Sept. 10, 1957 R. E. EVARTS 2,805,820

TWIN WINDOW FAN

Filed Dec. 21, 1953 3 Sheets-Sheet 1

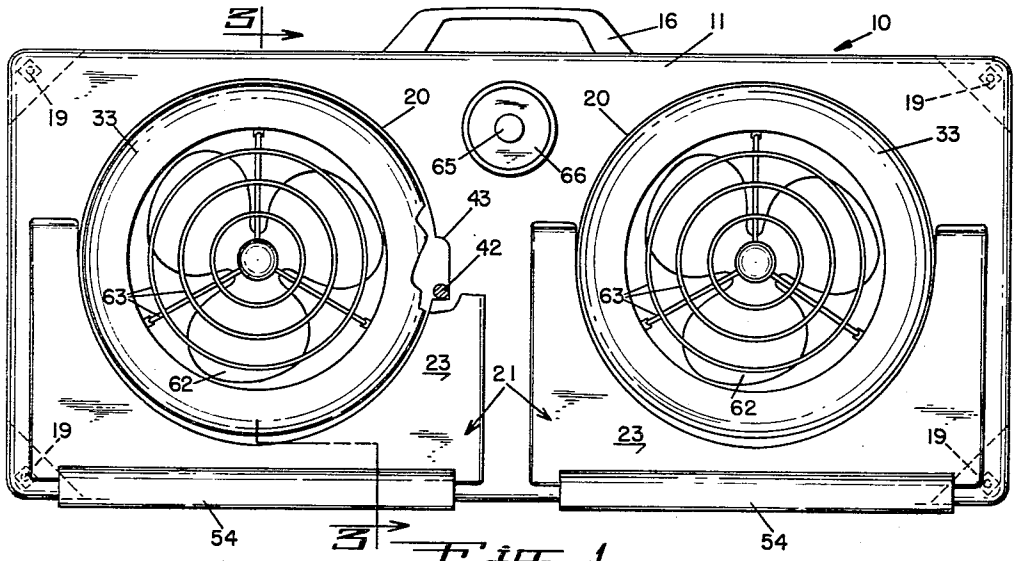


Fig 1

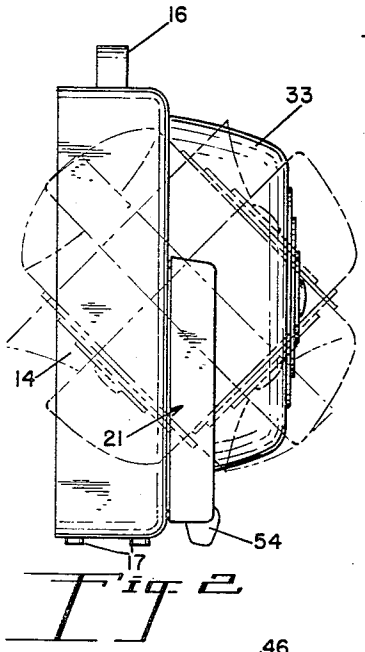


Fig 2

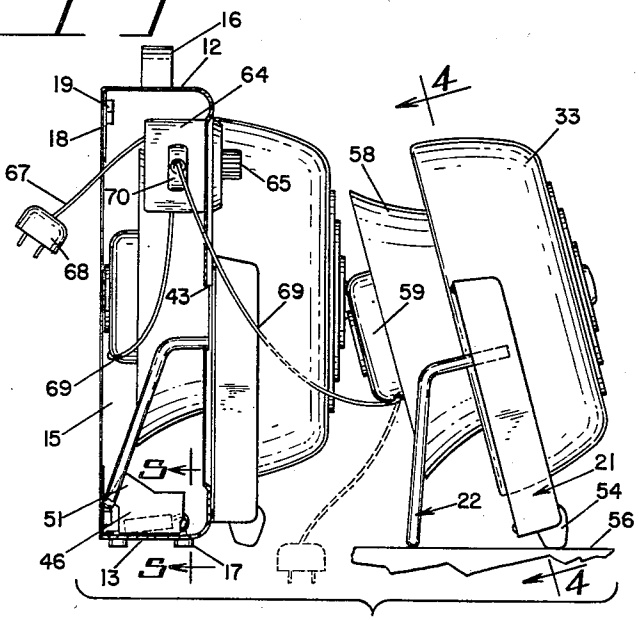


Fig 3

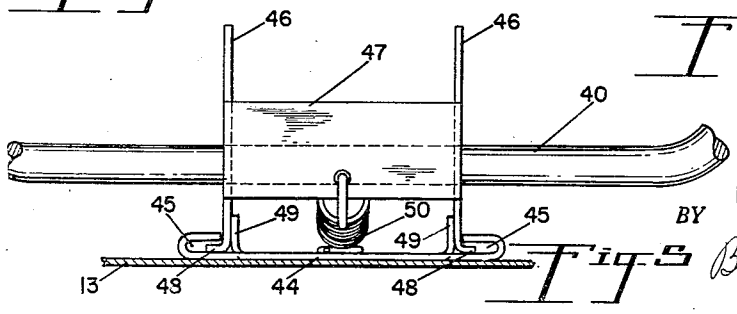


Fig 5

INVENTOR.

