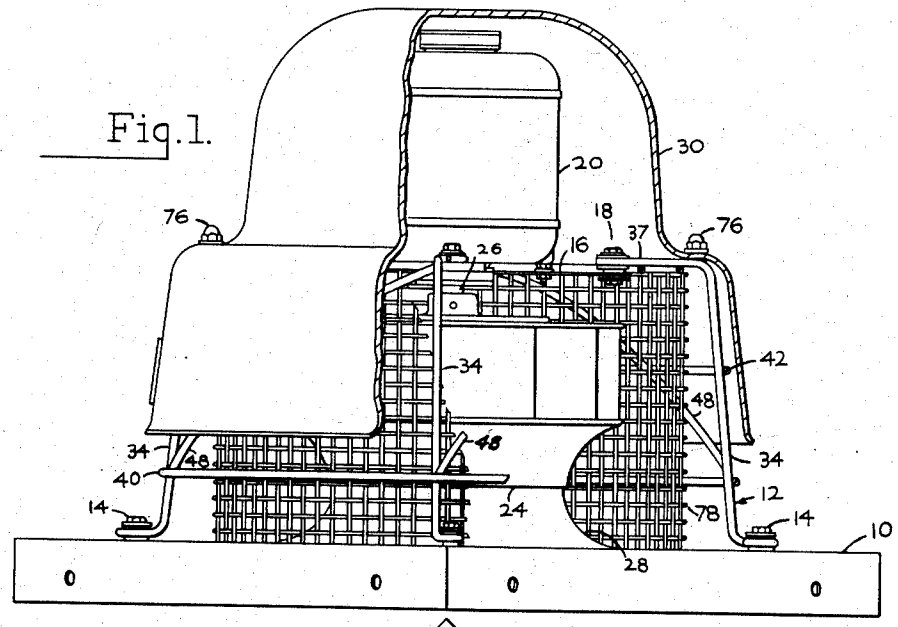
March 1, 1960 R. B. COE 2,926,837

POWER ROOF VENTILATOR

Filed July 11, 1957 2 Sheets-Sheet 1

Fig. 1.



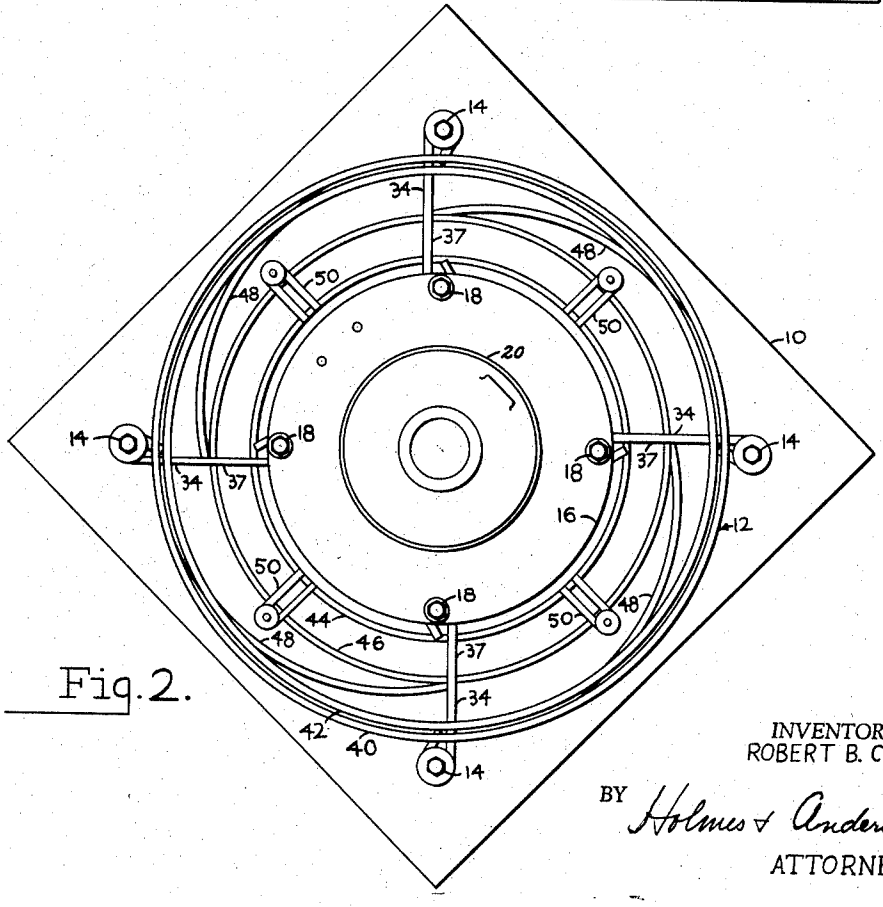


Fig. 2.

