Dec. 18, 1951 W. J. SHERRY 2,579,099

WINDOW CONSTRUCTION

Filed Aug. 29, 1947

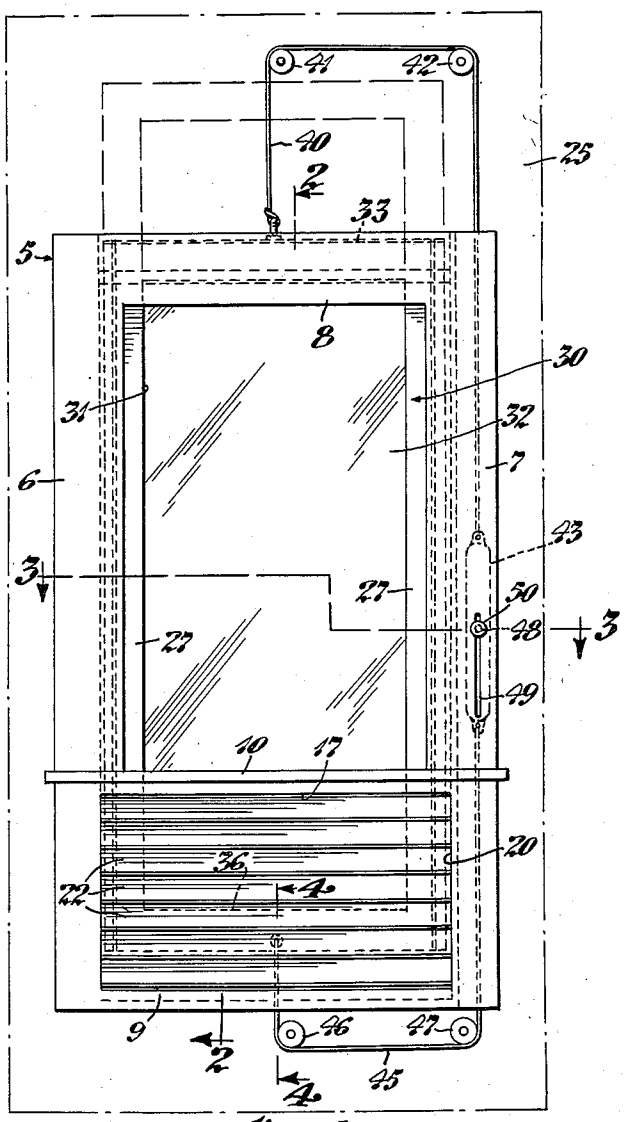


Fig. 1.

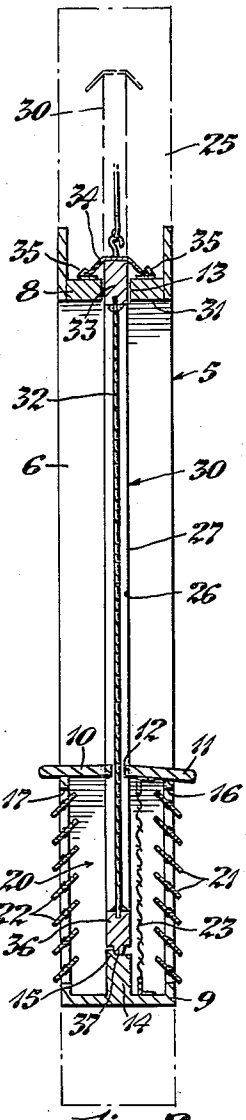


Fig. 2.

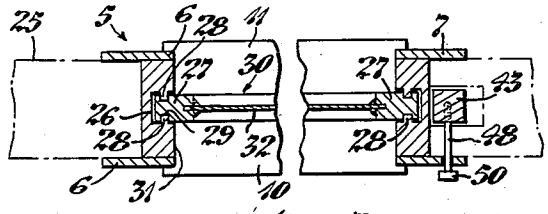


Fig. 3.

