

(No Model.)

H. P. ANDREWS.

VENTILATOR.

No. 345,945.

Patented July 20, 1886.

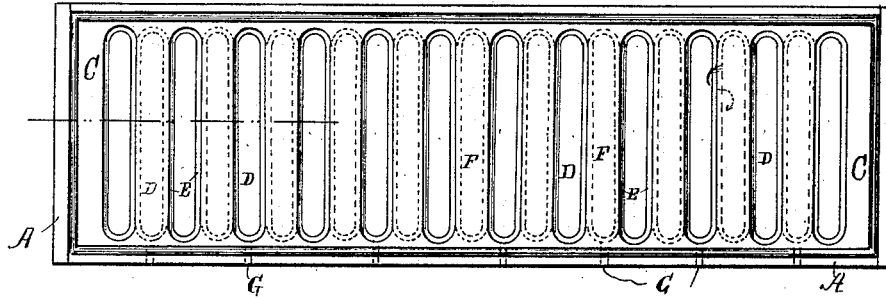


Fig. 1.

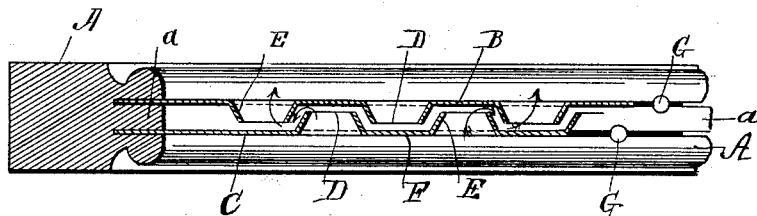


Fig. 2.

WITNESSES:

C. S. Gooding.  
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# UNITED STATES PATENT OFFICE.

HEZEKIAH P. ANDREWS, OF EVERETT, MASSACHUSETTS.

## VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 345,945, dated July 20, 1886.

Application filed December 28, 1885. Serial No. 186,848. (No model.)

*To all whom it may concern:*

Be it known that I, HEZEKIAH P. ANDREWS, of Everett, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Window-Ventilators, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention consists in the combination, with an inclosing-frame, of two perforated plates having the metal immediately surrounding said perforations preferably beveled or countersunk, the plates being placed at a limited distance from each other, with the perforation in one of them opposite to the unperforated part of the other, and their beveled margins reversing or interrupting the air-currents, making them indirect. The frame in which the plates are held is grooved to hold them out of contact with each other, or wires or other thin strips are interposed to keep them from contact. The grooves may extend in certain portions entirely through the frames, to permit escape of dust or water lodging in them.

In the drawings, Figure 1 is a front view of one of my improved ventilators; and Fig. 2, an enlarged transverse section of one end of the same, taken on line *xx* of Fig. 1.

A represents the rectangular frame, the inner edges of which are grooved to receive the two perforated plates B and C, preferably formed of sheet-zinc or similar material. These plates are arranged in pairs, as best shown in Fig. 2, with the perforations D through one opposite to the unperforated part of the other, and they are held at a little distance from each other to permit passage of the air-currents.

One feature of my invention is the double-grooving of the frame, forming a tongue, *a*, in the edge thereof, to hold the two plates at a limited distance from each other, so that a slight space is maintained between them, while the perforations are comparatively large. The result of this construction is, that the air passing through the narrow spaces and entering the room through the large perforations is deprived of its velocity of current, and flows

gently and without pronounced draft inwardly, so that purity of the air in the room is maintained without objectionable drafts.

Instead of the double grooving, I sometimes introduce wires or other thin strips between the plates at their margins, to maintain the desired space between them.

To still further check the air-currents, my invention also provides for countersinking the metal around each perforation, or, in other words, for deflecting or beveling each plate inwardly toward the other plate at the margin of each perforation, so as to reverse the current twice in entering, as illustrated in Fig. 2. The deflected portions E of the two plates are parallel and at about the same distance from each other as the perforated part of one is from the unperforated part of the other. This deflecting and reversing of the air-current is found to be of great value in perfecting the ventilation. These countersunk perforations may be formed by suitable dies in a very expeditious manner. The perforations shown are long and narrow, having narrow bars F, of metal, between them, giving the effect of a perforated metallic shutter. The beveled edges E of these bars add greatly to their stiffness, making them less liable to become bruised or so bent as to shut off the air-current.

I provide perforations, as G, through the lower portion of the frame, to permit escape of moisture or other matter entering the grooves of the frame-bars.

I claim as my invention—

1. The combination of the frame A *a* with the plates B C, held therein at a limited distance from each other, and perforated alternately, as described, with apertures of greater capacity than that of the air passages between the plates, substantially as and for the purpose set forth.

2. As a new article of manufacture, the ventilator herein described, consisting of the frame A and the alternately-perforated plate B C, with the deflected portions E, surrounding each aperture, substantially as and for the purpose set forth.

3. The ventilating plates B and C, alter-

nately perforated, and each having a series of parallel bars, F, alternating with the perforations, the bars of one plate being opposite to the perforations in the other, and the edges of said bars being deflected inwardly almost into contact with the opposite plate, substantially as and for the purpose set forth.

In testimony whereof I have signed my

name to this specification, in the presence of two subscribing witnesses, on this 23d day of 10 December, A. D. 1885.

HEZEKIAH P. ANDREWS.

Witnesses:

A. H. SPENCER,  
FRANK T. BENNER.