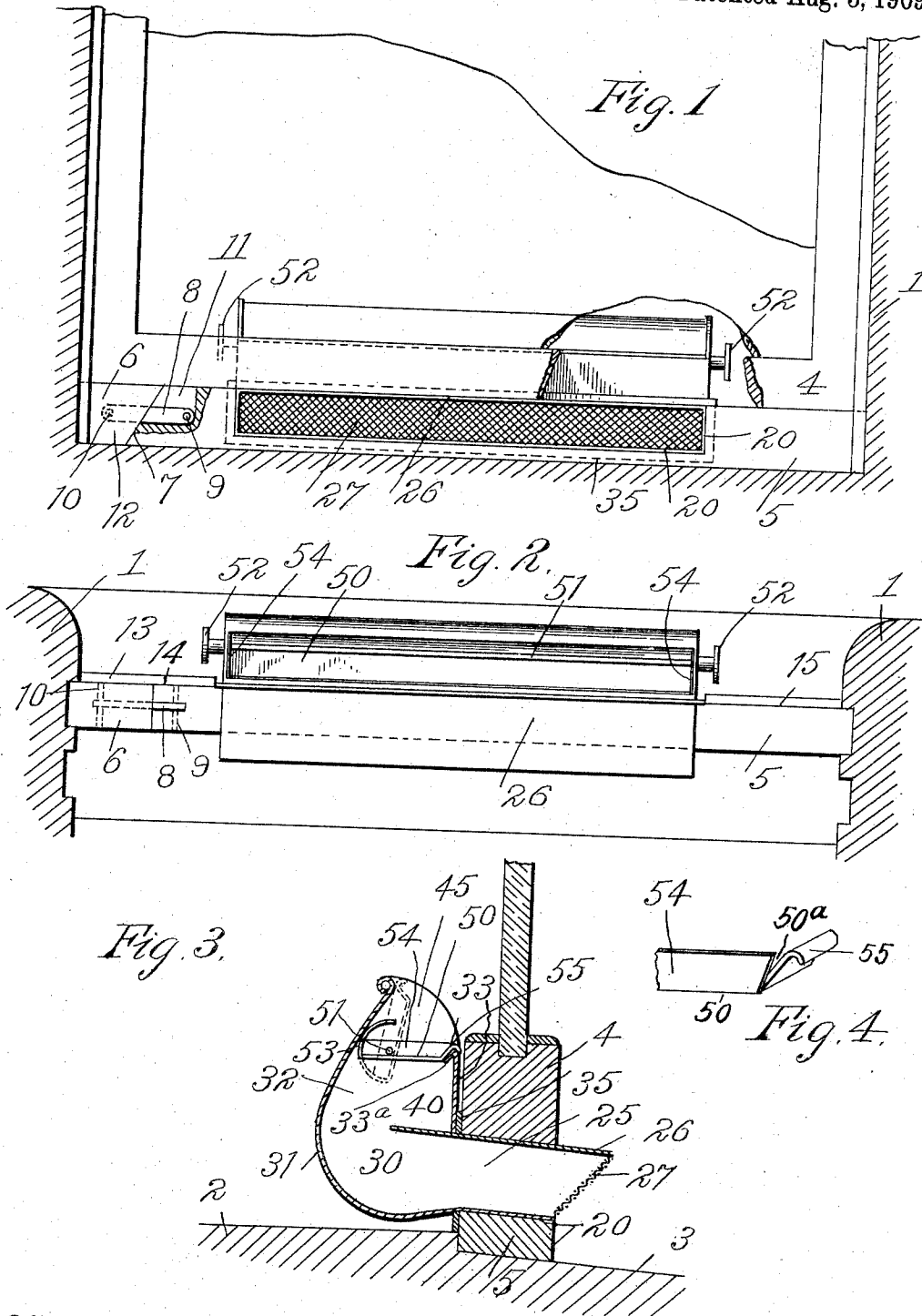


M. G. HUBBARD.
VENTILATOR.
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929,766.

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UNITED STATES PATENT OFFICE.

MOSES G. HUBBARD, OF CHATHAM, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
MONARCH VENTILATOR COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW
YORK.

VENTILATOR.

No. 929,766.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MOSES G. HUBBARD, a citizen of the United States, resident of Chatham, in the county of Morris and State of New Jersey, have invented certain new and useful Improvements in Ventilators, of which the following is a specification.

