(No Model.)

O. IVERSEN.

WINDOW VENTILATOR.

No. 405,313. Patented June 18, 1889.

Fig I.

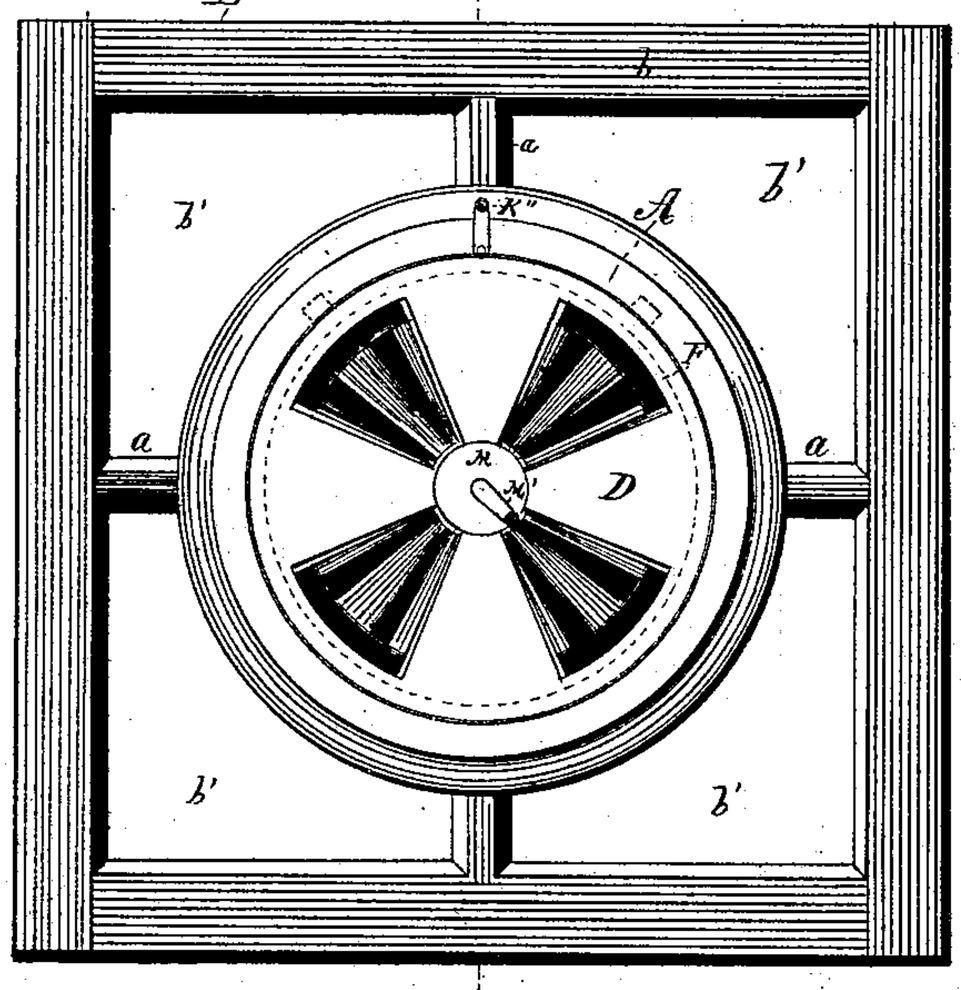


Fig. III.

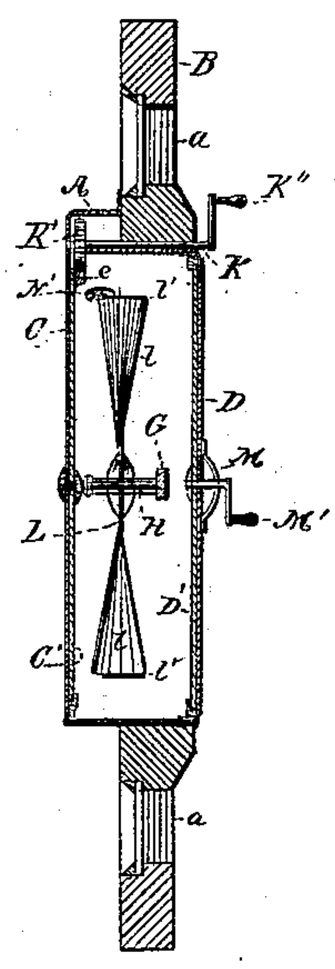


Fig. II.