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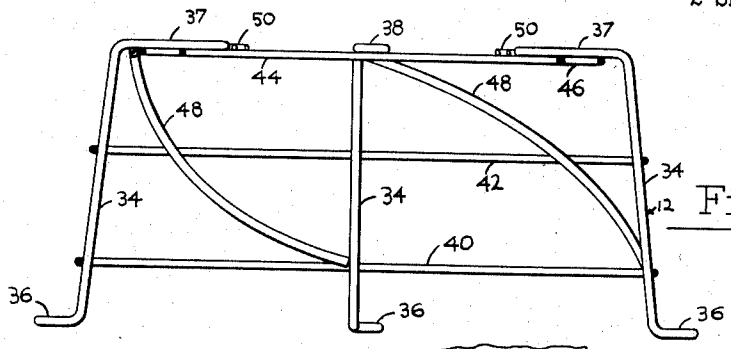


Fig. 3.

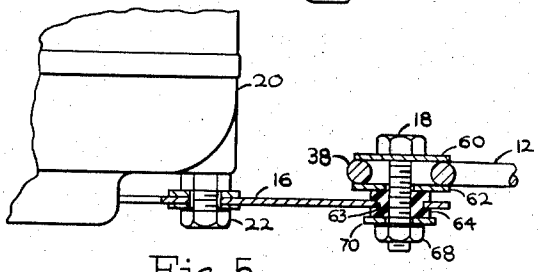


Fig. 5.

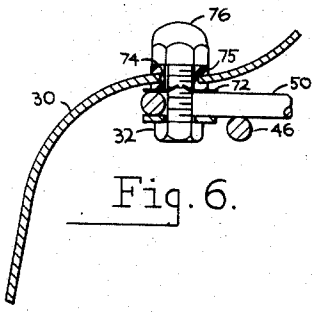


Fig. 6.

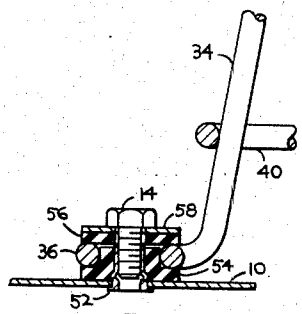


Fig. 7.

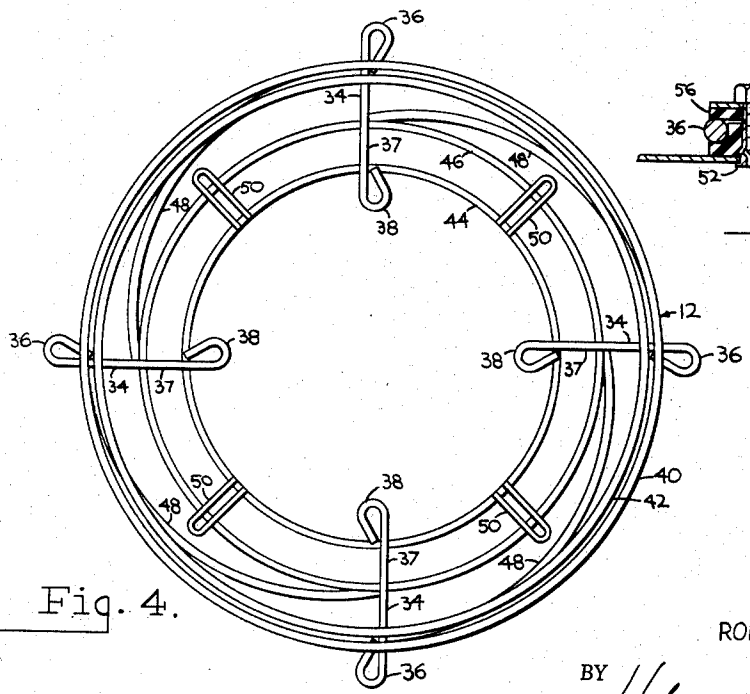


Fig. 4.