RALPH E. EVARTS

BY Buckhorn and Cheatham

ATTORNEY

Sept. 10, 1957 R. E. EVARTS 2,805,820

TWIN WINDOW FAN

Filed Dec. 21, 1953 3 Sheets-Sheet 2

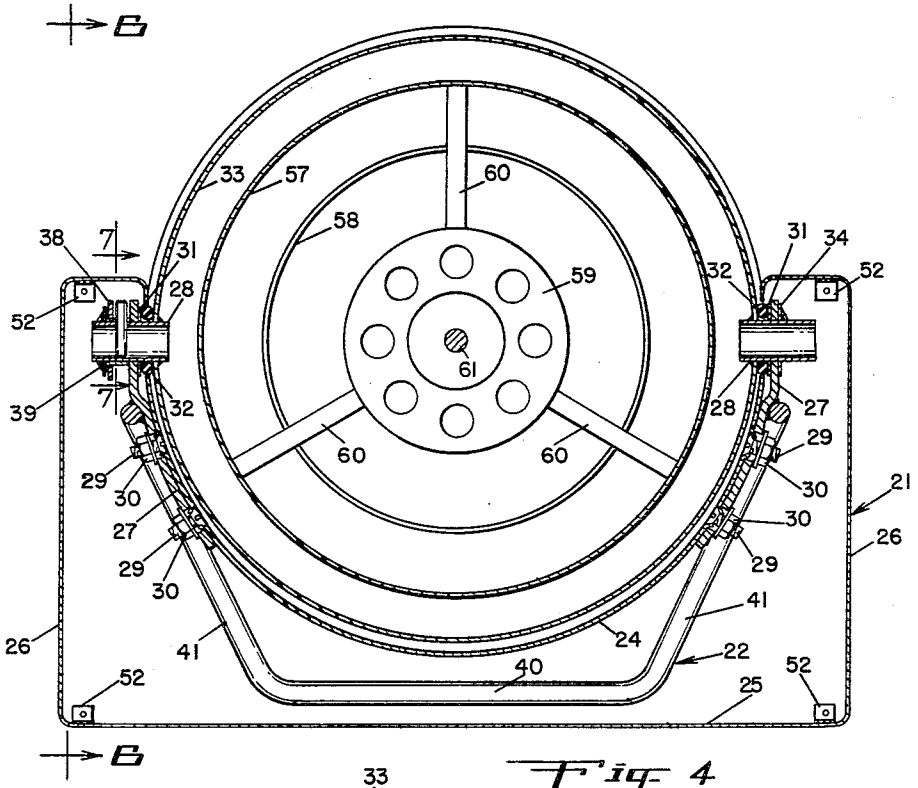


Fig 4

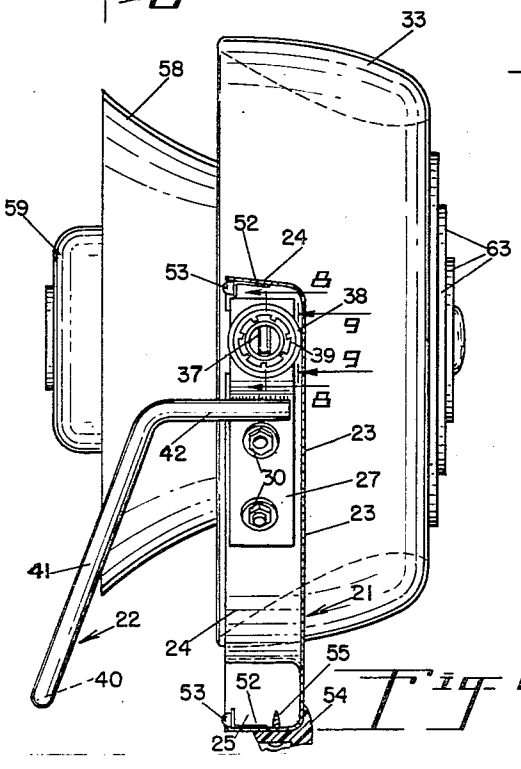


Fig 6

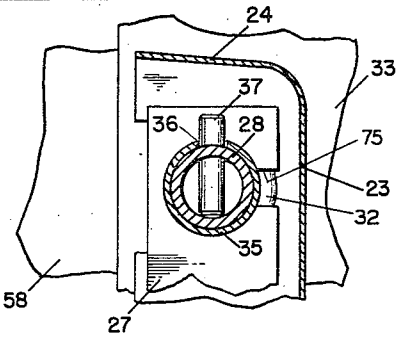


Fig 7

INVENTOR.

RALPH E. EVARTS

BY Buckhorn and Cheatham

ATTORNEY

Sept. 10, 1957 R. E. EVARTS 2,805,820

TWIN WINDOW FAN

Filed Dec. 21, 1953 3 Sheets-Sheet 3

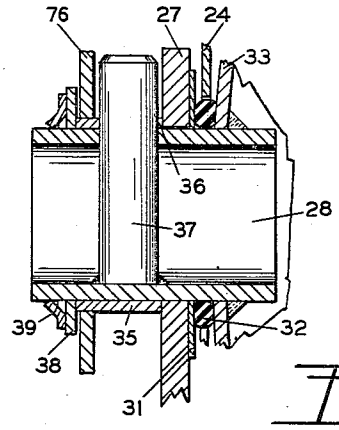


Fig 8

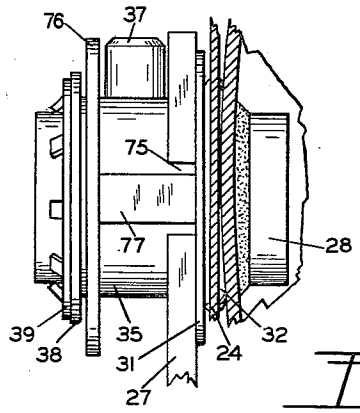


Fig 9

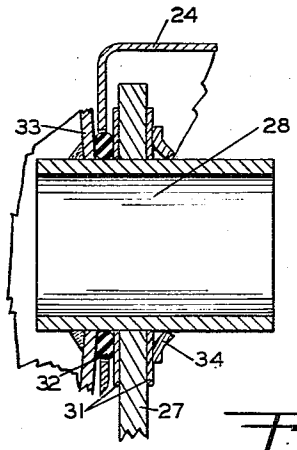


Fig 10

INVENTOR.
RALPH E. EVARTS

BY Buckhorn and Cheatham

ATTORNEYS

United States Patent Office 2,805,820 Patented Sept. 10, 1957

2,805,820

TWIN WINDOW FAN

Ralph E. Evarts, Wichita, Kans., assignor to The O. A. Sutton Corporation, Inc., Wichita, Kans., a corporation of Kansas

Application December 21, 1953, Serial No. 399,543

5 Claims. (Cl. 230—259)

My present invention comprises a multiple purpose fan construction. The principal object of the present invention is to provide fan means which may be mounted in a wall opening, such as on the ledge of a window, yet which may be simply and easily removed and mounted upon a supporting table top or similar supporting surface. A preferred form of the present invention comprises a housing removably supporting a pair of fan pedestals each having a fan mounted therein, the pedestals being such that either or both may be quickly dismounted from the housing so that the fans may be used individually at other desired points. The preferred form of the present invention comprises a pair of fans as described above, but it is obvious that invention resides in the removable fan concept, whether one, two, or more fans are mounted in a housing capable of being mounted in a window.

