Sept. 13, 1932. C. H. HUCKE 1,876,941

OPERATING MEANS FOR VENTILATING SASHES

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FIG. 1

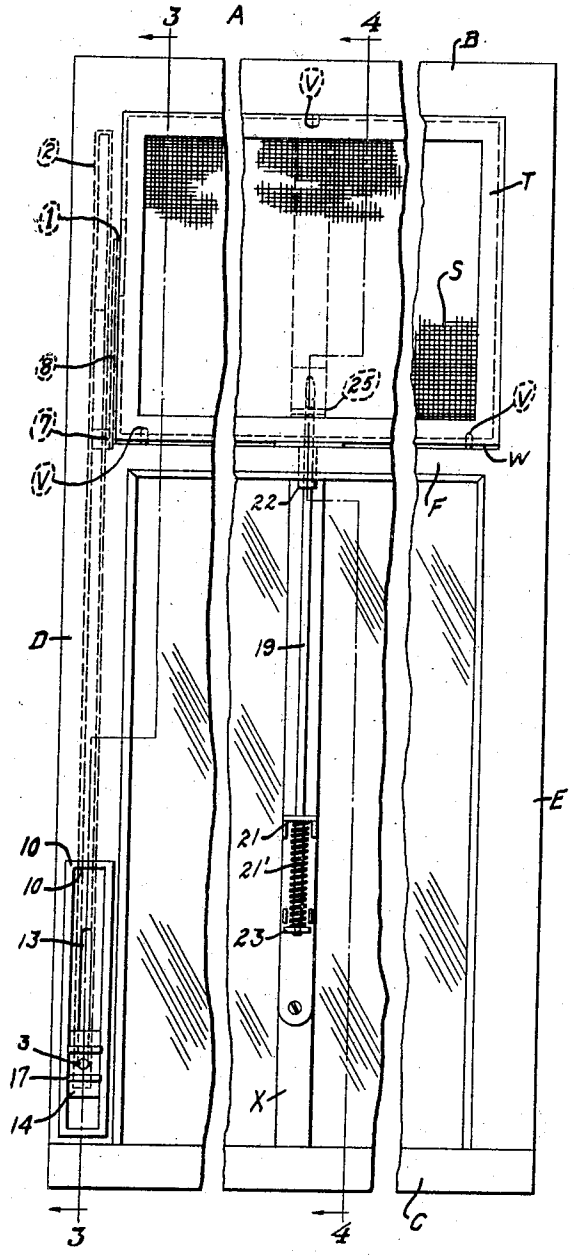

FIG. 2

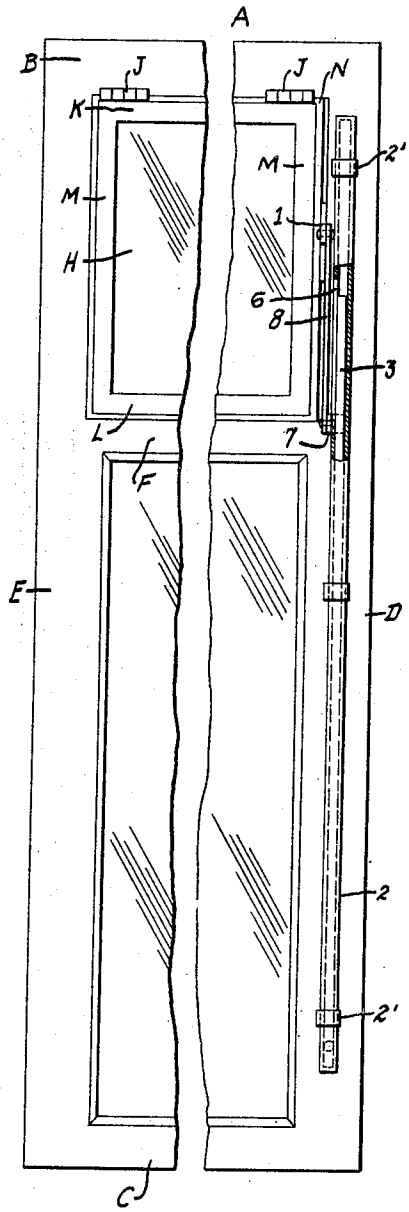

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FIG. 3

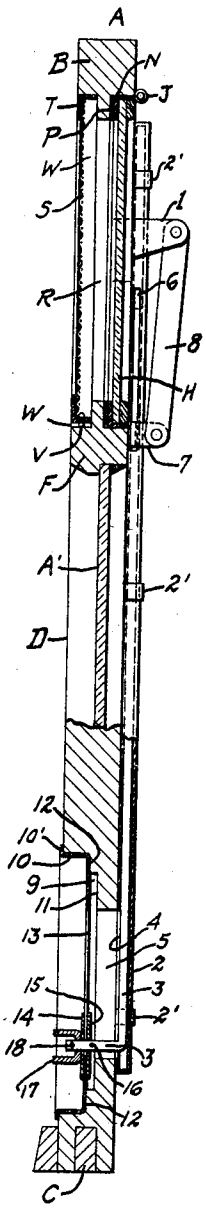


FIG. 4

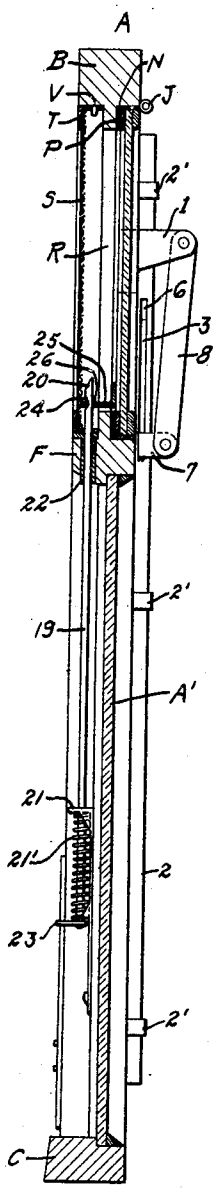
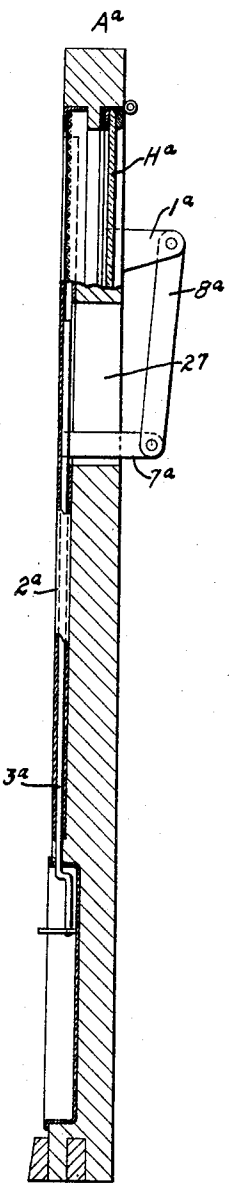


FIG. 5



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UNITED STATES PATENT OFFICE

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OPERATING MEANS FOR VENTILATING SASHES

Application filed October 17, 1928. Serial No. 312,947.

This invention relates generally to ventilating sashes of the type comprising an adjustable closure element incorporated as an operative part of a standard window sash, either of the sliding, swinging or pivoted variety, and more specifically to operating means for imparting movement to the adjustable closure element of such a ventilating sash, the predominant object of the invention being to provide operating means adapted for use in association with a ventilating sash of the type referred to, which is extremely simple in construction and inexpensive to manufacture.

Another important object of the invention is to provide operating means for the closure element of a ventilating sash which is so constructed, and so arranged on the associated window sash, that no parts of said operating means protrude from the window sash in a manner to interfere with the free movement thereof with respect to associated parts of the window structure.

Fig. 1 is a fragmentary front elevation of a ventilating window sash provided with operating means constructed in accordance with my invention.

Fig. 2 is a fragmentary rear elevation of the ventilating sash illustrated in Fig. 1, showing the operating means thereon.

Fig. 3 is a vertical section on line 3—3 of Fig. 1.

Fig. 4 is a vertical section on line 4—4 of Fig. 1.

