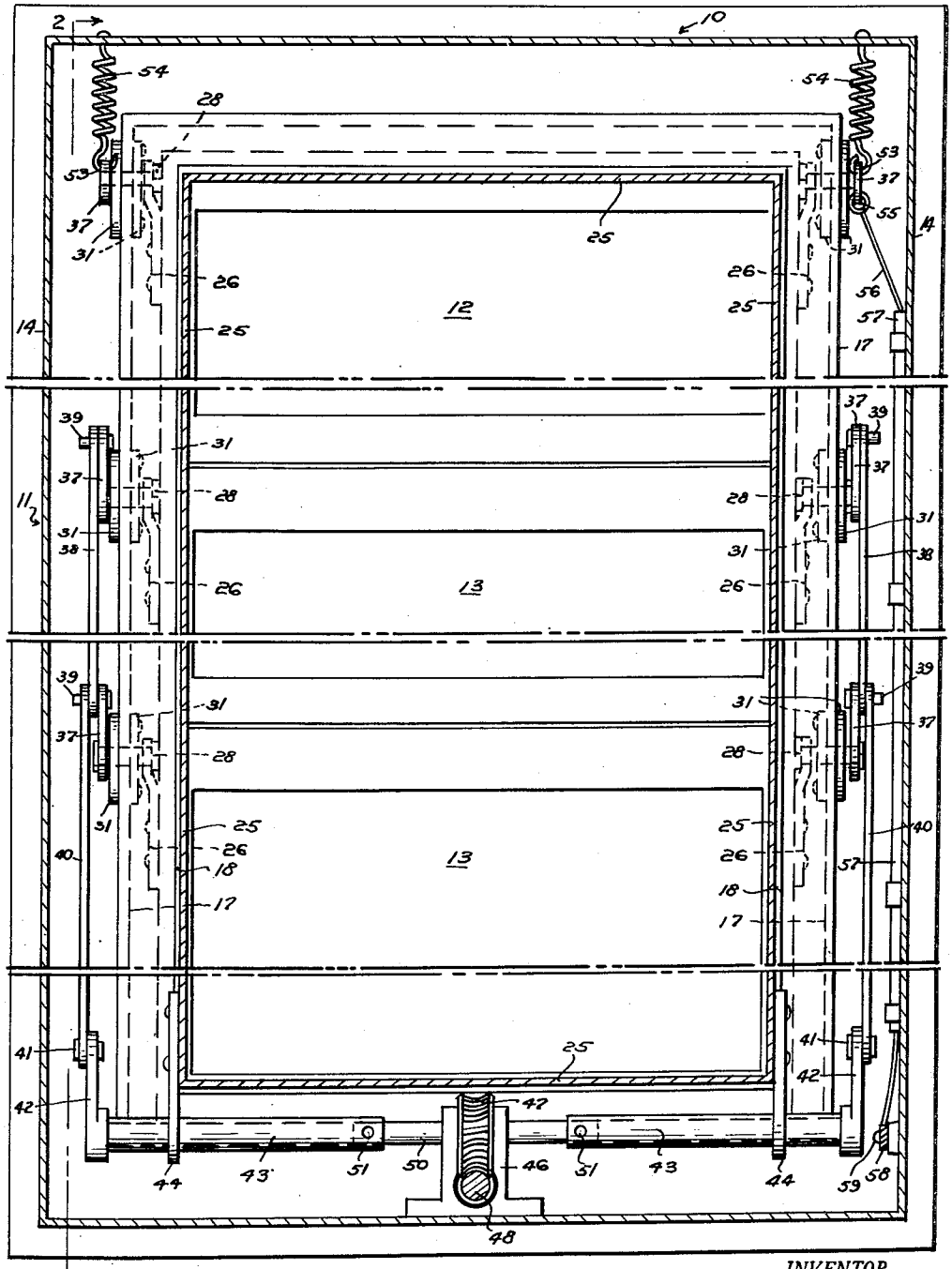
Oct. 16, 1956 T. A. FERRI 2,766,493

AWNING WINDOW

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Fig. 1.

