

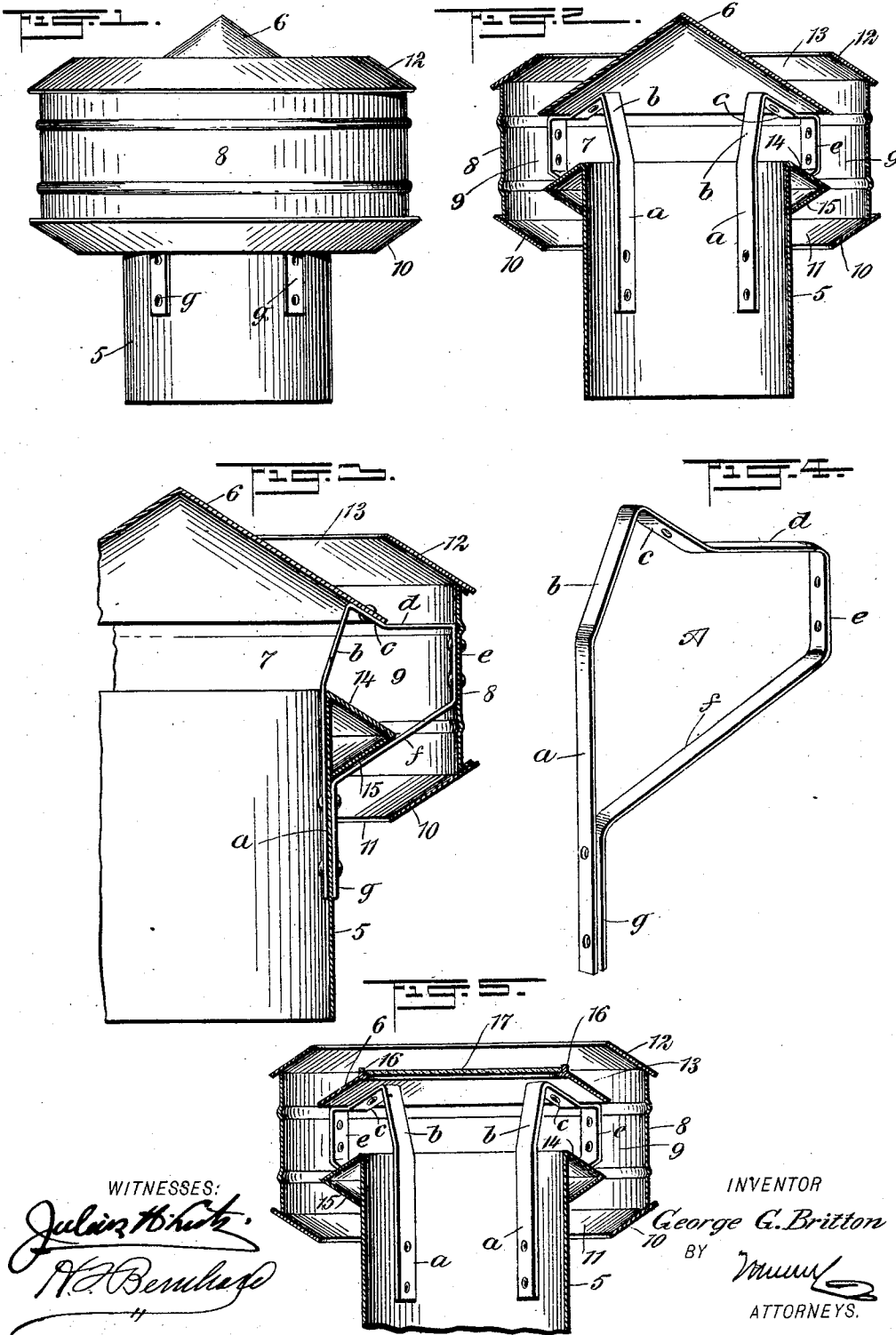
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G. G. BRITTON.
VENTILATOR.

(Application filed July 10, 1902.)

(No Model.)



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GEORGE G. BRITTON, OF ANNISTON, ALABAMA.

VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 715,968, dated December 16, 1902.

Application filed July 10, 1902. Serial No. 115,028. (No model.)

To all whom it may concern:

Be it known that I, GEORGE G. BRITTON, a citizen of the United States, and a resident of Anniston, in the county of Calhoun and State of Alabama, have invented a new and Improved Ventilating-Cowl, of which the following is a full, clear, and exact description.

My invention relates to improvements in ventilating-cowls for use on buildings and other places; and among other objects that I have in view is the provision of a device in which the entrance of wind, from whatever direction it may blow, is effectually excluded, so that the outside air will not have any effect on the draft through the tubular ventilator-stem; to so arrange the several parts comprising the ventilator that the wind cannot blow across the open end of the tubular stem, and it is directed or deflected in such a way as to create a draft or suction through the tubular stem, thus assisting in the operation of drawing air out of the stem and increasing the efficiency of the structure as a whole; to provide means which unites the several parts in a substantial manner and secures strength and stability in the structure; to provide for the use of glass or other transparent material when the ventilator is to be used on places where it is desirable to admit light, and to simplify and cheapen the construction of the ventilator or ventilating-cowl as a whole.

