

B. E. CUMMINGS.
DRAFT VENTILATOR.
APPLICATION FILED NOV. 30, 1908.

931,183.

Patented Aug. 17, 1909.

Fig. 1.

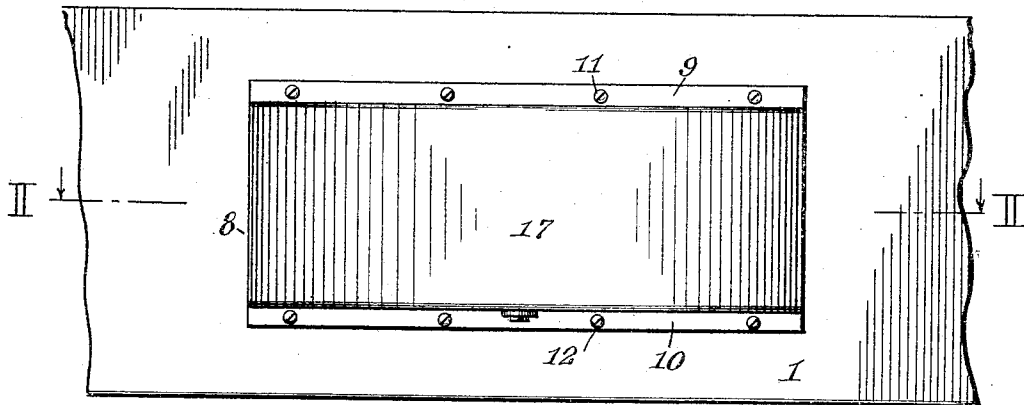


Fig. 2.

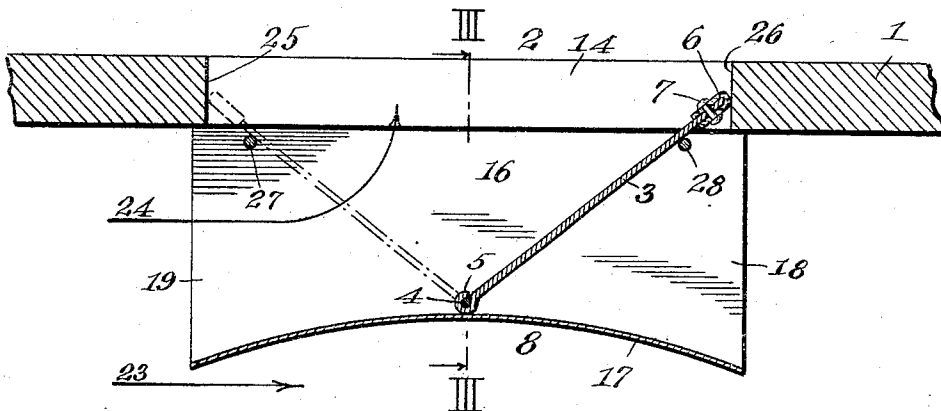
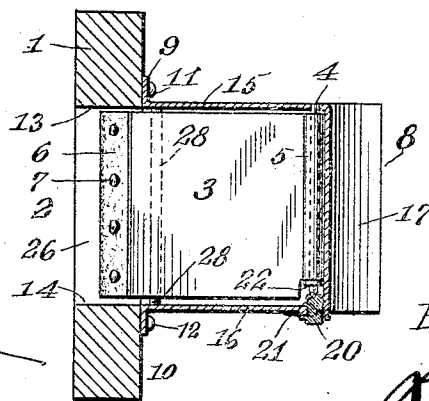


Fig. 3.



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DRAFT-VENTILATOR.

No. 931,183.

Specification of Letters Patent.

Patented Aug. 17, 1909.

Application filed November 30, 1908. Serial No. 465,331.

To all whom it may concern:

Be it known that I, BURTON E. CUMMINGS, a citizen of the United States, and a resident of Ridgefield Park, county of Bergen, and State of New Jersey, have invented certain new and useful Improvements in Indraft-Ventilators, as set forth in the following specification.

This invention relates to ventilating devices and particularly to those of the indraft type.

It is an object of the invention to insure the forced ventilation of a compartment from the momentum of an outside air current moving transversely to a ventilating aperture leading to the compartment to be ventilated.

To this end it is a further object to utilize the momentum of moving air currents of different directions and to provide suitable automatic means for deflecting such air currents into and through the ventilating aperture.

A further object of the invention is to provide such automatic means as will maintain free passage for the air current through the entire extent of the ventilating aperture for each direction of outside moving air current.