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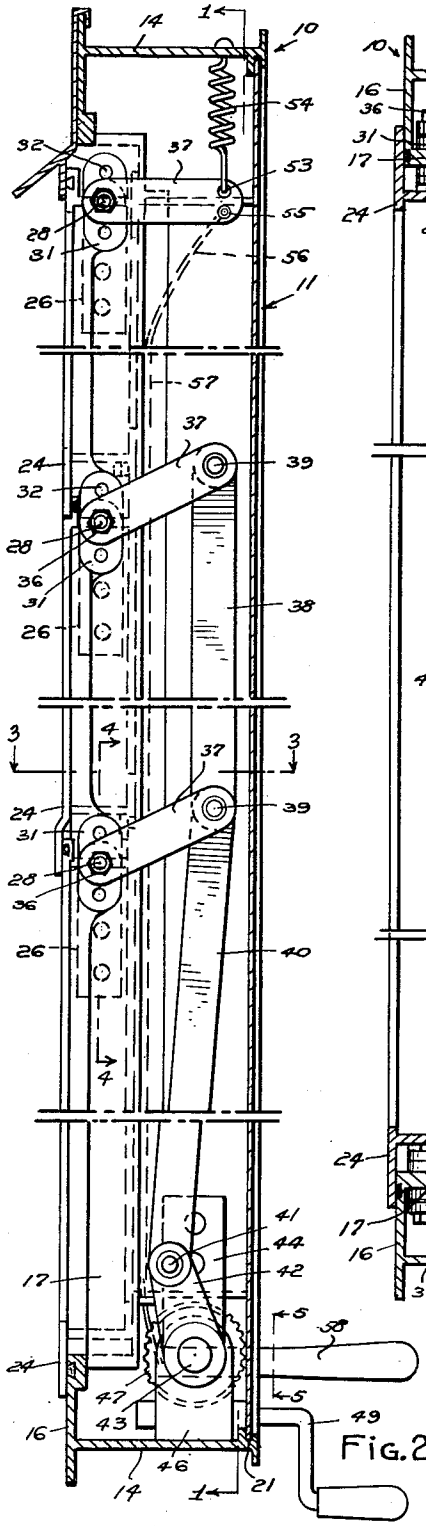


Fig. 2.

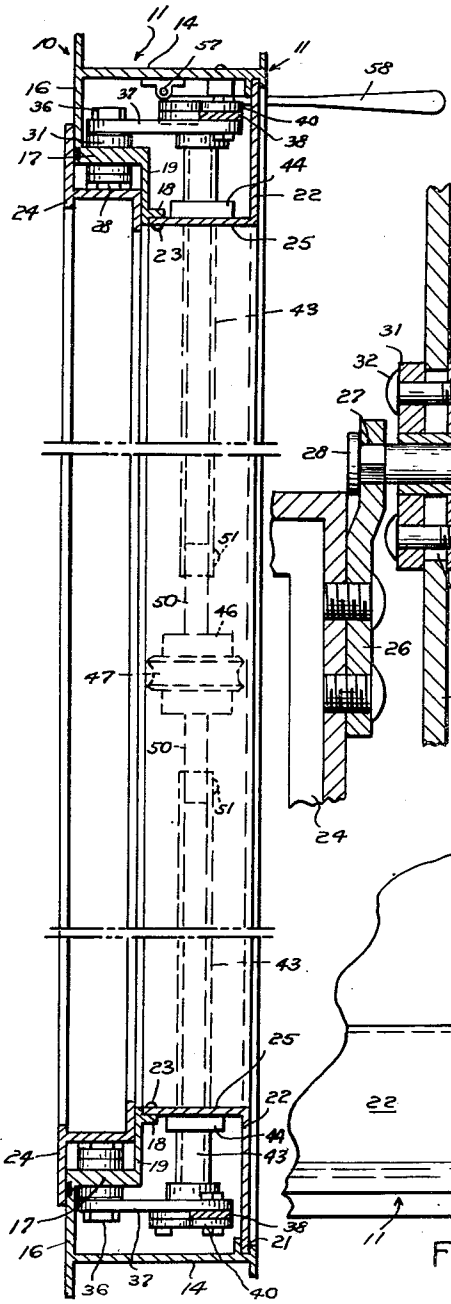


Fig. 3.

Fig. 4.