A further object of the present invention is to provide a construction of the foregoing character which is simple, easy to fabricate, and attractive in appearance. This object embraces the provision of a window mounted unit of neat and attractive appearance, which may be separated into its component parts to provide one or more desk mounted fans of neat and attractive appearance.

The foregoing and other objects and advantages of the present invention will be more readily apparent from inspection of the following specification taken in connection with the accompanying drawings wherein like numerals refer to like parts throughout and in which a preferred form of the invention is illustrated.

In the drawings,

Fig. 1 is a front elevation of the present invention, with a portion broken away to illustrate a detail;

Fig. 2 is an end view of Fig. 1 illustrating the pivotal mounting of the fans;

Fig. 3 is a sectional view taken along line 3—3 of Fig. 1 with one of the fans removed and resting upon a supporting surface;

Fig. 4 is a vertical section, on an enlarged scale, taken substantially along line 4—4 of Fig. 3;

Fig. 5 is a vertical section, on an enlarged scale, taken along line 5—5 of Fig. 3;

Fig. 6 is a vertical section taken along line 6—6 of Fig. 4;

Fig. 7 is a vertical section, on an enlarged scale, taken along line 7—7 of Fig. 4;

Fig. 8 is a vertical section, on an enlarged scale, taken along line 8—8 of Fig. 6;

Fig. 9 is a similar view taken along line 9—9 of Fig. 6; and

Fig. 10 is a view similar to Fig. 8 illustrating the opposite pivot construction.

The preferred form of the present invention comprises a housing 10 formed of sheet metal and includuing a front wall 11, a top wall 12, a bottom wall 13 and opposite end walls 14 and 15. The housing is preferably provided with a centrally disposed carrying handle 16 mounted on the top wall 12 and is preferably provided with a plurality of resilient feet 17 whereby the housing may rest

in stable condition upon a supporting flat surface. The housing may be rested upon a window ledge or otherwise mounted in an opening in a wall of a room, and may be associated with side wings (not shown) in the usual manner whereby the housing may be mounted in an opening larger than itself. The back of the housing is preferably open for the most part and corner brackets 18 are provided to brace the construction and to mount threaded members 19 by means of which bolts may be utilized to mount the housing on a wall surface in proper relation to a suitable opening. The front wall is provided with a pair of substantially circular openings 20 of large diameter and the housing is hollow so that an air passage is provided therethrough whereby air may be drawn through the open back and propelled through the openings 20 by fans mounted therein.

A pair of pedestal-mounted electric fans are removably associated with the housing. Each of the electric fans is pivotally mounted along a horizontal axis in a pedestal adapted for removable association with the housing or adapted to rest on a plane supporting surface so that the electric fan may be used as a desk fan.

Each of the pedestals comprises a front portion 21 and a rear portion 22. The front portion is in the form of a sheet metal stamping comprising a front wall 23, an upper flange 24, a lower flange 25, and opposed end flanges 26. The upper flange 24 is substantially semicylindrical, extending greater than half way around a circle of substantially the same diameter as the diameter of the openings 20, the upper extremities of the upper flange being directed laterally to the upper edges of the end flanges 26 whereby to provide a fan mounting cradle. The rear edges of all of the flanges lie in a common plane. A pair of trunnion brackets 27 are mounted within the upper flange 24 and project upwardly above the horizontal diameter thereof, the trunnion brackets being provided with circular openings for reception of pivot tubes 28 welded to a fan as will appear. The pivot tubes project outwardly through the trunnion brackets of the front portion 21 of the fan pedestal. The lower portions of the trunnion brackets are suitably secured to the flange 24 by bolts 29 and nuts 30. An anti-friction washer 31 surrounds the pivot tube 28 and an O-ring 32 of resilient material is compressed between the anti-friction washer 31 and the fan housing outer wall 33 so as to minimize the transmission of noise from the fan to the pedestal, the O-ring 32 fitting within a notch in the flange 24. At one side the assembly is held in adjusted relation by a clamping washer 34 and a second anti-friction washer 31 which bears against the outer surface of the trunnion bracket. At the other side the trunnion tube 28 projects through a cylindrical member 35 free to bear frictionally against the outer surface of bracket 27 and projecting radially outward from point of bearing, the member being provided with a narrow longitudinal slot 36. A limiting pin 37 is welded to the pivot tube 28 and projects through a radial opening in the pivot tube 28 so as to project radially outward therefrom through the slot 36. An anti-friction washer 38 is mounted upon the outer end of the pivot 28 and is retained against the outer end of member 35 by a clamping washer 39. The member 35 is thus clamped against the outer surface of the bracket 27 to provide frictional resistance to maintain the fan in any position at which it may be placed.