With these ends in view the invention consists in the novel construction and arrangement of parts, which will be hereinafter fully described, and the actual scope of the invention will be defined by the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of a ventilating-cowl constructed in accordance with my invention. Fig. 2 is a vertical sectional elevation of the same. Fig. 3 is a vertical sectional view, on an enlarged scale, through a part of the ventilating-cowl. Fig. 4 is a detail view of the stay employed by me to join the several parts together in a substantial manner; and Fig. 5 is a vertical sectional elevation through another embodiment of the ventilating-cowl, illustrating a construction adapted for the use

of glass in order to admit light to an air-shaft or other place on which the ventilator may be used.

5 designates the tubular stem of the improved ventilating-cowl, and 6 is a cap arranged to overhang the upper end portion of said tubular stem. In the embodiment of the invention shown by Figs. 1 to 3, inclusive, this cap 6 is of conical shape, the base of the cap exceeding in diameter the tubular stem 5. The cap is sustained in spaced relation to the stem by means of a series of stays, thus forming a space 7 between the top edge of the tubular stem and the under surface of the cap.

8 designates a shell or casing which is preferably of cylindrical form and which exceeds the diameter of the stem and the cap, said shell or casing arranged to surround the tubular stem for a part of its length and to also surround the lower end of the conical cap. This cylindrical shell is disposed in concentric relation to the tubular stem and the conical cap to leave an air-circulation space 9 between said stem, the cap, and the shell, as shown more clearly by Figs. 2 and 3.

10 designates an inclined flange which is secured or attached in any suitable way to the lower edge portion of the cylindrical shell 8, and this flange is disposed in a position to extend downwardly and inwardly from the surrounding shell toward the tubular stem 5. The lower edge of the inclined flange, however, does not engage with the stem; but, on the contrary, said edge of the flange terminates at a distance from the surface of the stem, so as to leave an annular space 11 for the passage of air.

Another inclined flange 12 is supported by the surrounding casing 8; but this flange 12 is arranged at the upper edge of said casing and in a reversely-inclined position to flange 10, thus making the flange 12 take an upwardly and inwardly inclined position on the casing 8. Said flange 12 is fastened or secured in any suitable way to the upper edge portion of the cylindrical casing, and it slopes or inclines inwardly from the casing, the pitch or inclination of said flange 12 corresponding to the sloping surface of the conical cap 6. The upwardly and inwardly inclined flange 12 is thus disposed in parallel relation to the cap 6, to form therewith a pas-

sage 13, which is open to the surrounding atmosphere and is in communication with the passage 9 within the cylindrical casing 8. The pitch or inclination of the two inclined flanges 10 12 is the same, so that they may be used interchangeably at the upper or lower portions of the cylindrical casing, and these flanges are of equal width and secured in corresponding positions to the surrounding casing 8, thus making the inner edges of the two inclined flanges lie in the same perpendicular plane, as will be readily understood by reference to Figs. 2 and 3.

A deflector is supported directly on the tubular member 5, at the upper portion thereof, and it consists of the reversely-inclined members 14 15. The members of said deflector are made by stamping or cutting them of sheet metal, and they are arranged around the tubular stem at the upper portion thereof and externally thereto. The inner edges of the members forming the deflector are united in any suitable way to the stem, and the outer edges of the two members are joined together by any suitable means, said outer edge of the deflector lying in a vertical plane which intersects the inner edges of the inclined flanges 10 12. The lower member of the annular deflector is disposed in opposing relation to the flange 10, while the upper member 14 lies in corresponding relation to the under surface of the cap 6, at the edge portion of the latter. The pitch or inclination of the members 14 15 corresponds to that of the flanges 10 12, and the members of said deflector are adapted to change the path of air-currents entering from above or below, the air being deflected toward the casing 8 and away from the open upper extremity of the tubular stem, whereby the air passing through the casing is prevented from flowing in a path across the upper end of said stem 5.

I prefer to employ a series of the stays shown by Fig. 4 to unite the cap and the casing to the tubular stem, and these stays are constructed in a way to brace and strengthen these several parts of the ventilator. Each stay is made or bent from a single length of metal, which may be either of flat iron or a strap having any desired cross-section. Each stay is designated in its entirety by the reference-letter A, and it has a straight stem *a*, an inclined arm *b*, an oppositely-inclined branch *c*, a horizontal arm *d*, a vertical length *e*, a downwardly and inwardly inclined brace *f*, and a leg *g*, all of which are bent or formed from a metallic bar or strip. The arm *b* at the upper extremity of the stem *a* is inclined outwardly to the stem, while the branch *c* lies at an acute angle to the arm *b*, the inclination of said branch *c* corresponding to the slope of the cap 6. The arm *d* extends from the inclined branch *c* in a direction at right angles to the stem *a*, while the length *e* is parallel to the stay A. The inclined part *f* joins the vertical length *e* and the leg *g*, re-

spectively, and said leg is disposed in parallel relation to the lower part of the stem *a*.

