June 5, 1928. 1,672,655

B. N. PARMENTER

WINDOW VENTILATOR

Filed Jan. 9, 1928

Fig. 1.

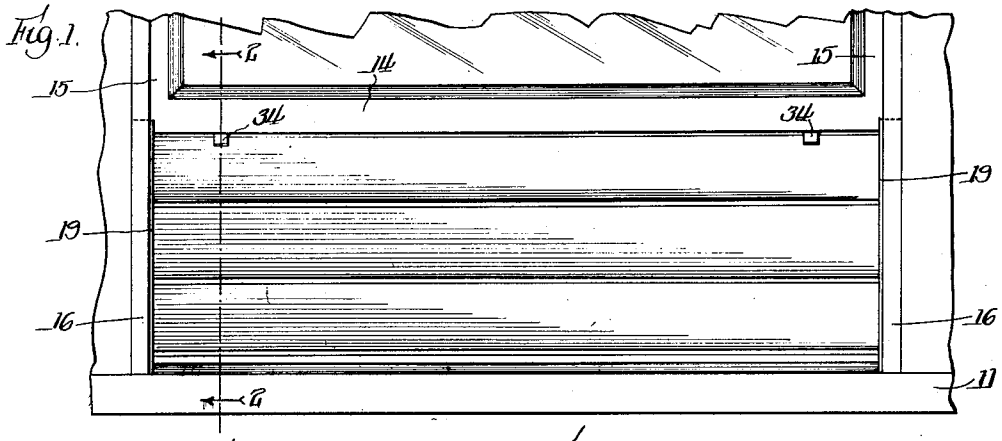


Fig. 2.

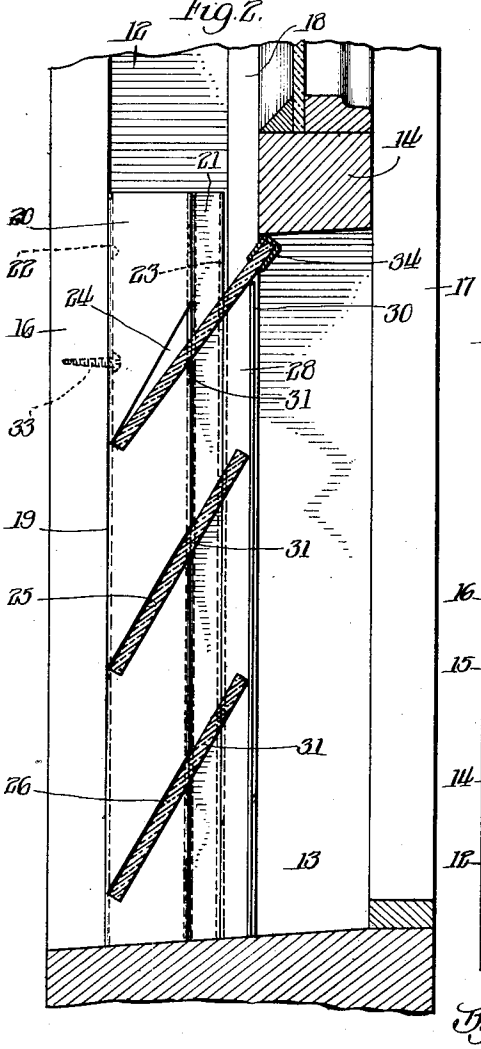


Fig. 3.

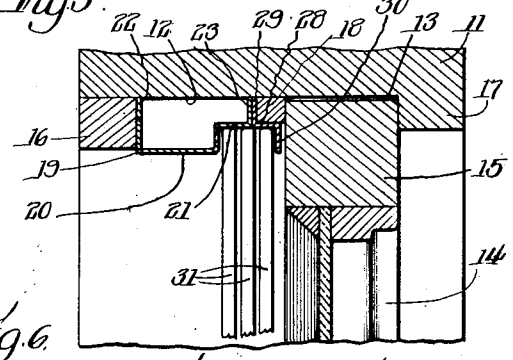


Fig. 6.

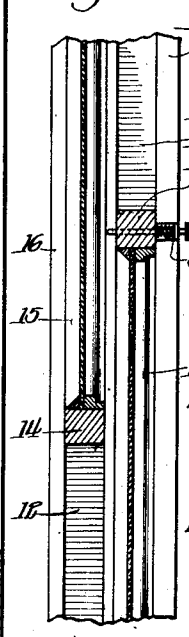


Fig. 4.

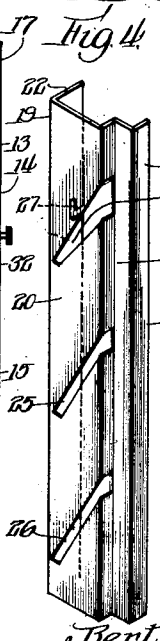
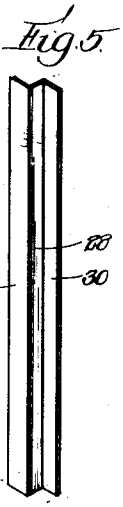


Fig. 5.