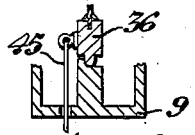


Fig. 4.

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Patented Dec. 18, 1951 2,579,099

UNITED STATES PATENT OFFICE

2,579,099

WINDOW CONSTRUCTION

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Application August 29, 1947, Serial No. 771,309

4 Claims. (Cl. 98—88)

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My invention relates to building structures, and particularly to a combined window and ventilator construction for use in a wall of a building.

One object of my invention is to provide a combined window and ventilator structure having a window frame or casing provided with a window opening and a ventilator passage, forming part of the opening but separated therefrom by a sill, and a window sash closing the window opening and slidable within the casing to a position wherein it extends across the ventilator passage to close the same and to another position to open the passage, to permit flow of air therethrough so as to ventilate the interior of the building.

Another object of the invention is to provide a structure, of the character referred to, including a counterbalance weight for facilitating the raising and lowering of the window sash to close and open the ventilator passage, cable and pulley means operatively connecting the weight to the upper and lower ends of the sash, and manually-operable means connected to the weight and slidable vertically on the window casing to move the weight and thereby slide the sash.

Another object is to provide a structure of the type indicated embodying means for sealing the sides and ends of the window sash, so as to prevent entrance of air into the building except by way of the ventilator passage.

A further object is to provide a structure of the type specified in which louvers and a screen are installed in the ventilator passage for the purpose of controlling the flow of air through the passage and to prevent the entrance of insects into the building.

Further objects of the invention will be apparent from the following detailed description and the drawing, which is intended for the purpose of illustration only, and in which:

Fig. 1 is a face view of the improved window and ventilator structure;

Fig. 2 is a vertical section, taken on line 2—2 of Fig. 1;

Fig. 3 is a cross-sectional view, taken on line 3—3 of Fig. 1; and,

Fig. 4 is a cross-sectional view taken on the line 4—4 of Fig. 1.

Referring to the drawing in detail, the window structure includes a rectangular window frame or casing 5 which has vertical side sections 6 and 7, a horizontal top section 8, and a horizontal lower section 9. The casing 5 also has an inside sill 10 and aligned outside sill 11, there being an elongated aperture 12 provided between the two sills, as shown in Fig. 2. The top section 8 also has an elongated aperture 13, while the lower section 9 has an upstanding ledge 14 forming a transverse seat 15. Below the sills 10, 11 the outer and inner walls of the casing 5 are provided with rectangular openings 16 and 17, thus forming a ventilator passage 20 through which air may pass from the outside of the window structure, that is, from the outside of the wall in which the structure is installed, to the inside of the wall, or vice versa. The openings 16 and 17 may be opened and closed by means of louvers 21 and 22, which may be of the adjustable type if desired. Arranged in the passage 20 is a screen 23 for preventing insects from entering the building. The window casing 5 is preferably made from aluminum, or other light weight and rust-proof metal, and its sections may be joined together in any suitable manner, such as by welding. The casing 5 may be installed in an opening between the studs of a wall, represented by dot-and-dash lines 25 in Figs. 1 and 2, in the usual manner, and essentially the wall 25 has an unobstructed hollow area directly above the casing, for a purpose to be later explained.

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The side sections 6 and 7 are provided with longitudinal guideways 26 for receiving the sides or vertical stiles 27 of a rectangular window sash 30 to adapt the latter to slide vertically within the casing 5. At the sides of the guideways 26 are longitudinal tongues 28, which are received in grooves 29 in the rails 27 to seal the sides of the rectangular opening 31 of the casing 5, see Fig. 3. The window sash 30, which has a glass pane 32, is considerably longer than the vertical length of the window opening 31, and its upper cross-member or rail 33 is normally disposed adjacent the top section 8 of the casing 5, as shown in Fig. 2. The rail 33 has an inverted channel strip 34 affixed to its upper surface, and the lateral edges of this strip are adapted to engage strips 35 mounted on the top section 8 to seal the aperture 13, through which the sash 30 is adapted to slide, so as to prevent the entrance of air into the room. The lower rail 36 of the sash 30 is normally disposed in position to cause a bead 37 on its lower surface to engage the bead or seat 15 on the ledge 14 to seal the lower end of the window.

