Nov. 21, 1950 O. KUBATZKY 2,531,281

VENTILATED WINDOW

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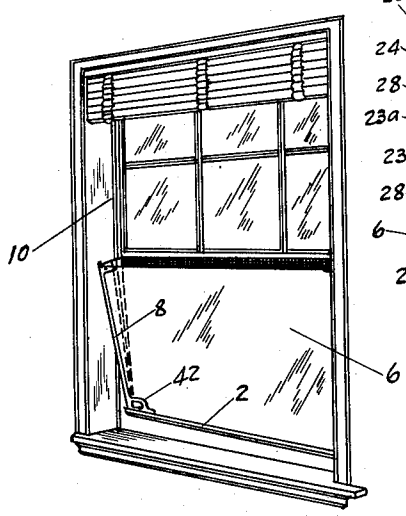


FIG. 1.

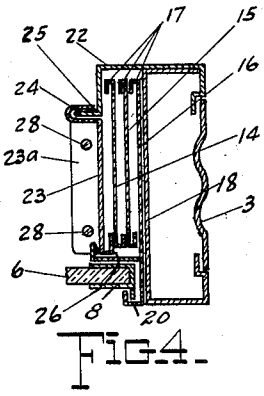


FIG. 4.

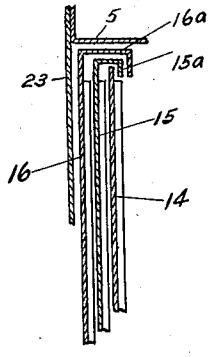


FIG. 5.

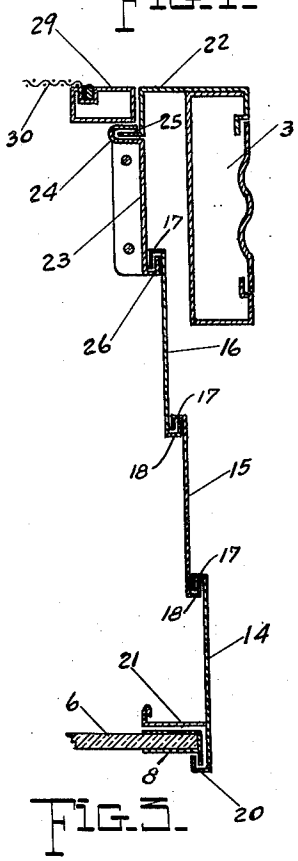
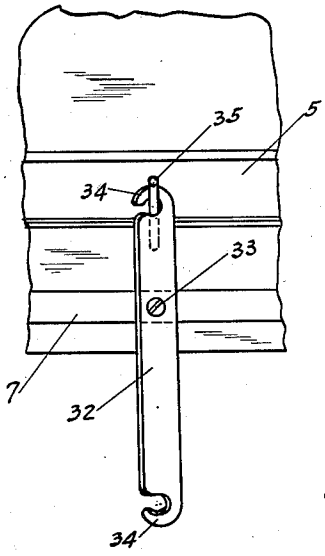


FIG. 3.



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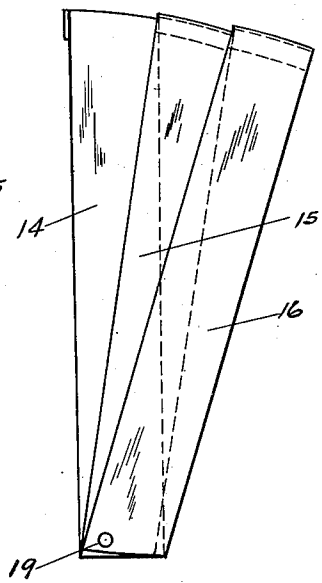

FIG. 7.

