Dec. 9, 1930. H. C. HUEGLIN 1,784,234

VENTILATOR

Filed Oct. 31, 1929

Fig. 1.

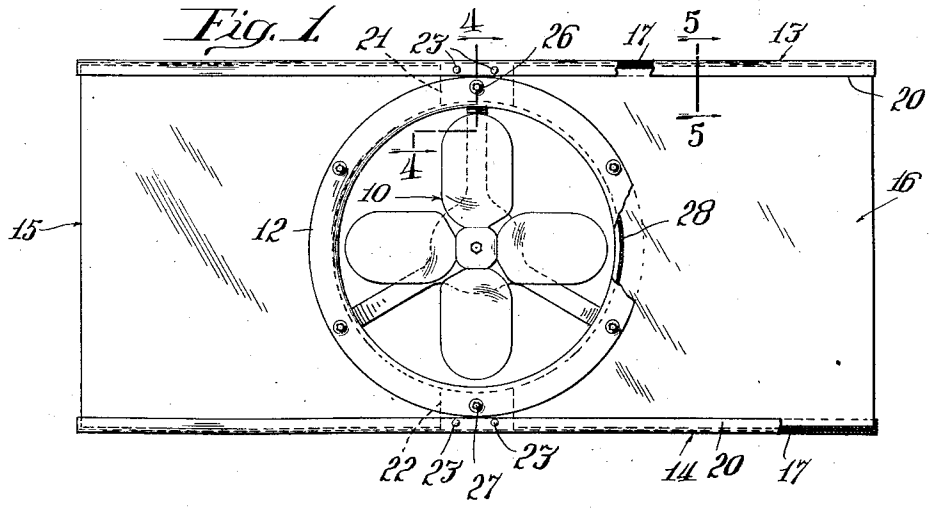


Fig. 2.

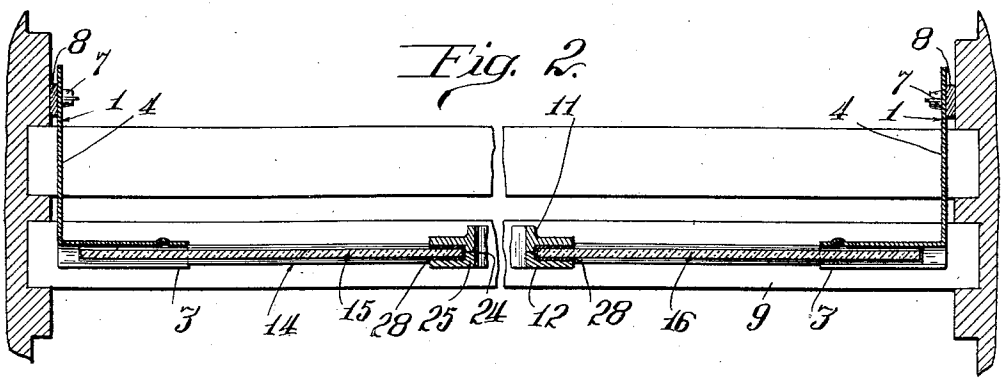


Fig. 3.

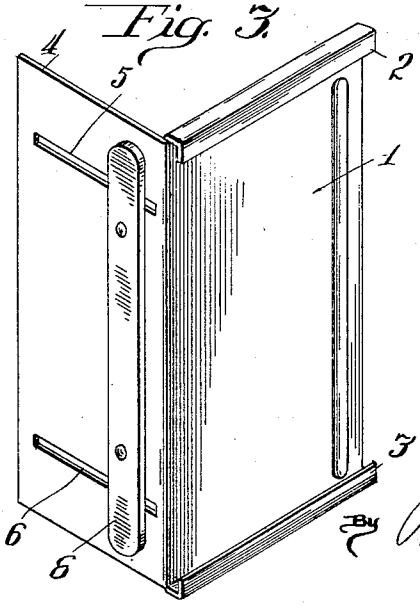


Fig. 4.

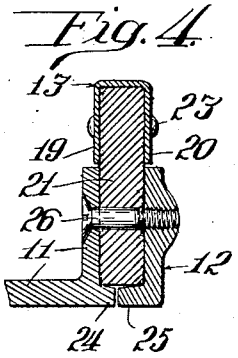
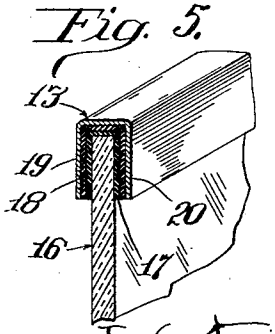


Fig. 5.