To the above end a valve plate is suitably pivoted to an outwardly extending support with its axis outlying the middle line of the ventilating aperture. The combination of such a valve plate with a suitable exterior hood for protecting the parts and for cooperating with the said valve plate to cause the desired deflection of the air currents is also contemplated.

A further object of the invention is to improve the general construction of ventilators of the class described and still further objects of the invention will be apparent from the accompanying drawings which form part of this application, which may be read in connection with the accompanying description, in which like characters designate corresponding parts, and in which—

Figure 1 is a front elevation of the apparatus with parts broken away; Fig. 2 is a horizontal section through line II—II of Fig. 1; and Fig. 3 is a vertical section looking in the direction of the arrows through line III—III of Fig. 2.

Referring now more in detail to the draw-

ings;—1 designates any partition between the compartment to be ventilated and the exterior thereof. It may be a window pane, window board, or the like. It is provided with ventilating aperture 2, which is shown rectangular. A valve plate 3 rectangular in form is provided to cooperate with the ventilating aperture 2. This valve plate is arranged vertically and may be suitably secured, as shown, by bending its outer vertical edge about a pivot spindle 4, the bent edge being indicated by 5. This spindle 4, which forms the axis about which the plate 3 swings, is vertical and outlies substantially the middle vertical line of the ventilating aperture 2. The plate is suitably arranged and supported upon such an axis that it may swing freely in response to varying air currents from the position shown in full lines in Fig. 2 to the position shown in dot and dash lines in the same figure. The edges of the valve plate 3 may be provided with packing material such as felt. The inner edge of the plate is shown thus provided with a strip of felt, secured as by rivets or other suitable means to the plate 3.

In the embodiment illustrated an open ended hood 8 is shown provided with flanges 9 and 10 which may be suitably secured as by screws 11 and 12 to the partition 1 with the flanges 9 and 10 paralleling the top and bottom edges 13 and 14 of the ventilating aperture 2. This hood comprises parallel top and bottom plates 15 and 16 extending at right angles to the flanges 9 and 10. Suitably secured to the top and bottom plates 15 and 16 is an exterior wall 17 cross-connecting their outer arc shaped edges. This wall 17 may be cylindrical in contour, as indicated, providing flaring mouths 18 and 19 for the hood. It is, however, to be understood that the contour of this wall need not be precisely as indicated.

In the embodiment illustrated the supporting means, to which the valve plate 3 is pivoted, consists of the top and bottom plates 15 and 16 of the hood. The spindle 4 may extend through a suitable perforation in the top plate 15 to act as a bearing. An adjustable pivot bearing 20 may be suitably secured, as by screw threads indicated, in the bottom plate 16 to cooperate with the lower pin bearing 21 of the spindle 4. A shoulder 22 formed on the spindle 4 is also shown to aid in supporting the valve plate 3.

The apparatus illustrated in Fig. 2 illustrates the position of the relative parts in response to an outer air current of the direction indicated by the arrow 23. A certain part of this outer air current finds its way into the open mouth 19 causing the valve plate 3 to assume the position illustrated in full lines and being deflected by said valve plate in the direction of the arrow 24 through the ventilating aperture 2, the entire extent of which is serviceable for the passage of the air. With the apparatus illustrated, the side walls 25 and 26 of the ventilating aperture 2 may serve as stops for the valve plate 3 or other stops such as rods 27 and 28 secured to the hood 8 may be provided. In case the direction of the outer air current is reversed the valve plate 3 will be swung into the position shown in dot and dash lines in Fig. 2 in which case this air current of opposite direction will be similarly deflected through the ventilating aperture 2, which again in this case has its full extent serviceable for the passage of the air.

Although the felt packing is shown applied merely to the inner edge of the valve plate, it is, of course, to be understood that this showing is merely illustrative and that the felt need not be limited merely to the inner edge of the valve plate. It is also to be understood that, although a preferred embodiment of the invention is illustrated, all

modifications within the scope of the accompanying claim are contemplated.

The hood and valve plate may be constructed of any suitable material as also may the various other parts, although sheet metal is preferred for the construction of the hood and valve plate.

What is claimed and what is desired to be secured by United States Letters Patent is:

In an automatic ventilating device, means providing a rectangular ventilating aperture; an open ended hood having an exterior outwardly concave cylindrical wall, covering said aperture and parallel, flat top and bottom walls; a single flat valve plate pivoted vertically at its outer edge within and to said hood and adjacent to said outer wall opposite the middle of said ventilating aperture and free to swing from side to side across said aperture; and the side edges of said aperture serving as means to stop the swing of said plate so as to deflect the air entering through either the one or the other open end of said hood through the entire extent of said aperture.

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

BURTON E. CUMMINGS.

Witnesses:

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EDSON B. SAMMIS.