Sept. 30, 1924. 1,509,996

T. ELTING

VENTILATOR

Filed Dec. 9, 1920

Fig. 1.

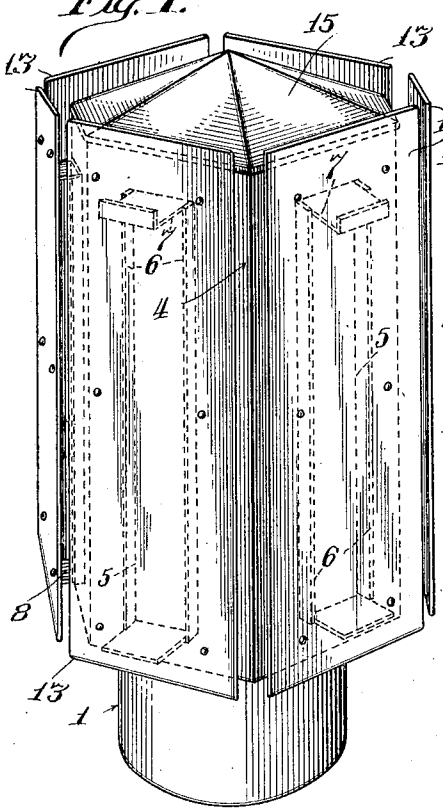


Fig. 2.

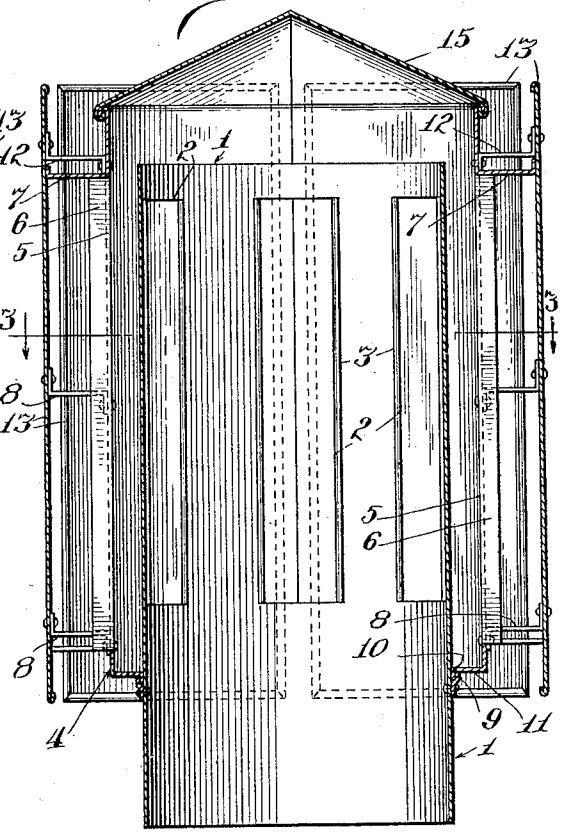
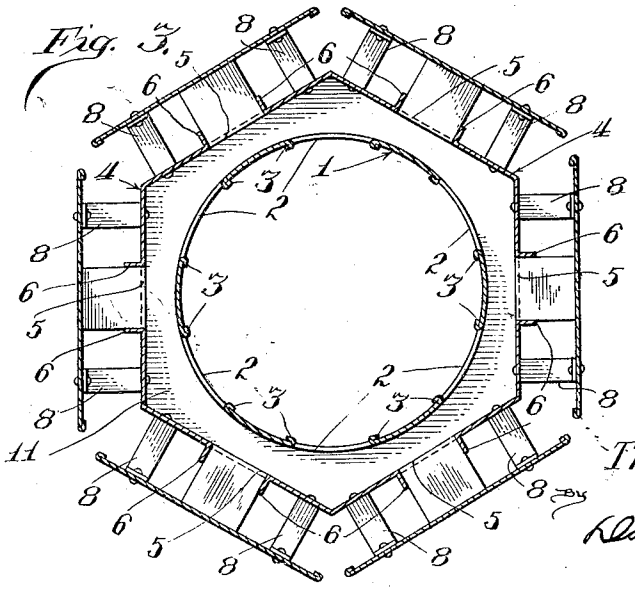


Fig. 3.



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UNITED STATES PATENT OFFICE.

THEODOR ELTING, OF CHICAGO, ILLINOIS.