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UNITED STATES PATENT OFFICE

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VENTILATOR

Application filed October 31, 1929. Serial No. 403,706.

This invention relates to ventilators, more particularly to an improved panel construction for mounting a ventilator of the exhaust type in the window of a room.

In my copending application, Serial No. 380,003 filed July 22, 1929, I disclosed a ventilating panel in which an electric fan is centrally mounted in a framework by the mounting ring of the fan itself.

The space around the mounting ring of the fan and inside of the border line of the framework is filled in with a panel which preferably is constructed of glass so that the installation of the device in the window of a room does not materially darken the room.

In my present invention, I provide a new and improved panel structure of this type, the improvement making the panel cheaper to manufacture, and at the same time adding beauty and grace to its appearance.

Now to acquaint those skilled in the art with the teachings of my invention, reference is here made to the accompanying drawings in which a preferred embodiment of it is shown by way of example, and in which:

Figure 1 is an elevational view of a completely assembled panel;

Figure 2 is a cross-sectional view taken in a horizontal plane through the improved panel showing it mounted in a window;

Figure 3 is a perspective view of the mounting bracket;

Figure 4 is a sectional view taken along the line 4—4 of Figure 1; and

Figure 5 is a cross-sectional view taken along the line 5—5 of Figure 1.

The improved ventilating panel made in accordance with the teachings of the present invention like its predecessor disclosed in my above mentioned copending application, is adapted to be mounted in the upper part of a window by the brackets 1 which are substantially L-shaped brackets having depending flanges 2 and 3 which fit over the top and bottom edges of the panel respectively. The mounting side of the bracket 4 is provided with slots 5 and 6 through which thumb screws 7 are projected and threaded into the mounting plate 8 which is rigidly attached to the window frame. By this arrangement, the panel can be moved at right angles to the plane of the window sash so that the sashes may be operated to their fullest extent when it is desired to clean the windows, or if desired the ventilating panel can be moved into the path of the upper sash 9 as it is shown in Figure 2.

The details of this mounting arrangement are fully covered in my above mentioned copending application, to which application reference is here made for those details.

In my present invention, the fan 10 is provided with the customary mounting rings 11 and 12 by which it is mounted in the panel structure. A particular type of fan is not of the essence of the present invention as any suitable type electric fan can be used in the panel of my invention.

The panel upon which the fan is mounted and supported in the window of a residence, comprises the side rails 13 and 14 which are of U-shape cross-section as will best be seen in Figures 4 and 5. These side rails may be constructed of brass, aluminum, or any other preferred metal, and are cut to such a length that they extend fully across the top and bottom sides respectively of the panel structure.

The panel members 15 and 16 are disposed upon opposite sides of the mounting rings 11 and 12 of the fan and held in place by their engagement with the panel members 13 and 14. In the preferred embodiment of my invention the panel members 15 and 16 are sheets of glass, preferably plate glass, although it will be obvious that panels made of any other preferred material can be substituted therefor within the teachings of my invention.

As will be best seen in Figure 5, the panel member 16 extends into the open end of the U-shaped rail 13, and is prevented from coming into contact with that rail member by the spacing strips 17 and 18. If the panel 16 is constructed of glass, it is preferable that the spacing members 17 and 18 be soft materials such as felt, cork, or the like, so that they cushion the panel in the side rail and prevent breakage of it due to the unequal expansion of the metallic side rail and

glass panel responsive to temperature variations.

In constructing the preferred embodiment of my invention, the interior dimension of the side members 19 and 20 of the rails 13 and 14 is such that they have to be pressed onto the panel members 15 and 16 over the spacers 17 and 18, and this press fit is relied upon for holding the panel members in the frame.

In order to eliminate the necessity of supporting the electric fan upon the glass panel members 15 and 16 I have provided mounting plates 21 and 22 which are pressed into the side rails 13 and 14 respectively at the midpoint of those rails. The mounting plates 21 and 22 are constructed of metal, which may be brass, aluminum or any other preferred metal, of such thickness as to form a press fit with the interior surfaces of the walls 19 and 20 of the rails 13 and 14. To securely mount the mounting plates 21 and 22 in these rails and to guard against the possibility of their being shaken loose by the vibration of the fan, I have provided rivets 23 which are projected through the sides 19 and 20 of the rails and the mounting plates 21 and 22 to hold those plates in their respective rails.