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UNITED STATES PATENT OFFICE.

BERT N. PARMENTER, OF LAKE FOREST, ILLINOIS.

WINDOW VENTILATOR.

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The present invention has for its salient characteristics the provision, in a window ventilator of the overlapping deflector slat type, of structural features which make for cheapness of construction, ease of installation and removal, the exclusion of rain, confinement to the exterior of the window, and security against unwarranted entry; associated with the highest degree of efficiency in the ventilation of the room from which the window opens.

Heretofore ventilators of this type have been complicated in arrangement of parts and designed for permanent association with the window frame or sash, the installation and removal requiring the services of a skilled workman. By my invention, the knock-down elements of the device may be readily assembled and disassembled with relation to the window opening by any householder in interfitting and interlocking relation without tools; and when installed they are proof against removal when the window is secured in ventilating position.

In order that the invention may be readily understood, together with its manufacture, and installation, and operation, I have in the following description predicated upon the accompanying drawings set forth by way of exemplification a preferred embodiment of the same. The description and drawings being purely illustrative, it is to be understood that they are not to be taken in an unnecessarily limiting sense, the invention being susceptible of modification by those skilled in the art without departure from the essence thereof as set forth in the appended claims.

In the drawing, to which reference is hereinafter made,

Fig. 1 is an interior elevational view of the lower part of a window with the ventilator in place;

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

Fig. 3 is a fragmentary horizontal section through one side of the window and ventilator with the slats removed;

Fig. 4 is a detail in perspective of one of the slat-retaining members;

Fig. 5 is a similar view of the slat-locking members; and

Fig. 6 is a fragmentary view illustrating one form of locking connection between the upper and lower sash members.

Having reference to the drawing, a window frame 11 is equipped with the usual facing guides 12 and 13 for the upper sliding sash and the lower sliding sash respectively, comprising rails 14 and stiles 15, the two sashes being confined within the guides by stops 16 and 17 and separated from each other by the usual stops 18. The foregoing description applies to any ordinary window of the double-hung sliding sash type.

The ventilator proper comprises three elements only, viz, a pair of slat-retaining side members, a pair of slat-locking members and a plurality of ventilating slats.

The slat-retaining side members 19 are of a length or height determined by the vertical extent of the ventilating opening desired. These side retaining members may be of wood or any desired material, solid or hollow, but are preferably made of sheet metal, as most clearly shown in Fig. 4, formed in stepped channel shape with stepped web portions 20 and 21 and having side flanges 22 and an intermediate flange 23 disposed at right angles to the web. The web face 20 of these retaining members is provided with a series of slots, here shown as three in number and designated by the reference numerals 24, 25 and 26. These slots have a substantial depth, attained in the case of sheet metal by extending the slots in the web portion 20 to the depth of the step and approximately to the plane of the web portion 21. These slots would be formed by a sheet metal worker with the material in the flat, the slots being punched and the metal thereafter bent to provide the stepped web 20, 21 and the angularly extending flanges 22 and 23. Advantageously, also, the member would be provided in one edge with the keyhole notch 27.

The pair of slat-locking members are preferably made of sheet metal formed of Z-cross section, most clearly shown in Fig. 5, and comprising a web 28 and oppositely extending flanges 29 and 30. These locking members may be coextensive in length with the retaining members but are preferably of a length corresponding to the distance from the bottom of the retaining members to the bottom of the upper slot 24.

The slats 31 are preferably formed of translucent material, light diffusing or transparent glass, although obviously they may be made of opaque material such as sheet metal or wood, all dependent upon the degree to which interference of light

through the ventilator is desirable. The slats are of a length corresponding to the distance between the bottoms of the opposed slots or between the opposed web portions 21 of the retaining members 19 when the latter are disposed in the corresponding guides 12 on opposite sides of the window opening, and are of a width sufficiently greater than the length of the slots that their upper edges will overlie the web portions 21 and extend beyond the same a slight distance in overlapping relation to the sash-separating stops 18.

Sash guides and stops are of standard widths and heights, dependent upon the window area and the light or heavy character of the window frame and sash. The slat-retaining side members may therefore be formed up in stock sizes to corresponding to these graded standards. Assuming that a certain window opening is to be equipped with the ventilator of this invention, the complete equipment comprises two of the slat-retaining side members, two slat-locking members and slats corresponding in number to the slots in the side members, all of a stock size to interfit with each other and to fit the window opening.