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2,926,837

POWER ROOF VENTILATOR

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Application July 11, 1957, Serial No. 671,164

4 Claims. (Cl. 230—117)

This invention relates generally to power ventilators and more particularly to roof ventilators employing a centrifugal fan for drawing air out of a building.

It is important that such ventilators operate with a minimum amount of vibration and noise. It is also important that the framework shall offer a minimum of resistance to air flow. The unit should be so constructed that it may be easily taken apart for servicing of the motor and the fan.

It is, therefore, an object of this invention to provide a frame which will isolate the noise and vibration of the fan and motor from the base of the unit.

It is another object of the invention to provide a frame which offers little resistance to air flow.

It is also an object of this invention to provide a construction which is inexpensive and easy to assemble and which is easily accessible for servicing and cleaning.

An illustrative embodiment of this invention is shown in the accompanying drawings, wherein:

Figure 1 is an elevational view of a power roof ventilator with portions of the hood, the wire frame and the bird screen removed to show the interior construction.

Fig. 2 is a plan view of the power roof ventilator with the hood removed.

Figure 3 is an elevational view of the wire frame.

Figure 4 is a plan view of the wire frame.

Figure 5 is a partial sectional view showing the mounting of the motor on the wire frame.

Figure 6 is a partial sectional view showing the mounting of the hood on the wire frame.

Figure 7 is a partial sectional view showing the mounting of the wire frame on the base.

A rectangular base member **10** is adapted to be mounted over an opening in the roof of a building. A wire frame **12** is secured by bolts **14** to the base member **10**. A motor support **16** is secured to the wire frame **12** by bolts **18** and the motor support **16** has the motor **20** secured thereto by thru bolts **22**. A centrifugal fan impeller **24** is mounted on a shaft **26** of the motor **20** with the inlet of the impeller **24** in fluid communication with an orifice **28** on the base member **10**. The hood **30** is secured to the wire frame **12** by bolts **32**.

Referring now more specifically to the wire frame **12**, there are four leg members **34** having outwardly extending eyes **36** at their lower ends and inwardly extending portions **37** terminating in eyes **38** at their upper ends. More or less than four leg members may be used if desired. Horizontal circular wire members **40** and **42** are welded to the members **34**. A circular wire member **44** is welded to the eyes **38** of the leg members **34**. Another circular wire member **46** is welded to the outer end of the portions **37** of the members **34**.

Diagonal wire braces **48** are welded to members **34** and members **46** at their points of intersection, to the members **42**, and to members **40** and **34** at their points of intersection. Angularly between the leg members **34** are U shaped wire members **50** which are welded to the members **44** and **46**.

The means for securing wire frame **12** on the base **10** will now be described with reference to Fig. 7. A nut **52** is secured to the base **10** by riveting. A flanged hollow rubber grommet **54** surrounds the nut **52** and supports the eye **36** of the wire frame **12**. A rubber washer **56** is supported on the nut **52** and bears against the eye **36** of the wire frame **12**. A rigid washer **58** preferably of metal bears against the rubber washer **56**. The bolt **14**, which is in threaded engagement with the nut **52**, may be adjusted to compress the washer **56** and the grommet **54** an amount which will isolate the noise and vibration in the wire frame **12** from the base **10**.

The mounting of the motor support **16** on the wire frame **12** will now be described with reference to Fig. 5. The bolt **18** has a washer **60** and a washer **62** bearing against the eye **38** of the wire frame **12**. Motor support **16** has holes **63** for receivnig grooved rubber grommets **64** which are mounted on bolts **18**. A nut **68** is in threaded engagement with the bolt **18** and has the usual washer **70**. The nut **68** may be adjusted on the bolt **18** to compress the grommet **64** an amount sufficient to isolate vibration and noise in the motor **20** from the wire frame **12**. The eye **38** is considerably larger in internal diameter than the bolt **18** so that the motor support **16** can be adjusted to align the axis of the motor **20** with the axis of the orifice **28**.

