

(No Model.)

C. B. LOVELESS.
CHIMNEY COWL AND VENTILATOR.

No. 409,990.

Patented Aug. 27, 1889.

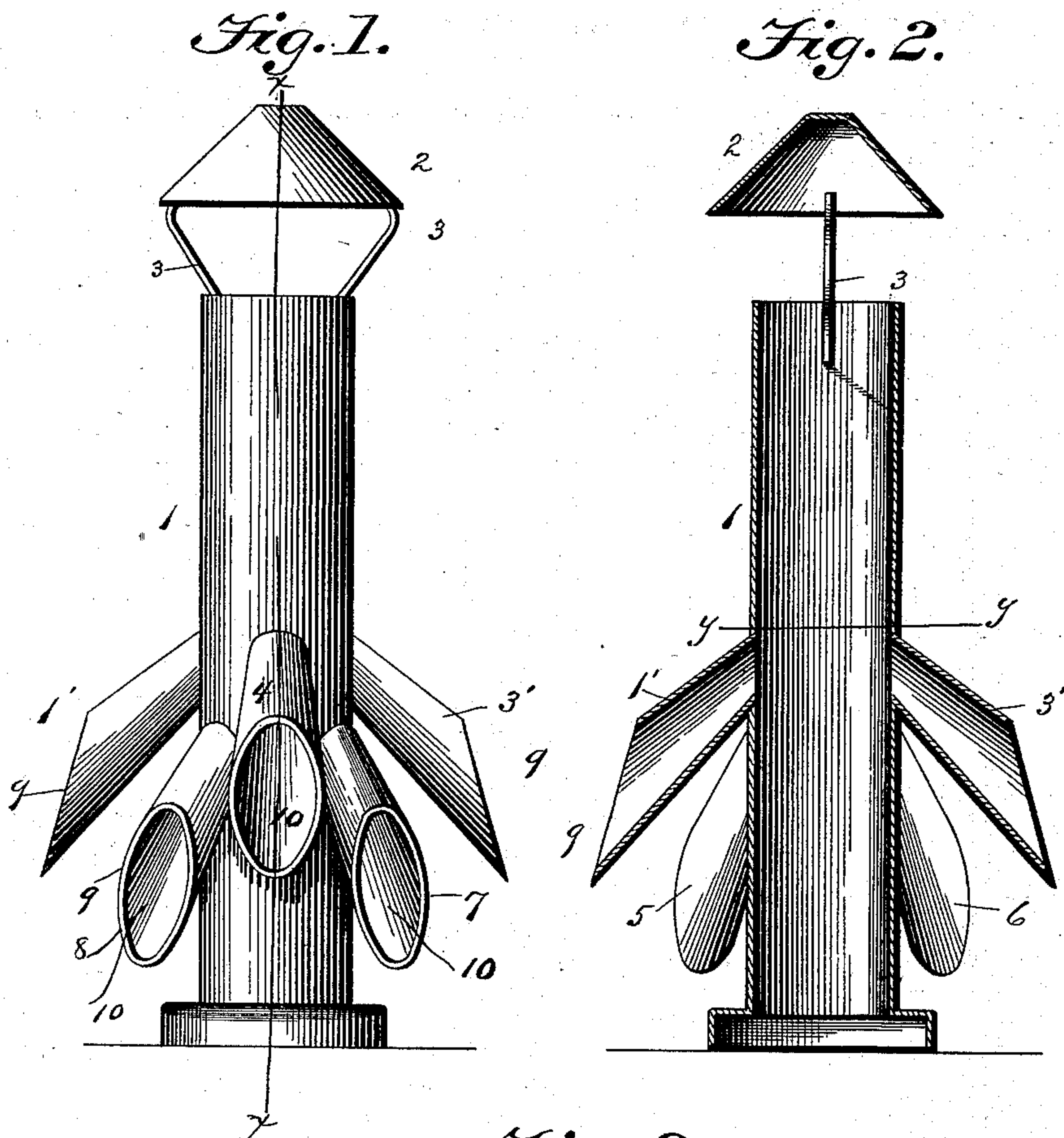
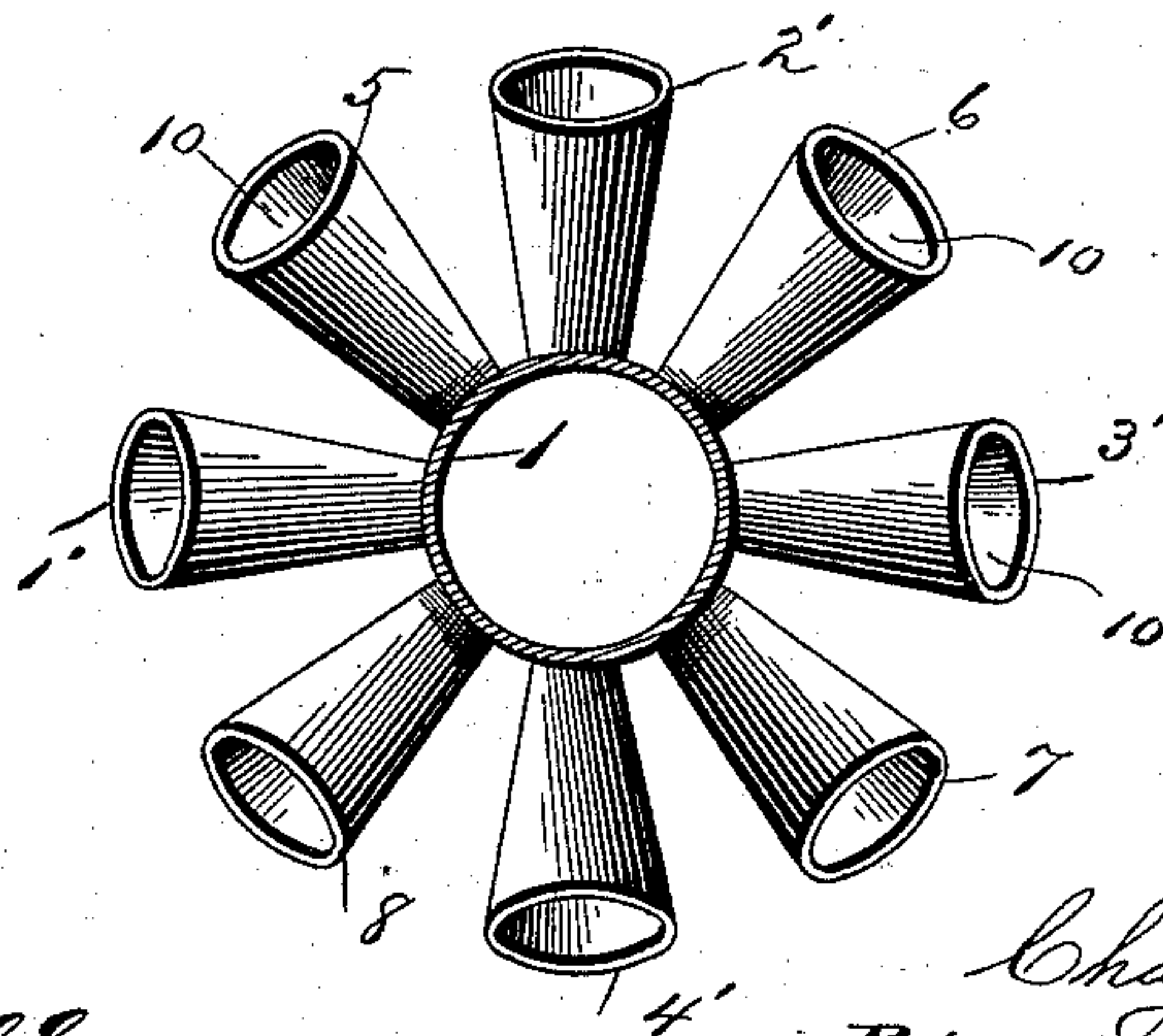


