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ROOF FAN VENTILATOR

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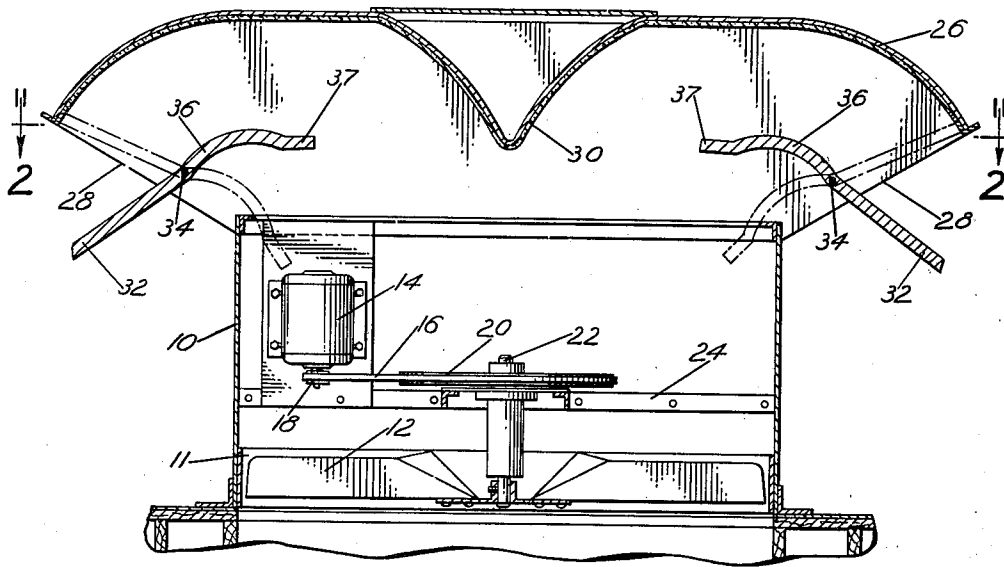


Fig. 1

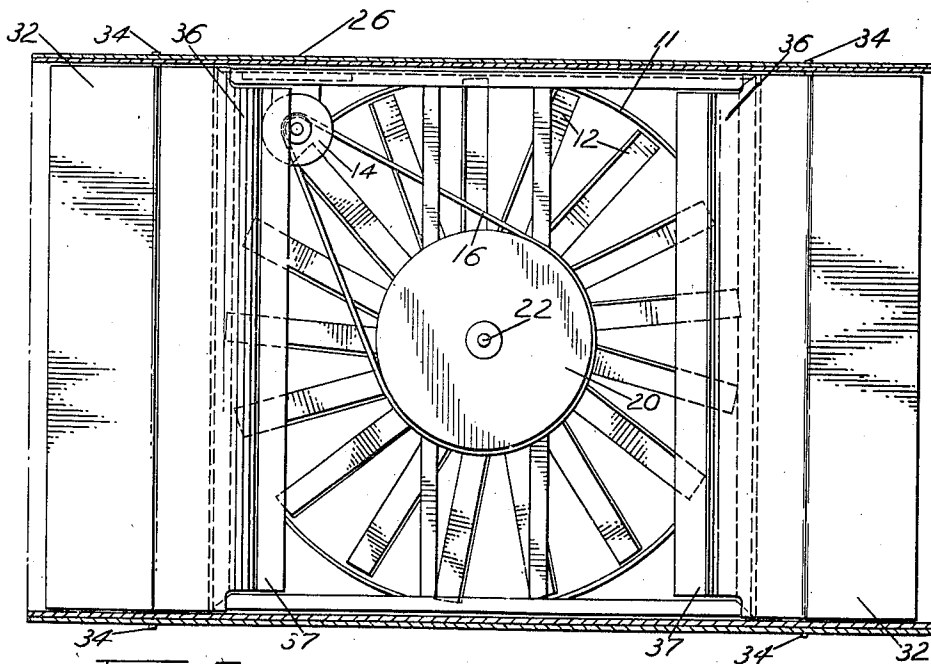


Fig. 2

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ROOF FAN VENTILATOR

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2 Claims. (Cl. 98—43)

This invention relates to improvements in roof ventilators of the power driven fan type.

An object is to provide a ventilator of the character described, which is of simple construction, attractive design, and inexpensive as to cost.

A further object is to provide a ventilator which is so closed when not in use as to effectively exclude snow, rain and the like, and which automatically opens to permit the exhaust of air driven outwardly by the fan.

A meritorious feature is that the ventilator is so constructed that the air outlet passageways therefrom are so shaped as to direct the air smoothly outwardly without obstruction to its even flow.

