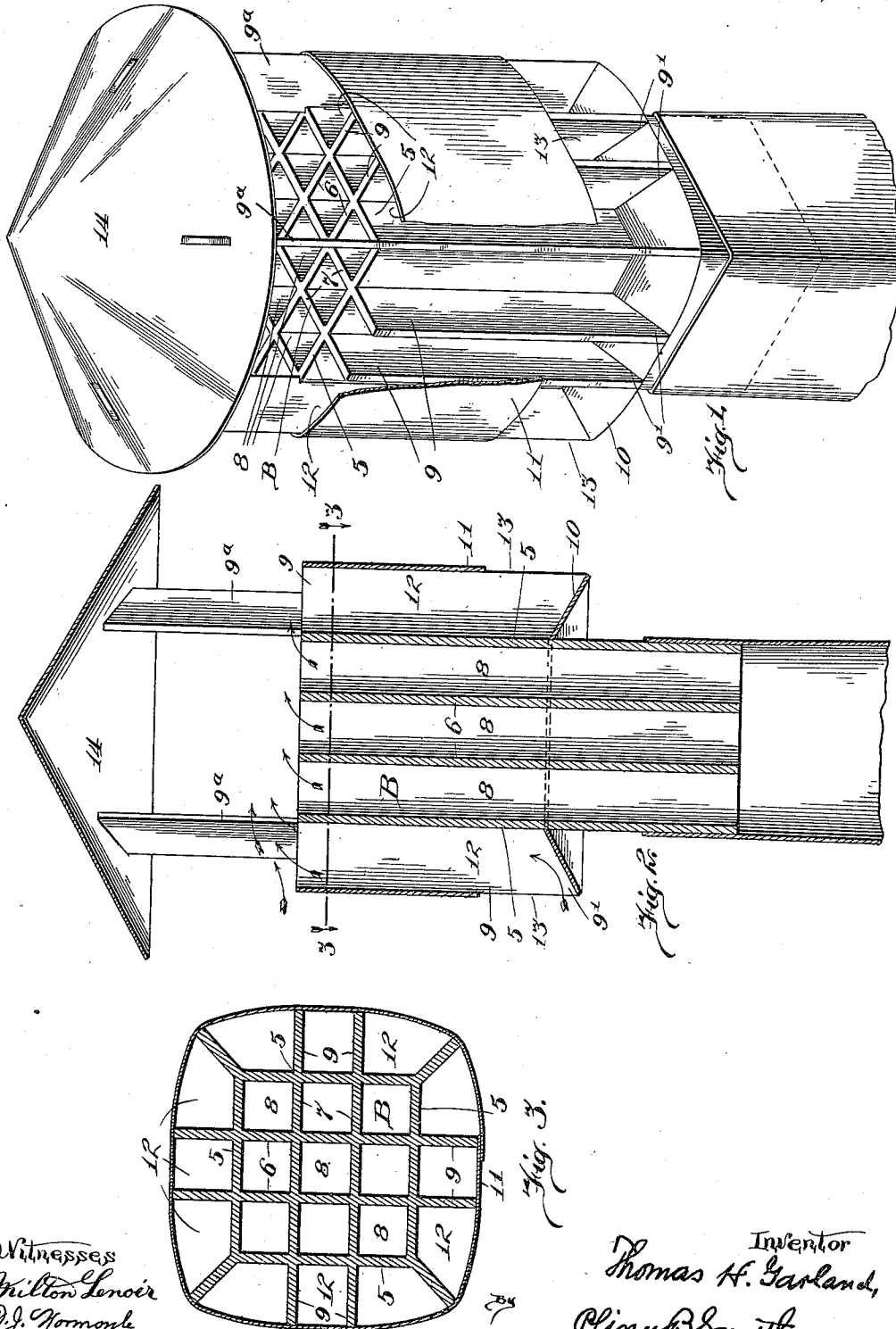


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VENTILATOR FOR BUILDINGS AND CHIMNEY TOPS.
APPLICATION FILED MAY 22, 1911.

1,006,930.

Patented Oct. 24, 1911.



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VENTILATOR FOR BUILDINGS AND CHIMNEY-TOPS.

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Specification of Letters Patent.

