

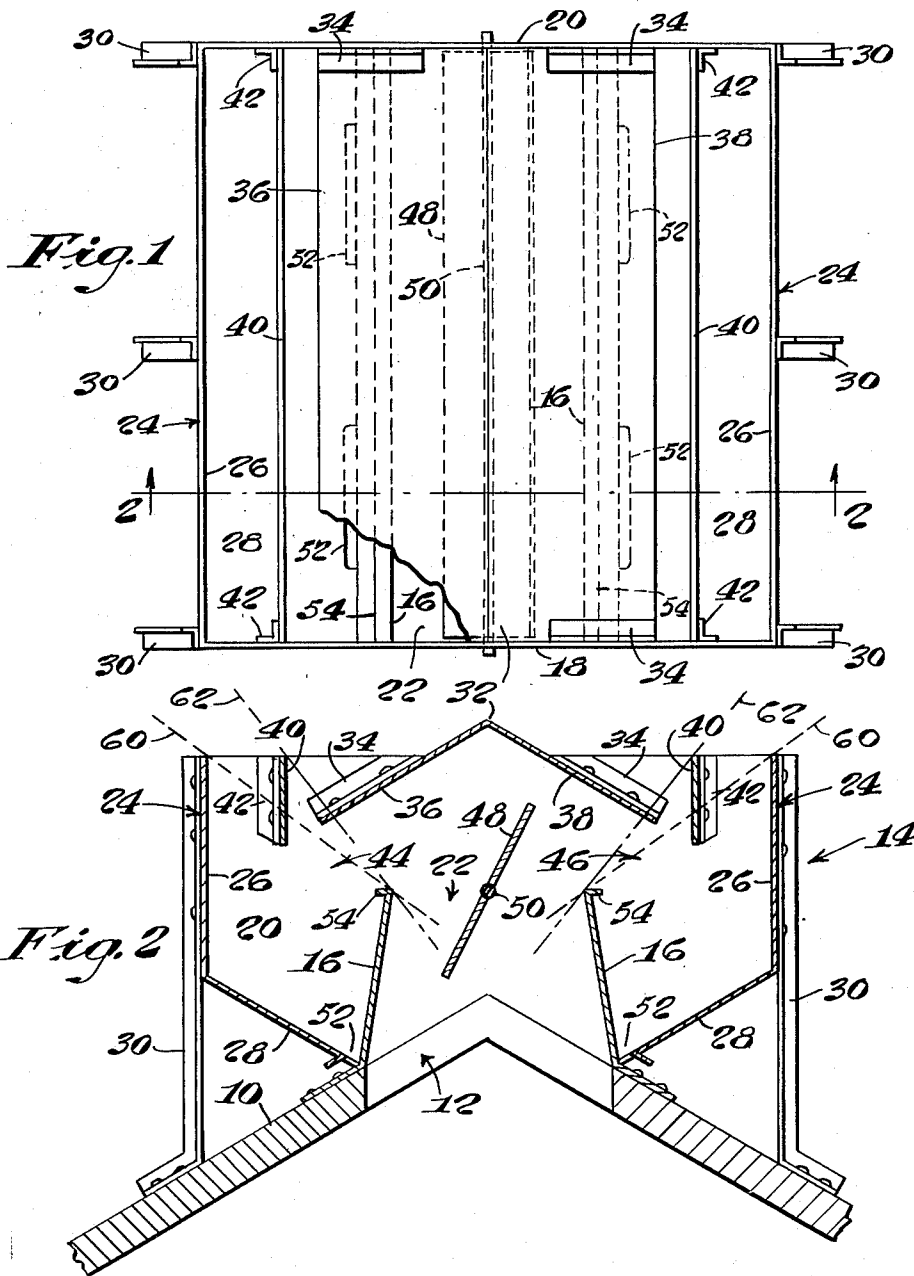
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VENTILATOR

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VENTILATOR

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1 Claim. (Cl. 98—42)

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This invention relates to a ventilator.

