

May 9, 1967

S. E. PERSSON

3,318,360

WINDOW WITH BLIND

Filed Aug. 24, 1965

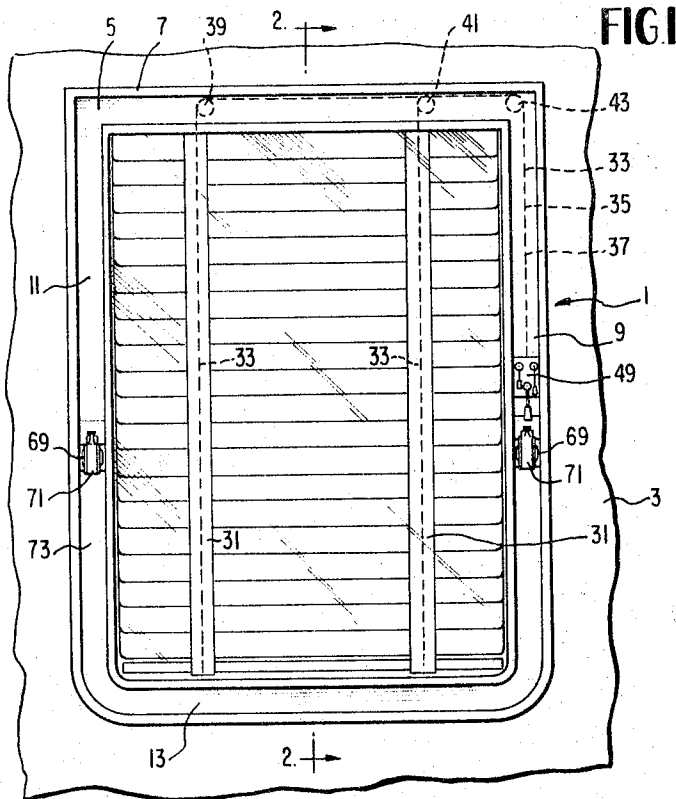


FIG 1

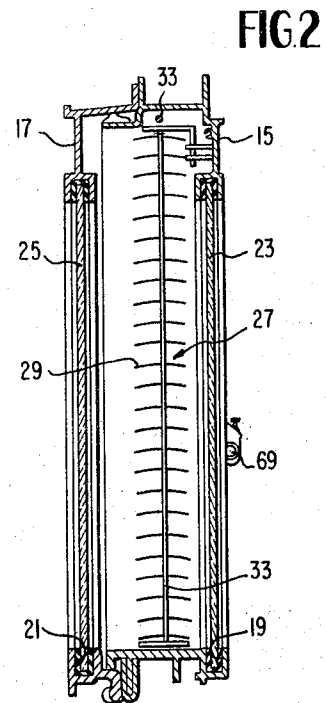


FIG 2

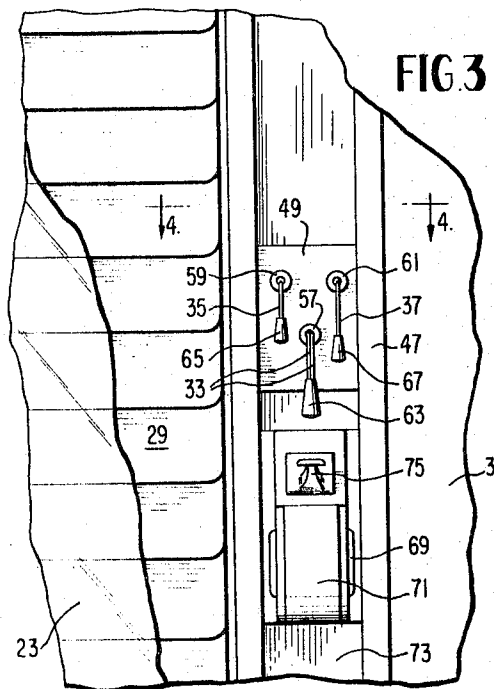


FIG 3

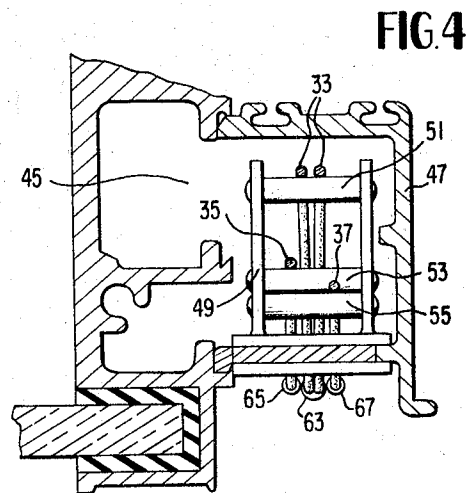


FIG 4

INVENTOR
SVEN ERIC PERSSON

BY

Young & Thompson

ATTORNEYS

1

3,318,360

WINDOW WITH BLIND

Sven E. Persson, Box 20034, Malmo, Sweden

Filed Aug. 24, 1965, Ser. No. 482,196

1 Claim. (Cl. 160—107)

The present application is a continuation-in-part of copending application Ser. No. 249,476, filed January 4, 1963, now abandoned. The present invention relates to windows of the type having a blind associated therewith for shading and screening purposes, and more particularly to the operating mechanism for such blind. The invention is particularly well suited for embodiment in a window of the type that swings about a horizontal axis for ventilating purposes, and also to a double-glazed window with the Venetian blind between two panes of glass.