VENTILATOR.

Application filed December 9, 1920. Serial No. 429,404.

To all whom it may concern:

Be it known that I, THEODOR ELTING, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented a new and useful Improvement in Ventilators, of which the following is a specification.

The invention relates to ventilators, especially of the kind employed for removing foul air from shops, plants, and the like.

It is an object of the invention to provide a ventilator which has a high degree of suction and is thus distinguished by its great efficiency.

A further object of the invention aims at the provision of a ventilator which is of extremely simple construction, devoid of movable parts, louvers, attachments, and the like, thus rendering the apparatus foolproof.

It is also an object of the invention to construct the ventilator so as to prevent rain or snow from entering.

A further object of the invention aims at the construction of a ventilator that will prevent the setting up of a back draft, whereby the foul air would be forced back into the building.

With these and other objects in view, which will appear as the description of the invention proceeds, the invention comprises the means set forth in the following specification, particularly pointed out in the claims forming a part thereof, and illustrated in the accompanying drawing, in which:

Fig. 1 is a perspective view of a ventilator constructed in accordance with the invention.

Fig. 2 is a sectional elevation of the ventilator.

Fig. 3 is a cross-section one the line 3—3 of Fig. 2.

Referring to the several views of the drawing, 1 indicates a cylindrical casing or shell, which has a diameter sufficient for the purposes for which the ventilator is intended. The height of the cylinder is commensurate with the suction to be created whereby the foul air is to be removed from the shop, plant, or other building, where sufficient ventilation is to be maintained. The cylinder is formed by rolling a sheet metal plate and riveting the meeting ends together. The cylinder 1 is provided with a plurality of openings 2 which are elongated in vertical direction and narrow in circumferential direction, as shown in the preferred embodiment of the invention.

In the drawing, the cylindrical shell 1 is equipped with six openings 2, but any other number of openings may be chosen if so desired. The longitudinal edges of the openings 2 are bent upon themselves, as indicated at 3, so as to provide reinforcements and curved portions for the egress of the foul air. The cylinder has six openings and a hexagonal casing 4 is provided to surround the shell, the latter also being provided with openings 5 elongated in vertical direction and narrow in horizontal direction. Attention is called to the fact that the openings 5 are opposed to an imperforate part of the shell 1, so that the air egressing from the shell is forced to flow in a circuitous path, as will be readily established from the drawing. The vertical edges of the openings 5 are provided with flanges 6 extending at right angles to the panels of the casing 4, and the upper horizontal edge is provided with a flange 7, which acts as a spacer for the outer cover plates hereinafter referred to and prevents rain from entering.

The cylindrical shell has secured thereto a circumferential ring 9 by rivets or the like, and this ring is offset at its upper end with relation to the cylinder to provide a circumferential groove into which extends the edge 10 of a horizontal flange 11 formed at the lower end of the hexagonal casing 4. To the panels of the hexagonal casing 4, a plurality of brackets 8 and 12 are secured and the outer ends of said brackets are riveted to plates 13, which are arranged parallel to the panels of the casing 4 and which plates 13 maintain a distance from each other at the sides to provide a passage for the egress of air. The flange 7 serves as a spacer for the plates 13 prior to their being riveted to the brackets 12. The hexagonal casing 4 is closed up at the top by a pyramidal cover 15 which is permanently secured to the upper end of the casing 4 by any approved or convenient means, and, as shown in the drawing, the upper end of the casing 4 is bent outwardly and downwardly to receive the lower end of the cover 15, which is bent downwardly and upwardly.

From the foregoing it is obvious that a ventilator is provided which is distinguished by a very simple and rigid construction; the ventilator is devoid of loose, rattling

parts, and thus continuously operates without requiring any supervision or repairs. The ventilator is closed at the top and on the sides by virtue of the cover plates, and is protected against the entrance of wind, rain or snow, thus precluding the possibility of back draft being set up, which would force foul air to flow back into the building.

The operation of the ventilator is thought to be obvious. By reason of the hexagonal construction of the casing 4 and the similar arrangement of the cover plates 13 the wind pressure existing at the top of the building will flow alongside the panels or plates 13 and at the edges thereof will set up a suction which will cause the foul air to flow from the building through the shell 1 past the openings 2, thence through the openings 5 and discharge through the passage between two adjoining plates 13. Rain or snow is prevented from entering the ventilator inasmuch as the same is closed up at the top and by virtue of the arrangement of the openings and passages which provide a tortuous or circuitous path, so that no danger exists that a back pressure will be set up.