Fig. 3.



WITNESSES

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CHIMNEY-COWL AND VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 409,990, dated August 27, 1889.

Application filed May 25, 1889. Serial No. 312,103. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. LOVELESS, a citizen of the United States, residing at Worthington, in the county of Nobles and State of Minnesota, have invented certain new and useful Improvements in Chimney-Cowls and Ventilators; and I do hereby 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.

My invention relates to improvements in stationary chimney-cowls and ventilators; and it has for its object, primarily, to provide means for materially increasing the strength of the natural air-current passing through the chimney or ventilator and secure a very strong powerful draft through the cowl and ventilator by utilizing the downward current of wind that enters the open top or upper end of the cowl and the suction created on the lee side of the same by the passing wind, as well as to prevent the entrance of rain and snow into the device.

With these primary ends in view and such others as pertain to my invention it consists of a vertical stationary tube of uniform diameter, having an open upper end, preferably protected by an elevated cap, and a cluster or group of vertically-inclined longitudinally-tapered draft-tubes fixed to the upright vertical tube, arranged in a peculiar manner with relation thereto and communicating with the same below the open upper end thereof. The cluster or group of vertically-inclined tapered tubes are arranged in two series around the upright tube, the upper series opening into the draft-tube all on a common horizontal plane or level, and the lower series of tubes being alternately arranged between the tubes of the upper series and all of the lower series of tubes likewise opening into the upright tube on the same level or plane. The inclined tubes of each series are arranged at diametrically-opposite points with respect to the upright tube, so that the current of wind entering the inclined tubes on one side of the upright tubes meets the downward current from the upper open end of the upright tube and passes or is drawn out under an increased velocity by the suction created

on the lee side of the upright tube by the passing wind, thereby augmenting very materially the strength and force of the current passing upward through the cowl and ventilator from the chimney or apartment to which the device is applied. The inclined tubes are expanded in the direction of their length from the points where they open into the upright tube toward their outer lower extremities, and the outer end of each inclined tube is beveled off from the lower side toward the upper side on a line at an acute angle to the axis of said tube. By thus constructing the inclined tube an exposed broad deflecting-surface is provided at its outer end, against which an increased volume or quantity of the passing wind strikes and is deflected into said inclined tube, and as the air passes through said tube it is compressed by the tapered tube and enters the vertical upright tube with an increased velocity.