Fig. 5 is a vertical section similar to Figs. 3 and 4 but showing a modified form of the operating means.

In the drawings, A designates a standard window sash of the sliding variety, which is equipped with an upper rail B, a lower rail C, and stiles D and E. F designates a dividing bar which extends horizontally of the sash A at a point spaced downwardly from the upper rail B.

H designates the adjustable closure element or ventilator sash of the sash A, said adjustable closure element H being hinged at its upper edge to the sash A by means of the hinges J, and being comprised of an upper rail K, a lower rail L, and stiles M. The upper rail B, the stiles D and E, and the dividing bar F of the sash A are cut away to provide a rectangular recess N in which the adjustable closure element is seated when same is in a closed position, and interposed between said closure element and the vertical wall of said rectangular recess is a gasket P of suitable weatherstripping material whereby a weather-tight joint between the closure element and the adjacent portions of the sash A is provided.

The closure element H is arranged at a rectangular opening R and is adjustable on its hinges so that the same may be moved to positions to control passage of air through said opening, and to prevent passage through said opening of flies and other insects I employ a screen S. The screen S includes a rectangular frame T which is preferably L-shaped in cross-section, and formed in the horizontal portions of said frame is a plurality of apertures into which pins V, extended from portions of the sash A, project. In this manner the screen S is secured to the sash A, and when it is desired to remove the screen from the sash A it is necessary merely to spring the top rail of the screen downwardly until the single pin V at the top of the screen has been withdrawn from the associated aperture in the frame of the screen. The screen S may then be tilted outwardly and then moved upwardly with respect to the sash A to free the lower rail of the screen from the associated pins V.