The limiting pin 37 is welded to the pivot 28 so that a slot 75 is provided in the bracket to permit assembly of the fan and the pedestal, the slot extending from the edge of the bracket to the opening in which the pivot is journaled. A washer 76 is loosely mounted on the member 35 and is provided with a limiting tongue 77 which projects into the slot 75 and is thereby anchored in position. As a result the fan may be swung about its piv-

otal axis from one limit position through an arc of about 270° to a second limit position, the fan being arrested at these positions by pin **37** striking the edges of the tongue **77**. The fan may thus be used to direct fresh air into the room or ventilate stale air from the room, or, when used as a desk fan, may be directed in any reasonably desired direction, without reversing the motor or repositioning the apparatus.

The rear portion **22** of the pedestal preferably comprises a rod formed to provide a transverse, lower, central portion **40**, and a pair of upwardly directed arms **41** which are inclined forwardly and laterally outward from the central portion and terminate in horizontal, forwardly directed portions **42** which are welded to the outer surfaces of the pivot brackets **27**. When the front portion is in vertical relation in association with the housing the transverse rod portion **40** is elevated above the lower wall **25** of the front portion. A pair of notches **43** are provided at the sides of each opening **20** so that the horizontal portions **42** of the rear portion of the pedestal may project through the opening into the interior of the housing and rest on the lower edges thereof.

Clamping means are movably mounted on the lower wall **13** of the housing for engagement with the transverse portion **40** of the rear portion of the pedestal. The clamping means comprise a face plate **44** which is affixed to the upper surface of the wall **13** and which is provided with reversely bent edges providing a pair of parallel grooves **45** directed fore and aft within the housing. A sheet metal clamp member comprising a pair of vertical side walls **46** and a transverse connection portion **47** is slidably mounted on the plate **44**, the side walls being provided with lateral, outwardly directed flanges **48** engaged in the grooves **45** and retained therein by tongues **49** bent upwardly from the mounting plate. A coil spring **50** is stretched between the rear portion of the mounting plate **44** and the transverse portion **47**, the spring constantly striving to pull the clamping member rearwardly within the housing. Each of the vertical walls **46** is provided with a rearwardly directed, overhanging portion **51** having a rearwardly inclined lower surface adapted to engage over the transverse bar portion **40** and retain the pedestal in association with the housing.

A plurality of mounting brackets **52** are welded into the interior of the front portion of the pedestal and mount resilient bumpers **53** adapted to engage the front wall **11** of the housing when the pedestal is in association therewith to minimize vibration. The front portion **22** comprises a support bar **54** of molded plastic and of ornamental configuration which extends along the lower extremity thereof and is retained by suitable mounting screws **55**. The lower edge of the bar **54** is parallel to the lower edge of the rear transverse portion **40** so as to provide therewith a stable support whereby the disassociated fan may be rested on a plane supporting surface **56** as seen in Fig. 3.

The preferred form of fan comprises an annular cowl of airfoil cross-section including the outer wall **33** and an inner wall **57**, an air funnel **58**, and a centrally mounted motor **59**, the assembly being held together by radial arms **60**. The shaft **61** of the motor projects forwardly and mounts a suitable air propeller **62**, and a guard grille **63** is suitably retained at the front of the assembly. Details of such a fan are given in the patents to O. A. Sutton 2,554,600, 2,554,601 and 2,554,602, issued May 29, 1951, but it is obvious that other electric fans may be utilized in lieu thereof.

