(No Model.)

L. ROBINSON.

VENTILATOR.

No. 493,295. Patented Mar. 14, 1893.

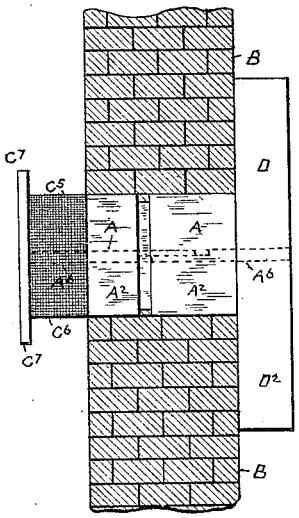

Fig 1

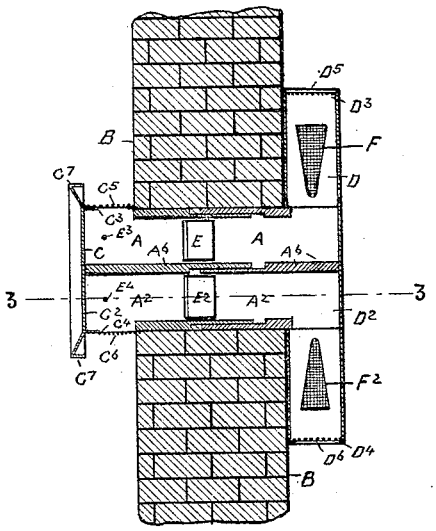

Fig 2.

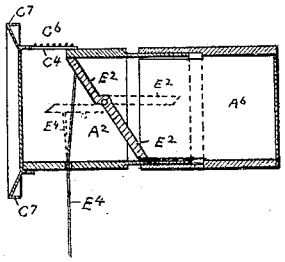

Fig 3.

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LUTHER ROBINSON, OF BOSTON, MASSACHUSETTS.

VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 493,295, dated March 14, 1893.

Application filed December 5, 1891. Serial No. 414,127. (No model.)

To all whom it may concern:

Be it known that I, LUTHER ROBINSON, a citizen of the United States of America, and a resident of the city of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Ventilators, of which the following is a full, clear, and exact description.

The object of this invention is to secure, in a most simple, inexpensive and effective manner, the ventilation of a room by air-passages which lead at an angle through a side-wall of the building and at their opposite ends are in communication with the air within and the air at the outside of the room.

To the end stated, the invention consists in the combination with the side wall of a building, &c., of a shell or casing located in and extending through the wall and having separated horizontal air-passages located side by side and extending lengthwise through it, horizontal continuations of said air-passages leading in opposite directions and along the outer face of the wall and open at their ends, a horizontal continuation of all of said air-passages forward of the inner face of the wall, and open on all its sides except the lower, and deflectors at the off end of said open sides of said air-passages at their said inner continuations, all as hereinafter described and pointed out in the claims.

In the drawings, forming part of this specification, Figure 1 is a plan view of the shell or casing and a horizontal section of the side-wall of a building broken off. Fig. 2 is a horizontal section of the shell or casing and of said side-wall. Fig. 3 is a vertical section, line 3—3, Fig. 2.

In the drawings, A, A^2 represent two parallel and distinct horizontal air-passages of a shell or casing leading through a wall B in representation of a side-wall of a building.

C, C^2 and D, D^2 respectively are the inner and outer extensions or prolongations, or in other words, the continuations of said air-passages A, A^2 respectively. Each inner continuation C, C^2 is at and beyond the inner or room side, and each outer continuation D, D^2 is at and beyond the outer side of the side-wall B. Each inner continuation is open for only vertical and lateral, or horizontal, air communication between the air-passages A and A^2 and the air contained within the room of which the side-wall B makes one part, all as shown, Figs. 2 and 3, at C^3 C^4 respectively. Preferably said openings C^3, C^4, for air-communication as stated, are each protected by a wire-screen or netting C^5, C^6, but such protection is not necessary, although, as is obvious, desirable and preferable. Again, each inner continuation C, C^2, at its end-portion the farther from the wall, has a surrounding outward flaring-rim C^7, shown, in the drawings, as continuous for the inner continuations of both air-passages A, A^2 for the reason that said continuations and said air-passages are directly alongside of each other, in fact, in a structure which otherwise is complete, as one whole, as will hereinafter appear. The outer continuation D, D^2 of each air-passage A, A^2 leads directly and horizontally from and at a right angle to its said air-passage A or A^2 and parallel to, and preferably it lies directly against the outer side of the wall B. These outer continuations D, D^2 are however in directly opposite directions and each at its outer end, as at D^3, D^4, Figs. 2 and 3, is open. Preferably said openings D^3, D^4 are protected by a wire-screen or netting D^5, D^6, but such protection is not necessary although, as is obvious, desirable and preferable.