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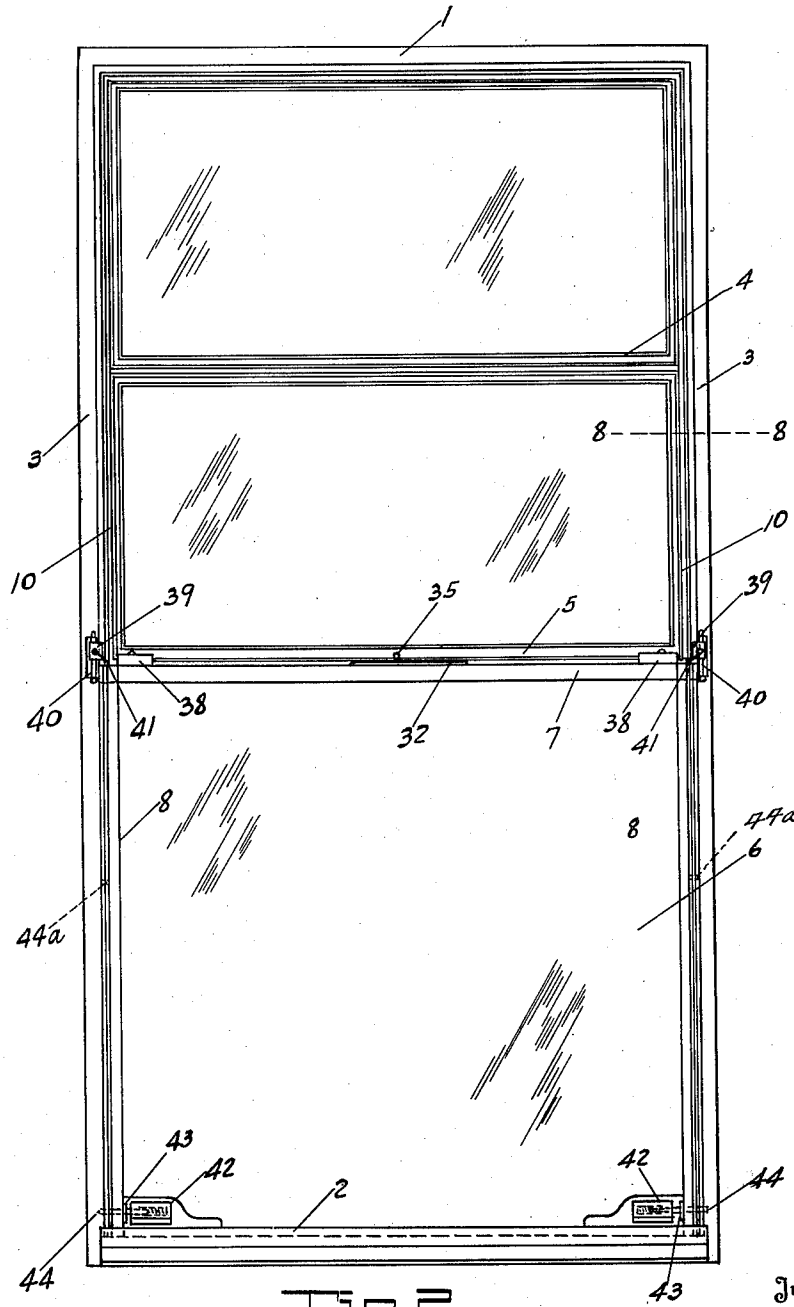

FIG. 2.