The invention has for an object to provide a novel and efficient ventilator of the stationary type adapted to be mounted upon the roof of a building or other structure from which it is desired to exhaust air and which may be economically manufactured and whose construction prevents wind and wind driven rain or snow from entering the building through the ventilator.

With this general object in view, and such others as may hereinafter appear, the invention consists in the ventilator hereinafter described and particularly defined in the claim at the end of this specification.

In the drawings illustrating the preferred embodiment of the invention, Fig. 1 is a plan view of a ventilator embodying the present invention; and, Fig. 2 is a cross sectional view of the ventilator taken on the line 2—2 of Fig. 1.

In general, the present invention contemplates a novel ventilator of the stationary type which is designed to permit efficient exhaustion of air from within a building and to effectively prevent the entrance of wind driven rain or snow through the ventilator. In the illustrated embodiment of the invention, the ventilator is preferably rectangular in form and may be designed for mounting upon any of the conventional types of roofs including flat, pitched, curved or inclined roofs. In practice, the ventilator may be manufactured as a single unit of any desired length for mounting upon a roof, or, may be in the form of a plurality of units adapted to be mounted end to end on a roof to form a continuous ventilator over the whole or part of the length of the roof.

In the preferred embodiment of the invention, the ventilator includes upstanding member defining a rectangular throat opening, a cap member disposed above and spaced from the throat and being of sufficient width to cover the throat, and suction band members disposed on opposite sides of the throat members and spaced laterally therefrom, the upper edges of the suction band members extending upwardly beyond the edges of the cap member. The invention also contemplates the provision of a pair of vertically arranged baffle members disposed relative to the suction band members, cap member and the throat members so as to prevent direct communication between the atmosphere and the throat of the ventilator, whereby entry of wind, and wind driven rain or snow is obstructed without materially reducing the efficiency of the ventilator.

Referring now to the drawings, the invention

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is herein illustrated as embodied in a building having a pitched roof 10 provided with a ridge opening 12 rectangular in form and which may extend any desired length along the roof. The ventilator, indicated generally at 14, includes two spaced upwardly extending and horizontally elongated members 16 secured at their lower ends on opposite sides of the roof opening 12, the members 16 being inclined towards each other to form with the vertical end members 18, 20 a rectangular opening 22 slightly narrower at its upper end and comprising the throat of the ventilator. The roof also has erected thereon a suction band comprising a pair of elongated members 24 spaced laterally from opposite sides of the throat 22, each suction band member 24 comprising a vertical portion 26 having its upper edge extending above the throat 22 and having an inwardly inclined portion 28 at its lower end extending diagonally downwardly towards and terminating at the lower ends of the throat members 16. The suction band members 24 may be supported by suitable angle supports 30 secured to the roof, and may be joined with the end members 18, 20 to form an elongated rectangular suction opening.

The ventilator further includes an elongated inverted and relatively flat V-shaped cap member 32 disposed above the throat 22 and supported between the end members 18, 20 by angle pieces 34. The downwardly inclined arms 36, 38 of the cap member are arranged to extend laterally beyond the upper edges of the throat member 16, as illustrated. A pair of elongated vertically arranged baffle members 40 are also provided at the upper end of the ventilator disposed on opposite sides of the cap member 32 and spaced therefrom between the ends of the arms 36, 38 and the vertical portions 26 of the suction band members. As herein shown, the baffle members 40 may be supported longitudinally between the end members 18, 20 by angle pieces 42, the upper edges of the baffle members being arranged in alignment with the upper edges of the suction band members 24 and extended downwardly a short distance below the lower edges of the sides 36, 38 of the cap member 32, as illustrated.