In the prior art, it was a common practice to provide blinds of various types, and more particularly of the Venetian blind type, in which the slats were interconnected with tapes that were disposed over a roller. A pair of cords turned the roller selectively in either direction so as to move the tapes relative to each other, with the result that the slats of the blind turned. It was also a common practice to provide cords trained over guides, such that when the cords were pulled, the blind was raised; and when the cords were released, the blind was lowered by gravity. Depending on the height of the window, the cords were of considerable length. Also, it was a common practice to provide cords for turning the roller that operated the tapes, with the result that further cords were included in the assembly.

Such exposed cords are hazardous. They are hazardous to infants who sometimes strangle in the cords; and they are also hazardous to persons in mental institutions who may attempt suicide by hanging. Also, the cords become dirty and tangled and are unsightly and often catch in the slats and impede the operation of the blind.

Accordingly, it is an object of the present invention to provide an operating mechanism for a shading and screening device for windows, that will be only partially exposed outside the window structure.

Another object of the present invention is the provision of operating mechanism for a shading and screening device for windows, that will prevent any hindrance to the opening and closing of the windows.

A still further object of the present invention is the provision of a shading and screening device for windows, in which a minimum length of operating cord is exposed.

It is also an object of the present invention to provide a shading and screening device for windows that operate by tilting, such that the operation of the shading and screening device does not itself tend to tilt the window.

Finally, it is an object of the present invention to provide windows having shading and screening devices which will be relatively simple and inexpensive to manufacture, easy to install, clean, maintain and repair, and rugged and durable in use.

Other objects and advantages of the present invention will become apparent from a consideration of the following description, taken in connection with the accompanying drawing, in which:

FIGURE 1 is a vertical elevational view of a window according to the present invention mounted in a wall;

FIGURE 2 is a cross-sectional view taken on the line 2—2 of FIG. 1;

FIGURE 3 is an enlarged fragment of FIG. 2 adjacent the control portion of the window; and

FIGURE 4 is a cross-sectional view taken on the line 4—4 of FIG. 3.

Window structures in connection with which the present

2

invention can be used are disclosed in U.S. Patent Nos. 2,838,109 and 2,845,116. Of course, the invention can also be used in connection with other similar window structures.

Referring now to the drawing in greater detail, there is shown in FIG. 1 a window according to the present invention, indicated generally at 1, mounted in a wall 3. Window 1 includes a marginal sash 5. Preferably, sash 5 is of metal such as extruded aluminum.

Sash 5 includes a top section or rail or header 7 which is straight and horizontal. Sash 5 also includes a pair of spaced parallel upright sides 9 and 11 and a horizontal bottom 13 which is parallel to header 7. The corners between sides 9 and 11 and bottom 13 are smoothly rounded so as to improve the strength and appearance of the window and also to facilitate extrusion of sides 9 and 11 and bottom 13 as a unit.

As can best be seen in FIG. 2, the window in which this invention is exemplified in the present application is double glazed and includes an inner sash 15 and an outer sash 17. Sashes 15 and 17 are of generally known construction detachably secured together in a known manner for swinging movement relative to each other so that they can be opened relative to each other for cleaning or repair or the like. Each of sashes 15 and 17 is bordered internally by inwardly opening continuous glazing channels 19 and 21, respectively. Panes of glass 23 and 25 are disposed in glazing channels 19 and 21, respectively. Naturally, that portion of the glazing channel which is integral with header 7 is removable with the header to permit insertion of the glass.

Disposed between the panes of glass 23 and 25 is a blind 27 which in the illustrated embodiment is of the Venetian blind type. Blind 27 comprises a plurality of generally horizontally elongated thin slats 29 interconnected by the usual vertical tapes 31 at the front and the rear of the slats. Tapes 31 pass over and are secured to the usual roller (not shown) disposed in header 7, so that upon turning of that roller in one direction, the front tapes will be raised and the rear tapes lowered; while upon turning of that roller in the other direction, the rear tapes will be raised and the front tapes will be lowered, thereby selectively to turn the slats in a desired direction for opening or closing the blind.

