Dec. 23, 1930. A. C. GILBERT 1,786,203

VENTILATING DEVICE

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Fig. 1.

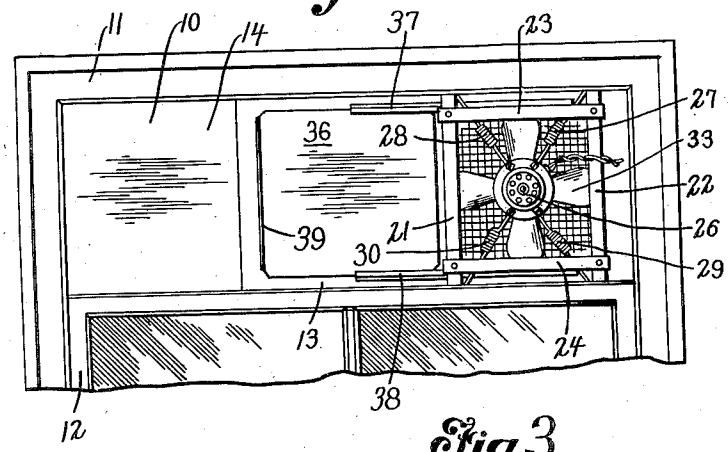


Fig. 2.

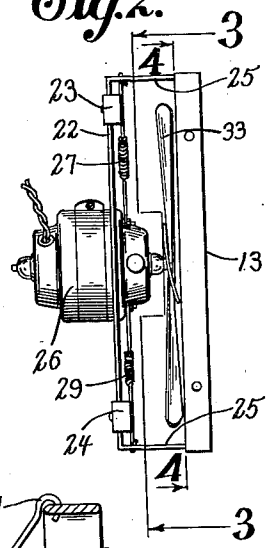
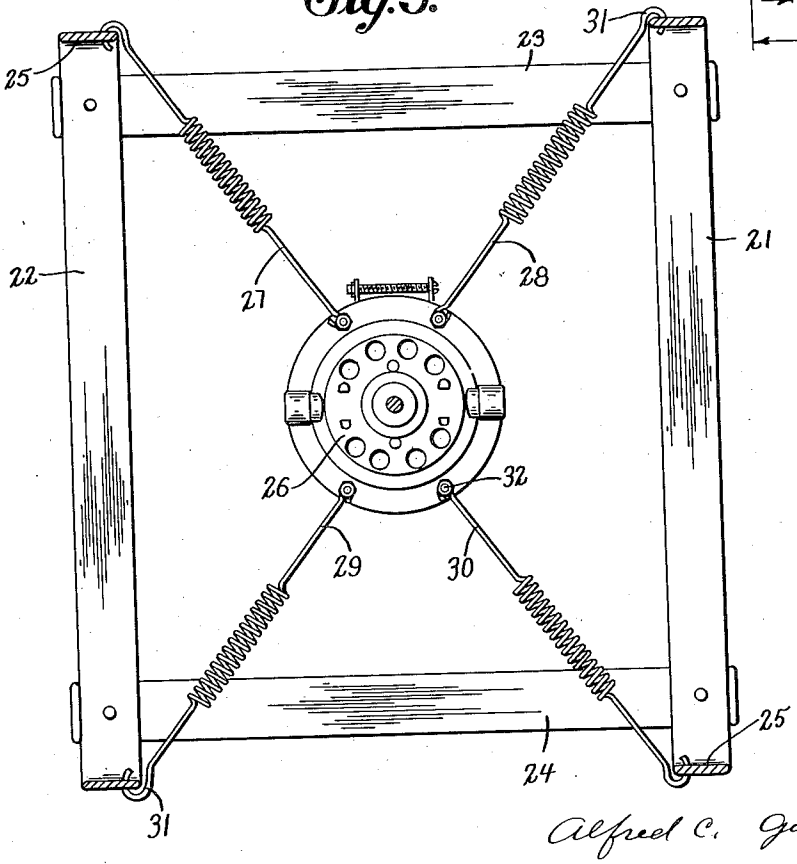


Fig. 3.



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Fig. 4.

