

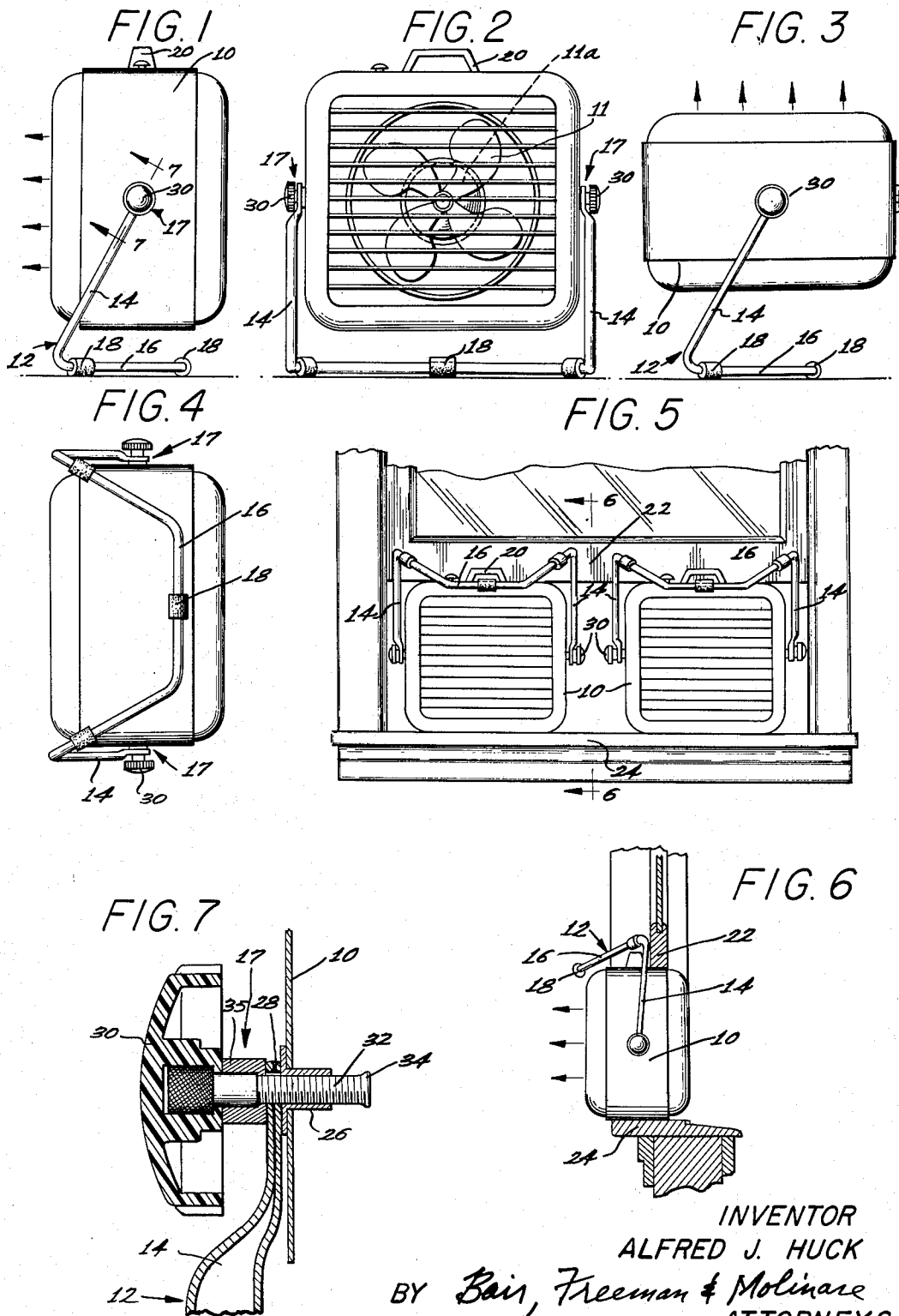
Jan. 31, 1956

A. J. HUCK
TWIN WINDOW FANS

2,733,002

Filed Aug. 16, 1954

2 Sheets-Sheet 1



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FIG. 8

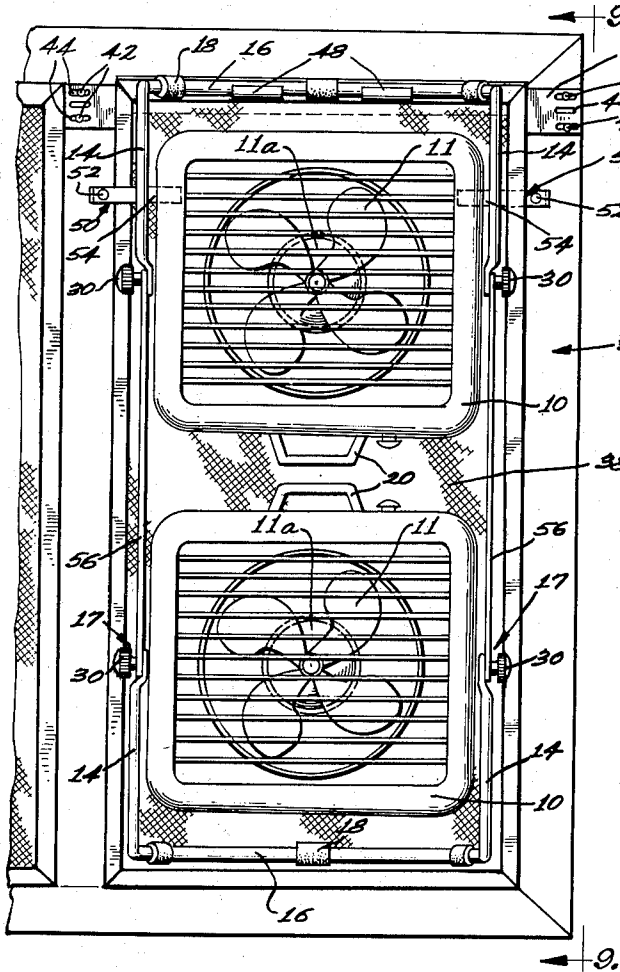


FIG. 9

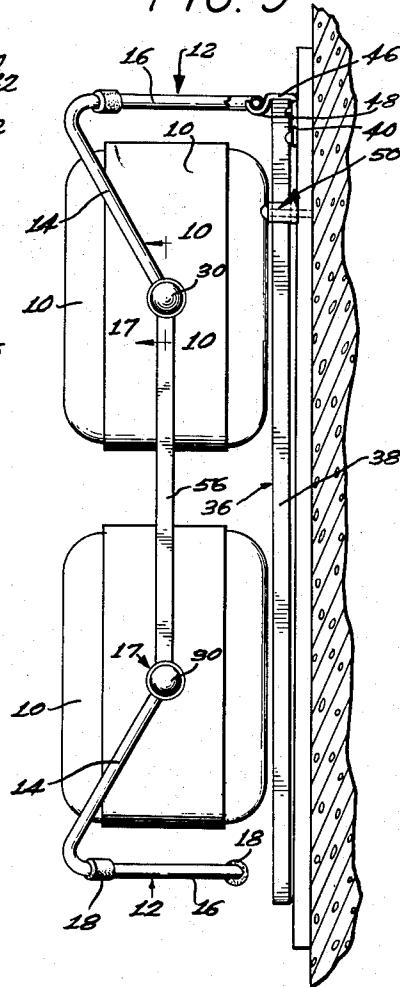


FIG. 11

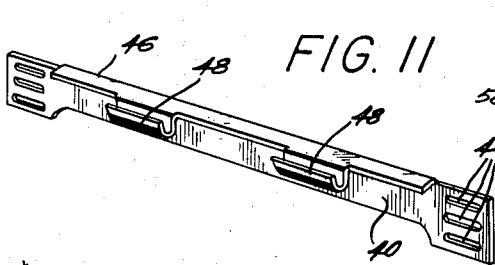


FIG. 12

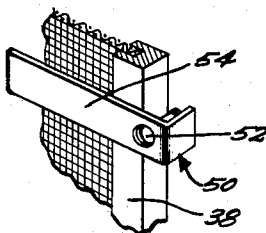


FIG. 13

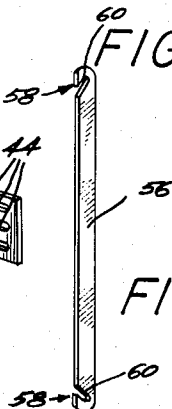
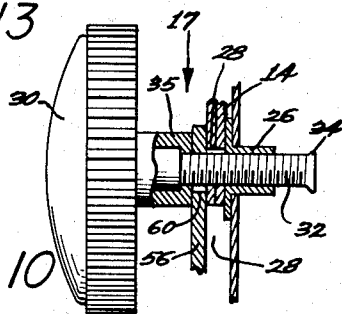


FIG. 10



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TWIN WINDOW FANS

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6 Claims. (Cl. 230-259)

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

One object of this 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 of this invention is to provide a fan with supporting means therefor in the form of a single bail, or support member, which is pivoted to opposite sides of the fan housing and which is so designed and arranged that it provides a base, or supporting portion, which permits pivoting of the fan housing to any angle without interference of the fan housing with the support member, or with the surface upon which the support member is positioned, and said support member being adjustable for suspending one fan in a window opening and a second one from said first fan by means of simple hanger straps connecting the housings together at their pivot points.

