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2,826,136

ROOF TYPE VENTILATOR

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FIG. 1

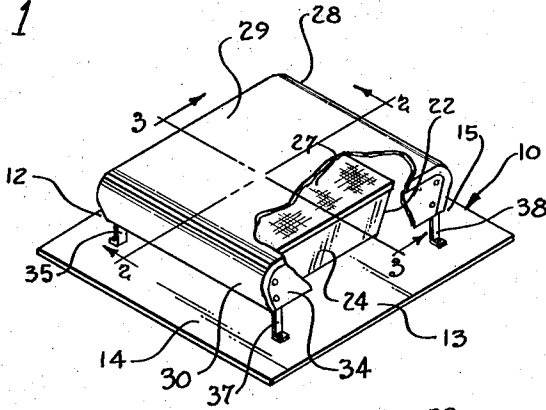


FIG. 2

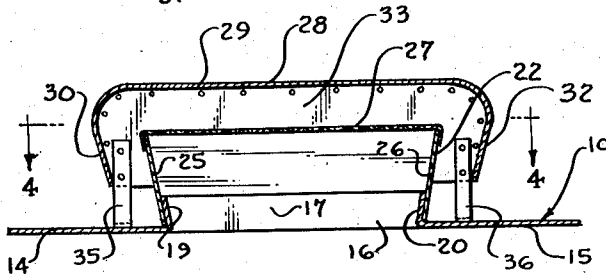


FIG. 3

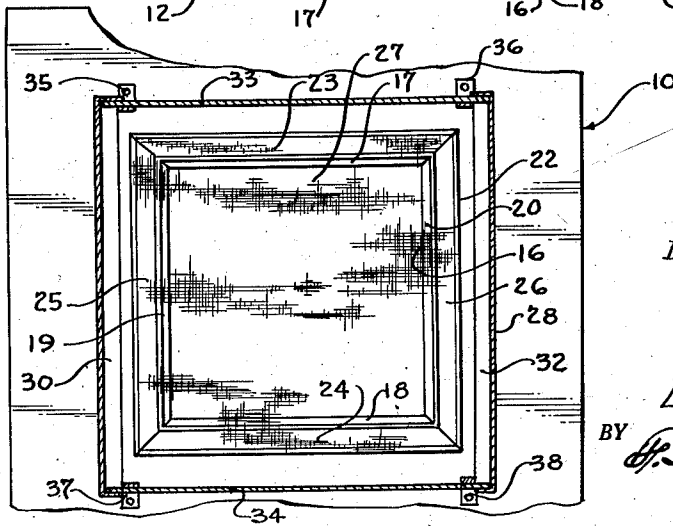
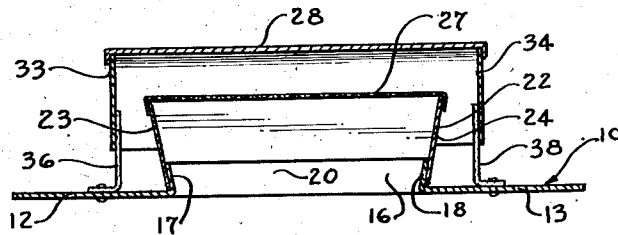


FIG. 4

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## ROOF TYPE VENTILATOR

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4 Claims. (Cl. 98—42)

This invention relates to roof type ventilators, and more particularly to such ventilators which are adapted to afford ventilation and good weather protection when mounted in various positions in either flat or pitched roofs.

One of the general objects of this invention is to provide a plural part ventilator having openings for the passage of air and parts affording adequate weather shields for the openings, and wherein the several parts are so constructed and arranged that connected portions of the air flow passage through the ventilator are proportioned to provide substantially uniform air flow areas, thereby to avoid undesirable localized restrictions to the flow of air through the ventilator.

As another and more specific object, my invention comprehends the provision of a screened roof type ventilator wherein the placement of the screen and the structures of associated parts are selected to afford both compensation for the solid area of the screen and an improved measure of weather protection in the ventilator.

