June 23, 1953 C. G. SHERMAN ET AL 2,643,053

COMBINATION FAN AND AWNING CONSTRUCTION

Filed June 7, 1950

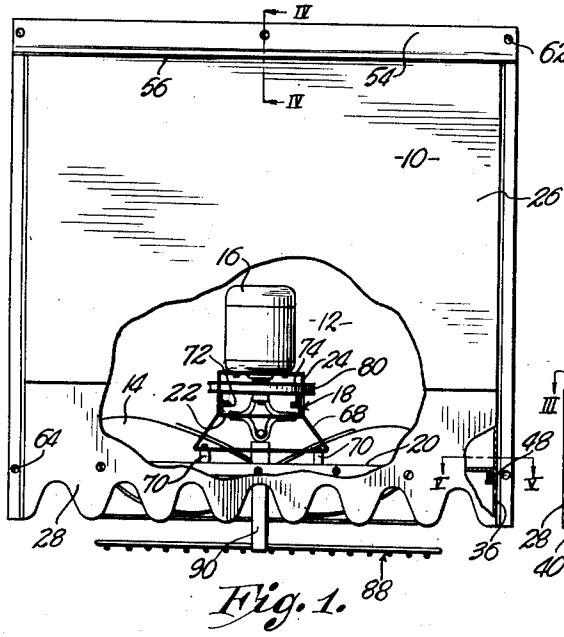


Fig. 1.

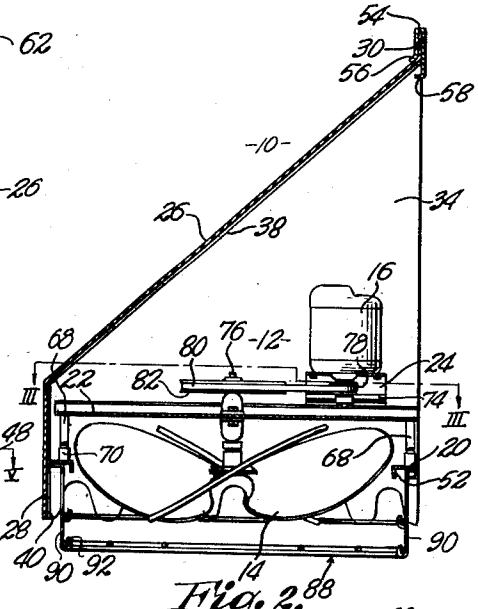


Fig. 2.

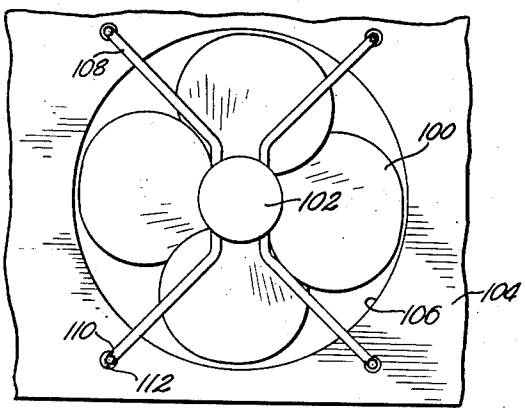


Fig. 7.

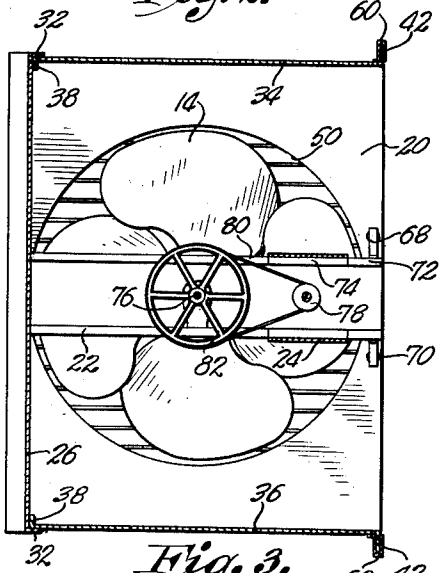


Fig. 3.

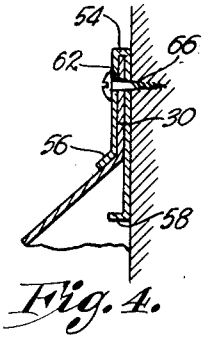


Fig. 4.