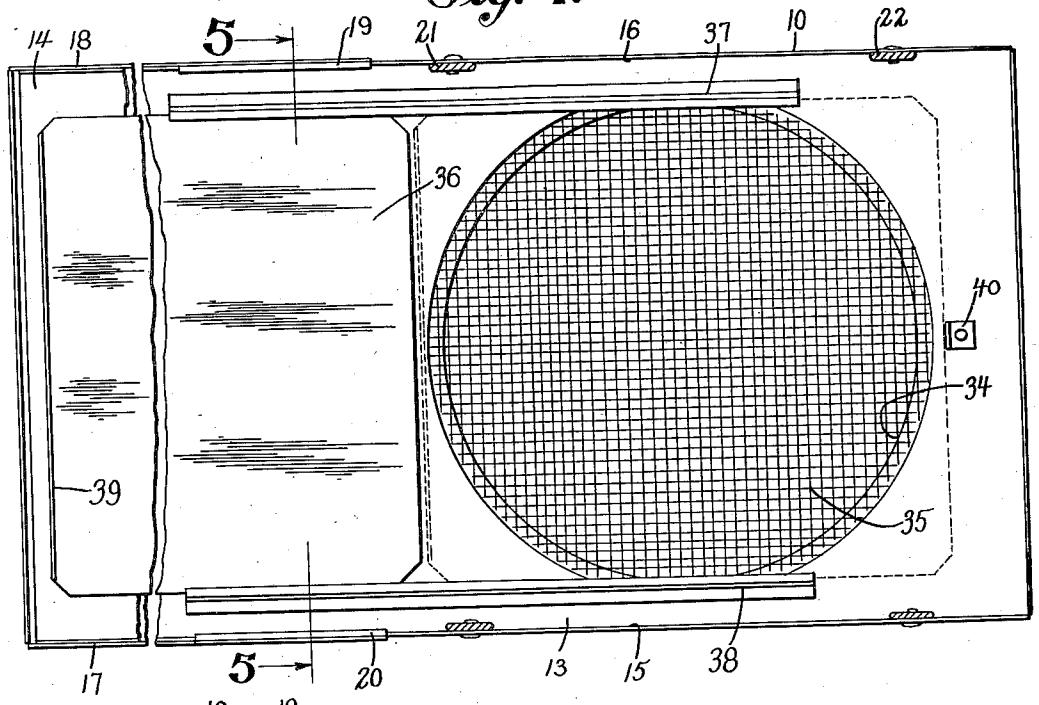
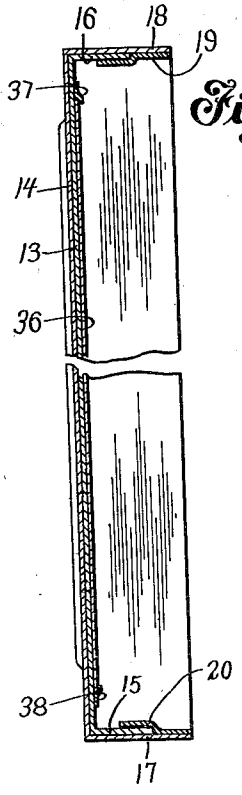


Fig. 5.



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Patented Dec. 23, 1930

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UNITED STATES PATENT OFFICE

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VENTILATING DEVICE

Application filed July 5, 1928. Serial No. 290,499.

This invention relates to a ventilating device, and more especially to a ventilating attachment adapted to be placed in a window frame or other suitable opening in a wall of a room.

Ventilating attachments have heretofore been proposed which may be adjusted to the width of, and supported in, a window frame, such devices being provided with electrically driven fans for creating a draft of air for ventilating purposes. Generally speaking, it is an object of the present invention to improve ventilating devices of this character to bring about more efficient and durable structures.

In carrying out my invention, I prefer to make my improved ventilating device substantially entirely of metal as distinct from the less durable wooden forms generally in use, and as a further object of the invention I contemplate a ventilator of the above character which may be readily adjusted to fit window frames of various widths or other suitable openings.

A still further object of the invention is to provide a ventilating device of the above character in which means is provided for regulating the amount of air passing through the ventilator, or for cutting off the passage of air entirely if so desired.

