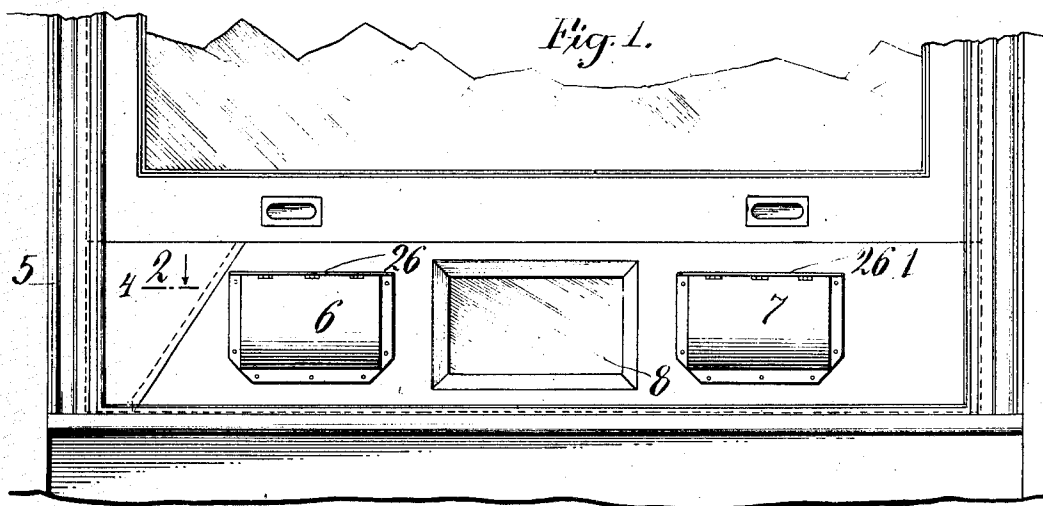
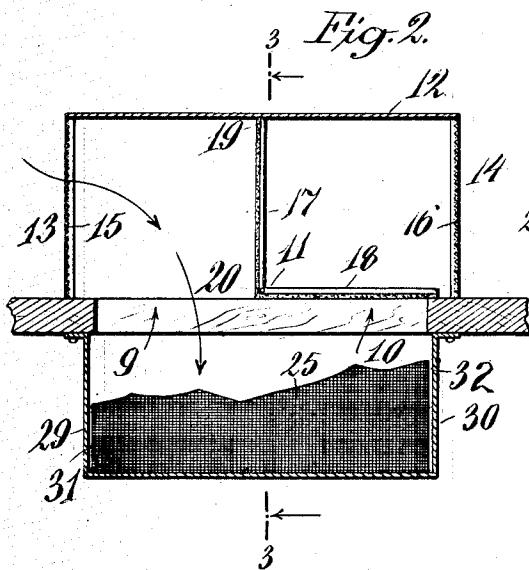
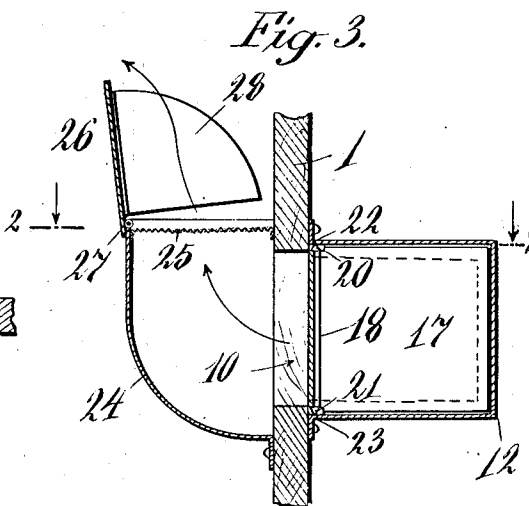
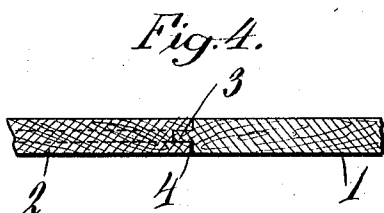


No. 860,366.