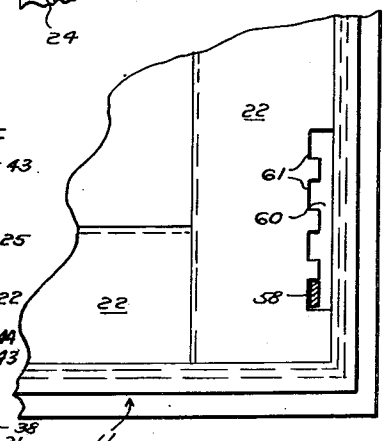


Fig. 5.

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AWNING WINDOW

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Application September 28, 1953, Serial No. 382,577

1 Claim. (Cl. 20—62)

This invention relates to window structures and is more particularly directed to an awning type window.

A principal object of the present invention is to provide an awning window having an upper vent and a plurality of lower vents which are provided with individual operating mechanism thereby permitting the upper vent to be operated separately of the lower vents.

A further object of the present invention is to provide an awning window described herein above having a window frame which completely encloses the operating mechanism so that the mechanism cannot be viewed no matter what position the vents are in.

A still further object of the present invention is the provision of an awning characterized as above which is simple and economical in construction.

With these and other objects in view, the invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings, forming a part of the present specification with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawings, but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claim.

In the drawings:

Figure 1 is a longitudinal sectional view of an awning window embodying my invention, the section taken along the line 1—1 of Figure 2.

Figure 2 is a sectional view taken along the line 2—2 of Figure 1.

Figure 3 is a transverse sectional view taken along 3—3 of Figure 2.

Figure 4 is an enlarged fragmentary sectional view taken along 4—4 of Figure 2.

Figure 5 is a fragmentary sectional view taken along the line 5—5 of Figure 2.

Referring now to the drawings wherein like numerals are used to designate similar parts throughout the several views, the numeral 10 refers generally to an awning window having a window frame 11 on which are pivotally mounted an upper vent or light 12 and a plurality of lower vents 13. Although only two vents 13 are shown and described herein; any desired number of such lower vents may be readily adapted in the awning window 10. The frame 11 whose cross section forms a generally L-shaped enclosure consists of a wall member 14 arranged to form a rectangular box-like structure having a flange 16 mounted along the forward or outward edge of the wall members 14 at susbtantially right angle thereto, the flange 16 extending beyond either side of the wall member 14. The inner edge portion of the flange 16 has mounted thereon and extending inwardly therefrom, a generally Z-shaped member whose leg portions 17 and 18 are substantially parallel to the wall member 14 while the member 19 is disposed parallel to the flange 16. On the rear edge portion of the wall member 14 there is a longitudinally disposed slot 21 which extends about the

entire periphery of the frame 11. A removable cover consists of leg portions 22 and 25 set at right angles to each other; the leg portion 22 being fitted into the slot 21 while the leg portion 25 is secured to the flange 18 by means of screws 23. The cover 22 and 25 is constructed in four sections each of which is mounted separately on the top, bottom and side walls of the frame 11 to completely enclose the operating mechanism which is described in detail hereinafter.

The individual vents 12 and 13 are provided with a frame 24 on whose upper edge portions on either side thereof there is secured a hinge plate 26 having a hexagonal bore 27 at its free end, which end is slightly offset in order to permit a bolt 28 to be received by the bore 27. The particular construction of the bolt 28 is described in detail hereinafter. Adjacent the free ends of each of the hinge plates 26 there is an elongated bore 29 in the flange member 17 of the frame 11. On either side of the flange 17 there is a bushing support plate 31 secured together by bolts 32. The bushing support plates 31 are provided with a centrally disposed bore through which extends a bushing 33 adapted to receive the shank portion of the bolt 28. The bolts 28 are provided with a hexagonal cross section adjacent the head portion in order that there be no relative rotational movement between the bolt 28 and the hinge plate 26. That portion of the bolt 28 received by the bushing 33 is cylindrical while the portion adjacent thereto is slightly conical having longitudinally disposed grooves or serrations 34 thereon. The end portion of the bolt 28 is cylindrical with threads formed thereon on which a nut 36 is threaded for securing one end of a pivot arm 37 on the conical and serrated portion 34 of the bolt 28. A slide bar 38 has its end portions pivotally secured to the free ends of the pivot arms 37 of the vents 13 by means of pivot pins 39. To each of the lowermost pivot pins 39 there is pivotally mounted the upper end of an operating bar 40 whose lower end is pivotally mounted as at 41 to a power arm 42. The power arms 42 are secured to the end portions of cross shafts 43 made of tubing material which are each supported by a bracket 44 secured to the flange 25 of the frame 11. The cross shafts 43 extend adjacent to and in spaced relation to a gear box 46 secured on the longitudinal centerline of the window 10. Mounted on the support 46 is a gear wheel 47 in mesh engagement with a worm gear 48 secured to the free end of an operating crank handle 49. A stub gear shaft 50 which is secured at its mid portion to the gear wheel 47 is fitted into the end portions of the cross shaft tubings 43, 43 and secured thereto by the bolts 51. This construction permits the ready removal of the gearing mechanism in the event there is the need to replace same due to wear.