Means are also provided for raising and lowering the blind, in the form of cords 33 that are spaced apart lengthwise of slats 29 and secured to the lowermost slat 29 and are generally disposed between each pair of tapes 31. Cords 35 and 37 are also provided for turning the roller (not shown) that moves the tapes 31 lengthwise relative to each other, as explained above. Thus, pulling on cord 35 turns the roller in one direction, while pulling on cord 37 turns the roller in the other direction.

A plurality of guides are provided for the various cords. Thus, the cords 33 are trained over guides 39 and 41 and thence about guide 43, all disposed within header 7 or the upper end of side 9 of the sash; and cords 33, 35 and 37 extend downwardly through side 9 of the sash which for this purpose is hollow and in the form of an outwardly opening channel 45. A closure plate 47, best seen in FIG. 4, closes what would otherwise be the open outer side of channel 45.

Cords 33, 35 and 37 extend through channel 45 to the vicinity of the midpoint of sides 9. In that region, means are provided for selectively pulling on the various cords so as to open and close the blind or raise or lower the blind. These means may of course take various forms, such as knobs or handles to be turned; but in the illustrated embodiment, the cord-operating means includes a guide member 49 which is set in and secured to side 9 of the sash and includes a plurality of horizontal guides

51, 53 and 55 under which the cords 33, 35 and 37 are respectively trained. The guides 51, 53 and 55 are spaced apart from each other both vertically and horizontally so as to space the cords from each other and reduce the wear of the cords on each other. Guide member 49 also has openings 57, 59 and 61 through its vertical front plate. Cords 33 extend through and terminate outside opening 57, while cords 35 and 37 extend through and terminate on the outside of openings 59 and 61, respectively. Pulls 63, 65 and 67 are provided on the free ends of cords 33, 35 and 37, respectively, for ease in pulling on the cords and also to prevent the cords from retracting too far through openings 57, 59 and 61. Thus, pulling on pulls 63 will raise the blind, while pulling on pulls 65 will turn the slats in one direction and pulling on pulls 67 will turn the slats in the other direction.

Although the present invention is adaptable for use in a window which is fixed relative to its associated wall, it is preferred that the invention be practiced in the environment shown, namely, in the environment of a window which swings vertically about a horizontal axis intermediate the top and bottom of the window. To this end, hinge members 69 are mounted on and are movable with the sash, while hinge members 71 are secured to and are stationary with the wall. Hinge members 69 and 71 coact to mount the window for vertical swinging movement on and relative to the wall. Accordingly, a fixed frame member 73 is secured to the wall and borders the portions of sides 9 and 11 and bottom 13 which are below the hinge assemblies 69, 71.

A cleat 75 is carried by one hinge member 69 of the sash, on the same side as guide member 49. When a length of cords 33 has been pulled through opening 57, it is convenient to dead-end this length about cleat 75, thereby to maintain the blind at a desired elevation.

It is especially to be noted that the openings 57, 59 and 61 through which the various cords extend are located substantially closer to the horizontal axis of vertical swinging movement of the window than they are to the header 7. Indeed, these openings are located as close as possible to that axis. This location has a number of advantages. In the first place, the free length of cord which is exposed to become dirty or hazardous is kept to a minimum. In the second place, the lever arm between the cords and the swinging axis of the window is kept to a minimum, so that even when the window is open, pulling on the cords will have a minimum tendency to swing the window undesirably.

From a consideration of the foregoing disclosure therefore, it will be evident that all of the initially recited objects of the present invention have been achieved.

Although the present invention has been disclosed and illustrated in connection with a preferred embodiment, it is to be understood that modifications and variations may be resorted to without departing from the spirit of the invention, as those skilled in this art will readily understand. Such modifications and variations are considered to be within the purview and scope of the present invention as defined by the appended claim.

Having described my invention, I claim:

Window structure including a fixed frame, a sash, pivot means for pivotally mounting the sash for vertical swinging movement on the fixed frame about a horizontal axis intermediate the height of the sash, the sash having top and side portions, a Venetian blind suspended from said top sash portion, cords for raising and lowering the Venetian blind, cords for turning the slats of the Venetian blind, all of said cords extending through the interior of said top sash portion and through the interior of one said side sash portion, said one side sash portion being closed on all lateral sides to protect the cords from dirt and wear, and a unit disposed within said one side sash portion and including a plurality of spaced guide means about which said cords are trained, said unit having a plurality of separate closely spaced holes that open through the front side of the sash closely adjacent said axis and through which said cords emerge, said cords terminating in free ends.

References Cited by the Examiner

UNITED STATES PATENTS

355,046	12/1886	Auld	160—167
1,914,050	6/1933	Smith	160—172
2,557,978	6/1951	Krumm	160—107 X
2,838,109	6/1958	Persson	160—107

FOREIGN PATENTS

1,034,262	4/1953	France.
1,051,039	9/1953	France.

HARRISON R. MOSELEY, *Primary Examiner.*

45 P. M. CAUN, *Assistant Examiner.*