PATENTED JULY 16, 1907.

L. S. GRAEBING.
VENTILATING DEVICE.
APPLICATION FILED APR. 6, 1907.



WITNESSES:

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UNITED STATES PATENT OFFICE.

LAWRENCE S. GRAEBING, OF YONKERS PARK, NEW YORK.

VENTILATING DEVICE.

No. 860,366.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed April 6, 1907. Serial No. 366,653.

To all whom it may concern:

Be it known that I, LAWRENCE S. GRAEBING, a citizen of the United States, and a resident of Yonkers Park, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Ventilating Devices, of which the following is a specification.

The object of this invention is to provide an improved ventilator for an inclosed space and particularly a ventilator excluding from the inclosed space dust and the like impelled by gusts of wind outside the inclosed space and for utilizing the force of an outside air movement to accelerate the supply of ventilating air to the inclosed space.

This object may be furthered by providing a hooded ventilating aperture with an automatic dust discharging valve for permitting and then checking the flow of air longitudinally through the open ended hood and then deflecting the air through a ventilating aperture.

The above and further objects will be apparent from the following description.

A preferred embodiment of the invention is shown in the accompanying drawings which form a part of this specification and in which,—

Figure 1 is an inside elevation showing the application of the invention to a window frame; Fig. 2 is a horizontal section taken through 2—2 of Fig. 3; Fig. 3 is a vertical section taken through 3—3 of Fig. 2; and Fig. 4 is an enlarged detail section through 4—4 of Fig. 1.

Referring now more particularly to the drawings, 1 designates a back plate which forms a partition section separating some inclosed space such as a room or car interior from the outside atmosphere. Obviously, the back plate 1 may be a permanent partition, may be a part of the window itself or may be a removable and replaceable part such as that indicated. For convenience in removing and replacing the back plate 1, it is provided with a slidable section 2 which is secured to the base plate 1 by means of a tongue and groove 3, 4, one formed on the back plate and the other formed along the abutting edge of the section 2. The tongue and groove jointure should be inclined to the length of the back plate, as shown, so that by sliding the section 2 upwardly along the tongue 3, the effective length of the back plate or section 2 will be shortened to permit its ready removal from the window frame 5.

The back plate 1 is illustrated as being provided with two complete ventilating devices 6 and 7 between which there is located a small window pane 8. For each of the devices 6 and 7 the back plate 1 is provided with two ventilating apertures 9 and 10. In the present embodiment these apertures are provided by a continuous slot through the back plate 1 which is divided into two apertures 9 and 10 by a valve device 11, the axis of which is the demarcation between the apertures.

When in operation either one or the other of the apertures 9 and 10 serves alone as the intake ventilating aperture and, of course, for some purposes, a ventilating device provided merely with one of the apertures either 9 or 10 would be serviceable, in this case air being forced through this single aperture only when the outside air current is of a given direction. Secured to the back plate 1 in a horizontal position so as to cover the apertures 9 and 10 is a rectangular hood 12 provided with open ends 13 and 14 but closed on the other three sides, as shown. The open ends 13 and 14 are preferably provided with suitable screens 15 and 16 to prevent the entrance of foreign matter. The valve device 11 preferably comprises two plates 17 and 18 secured one to the other and angularly disposed to form an L-shaped member, as shown, or if the angular opening between the two plates is varied as it may be, the member would assume either a V-shaped cross section or one in which the angular section was obtuse. Secured to the edges of the plates 17 and 18 is a suitable packing 19 which may be felt or other yielding material capable of cushioning the impact of the plates 17 and 18 and of making a better air-tight closure. The plates 17 and 18 are secured one to the other, as shown, along their meeting edges and at this angular edge are provided at top and bottom with suitable pivots 20 and 21 which work in sockets 22 and 23 formed at the top and bottom of the hood 12 so that the axis, about which the valve device 11 swings, extends vertically substantially across the face of the back plate 1 and the ventilating apertures 9 and 10 are substantially symmetrically arranged on opposite sides of this axis. Each of the plates 17 and 18 is substantially identical with the other and they are respectively of a size sufficient to cover the apertures 9 and 10 and also to form a closing partition across the middle of the hood 12.

