(No Model.)

W. F. MATTHEWS.

COMBINED VENTILATOR AND CHIMNEY.

No. 291,919. Patented Jan. 15, 1884.

Fig. 1.

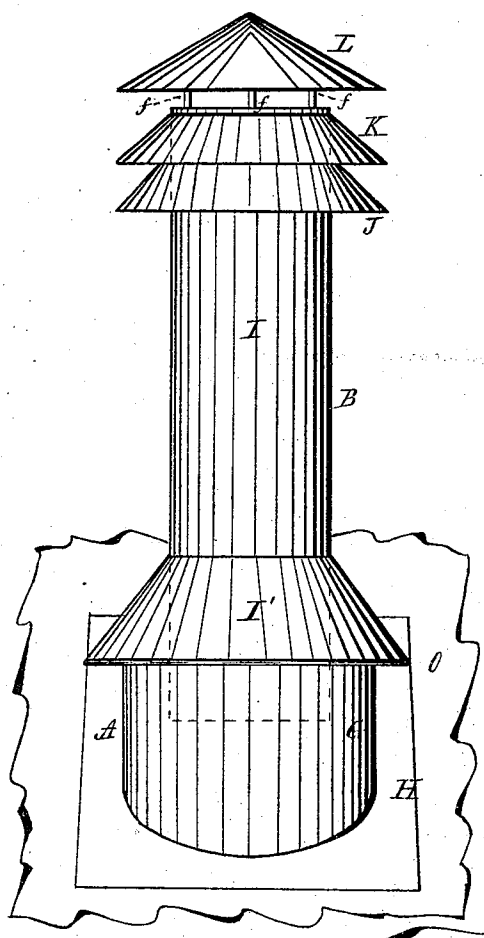
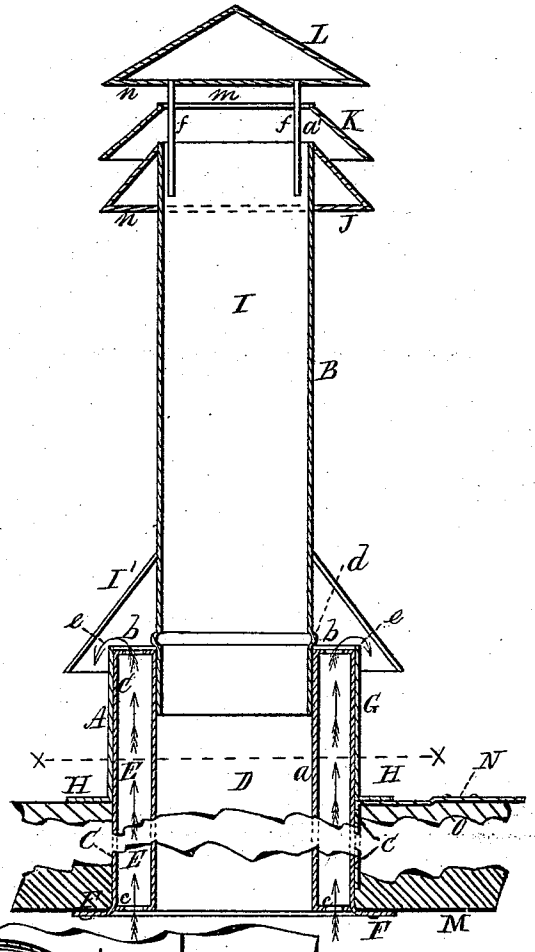


Fig. 2.



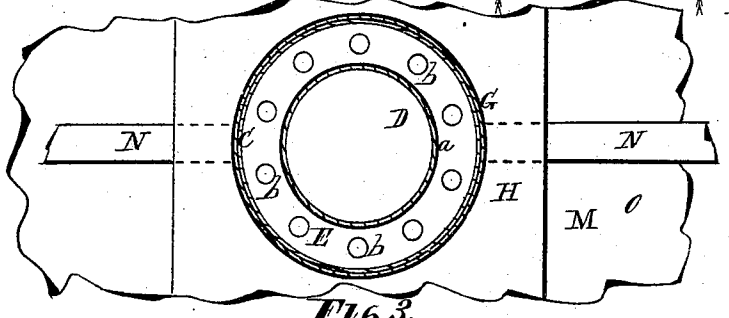


Fig. 3.

Witnesses.
J. H. Burridge.
D. Rogers.

Inventor.
W. F. Matthews
W. H. Burridge Atty.

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM F. MATTHEWS, OF DALLAS, TEXAS.

COMBINED VENTILATOR AND CHIMNEY.

SPECIFICATION forming part of Letters Patent No. 291,919, dated January 15, 1884.

Application filed June 25, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. MATTHEWS, of Dallas, in the county of Dallas and State of Texas, have invented new and useful Improvements in Combined Ventilator and Chimney; and I do hereby declare that the following is a full and complete description thereof.

