G. W. STEIN.

COMBINED WINDOW VENTILATOR AND SCREEN.

APPLICATION FILED NOV. 24, 1917.

1,273,288.

Patented July 23, 1918.

2 SHEETS—SHEET 1.

FIG. 1.

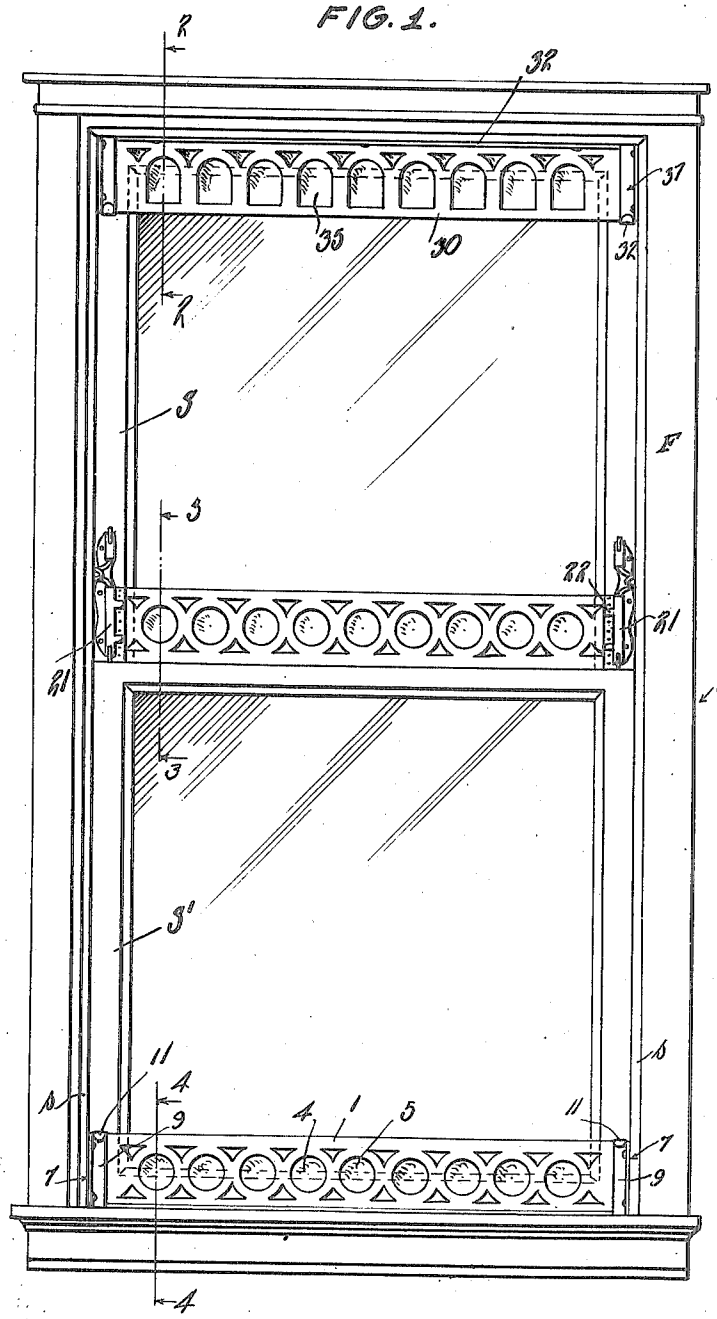


FIG. 2.

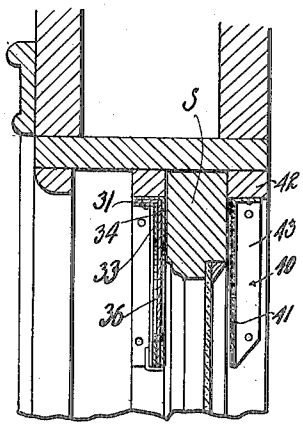
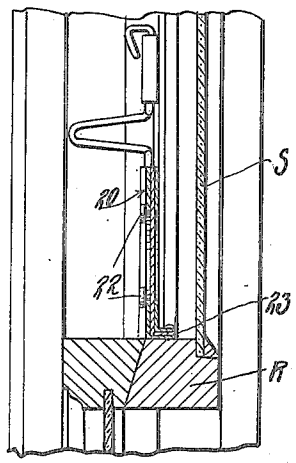


FIG. 3.



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2 SHEETS—SHEET 2.