Switch means are centrally mounted on the housing **10**, the means comprising a switch housing **64** mounted within the housing and a switch knob **65** projecting forwardly from the front wall, the switch knob being surrounded by an ornamental plaque **66** or the like. A suitable switch, details of which are well known to those skilled in the art, is mounted in the switch housing **64** whereby manipulation of the knob **65** may result in operation of one or both of the fans. A power source conductor **67** is connected in proper circuit relation with the switch mechanism, and is provided with a plug-in terminal **68** so that the switch may be connected to a source of power. Each electric motor is connected in circuit with the switch by a conductor **69** terminating in a plug-in terminal **70** adapted for removable association with plug-in receptacle facilities (not shown) of the switch housing, whereby either or both of the fans may be disassociated from the housing and plugged into any suitable outlet at other positions.

In Fig. 2 it is seen that when the pedestal is associated with the housing the support bar **54** has its lower edge resting in a common plane with the housing feet **17** so that the entire assembly may rest upon a supporting surface in lieu of mounting the assembly in a wall opening. Either or both of the fans may be rotated about their horizontal pivotal axes so as to direct the airstreams therefrom upwardly or downwardly, inwardly or outwardly, as desired, as illustrated in dash outline. When one of the fans is directed upwardly a space is provided between the lower edge thereof and the flange **24** whereby a person may reach through the opening **20** and engage the transverse portion **47** to pull the clamping member forwardly to release the pedestal, whereupon the fan may be lifted out and set to one side as illustrated in Fig. 3. The plug-in terminal **70** may be disengaged for use with other suitable outlets or may be left in association with the switch housing **64** as desired.

Having illustrated and described a preferred embodiment of the present invention it should be apparent to those skilled in the art that the invention permits of modification in detail and arrangement. I claim as my invention all such modifications as come within the true spirit and scope of the appended claims.

I claim:

1. A multiple use fan construction comprising a housing adapted to be mounted in a wall opening, said housing having a passage therethrough, a fan mounting pedestal including a front portion and a rear portion, said portions being rigidly connected together, the lower edges of said portions lying in a common plane whereby said pedestal may rest upon a supporting flat surface in stable condition, said rear portion comprising a transverse bar defining the lower edge thereof, an electric fan pivotally mounted in said pedestal along a horizontal axis spaced above and parallel to said edges, said housing being hollow and comprising a forward wall having an opening therethrough defining the forward end of said passage, said opening being of a size to surround said fan and to permit projection of said rear portion and said fan into said housing, said front portion extending radially outward from said fan and being larger than said opening, said front portion being adapted to lie against said forward wall of the housing adjacent said opening so as to project forwardly therefrom in removable relation thereto, and latch means movably mounted within said housing and engageable with said transverse bar separably to retain said pedestal and fan in association with said housing.

2. A multiple use fan construction comprising a housing adapted to be mounted in a wall opening, said housing having a passage therethrough, a fan mounting pedestal including a front portion and a rear portion, said portions being rigidly connected together, the lower edges of said portions lying in a common plane whereby said pedestal may rest upon a supporting flat surface in stable condition, said rear portion comprising a transverse bar defining the lower edge thereof, an electric fan pivotally mounted in said pedestal along a horizontal axis spaced above and parallel to said edges, said housing being hollow and comprising a forward wall having an opening therethrough defining the forward end of said passage, said opening being of a size to surround said fan and to permit projection of said rear portion and said fan into said housing, said front portion extending radially outwardly from said

fan and being larger than said opening, said front portion being adapted to lie against said forward wall of the housing adjacent said opening so as to project forwardly therefrom in removable relation thereto, and latch means movably mounted within said housing and engageable with said transverse bar separably to retain said pedestal and fan in association with said housing, said latch means comprising a member slidably mounted for fore and aft movement within said housing and having an overhanging edge extending rearwardly toward the rear of said housing, a spring tensioned between said member and said housing and biased to draw said member rearwardly, said overhanging edge being adapted to overlie said transverse bar to hold the same rearwardly and downwardly within said housing and said member being manually engageable through said opening when said fan is tilted about its pivotal axis.