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VENTILATED WINDOW

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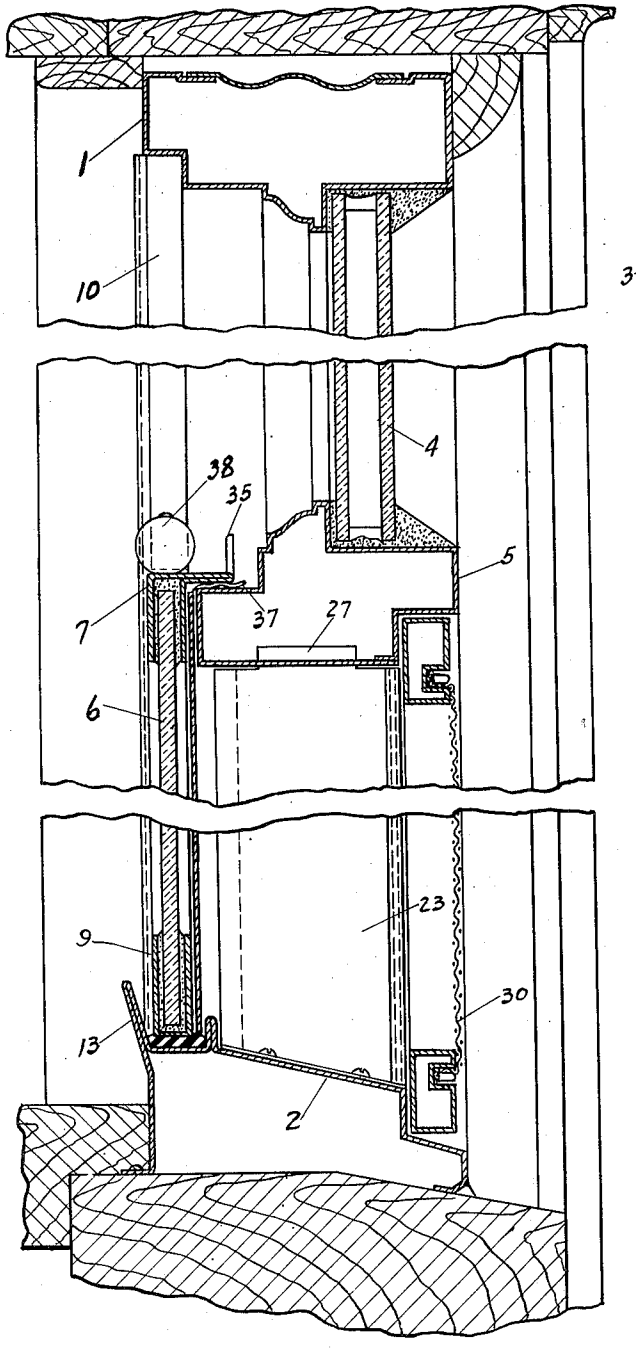

FIG. 10.

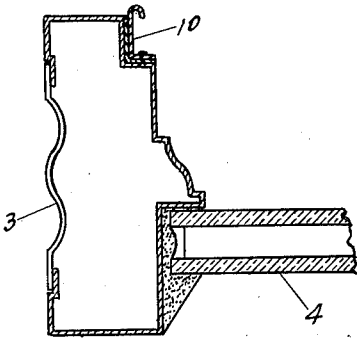

FIG. 8.

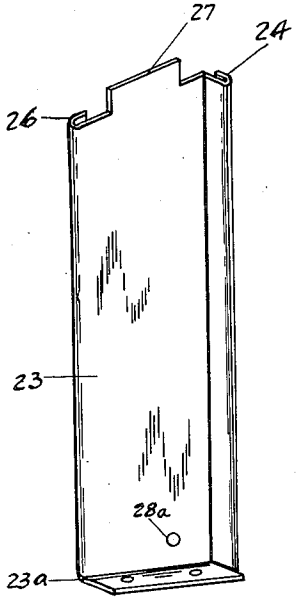

FIG. 9.

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UNITED STATES PATENT OFFICE

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VENTILATED WINDOW

Otto Kubatzky, St. Louis, Mo.

Application May 14, 1945, Serial No. 593,617

3 Claims. (Cl. 98—96)

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My present invention comprises a new and improved form of ventilating window of the general type in which the lower window sash is mounted for both swinging and vertical sliding movement in the window frame, swinging movement in an inward direction from the plane of the window to assume open ventilating adjustments, and vertical movement to enable positioning of said lower sash in upper adjusted positions in the plane of the window frame partly or completely open.

My invention includes primarily certain improvements or a continuation of the invention of my Patent No. 2,404,807, issued July 30, 1946, and covering a ventilated window, the present improvements residing primarily in the peculiar construction of sectional wing members located at the opposite vertical edges of the lower movable sash and supporting and guiding the latter in its various operative positions, to be more fully hereinafter explained.

