

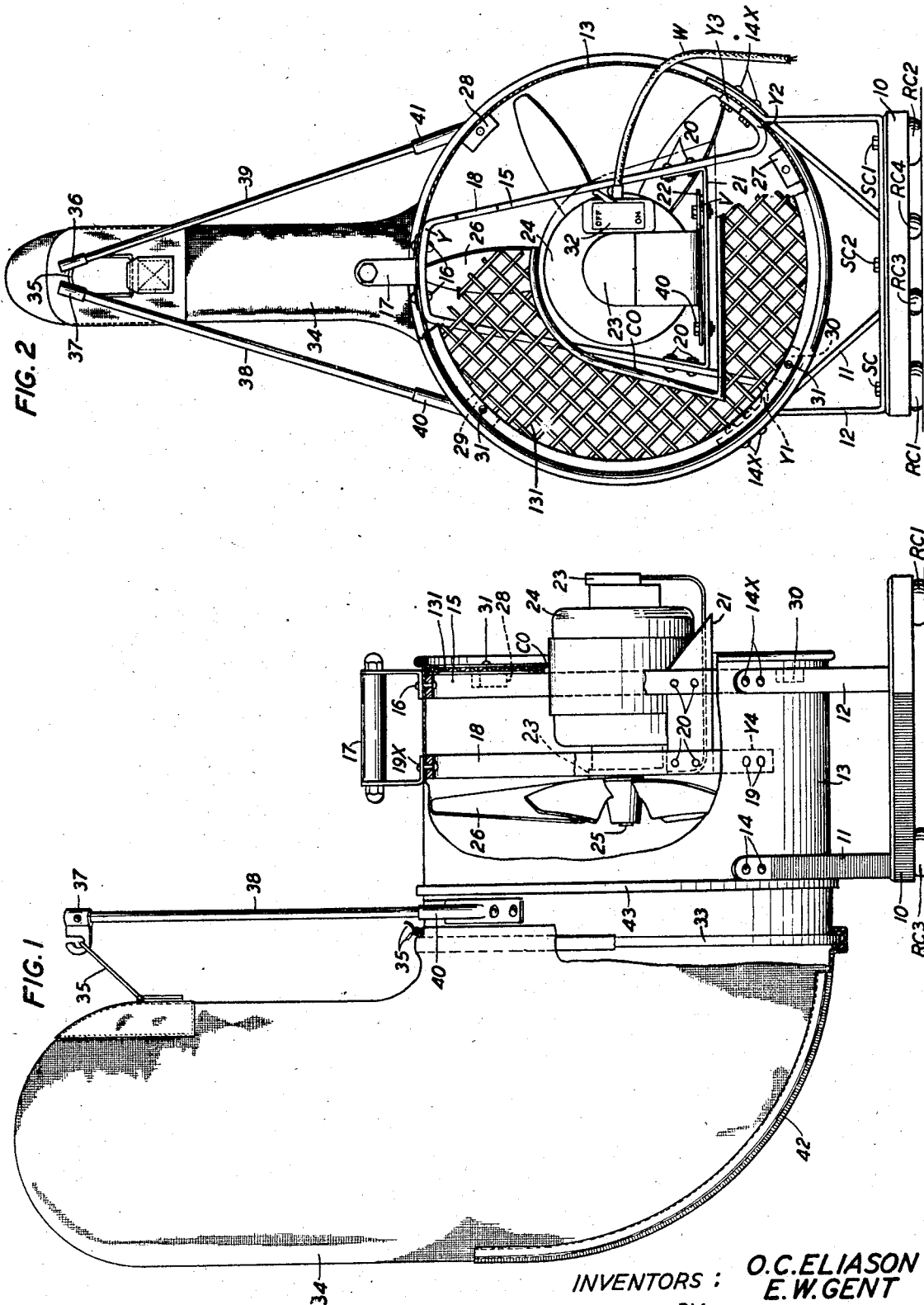
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MOTOR FAN MOUNTING

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MOTOR FAN MOUNTING

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3 Claims. (Cl. 230-117)

This invention relates to motor fan mountings particularly for use with air filter devices, the object of the invention being to improve the construction and operation of such devices while
5 reducing the noise generated thereby to a minimum level.

According to the invention, an air filter device is provided in which a motor operates a fan-wheel in a cylindrical casing for blowing dust laden air into a filter element in the form of an
10 L-shaped fabric bag having means at one end thereof for attachment to means formed with the cylindrical casing, while means is provided at the lowermost disposed end of the bag for
15 permitting the removal of the dust without detaching the filter element from the casing.

A cushioned base is provided for securing at three points thereon a pair of supporting elements having their free ends secured to the
20 cylindrical casing for supporting it. A second frame structure in the casing serves for mounting a third frame structure which in turn supports the cage of a motor having its armature shaft extending from end to end thereof for
25 mounting the fan-wheel in concentric relation to the casing and in coaxial alignment therewith. Means secured to the casing opposite the filter element serves as a guard for the fan-wheel, such means having an opening following
30 the contour of the motor and that of a controlling switch attached thereto, while a plurality of detachable means carried by the casing support the other end of the filter element in an
35 upright position so as to facilitate the operation of the bag closure for the removal of the dust.

Air filter devices constructed according to the invention have been found to be efficient in operation while being substantially noiseless.

