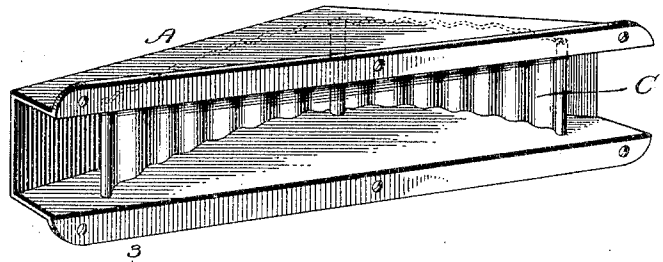
No. 789,627. PATENTED MAY 9, 1905.

C. L. PULLMAN.

VENTILATION.

APPLICATION FILED JAN. 19, 1901.

Fig. 1.



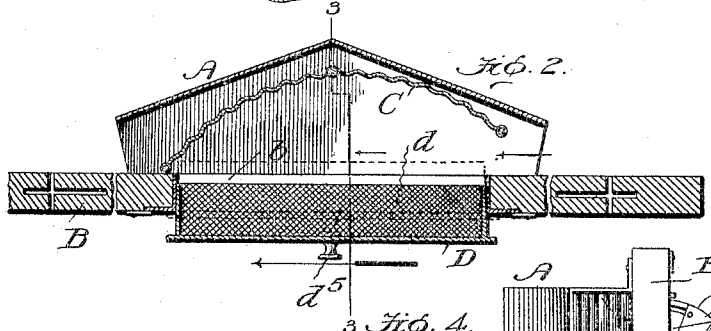


Fig. 2.

Fig. 3.

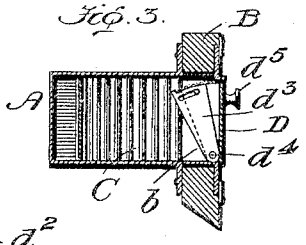


Fig. 4.

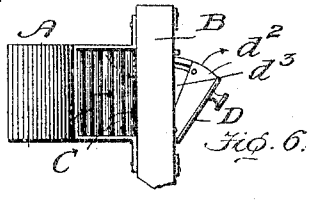


Fig. 6.

Fig. 5.

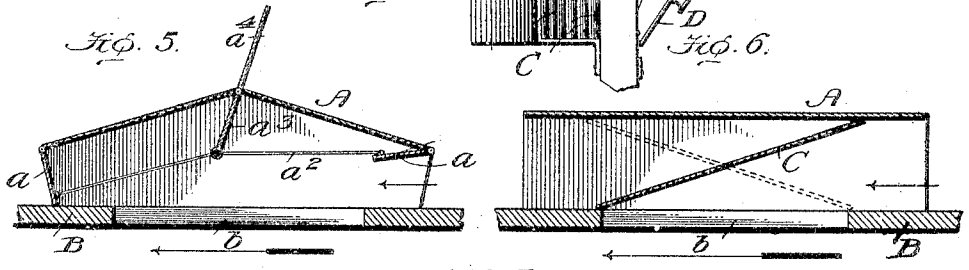


Fig. 7.

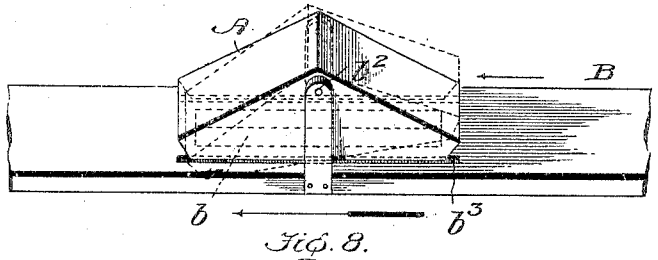
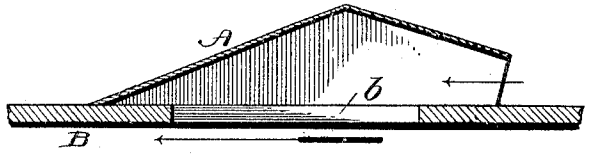


Fig. 8.



Witnesses:

R. M. Elliott.

Inventor:
Charles L. Pullman.
by R. G. Dyrenforth.
his Attorney.

PHOTO LITHOGRAPHED BY SACKETT & WILHELMS LITHO. & PTG. CO. NEW YORK.

No. 789,627. Patented May 9, 1905.

UNITED STATES PATENT OFFICE.

CHARLES LEWIS PULLMAN, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO THE PULLMAN AUTOMATIC VENTILATOR COMPANY, OF WASHINGTON, DISTRICT OF COLUMBIA, A CORPORATION OF WEST VIRGINIA.