My special type of sectional wing members located at the opposite side edges of the movable window include relatively movable wing plates interlocked together and provided at their vertical edges, and also at their top edges, with sealing flanges for window sealing effect when the lower sash is closed from its ventilating position. The wing unit feature of my invention also includes a special improved type of wing box, one of which is located at the opposite lower sides of the window frame for receiving the wing sections or plates at such side and permitting the extension movement of these plates in the adjustment of the movable sash to a ventilating position.

My invention involves other detail features of improvements in window constructions which will be more fully understood upon reference to the following description, in conjunction with the annexed drawings, in which:

Figure 1 is a perspective view of a window of the general design of my invention, showing the upper stationary sash, the lower movable ventilating sash adjusted to its inwardly projecting position for ventilation purposes, and the window frame structure generally, the illustration including a Venetian blind.

Figure 2 is a front elevation of a window embodying my invention.

Figure 3 is a horizontal sectional view showing one of the hollow metal side members of the window frame, the wing box, and the wing sections as when one of the wing members is adjusted for the ventilating position of the movable sash, the said movable sash at one of its vertical

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edges being shown with its operative connection to the innermost adjustable wing plate or section, in and on which it slides at such portion.

Figure 4 is a view similar to Figure 3, but illustrating the wing in its folded or collapsed condition.

Figure 5 is a vertical sectional view through the upper portions of the wing plates of one of the wing units, bringing out more clearly the formation of the top flanges of these plates.

Figure 6 is a fragmentary view showing the latching means on the upper rail of the movable sash which is engageable with a pin on the horizontal meeting rail on the sashes, for holding the ventilating sash in either of two inwardly adjusted positions in which it will afford its ventilating function.

Figure 7 is a side view showing one of the wing plate assemblies with the wing plates pivotally moved to the maximum separating adjustment thereof as when the lower sash is in full ventilating position.

Figure 8 is a sectional view taken about on the line 8—8 of Figure 2.

Figure 9 is a fragmentary perspective view bringing out more clearly the construction of the closure plate for one of the wing boxes.

Figure 10 is a vertical sectional view through my window and bringing out the general features of the window construction including certain of the improvements of my invention.

Describing my novel window in detail, it is notable that I provide a window frame which is made up of the top stile 1, the sill 2, and the side frame members 3, these parts being all preferably made of metal, though it would be within the purview of my invention to utilize wood or other material.

In the upper portion of the window frame is stationarily mounted the upper sash generally designated at 4 and shown as comprising upper and lower panes supported above the meeting rail 5 in the frame of the sash, which also is preferably made of metal.

The lower sash is generally designated at 6 and is comprised of the glass sash body mounted in a suitable metal frame comprising a top rail 7, side rails 8, and a bottom rail 9, such frame being U-shaped in cross section and having the glass pane or sash 6 suitably sealed to the frame after conventional practice. The upper portion of the main frame of the window in which the upper and lower sashes are mounted is provided inwardly of the window and on the sides 3 thereof with guides 10, including outer flanges 11, and

the lower sash 6 with its frame is adapted to move upwardly in the vertical plane of the window frame side rails 3 between the flanges 11 of the guides 10 and the side rails of the frame 3.

The lower sash 6 is primarily supported at the lower portion of the window frame by means of side wing units in which the said lower sash is mounted to slide vertically from the said units upwardly to positions opposite the upper sash, and in which the lower sash 6 with its frame is adapted to swing inwardly from the window frame while the lower portion of the sash 6 is supported in the trough-like member 13 on the sill 2, see Figure 10.

The inward movement of the sash 6 is accommodated for by utilizing wing units such as shown in Figures 3, 4, 5 and 7, which wing units are made up of a series of vertical plates 14, 15, and 16 formed at their inner edges with vertical lateral angular flanges 17, the plates 15 and 16 being formed at their vertical outer edges with similar angular flanges 18.

