

April 2, 1957

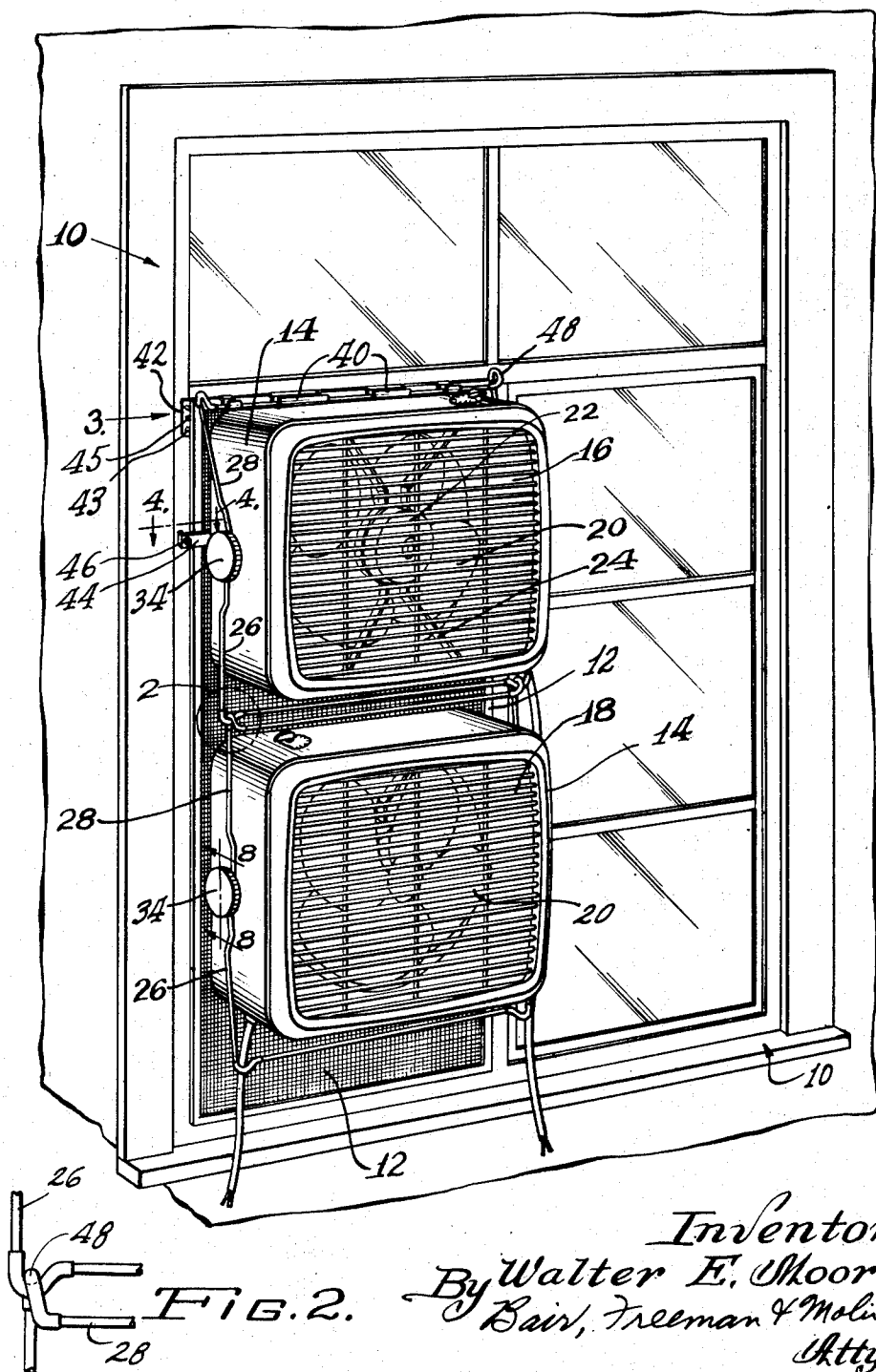
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TWIN WINDOW FANS

2,787,207

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2 Sheets-Sheet 1

FIG. 1.