With the vents 13 in their closed position when the operating handle 49 is actuated the worm gear 48 and gear wheel 47 and the cross shafts 43 are rotated causing the power arms 42 to swing downwardly. The operating bars 40 and the slide bars 38 will slide to a downward position causing the free ends of the pivot arms 37 to swing downwardly compelling the pivot bolts 28 to rotate and the vents 13 to swing about the pivot bolts 28 to an open position. By reversing the operation of the operating handle 49, the vents 13 will be brought to their closed position. The elongated bores 29 on the flanges 17 of the frame 11 permit the adjustment of the pivot bolts 28 thereon in the event it is found that the vents 13 do not come to their completely closed position simultaneously.

Each of the pivot arms 37 of the vent 12 extends substantially horizontally and has on its free end a bore 53 which receives the hooked end of a tension spring 54 whose other end is secured to the top wall 14 of the

frame 11. One of the arms 37 of the vent 12 is provided with a second bore 55 which receives the hooked end of a flexible operating cable 56. The operating cable 56 extends downwardly through a tubular guide 57 which is secured to the side wall member 14 of the window frame 11. The lower end of the operating cable 56 is secured to one end of an operating lever 58 which is pivotally mounted as at 59 to the frame 11 and extends outwardly of the window frame 11 through an elongated opening 60 in the cover member 22. The opening 60 has a plurality of slots 61 along one side thereof which are adapted to receive the operating lever 58 at its different positions to maintain the lever 58 secured until removed from the particular slot 61 by a sidewise movement of the operating lever 58.

With the vent 12 in its closed position the operating lever 58 will be found in the lowermost slot 61 as shown in Figures 2 and 5. When it is desired to open the vent 12, the operating lever 58 is forced sideways until the lever 58 is flexed into the elongated opening 60. Then by lifting upwardly on the operating lever 58, the flexible cable 56 will move downwardly causing the arm 37 and the vent 12 to pivot in a clockwise direction as viewed in Figure 2 against the spring pressure 54. Upon releasing the sidewise force on the operating handle 58, the latter will be received by one of the upper slots 61 thereby securing the vent 12 in the desired open position. To return the vent 12 to its closed position, a slight sidewise pressure on the operating handle 58 will position the latter in the elongated opening 60 at which time the spring pressure 54 will cause the arm 37 and the vent 12 to swing in a counterclockwise direction to its closed position and the operating handle will swing downwardly in the elongated opening 60 to be received by the lowermost slot 61.

Having disclosed my invention and realizing that, in view of my disclosure many modifications in details and construction or design will readily occur to those skilled in the art, I do not choose to limit myself except as in the appended claim.

I claim as my invention:

An awning window comprising a frame, said frame having a vertically disposed flanged portion on each side, a plurality of vents positioned between said flanged portions, a hinge plate secured to both sides of each of said vents adjacent said flanged portions, said flanged portions having an elongated bore adjacent each of said hinge plates, a slide bar, a plurality of pivot arms each having one end pivotally secured to said slide bar and the other end positioned adjacent said elongated bore, operating means mounted on said frame operatively connected to said slide bar and means adjustably securing said hinge plates to said flanged portions, said adjustable means comprising a pivot pin extending through said elongated bore with one end secured to said hinge plate and said other end secured to said other end of said pivot arm, a bushing rotatably mounted on said pivot pin and extending through said elongated bore beyond both sides of said flanged portion, a bushing support plate positioned on each side of said flanged portion supporting said bushing and bolt means extending through said flanged portion securing said support plates and flanged portion together whereby the pivotal position of said vents on said flanged portions may be adjusted.

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