Other novel features and advantages of the
40 invention will appear from the following description and by the claims appended thereto, reference being had to the accompanying drawing in which:

Fig. 1 is a side elevation of the air filter device shown with a number of operating parts in section; and

Fig. 2 is a rear view shown with the casing partly in section and a portion of the screen broken away.

As shown in Figs. 1 and 2 of the drawing the air filter device consists of a mounting plate 10 provided for securing a pair of supports 11 and 12, this mounting plate being in turn supported
50 by four rubber cushions RC₁, RC₂, RC₃ and RC₄.

Support 12 is made of a steel strip bent sub-

stantially at right angles relative to the plane of base 10 and is secured to such plate by screws SC and SC₁, while support 11, which is also formed of a steel strip, is secured to the mounting plate 10 by a screw SC₂ shown in Fig. 2 from
5 which point the arms of this support extend tangentially to the cylindrical casing 13 where the free ends of these arms are secured, as by rivets 14 shown in Fig. 1, while the upright extending arms of support 12 are secured to the
10 casing 13 by rivets 14x which also serve for securing the attaching portions Y₁ and Y₂ of a substantially A-shaped frame 15 to casing 13, the top portion of this frame 15 being secured to the casing 13 by rivets 16, also serving for securing
15 one arm of a handle 17 to the casing 13.

Another A-shaped frame 18 has its attaching points Y₃ and Y₄ secured to the casing 13 by rivets 19, and at its top portion by rivets 19x, which also serve for securing the other arm of
20 handle 17 to the wall of casing 13. On supports 15 and 18 is secured as by rivets 20, a plate 21 provided for securing a second mounting plate 22 thereon by a number of bolts 40. Mounting
25 plate 22 in turn supports at two points, as 23, the cage of a motor 24 having its armature shaft 25 extending from its front bearing for mounting a fan-wheel 26 arranged for rotating movement in the cylindrical casing 13 while four washers
30 as V of resilient material serve for cushioning the motor on its supporting plate 22.

The casing 13 adjacent its left edge is provided with four lug members 27, 28, 29 and 30, best seen in Fig. 2, to which a wire screen 131 is
35 secured as by a number of screws 31. This wire screen is provided with a central opening CO, the edge of which follows the contour of motor 24, of the supporting base 21 and of a switching device 32 provided for controlling the operation
40 of the motor 24 and thereby that of the fan-wheel 26.

The cylindrical casing 13 is provided with two rings 33 and 43 best seen in Fig. 1. Ring 33 cooperates with a cord 35 for securing the dust
45 bag 34 onto the casing 13, this bag being held in an upright position by a buckle 35 secured to the bag 34 and engaging hook members 36 and 37 at the top end of supporting rods 38 and 39, these rods having their lower ends removably
50 engaging the sleeves 40 and 41 riveted to the cylindrical casing 13.

The dust bag 34 is provided at its lowermost disposed portion with a so-called zipper closure
42 provided for removing the dust therefrom 55

without requiring the detaching and removing of this bag from the casing 13.

According to the construction above described, the motor mounting plate 22 and its cushioning washers V cooperate with the supports 15 and 18 and with the supports 11 and 12 to form a yieldable or resilient unit frame structure which effectively prevents the vibration generated by the motor and the fan-wheel actuated thereby from reaching the mounting plate 10 and consequently the floor of the room in which the articles to be cleaned are located, while cushions RC₁, RC₂, RC₃ and RC₄, which are secured to the underside of the mounting plate, further insulate the complete unit thus formed from the room floor.

For removing the dust which is present in a room and on telephone apparatus therein, for example, the dust laden air is caused to pass through the screen 131 to the dust bag 34 due to the air current generated by the rotation of the fan-wheel 26 upon the operation of motor 24, this motor in turn being controlled by the manual operation of the switching device 32 shown in Fig. 2, connected to any suitable current source by the lead-in wire W. The dust so filtered may be collected by opening the zipper closure 42 without detaching and removing the dust bag from the casing 13. However, the bag may be removed from the casing, if desired, by simply loosening the cord 35 and removing the buckle from the hooks 36 and 37 of supporting bars 38 and 39 and these bars may also be removed from the sleeves 40 and 41 for facilitating the transportation of the device wherever needed.

What is claimed is:

1. In a motor fan mounting having an electric fan and a casing housing the fan, in combination with a mounting plate, a pair of supports secured to said plate for mounting the casing, a second pair of supports secured in the casing, a plate secured to the second-mentioned pair of supports and another support mounted on said plate for supporting the electric fan.

2. In a motor fan mounting having an electric fan and a casing housing the fan in combination with a mounting plate, a pair of supports secured to said plate for mounting the casing, a second pair of supports secured in the casing, a plate secured to the second-mentioned pair of supports, another support mounted on said plate for supporting the electric fan, a screen having an opening registering with the contour formed by the motor of the fan and said supporting plate, and means for securing said screen to means carried by the casing.

3. In a motor fan mounting having a casing housing the fan, in combination with a mounting plate, a pair of supporting members secured to said plate, one of said supports having arms extending upwardly to form two attachment points for the casing, the other of said supports having arms extending tangentially of the casing and in opposite directions to each other to form two attaching points, means for securing each of said arms to the casing, and a pair of supports each secured at three points in the casing for supporting the electric fan.

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