

B. R. ANDREWS.
VENTILATOR.
APPLICATION FILED JULY 2, 1917.

1,306,845.

Patented June 17, 1919.

Fig. 1.

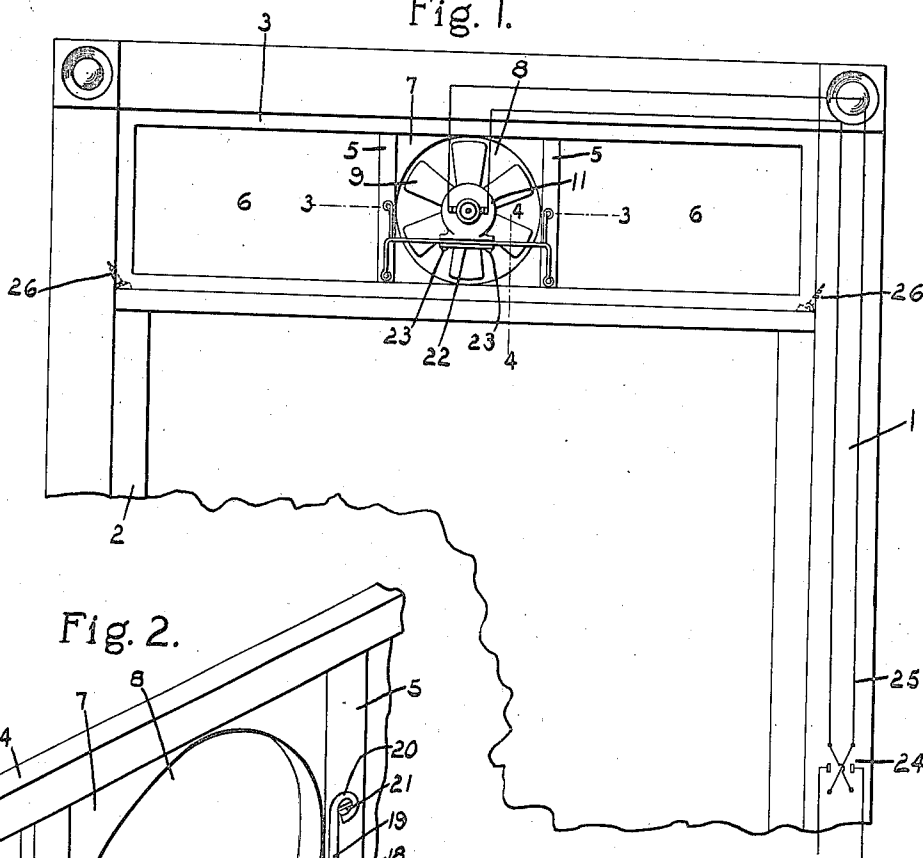


Fig. 2.

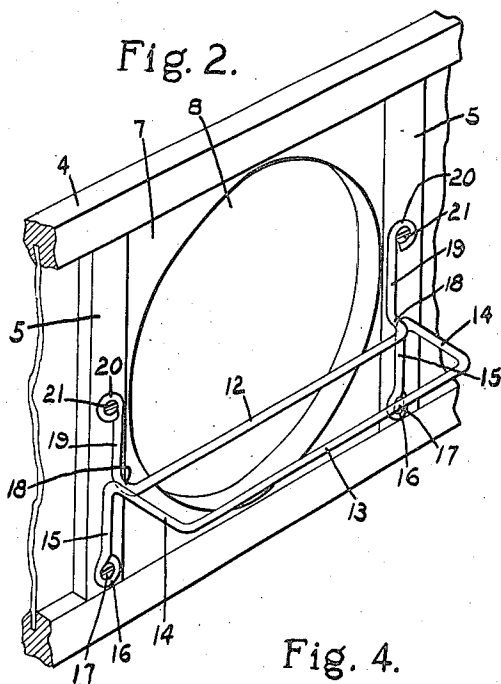


Fig. 3.

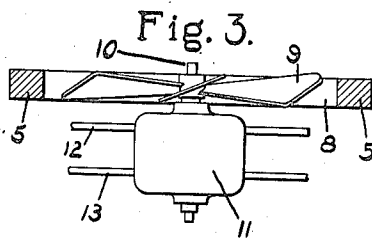
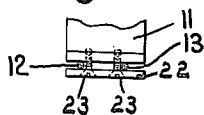


Fig. 4.



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VENTILATOR.

1,306,845.

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To all whom it may concern:

Be it known that I, BERNARD R. ANDREWS, a citizen of the United States, residing at Newton, county of Middlesex, State of Massachusetts, have invented an Improvement in Ventilators, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to ventilators such as are adapted to be placed in the window of a room for ventilating the latter, and the object of the invention is to provide a novel ventilator which can be easily and quickly installed in any window, and which may be operated either to draw outside air into the room or force room air through the ventilator to the outside of the window.

My improved device comprises a panel member constructed to be set into the sash-receiving grooves of the window frame either from the top or the bottom thereof and provided with a ventilating opening, a reversible fan situated in said opening, and means for operating said fan so that it will ventilate the room either by blowing fresh outside air through the opening into the room or by forcing the vitiated room air through the opening to the outside of the building. The device also comprises a vibration-absorbing support for the fan and the motor which operates it so that the device will be relatively noiseless in its operation.