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Application filed May 22, 1911. Serial No. 628,756.

To all whom it may concern:

Be it known that I, THOMAS H. GARLAND, a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Ventilators for Buildings and Chimney-Tops, of which the following is a specification.

My invention relates to exhaust ventilators, and involves improved features of construction and operation.

Among the important objects of my invention are to provide an improved form of ventilator which not only forms a free opening for the passage of air from a building or space to be ventilated, but is so constructed that outside currents of air striking or blowing against it will produce an inductive action causing a strong exhaust of air from the interior of the building to the outside.

My invention comprises a body part which is subdivided into a plurality of parallel ducts or flues. This body is encircled by other parallel ducts or flues open at their upper ends and open laterally at their lower ends. At the lower ends deflector plates are attached which deflect the wind upwardly through the outer ducts or flues and against the air or wind that is blowing transversely across the upper ends of the ducts or flues that sub-divide the body of the ventilator. The upward currents of air through these outer ducts serve to lift or push away the transverse wind or currents of air from the upper ends of the interior ducts, thus creating a partial vacuum at the outlet ends of these ducts which must be filled by air from the building or space to be ventilated. The principal object in sub-dividing the body into a plurality of ducts is to make the induction action stronger than would be the case were the body not so divided. The presence of the interior dividing walls prevents the surrounding outside air from creeping in over the top of the lee side of the ventilator to fill the partial vacuum created at the outlet ends of the interior ducts or flues next to the wind side. Therefore the induction action upward through the body is greatly increased.

My invention will be clearly understood by reference to the accompanying drawing, in which—

Figure 1 is a perspective view of the top with a section of the outer surrounding band broken away, Fig. 2 is a vertical sectional

view, and Fig. 3 is a sectional view taken on plane 3—3, Fig. 2.

The body part B comprises side walls 5 connected by intersecting intermediate walls 6 and 7 whereby the body part passageway is sub-divided into a plurality of vertical ducts or flues 8. Extending laterally from the upper part of the body walls 5 are extension walls 9 whose lower ends 9' are tapered upwardly, as shown in Figs. 1 and 2, and against the lower edges of these extension walls a deflector plate 10 is applied. Surrounding these walls 9 is a band 11, this band, together with the walls 9, forming the external passageways or ducts 12. The deflector plate 10 closes the lower ends of the ducts 12, and the band 11 terminates a distance short of this plate so as to leave lateral entrance passageways 13 at the lower end of and into the lower parts of the ducts 12. Some of the outer walls, as the walls 9^a, are continued upwardly beyond the body part and carry the conical hood 14 which serves to prevent rain, snow and downward air currents from entering the ducts.

In practice, the ventilator is applied to roofs of buildings or to a chimney or stack with the lower end of the body part engaging the chimney or stack end to form a continuation thereof. The outside air currents enter the lower ends of the exterior ducts 12 through the entrance 13, and by the tapered deflector plate 10 are deflected upwardly through the ducts 12, and as they are forced out of the upper ends of these ducts they encounter the wind flowing transversely across the body part outlets, and this wind is raised away from the body part duct outlets so that a partial vacuum is created at the upper ends of these ducts, which vacuum is effective on the body part ducts in creating inductive effect which will draw air or smoke out of the ducts, the air or smoke being then carried well above the ducts and then laterally away from the top. The conical top 14 extends well over the ducts, so that downward counter currents against the ducts are prevented and so that rain, snow, etc., are prevented from entering the ducts.

I do not desire to be limited to the precise construction and arrangement shown, as changes and modifications are possible which would still come within the scope of my invention, and I therefore claim the following:

1. In a ventilator, the combination of a body part sub-divided into a plurality of

vertical ducts, extension walls on said body part forming vertical passageways, and outer walls cooperating with said extension walls to form external vertical passageways open at the top and closed at the lower end and having lateral inlets at their lower ends.

2. In a ventilator, the combination of a body part having intersecting inner walls for sub-dividing it into parallel vertical ducts, exterior walls forming vertical passageways about said body part, said passageways opening to atmosphere at their upper ends in line with the outlets of the body part ducts, and said passageways being open to atmosphere at their lower ends, and means for deflecting air currents upwardly through said passageways.