First, the two retaining members 19 are placed in the outer guides with their slotted faces opposed to each other. Second, the slats are dropped into the slots from the inside through the upper open ends thereof, the lower edges finding a seat against the flanges 22. Third, the flange 29 of each locking member is pressed into the space between the inner flange 23 of the retaining member and the adjacent side face of the stop 18, in which position the web 28 of the locking member overlies the front face of the stop 18 and the flange 30 engages the upper inner edges of the slats 31 in overlapping relation.

The installation of the ventilator is now complete and it may be disassembled by a reversal of the steps just enumerated. In will be observed that the retaining members 19 are securely held in place by the transverse bracing effect of the slats 31, and the slats 31 are, in turn, held in place by the overlapping relationship of the locking flange 30. No tools have been required for installation or removal.

If it be desired to modify the interference with air currents entering the room, one or more of the slats 31 may be removed from its place and the ends seated within the opposed pockets formed by the opposed faces of the webs 21 and 28 as illustrated in Fig. 3. Upon occasion where the entry of air is desired to be unobstructed over a period of time, all of the slats 31 may be stored as above described and illustrated instead of dismantling completely and storing the parts in a closet or elsewhere.

The ventilator, as heretofore described, is complete in itself and is secure against accidental displacement or disarrangement. Air currents from without are deflected upwardly through the space between overlapping slats to the upper portion of the room so that papers lying upon a table adjacent the window or the occupant of a bed disposed close to the window are not subject to a draft.

Better exclusion of rain is accomplished by a slight modification of the structure thus far described, the upper slot 24 having its walls slightly diverging to form an upwardly flaring slot, the lower wall being slightly out of parallel with and of less inclination than the corresponding walls of the slots 25 and 26. This permits the upper inner edge of the slat to swing, from a position parallel to the other slats with its inner edge clearing the path of the sash rail 14, to a position overlapping the guideway of the sash. It follows that when the sash 14 is lifted to the position shown in Fig. 2, the extreme edge of the upper slat will drop to a position beneath the sash rail. Any rain beating upon the sash and flowing downward will be carried by the outer face of the slat away from the window opening.

The construction last described also provides an additional safeguard against unwarranted entry or tampering with the ventilator. Not only are the retaining strips held in place by the bridging effect of the slats 31, and the slats held in place by the flange 30 of the locking strips, but the upper slat overlies the upper end of the flange 30 and is, in turn, overlain by the sash 14. Obviously none of the elements of the ventilator can now be moved unless the window sash 14 be raised out of engagement with the upper edge of the ventilating slat 31. However, unauthorized raising of the cash to release the slat is precluded by an ordinary sash lock 32 mounted on the inside of the inner sash rail 14 and engaging within a recess of the outer sash stile 15 as indicated in Fig. 6.

Although not necessary to the security of the window ventilator against accidental or unwarranted displacement, the parts will be steadied during installation and additional security may be obtained by a screw seated in the guideway 12, the head 33 of the screw interlocking with the keyhole notch 27 in the flange 22 of the slat-retaining member. The screw would be permanently seated in the window stop and the engagement and disengagement would be effected by simply moving the retaining member into and out of its position in the guide.

To cushion the sash rail and prevent injury to the slat or the painted surface of the sash, the edge of the slat may be fitted with a rubber or metallic saddle clip 34.

From the foregoing it will be appreciated that I have devised a window ventilator peculiarly adapted for hospital and residence purposes, which is entirely exterior to the plane of the inner window sash, which will not interfere in any way with draperies and window shades, sightly, effective in excluding rain and snow and in directing air currents to the upper room space away from a floor location in front of the window; a device comprising few simple elements adapted to economical manufacture and for ready installation and removal by anyone without tools and yet proof against unwarranted displacement and unlawful entry even when the window sash is in open ventilating position.

I claim:

1. The combination with a window including sash, sash guides, and stops, of a ventilator comprising a pair of slat-retaining members for seating in the guides between the stops, the opposed faces of said members provided with diagonally extending slots, slats bridging the window opening with their ends seated in the slots, and slat-locking members seated between the edges of the retaining members and the adjacent stops and engaging over the upper inner edges of the slats, whereby the retaining members are held in the guides by the slats and the slats are held in engagement with the retaining members by the locking members.

2. The combination with a window including sash, sash guides, and stops, of a ventilator comprising a pair of slat-retaining members for seating in the guides between the stops, the opposed faces of said members provided with diagonally extending slots, slats of greater width than the lengths of the slots and bridging the window opening with their ends loosely seated in the slots and their upper edges extending beyond the slots and overlapping the adjacent stops, and slat-locking members comprising Z-section strips having one flange seated between the edges of the retaining members and the adjacent stops with the web overlying the stop and the other flange engaging over the upper inner edges of the slats, whereby the retaining members are held in the guides by the slats and the slats are held in engagement with the retaining members by the locking members.