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FIG. 6.

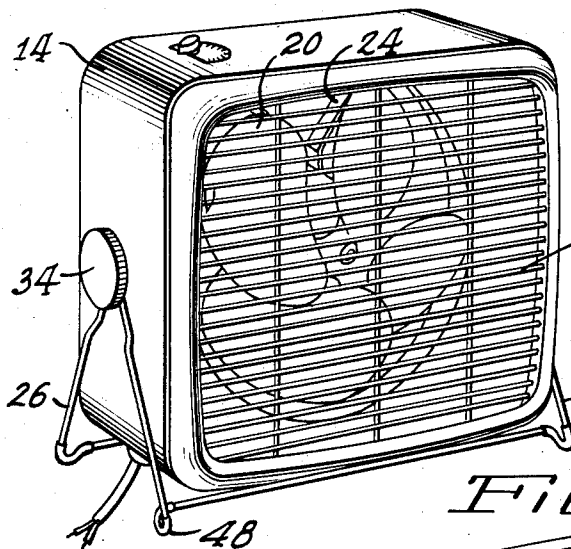


FIG. 3.

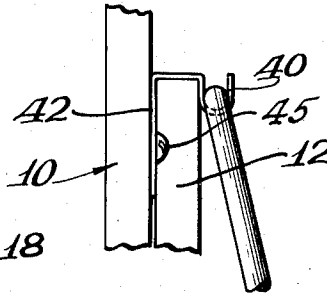


FIG. 4.

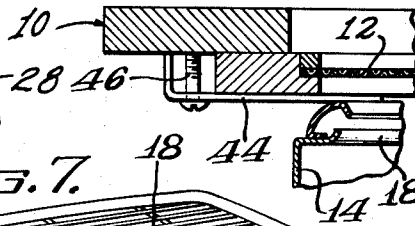


FIG. 7.

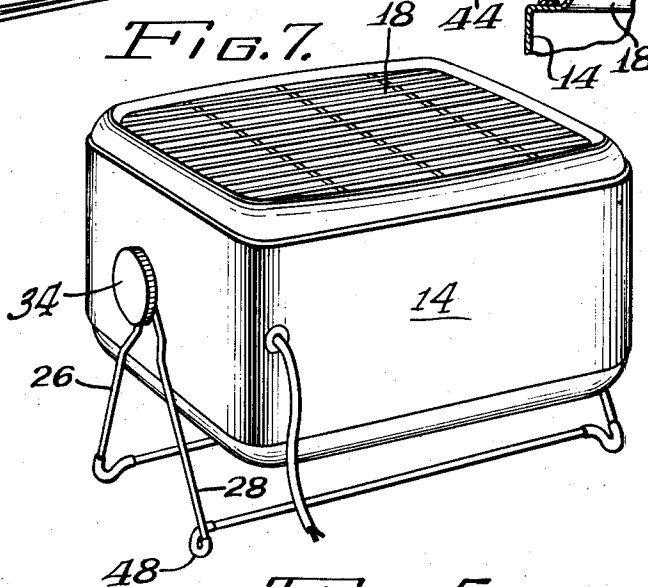


FIG. 8.

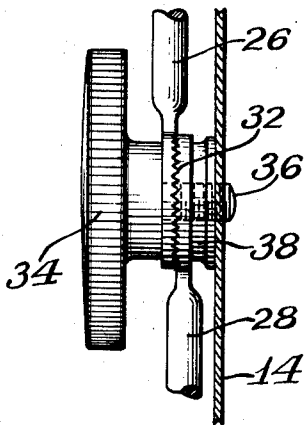


FIG. 5.

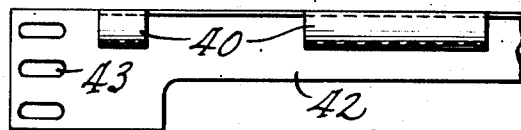
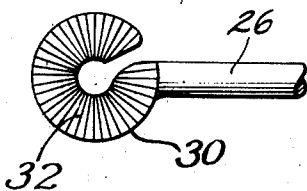


FIG. 9.