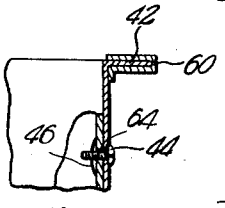


Fig. 5.

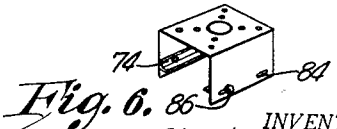


Fig. 6.

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Patented June 23, 1953

2,643,053

UNITED STATES PATENT OFFICE

2,643,053

COMBINATION FAN AND AWNING CONSTRUCTION

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Application June 7, 1950, Serial No. 166,616

4 Claims. (Cl. 230—241)

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This invention relates to the field of ventilation and air conditioning, its primary object being to combine fan and awning construction adapted for positioning exteriorly of a building adjacent the window for drawing out stale air from the building and thereby ventilating the same.

The most important object of the present invention is the provision of a combination fan and awning construction including an awning having a perforated, horizontal support therein and a fan within the perforation thereof, there being a novel mounting assembly for the fan and the prime mover thereof and including an elongated bracket for rotatably receiving the fan and adjustably mounting the prime mover therefor.

Another important object of the present invention is the provision of a construction as above set forth wherein the perforated horizontal support or diaphragm, is provided with an elongated bracket on the uppermost face thereof for rotatably receiving the fan shaft and supporting the fan within the perforation of the support.

Another object of the present invention is the provision of a bracket as just above described, having a mounting thereon that is U-shaped and slidable upon the bracket, the prime mover for the fan being secured directly to the bight of the U-shaped mounting.

Another important object of the present invention is the provision of a fan and prime mover assembly for awnings wherein the shafts for the fan and the prime mover respectively are offset and parallel, there being a bracket adapted to support both the fan and the prime mover and the latter having a novel mounting that is adjustable with respect to the bracket toward and away from the fan shaft.

Other objects of the invention include the way in which the awning itself is made in three main separable sections including a roof, a valance and a pair of side walls; the way in which the awning is provided with a plurality of clamps for securing the same to the side of a building adjacent a window or the like; and the manner of securing the fan and prime mover assembly with its perforated support within the awning so as to present a rigid mounting for the latter and reinforcement for the awning.

Many more minor objects will be made clear or become apparent as the following specification progresses, reference being had to the accompanying drawing, wherein:

Figure 1 is a front elevational view of a combination fan and awning construction made in

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accordance with the present invention, parts being broken away to reveal details of construction.

Fig. 2 is a vertical, substantially central, cross-sectional view taken through the entire assembly.

Fig. 3 is a horizontal, cross-sectional view taken on irregular line III—III of Fig. 2.

Fig. 4 is an enlarged, detailed, cross-sectional view taken on line IV—IV of Fig. 1.

Fig. 5 is a detailed, enlarged, cross-sectional view taken on line V—V of Fig. 1.

Fig. 6 is a perspective view of the prime mover mounting showing the same entirely removed from its normal operative position; and

Fig. 7 is a fragmentary, top plan view of a modified form of fan and motor mounting.

The primary elements of the combined construction forming the subject matter of this invention, include an awning broadly designated by the numeral 10, a fan and prime mover assembly broadly designated by the numeral 12 and including a fan 14 and a prime mover 16; mounting construction for assembly 12 designated broadly by the numeral 18 and including a support or diaphragm 20; an elongated bracket 22; and a mounting 24 for prime mover 16.

Awning 10 is preferably made in its entirety from sheet metal and includes a roof 26 inclined as indicated clearly in Fig. 2 and a vertical valance 28 depending from, and integral with, the lowermost horizontal edge of the roof 26. Roof 26 is provided with an up-standing integral, vertical flange 30 that extends the entire length thereof and projects outwardly beyond its inclined marginal edges. Additionally, the aforesaid marginal edges of the roof 26 are each provided with a down-turned flange 32 that extends downwardly along the vertical marginal edges of the valance 28.

