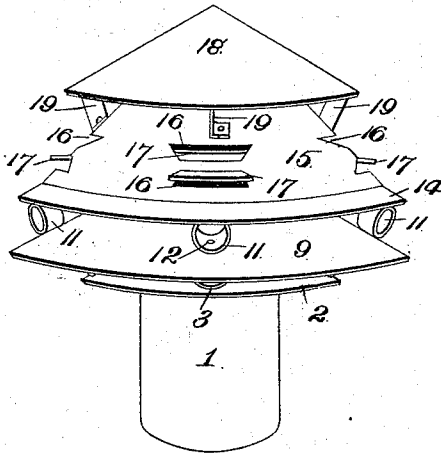


Fig. 2.

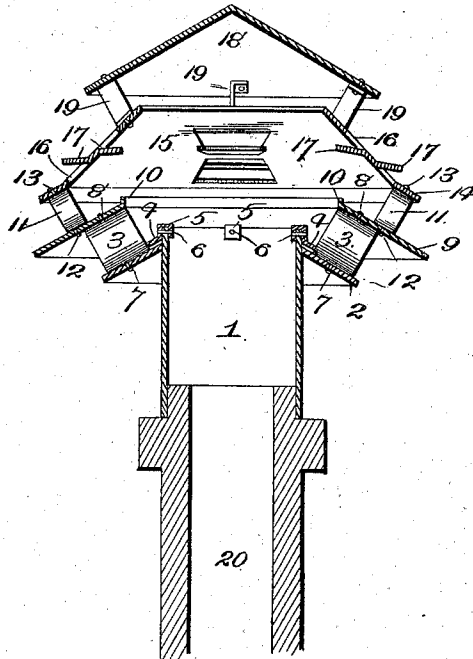
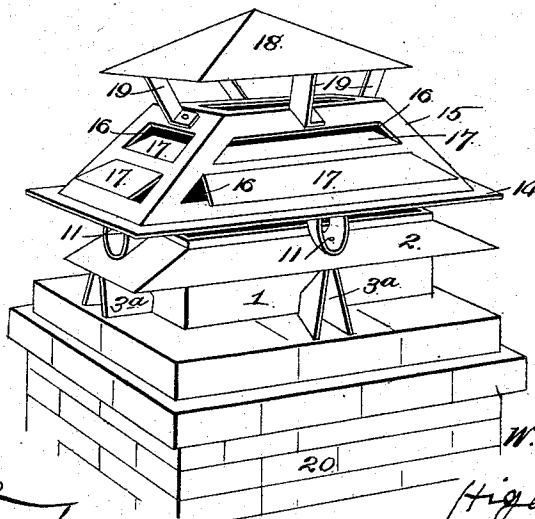


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM J. KAYSER, OF KANSAS CITY, MISSOURI, ASSIGNOR OF ONE-FOURTH TO EDWARD W. TOLER, OF SAME PLACE.

CHIMNEY CAP AND VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 559,388, dated May 5, 1896.

Application filed May 11, 1895. Serial No. 548,900. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. KAYSER, of Kansas City, Jackson county, Missouri, have invented certain new and useful Improvements in Chimney Caps and Ventilators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to ventilators, and more particularly to ventilator-caps for chimneys and flues of all descriptions, for sewers, skylights, &c.; and my object is to provide a ventilator of this type which effectually accomplishes the object of the invention, is simple, strong, durable, and comparatively inexpensive of construction, and may be easily and expeditiously placed in or removed from operative position relative to the opening through which the ventilating-draft must pass.

With these objects in view the invention consists in certain novel and peculiar features of construction and combinations of parts, as will be hereinafter described and claimed.

In order that the invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, wherein—

Figure 1 represents a perspective view of a ventilator constructed in accordance with my invention. Fig. 2 represents a vertical sectional view of the same in operative position upon a chimney or flue. Fig. 3 represents a perspective view of a ventilator of slightly-modified form of construction, this modification consisting wholly in a difference of form and in dispensing with one of the deflecting-plates or frustums.

Similar numerals refer to corresponding parts in all of the figures.

Referring first to the construction shown in Figs. 1 and 2, 1 designates a short tube or cylinder vertically arranged, and 2 designates a downwardly and outwardly inclined frustum, which is united to and snugly embraces the external surface of the tube 1 near its upper end. At intervals said frustum carries, projecting upwardly and outwardly at right angles to its inclination, the circular brackets or rings 3, and projecting into and

bearing upon the base of said circular bracket or rings are the arms 4, provided at their upper ends with downwardly-disposed hooks 5, engaging the upper end of the tube or cylinder 1 and riveted thereto, as shown at 6. Rivets 7 engage the lower ends of said arms and also extend through the interposed portions of the circular brackets or rings 3 and through the frustum 2. Similar rivets 8 unite the upper portions of said circular brackets to a parallel frustum 9, which frustum in internal diameter exceeds the diameter of the tube or cylinder 1, but preferably is less than the external diameter of the frustum 2. The external diameter of said frustum 9, however, greatly exceeds the external diameter of the frustum 2 to form practically a protruding lip. Said frustum 9 at its upper and inner margin is preferably formed with a vertical and upwardly-projecting flange 10. A series of circular brackets or rings 11, corresponding in number and superimposed with reference to the brackets or rings 3, project upwardly at right angles and are riveted, as shown at 12, to the frustum 9, and are also riveted, as shown at 13, to the parallel flange 14 of the frustum 15, said frustum 15 preferably extending upward at a greater angle than the frustums 2 and 9 and having both its internal and external diameters less than that of the frustum 9. At suitable points said frustum 15 is provided with openings 16, controlled by baffle-plates 17, which are preferably formed by stamping them from the frustum 15. Superimposed with reference to the registering openings formed by said frustums and said tube or cylinder is a conical cap or hood 18, and said cap or hood is supported in position by means of brackets 19, which are riveted at their opposite ends to the frustum 15 and said hood or cap. The entire structure is preferably of sheet metal, and the frustum 15, if the baffle-plates 17 be formed integral therewith, must be of metal which will permit said plates to be adjusted without danger of breakage at the hinge point. A ventilator formed with a cylindrical tube or stem will be employed in connection with a cylindrical draft-opening in the manner illustrated, where it is mounted upon a cor-

respondingly-formed chimney or stack, or it may be mounted in any other suitable or preferred manner.