As is usual in ventilators of the general type contemplated, I prefer to mount the fan and fan motor for creating the draft of air directly on the ventilator body or frame, and another object of the invention is to provide a mounting for a motor or motor and fan in which means is provided for absorbing fan and motor noises and vibrations, so that they will not be communicated to the surrounding structures and amplified.

To these and other ends, the invention consists in the novel features and combination of parts to be hereinafter described and claimed.

In the drawings,

Fig. 1 is a general view, showing my improved ventilating device supported in a window frame;

Fig. 2 is a side view of the same detached from the window frame;

Fig. 3 is a sectional view along line 3—3 of Fig. 2, but on an enlarged scale;

Fig. 4 is a sectional view, along line 4—4 of Fig. 2, but on an enlarged scale; and

Fig. 5 is a sectional view, along line 5—5 of Fig. 4.

Referring to the drawings in which I have illustrated my invention by showing a preferred embodiment thereof, the reference character 10 indicates, in general, my improved ventilating device which, as shown in Fig. 1 of the drawings, is mounted in a window frame 11, being held in place by the upper window sash 12. Preferably, the ventilator frame is made up out of sheet metal and comprises two overlapping substantially flat ventilator body parts 13 and 14, part 13 being provided with flange-like side edges 15 and 16, on the exterior of which are received the flange-like side edges 17 and 18 of part 14, parts 13 and 14 being maintained in tight sliding fit by means of guides 19 and 20 secured to flanges 17 and 18 and embracing flange-like edges 15 and 16, the latter being of less width than the edges 17 and 18 (Fig. 5).

Adjacent one end of the ventilator is a fan and motor support, which, in the preferred embodiment disclosed, takes the form of a pair of spaced straps 21 and 22, secured by rivets, or other suitable fastening means, to flanges 15 and 16, and braced by means of cross bars 23 and 24, which may be secured by rivets, or other suitable means, to straps 21 and 22. As shown particularly in Fig. 2 of the drawings, the straps 21 and 22 are provided at their ends with arms 25 which space the straps from the body of the ventilator, and also serve to support fan motor 26, which may be of any suitable or preferred type, by means of springs 27, 28, 29 and 30, each of the springs having a hook-like outer end 31 engaging an opening in an arm 25 and an inner end secured to motor 26 by means of bolts 32.

A fan 33, which may be of any suitable or preferred type, is mounted on the shaft of motor 26 between the straps 21 and 22 and ventilator body part 13, while opposite the fan 33 the ventilator body is provided with an

opening 34 of substantially the same diameter as the fan, opening 34 being covered by a screen 35, which not only serves to protect the fan against injury but prevents the entrance of insects and dust. In order that the amount of air passing into or out of the room may be regulated or completely cut off, if desired, a regulating slide or damper 36 is provided slidably mounted in guideways 37 and 38, secured to the inner face of ventilator body or frame part 13, slide 36 being provided with an outwardly extending flanged end 39 by means of which it may be readily moved in guides 37 and 38, while a stop 40 is provided against which the end of slide 36 abuts when the opening 34 is fully cut off.

In use, the improved ventilating device may be supported in any suitable opening, although normally it will be found convenient to use a window frame for this purpose. When so used, the parts 13 and 14 may be adjusted to suit the width of the window frame, whereupon the upper sash of the window may be moved upwardly to secure the ventilator in place, as shown in Fig. 1 of the drawings. It will be readily understood, however, that the ventilator could be used as well in the lower part of the window frame, in cooperation with the lower sash.

Upon connecting the motor by the usual cord to a power outlet, the fan will be brought into rotation, creating a draft of air which passes inwardly or outwardly through opening 34, depending on the direction of rotation of the fan, the slide 36 providing a convenient means for regulating the size of the opening and thereby the amount of air transferred from or into the room. When desired, the slide may be adjusted to completely cut off the opening, although normally the slide will only occupy this position when the fan is not in operation.

The resilient fan and motor mounting provided ensures that fan and motor noises and vibrations will not be communicated to the main body of the ventilator or the surrounding parts of the window or wall, thus effectively cutting down the amount of noise produced, which, in many ventilators, is highly objectionable.