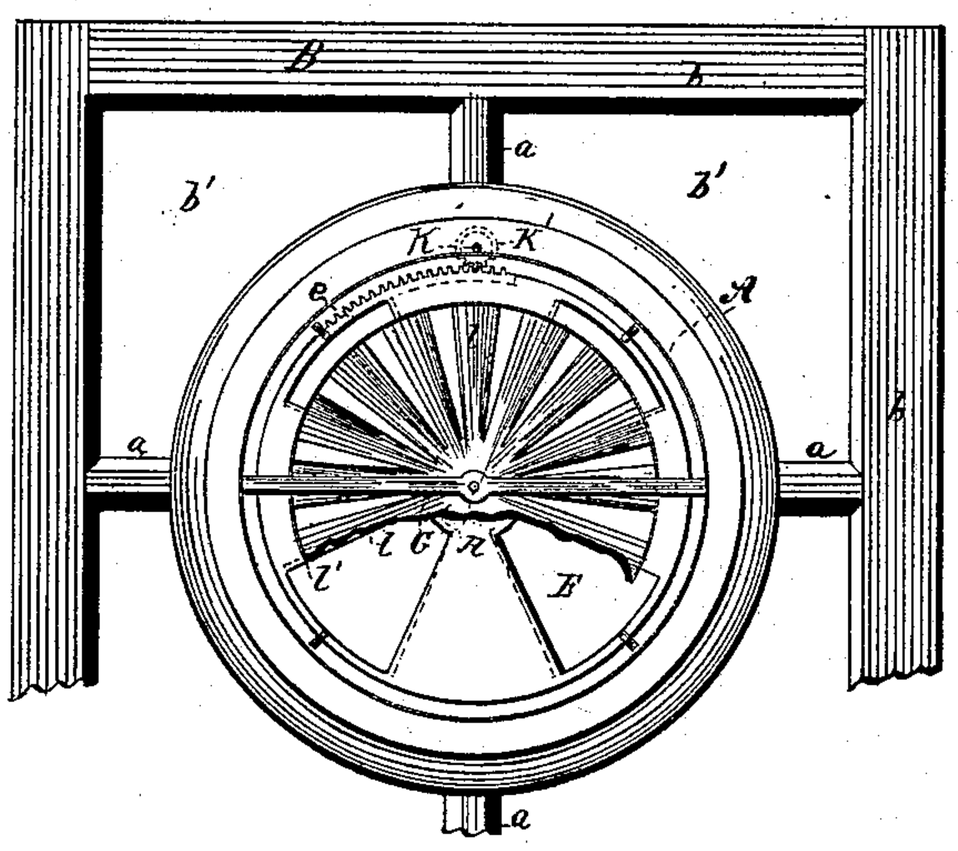
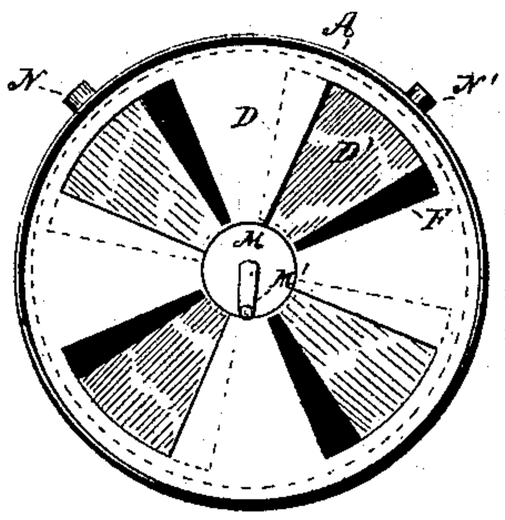


Fig. IV.



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UNITED STATES PATENT OFFICE.

OLE IVERSEN, OF ANOKA, MINNESOTA.