My invention relates to improvements in window ventilators, which provide for the natural ventilation of a room upon the well known law of the equalization and circulation of gases; and the object of my invention is to simplify and improve the construction and operation of this type of ventilator with a view to preventing the entrance of objectionable drafts and directing the incoming currents of fresh air upwardly and away from the occupants of the room.

With these objects in view my invention comprises a window ventilator having a flue adapted to be mounted horizontally in a window or other wall opening and expanded into an enlarged chamber leading to a vertical extension, the outlet of which is of smaller area than the said enlarged chamber. The enlargement of the flue is preferably provided with a curved wall for directing the incoming currents of air upwardly and outwardly toward the inner face of the window, and to prevent the entrance of gusts of air, one or more baffle plates are arranged in the enlarged chamber to direct the incoming air against the said curved wall. A damper is arranged in the outlet opening of the ventilator to control the amount of air entering the room, and this damper is preferably formed with springy or yielding contact edges which engage the walls of the ventilating flue and tightly close the opening when the damper is in closed position. To facilitate the mounting of the ventilator in a window opening beneath the window sash, I provide a filling block or bar, preferably of wood, which extends the entire width of the window opening and rests upon the sill, and I form in this filling block or bar a transverse opening of the proper size to receive the horizontal portion of the ventilator. Any suitable means may be provided for fitting the filling block or bar tightly in the window opening.

In addition to the above recited main features of my invention, I have devised other minor features of more or less importance, and in order that my invention may be fully

understood, I will first describe the same with reference to the accompanying drawing; and afterward point out the novelty more particularly in the annexed claims.

In said drawing: Figure 1 is a vertical exterior elevation of my improved ventilator mounted in the filling block or bar beneath the window sash. Fig. 2 is a plan view of the same. Fig. 3 is a vertical transverse sectional view of the same. Fig. 4 is a detail perspective view showing the yielding lips or flanges of the damper.

1 represents the frame of a window or other opening in the wall of a building leading to a room to be ventilated.

2 is the inner window sill and 3 is the outer sill.

5 is a block or bar of wood extending transversely of the window opening and completely filling the same, said bar 5 resting under the lower window sash 4. This block or bar may be formed with an adjustable end section 6 cut off at an angle as indicated at 7 from the main bar and connected to the main bar by a link 8 which is pivoted at its opposite ends 9 and 10 to the main bar 5 and section 6. This link 8 rests in saw kerfs or recesses 11 and 12 in the members 5 and 6, so as to permit the adjustable member 6 to be moved upwardly upon the main bar 5. To prevent the entrance of drafts between the members 5 and 6 on their line of separation 7, I preferably provide an inner facing strip 13 which is divided at 14 on a line parallel with the plane of separation 7, but removed from said plane so as to break joint therewith. A similar inner facing strip 15 may be provided at the opposite end of the bar 5. It will be observed that the bar 5 with adjustable end block 6 being cut to approximately the proper length to completely fill the window opening, the bar is put in place with the block 6 raised out of line with the bar when the block is moved over into alinement with the bar and forced into place to tightly fit the bar in the window opening.

The filler block or bar 5 is formed with a transverse opening or recess in its upper edge as indicated at 20 in Figs. 1 and 3 to receive the approximately horizontal rectangular flue portion of the ventilator.

The ventilator proper is made of sheet metal and comprises a broad shallow inlet flue 25 which is adapted to rest in the opening 20 of the filler block 5 directly beneath

the window sash 4. This rectangular inlet flue has an upper outwardly projecting wall 26, which overhangs the entrance to the flue to prevent the entrance of rain and snow and the entrance to the flue is further protected by a fine mesh screen 27 to keep out insects and other foreign matter. The screen 27 is preferably mounted upon an incline or angle to the ventilating flue 25, as shown in Fig. 3 of the drawings, this arrangement reducing the obstruction to the flue to a minimum and affording material assistance in deflecting gusts of wind. The inlet flue portion 25 expands inwardly into an enlarged chamber 30 formed by the curved inner wall 31, the end walls 32 and the vertical wall 33. A rectangular flange 35 extends around the inlet flue 25 and is adapted to engage against the inner faces of the filler block 5 and lower bar of the window sash 4.

The upper wall of the inlet flue 25 is extended inwardly to approximately the center of the enlarged chamber 30 to form a baffle plate as shown at 40, the main purpose of said baffle plate being to direct the incoming currents of air against the curved wall 31 to assist this wall of the enlarged chamber in directing the air upwardly and outwardly toward the inner face of the window.