Further objects and advantages of this invention will become apparent as the description proceeds and the features of novelty which characterize this invention will be pointed out with particularity in the claims annexed to and forming part of this specification.

A preferred embodiment of this invention is shown in the accompanying drawings, in which:

Figure 1 is a side elevation view of one of the tandem fans mounted by its support means on a support surface, such as a desk or a floor, and positioned for causing horizontal air currents.

Figure 2 is an end elevation view of the fan shown in Figure 1.

Figure 3 is another side elevation view of the fan shown in Figure 1, showing the fan housing pivoted to a position for causing vertical air currents.

Figure 4 is a view looking upwardly from the support of Figure 1.

Figure 5 shows a typical installation of a pair of fans in a double-hung window with the fans in horizontal tandem relation.

Figure 6 is a view taken on line 6-6 of Figure 5.

Figure 7 is an enlarged cross-section view taken on line 7-7 of Figure 1.

Figure 8 shows the mounting of a pair of fans in a casement window with the fans mounted in vertical tandem relation.

Figure 9 is a side elevation view taken substantially on line 9-9 of Figure 8.

Figure 10 is an enlarged cross-section view taken on line 10-10 of Figure 9.

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Figure 11 is a perspective view of an upper casement mounting bracket used in the installation shown in Figures 8 and 9.

Figure 12 is a perspective view of a side casement mounting bracket used in the installation shown in Figures 8 and 9.

Figure 13 is a perspective view of a hanger strap used in supporting the lower one of a pair of fans in said vertical tandem relation.

Referring now to the figures, there is shown in Figure 1 a fan including a housing 10 and support means 12 therefor. Mounted within housing 10 are fan means 11 and a motor 11a therefor. The support means 12 is a single elongated member, either solid or tubular, which is formed to define a pair of mounting legs 14 and a base member, or mounting portion, 16 which lies in a plane parallel to the axis of a pivot pin means 17 about which said housing 10 is adapted to pivot. Support means 12 is so constructed and arranged that the mounting portion 16 is disposed both below and laterally of the center of gravity of the fan housing 10, whereby the mounting means 12 provides a resilient yet stable support for the fan. The terminal ends of the tubular member 12 are flattened and pierced to accommodate pivot pin means 17 for pivotally mounting the housing 10 on the support means 12. The pivot pin means 17 are disposed so that the axis thereof passes through the center of gravity of the housing 10 with the motor and fan means therein, thereby providing that the fan is pivotable about an axis through its center of gravity. The base member 16 may have rubber sleeves 18 thereon for minimizing the vibration communicated to the floor by the operation of the fan. The housing 10 additionally is provided with a handle 20 for convenience in carrying the fan.

In Figure 3, the housing is shown pivoted to a position for delivering a blast of air upwardly. The support means 12 is so constructed and arranged that the base 16 is spaced further from the axis of the pivot means, than the distance from the pivot axis of the housing to any portion of the housing. By this arrangement the fan housing 10 may be pivoted all the way around on its pivot axis without interference of any portion of the housing with the support upon which the support means 12 is mounted.

In Figure 5, there is shown a pair of fans arranged in horizontal tandem relation and mounted in a double-hung window. The fans are secured in position by clamping engagement of the housing 10 between the lower edge of the window frame 22 and the sill 24 of the window.

Figure 7 discloses the detail of the pivot pin means 17 between the fan housing 10 and the support means 12. As shown, the housing 10 is provided with a female threaded sleeve 26 which is secured to housing 10 in any appropriate manner. The ends of the legs 14 of the support means 12 are apertured or pierced at 28. A side adjusting knob 30 is provided which carries a threaded shaft 32 which extends slidably through aperture 28 and which cooperates with the threaded sleeve 26. After the support means 12 have been assembled on the housing 10, the terminal end of the threaded shaft 32 may be upset as indicated at 34 to prevent disassembly of the unit. A washer 35 is provided between knob 30 and leg 14 to provide means for frictionally clamping the housing 10 at selected attitudes or angles.

Figures 8 and 9 disclose the details by means of which a pair of fans thus described may be mounted in vertical tandem relation. In these figures, the casement windows are generally indicated at 36. One of the sections of the casement window is opened and the opening is screened as at 38 in the usual manner.