WINDOW-VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 405,313, dated June 18, 1889.

Application filed May 10, 1888. Serial No. 273,537. (No model.)

To all whom it may concern:

Be it known that I, OLE IVERSEN, a citizen of the United States, and a resident of Anoka, county of Anoka, State of Minnesota, have invented a certain new and useful Improvement in Window-Ventilators, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to window-ventilators, and has for its object to provide a simple and efficient device for introducing fresh air into a room, or for passing the foul air to the outside of the same.

To this end my invention consists of the construction hereinafter described, and particularly pointed out in the claim.

In the drawings, like letters referring to like parts throughout, Figure I is a front elevation of the device looking outward from the inside of the room. Fig. II is a similar view with the inner face-plates removed. Fig. III is a central vertical section of Fig. I; and Fig. IV is an inside front elevation of the device detached from the sash, showing the cut-off plate partially closed.

A is an annular rim or circular frame of a greater peripheral breadth than the thickness of the ordinary window-frame. Around this and rigidly connected thereto is built up a small rectangular frame or window-sash B, of the size of an average window-pane. The outside pieces *b* of this frame are rigidly connected to the central annulus by the cross-ribs *a*, and the corner spaces intervening between *a* and *b* are occupied by small panes of glass *b'*.

To the outer and inner edges of the annulus are secured the outer and inner face-plates C and D, both of which are cut away from points near the center to points near the periphery, forming segmental openings E and F. On the line of the horizontal diameter of the rim A and attached to the inside of its peripheral walls is a cross-bar G. Journaled in this bar and the outer face-plate C is a short shaft H. On this shaft, adjacent to the outside plate C, is loosely mounted a cut-off plate C', similar in shape to the plate C and provided with similar segmental openings. The periphery of the cut-off plate C' is provided on some convenient portion thereof with a rack *e*. A crank-shaft K is journaled in the peripheral wall of the rim A, and is provided with a pinion K' in engagement with said rack. This shaft K extends beyond the face of the inner plate D and is provided with a small crank K''.

On the shaft H, inside the cut-off plate C', is loosely mounted a fan L, provided with spiral radial blades *l*, the outer ends of which are tied together and secured in position by the peripheral band *l'*. The concave portion of the fan faces outward.

M is a short crank-shaft journaled in the center of the inner face-plate D and provided with the crank-arm M'. Rigidly secured to the shaft M, inside of the face-plate D and directly adjacent thereto, is a cut-off plate D', similar in shape and having like openings to D'.

N and N' are small pipes located in that portion of the periphery of the rim A which is outside the frame B, giving an opening from the space between the face-plates to the exterior of the rim independent of the face-plate and cut-off openings.

The operation of the device is evident. The frame B takes the place of a pane of glass in the ordinary window-sash of some window in a room which it is desired to ventilate. By turning the cut-off plates C' and D' until the solid portions of the face-plates C and D coincide the segmental openings will also coincide, the fan will be set in motion, and the fresh air from the outside will pass freely into the room. If the outer cut-off C' be now turned until its solid portions coincide with and close the open portions of the outer face-plate C, then the fan will be set in motion in the opposite direction, and the foul air or warm air from within the room will pass out through the pipes N N'. If both cut-off plates C' and D' be turned until their solid portions coincide with the openings in the face-plates C and D, covering and closing the same, the fan will be inclosed and no current will pass in either direction. In actual practice I have found this a very efficient ventilator.

It will of course be understood that, instead of being set within a small frame especially adapted to take the place of a pane of glass

in an ordinary window-sash, the ventilator may be set into the ordinary window itself in any other suitable manner.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

In a window-ventilator, the combination, with the peripheral rim A, of the outer and inner face-plates C and D, having radial openings, the revolving cut-off plate C′, mounted on a suitable support and provided with the rack *e*, the shaft K, provided with the pinion K′, engaging said rack and having the handle K″, the crank-shaft M, provided with the handle M′, both of said handles being on the same side of the ventilator, and the revolving cut-off plate D′, rigidly attached to the shaft M, substantially as described.

OLE IVERSEN.

In presence of—
SAM NELSON,
JAS. F. WILLIAMSON.