The awning 10 is also provided with a pair of spaced-apart, vertical side walls 34 and 36 of identical character and each having an inturned flange 38 extending along the uppermost inclined edge thereof and continuing downwardly along that vertical edge thereof adjacent the valance 28, one only of which is illustrated in the drawing and designated by the numeral 40. The opposite vertical edge of each wall 34 and 36 respectively, is provided with an out-turned flange 42.

The diaphragm or support 20 is horizontally disposed within the awning 10 in direct connection with the side walls 34 and 36 and with the valance 28 through the medium of screws

44 and resilient washer-like nuts 46 (Fig. 5). Fastening elements 44 and 46 are also utilized to interconnect the flanges 32 and 38 of roof 26 and walls 34 and 36 respectively and the flanges 40 of side walls 34 and 36 are likewise secured through the medium of fastening elements 44—46, with the in-turned flange 38 of valance 28.

It is noted in Fig. 1 of the drawing that the support 20 is provided with a down-turned flange 48 for receiving fastening elements 44—46 that secure support 20 in place. Support 20 is provided with a substantially central, circular perforation 50, defined by a down-turned flange 52.

The manner of mounting the awning 10 upon the side of a building adjacent a window, door or the like, is illustrated in Figs. 4 and 5. An elongated U-shaped clamp 54 extends the entire length of the flange 30 and in embracing relationship thereto. One leg of the clamp 54 extends downwardly into partial overlapping relationship with the roof 26 as at 56 and the other leg of the clamp 54 depends slightly below the innermost face of the roof 26 and has an in-turned flange 58 on the lowermost edge thereof between the walls 34 and 36.

Each of the out-turned flanges 42 of walls 34 and 36, is likewise provided with an elongated vertical U-shaped embracing clamp 60. A plurality of openings 62 passing through the legs of clamp 54 and through the flange 30, as well as an opening 64 in each leg of each clamp 60 that passes through flange 42, are adapted to receive fastening elements such as screws 66 for mounting the entire assembly upon the framework of a window. It is seen that the screws 66 constitute the sole means of joining the clamps 54 and 60 to the awning 10.

The elongated bracket 22 extends diametrically across the perforation 50 of support 20 and is held in spaced, parallelism above the uppermost face of the latter by a pair of substantially U-shaped, spaced-apart brackets 68. Brackets 68 are held spaced above the support 20 by a number of rubber-like mountings or feet 70. The bracket 22 is provided with a pair of spaced, parallel, longitudinally extending tracks 72 for receiving the mounting 24. It is noted that mounting 24 is U-shaped and that the lowermost marginal edges of the legs thereof are in embracing relationship to the bracket 22. The prime mover 16 rests upon and is secured directly to the bight of mounting 24. Each leg of the mounting 24 is provided with a guide 74 on the innermost face thereof that rests directly upon and is slidable along the respective track 72 of bracket 22.

Shaft 76 of fan 14 is rotatably carried by the bracket 22 in concentric relationship with respect to the perforation 50 and extends above bracket 22 as illustrated in Fig. 2. Likewise, the drive shaft for prime mover 16, projects downwardly into the mounting 24 and makes a pulley 78 thereon for receiving an endless belt 80 that is also trained about a pulley 82 on shaft 76. The mounting 24 is releasably secured on the bracket 22 for selective adjustment with respect to the shaft 76 by elongated openings 84 formed in the legs of mounting 24 and adapted to receive nut and bolt assemblies 86 that also pass through the sides of bracket 22.

A guard 88 for fan 14 is held in place through the medium of a plurality of straps 90 depending from support 20 and having hooks 92 thereon for receiving the protective grill-work of the guard 88.

It is seen that the awnning 10 is light-weight, inexpensive and attractive. It is inexpensively manufactured by virtue of the fact that it consists of a minimum number of parts, namely, roof 26 with its valance 28, and the two side walls 34 and 36. By virtue of the plurality of cooperating flanges on these parts, interconnection is quickly and easily made through the medium of fastening elements 44—46. The awning construction 10 is additionally rendered strong and durable by virtue of the support 20 that reinforces the side walls 34 and 36 and the valance 28. A strong, sturdy mounting for the entire assembly is presented by virtue of the clamping members 54 and 60.

