F. RIEMER.

CHIMNEY COWL AND VENTILATOR.

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1,001,166.

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Fig. 1.

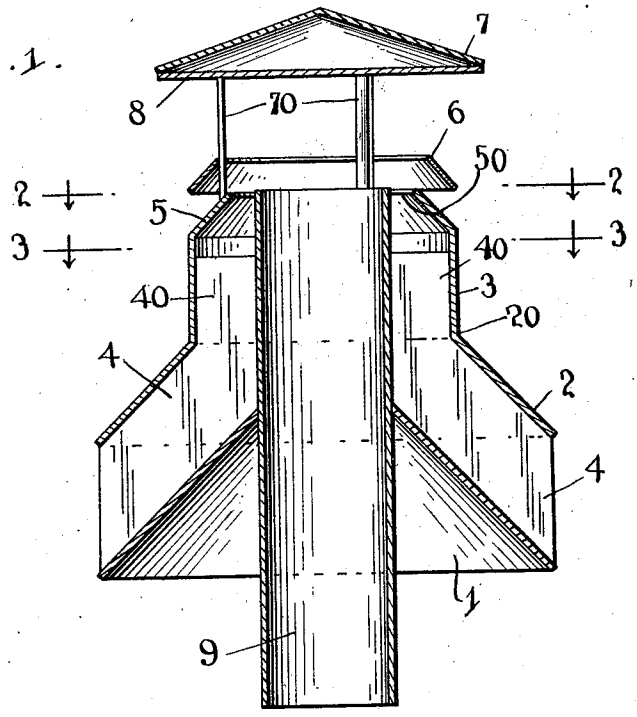


Fig. 2.

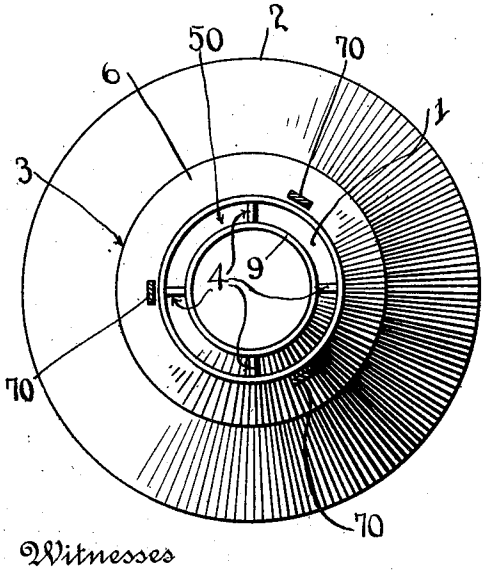
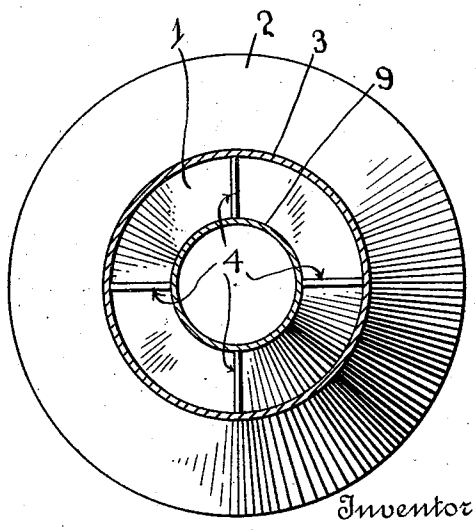


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

FRANK RIEMER, OF DENVER, COLORADO, ASSIGNOR OF FORTY-EIGHT ONE-HUNDREDTHS TO JULIUS HARTLER, OF DENVER, COLORADO.

CHIMNEY-COWL AND VENTILATOR.

1,001,166. Specification of Letters Patent. **Patented Aug. 22, 1911.**

Application filed April 24, 1911. Serial No. 622,946.

To all whom it may concern:

Be it known that I, FRANK RIEMER, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Chimney-Cowls and Ventilators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to ventilation, and more especially it is a cowl for chimneys, smokestacks, or exhaust pipes, and it may also serve as a ventilator.

The object of the same is to improve the construction of such a cowl or ventilator so as to prevent back drafts down the flue whichever way the wind blows and to prevent admission of rain, snow or sleet. This object is accomplished by constructing the cowl or ventilator as hereinafter more fully described and claimed, and as shown in the drawings wherein—

Figure 1 is a central vertical section of this improved cowl or ventilator. Figs. 2 and 3 are cross sections on the lines 2—2 and 3—3 of Fig. 1.

This device is made entirely of sheet metal, preferably galvanized so as to prevent rust; and its size and exact shape are matters of no moment. The relative disposition of parts, excepting as hereinafter described and claimed, may also be altered without departing from the principle of my invention.