It will be apparent that the thickness of the mounting plates 21 and 22 must be equal to the thickness of the panels 15 and 16 plus two thicknesses of the spacing members 17 and two thicknesses of the spacing members 18.

The mounting rings 11 and 12 of the fan 10 are provided with flanges 24 and 25 which when fitted together space the rings 11 and 12 apart a distance equal to the thickness of the mounting plates 21 and 22, so that when those rings are slipped onto opposite sides of the mounting plate and the screw bolts 26 and 27 are tightened, the fan is securely mounted to the mounting plate and in turn to the side rails 13 and 14 of the panel structure.

Since the opening formed by the flanges 24 and 25 of the fan mounting rings spaces the rings 11 and 12 apart a distance equal to the thickness of the mounting plates 21 and 22, that distance is greater than the thickness of the panel members 15 and 16 and I have therefore provided spacing strips 28 which are formed over the curved edge of the panels 15 and 16 where those edges extend into the slot between the mounting rings 11 and 12, these members 28 being of sufficient thickness to tightly clamp the panel between the rings 11 and 12.

The spacing members 17, 18 and 28 may be felt, soft rubber, or any other preferred material of rather soft nature, or if desired the inner spacer 17 which is in contact with the glass panels may be a soft material and the outside spacer 18 may be a harder material such as fiber.

Furthermore, if it is desired to do so, a single spacing member can be used in lieu of the two spacing members 17 and 18 shown for example.

In assembling the panel structure in accordance with the teachings of my invention, the side rails 13 and 14 are cut to length, the mounting plates 21 and 22 are pressed into these rails, and riveted therein. The rails are then plated and polished, or finished in any other preferred manner, and the panel structure is subsequently finished by pressing the rails on over the panel members 15 and 16 to hold them in planar relation with their recessed ends abutting against opposite sides of the mounting plates 21 and 22. It will be noted that no end strips are placed on over the panel members 15 and 16 since those ends lie within the channels 2 and 3 of the mounting bracket 1 and behind the planar section of that bracket when the panel is installed in a window.

The indentures in the adjacent ends of the panel members 15 and 16 and the inner ends of the mounting plates 21 and 22 all fall on the circumference of a circle, and the fan 10 is mounted in this circle by ring members 11 and 12 in the obvious manner.

The unit so constructed is graceful in its appearance and solid in its construction, and since the metallic side rails are narrow, the panel so constructed obstructs a minimum amount of the window opening so that the entrance of light into the room through that opening is practically unhampered by the installation of the ventilating panel.

While I have chosen to show my invention by illustrating a preferred embodiment of it, I have done so by way of example only as there are many modifications and adaptations which can be made by one skilled in the art without departing from the teachings of my invention.

Having thus complied with the statutes and shown and described a preferred embodiment of my invention, what I consider new and desire to have protected by Letters Patent is pointed out in the appended claims.

What is claimed is:

1. In a ventilating panel, a fan having a circular mounting ring, a pair of mounting plates diametrically mounted on said ring, a pair of channel members fitted over said plates and attached thereto, said members being parallel to each other and tangential to said ring, and panel members supported in said channels and butted against said ring.

2. In a ventilating panel, a pair of panel members, a pair of mounting plates separating said members, a pair of channel rails pressed on over the edges of said panel members and plates, the adjacent edges of said members and plates being disposed on a cir-

cle located centrally of said channel rails, and a fan having a mounting ring fitted over said circle and attached to said mounting plates.

3. In a ventilating panel, a pair of rectangular panel members each having a semi-circular indentation located centrally in one of its ends, a pair of channel rails pressed over the opposite sides of said panels to hold them in planar relation with their indented ends adjacent, a mounting plate pressed into each channel between the adjacent ends of said panels, and a fan mounted on said plates and disposed opposite the circular opening formed by the indentations of said panels.

4. In a ventilating panel, a pair of rectangular panel members each having a semi-circular indentation located centrally in one of its ends, a pair of channel rails pressed over the opposite sides of said panels to hold them in planar relation with their indented ends adjacent, a mounting plate pressed into each channel between the adjacent ends of said panels, and securely fastened therein, a fan having a mounting ring fitted over said plates and the adjacent ends of said panels, and means for fastening said ring to said plates.