Other objects and advantages of the invention will be apparent from the following description and the accompanying drawings in which similar characters of reference indicate similar parts throughout the several views.

Referring to the drawings:

Fig. 1 is a perspective view of a roof type ventilator embodying a preferred form of my invention;

Figs. 2 and 3 are respectively longitudinal and lateral sectional views taken substantially at the positions and in the direction indicated by lines 2—2 and 3—3 and accompanying arrows in Fig. 1; and

Fig. 4 is a top sectional view taken substantially at the position indicated by a line 4—4 in Fig. 2, and in the direction indicated by arrows.

In the exemplary embodiment of my roof type ventilator which is shown in the accompanying drawings for illustrative purposes, a metal base sheet 10 provides relatively coplanar side mounting flange portions 12 and 13 and end mounting flange portions 14 and 15, and has an opening 16 of predetermined area in the mid-portion thereof. Although the opening 16 may be of any desired shape, a rectangular shape, such as that illustrated, affords a convenient shape for ease of fabrication. As depicted in Figs. 2, 3 and 4, flanges 17, 18, 19 and 20 are provided on the base sheet adjacent the opening 16 and extend upwardly from the mounting flange portions. The flanges 17, 18, 19 and 20 of the disclosed structure are integral with the base sheet 10, as by being drawn from the base sheet material after the piercing of an opening smaller than the opening 16, and have their adjacent ends suitably adjoined to provide water-tight joints around the opening. The flanges 17, 18, 19 and 20 together serve as a mounting for a wall 22 which, in the present instance, is fabricated from a formed strip of sheet metal of uniform width and encompasses the exterior surfaces of the mounting flanges. The wall 22 has side portions 23 and 24 and end portions 25 and 26

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which are preferably secured to the flanges 17, 18, 19 and 20, respectively.

In the disclosed structure, the exterior surface of the flanges 17, 18, 19 and 20 and the wall portions 23, 24, 25 and 26 form acute angles with the mounting flange portions of the base sheet, so that the end and side portions of the wall diverge upwardly, whereby the opening encompassed by the top of the wall is larger than the opening 16 in the base sheet. The upward divergence of the wall portions and the acute angular relationship between the wall portions and the mounting flange portions not only affords weather protection, because of the tendency to deflect driving rain and the like outwardly and downwardly therefrom, but also is utilized in the disclosed structure to compensate for the restriction of air flow which accompanies the use of a screen 27 secured to the top of the wall and which covers the opening encompassed by the wall at its top. The screen 27 may be of the usual wire mesh type and embodies solid material having a multiplicity of openings therein. In order to avoid restriction to the air flow through the ventilator as a result of disproportionment of air flow passages therein, the area of the opening at the top of the wall 22 is larger than the opening 16 in the base sheet by an amount substantially proportionate to the percentage of the total screened area which is occupied by the solid material of the screen.

For added weather protection, the screened opening at the top of the wall 22 is covered by a cap 28, which cap, in the present instance, has a relatively flat top portion 29 bent downwardly at opposite ends to provide end cover flanges 30 and 32. Also, side cover pieces 33 and 34 are secured to opposite sides of the top portion 29 to provide side cover flanges thereon which are substantially co-extensive with the end cover flanges 30 and 32. Brackets 35, 36, 37 and 38 are secured to the side cover pieces 33 and 34 near the corners of the cover and extend downwardly therefrom, with their bottom ends secured to the mounting flange portions of the base sheet to support the cap relatively to the base sheet.

