(No Model.)

F. W. SIMMONS.

CHIMNEY COWL.

No. 588,492. Patented Aug. 17, 1897.

Fig. 1.

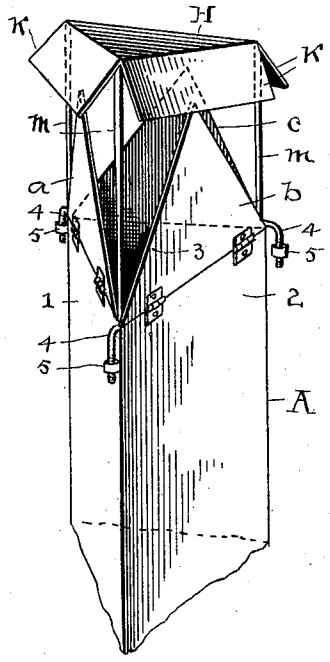
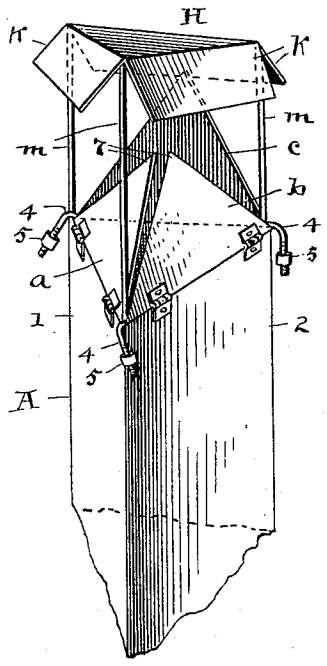


Fig. 2.



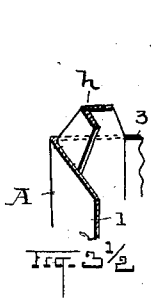


Fig. 3½.

Fig. 3.

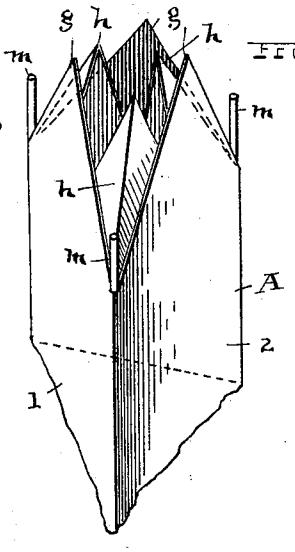
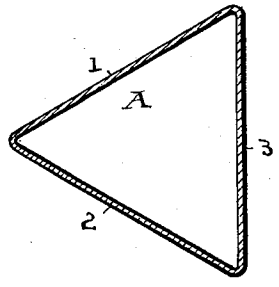


Fig. 4.



ATTEST

R. B. Moser

H. E. Mudra.

INVENTOR.

Freeman W. Simmons

BY H. J. Fisher ATTY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FREEMAN W. SIMMONS, OF CLEVELAND, OHIO.

CHIMNEY-COWL.

SPECIFICATION forming part of Letters Patent No. 588,492, dated August 17, 1897.

Application filed January 7, 1897. Serial No. 618,272. (No model.)

To all whom it may concern:

Be it known that I, FREEMAN W. SIMMONS, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Chimney-Cowls; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to what are commonly known as "chimney-cowls;" and the invention consists in a chimney-cowl constructed substantially as shown and described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view of a chimney top or extension and a cowl surmounting the same embodying my invention in one of several practical forms and with all the vanes open. Fig. 2 is a perspective view of the construction corresponding to Fig. 1, but with two of the vanes substantially closed. Fig. 3 is a perspective elevation of a modified construction as compared with Fig. 1 and in which the vanes are rigid with the chimney extension instead of pivoted thereon and connected with which are other features of construction, as hereinafter fully described; and Fig. 3½ is a detail of the same. Fig. 4 is a cross-section of the chimney or flue or an extension thereof, as the case may be.

Still further modifications of the invention might be incorporated to show other practical forms of construction and arrangements of parts, but the foregoing are deemed sufficient for present purposes, the idea in any and all cases being to preserve the triangular principle in the vanes or projections which conclude and terminate the smoke-passage.

In the drawings, A represents a chimney top, flue, or extension, as already described, and a cross-section of which, as shown in the drawings, appears in Fig. 4. This part A may be a triangular chimney built of brick or an earthenware or metallic extension of a chimney or flue, the essential point in any case being its triangular cross-section, thereby exposing sharp angles and sharply-retreating sides to the wind and providing a suitable passage within. The present construction may be considered as of metal, galvanized iron serving a good purpose. This base for the cowl proper is the same in all constructions, and by reason especially of its shape coacts with the cowl in carrying out the functions of the invention.