While the drawing discloses a hexagonal ventilator it is, of course, within the scope of the invention to increase or decrease the number of sides selected for the casing although it has been found by practical experiments and researches that a hexagonal ventilator is the preferred form. The manner of securing the parts of the ventilator together may also be varied and if preferred screw connections instead of riveting may be employed. The drawing does not disclose any changes or modifications but no intention prevails of limiting the invention to the precise construction as shown, as changes and alterations are included within the scope of the invention which is defined by the following claims.

I claim:

1. A ventilator, comprising a cylindrical shell having a plurality of spaced openings, a polygonal casing comprising a plurality of connected panels spaced from said shell and provided with openings, said last named openings being opposed to imperforate parts of said shell, and a plurality of plates spaced from each other and from said panels and means for supporting said plates directly from said panels of said casing.

2. A ventilator, comprising a cylindrical shell, a polygonal casing surrounding said shell to define an annular air channel therebetween, and spaced plates parallel to the panels of said casing and secured thereto and wholly supported thereby, said casing and shell being provided with openings to constitute a circuitous path for the egress of air.

3. A ventilator, comprising a cylindrical shell having a plurality of spaced openings elongated in vertical direction, a polygonal casing surrounding said shell to define an annular air channel therebetween, said casing having openings elongated in vertical direction and opposed to imperforate parts of said shell, and shields parallel to the panels of said casing and secured directly thereto and wholly supported thereby to provide openings at the top and bottom, adjacent edges of said shields being spaced to provide passages for the egress of air.

4. A ventilator, comprising a cylindrical shell, a polygonal casing surrounding said shell to define an annular air channel therebetween, spaced plates parallel to the panels of said casing secured directly thereto and wholly supported thereby, said casing and shell being provided with openings which constitute a circuitous path for the egress of air, and a cover closing the upper open end of said casing.

5. A ventilator, comprising a cylindrical shell, a polygonal casing surrounding said shell to define an annular air channel therebetween, spaced plates parallel to the panels of said casing and secured directly thereto and supported thereby, said casing and shell being provided with openings to constitute a circuitous path for the egress of air, and means for entirely supporting said casing at the lower end thereof from said shell.

6. A ventilator, comprising a cylindrical shell having a plurality of spaced openings elongated in vertical direction, a polygonal casing surrounding said shell to define an annular air channel therebetween, said casing having openings elongated in vertical direction and opposed to imperforate parts of said shell, the edges of said casing openings being formed with flanges extending at right angles to the panels of said casing, and shields parallel to the panels of said casing and secured directly to said flanges, adjacent edges of said shields being spaced to provide passages for the egressing air.

7. In a ventilator, the combination of a cylindrical shell provided with a circumferential series of elongated openings, a hexagonal casing surrounding the shell and having in each of the sides thereof an elongated opening presented to an imperforate part of the shell, brackets extending from the sides of said casing, plates arranged over each side of the casing and supported entirely on said brackets in spaced relation to the sides of said casing and to each other to afford air passages open on all sides, and means for supporting said casing and plates wholly at the bottom on said shell.

8. In a ventilator, the combination of a cylindrical shell provided with a circumferential series of elongated openings, a

hexagonal casing surrounding the shell and in spaced relation thereto, said casing having openings in the sides each presented to an imperforate part of the shell, brackets on the external surfaces of each of the sides of the casing, plates disposed over each side of the casing and wholly supported on said brackets in spaced relation to the sides of the casing and to each other to afford air passages open on all sides, and a circumferentially extending flange on the outer face of said shell to receive one end of said casing and form the sole support for said casing.

9. In a ventilator, in combination, a cylindrical central shell, having a plurality of openings, a polygonal casing surrounding and in spaced relation to said shell, said casing having openings in the sides thereof presented to imperforate parts of said shell, plates rigidly secured to the side of said casing, and means circumferentially arranged on said shell for readily removably supporting said casing and plates as a unit on said shell.

In testimony whereof, I affix my signature in the presence of two witnesses at 36 West Randolph St., Chicago, Illinois.

THEODOR ELTING.

Witnesses:

DANIEL A. BRENNAN,

DOROTHY WISE.