By referring to Fig. 3 of the drawings it will be noted that the screen S is seated in a rectangular recess W formed in the upper rail B, stiles D and E, and dividing bar F of the sash A, so that no portion of said screen protrudes outwardly beyond the adjacent outer face of the sash A.

The sash is, of course, provided with the usual pane, or panes, of glass A′ secured in place in the ordinary manner, and in the particular type of sash illustrated in the drawings I prefer to employ a vertical dividing bar X, which serves a purpose which will be hereinafter set forth.

Referring now to my improved means for imparting movement to the adjustable closure member H of the sash A illustrated in the

drawings, 1 designates an arm which is rigidly fixed to one of the stiles M of said closure member. Arranged for vertical sliding movement in a tubular element 2 fixed to the sash A is an operating rod 3. The tubular element 2 is secured perpendicularly to the sash A in any convenient manner, as, for instance, by means of staple-like fastening devices 2′, which embrace said tubular element and are driven into the material of the sash, and the tubular element is closed at the top and bottom thereof and is provided adjacent to its lower end with a slot 4 (Fig. 3). The operating rod 3 at its lower end has a portion 3′ which is bent at an approximate right angle to the main body portion of said rod, and this bent portion is extended through said slot 4 in the tubular element and through a correspondingly shaped and proportioned slot 5 formed in the sash A (Fig. 3).

Adjacent to the upper end thereof the tubular element 2 is provided with a second slot 6 through which an ear 7, fixed to the operating rod 3, passes. The ear 7 is approximately L-shaped, that is to say, the portion of said ear which extends through the slot 6 is arranged at an approximate right angle to the portion thereof which is located outside of the tubular element 2, and the last mentioned portion of the ear 7 is located parallel with and below the arm 1 fixed to the closure element H. 8 designates a link which is attached at its opposite ends to the arm 1 and ears 7, respectively, whereby movement of the operating rod 3 will be transmitted through said link to the closure element H.

Formed in the front face of the sash A adjacent to the slot 5 (Fig. 3) is a recess 9 in which a depressed plate 10 is seated. The plate 10 is provided with a marginal flange 10′ which contacts with the surface of the sash, as shown in Fig. 3, or, if desired, this flange may be countersunk in the face of the sash so that the same would be flush therewith. The recess 9 is cut away at its inner wall as designated by the reference character 11, said cut away portion being of such height with respect to the height of the recess 9 that a pair of shoulders 12 are provided at the top and bottom of the recess with which the inner wall of the depressed plate 10 contacts. The inner wall of the depressed plate 10 is provided with a slot 13 of the approximate length and width of the slots 4 and 5 already referred to herein, and the angularly extended portion 3′ of the operating rod 3 passes through said slot 13.

Associated with the angular portion 3′ of the operating rod 3 is a pair of plates 14 and 15 which are located at and in contact with the opposite sides of the inner wall of the depressed plate 10 (Fig. 3). The plates 14 and 15 are provided each with an aperture through which the portion 3′ of the operating rod 3 extends, and the plate 15 is prevented from moving in a direction away from the inner wall of the depressed plate 10 by a stop which may be in the form of a pin such as that designated by the reference character 16, which pin is extended through an aperture formed transversely through the portion 3′ of the rod 3. The plate 14 is interposed between the inner wall of the depressed plate 10 and an operating member, or grip, 17 mounted on the portion 3′ of the rod 3 at the outer end thereof, and this operating member or grip 17 is maintained in its proper inward position on said portion 3′ by a pin 18 which passes through said portion 3′. The plate 14 is approximately the same width as the depressed portion of the plate 10, and the plate 15 is of approximately the same width as the cut away portion 11, hence said plates 14 and 15 may be moved vertically within said depressed portion of the plate 10 and within the cut away portion 11, but will be prevented from swinging about the portion 3′ of the rod 3 because of contact of the side edges of said plates 14 and 15 with the side walls of the depressed portion of the plate 10 and the side walls of the cut away portion 11, respectively.

In view of the arrangement of the plates 14 and 15 with the inner wall of the depressed plate 10, it is obvious that said inner wall of the depressed plate 10 serves as a guiding member for the lower end of the operating rod 3. It is likewise plain that because the tubular element 2 is of greater width than the slots 4, 5 and 13, and because said tubular element is closed at its upper and lower ends, there is no opportunity for cold air to pass through said slots and into the room with which the sash A is associated.