To enable others to more readily understand my invention, I will now proceed to a detailed description thereof, in connection with the accompanying drawings, in which—

Figure 1 is a side elevation. Fig. 2 is a vertical central sectional view of the same on the plane indicated by the line *x x* of Fig. 1. Fig. 3 is a horizontal transverse sectional view on the plane indicated by the line *y y* of Fig. 2.

Like numerals of reference denote corresponding parts in all the figures of the drawings, referring to which—

1 designates the upright vertical tube of my improved chimney-cowl and ventilator, which is adapted to be fitted on the open end of a chimney or to communicate with a hall or other apartment which it is desired to ventilate. This vertical tube is open at its upper end; but rain, snow, &c., are prevented from entering directly therein by a conical cap 2, which is arranged above said tube and is secured thereto by means of arms 3, as is usual.

At points a suitable distance below the open upper end of the upright tube I provide a cluster or group of inclined tubes, which are divided into two series, each series of tubes opening into the upright tube on the same horizontal level or plane. The upper series of tubes are designated by the nu-

merals 1 to 4, inclusive, and the lower series by the numerals 5 to 8, inclusive; but I would have it understood that I do not restrict myself to the particular number of inclined tubes herein shown, as the number may be varied without departing from the spirit of my invention. The inclined tubes of each series open into the upright tube at diametrically-opposite points. Thus the tubes 1 and 3 of the upper series are arranged opposite to the tubes 2 and 4 of the same series, and the tubes 5 and 7 of the lower series opposite to the tubes 6 and 8 of said lower series, whereby the current of air entering the upright tube through the inclined tubes on one side of said upright tube will pass or be drawn out of the inclined tubes on the opposite side of the upright tube. The tubes 5 6 7 8 of the lower series are arranged alternately between and with respect to the tubes 1 2 3 4 of the upper series, whereby the lower series of tubes are arranged to open into the upright tube 1 on a plane close to points where the upper series of tubes open into the upright tube. I am thus enabled to provide a plurality of inclined tubes, which are closely and compactly arranged in a cluster or group around a common tube, and which presents a large number of surfaces of considerable area to the wind, in order to receive the same from all points or directions. All the tubes are inclined downward and outward from the upright central tube, in order to prevent rain, snow, &c., from passing into the central tube, and each inclined tube is tapered longitudinally from the point where it opens into the central tube toward its outer lower end, in order to compress the air as it passes through the tube and cause it to enter the central tube with increased velocity and force. The outer extremity of each inclined tube is beveled on a line that lies at an acute angle to the axis of the tube, the bevel extending from the lower side of the tube toward the upper side, as at 9, to provide a broad surface of considerable area 10, against which the wind strikes and is deflected into the tube, thus causing an increased larger quantity of air to enter said tube than if the tube were cut off at right angles to its axis.

I attach especial importance to the pecu-

liar arrangement of the group of inclined tubes around a common central tube, and to the peculiar construction of the tubes, as herein described, as I am thereby enabled to create a current of air of increased volume and velocity through the cowl or ventilator, no matter in what direction the wind is blowing, and exclude rain, &c., from the device.

The operation of my invention is obvious from the foregoing description, taken in connection with the drawings, and I do not therefore deem it necessary to recite the same in detail again.

Slight changes in the form and proportion of parts can be made without departing from the spirit of my invention.

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

1. A chimney-cowl and ventilator consisting of a cylindrical central vertical tube having an open upper end and two series of downwardly-inclined tubes—an upper and a lower series—said inclined tubes being located exteriorly of and extending entirely around the central tube and communicating with the same below the open upper end thereof, the tubes composing said upper and lower series of tubes being alternately arranged in different vertical planes, substantially as described, for the purpose set forth.

2. A chimney-cowl and ventilator consisting of a cylindrical vertical tube having an open upper end and two series—an upper and a lower series—of downwardly-inclined tubes located exteriorly of said vertical tube, the tubes comprising both series being alternately arranged in different vertical planes, and each tube of each of the series of tubes converging from its outer end to its point of attachment to the vertical tube, and having its outer end truncated on a vertical line to form a mouth in the shape of a broad open ellipse, substantially as described, for the purpose set forth.

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

CHARLES B. LOVELESS.

Witnesses:

PETER THOMPSON,
M. P. MANN.