There is provided adjacent the upper end of the case-

ment window 36, an upper casement support bracket 40 which is secured to the casement window 36 by means of screws 42 and the like. The mounting bracket 40 is provided with horizontally elongated slots 44 to accommodate variations in window widths and to provide for convenient installations of the upper casement mounting bracket 40 on the casement window. The upper casement bracket 40 has a forwardly extending flange 46 which terminates in a pair of upwardly opening hooks 48.

The upper fan of the pair of vertical tandem fans may be supported from this upper casement bracket 40 by merely hooking the support means 12 into the upwardly opening hooks 48, in the manner as clearly shown in Figures 8 and 9.

Inasmuch as the center of gravity of the upper fan is then located outwardly of the support provided by the upwardly extending hooks 48, there is a tendency of the fan to swing toward the screen 38. To prevent the upper fan from engaging the screen 38 and damaging the screen, there is provided a pair of side casement brackets 50 which are mounted on opposite sides of the casement window 36. The side casement brackets 50 are secured by means of screws 52 to the framework of the casement windows and provide inwardly extending portions 54 which are positioned to engage the housing 10 of the fan so as to prevent engagement of the housing 10 with the screen 38.

The second, or lower, fan that is mounted in vertical tandem relation to the upper fan and below said upper fan is supported from the upper fan by means of a pair of rigid hanger straps 56. Figure 10 shows the stacking of parts at the side adjusting knob and shows where the hanger straps 56 are inserted. The hanger strap 56 is so formed as to define hook means generally indicated at 58 adjacent its ends. These hook means 58 include notches 60 which extend inwardly from the edge of the hanger strap 56 at an angle with respect to the edge of the strap 56. The hook means 58 hook over the shafts 32 on the pair of fans, and thereby provide for pivotal connection of each hanger strap 56 at its ends to the threaded shafts 32 of the upper and lower tandem fans.

The connection of the hanger straps 56 to the threaded shafts 32 may be maintained loose, by backing off knob 30, to permit pivoting of the upper and lower fans to any desired position, or arrangement, either for exhausting air from within the room or for drawing outside air into the room through one or both fans, as desired. Or the arrangement may be such that the side adjusting knob 30 may be tightened up to frictionally clamp the hanger straps 56 in fixed angular relation to the legs 14 of the support means 12 so as to fix the fan housings at any desired attitude or angle with respect to their pivotal mountings.

The length of the hanger straps 56 is such that pivoting of the upper and lower fan housings 10 may be accomplished without any interference of the fan housings with each other. As shown in Figure 8, when the handles 20 of the upper and lower fan housings are opposite each other, the spacing is such that the handles 20 do not interfere with each other and thus each of the fans is individually pivotable to any position without interference with the other fan.

The above described invention affords a novel merchandising arrangement that has considerable customer appeal. It is well known that customers do not relish purchasing a packaged product containing large amounts of extra hardware or parts which are not essential for all manners of use of the product and are used only when the product is utilized in one of a plurality of manners. If the customer doesn't use the extra hardware, he generally feels that he has paid extra for parts that are of no use to him. On the other hand, if the amount of extra hardware in a packaged unit is small, this adverse reaction in the customer is avoided.

The above described invention permits the setting up in a single package one fan unit, one hanger strap, and

the casement mounting brackets 40 and 50 and screws therefor. The single package thus provides a fan unit that may be used as a floor fan or a desk fan, and may be mounted in a double hung window or in a casement window. The only non-usable hardware is the single hanger strap. When two units are purchased, the purchaser then gets two hanger straps and the two fans may be utilized in the manner shown in Figures 8 and 9.

While there has been shown and described a particular embodiment of this invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the invention and, therefore, it is intended in the appended claims to cover all such changes and modifications as fall within the true spirit and scope of the invention.

What I claim as new, and desire to secure by Letters Patent of the United States, is:

1. In combination, a pair of twin window fans for mounting in vertical tandem relation, each fan comprising: a fan housing adapted to be positioned in a window opening, motor and fan means in said housing, pivot pin means on opposite sides of said housing for mounting said housing for pivoting about an axis through the center of gravity thereof, and a single support member pivoted on said pivot pin means, said support member defining a base member disposed in a plane parallel to said pivot axis and spaced from said pivot axis a distance greater than the distance from the pivot axis to any point on said housing furthest therefrom; means including the single support member of the upper one of said tandem fans for supporting said upper fan therefrom; and means for supporting the lower one of said tandem fans from the upper tandem fan including a pair of elongated hanger straps each pivotally connected adjacent its ends to said pivot pin means on said pair of tandem window fans.