VENTILATION.

SPECIFICATION forming part of Letters Patent No. 789,627, dated May 9, 1905.

Application filed January 19, 1901. Serial No. 43,937.

To all whom it may concern:

Be it known that I, CHARLES LEWIS PULLMAN, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Ventilation; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object is to supply fresh air, free from smoke, dust, and cinders, to a railway-car, street-car, cab, carriage, ship, or other closed conveyance, or to a stationary chamber, such as an apartment, or a mine, and rid the space of foul air.

The invention consists, generally stated, in a ventilator operating in impingement by it of air, or in impingement of it by air, to cause passage of air between the outside and an inclosed space at a part of the ventilator opposite to or different from that of the impingement, substantially as hereinafter described.

The appurtenant drawings show some of many forms of embodiment of my invention.

Figure 1 is a view in perspective of a device suitable to perform my invention when applied to an appropriate apertured support, the assemblage constituting a ventilator. Fig. 2 is a view in sectional plan exhibiting this device on such a support and showing a convenient shutter. Fig. 3 is a view in transverse section of this form of ventilator, taken on the line 3 3 of Fig. 2 and looking in the direction of the small arrow. Fig. 4 is a view in end elevation of the same. Fig. 5 is a view in sectional plan of a modification. Fig. 6 is a similar view of another modification. Fig. 7 is a view in perspective of another modification, and Fig. 8 is a view in sectional plan of still another modification.

In the embodiments shown connection between the space to be ventilated and the outside is at the end opposite that of impact—that is to say, calling the end which in moving strikes the air or which when stationary is struck by the air the "front end" and the other the "rear-end" connection or opening between the space to be ventilated and the outside is at the rear. To effect this, not only must there be passage at the rear, but passage at the front must be closed. For this purpose I provide by preference a valve action and by the provision thereof not only may passage at the front be closed and passage at the rear through the aperture be open, but the device will be rendered automatic, since with the closure by the valve at the front there will be opening at the rear.

Referring to the drawings, A designates a solid-backed hood or casing which in use will have its back projecting outward. The hood may be of any desirable contour, hipped or other, is to bridge an aperture to the space to be ventilated, and has an end (the rear end in use) over the corresponding end of said aperture, leaving a passage. The aperture may be in a window-sash.

In Figs. 2, 3, 4, 5, 6, and 8 I show the hood upon a support or back plate B provided with an aperture *b*, and this support may be removable or not, be in one piece, or be composed of a number of removable sections for adjustment of the device to windows of different widths.

To close the front of the hood to passage therethrough of air, I may provide a valve C, as shown in Figs. 1, 2, 3, 4, and 6, pivoted in the hood, the valve being preferably curved, as shown in Figs. 1 and 2, (which display the preferred form of my invention,) and for increased impact-surface transversely corrugated.

Instead of employing the centrally-pivoted valve I may employ two flaps *a*, connected by a rod a^2, having pivotal connection with an extension a^3, carried by a vane a^4, arranged on the outer side of the hood, the vane being pivoted at the apex of the hood and operated by impact of air.

In some instances I may, as shown in Fig. 7, make the hood alone constitute at once a valve and a hood by pivotally supporting it over the aperture in the support, as by arms

b^2, and providing slots or grooves b^3, in which the sides of the hood work when it is shifted by impact of air.

To operate without valve action, one end of the hood may extend down to the support, Fig. 8, and the device be arranged always to have this end that of impact.

For general action as an intake the rear end of the hood should extend one and one-fourth inches more, or somewhat less, beyond the corresponding end of the aperture; but action will sometimes alternate to that of an exhaust. To facilitate action as an exhaust, the termination should be practically with the end of the aperture or only slightly beyond this.

Figs. 2 to 4 display as a convenient addition to a suitable ventilator a shutter D, hinged at its lower side within the aperture, the upper side carrying a screen d as a guard against deposit of matter or interference with the valve. Each end of the shutter carries a flange d^2, having extensions d^3, pivoted, as at d^4. The shutter may be operated from within the chamber or space to be ventilated by a knob d^5 or from without by a rod or the like.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A ventilator comprising a back plate provided with an aperture, an open-ended, hipped casing carried by the back plate and being over an end wall of the aperture, and a curved valve pivoted within the casing, substantially as described.

2. A ventilator comprising a back plate provided with an aperture, an open-ended, hipped casing carried by the back plate, and being over an end wall of the aperture, and a curved, corrugated valve arranged within, substantially as described.

In testimony whereof I affix my signature in the presence of two subscribing witnesses.

CHARLES LEWIS PULLMAN.

Witnesses:

CHAPMAN W. FOWLER,

EDMUND H. PARRY.