3. The combination with a window including double-hung sash, inner and outer sash guides and stops, of a ventilator comprising a pair of slat-retaining members for seating in the outer guides between the stops, the opposed faces of the said members provided with diagonally extending vertically overlapping slots, light-transmitting slats bridging the window opening with their ends seated in the slots, and slat-locking members seated between the edges of the retaining members and the adjacent stops and engaging over the upper inner edges of the slats, whereby the retaining members are held in the guides by the slats and the slats are held in engagement with the retaining members by the locking members.

4. The combination with a window including double-hung sash, inner and outer sash guides and stops, of a ventilator comprising a pair of slat-retaining members for seating in the outer guides between the stops, the opposed faces of the said members provided with diagonally extending vertically overlapping slots, light-transmitting slats of greater width than the lengths of the slots and bridging the window opening with their ends loosely seated in the slots and their upper edges extending inwardly beyond the slots and overlapping the adjacent stops, and slat-locking members comprising Z-section strips having one flange seated between the edges of the retaining members in the adjacent stops, with the webs overlying the stops and the other flange engaging over the upper inner edges of the slats, whereby the retaining members are held in the guides by the slats and the slats are held in engagement with the retaining members by the locking members.

5. The combination with a window including double-hung sliding sash, inner and outer sash guides and stops, of a ventilator comprising a pair of slat-retaining members for seating in the outer guides between the stops, the opposed faces of the said retaining members provided with diagonally extending vertically overlapping slots, transparent slats of greater width than the length of the slots and bridging the window opening with their ends loosely seated in the slots and their upper edges extending inwardly beyond the slots and overlapping the adjacent stops, and slat-locking members comprising Z-section strips having one flange seated between the edges of the retaining members and the adjacent stops with the webs overlying the stops and the other flange engaging over the upper inner edges of the slats, the upper slot being of such inclination as to permit the upper inner edge of the slat to extend inwardly beyond the stops and to overlie the inner guides beneath the inner sash when raised, whereby the retaining members are held in the guides by the slats and the slats are held in engagement with the retaining members by the locking members, and the locking members are held against displacement by the inner sash.

6. The combination with a window including double-hung sliding sash, inner and outer sash guides and stops, of a ventilator comprising a pair of slat-retaining members for seating in the outer guides between the stops, the opposed faces of the said retaining

members provided with diagonally extending vertically overlapping slots, transparent slats of greater width than the length of the slots and bridging the window opening with their ends loosely seated in the slots and their upper edges extending inwardly beyond the slots and overlapping the adjacent stops, and slat-locking members comprising Z-section strips having one flange seated between the edges of the retaining members and the adjacent stops with the webs overlying the stops and the other flange engaging over the upper inner edges of the slats, the upper slat being of upwardly inwardly flaring shape and having its lower wall at a less inclination than the other slots to permit the upper inner edge of that slat to extend inwardly beyond the stops and overlie the inner guide in the path of the inner sash when raised and lowered, whereby the retaining members are held in the guides by the slats and the slats are held in engagement with the retaining members by the locking members, the upper slat being permitted to ride against the lower sash when being raised and to drop beneath said sash when raised and to be held by the raised sash against displacement, and means for locking the sash in its raised ventilating position.

7. The combination with a window including sash, sash guides, and stops, of a ventilator comprising a pair of slat-retaining member for seating in the guides between the stops, the opposed faces of said members provided with diagonally extending slots, slats bridging the window opening with their ends seated in the slots, and slat-locking members seated between the edges of the retaining members and the adjacent stops and engaging over the upper inner edges of the slats, whereby the retaining members are held in the guides by the slats and the slats are held in engagement with the retaining members by the locking members, one of the slat-retaining members having a notched opening to its bottom concealed side, a screw or the like with its head disposed between the stops and adapted to interlock with the notch in the retaining member when the latter is inserted in the guide, whereby to prevent vertical displacement of the retaining member.

8. The combination with a window including sash, sash guides, and stops, of a ventilator comprising a pair of slat-retaining members for seating in the guides between the stops, the opposed faces of said members stepped to provide primary and secondary web portions in different planes, the primary web portions provided with diagonal slots extending in depth to the planes of the secondary web portions, slats bridging the window opening with their ends seated in the slots and overlying the secondary web portions, and slat-locking members comprising Z-section strips having one flange seated between the edges of the retaining members and the adjacent stops with the webs overlying the stops and the other flange engaging over the upper inner edges of the slats, whereby the retaining members are held in the guides by the slats and the slats are held in engagement with the retaining members by the locking members, the secondary web portions of the retaining members lying in substantially the same plane as the web portions of the locking members whereby to provide between the said web portions on opposite sides of the window opening a receptacle for one or more of the slats when removed from the slots.

In testimony whereof I have hereunto subscribed my name.

BERT N. PARMENTER.