It will be apparent from the foregoing, and from the drawing, that when the window sash 30 is in lowermost position with its bottom rail 36 resting upon the ledge 14 the ventilator passage 20 is closed thereby, but when the sash is slid upwardly in the casing to the position indicated by dash lines in Fig. 2, the lower end of

the sash will no longer act as a partition in the passage **20** and the latter will then be open to admit air into the room through the openings between the louvers **21** and **22**. It is also to be noted that the window sash **30** moves upwardly to an extent wherein its lower rail **36** is aligned with the sills **10**, **11**, so that the window pane **32** always extends entirely across and maintains the window opening **31** closed at all times.

While various means may be provided for sliding the window sash, I prefer to employ the cable system, shown in Fig. 1. A cable or cord **40** is attached to the upper rail **33** of the sash **30** and extends upwardly over a pulley **41**, laterally around a pulley **42**, and then downwardly through the side section **7** of the casing **5** with its end joined to the upper end of a counterbalance weight **43** adapted to slide vertically within the section **7**. The pulleys **41** and **42** may be rotatably mounted either on pins carried by and within the building wall, or carried by vertical projections or brackets on the upper section **8**. A similar cord or cable **45** has one end attached to the lower rail **36** of the sash **30**, and extends around pulleys **46** and **47** with its other end extending upwardly and secured to the lower end of the weight **43**. The weight **43** carries a pin **48** which projects outwardly through an elongated vertical aperture **49** in the side section **7**, a knob **50** being provided on the pin to facilitate manual sliding of the weight.

By the cable and weight system described above, the raising and lowering of the window is greatly facilitated. When the weight **43** is lowered, by means of the knob **50**, the window is raised to open the ventilator passage **20**, and when the weight is raised the sash is lowered to cause its lower end to extend across the passage to close the same. Upward movement of the window sash **30** is limited by the engagement of the pin **48** with the lower end of the aperture **49**.

While I have herein shown and described my improved window, as embodied in a preferred construction, by way of example, it will be apparent that various modifications might be made in the structure without departing from the spirit or scope of the invention. Therefore, without limiting myself in this respect, I claim:

1. In a building structure: a wall having a rectangular opening therein; a rectangular window casing having vertical side sections provided with longitudinal guideways, a lower horizontal section, an upper horizontal section having an elongated aperture, a sill spaced above said lower section and including an inner sill element and an outer sill element, said elements defining between them an elongated aperture, said casing being adapted to be installed in the opening of said wall, the space between the sill and the upper horizontal section being of a length less than the length of said opening so as to provide a ventilator passage in said wall disposed beneath said sill; and a window sash slidable in said guideways vertically within said casing, said sash being longer than the vertical dimension of the interior of said casing between the sill and the upper horizontal section so that its ends project through said apertures, said sash being slidable downwardly to extend across said ventilator passage to close the same and slidable upwardly to open said passage to permit flow of air therethrough, said sash completely covering the interior of said casing between the sill and the upper horizontal section at all times.

2. A structure as defined in claim 1, including means within said ventilator passage engageable by the lower end of said sash to seal said passage when said sash is slid to passage-closing position.

3. A structure as defined in claim 2 and including interengaging means on the upper end of said sash and said upper section for sealing the aperture in said upper section when said sash is slid to passage-closing position.

4. A structure as defined in claim 3 in which said interengaging means for sealing the aperture in said upper means consists of a pair of V-shaped elements mounted on said upper section at the sides of said aperture, and an inverted channel carried by said sash and having lateral flanges engageable with said V-shaped elements.

WALTER J. SHERRY.

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