3. In a ventilator, the combination of a body part having intersecting inner walls for sub-dividing it into parallel vertical ducts, exterior walls forming vertical passageways about said body part, said passageways opening to atmosphere at their upper ends in line with the outlets of the body part ducts, and said passageways being open to atmosphere at their lower ends, and a deflector plate for deflecting lateral air currents into and upwardly through said passageways.

4. In a ventilator, the combination of a body part sub-divided into a plurality of ducts, walls outside of said body part forming external passageways open at the top to atmosphere and closed against lateral air currents except at their lower ends, and deflector means for deflecting air currents into and vertically through said exterior passageways.

5. In a ventilator, the combination of a body part sub-divided into a plurality of vertical ducts, walls extending laterally from said body part, a band engaging the outer ends of said walls along the greater part thereof but short of the lower ends of said walls to leave lateral entrance openings to the external ducts formed by said walls, and a deflector plate engaging the lower ends of said walls for deflecting air currents into and upwardly through said external ducts.

6. In a ventilator, the combination of a body part for engaging the roofs of buildings or for the chimney to form an extension thereof and sub-divided into a plurality of vertical ducts for communicating with the building or chimney, walls extending laterally from said body part, a band engaging the outer ends of said walls along the greater part thereof, but short of the lower ends of said walls to leave lateral entrance openings to the external ducts formed by said walls, and a deflector plate engaging the lower ends of said walls for deflecting air currents into and upwardly through said external ducts, the outlets of said body part

ducts and external ducts being in a common plane.

7. In a ventilator, the combination of a body part sub-divided into a plurality of vertical ducts, external walls forming a plurality of vertical passageways about the outside of said body part, said external passageways being open at their upper and lower ends to atmosphere, and means for deflecting air currents into the lower ends of said external passageways and upwardly therethrough.

8. In a ventilator, the combination of a body part sub-divided into a plurality of vertical ducts, external walls forming a plurality of vertical passageways about the outside of said body part, said external passageways being open at their upper and lower ends to atmosphere, means for deflecting air currents into the lower ends of said external passageways and upwardly therethrough, and a hood surmounting said body part.

9. In a ventilator, the combination of a body part sub-divided into a plurality of vertical ducts, external walls forming a plurality of vertical passageways about the outside of said body part, said external passageways being open at their upper and lower ends to atmosphere, means for deflecting air currents into the lower ends of said external passageways and upwardly therethrough, some of said external walls being extended upwardly beyond the body part, and a hood supported by said extended walls.

10. In a ventilator, the combination of a body part adapted for the roofs of buildings or to be applied to a chimney to form an extension thereof and being sub-divided into a plurality of vertical ducts, and means surrounding said body part for causing upward circulation of air currents adjacent the body part for lifting away from the outlets of the body part ducts the air currents flowing transversely across said outlets whereby vacuum effect is created at the outlets of said body part ducts.

11. In a ventilator structure, the combination of a body part adapted to be applied to the tops of buildings or chimneys to communicate therewith, said body part being sub-divided into a plurality of vertical flues, and means for controlling air currents to create a partial vacuum at the outlet ends of the body part flues whereby to increase the inductive action upwardly through said body part flues.

12. In a ventilator structure, the combination of a frame sub-divided into vertical flues all terminating at their upper end in a common plane and open to atmosphere at this end, the outer flues being also open to atmosphere at their lower ends, the inner flues being adapted for connection at their

lower end with a chimney or building top, and means for deflecting lateral air currents upwardly through the outer layer of flues.

5 13. In a ventilator structure, the combination of a body part sub-divided its entire length into vertical flues, walls extending from said body part and forming about the upper end thereof a row of air ducts terminating at their upper ends in the plane of
10 the body part flues and open to atmosphere, the upper ends of said flues and air ducts being exposed to direct lateral flow of at-

mosphere and the air ducts being exposed to direct lateral flow of atmosphere at their lower ends, and deflector mechanism for deflecting lateral air currents into the lower ends of the ducts and upwardly there-
15 through.

In witness whereof, I hereunto subscribe my name this 19th day of May, A. D. 1911.
20 THOMAS H. GARLAND.

Witnesses:

L. M. ANDREW,
D. J. NORMOYLE..

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."