Referring now to Figs. 1 and 2, I have the same parts present but in somewhat different relations. Thus in Fig. 1 are shown three several triangular vanes or wings *a*, *b*, and *c*, pivotally supported along the edges of the three several sides 1, 2, and 3 of the base A. Almost any suitable pivot or hinge connection of these vanes may be employed, and each vane is provided with its own counterbalance or weight, located in this instance at one end of the vane, and, as shown here, comprising a right-angled projection 4 with a nut 5 adjustable thereon and serving as a movable counterbalance to make the vanes more or less sensitive to wind disturbances. Ordinarily, or even when there is a fair movement of air, it is found advantageous to keep the vanes open, as in Fig. 1, but when the wind rises to a considerable velocity and the draft is endangered the vanes should respond to the change and close on the windward side—say as seen in Fig. 2. In this instance vane *c* of course remains open and vanes *a* and *b* close inward toward each other to an inclined position about as shown, though this may be varied somewhat as to degree. In no case, however, should the closing be sufficient to make any material difference in the size of the smoke-outlet or so as to choke the outlet. This effect or result, however, is averted in part by reason of my novel construction and arrangement of vanes. It will be noticed that when they close they close toward each other and the center of draft, and at the same time assume an inclined position. This forms upward-glancing surfaces for the wind, which stimulates the draft. Then to avoid an eddy or dead-space behind the closed vanes I so construct and arrange the vanes in respect to each other along the closing line as to leave a slightly open space between them, as clearly seen in Fig. 2. This open space feathers out at the bottom but gradually widens toward the top and leaves the points 7 of the vanes independent and exposed relatively about as shown. I have found that I can use this open space between the vanes, when it tapers, as

in this case, with great advantage in clearing the top of the chimney of smoke and promoting a healthy draft back to the fire. A suitable stop should be provided for limiting the inward movement of the vanes. The direction of the wind will of course determine which of the vanes will be closed, and experience has shown that it rarely occurs that one vane alone will be pressed down while the other two remain open. In fact there is liable to be a play of the vanes between the extremes of their positions if the wind is unsteady or changing, or insufficient to overcome the counterweights, but in all cases they are found to respond with sufficient promptness and fullness to meet the varying situations. This is true even if the two vanes affected close to different extents and more or less in proportion to the pressure upon them.

In Fig. 4 I show a modification of the invention in which the vanes or upward projections *g* are rigid with the base A and therefore are stationary. They, however, retain the triangular shape with the points at the top, and they may be more or less inclined inward or outward, but an inward inclination is better, if it does not unduly choke the smoke-passage. Then in the angles or corners of the vanes *g* are arranged angular and pointed deflectors *h*, which are constructed on the same general principle as the vanes, and are largest at their base and taper along both edges toward the top or point of the projection. In this case I rely with special stress on the triangular principle to control the air-currents, and find that though there is no movable part subject to the wind and adapted to close against its action there is perfect clearance of smoke and a healthy draft under all circumstances. In this case, as well as in Fig. 1 and in modifications or forms of the device, I employ a hood H of triangular plan view corresponding to the outlines of base part A and having, preferably, inclined side flanges *k*, which are deep enough to cover some distance over the points of the vanes. These hoods are supported by suitable rods or posts *m* at the corners of the base A. The hood is of course more especially intended to protect the chimney from downcurrents as are liable to occur where chimney-tops are beneath the level of adjacent buildings as well as from other causes, but they also serve a useful purpose in conjunction with the vanes whether pivoted or fixed.

What I claim as new, and desire to secure by Letters Patent, is—

1. In chimneys, a triangular top and a triangular upward projection surmounting each side of the top, substantially as described.

2. A chimney-top triangular in cross-section on its outside and a triangular projection on each side of the top forming a continuation of the sides thereof, substantially as described.

3. A three-sided chimney-top and a flat triangular upward projection on each of the sides of the top and on a plane substantially with the outside thereof, substantially as described.

4. A three-sided chimney-top, three several triangular vanes surmounting said top and a triangular hood over the top and vanes, substantially as described.

5. A triangular chimney-top having a plurality of self-adjusting triangular vanes, in combination with a triangular hood, substantially as described.

6. A triangular chimney-top having a plurality of self-adjusting vanes arranged to leave an open space between them when closed, in combination with a triangular hood having downward flanges, substantially as described.

Witness my hand to the foregoing specification this 28th day of December, 1896.

FREEMAN W. SIMMONS.

Witnesses:
H. T. FISHER,
R. B. MOSER.