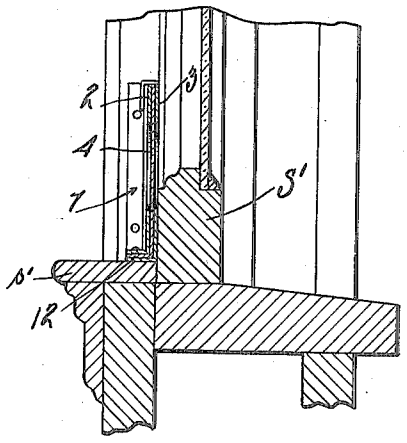


FIG. 4.

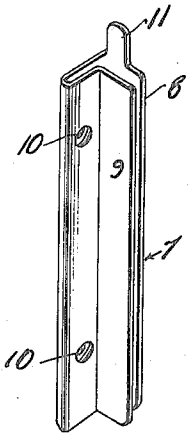


FIG. 5.

FIG. 6.

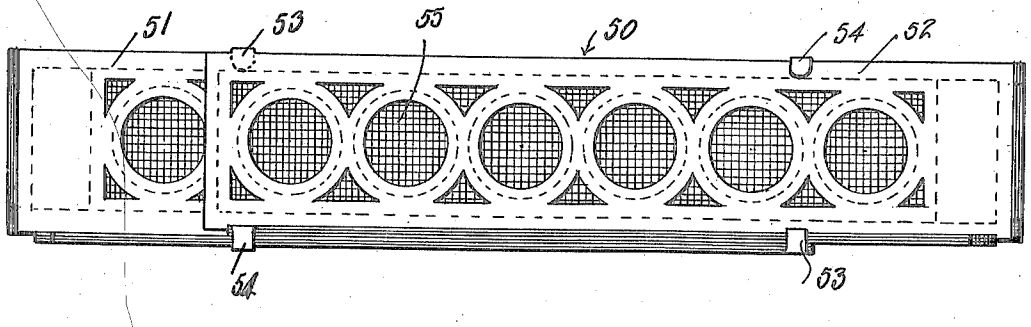


FIG. 7.

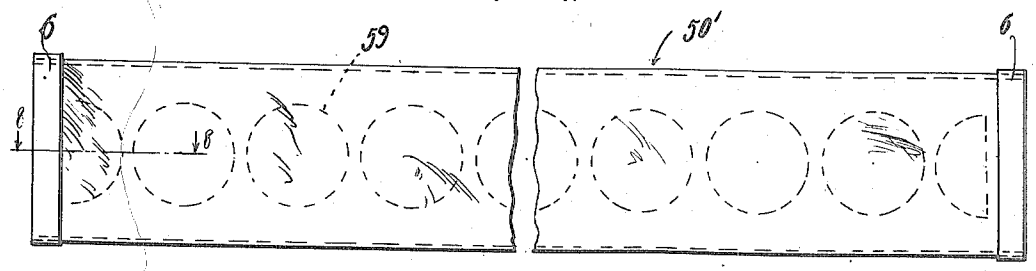
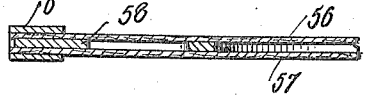


FIG. 8.



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COMBINED WINDOW VENTILATOR AND SCREEN.

1,273,288. Specification of Letters Patent. Patented July 23, 1918.

Application filed November 24, 1917. Serial No. 203,752.

To all whom it may concern:

Be it known that I, GEORGE W. STEIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Combined Window Ventilators and Screens, of which the following is a specification.

This invention relates to ventilators for windows.

The object of the invention is to provide a ventilator of this character so constructed as to be used for both top and bottom window sash and on either the inside or the outside thereof or both, and also as a screen.

Another object is to construct ventilators of this character which will seat snugly against the window sash to provide for the opening of either the top or bottom sash or both without danger of dust and insects entering between the ventilator and the sash.

Another object is to provide a protector and ventilator for the center of the window to prevent the entrance of dust and insects when either sash is opened.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein described may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings:—

Figure 1 represents a front elevation taken from the inside of a window equipped with this improved ventilator,

Fig. 2 is a transverse section taken on the line 2—2 of Fig. 1,

Fig. 3 is a similar view taken on the line 3—3 of Fig. 1,

Fig. 4 is a similar view taken on the line 4—4 of Fig. 1,

Fig. 5 is a detail perspective view of one of the ventilator guides,

Fig. 6 is a front elevation showing a slightly different form of the ventilator on an enlarged scale,

Fig. 7 is a similar view with parts broken out of still another form of the ventilator, and

Fig. 8 is a detail sectional view taken on the line 8—8 of Fig. 7.

In Fig. 1 a window W of ordinary construction is shown including the usual frame F with the upper and lower sash S and S′ mounted to slide therein in the usual manner and which may be held in raised or lowered position by any suitable means.