3. A multiple use fan construction comprising a housing adapted to be mounted in a wall opening, said housing having a passage therethrough, a fan mounting pedestal including a front portion and a rear portion, said portions being rigidly connected together, the lower edges of said portions lying in a common plane whereby said pedestal may rest upon a supporting flat surface in stable condition, said rear portion comprising a transverse bar defining the lower edge thereof, an electric fan pivotally mounted in said pedestal along a horizontal axis spaced above and parallel to said edges, said housing being hollow and comprising a forward wall having an opening therethrough defining the forward end of said passage, said opening being of a size to surround said fan and to permit projection of said rear portion and said fan into said housing, said front portion extending radially outward from said fan and being larger than said opening, said front portion being adapted to lie against said forward wall of the housing adjacent said opening so as to project forwardly therefrom in removable relation thereto, and latch means movably mounted within said housing and engageable with said transverse bar separably to retain said pedestal and fan in association with said housing, switch means mounted on said housing and including a plug-in terminal receptacle, a conductor leading from said electric fan, and a plug-in terminal on said conductor adapted to be engaged in said terminal receptacle.

4. A multiple use fan construction comprising a housing adapted to be mounted in a wall opening, said housing having a passage therethrough, a fan mounting pedestal including a front portion and a rear portion, said portions being rigidly connected together, the lower edges of said portions lying in a common plane whereby said pedestal may rest upon a supporting flat surface in stable condition, said rear portion comprising a transverse bar defining the lower edge thereof, an electric fan pivotally mounted in said pedestal along a horizontal axis spaced above and parallel to said edges, said housing being hollow and comprising a forward wall having an opening therethrough defining the forward end of said passage, said

opening being of a size to surround said fan and to permit projection of said rear portion and said fan into said housing, said front portion extending radially outward from said fan and being larger than said opening, said front portion being adapted to lie against said forward wall of the housing adjacent said opening so as to project forwardly therefrom in removable relation thereto, and latch means movably mounted within said housing and engageable with said transverse bar separably to retain said pedestal and fan in association with said housing, and resilient vibration dampening means mounted on the rear surface of said forward portion and engageable with the forward wall of said housing when said pedestal is associated therewith.

5. A multiple use fan construction comprising a housing adapted to be mounted in a wall opening, said housing having a passage therethrough, a fan mounting pedestal including a front portion and a rear portion, said portions being rigidly connected together, the lower edges of said portions lying in a common plane whereby said pedestal may rest upon a supporting flat surface in stable condition, said rear portion comprising a transverse bar defining the lower edge thereof, and an electric fan pivotally mounted in said pedestal along a horizontal axis spaced above and parallel to said edges, said housing being hollow and comprising a forward wall having an opening therethrough defining the forward end of said passage, said opening being of a size to surround said fan and to permit projection of said rear portion and said fan into said housing, said front portion extending radially outward from said fan and being larger than said opening, said front portion being adapted to lie against said forward wall of the housing adjacent said opening so as to project forwardly therefrom in removable relation thereto, and latch means movably mounted within said housing and engageable with said transverse bar separably to retain said pedestal and fan in association with said housing, said forward portion comprising a cradle extending circumferentially about the lower portion of said fan up to a plane above the pivotal axis of said fan and radially disposed trunnion means for pivotally mounting said fan, and said fan comprising a pair of dimetrically opposed pivots extending radially outward for reception in said trunnion means.

References Cited in the file of this patent

UNITED STATES PATENTS

2,133,985	Green	Oct. 25, 1938
2,553,172	Carrick	May 15, 1951
2,554,600	Sutton	May 29, 1951
2,554,601	Sutton	May 29, 1951
2,554,602	Sutton	May 29, 1951
2,620,127	Radcliffe	Dec. 2, 1952
2,644,390	Delf et al.	July 7, 1953
2,650,535	Hord	Sept. 1, 1953