2. In combination, a pair of twin window fans for mounting in vertical tandem relation, each fan comprising: a fan housing adapted to be positioned in a window opening, motor and fan means in said housing, pivot pin means on opposite sides of said housing for mounting said housing for pivoting about an axis through the center of gravity thereof, and a single support member pivoted on said pivot pin means, said support member defining a base member disposed in a plane parallel to said pivot axis and spaced from said pivot axis a distance greater than the distance from the pivot axis to any point on said housing furthest therefrom; means including the single support member of the upper one of said tandem fans for supporting said upper fan therefrom; and means for supporting the lower one of said tandem fans from the upper tandem fan including a pair of elongated hanger straps, each said hanger strap having hook means formed adjacent its ends and pivotally connected by said hook means to said pivot pin means on said pair of tandem window fans.

3. In combination, a pair of twin window fans for mounting in vertical tandem relation, each fan comprising: a fan housing adapted to be positioned in a window opening, motor and fan means in said housing, pivot pin means on opposite sides of said housing for mounting said housing for pivoting about an axis through the center of gravity thereof, and a single support member pivoted on said pivot pin means, said support member defining a base member disposed in a plane parallel to said pivot axis and spaced from said pivot axis a distance greater than the distance from the pivot axis to any point on said housing furthest therefrom; means including the single support member of the upper one of said tandem fans for supporting said upper fan therefrom; and means for supporting the lower one of said tandem fans from the upper tandem fan including a pair of elongated hanger straps each pivotally connected adjacent its ends to said pivot pin means on said pair of tandem window fans, said hanger straps being of a length sufficient to accommodate the pivoting of either or both of said tandem fans to any selected position.

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4. In combination, a pair of twin window fans for mounting in vertical tandem relation, each fan comprising: a fan housing adapted to be positioned in a window opening, motor and fan means in said housing, pivot pin means on opposite sides of said housing for mounting said housing for pivoting about an axis through the center of gravity thereof, and a single support member pivoted on said pivot pin means, said support member defining a base member disposed in a plane parallel to said pivot axis and spaced from said pivot axis a distance greater than the distance from the pivot axis to any point on said housing furthest therefrom; means including the single support member of the upper one of said tandem fans for supporting said upper fan therefrom; and means for supporting the lower one of said tandem fans from the upper tandem fan including a pair of elongated hanger straps each pivotally connected adjacent its ends to said pivot pin means on said pair of tandem window fans, and clamp means operatively associated with said pivot pin means for locking each of the tandem fans individually in selected positions.

5. In combination, a pair of twin window fans for mounting in vertical tandem relation, each fan comprising: a fan housing adapted to be positioned in a window opening, motor and fan means in said housing, pivot pin means on opposite sides of said housing for mounting said housing for pivoting about an axis through the center of gravity thereof, and a single support member pivoted on said pivot pin means, said support member defining a base member disposed in a plane parallel to said pivot axis and spaced from said pivot axis a distance greater than the distance from the pivot axis to any point on said housing furthest therefrom; means including the single support member of the upper one of said tandem fans for supporting said upper fan therefrom; and means for supporting the lower one of said tandem fans from the upper tandem fan including a pair of elongated rigid hanger straps, each said hanger strap having hook means formed

adjacent its ends and pivotally connected by said hook means to said pivot pin means on said pair of tandem window fans, and said hanger straps being of a length sufficient to accommodate the pivoting of either or both said tandem fans to any selected positions.

6. In combination, a pair of twin window fans for mounting in vertical tandem relation, each fan comprising: a fan housing adapted to be positioned in a window opening, motor and fan means in said housing, pivot pin means on opposite sides of said housing for mounting said housing for pivoting about an axis through the center of gravity thereof, and a single support member pivoted on said pivot pin means, said support member defining a base member disposed in a plane parallel to said pivot axis and spaced from said pivot axis a distance greater than the distance from the pivot axis to any point on said housing furthest therefrom; means including the single support member of the upper one of said tandem fans for supporting said upper fan therefrom; and means for supporting the lower one of said tandem fans from the upper tandem fan including a pair of elongated hanger straps, each said hanger strap having hook means formed adjacent its ends and pivotally connected by said hook means to said pivot pin means on said pair of tandem window fans, said hanger straps being of a length sufficient to accommodate the pivoting of either or both said tandem fans to any selected positions, and clamp means operatively associated with said pivot pin means for locking each of the tandem fans individually at selected positions.

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