So far as the fan and prime mover assembly 12 is concerned, it is seen that fan 14 is held in position within the perforation 50 on a substantially median line through fan 14 by the bracket 22. The bracket 22 is held above the support 20 for proper positioning fan 14 by the brackets 68. The resilient feet 70 absorb the shock of vibration when prime mover 16 is actuated. By loosening of the nut and bolt assemblies 86, the mounting 24 may be moved toward and away from the shaft 76 while the guides 74 thereof slide upon the tracks 72. The tightness of belt 80 can therefore, be adjusted quickly and easily and it is seen that assemblies 86 are easily accessible from the open end of the awning 10. The drive shaft for the prime mover 16 and the fan shaft 76, are offset and in parallelism.

Prime mover 16, its mounting 24, pulleys 78 and 82 and the belt 80, are all disposed above the bracket 22 in opposed relationship to the support 20 and the fan 14.

In Fig. 7 of the drawing, there is shown a mounting for a fan 100 that is directly connected with its prime mover 102. In this instance, a diaphragm or support 104 comparable to support 22, has a central perforation 106 for receiving the fan 100. Motor 102 is joined directly with a pair of identical substantially U-shaped arms 108 joined at the outermost free ends thereof with the diaphragm 104 by means of bolts or the like 110 receiving resilient feet 110. The arms 108 are in overlying relationship to the fan 100 and the legs thereof extend inwardly and upwardly toward the motor 102 from the mounting 110—112.

The form illustrated in Fig. 7 of the drawing shows but one modification of the broad concepts of this invention and manifestly, many additional changes may be made without departing from the scope of the appended claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In air conditioning apparatus the combination of an awning having an inclined roof and a pair of spaced side walls; a perforated support joining the side walls; an elongated bracket mounted on one face of said support in spaced parallelism to said face and traversing the perforation of the support; a fan in said perforation and rotatably carried by the bracket; a prime mover on the bracket; apparatus operably coupling said prime mover and the fan; and structure adjustably receiving the prime mover on the bracket, said structure including a mounting for the prime mover slidable on the bracket and means releasably joining the mounting and the bracket, said mounting partially embracing the bracket and having guide strips resting on the

bracket and slidable therealong when said means is released.

2. In air conditioning apparatus the combination of an awning having an inclined roof and a pair of spaced side walls; a perforated support joining the side walls; an elongated bracket mounted on one face of the support across the perforation of the latter; a fan in the perforation and having a shaft rotatably carried by the bracket substantially perpendicular to said face; a U-shaped mounting, said bracket being between the legs of the mounting, there being a guide on the inner face of each leg respectively resting on the bracket; a prime mover carried by the bight of said mounting; apparatus operably coupling the prime mover and the fan shaft; and means releasably connecting the mounting with the bracket for selective adjustment with respect to the fan shaft..

3. In air conditioning apparatus the combination of an awning having an inclined roof and a pair of spaced side walls; a perforated support joining the side walls; an elongated bracket mounted on one face of the support across the perforation of the latter; a fan in the perforation and having a shaft rotatably carried by the bracket substantially perpendicular to said face; a U-shaped mounting, said bracket being between the legs of the mounting, there being a guide on the inner face of each leg respectively resting on the bracket; a prime mover carried by the bight of said mounting; apparatus operably coupling the prime mover and the fan shaft; and means releasably connecting the mounting with the bracket for selective adjustment with respect to the fan shaft, said bracket having a longitudinally extending track for each guide respectively.

4. In air conditioning apparatus the combination of an awning having an inclined roof and a pair of spaced side walls; a perforated support joining the side walls; an elongated bracket mounted on one face of the support across the perforation of the latter; a fan in the perforation and having a shaft rotatably carried by the bracket substantially perpendicular to said face; a U-shaped mounting, said bracket being between the legs of the mounting, there being a guide on the inner face of each leg respectively resting on the bracket; a prime mover carried by the bight of said mounting; apparatus operably coupling the prime mover and the fan shaft; and means releasably connecting the mounting with the bracket for selective adjustment with respect to the fan shaft, said prime mover having a drive shaft parallel with the fan shaft, said apparatus including a pulley on each shaft respectively and an endless belt trained over the pulleys, said prime mover, said mounting, said pulleys and said belt being on one side of the bracket opposite to said face and the fan.

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