Heretofore it has been customary to make cowls or ventilators of this character with a series of surrounding hoods to shed the falling rain but to admit laterally blowing breezes and to deflect the same upward across the outlet end of the exhaust pipe or flue; but my present invention contains details of construction and arrangement as particularly set forth herein which prevent a lateral or oblique breeze from interrupting the draft set up by the upwardly-directed wind which is forced across said flue.

Coming more particularly to a detailed description of the invention, the numeral 9 designates the flue or exhaust pipe from a chimney, smokestack, or other source through which smoke or other waste gases are passed out into the air, and in the present drawings this and other parts are shown circular in form although it will be clear that they may have other contours. Surrounding and having their smaller ends next said flue are two frusto-conical hoods 1 and 2 whose walls are by preference strictly parallel with each other, and whose outer larger ends are preferably of the same circumference so that they are accurately superimposed. These hoods are connected with the flue by upright partitions 4 radial to the flue and preferably about four in number, united at their upper and lower edges to adjacent faces of the hoods 1 and 2 and at their inner ends with the exterior surface of the flue 9. The smaller end of the hood 2 is of a circumference at the line 20 larger than the circumference of the flue, and rising from this line is a cylindrical drum 3 which surrounds and stands concentric with said flue. The upper ends of said partitions 4 are extended upward as at 40 between the drum and the flue and connected to the adjacent faces of both so that all parts are held rigidly separated and in the relative positions shown in Fig. 1. The annular space between the drum and flue is by preference of less width than the upright space between the two hoods, so that air entering horizontally between the latter and laterally between any two partitions 4 is compressed in an upright direction when it passes upward into the drum and also compressed transversely between the two partitions because the latter converge as will be understood; and therefore the speed of the inflowing air is accelerated as it passes upward through the drum. The upper end of the latter is covered with a frusto-conical top 5 whose larger lower end is united with the upper end of the drum and whose smaller upper end stands near but is disposed a little distance away from the upper extremity of the flue 9 so as to leave between them a narrow annular mouth 50; and it will be clear that the inflowing air, once already compressed both vertically and transversely as it passes upward into the drum 3, is a second time compressed vertically as it passes under said frusto-conical top 5 and issues from the mouth 50 of the drum 3. The result is that where it issues therefrom it has considerable velocity, and this upwardly and inwardly moving tubular volume causes a suction upward through the flue 9 which assists the draft of the chimney or whatever exhaust the flue is connected with.

In order to protect the upper open end of the flue from snow, hail, and rain which might fall therein, I provide upright standards 70 rising from the conical top 5, and mount thereon a slightly conical cap 7 which by preference has a flat bottom 8 whose outer edge united with that of the cap on a circle which is a little larger than the circumference of the drum 3. This feature of itself is quite old in devices of this character; but in order to prevent lateral or oblique blasts of air blowing over the top 5 and under the cap from interrupting the strong upward draft which flows out the annular mouth 50 and assists the draft through the flue 9 as above described, I provide a ring 6, also of frusto-conical shape, whose inner edge surrounds and is supported by said uprights 70 and whose body is disposed above and parallel with the top 5 and is of about the same width. Upwardly moving oblique blasts of air pass between these two parts 5 and 6, downwardly moving oblique blasts of air strike the guard ring 6 and are deflected, and horizontally moving blasts of air strike the ring 5 and pass upward between it and the guard ring 6 and assist the draft which comes upward through the drum rather than otherwise. Hence the presence of this ring 6 is beneficial whatever the direction of the wind, and if the entire device is made circular as I prefer it will have the same beneficial effect on the draft through the chimney whichever way the wind blows.

What is claimed as new is:

1. The herein described chimney cowl and ventilator comprising a central cylindrical upright flue, two parallel frusto-conical hoods surrounding it with the smaller end of the lower hood connected with the flue, a cylindrical drum spaced from said flue with its lower end connected with the smaller end of the upper hood, a series of radial partitions connecting said hoods and each having an extension at its upper end projecting upward throughout the length of the drum and connecting the latter with the flue, and a frusto-conical top to the drum whose larger end is connected therewith and whose smaller end is spaced a slight distance from the upper end of the flue so as to leave an annular passage between them.

2. The herein described chimney cowl and cap comprising an upright flue, a concentric drum surrounding it, two parallel hoods around the flue and having a space between them communicating with the lower end of said drum, means for supporting the hoods and drum from the flue, a frusto-conical top whose larger end is united with the upper end of the drum and whose smaller end is slightly spaced from but stands in a horizontal line with the upper end of the flue, standards rising therefrom, a cap covering said standards, and a frusto-conical guard ring surrounding said standards and standing above, of the same size as, and parallel with said top, for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FRANK RIEMER.

Witnesses:
JULIUS HARTLER,
JAS. F. IREY.