The series of stays are arranged with relation to the other parts of the ventilator in the manner shown by Figs. 2 and 3—that is to say, the stem and leg of each stay are applied to the inner and outer faces of the tubular stem 5. The arm *b* inclines outwardly from the tubular stem 5 in order to bring the branch *c* into position to engage with the under face of the conical cap, while the arm *d* extends beyond the edge of the cap and the vertical length *e* engages with the inner face of the surrounding casing 8, and, finally, the brace *f* extends downwardly from the casing and inwardly toward the tubular member, said brace lying below and parallel to the inclined section 15 of the surrounding deflector. The stem and leg of each stay are joined solidly to the tubular member by suitable rivets or other equivalent fastenings. The inclined branch *c* is fastened in a similar way to the edge portion of the conical cap, and the vertical length *e* of the stay is riveted to the surrounding casing at points between the oppositely-inclined flanges 10 12. The stays are thus firmly supported on the tubular member in a manner to sustain the conical cap and the surrounding casing in rigid relation to the tubular stem and to each other, and these stays serve to brace and strengthen the various parts of the structure.

In the embodiment of the invention shown by Fig. 5 the parts comprising the ventilator or ventilating-cowl are the same as in the devices shown by Figs. 1 to 4, inclusive, except that the upper part of the cap 6 is cut off and provided with a flanged opening, the said flange being indicated at 16. This flanged opening of the cap forms a seat adapted to receive a light 17, of glass or other transparent material, the same lying directly over the tubular stem and below the opening formed by the inwardly-inclined flange 12 of the casing, thus admitting light to the tubular stem.

I prefer to construct and arrange the cap 6 in a manner for its lower edge portion to lie in the vertical plane of the inner edges of the flanges 10 and 12 and the outer edge of the surrounding deflector on the tubular stem, thus making the edge portions of all the inclined parts lie in corresponding positions.

When the ventilator or ventilating-cowl is in service, the air is free to circulate through the passage 9 and the passages or openings formed by the flanges 10 12; but the wind cannot blow crosswise of the open end of the tubular stem. An updraft of air through the tubular stem is free to pass through the passage 7 between the stem and the cap and through the passage 9, provided within the casing, the air making its exit through one or the other of the flanges 10 12, according to the direction in which the wind is blowing. If the wind blows in an upward direction against the flange 10, the air is free to pass through the opening 11 and the passage 9 and

make it exit through the opening 13; but this upward current of air through the surrounding casing is deflected by the member 15 toward the casing 8, thus preventing the air from crossing the tubular stem and causing it to create a suction or draft through the passages 7 9 and the stem, thereby increasing the efficiency of the ventilator. If the wind blows in a downward direction against the upper flange 12, it passes through the passages 13, 9, and 11; but the cap 6 and the member 14 of the deflector change the course of the downwardly-flowing current of air toward the casing, thus making this downdraft create a suction through the passage 7 and the tubular stem 5, so as to also increase the efficiency of the ventilator. If the wind blows horizontally against the casing, it cannot enter the ventilator, because it will be deflected by the casing 8, the stem 5, or the flanges 10 12 on said casing.

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

1. A ventilating-cowl comprising a tubular stem, a doubly-inclined deflector supported externally on the stem, adjacent to the open end thereof, and having reversely-inclined members meeting in an apex and joined to the stem, a cylindrical casing of larger diameter than the stem and the deflector and arranged to inclose the latter and to extend above the stem, a cap over said stem and disposed for its lower edge to lie in the vertical plane of the apex of said deflector, an upwardly-inclined flange at the upper edge of the casing and dis-

posed parallel to the cap, and a downwardly-inclined flange at the lower edge of the casing and disposed parallel to the lower member of said deflector; the inner edges of the flanges lying in the vertical plane of the edge of the cap and the apex of the deflector.

2. A ventilating-cowl comprising a tubular stem, a series of stays each provided with a horizontal arm and a vertical arm and terminating in an inwardly-inclined leg which is fastened to the stem, a doubly-inclined deflector united to the stem above the legs of the stays, a cap attached to the stays, a cylindrical casing fastened to the vertical arms of the stays and inclosing said deflector, and reversely-inclined flanges at the upper and lower ends of the casing, the upper flange lying parallel to the cap and the lower flange extending below and parallel to a lower inclined member of said deflector.

3. A ventilating-cowl comprising a stem, a doubly-inclined deflector surrounding the stem near the upper end thereof, a series of stays fastened to the stem, a cap fastened to the stays and provided with a light or transparent pane which lies over the stem, and a casing attached to the stays and having the inwardly-inclined flanges at the upper and lower ends thereof.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE G. BRITTON.

Witnesses:

JNO. H. FRYE,
JOHN R. SWEETS.