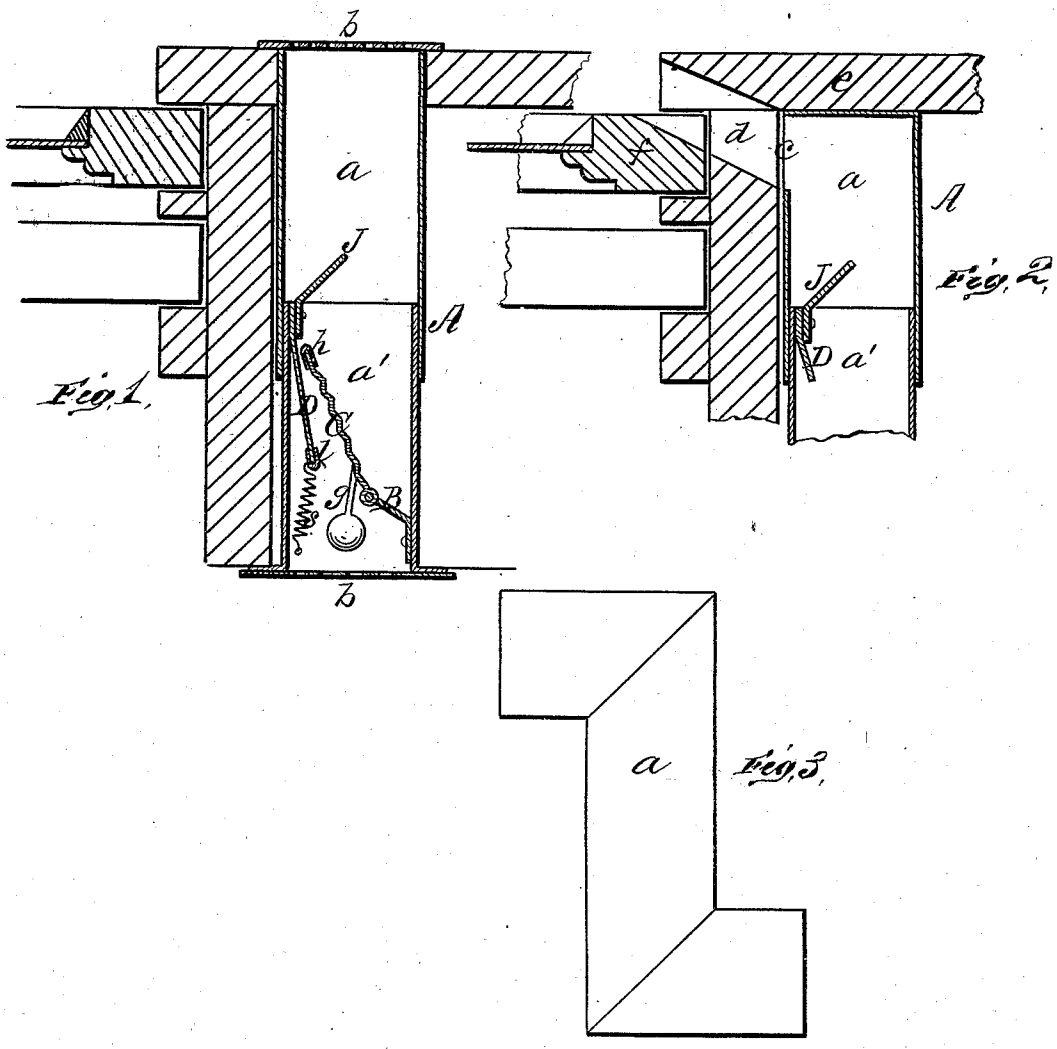
C. M. HANDOVER.

Ventilator.

No. 203,447. Patented May 7, 1878.



WITNESSES

E. H. Bates

F. J. Masi.

INVENTOR

Chas. M. Handover.

by E. W. Anderson

ATTORNEY

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES M. HANDOVER, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN VENTILATORS.

Specification forming part of Letters Patent No. **203,447**, dated May 7, 1878; application filed April 12, 1878.

To all whom it may concern:

Be it known that I, CHARLES M. HANDOVER, of Brooklyn, in the county of Kings and State of New York, have invented a new and valuable Improvement in Ventilators; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a horizontal section of my improved ventilator. Fig. 2 is a like view of a modification thereof, and Fig. 3 is a side view of an elbowed section of the air-tube.

This invention has relation to improvements in ventilators for dwellings, public buildings, and offices.

The nature of the invention consists in combining with a tubular conduit, closed at each end by a wire or other screen, and a horizontally-vibrating valve arranged at one end of the same, and provided with a weighted arm, a bearing made of cloth or other soft material, against which the cloth-covered free edge of the valve abuts when it is vibrated by a strong wind, without noise, as will be hereinafter more fully set forth.

In the annexed drawings, the letter A designates the air-tube, made in two or more sections, *a a'*, fitting the one into the other, as shown in Figs. 1 and 2, and extensible or contractible, so as to lengthen or shorten it in accordance with the thickness of the wall. This tube is, preferably, of rectangular form, and is set in the jamb of the window-frame, at a suitable height from the floor, openings being made in the faces of the frame for its reception, the said openings being closed by a reticulated material, *b*. Where the faces of the jamb are of iron or stone, the section *a* has its opening *c* in the side, and this opening registers with an aperture, *d*, partly in the inner face of the outside plate *e* of the window-frame, and partly in the sash *f*, as shown in Fig. 2; or the window-frame may be avoided entirely by the use of a double elbow-section, *a*. (Shown in Fig. 3.)

The section *a'* (the innermost one) has near its inner end an oblique vertical current-breaker, B, extending from its top to bottom, to the free edge of which is hinged a horizontally-vibrating valve, C, having near its hinged edge a projecting weighted arm, *g*. The valve is nicely balanced on its bearing by the weighted arm aforesaid, and extends from the top to the bottom of the section *a'*. It is of sufficient length to reach obliquely across the said section, and abut against the bearing D, upon the opposite side thereof, with its cushioned free edge *h*. The bearing D is made of cloth or other soft material, as buckskin and the like. Its outer edge is rigidly secured to the corresponding portion of the section *a'*. It extends to the front, beyond the outer edge of the valve, and is held sufficiently tense by means of the springs *s*, secured at one end to the top and bottom of the said section, and at the other to the ends of a metallic spreader, *l*, which holds the bearing-cloth D distended.

At the opposite side of the section *a'*, and at its rear end, is a current-breaker, J, reaching from top to bottom thereof, and nearly half-way across. The valve is always open, except when the wind is blowing against it, to let out foul air. Under these circumstances the current is thrown by the breaker J against the valve, causing it to swing noiselessly against the bearing-cloth, when the outward flow of air, as well as the inward current, is shut off. The contact of the valve, its edge being cushioned with the bearing-cloth D, is inaudible. Upon coming in contact therewith, the springs *s* of the said cloth are distended by the pressure of the valve, and when the wind lulls the said springs react, thereby straightening out the said cloth, and throwing the valve C open. The outward flow of air is thus re-established. The cold air from the outside will be excluded as often as it blows sufficiently hard to swing the valve.

The air-tube A may be made of any suitable material, metal being preferred.

What I claim as new, and desire to secure by Letters Patent, is—

In a house-ventilator, the combination, with the air-tube A, having the end screens *b*, and the horizontally-vibrating valve C, having edge-cushion *h* and weighted arm *g*, of the yielding bearing D and current-breaker J, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

CHARLES MOREY HANDOVER.

Witnesses:

HENRY ACKER,

WILLIAM FOSKETT.