On the interior face of the back plate 1 there is provided a suitable air current deflector 24. A screen 25 is preferably provided for this deflector. The member 26 is a combined extension and cover for the deflector 24 and is hinged thereto by hinges 27. The side edges of the member 26 are provided with projecting wings 28 which are designed to pass down adjacent to the side members 29 and 30 of the deflector 24 either through the openings 31 and 32 between the screen 25 and the sides 29 and 30 or outside of the side members 29 and 30. Sufficient friction may be provided in the hinge 27 and the sliding engagement of the wings 28 with the sides 29 and 30 so that the member 26 will remain in any position into which it may be moved either completely covering the opening at the top of the deflector 24, partially closing the same, or leaving it completely open.

The arrows in Figs. 2 and 3 indicate the course of an air current when the ventilating device is operating in response to a steady air movement traveling in a direc-

tion transverse to the aperture 9 and substantially from left to right. The plate 17 forms a partition across the middle portion of the hood 12 and deflects the air current which enters the hood at the end 13 through the aperture 9. It then passes up through the deflector 24 into the inclosed space to be ventilated and obviously is impelled by the force of the air movement without the inclosed space.

It is well known that air currents outside of a building are frequently changing in direction and velocity and many times may be termed gusts of wind. These gusts of wind carry with them accumulated dust and sometimes larger particles of foreign matter. The screens 15 and 16 serve to protect the entrance of much foreign matter but are not alone adequate to prevent the entrance of dust.

If a sudden change in direction of the outside air current occurs, air will forcibly enter the right hand end 14 of the hood 12 carrying with it a charge of dust. The plate 18 is closing the aperture 10 so that this dust cannot enter the inclosed space. The air pressure acting upon the plate 17 immediately swings the entire valve device 11, comprising the plates 17 and 18, about its axis and there is a momentary sweep of air from end to end through the hood 12 which discharges the accumulated dust out the end 13. The plate 18 then forms a closing partition for the passage of air from end to end through the hood 12 and deflects the air current entering the end 14 through the ventilating aperture 10, leaving the valve device 11 in the opposite position to that illustrated in Fig. 2.

Obviously, the operation of the device in response to a second gust of a direction to enter the hood through the end 13 is similar to that described for end 14 and the valve device is then returned to the position illustrated in the drawings.

Obviously, various changes in the valve device illustrated and in the inclosing hood may be made without departing from the spirit of this invention and for some purposes, the valve device 11 may be used to advantage without the inclosing hood.

Furthermore, it is obvious that a single ventilating aperture 9 or 10 might sometimes be of service and be advantageously provided with a closing and deflecting plate or valve device 17 or 18 although it is preferred to provide two ventilating apertures, as shown, and the valve device 11 comprising two plates 17 and 18.

Obviously, the deflector 24 may in some instances be dispensed with or be replaced by another of suitable form.

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

1. A ventilating device comprising a partition section for an inclosed space, said partition section being provided with a ventilating aperture; an open ended exterior hood covering said aperture; and automatic means operable in response to gusts of wind for permitting a momentary sweep of air through the hood and thereby discharging dust through the open ends of said hood and then for deflecting outside air currents through said aperture into the inclosed space until a change in direction of air current occurs.

2. A ventilating device comprising a back plate provided with a ventilating aperture for an inclosed space; an exterior hood secured to said back plate to cover said aperture, said hood being closed on three sides and open at its ends; and pivoted valve means within said hood operable by air movements first to permit a flow of air

and a discharge of dust from end to end through said hood and then to check the flow of air from end to end through said hood and to deflect the air through said ventilating aperture.