The means for mounting the hood **30** on the wire frame **12** will now be described with reference to Fig. 6. Bolts **32** extend through the U-shaped members **50** and have mounted thereon push-on nuts **72**. Hood **30** has holes **74** for receiving grooved rubber grommets **75**. Nuts **76** are in threaded engagement with bolts **32** and bear against the rubber grommets **75** to compress the rubber grommets **75** an amount sufficient to isolate the hood **30** from the noise and vibration of the wire frame **12**. A screen **78** in annular shape rests upon the base **10** and extends upwardly to the inwardly extending portions **37** of the leg members **34**. The leg members **34** prevent the screen **78** from moving substantially out of concentricity with the shaft **26**. This screen **78** prevents birds or rodents from entering the building through the roof ventilator.

Although the grommets **54**, **64**, and **75** and the washer **56** have been described as being made of rubber, it should be understood that they can be made of other resilient materials such as neoprene, felt, etc.

The grommet **64** prevents most of the vibrations generated by the motor and fan impeller from reaching the wire frame **12**. The wire frame **12** because of its resilient construction is effective in dampening out vibrations transmitted to it by the motor support **16**, so that such vibrations are not transmitted to the base **10**. The grommet **54** and washer **56** provide additional means for preventing vibrations from reaching the base **10**.

I claim:

1. A power roof ventilator comprising a base adapted to be mounted on a roof over a roof opening, said base having an orifice for the passage of air, upright wire leg members secured to said base and being angularly spaced about the orifice of said base, horizontal annular wire members welded to said upright wire leg members at spaced intervals along said upright wire leg members, diagonal wire members each having one end welded to one of said upright wire leg members at its joint with one of said horizontal annular wire members and having its other end welded to another of said upright wire leg members at its joint with another of said horizontal annular wire members, a motor secured to the upper ends of said upright wire leg members, a motor shaft extending downwardly from said motor, a centrifugal fan impeller secured to said motor shaft in fluid communication with the orifice of said base, a hood secured

to said upright wire leg members and extending downwardly over said motor and having its lower end open and spaced from said base to provide an outlet for the air discharged by said centrifugal fan impeller.

2. A power roof ventilator comprising a base adapted to be mounted on a roof over a roof opening, said base having an orifice for the passage of air, upright wire leg members secured to said base and being angularly spaced about the orifice of said base, horizontal annular wire members welded to said upright wire leg members at spaced intervals along said upright wire leg members, diagonal wire members each having one end welded to one of said upright wire leg members at its joint with one of said horizontal annular wire members and having its other end welded to another of said upright wire leg members at its joint with another of said horizontal annular wire members, a motor secured to the upper ends of said upright wire leg members, a motor shaft extending downwardly from said motor, a centrifugal fan impeller secured to said motor shaft in fluid communication with the orifice of said base, a hood secured to one of said horizontal annular wire members and extending downwardly over said motor and having its lower end open and spaced from said base to provide an outlet for the air discharged by said centrifugal fan impeller.

3. A power roof ventilator comprising a base adapted to be mounted on a roof over a roof opening, said base having an orifice for the passage of air, upright wire leg members secured to said base and being angularly spaced about the orifice of said base, said upright wire leg members converging upwardly from said base; horizontal annular wire members welded to said upright wire leg members at spaced intervals along said upright wire leg members, diagonal wire members each having one end welded to one of said upright wire leg members at its joint with one of said horizontal annular wire members and having its other end welded to another of said upright wire leg members at its joint with another of said horizontal annular wire members, a motor secured to the upper ends of said upright wire leg members, a motor shaft extending downwardly from said motor, a centrifugal fan impeller secured to said motor shaft in fluid communication with the orifice of said base, a hood secured to one of said horizontal annular wire members and extending downwardly over said motor and having its lower end open and spaced from said base to provide an outlet for the air discharged by said centrifugal fan impeller.

4. A power roof ventilator comprising a base adapted to be mounted on a roof over a roof opening, said base having an orifice for the passage of air, upright wire leg members secured to said base and being angularly spaced about the orifice of said base, horizontal annular wire members welded to said upright wire leg members at spaced intervals along said upright wire leg members, diagonal wire members each having one end welded to one of said horizontal annular wire members at its joint with one of said upright wire leg members and having its other end welded to another of said horizontal annular wire members at its joint with another of said upright wire leg members, a motor secured to the upper ends of said upright wire leg members, a motor shaft extending downwardly from said motor, a centrifugal fan impeller secured to said motor shaft in fluid communication with the orifice of said base, a hood secured to one of said horizontal annular wire members and extending downwardly over said motor and having its lower end open and spaced from said base to provide an outlet for the air discharged by said centrifugal fan impeller.

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