No. 648,566. Patented May 1, 1900.

W. J. KAYSER.

COWL.

(Application filed July 24, 1899.)

(No Model.)

Fig. 1.

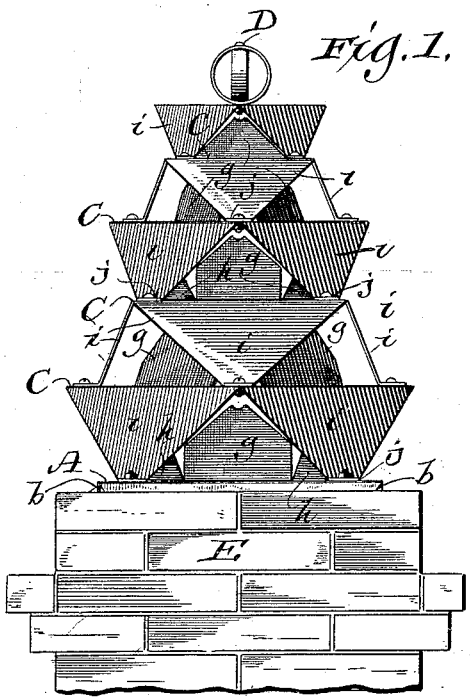


Fig. 2.

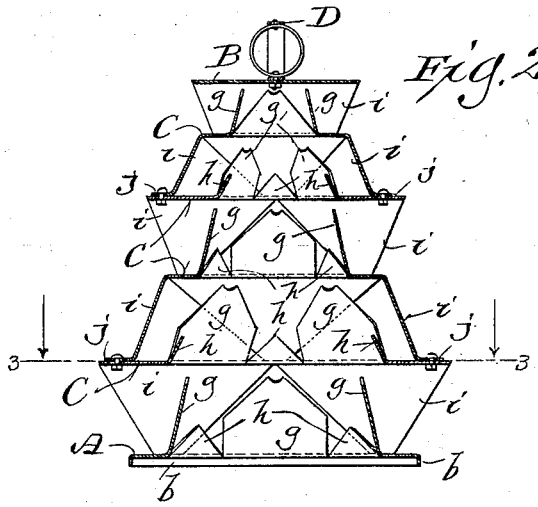


Fig. 3.

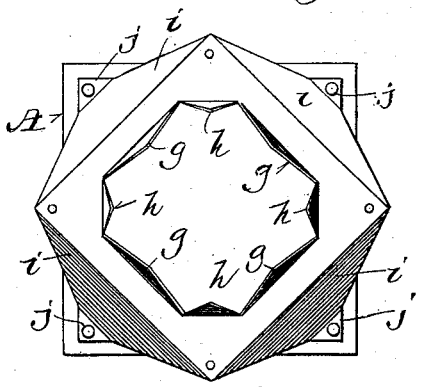


Fig. 4.

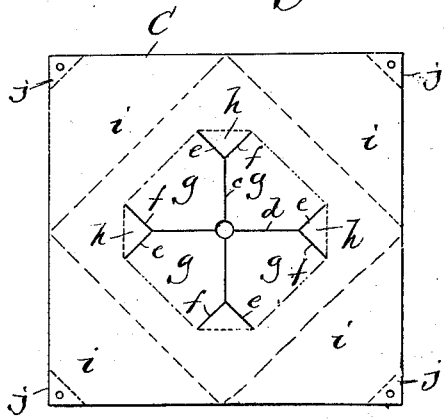
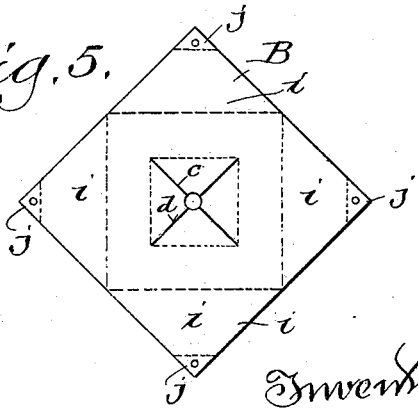


Fig. 5.



Witnesses:
Geo. W. Young.
N. E. Oliphant

Inventor
William J. Kayser
By H. G. Underwood
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM J. KAYSER, OF FREEPORT, ILLINOIS.

COWL.

SPECIFICATION forming part of Letters Patent No. 648,566, dated May 1, 1900.

Application filed July 24, 1899. Serial No. 724,899. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. KAYSER, a citizen of the United States, and a resident of Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Cowls; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide simple economical cowls for insuring the efficiency of chimneys and ventilator-flues; and it consists in certain peculiarities of construction and combination of parts hereinafter particularly set forth with reference to the accompanying drawings and subsequently claimed, whereby advantageous results are obtained.

Figure 1 of the drawings represents an elevation of a cowl in accordance with my invention mounted on a chimney; Fig. 2, a vertical transverse section central of the cap; Fig. 3, a plan view of a cowl-section on the plane indicated by line 3 3 in the preceding figure; and Figs. 4 and 5, plan views of other cowl-sections while in the flat, full and dotted lines in these latter figures illustrating cuts and bends in the sheet material from which said sections are formed.