Referring now to Fig. 3, it will be noticed that the cap 18 and the frustum 15 are like those already described except as to configuration, one set being adapted for use in connection with a circular draft-opening and the other set being rectangular for use with a rectangular draft-opening. It will also be noticed that the tube 1 in this instance is rectangular to fit the corresponding rectangular opening of the chimney 20, and that I use brackets 3^a of approximately inverted-V shape in lieu of the circular brackets or rings 3 and the hook-arms 4 for supporting the frustum 12. Furthermore, it will be noticed that I dispense with the frustum 9 and employ the circular brackets or rings 11 as a direct connection between the frustum 2 and the parallel flange 14 of the frustum 15. The diameter of the base of the frustum 15 must, or should, in this case, be greater than the diameter of the base of the frustum 2, so as to overlap the same, as before described with reference to the frustum 9.

When in operative position, it will be noticed, by reason of the peculiar construction and relative disposition of the parts described, that if the wind blows directly upward it will be caught by the lip of the overlapping portion of the frustum 9 in Fig. 2, or the frustum 15 in Fig. 3, and be deflected at an angle across the open upper end of the tube 1 and therefore the draft-opening, and by moving in this manner tends to create a vacuum in the draft-opening, whether it be a skylight, a sewer, or a chimney, and by thus removing the atmospheric pressure from above permits a free and uninterrupted draft upward and through the draft or ventilating opening, as will be readily understood. It is also obvious that if the wind blows directly downward the effect is the same—that is, the air deflected downwardly and outwardly from the ventilator exhausts the air from the interior of the ventilator by suction action, and by thus removing the atmospheric pressure from above permits the draft an uninterrupted and free passage up through said opening; and it is furthermore obvious that the wind blowing from any side or in any plane by the peculiar arrangement and construction of said frustums forming the ventilator will always be prevented from blowing down into the draft or ventilating opening and impeding the progress of the draft, but will, on the contrary, always cause the air-currents to pass in a horizontal plane or upwardly over the draft or ventilating opening and thus remove the atmospheric pressure from above. Therefore it will be apparent that I have produced a ventilator which is positive and reliable in operation at all times and which will thoroughly and effectually ventilate any room, building, sewer, &c., to which it may be ap-

plied, and also prevents chimneys, flues, &c., from "smoking back."

It is to be understood, of course, that the precise number of frustums employed and their particular arrangement relative one to another and also their configuration or form may be varied slightly, and that brackets of construction different from those herein shown may be employed, without departing from the essential spirit and scope or sacrificing any of the advantages of my invention, one of the desirable features of which is the employment of a frustum of greater diameter externally than any of the others and locating said frustum next above the open upper end of the tube or cylinder 1. Another desirable feature is forming the said frustum of greater internal diameter than said tube or cylinder, so that air-currents passing up between them will have a chance to rise without passing too closely over the top of said tube or cylinder 1. The flange 10 assists the air-currents to take this desirable course, and one other very important feature is the employment of a conical cap to cover the open upper end of the frustum next below to prevent wind blowing down into the draft-opening and thereby defeating the object in view.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A ventilator, comprising a tube, communicating with the draft-opening, a frustum secured to the tube, a second frustum inclined downwardly and outwardly, and having its upper end and its lower end, respectively, above and below the upper end of said tube, and having its internal diameter greater than the diameter of said tube, a third frustum superimposed with reference to the first-mentioned frustums, and provided with openings, baffle-plates controlling said openings, and a conical cap superimposed with reference to the draft-opening, and overlapping the open upper end of said last-named frustum, substantially as set forth.

2. A ventilator, comprising a tube, communicating with the draft-opening, a frustum carried by said tube and extending downwardly and outwardly, circular brackets or rings projecting upwardly at right angles to said frustum, a second and parallel frustum supported by said circular brackets or rings and having its external diameter exceeding that of the first-mentioned frustum, and having its internal diameter also exceeding that of the first-named frustum, a second series of circular brackets or rings projecting upwardly at right angles from the said last-named frustum, a third frustum superimposed with reference to the first-named frustums and supported upon said last-named circular brackets or rings, brackets projecting from said last-named frustum, and a conical hood or cap carried thereby, substantially as set forth.

3. A ventilator, comprising a tube, communicating with the draft-opening, a frustum carried by said tube and extending downwardly and outwardly, circular brackets or rings, hook-arms embracing the upper end of the tube and riveted to the same and to the frustum and circular brackets or rings, a second and parallel frustum supported by said circular brackets or rings and having its external diameter exceeding that of the first-named frustum, and having its internal diameter also exceeding that of the first-named frustum, a second series of circular brackets or rings, projecting upwardly at right angles

from said last-named frustum, a third frustum superimposed with reference to the first-named frustum and supported upon the said last-named circular brackets or rings, brackets projecting from said last-named frustum, and a conical hood or cap carried thereby, substantially as set forth. 15 20

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM J. KAYSER.

Witnesses:

M. REMLEY,
S. B. FALOR.