In the operation of a ventilating sash equipped with my improved operating means, the closure element H may be adjusted to open or closed positions by merely moving the operating element or grip 17 vertically, and because said grip is located within the depressed portion of the plate 10 no part thereof, or of any other element of the operating means, protrudes outwardly beyond the sash so that it will interfere with the free movement thereof with respect to adjacent parts of the window structure.

To insure a weather-tight joint between the closure element H and adjacent portions of the sash A when said closure element is in a closed position, I employ means comprising a rod 19 having an inclined face 20 at its upper end. The rod 19 is supported for vertical movement by a bracket 21 (Fig. 4) fixed to the dividing bar X and located adjacent to the lower end of the rod 19 and a sleeve 22 extended through the dividing bar F. At the lower end thereof the rod 19 is provided with an operating element 23 between which and a portion of the bracket 21 a coil spring 21′ is arranged, which coil spring tends to force the

rod 19 downwardly. The rod 19 adjacent to its upper end is provided with a notch 24, and 25 designates a member fixed to the closure element H through which member 25 an aperture 26 is formed. When the closure element H is moved to the closed position and it is desired to insure a weather-tight joint between said closure element and the adjacent portions of the sash A, the rod 19 will be moved upwardly against the action of the coil spring. The inclined face 20 at the upper end of the rod 19 will contact with the wall of the aperture 26 formed through the member 25, and continued upward movement of said rod will cam said member 25, and with it the closure element H, rearwardly, so that the gasket P will be compressed to provide the desired weather-proof joint. When the rod has been moved upwardly a sufficient distance the portion of the member 25 adjacent to the aperture 26 will engage the wall of the notch 24, whereby the rod will be maintained in its elevated position against the action of the coil spring 21′ until forcibly released.

In Fig. 5 I illustrate a modified form of the invention in accordance with which the tubular member 2^a is arranged at the inner face of the sash A^a, instead of at the outer face of said sash as in the preferred construction of the invention. The tubular member 2^a is seated in a recess formed in the inner face of the sash A^a so that said tubular member will be flush with said inner face of the sash, and the operating rod 3^a has an arm 7^a fixed thereto which arm passes through an elongated opening 27 formed through the sash. The arm 7^a is connected to an arm 1^a fixed to the closure element H^a by means of a link 8^a, and upon vertical movement of the operating rod 3^a, corresponding movement will be imparted to the closure element.

I claim:

1. An operating device for a closure element mounted for movement at and with respect to the outer face of a window sash by which same is supported, comprising an operating member arranged at the outer face of said window sash, said operating member being connected to said closure member and being extended transversely through an elongated opening formed through said window sash to the face of said window sash opposite to the face thereof at which said closure element is located, said operating member at the latter face of the window sash being provided with an operating portion.

2. An operating device for a closure element mounted for movement with respect to a window sash by which same is supported, comprising an operating member arranged at the outer face of said window sash, said operating member being connected to said closure member and being extended transversely through an elongated opening formed through said window sash to the face of said window sash opposite to the face thereof at which said closure element is located, the operating portion of said operating member being arranged within a depression formed in the latter face of said window sash.

3. An operating device for a closure element mounted for movement at and with respect to the outer face of a window sash by which same is supported, comprising an operating member connected to said closure element and extended transversely through an elongated opening formed through said window sash to the face of the window sash opposite to the face thereof at which said closure element is located, and a hollow element enclosing and guiding said operating member, said hollow element being arranged to seal said elongated opening in the window sash to prevent passage of air therethrough.

4. An operating device for a closure element mounted for movement at and with respect to the outer face of a window sash by which same is supported, comprising an operating member connected to said closure element and extended transversely through an elongated opening formed through said window sash to the face of the window sash opposite to the face thereof at which said closure element is located, means for sealing said elongated opening to prevent passage of air therethrough, and guiding means for guiding the lower portion of said operating member.

5. An operating device for a closure element mounted for movement with respect to a window sash by which same is supported, comprising an operating member connected to said closure element and extended transversely through an elongated opening formed through said window sash to the face of the window sash opposite to the face thereof at which said closure element is located, a hollow element enclosing and guiding said operating member, said hollow element being arranged to seal said elongated opening in the window sash to prevent passage of air therethrough, and guiding means for aiding the guiding of the lower portion of said operating member.

6. An operating device for a closure element mounted for movement with respect to a window sash by which same is supported, comprising an operating member connected to said closure element and extended transversely through an elongated opening formed through said window sash to the face of the window sash opposite to the face thereof at which said closure element is located, a hollow element enclosing and guiding said operating member, said hollow element being arranged to seal said elongated opening in the window sash to prevent passage of air therethrough, and guiding means for aiding the guiding of

the lower portion of said operating member, the operating portion of said operating member being arranged within a depression formed in the inner face of said window sash.

In testimony that I claim the foregoing I hereunto affix my signature.

CHARLES H. HUCKE.