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2,787,207

TWIN WINDOW FANS

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3 Claims. (Cl. 98—94)

This invention relates to a multi-purpose design of twin window fans and particularly to a fan structure having a supporting means which enables one fan unit to be supported in a casement window opening and another similar fan unit to be supported therein in tandem below the first one, as well as enabling the fan unit to be used as a floor or desk fan.

One object of the invention is to provide supporting means for a fan housing in which a motor is mounted, together with a fan driven thereby for drawing air into one face of the housing and discharging it from the other.

Another object is to provide supporting means in the form of a pair of bails which are pivoted to opposite sides of the fan housing so that the housing can be supported vertically or horizontally as desired, or at any angle in between, vertical and horizontal or the bails may be adjusted for suspending one fan in a window opening and a second one from the first.

Still another object is to provide bail-like supports having serrated ends which are pivotally mounted relative to opposite ends of the fan housing and a clamp means to clamp them together for locking the pivotal connections with the bails in any desired angular relation to each other.

A further object is to provide a fan structure particularly adaptable for support by means of a bail in position against a window screen, with a second unit bail-suspended below the first if desired.

With these and other objects in view, my invention consists in the construction, arrangement and combination of the various parts of my invention, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawings, wherein:

Figure 1 is a perspective view of two of my window fans mounted in vertical tandem on a casement window.

Figure 2 is a detail front elevation of that portion of Figure 1 within the circle 2 showing the coaction of supporting bails for two of the twin window fans in relation to each other.

Figure 3 is an enlarged end view of a portion of Figure 1 looking in the direction of the arrow 3 thereon to show a supporting flange for the window fans.

Figure 4 is an enlarged horizontal sectional view on the line 4—4 of Figure 1 showing a supporting clip for the fan housing.

Figure 5 is a front elevation of a portion of the supporting flange of Figure 3.

Figure 6 is a perspective view of one of the fan units showing it supported on a floor surface with the housing in a vertical position.

Figure 7 is a similar perspective view showing the housing in a horizontal position.

Figure 8 is an enlarged vertical sectional view on the line 8—8 of Figure 1 to show the clamping means for the pivotal connection of the bails; and

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Figure 9 is a face view of one of the serrated ends of the bails.

On the accompanying drawings I have used the reference numeral 10 to indicate in general a casement window. One of the sections thereof is open and the opening is screened as at 12 in the usual manner. My twin window fans are particularly designed for vertical tandem support against such a screen and will now be described.

Each of the fan units comprises a housing 14 having a rear grille 16 and a front grille 18 through which air may circulate, the grilles serving as a guard for the fan blades 20 within the housing 14 driven by the usual electric motor 22. Suitable supports 24 are provided for the motor.

For supporting the housing 14 I provide a pair of bails 26 and 28. Each bail has an eye 30 formed at one end and the face thereof is serrated as indicated at 32 in Figure 9. The serrations of the two bails are opposite as shown in Figure 8. These bails are adapted to be clamped together by a knob 34 from which a screw 36 projects, the screw being threaded into a hub 38 secured to one end of the housing 14. The opposite end likewise has a hub 38 and a locking knob 34.

The bails 26 and 28 may be adjusted as in Figures 6 and 7 for using the fan unit as a desk or floor fan or the like. As adjusted in Figure 6, the air flow will be horizontal. As adjusted in Figure 7, it will be vertical and of course the housing 14 may be adjusted to any angle in between these two for directing the air at any desired angle in a vertical plane.

The bails 26 and 28 may also be adjusted as in Figure 1 so that the bail 28 may support the upper fan unit as by reception thereof in hook portions 40 of a supporting flange 42. The flange 42 is adapted to be inserted between the window frame 10 and the frame of the screen 12 as illustrated, and has openings 43 for screws 45 into the window frame if desired for permanent mounting purposes. Usually it is sufficient to merely slide the bracket between the screen and the casement window so that it hangs on the screen.