In order to give an understanding of my invention, I have illustrated in the drawings a selected embodiment thereof which will now be described, after which the novel features will be pointed out in the appended claims.

Figure 1 is a view of a portion of a window frame having my improved ventilator therein;

Fig. 2 is an enlarged perspective view of the portion of the ventilating panel having the ventilating opening therein, said view showing a vibration-absorbing support for the motor, the motor and fan being omitted in order to better illustrate the vibration-absorbing support;

Fig. 3 is a section on the line 3—3, Fig. 1;

Fig. 4 is a section on the line 4—4, Fig. 1.

I have indicated at 1 the window frame in a room and at 2 a portion of the upper sash in the window.

My improved ventilator comprises a panel indicated generally at 3 which is adapted to be placed either above the upper sash or below the lower sash of the window in the sash-receiving groove, and which is provided with the ventilating opening in which operates the ventilating fan. The panel may be made in various ways without departing from the invention. I have herein shown it as in the form of a window sash comprising the sash frame 4 which is divided into three sections by the two vertical stiles or posts 5. The two end sections of the sash contain panes of glass 6. The central section 7 of the sash is provided with a ventilating opening 8 in which operates a suitable fan 9. The fan 9 is shown as mounted on the shaft 10 of an electric motor 11, and this motor is mounted on a suitable vibration-absorbing shelf or support which is secured to the stiles or posts 5. Any suitable form of vibration-absorbing support may be used. I have herein illustrated a construction which comprises two rods 12 and 13 which extend from one stile 5 to the other, and to which the motor 11 is secured. The rods 12 and 13 are slightly resilient and as a result they act to absorb any vibration that may be developed by the operation of the motor and fan. The rod 13 is provided with the two laterally-bent portions 14, and the ends of the rod are bent downwardly, as shown at 15, said downwardly-bent portions lying against the stiles or posts 5. The extremities of the downwardly-bent portions 15 are provided with loops or eyes 16 to receive screws 17 by which the rod is secured to the stile 5.

The rod 12 is also provided with the laterally-bent portions 18 which, however, are of less extent than the laterally-bent portions 14, and with the upwardly-bent portions 19 that lie against the stiles 5 and are provided with eyes or loops 20 at their extremities to receive the screws 21 by which the rod 12 is secured in place. The rods 12 and 13 extend parallel to each other and in the same horizontal plane, and the motor 11 rests on the rods and is secured thereto by a clamping plate 22 situated on the underside of the rods and clamped to the motor frame by clamping screws 23. The rods are sufficiently resilient so that they absorb any vibration developed during the operation of the motor, and thus the fan will be practically noiseless.

The fan 9 is a reversible fan, that is, the blades are so shaped that the fan will operate equally well when rotated in either direction. When the fan is rotated in one direction it will force air outwardly through the ventilating opening 8, and when it is rotated in the opposite direction it will draw air inwardly through said opening. The motor 11 for operating the fan is also a reversible motor so that it can be run in either direction. The motor is shown as controlled by a suitable reversing switch 24 which may be located at any convenient place on the window frame and which is connected to the motor by suitable wiring 25.

The ventilating panel with its motor attachment comprises a unitary self-contained structure which may be easily installed in any window. I will preferably place the ventilating panel at the upper portion of the window, although it may be situated at the bottom of the window if desired. When it is placed at the upper part of the window, I propose to set it into the grooves of the window frame in which the lower sash runs and to place it at the top of the window, as shown in the drawings. The panel may be held in position by any suitable means, such, for instance, as screws 26. The fan is situated in the opening 8 and does not project through the opening, and as the motor is on the inside of the panel, the presence of the panel in the window frame does not interfere with raising and lowering the upper sash.

When it is desired to use the ventilator, the upper sash is dropped until the top rail thereof comes flush with the bottom of the panel and the fan is set in operation. In warm weather the fan may be rotated in a direction to draw the outside air into the room through the ventilating opening, thus providing the room with fresh air. In the

winter time, or during cold weather, the ventilation may be secured by rotating the fan in the opposite direction thereby to force the room air out through the opening 8. This will keep the room free from vitiated air and will induce a proper circulation of air in the room.

The apparatus is a self-contained device and can be manufactured in a variety of sizes to fit the window frames of standard sizes. The device is also simple and can be readily installed in any window frame without making any alterations therein.

While I have illustrated a selected embodiment of my invention, I do not wish to be limited to the constructional features shown.

I claim:

1. A ventilating device comprising a panel member having a thickness substantially equal to that of a window sash and a shape to fit into a window frame in the plane of the sash, said panel being provided with a ventilating opening, a vibration-absorbing shelf secured to the inner side of the panel and extending from one side to the other of the opening, a reversible motor sustained on said shelf, a fan connected to the motor and operating in said opening, and means for controlling the direction of rotation of the motor whereby air may be either drawn into the room or forced from the room through said opening, depending on the direction in which said motor is operating.

2. A ventilating device having a panel member, a vibration-absorbing shelf comprising two resilient rods secured at their ends to the inner side of the panel, a motor clamped to said rods, and a fan carried by said motor.

In testimony whereof, I have signed my name to this specification.

BERNARD R. ANDREWS.