Referring by letter to the drawings, A indicates a base-section, B a cover-section, and C other sections intermediate of those aforesaid in my improved cowl for a chimney or ventilator-flue. The cowl is shown provided with a handle D, that consists of two strips of sheet metal crossing each other and bent into rings that are bolted to the cover-section of said cowl central of the same. Aside from its utility, the handle serves to ornament the cap.

Galvanized iron is the preferred material for the cowl-sections, and section A is preferably bent down at its edges to form supporting-flanges *b*, that rest upon the top of a chimney E, as herein shown, the cowl being secured in place upon said chimney by any suitable means.

All the cowl-sections are made from rectangular sheets of metal that vary in the matter of dimensions. The sheet for the lowest one of sections C is the largest and the sheet for the cover-section B the smallest of all the sheets necessary to the complete cowl herein shown. All the sheets except the one for the cover-section B are centrally punctured and cut on straight lines *c d*, crossing its center, as shown in Figs. 4 and 5. In that form of cowl herein illustrated the sheets for section A and all but the uppermost of sections C are further cut on the lines *e f*. (Shown in Fig. 4.) If it is desirable in practice, all of the sheets for sections C may be cut alike. After the cutting of the sheets for sections A and C the material between the cuts is bent up to form converging wings *g h* and leave a central angular draft-opening in said sheets. The corners of all the sheets except the one for section A are bent down and turned out at right angles to form diverging inverted triangular shields, constituting legs *i*, having feet *j*, the bends being indicated by dotted lines in Figs. 4 and 5.

The above-described sections C are piled one upon the other above section A and surmounted by the cover-section B, the feet *j* of each section B and C being bolted or otherwise made fast to the section next below at the corners of what is now the rectangular top of same, whereby the several sections are in break-joint connection throughout the structure.

By the peculiar arrangement of the sections B C of the cowl the larger upturned wings *g* of the latter sections face the triangular spaces between the section-legs *i*, and the smaller upturned section-wings *h* are inversely parallel to said legs wherever these smaller section-wings occur.

The cowl-sections C are of gradually-diminishing size in ascending order and the cowl-section B is proportionately smaller than the uppermost cowl-section C, to which its feet are made fast, whereby the structure as a whole is pyramidic in its outlines.

While I have shown the structure organized with a rectangular base and a cover-section to serve as a cowl for an ordinary house-chimney, it may be organized without said cover-section to serve as a draft-increaser for a factory-chimney, or the base-section A may be omitted and the legs of the lowermost section C bent to form feet suitable for attachment to a circular ventilating-flue, it being understood that when the aforesaid structure is utilized as a cowl on a ventilator-flue it will be provided with a cover-section.

The number of the sections C in the structure is preferably equal to the quotient of the diameter of the chimney or ventilator-flue opening, in inches, divided by two, experiment having determined this proportion to be the most satisfactory in practice.

From the foregoing it will be understood that the structure presents a succession of angular air-spaces of gradually-contracting area in ascending order about the upturned wings adjacent to the vertical draft-space, the edges of these wings and those of the shields or legs *i* being at a great variety of angles, whereby air-currents from any direction are caused to pass in straight lines through said structure between its wings and shields.

It will be observed that provision is made for a considerable area of flat surface outside the wings of sections A and C, whereby the air-currents through the structure are proportionately deflected, and as smoke or foul air emerges at intervals vertically of the cowl the wind blowing from any direction through the same carries off said smoke or foul air, while at the same time the tendency of the wind to create a vacuum central of said cowl insures good draft.

A cowl such as I have shown and described is proof against downdrafts in the chimney or ventilator-flue to which it may be connected, and it prevents wind eddies or whirls from retarding the upward draft. If utilized in connection with a chimney, the structure herein set forth is proof against condensation thereon of smoke-vapors, and hence it will be at all times free from smutty accumulations, that are detrimental in the ordinary chimney-cowls to good draft.

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

1. A pyramidic cowl comprising a plurality of angular flat-top sections of gradually-diminished size in ascending order, each section having upwardly-extending angular wings at the boundaries of a central opening therein and depending shields of inverted triangular form constituting legs between its top corners, these legs of each section in ascending order being fast at the top corners of the section next below.

2. A pyramidic cowl comprising a plurality of angular flat-top sections of gradually-diminished size in ascending order, each section having upwardly-extending angular wings at the boundaries of a central opening therein and depending shields of inverted triangular form constituting legs between its top corners, the legs of each section in ascending order being fast at the top corners of the section next below, and a cover-section also provided with depending shields of inverted triangular form constituting legs between its top corners, these legs being fastened at top corners of the uppermost section in the aforesaid series.

3. A pyramidic cowl comprising a base-section, and a superstructure consisting of a plurality of angular flat-top sections of gradually-diminishing size in ascending order, each of the several sections aforesaid having upwardly-extending angular wings at boundaries of a central opening therein and those of the superstructure provided with depending shields of inverted triangular form constituting legs between their top corners, the several sections being in break-joint connection throughout the structure.

4. A pyramidic cowl comprising a base-section, a cover-section and an interposed series of angular flat-top sections of gradually-diminishing size in ascending order, all but the cover-section having upwardly-extending angular wings at the boundaries of central openings therein, said cover-section and those between it and said base-section provided with depending shields of inverted triangular form constituting legs between their top corners, the several sections being in break-joint connection throughout the structure.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

WILLIAM J. KAYSER.

Witnesses:
H. E. OLIPHANT,
B. C. ROLOFF.