3. A ventilating device comprising a back plate provided with a ventilating aperture; a combined valve and air current deflecting device pivoted to cooperate with said ventilating aperture, said device operable by an outside air current of one direction to close said ventilating aperture and operable by an outside air current of the opposite direction to open said ventilating aperture and deflect the said air current through said ventilating aperture.

4. A ventilating device comprising a back plate provided with apertures; a combined valve device and deflector automatically operable by air currents comprising two angularly disposed plates secured one to the other at their meeting edges; and means for pivoting said valve device to swing about an axis extending transversely between said apertures and substantially through the meeting edges of said plates, so that said valve device when swung in one direction will close one of said apertures and deflect the air current into the other aperture and when swung in the opposite direction will close the other of said apertures and deflect the air current into the first aperture.

5. In a ventilating device a back plate provided with two ventilating apertures; an automatic valve device, pivoted to swing on an axis at the face of said back plate and midway between said apertures; said valve device comprising plates for alternately closing said apertures and for alternately deflecting a transverse air current into one or the other of said apertures according to the direction of said air current.

6. In a ventilating device a back plate provided with two ventilating apertures; an automatic valve device pivoted to swing on a vertical axis near the face of said back plate and midway between said apertures; said valve device comprising plates for alternately closing said apertures and for alternately deflecting a transverse air current into one or the other of said apertures according to the direction of said air current.

7. In a ventilating device a back plate provided with two ventilating apertures; an automatic valve device pivoted to swing on a vertical axis near the face of said back plate and midway between said apertures; said valve device comprising plates for alternately closing said apertures and for alternately deflecting a transverse air current into one or the other of said apertures according to the direction of said air current; and an open ended hood for covering said apertures and inclosing said valve device.

8. A ventilating device comprising a back plate provided with two adjacent ventilating apertures located substantially symmetrically on opposite sides of a vertical axis near the face of said back plate; a horizontal hood secured to the face of said back plate and covering said apertures but open at its ends; an angular shaped valve device pivoted at its angular edge to swing about said axis and within said hood in response to varying air currents directed into the ends of said hood, whereby an air current will be deflected through one aperture and whereby a sudden change of air current direction will swing said valve device to discharge dust and then the valve device will deflect the air current through the second aperture.

9. A ventilating device comprising a back plate provided with a ventilating aperture; a pivoted valve device at one face of said back plate for deflecting transverse air currents of one direction through said aperture and for closing said aperture in response to transverse air currents of the opposite direction; and an air current deflector for the opposite face of said back plate.

10. A ventilating device comprising a back plate provided with a ventilating aperture; a pivoted valve device at one face of said back plate for deflecting transverse air currents of one direction through said aperture and for closing said aperture in response to transverse air currents of the opposite direction; an open ended hood inclosing said valve device and covering said aperture; and an air current deflector for the opposite face of said back plate.

11. A ventilating device comprising a back plate provided with a ventilating aperture; a pivoted valve device at one face of said back plate for deflecting transverse air currents of one direction through said aperture and for closing said aperture in response to transverse air currents of the opposite direction; an open ended hood in-
5 closing said valve device and covering said aperture; screens for the open ends of said hood; and an air current deflector for the opposite face of said back plate.

10 12. A ventilating device comprising a back plate provided with a ventilating aperture; a pivoted valve device at one face of said back plate for deflecting transverse air currents of one direction through said aperture and for

closing said aperture in response to transverse air currents of the opposite direction; an open ended hood in- 15
closing said valve device and covering said aperture; screens for the open ends of said hood; an air current deflector for the opposite face of said back plate; and a screen for said deflector.

In testimony whereof, I have signed my name to this 20
specification, in the presence of two subscribing witnesses.

LAWRENCE S. CRAEBING.

Witnesses:

IDA G. GILMORE,
LEONARD DAY.