The plates 14, 15, and 16 are pivoted together at their lower ends as shown at 19, and the plate 14 which moves to the outermost position as shown in Figure 7, is equipped at its outer portion with a U-shaped guide member 20. Also, this plate 14 is formed with an inwardly extending flange 21 acting as a guide member complemental with the member 20 so that the vertical side rail of the sash 6 is adapted to slide between the parts 20 and 21 when the wing unit is collapsed to its folded position of Figure 4, and when the lower sash 6 is slid vertically relatively to the guide members 20 and 21 of the wing units between which the lower sash is held, said lower sash may progress upwardly in parallelism with the upper sash 4 moving at the inner sides of the guide members 10 on the upper portion of the window frame side rails 3.

Each wing unit comprises, in addition to the wings 14, 15, and 16 thus far described, a housing member which is comprised of an angle plate 22 attached to each side rail 3 of the window frame, and a closure housing plate 23 spaced from said side rail 3, as seen best in Figures 3 and 4, to which plate 23 the plates 14, 15, and 16 are connected by the pivot 19 at the pivot opening 28 seen in Figure 9. The closure housing plate 23 is provided at its outer edge with a U-flange 24 which receives an outwardly extending flange 25 on the angle plate 22, and the outer vertical edge of the closure plate 23 is formed with a U-flange 26 that constitutes a stop member to interengage the inner flange 17 of the plate 14 of the wing unit as the wing unit is extended by movement of the plates 14, 15, and 16 upon pulling inwardly of the sash 6 for the latter to assume its ventilating position.

The closure plate 23 is easily removable because at its upper end it has a projection 27 that interlocks with the underside of the meeting rail 5 of the window frame, and the lower edge of the closure plate 23 which slants outwardly of the window frame has a flange 23*a* adapted to be attached by screws 28 to the sill 2.

By removing the screws 28 and swinging the closure plate or member 23 inwardly at its lower end, or toward the middle of the window frame, the lug 27 at the upper edge of said plate 23 may be disengaged and the plate entirely removed to permit access to the wing plates or sections 14, 15, and 16 which are enclosed between the parts 3, 22, and 23.

The U-flange 24 is inset from the plane of the plate 22 to provide a seat for the frame 29 of a window screen 30, which preferably is hingedly mounted on the window frame outwardly of the lower sash 6. This feature is not fully shown because it forms no part of the present invention.

At their upper edges the plates 16 and 15 of each wing unit are formed with angular flanges 16*a* and 15*a* respectively, the flange 16*a* overlapping the flange 15*a* and the flange 15*a* overlapping the upper edge of the plate 14. This construction is provided for affording more effective air or wind sealing action of the members 14, 15, and 16 when the window sash 6 is closed.

Of course, when the window sash 6 is shifted inwardly or outwardly, the bottom rail 9 of the frame thereof rocks on its seat provided on the sill 2 at 13, which seat may be supplied with packing or sealing material 31 affording a support and seal between the members 6 and 2 at the lower end of the former.

On the top rail 7 of the sash 6 a double latch member 32 is pivoted medially, but off center, at 33. At each end the member 32 has a catch 34. Each catch 34 may engage the pin 35 on the meeting rail of the window frame. By turning the latch 32, the catch 34 at the longer distance from the pivot 33 may be engaged with the pin 35, and the opposite turning will enable the other catch 34 to be so engaged. The first engagement will lock the sash 6 at a definite inward inclination from the plane of the window, as seen in Figure 1, and the second engagement will hold the sash 6 at a less inclination. The greater the inclination the greater the ventilation because the larger will be the opening between the upper end of the sash 6 and the lower end of the sash 4.

The top rail 7 of the sash 6 is formed with an inwardly extending flange 36 to overlie the outer portion of the meeting rail 5, as seen in Figure 10. Weather sealing at these parts is obtained by a spring bronze strip 37 carried on the part 5.