To restrain the grille 18 of the upper fan unit against moving forward through the screen 12, a pair of clips 44 may be provided as in Figure 4 and held in position by screws 46 so as to project to a position such that the grille 18 can engage these clips rather than the screen.

The second or lower fan unit may then be supported in relation to the first one by hooking its bail 28 over the depending bail 26 of the upper fan unit. The two units may be supported in reversed relation to each other as shown in Figure 1 so that the upper one circulates the air outwardly and the lower one circulates it inwardly, thus providing very efficient circulation of air through the casement window.

In order to reverse the position of either fan, it is merely necessary to remove it from its hanging position, turn it around 180° then again hang it in position. In casement applications it is of course necessary to loosen the adjusting knobs 34 slightly, spread the bails 26 and 28 and then retighten the knobs.

In other types of windows, the housings 14 may be supported either on the window sill with the bails 26 and 28 adjusted as in Fig. 6 and standing thereon or the housings 14 may rest directly on the window sill in side-by-side relation, thus providing for a horizontal tandem arrangement as distinguished from a vertical tandem arrangement, as shown in Fig. 1.

Two of the fans of course can be supported side by side and either one can be picked up and turned backwards so that without using a reversible motor the fans can both exhaust or intake, or one may exhaust and the other intake as desired.

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When the knobs 34 are tightened they bring the serrations 32 into engagement with each other so that one of the bails is locked with respect to the other but the housing 14 can still be rocked as from the position of Fig. 6 to the position of Fig. 7 without loosening the knobs 34 or at least with very little loosening thereof. To prevent undue vibration the bails 26 and 28 at their corners are covered with rubber tubing as indicated at 43 and this will prevent vibration on the floor, the desk or the window sill and likewise when one fan hangs below the other it prevents the transmission of vibrations from the second one to the first one.

From the foregoing specification it will be obvious that I have provided a comparatively simple supporting means for a fan housing so that two of them can be arranged in vertical tandem as shown in Figure 1 or the fan units can be used individually as in Figures 6 and 7 as desired. I have provided an efficient locking means for the pivotal connections of the bails to the housing so that any desired adjustments thereof can be made to support the fan at various angles and in various desired arrangements.

Some changes may be made in the construction and arrangement of the parts of my twin window fans without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

I claim as my invention:

1. In twin window fans, a pair of open-ended housings adapted to be positioned in a window opening, a motor in each thereof, a fan driven by each of said motors to draw air into one end of each housing and discharge it from the other, and means for supporting said housings comprising for each housing a pair of bails each comprising a pair of arms and a connecting member at the outer ends of said arms, the inner ends of said arms being pivoted to its housing adjacent the centers of the sides thereof for adjustment to spread 180° apart, one of said bails of one housing having hook portions at the junctions of its arms and connecting members to engage one of the bails of the second window fan to support the two in vertical tandem with the upper bail of the upper housing supporting both housings, and means

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for locking the pivotal connections of said bail arms to said housings.

2. In twin window fans, a pair of open-ended housings adapted to be positioned in a window opening, a motor in each of said housings, a fan driven by each motor to draw air into one end of each housing and discharge it from the other, and means for supporting said housings comprising a pair of bails on each housing and each comprising a pair of arms and a connecting member at the outer ends of said arms, one of said bails of one housing having hook portions at the junctions of its arms and connecting members to engage one of the bails of a second window fan to support the two in vertical tandem with the upper bail of the upper housing supporting both housings.

3. In a fan structure, an open-ended housing, a motor therein, a fan driven by said motor to draw air in the one end of said housing and discharge it from the other, a pair of U-shaped bails for supporting said housing, said bails having the extremities of their arms pivoted to opposite ends of the housing adjacent the center thereof and capable of being spread to diametrically opposite positions, and clamp screw means to lock the pivot adjustments, one of said bails having a hook portion to engage a bail of another fan structure to support one below the other when said bails are spread to said diametrically opposite positions.

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