E, E^2 are weighted valves one for and in each air-passage A, A^2. Each valve is pivoted and otherwise it is arranged and it is adapted normally to close the passage A, A^2, to which it belongs, against the flow of air through it in either direction.

E^3, E^4 are operating cords one for each valve E, E^2 and to which at one end each is suitably attached and thence led out of the air-passage to a convenient place for handling and thereby operating it to open or to allow the valve to which it is connected to close as may be desired. These valves while obviously desirable are not necessary and in themselves are well known and common in ventilating or air-flowing or circulating passages.

The air-passages A, A^2 and their respective inner and outer continuations C, C^2 and D, D^2 are shown as of and constituting one complete structure. Again this structure is shown as having another desirable feature to wit;

the making of its combined air-passages A, A^2 and partition A^6 separating them, of two intermediate transverse parts or sections, relatively adapted as shown to lap by and so to telescope each other, all so that said air-passages and their partitions may be elongated or shortened within given limits to accommodate the structure to varying thicknesses of walls.

Air-passages A, A^2 having inner and outer continuations all as described and located at a suitable or proper part of, and in the side-wall of a room and otherwise for air-communication to be had between said room and the outer face of said wall, obviously, in accordance with the well known laws of ventilation and circulation and moving of air-currents, will secure movement of air through them, either from, or into, and thus a ventilation of the room, all according as the condition of the air of the room and of the outside air may vary and furthermore according as the outside air may be in motion along the outer side of the wall in a direction toward, or away from, or otherwise, in relation to the open ends of the outer continuations of said air-passages.

The activity of ventilation and circulation as has been stated is very efficient for should the outside air be moving in a direction along the wall to enter into the outer open end of one air-passage and thus by deflection within the passage entered into the room, the air of the room necessarily will be actively made to pass into and to be conducted through the other air-passage and therein deflected and discharged at the open outer end of its said outer continuation. Again necessarily the movements of the outside air, as for instance, its movement toward or against, or its movement from the outside of the wall, affects the movement of the air in and through the air-passages as to whether it is an outward or an inward movement relative to the room. Again with the two air-passages having outer and inner continuations it is obvious, whatever may be the direction of movement of the outside air, there will be an influx of air through one of said passages and an efflux through the other, and so plainly contributing to the better ventilation of and improvement of the air within the room.

In the description given of the moving of air-currents from within to the outside of the room and vice versa, the valve or valves in the air-passages have been assumed as fully open, but obviously they may be used effectively in diminishing the quantity of air passing through said air-passages.

As the openings at the inner continuations of the air-passages are adapted for the entrance of the air from said continuations into the room in upward and horizontal directions obviously there can be no marked or annoying downward movement of the air of the room, a most important advantage, and further using an outward flaring lip or flange relative to the air-openings of the inner continuation of the air-passages serves most effectually to deflect and thereby to diffuse and spread the air as it escapes from said openings into the room.

F, F^2 are openings through the floor of the outer continuation of each of the air-passages A, A^2. These openings preferably are screened as shown.

The floor openings F, F^2 are useful in that they afford means for the air circulating through the air-passages either to pass downwardly from them or to enter upwardly into them and also that they increase the efficiency of the ventilation by giving more free communication between the internal and external air.

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

1. The combination with the side wall of a building, &c., of a shell or casing located in and extending through the wall and having separated horizontal air-passages located side by side and extending lengthwise through it, horizontal continuations of said air-passages leading in opposite directions and along the outer face of the wall and open at their outer ends, a horizontal continuation of all of said air-passages forward of the inner face of the wall, and open on all its sides except the lower, and deflectors at the off end of said open sides of said air-passages at their said inner continuation, all as described, for the purposes specified.

2. The combination with the side wall of a building, &c., of a shell or casing located in and extending through the wall and having separated horizontal air-passages located side by side and extending lengthwise through it, and transversely divided into sections having the walls of each adapted to severally telescope each other, horizontal continuations of said air-passages leading in opposite directions and along the outer face of the wall, and open at their outer ends, a horizontal continuation of all of said air-passages forward of the inner face of the wall, and open on all its sides except the lower, and deflectors at the off end of said open sides of all said air-passages at their said inner continuations, all as described, for the purposes specified.

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

LUTHER ROBINSON.

Witnesses:
ALBERT W. BROWN,
MARY W. STORER.