The special purpose of this invention is to furnish a competent, inexpensive, and less complicated combined ventilator and chimney than such structures now in ordinary use, and of which the following is a detailed description, and illustrated by the accompanying drawings, making a part of this specification, in which—

Figure 1 shows a side elevation of the ventilator and chimney. Fig. 2 is a vertical section. Fig. 3 is a horizontal section through the line *x x*.

Like letters of reference refer to like parts in the several views.

The above-said combined ventilator and chimney is composed of two sections, A and B. Section A is the ventilator, consisting of a cylindrical shell, C, surrounding a central flue, D, Fig. 2.

Between the wall *a* of the flue and the shell C is an annular chamber, E, the top and bottom of which are perforated with holes *b* and *c*. Said holes or openings may be more or less in number than shown in the drawings. The lower end of the shell C is provided with a flange, F, the use of which will presently be shown.

G is a case inclosing the upper part of the shell C, the lower end of the case terminating in a wide flange or water-shed, H.

Section B of the above-said structure consists of the flue or chimney I, the lower end of which is adapted to fit in the flue D of the ventilator, as shown in Fig. 2. The chimney is prevented from slipping down too far into the flue by means of a bead, *d;* or the two parts may be riveted together. It is preferred to use the bead or band, as the two parts can then be easily taken apart for any desirable purpose.

I′ is a hood or cap secured to the chimney, and spreading therefrom down over the end of the ventilator, but without tactual relation therewith, there being an annular space, *e*, between the end of the ventilator and the chimney, as seen in Fig. 2. The upper end of the flue or chimney is also provided with a cap or hood, J, above which is a similar cap, K, supported above the top of the cap J and the top of the chimney by standards *f*.

It will be observed that the cap K spreads partly down over the cap J and over the end of the chimney, but not in contact therewith, there being a clearance between the top of the chimney and of the cap, as seen at *a′*.

Over the cap K is a hood, L, supported by the standards *f* above the top of the cap K, leaving a space, *m*, between the hood and cap, which may be more or less, as circumstances may require.

It will also be observed that the bottom of the hood L and the cap J are closed by a ceiling, *n*, thereby presenting a horizontal reflecting-surface instead of an oblique one, as seen, under the cap K.

Having described the construction of the above-specified device, the practical application and use of the same are as follows: The device is especially intended for light structures or buildings in which brick or stone chimneys are not provided for. Of such a building, M in the drawings is supposed to represent the ceiling through which the ventilator is passed, and which also extends up through the roof, (represented at O,) above which it projects, as seen in the drawings. The ventilator is secured in this position by the straps N, which may be more or less in number. One end of each of said straps is attached to the side of the ventilator, and extends therefrom through the roof by the side of the ventilator. The straps are then drawn upward and turned down upon the roof, to which they are nailed or otherwise made fast; or they may be secured to the under side of the roof. The straps, on being drawn upward, as above said, draw the flange F close against the ceiling, so that it may fit snugly thereto. Around that portion of the ventilator projecting above the roof is placed the casing G, with its broad water-shedding flange H flat upon the roof and upon the straps N. The casing fits closely around the ventilator and snugly to the aperture in the roof through which the ventilator projects, thereby making the connection of the ventilator with the roof secure and weather-tight. When the ventilator is secured in the building, as above described, the chimney or flue I, that is to be

above the roof, is inserted in the flue D, as shown in Fig. 2. The connection of the two parts is close fitting and covered by the hood I′, thereby rendering the union of the two parts secure and weather-proof.

It will be obvious from the above-described device that there is no contact of the chimney-flue D with floor and roof, it being insulated therefrom by the air-chamber E; hence its connection with the building is not only weather-proof, but also fire-proof, and as a structure it is simple and durable.

The ventilator is made of sheet metal, and it is preferred to make the foraminous ends of the ventilator of cast metal instead of sheet metal, and to connect the terminal caps and hood to the chimney in a detachable manner, instead of being a permanent fixture thereto.

Practically the operation of the above-described device is as follows: The heat of the gases and smoke ascending from the fire below, on passing up through the ventilator, heats the air in the annular chamber E, thereby causing an induced current of air from the room through the air-chamber to the outside, said draft of air having a direct course through the air-chamber by passing in from the room through the bottom of the air-chamber and out of the top thereof, as indicated by the arrows, the outflow being protected from outside reverse currents of air by the cap I′, between which and the end of the ventilator is a wide space for a free escape of the air issuing from the chamber of the ventilator, as above described, and shown in the drawings.

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

A combined ventilator and chimney, consisting of section A, composed of a central flue surrounded by an annular air-chamber, in the top and bottom of which are openings, flange F, and case G, provided with a water-shed or apron, in combination with section B, consisting of a flue or chimney, I, having its lower end inserted in the flue of the ventilator and extending therefrom above the roof, and covered with a cap or caps, and its juncture with the ventilator protected by a downward-projecting hood, I′, substantially as described, and for the purpose specified.

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

WILLIAM F. MATTHEWS.

Witnesses:

E. R. RAY,

R. L. CHAPMAN.