The ventilator is provided with dampers pivotally supported and so balanced in such a manner as to normally close the air outlets. Each damper is provided with an end portion which projects, when the damper is closed, into that portion of the ventilator adjacent to the exhaust side of the fan. Such end portion extends partially across the air passageway leading away from the fan and is so positioned therein that the damper is actuated by the pressure of the air exhausted by the fan so as to be moved to the open position.

More specifically that portion of the damper which is adapted to be acted upon by the air exhausted by the fan is so curved and shaped as not only to extend, when the damper is in the closed position, partially across the air passageway so as to be actuated by the air blast of the fan to be moved to the open position, but is also so curved that when the damper is in the open position such curved portion serves to direct the air outwardly through the ventilator outlet opening.

Other objects, advantages, and meritorious features of this invention will more particularly appear from the following specification, appended claims and accompanying drawing wherein:

Figure 1 is a vertical sectional view taken through my improved ventilator.

Fig. 2 is a plan view of the structure shown in Figure 1, such view being partially broken away.

The ventilator comprises a tubular trunk portion 10, which is adapted to be secured to the roof of a building as an upright extension of a roof opening. Suitable flashing is provided to make a tight joint with the roof.

Mounted within the trunk is a fan 12, adapted to be driven by suitable power means such as an electric motor 14. The fan is here shown as driven from the motor by means of a belt 16, and

a pulley 18 on the motor shaft and a pulley 20 on the fan shaft 22. The fan shaft is supported in suitable bearings carried by a frame work 24 within the trunk. The fan is a conventional exhaust fan adapted to exhaust air from the building structure. A circular fan ring 11 surrounds the fan.

Surmounting the trunk is a hood structure 26. As shown in a plan drawing this hood structure may be of a rectangular shape. The hood is suitably secured to the trunk and is provided with a pair of oppositely disposed air outlets 28. The hood is interiorally shaped as shown in the vertical sectional view in that it is provided with an inverted trough portion 30 which is so shaped as to direct the air exhausted by the fan outwardly through the two outlets smoothly and with a minimum of obstruction of flow. If desired suitable insulation may be provided within the hood as against heat or sound.

A damper 32 is provided for each outlet opening. Such damper is pivotally supported within the hood upon a pivot 34. The inner or lower end 36 of each damper is curved as shown in the drawing. The tip portion 37 of this curved end is bent outwardly as shown in the drawing. This curved end of each damper is so weighted as to overbalance the upper end of the damper whereby the damper normally occupies the position shown in dotted outline closing the air outlet from the hood. In such dotted outline position the curved end of each damper projects downwardly and inwardly into the trunk and extends partially across the air passageway therefrom through which air is exhausted by the fan.

When the fan is started the air blast acts upon the tip 37 of each damper and swings the damper upwardly to the open solid line position. The air stream created by the fan maintains the damper in such position during the time the fan is running. It will be noted that because the tip of the curved end portion of each damper is bent out of the plane of the curve the projection of such end portion across the air passageway from the outlet side of the fan is increased. As a consequence the damper is quickly picked up by the air blast from the fan and opened whereby the device responds immediately and automatically to open the outlets for exhaust of air.

The end 36 of each damper is so curved that the air which strikes such end portion is directed outwardly through the outlet opening. The curvature is such that the air flows smoothly outwardly without obstruction to its flow.

What I claim:

1. A roof fan ventilator comprising in combination a tubular trunk portion secured to the roof as an upright outlet extension of an opening through the roof, a ventilator fan rotatably supported within said trunk, a hood surmounting the upper open end of the trunk so shaped as to provide a curved air outlet extending upwardly and outwardly from the trunk and discharging outwardly therebeyond, a damper pivotally supported within the hood extending across said outlet and controlling the discharge of air therethrough and having a normal position closing said outlet, said damper having a curved lower end closing the discharge outlet from the hood between the damper-pivot and the trunk when the damper is in the closed position, said curved lower end of the damper having a tip portion bent inwardly of the hood out of the plane of said curved lower end and extending when the damper is in the closed position partially across the air outlet from the trunk into the hood, said tip portion of the damper adapted to be acted upon by the air exhausted by the fan to move the damper to the open position.

2. A roof fan ventilator comprising in combination a tubular trunk portion secured to the roof as an upright outlet extension of an opening through the roof, a ventilator fan rotatably supported within said trunk, a hood surmounting the upper open end of the trunk providing a pair of curved air outlets extending upwardly and outwardly in opposite directions from the trunk discharging outwardly therebeyond, a damper pivotally supported within each air outlet of the hood extending across said outlet and controlling the discharge of air therethrough and having a normal position closing said outlet, said damper having a curved lower end portion closing the discharge outlet from the hood between the pivot and the trunk when the damper is in the closed position, said curved portion having a tip bent inwardly of the hood out of the plane of the curve and projecting downwardly and inwardly into the trunk portion partially across the air outlet therefrom, said curved portion adapted when the damper is in the open position to direct the air striking the same outwardly through the outlet from the hood.

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