The ventilator as a whole comprises but few and simple parts, and while providing the requisite amount of adjustability, is not apt to get out of order. By making relatively tight sliding fits between the guides and parts received therein, the use of various clamping and securing means generally found necessary is obviated.

While I have shown and described a preferred embodiment of my invention, it is to be understood that the same is not to be limited to all the details shown but is capable of modification and variation within the spirit of the invention and the scope of the appended claims.

What I claim is:

1. In a ventilator, a generally flat sheet metal body part having a ventilating opening therein, flat sheets of metal in surface to surface contact with the body part on the opposite faces thereof, one of said last-named sheets of metal forming an adjustable extension for the body part and the other of said sheets forming a damper for the ventilating opening, means for slidably mounting said sheets on the body part, a motor driven fan, and means for mounting said fan on the body part opposite the opening.

2. In a ventilator, a generally flat sheet metal body part having a relatively large ventilating opening therein, a motor driven fan for creating a draft through the opening, and combined means for supporting the fan opposite the opening and stiffening the sheet metal body adjacent the opening, said last-named means including a pair of relatively rigid parallel spaced U-shaped bars, the ends of the legs of the U's being secured to the body part.

3. In a ventilating device, a ventilator body made of sheet material, said body being provided with a ventilating opening therein, a pair of spaced bars supported at their ends on the ventilator body adjacent said opening, a motor driven fan supported by said bars opposite said opening and at a spaced interval from said body, a sheet metal slide for regulating the size of said opening and guideways on said body in which said slide is mounted, said slide being movable across said opening between said bars in the space between said fan and body.

4. In a ventilating device, a ventilator body made of sheet material, said body being provided with a ventilating opening therein, a pair of spaced bars supported at their ends on the ventilator body adjacent said opening, a motor driven fan mounted on said bars opposite said opening, and at a spaced interval from said body, a sheet metal slide for regulating the size of said opening, and guideways on said body in which said slide is mounted, said slide being movable across said opening between said bars in the space between said fan and body, and means for limiting the movement of the slide, said means comprising a stop against which the end of the slide abuts when the slide fully covers the opening.

5. In a ventilating device, a sheet metal ventilator body, said body being provided with an opening therein, a pair of spaced bars extending transversely across said body and having their ends attached thereto, a motor driven fan for creating a draft of air through said opening, and resilient means for suspending said motor driven fan from the spaced bars, said resilient means comprising a plurality of springs, each having one end

secured to the fan motor and the opposite end to said spaced bars.

6. In a ventilating device, a sheet metal ventilator body, said body being provided with a ventilating opening therein, a pair of rigid spaced U-shaped bars extending transversely across said body, one on either side of said opening, the ends of the legs of said bars being attached to said body adjacent the edges thereof, a motor driven fan for creating a draft of air through said opening, and resilient means for suspending said motor driven fan from the spaced bars, said resilient means comprising a plurality of springs having one end secured to the fan and the opposite end to said spaced bars.

7. In a ventilating device, a sheet metal ventilator body, said body being provided with a ventilating opening therein, a pair of spaced U-shaped bars extending transversely across said body, one on either side of said opening, the ends of the legs of said bars being attached to said body adjacent opposite edges thereof, a second pair of spaced bars arranged at right angles to said first bars and secured thereto, a motor driven fan for creating a draft of air through said opening, and resilient means for suspending said motor driven fan from the spaced bars, said resilient means comprising a plurality of springs having one end secured to the fan motor and the opposite end to said spaced bars.

8. In a ventilator, a generally flat sheet metal body part having a relatively large ventilating opening therein, and flanges on the opposite edge portions thereof, a motor driven fan for creating a draft through the opening, and combined means for supporting the fan opposite the opening and stiffening the sheet metal body part, said last-named means comprising a pair of relatively rigid parallel spaced U-shaped bars, the ends of the legs of the U's being secured to the flanges on the body part.

In witness whereof, I have hereunto set my hand this 2d day of July, 1928.

ALFRED C. GILBERT.