Small solid handles of somewhat cylindrical form, designated 38, are screwed or otherwise attached to the top rail 7 of the sash 6 and may be grasped to pull the sash inwardly to a position for ventilating. The sash 6 is normally held from inward movement by sliding latch plates 39 mounted in vertical guides 40. Finger pieces 41 on the plates 39 enable them to be raised from positions overlying the adjacent upper side portions of the frame of the sash 6, thus to permit the inward swing action of the sash 6 while grasping the handles 38.

By grasping the handles 42 at the bottom rail 2 of the sash 6, and by finger pull on the finger pieces 43 of latch bolts 44, the latter may be caused to release the sash 6 for raising by the handles 42. Latch bolts 44 engage recesses in the sides of the window frame at the bottom of the latter, at points half-way up the depth of the sash 6, to hold the latter in half-open position, and opposite the upper end of the sash 6 when the sash 6 is fully raised. Thus the bolts 44 may hold the sash closed down fully, one-half open after vertical sliding movement, or entirely open adjusted in the guides 10, as desired. While in the latter position the sash 6 readily permits the washing of the outside of the upper sash 4 in the customary manner. The lower sash 6 may also be readily washed by displacing it bodily and upwardly from the wing plates 16 between the guides on which it slides and swings.

As the sash 6 is swung inwardly for the ventilation adjustments of the sash, the side wing

units operate to afford such movement by taking positions more or less extended as in Figure 3.

My ventilating window construction is relatively simple but highly efficient for its purposes, as apparent from the foregoing. The wing units effectively prevent admission of air when the sash **6** is closed.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is:

1. In a ventilating window construction, in combination, a window frame, a lower sash therein, a sill on which the said sash is rockably supported to move from the plane of the window inwardly to a ventilating position, wing units on opposite sides of the window frame at the lower portions thereof and each comprising relatively movable plates connected to slide inwardly, one relatively to the other, one of the plates of each wing unit being engageable with the frame to limit the in-swing movement of the sash, and another of said plates having a guide for the adjacent side edge of the sash in which the latter may slide relatively to the wing unit, the plates of each wing unit being pivotally connected to each other at their lower ends, and certain of said plates having top relatively horizontal flanges in overlapping relation to each other.

2. In a ventilating window construction, in combination, a window frame comprising a sash meeting rail extending across the same, a lower sash therein below said rail, a sill on which the said sash is rockably supported to move from the plane of the window inwardly to a ventilating position, wing units on opposite sides of the window frame at the lower portions thereof and each comprising relatively movable plates connected to slide inwardly, one relatively to the other, one of the plates of each wing unit being engageable with the frame to limit the in-swing movement of the sash, and another of said plates having a guide for the adjacent side edge of the sash in which the latter may slide relatively to the wing unit, the plates of each wing unit being at least three in number, including those mentioned and an intermediately operating plate having flanges at its vertical edges to coact with flanges of the inner and outer plates, said three

plates being pivotally connected to each other at their lower ends, the frame comprising sides, an angular housing plate attached to each side of the frame and extending laterally in relation to the planes of the wing unit, said housing plate being spaced so the wing plates may enter such space, and a detachable housing plate spaced from the body of the angular housing plate and interlocking with the inner operating plate of the adjacent wing unit, and detachable to permit access to the said housing space for the wing unit, the meeting rail having a slot therein, and the last mentioned housing plate being provided with a projection at its upper end detachably interlocking with the meeting rail of the window frame in said slot thereof, said housing plate being equipped at its lower end with a lateral flange attached to the sill of the window frame.

3. In a ventilated window construction, in combination a window frame, a lower sash therein, a sill on which said sash is rockably supported to move from the plane of the window inwardly to a ventilating position, and means for holding the said sash at adjusted positions obtained by inward movement of the sash, comprising a latch member pivoted intermediately of its ends to the top rail of the sash at a point nearer one end than the other, said latch member having catches at its opposite ends, and a pin member on the meeting rail of the window adapted to be engaged by either catch provided on the latch member, whereby to position the sash in different ventilating positions.

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