In the disclosed structure, the top portion 29 of the cap, as that cap is supported from the base sheet by the brackets 35, 36, 37 and 38, is spaced sufficiently above the top of the wall 22 and the end flanges 30 and 32 and side pieces 33 and 34 of the cap are spaced from the portions of the wall 22 in amounts such that the combined air flow areas between those parts are at least equal to the area of the opening 16 in the base sheet. The spacing between the bottoms of the end flanges 30 and 32 and side parts 33 and 34 and the mounting flange portions of the base sheet is also sufficient to afford air flow area at least equal to the area of the opening 16. It may also be observed that the described air flow openings through the ventilator structure are provided with the cap and wall so relatively disposed that the end flanges and side parts of the cap overlap substantial portions of the upper part of the wall 22, thereby to afford adequate weather protection for driving rain, snow and the like.

From the foregoing description and reference to the accompanying drawings, it may be readily understood that I have provided a roof type ventilator having open ventilating spaces on all sides and which affords fully adequate weather protection with various portions of the ventilator structure relatively disposed and proportioned to avoid limiting restrictions at any part of the ventilator structure which tend to curtail the passage of air at any part of the ventilator ensemble.

While I have illustrated a preferred embodiment of my invention, many modifications may be made without departing from the spirit of the invention, and I do not wish to be limited to the precise details of construction

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set forth, but desire to avail myself of all changes within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A roof type ventilator comprising, in combination, a relatively flat base sheet having an opening of predetermined area in the mid portion thereof and providing substantially coplanar mounting portions surrounding the opening, means secured to the base sheet and providing a wall encompassing the opening in adjacent relationship thereto, said wall projecting upwardly from the base sheet and having portions flared outwardly from one another toward the tops thereof and being in acute angular relationship to the mounting portions of the base sheet to provide weather protection by affording outward and downward deflection to driving rain and the like, and the area of the opening encompassed by the wall being larger at the top than at the bottom, a screen secured to the top portion of the wall and covering the top of the opening encompassed thereby, said screen having solid material and openings therein, the area of the opening at the top of the wall being larger than the opening in the base sheet by an amount substantially proportionate to the percentage of the total screened area which is occupied by the solid material of the screen, a cap covering the top of the opening encompassed by the wall and having side and end portions extending downwardly in overlapping and spaced relationship to the exterior of the top portions of the wall, said cap also being spaced from the top of the wall and the side and end portions thereof being spaced from the base sheet, means for supporting the cap relative to the base sheet, and the spaces between the cap and the wall and base sheet being sufficient to provide air flow spaces between the cap and the wall and base sheet which are at least equal in area to that of the opening in the base sheet.

2. A room type ventilator comprising, in combination, a base sheet having an opening in the mid-portion thereof and providing mounting portions surrounding the

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opening, means secured to the base sheet and providing a wall including adjoined side and end portions which encompass the opening in adjacent relationship thereto, said side and end portions of the wall projecting upwardly from the base sheet and diverging upwardly toward the tops thereof to provide weather protection by effecting outward and downward deflection of driving rain and the like and so that the opening encompassed by the wall is larger at the top than at the bottom, a screen secured to the wall and covering the opening encompassed by the wall at the top thereof, a cap covering the top of the opening encompassed by the wall and having side and end portions respectively extending downwardly in overlapping and spaced relationship to the exteriors of the side and end portions of the wall, and means for securing the cap to the base sheet in spaced relationship to the tops of the side and end portions of the wall and the side and end portions of the cap spaced from the mounting portions of the base sheet.

3. A roof type ventilator as defined in claim 2, and wherein said screen includes solid material and has openings therein, and also wherein the opening encompassed by the wall at the top thereof is sufficiently larger than that at the bottom thereof to provide air flow space through the openings of the screen equivalent in area to that through the opening in the mid-portion of the base sheet.

4. A roof type ventilator as defined in claim 2, and wherein the planes of the portions of the end portions of the cap which are in overlapping relation to the end portions of the wall are substantially parallel to the upwardly diverging end portions of the wall.

#### References Cited in the file of this patent

##### UNITED STATES PATENTS

2,638,835 Strawshine ----- May 19, 1953

##### FOREIGN PATENTS

979,945 France ----- Dec. 20, 1950  
71,465 Netherlands ----- Dec. 15, 1952