From the description thus far it will be seen that in the operation of the ventilator the warm air from within the building rises and escapes through the throat 22. The suction band members 24 are preferably spaced a substantial distance from the ventilator throat to enable the air to pass from the throat outwardly through lateral passageways 44, 46 defined by the lower

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edges of the cap member and the upper edges of the throat members 16, the air then passing upwardly between the cap member and the suction band members 26 on either or both sides of the baffle members 40. As is well known in the stationary ventilator art, the wind passing over the top of the ventilator in a horizontal direction creates a low pressure area to draw the air upwardly through the space between the cap member and the suction band members. The inwardly extended and downwardly inclined portions 28 of the suction band members 24 serve to deflect upward flowing wind or cold air currents to cause them to pass upwardly outside of the ventilator. Such upward air currents would otherwise chill and retard the stream of warm air flowing outwardly and upwardly between the inwardly inclined throat members 16 and tend to reduce the efficiency of the ventilator.

In order to control the exhaustion of the air from within the building by the ventilator, the damper plate 48 is preferably provided adjacent the upper end of the throat 22, such damper being movable about a central longitudinal axis 50 to control the volume of air flowing upwardly and outwardly from the building through the rectangular ridge opening 12 and throat 22. The lower edges of the inwardly inclined portions 28 of the suction band members 24 are preferably spaced slightly from the roof, or, as herein illustrated, are formed with spaced aperture 52 so as to permit outflow of driven rain water or melted snow which may have entered the ventilator. The upper edges of the throat members 16 may be provided with outwardly extended lips 54 which serve to deflect any air currents entering through the drainage openings and flowing upwardly along the outside of the throat members 16.

In accordance with the present invention, wind and wind driven rain or snow is prevented from entering within the building by the cooperation of the cap member 32 and the two vertically arranged longitudinal baffles 40. As herein illustrated, the arms 36, 38 of the cap member 32 disposed above the throat 22 extend to positions laterally beyond the upper edges of the inwardly inclined throat members 16, and the suction band members 26 extend above the lower edges of the arms 36, 38 of the cap member. In order to prevent direct entry of wind and wind driven rain or snow from the atmosphere at an angle such as to pass over the upper edge of a suction band member 26, under a lower edge of the cap member, and then over the upper edge of a throat member 16 into the ventilator, the vertical baffles 40, disposed between the cap member and the suction band member, extend downwardly from the upper edges of the end members 18, 20 to a position slightly below an inclined plane passing through the upper edge of a suction band member 26 and the upper edge of a throat member 16, such inclined plane being represented by the dotted line 60 in Fig. 2. It will also be observed that the lower edges of the arms 36, 38 of the cap member are disposed relative to the upper edges of the baffle members 40 and the upper edges of

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the throat members 16 so as to intercept and block off direct entry of wind or wind driven rain or snow at an angle passing through the upper edge of a baffle member and the upper edge of a throat member, as indicated by the dot and dash line 62. Thus, the provision of the baffle members 40 permits proportioning of the ventilator elements relative to each other for maximum efficiency of operation without being subject to entry of wind or wind driven rain or snow from any angle and offering minimum obstruction to the passage of air out of the ventilator. The vertical disposition of the baffle members is also of advantage since in this position they are not subject to accumulation of snow and ice thereon.

While the preferred embodiment of the invention has been herein illustrated and described, it will be understood that the invention may be embodied in other forms within the scope of the following claim.

Having thus described the invention, what is claimed is:

A ventilator adapted to be mounted on the roof of a building comprising an elongated rectangular throat member defined by upstanding and slightly inwardly inclined side plates and communicating with an opening in the roof, a cap member of an inverted and relatively flat V-shape disposed above said throat, the arms of the V extending beyond the upper edges of said throat, an elongated rectangular suction band spaced from and surrounding said throat, the upper edges of the suction band extending vertically above said throat and above the lower edges of said cap member, and elongated vertical baffle plates disposed between and spaced from said cap edges and from the suction band, the upper edges of said baffle plates being substantially in horizontal alignment with the upper edges of the suction band, said cap extending laterally beyond an inclined plane passing through the upper edge of a baffle plate and the upper edge of a throat side plate to prevent wind and wind driven rain or snow falling within the baffle plates from entering said throat, the lower edges of said plates intersecting and extending slightly below a second inclined plane passing through the upper edge of the suction band and the upper edge of a throat side plate to prevent wind and wind driven rain or snow falling within the suction band from entering said throat.

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