The enlarged chamber 30 leads into an approximately rectangular upward extension having an elongated outlet 45 which is closed by an oblong damper or valve 50 mounted upon a rod 51 which is journaled in the end walls 32 of the chamber 30. The rod 51 is provided at its opposite projecting ends with hand wheels 52, by which the damper may be adjusted to open the outlet into the room to a greater or less extent, thereby regulating the quantity of incoming air. This damper 50 has its edges bent upwardly to form yielding lips or flanges which engage the walls of the outlet of the ventilating flue to form tight joints therewith to completely close the flue when the damper is in closed position. 53 is the long yielding flange or lip at the inner edge of the damper plate 50, while 54 indicates the end flanges or lips of the damper plate. This inner yielding flange or lip 53 of the damper plate is preferably shaped as shown in Fig. 3 of the drawings, in which it is extended on the arc of a circle drawn from the pivot rod 51. This form is preferred since it affords a yielding sliding contact with the outer wall of the upward extension of the ventilating flue in all positions of the damper. When the damper is in open position the curved springy flange or lip 53 acts as an additional baffle plate to further counteract the entrance of objectionable gusts of wind into the room. The only air that can possibly enter through the ventilator must pass up between the damper 50 and the window. The outer flange or lip 55 of damper plate 50 is bent upwardly and downwardly to yield-

ingly fit over the upper edge of the wall 33, which is preferably formed with an angular upper edge as shown at 33^a. As stated all of the up-turned edges of the damper plate yield or spring with relation to the main body of the damper so as to effect tight wiping engagements with the walls of the ventilating flue. The upturned edges which form the yielding or springy lips or flanges of the damper plate are separated at their ends as indicated at 50° in Fig. 4, so as to retain their maximum resiliency.

The upper edge of the curved wall 31 of the enlarged chamber and the extension is preferably finished off by being bent over a wire rod to afford proper strength and produce a neat finish.

Assuming that the improved ventilator is mounted in the filler block in the window opening as above described, in the position shown in the drawing, it will be observed that the incoming currents of air passing through the horizontal oblong flue 25 will be directed against the curved wall 31 of the enlarged chamber, the baffle plate 40 serving to throw the air against said curved surface, which directs the air upwardly against the extended curved lip or flange 51 of the damper, by which the air is thrown back or curved downwardly and then moves upwardly and outwardly toward the inner surface of the window pane. The damper being open to permit more or less of the air to enter in this direction, will also serve to direct the incoming currents against the window, and away from the occupants of the room. Air currents pass upwardly against the window and are finally mingled with and neutralized by the heated air in the upper part of the room.

The outlet 45 of the ventilator being of smaller area than the enlarged chamber 30, will tend to arrest any sudden gusts or sudden drafts of air, which action is also aided by the baffle plate 40. If desired more than one baffle plate may be used, although I have experienced great satisfaction with the ventilator in the form exactly as shown in the drawing. The damper plate 50 with the yielding flanges or edges above described will always effectively seat itself in the ventilating flue, so that when the damper is in closed position no air can enter through the ventilator, and when the damper is in open position the only air that enters must pass through the opening in front of the edge 33 of the damper plate.

What I claim is:

1. A window ventilator comprising an inlet flue adapted to pass through a window or other wall opening and having an inward upward extension, the upper wall of the inlet portion of said flue being extended to form a baffle plate within said flue, and a damper pivotally mounted within said upward ex-

tension and formed with an elastic flange extending from one edge and having wiping contact with the inner wall of the flue, substantially as set forth.

5 2. A window ventilator comprising a flue adapted to pass through a window or other wall opening and having an inner upward extension, an adjustable damper plate mounted wholly within said flue, and yielding lips or flanges on all edges of said damper
10 plate engaging the walls of the flue.

3. A window ventilator comprising a flue adapted to pass through a window or other wall opening and expanding at its inner end
15 into an enlarged chamber having an upwardly presented outlet opening, and a pivotally mounted damper arranged in the flue adjacent to the outlet opening, said damper having its edges bent with relation to the
20 damper plate to yieldingly engage the walls of the flue.

4. The combination with a flue, of a valve

or damper pivotally mounted therein and formed with an elastic curved lip or flange extending from one edge on an arc approximately concentric to said pivot, said curved
25 lip or flange being in constant engagement with the wall of the flue.

5. A window ventilator comprising an inlet flue adapted to pass through a window
30 or other wall opening and having an inner upward extension opening into the room, a damper movably mounted in the opening of said flue extension and having one edge bent upwardly and downwardly to engage the upper
35 edge of one wall of said extension to limit the closing movement of the damper, the other edges of said damper yieldingly engaging the other walls of the flue extension.

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