5. In a ventilating panel, a pair of rectangular panel members each having a semi-circular indentation located centrally in one of its ends, soft U-shaped strips fitted over the opposite sides of said panels, a pair of U-shaped metallic rails pressed over said strips and panels to hold the panels in planar relation with their indented ends adjacent, metallic mounting plates pressed into said U-rails and between the adjacent ends of said panels to space the panels apart, a fan, a flanged mounting ring for said fan disposed on one side of said plates and over the edges of said panel indentations, a second flanged ring disposed on the opposite face of said plates and panels in registration with said first ring, and mounting means extending through said rings and plates to tie the rings together on said panels.

6. In a ventilating panel, a fan, a flanged mounting ring therefor, a second flanged mounting plate registering therewith, the rings between forming a rectangular mounting groove around the rings, a pair of mounting plates fitting into said groove and fastened to said rings at diametrically opposite points, a U-shaped metallic rail pressed over the free edge of each of said plates and fastened thereto and disposed parallel to each other and tangential to said mounting rings, and a pair of panel members pressed into said U-rails and said groove to close in said panel.

7. In a ventilating panel, a fan, a flanged mounting ring therefor, a second flanged mounting plate registering therewith, the rings between forming a rectangular mounting groove around the rings, a pair of mounting plates fitting into said groove and fastened to said rings at diametrically opposite points, a U-shaped metallic rail pressed over the free edge of each of said plates and fastened thereto and disposed parallel to each other and tangential to said mounting rings, and a pair of glass sheets fitted between said rails and into said groove to close in said panel.

8. In a ventilating panel, a fan, a flanged mounting ring therefor, a second flanged mounting plate registering therewith, the rings between forming a rectangular mounting groove around the rings, a pair of mounting plates fitting into said groove and fastened to said rings at diametrically opposite points, a U-shaped metallic rail pressed over the free edge of each of said plates and fastened thereto and disposed parallel to each other and tangential to said mounting rings, and a pair of glass sheets of thickness less than that of said plates and fitted between said rails and into said groove to close in said panel, and fillers disposed between said sheets and said rails and the edges of said groove.

9. In a ventilating panel, a pair of rectangular panels provided with semi-circular indentations in one of their ends, U-shaped semi-flexible strips disposed over the sides of said panels, a pair of U-shaped metallic rails pressed on to the edges of said panels over said strips to hold the panels in planar relation with their indented edges adjacent, and a metallic plate pressed into each of said rails between the adjacent ends of said panels.

10. In a ventilating panel, a pair of rectangular panels provided with semi-circular indentations in one of their ends, U-shaped semi-flexible strips disposed over the sides of said panels, a pair of U-shaped metallic rails pressed onto the edges of said panels over said strips to hold the panels in planar relation with their indented edges adjacent, and a metallic plate pressed into each of said rails and fastened thereto between the adjacent ends of said panels.

11. In a ventilating panel, a pair of rectangular panels provided with semi-circular indentations in one of their ends, U-shaped semi-flexible strips disposed over the sides of said panels, a pair of U-shaped metallic rails pressed onto the edges of said panels over said strips to hold the panels in planar relation with their indented edges adjacent, and a metallic plate pressed into each of said rails and riveted thereto between the adjacent ends of said panels.

12. In a ventilating panel, a pair of rectangular transparent panels provided with semi-circular indentations in one of their ends, U-shaped semi-flexible strips disposed over the sides of said panels, a pair of U-shaped metallic rails pressed onto the edges of said panels over said strips to hold the panels in planar relation with their indented edges

adjacent, and a metallic plate pressed into each of said rails between the adjacent ends of said panels.

13. In a ventilating panel, a pair of rectangular glass panels provided with semi-circular indentations in one of their ends, U-shaped semi-flexible strips disposed over the sides of said panels, a pair of U-shaped metallic rails pressed onto the edges of said panels over said strips to hold the panels in planar relation with their indented edges adjacent, and a metallic plate pressed into each of said rails between the adjacent ends of said panels.

14. In a ventilating panel, a pair of rectangular panels provided with semi-circular indentations in one of their ends, U-shaped semi-flexible strips disposed over the sides of said panels, a pair of U-shaped metallic rails having parallel legs spaced apart a distance equal to the thickness of said panels and strips and pressed onto the edges of said panels over said strips to hold the panels in planar relation with their indented edges adjacent, and a metallic plate pressed into each of said rails between the adjacent ends of said panels.

In witness whereof, I hereunto subscribe my name this 26th day of October, 1929.

HERMAN C. HUEGLIN.