In Fig. 1 the window W is shown equipped with ventilators constructed in accordance with this invention applied to both the upper and lower sash at their top and bottom, respectively, and to the center of the window where the sash rails of the upper and lower sash meet. These ventilators may be of any desired pattern, the bottom ventilator 1 and the intermediate ventilator 20 being here shown of the same pattern, while the top ventilator 30 is of a different pattern, the structure of all being the same.

The ventilator 1 which is shown mounted on the inside of the window at the bottom thereof is composed of two sheets of material 2 and 3, which may be of card-board, thin sheet metal or any other thin material. These sheets are made of the same width and length and are each provided with a plurality of ventilating openings shown at 4 which may be of any desired configuration, the openings in the two plates being preferably arranged to register with each other and permit the passage of air through a foraminous member 5 which is positioned between these plates and secured in any suitable manner, preferably by stitching, although obviously any other means may be employed for this purpose. This fabric 5 may be of cheese cloth, or any loosely woven fabric and fine mesh wire is sometimes found desirable for this purpose, said wire being shown in the form illustrated in Fig. 6. These ventilating strips 1 may be manufactured and sold in rolls if found desirable and when fitted to a window are measured off in lengths corresponding to the distance between the strips *s* carried by the inner faces of the side members of the frame. After being so measured they are cut transversely and the ends thereof are preferably finished by metal strips such as those shown at 6 in Fig. 7, although these strips need not necessarily be employed. Carried by the side strips *s* at each side of the frame are ventilator guides 7 shown in detail in Fig. 5. These guides are constructed of sheet metal plates folded longitudinally to provide inner and outer members 8 and 9 which are spaced laterally apart a sufficient distance for the passage between them of

the ends of the ventilator strips, said folded plates being bent at right angles to each other longitudinally as shown clearly in Fig. 5 and one member thereof apertured as shown at 10 to receive fastening screws for connecting the guides to the side strips *s* as is shown clearly in Figs. 1 and 4. The free edges of the plates 8 and 9 which are spaced apart to receive the end of the ventilator strip 1 open inwardly, said plates being of a length corresponding to the width of the strip 1. One of these plates is provided at its upper end with a pliable lug or finger 11 which is adapted to be bent downwardly over strip 1 after the ends thereof have been inserted between the plates 8 and 9 thereby securely clamping the strip in operative engagement with the guides as is shown clearly in Fig. 1.

In applying this ventilator, the guides 7 are first positioned on the side strips *s* in close proximity to the lower sash S' and are secured to said side strips by fastening screws which are passed through the apertures 10 in the guides. The ventilator strip 1 is then inserted in said guides and the pliable fingers or lugs 11 bent downwardly over its upper edge. When so positioned the strip 1 which is of very thin construction will lie close against the inner face of the lower sash and thus effectively operate to prevent the entrance of dust between the sash and the ventilator when the sash is raised, it being understood that the sash is never raised above the upper edge of strip 1 except under extraordinary conditions, that is, when a person desires to lean out of a window or for some other purpose.

The foraminous fabric 5 which is clamped between plates 2 and 3 may be of any desired color and preferably matches the shades used, although obviously if desired it may be made to match the painting of the window frame to which it is applied. While this bottom ventilating member 1 is here shown applied to the inner face of the window, it obviously may be equally well used on the outer face of the window, the window then sliding against the inner face of the ventilator strip instead of against its outer face.

This strip 1 is provided along its lower edge with a laterally extending flange 12 which is designed to fit snugly against the upper face of the window sill *s'* as shown in Fig. 4 and to be secured thereto by tacks or other suitable fastening elements which may be readily removed when it is desired to change the pattern of the ventilator or to provide a new one for any reason.

The ventilator 30 which is disposed at the top of the window frame is constructed exactly like the lower ventilator 1 except that the openings 35 therein are of a different configuration from those shown in the ventilator 1 and the flange 31 thereof instead of being on the lower edge of strip 30 is on its upper edge and is of course secured to the inner face of the upper portion of frame 1 as is shown clearly in Fig. 2, said flange being secured to said frame by tacks or other fastening elements. The ventilator guides 37 arranged at opposite sides of the frame are exactly the same in construction as those shown at the lower end of the frame, except that they are arranged in reverse position so that the fingers 32 are disposed downwardly and are bent upwardly around the lower edge of the ventilator strip to hold it in engagement with the guides.

In Fig. 2, two of these ventilators are shown, one being arranged on the inner side of the window and the other on the outer side. When used on the inner side of the window the plates 33 and 34 between which the straining or foraminous fabric is clamped are preferably constructed of card-board. The ventilator 40 shown in Fig. 2, which is arranged outside the window is constructed of a perforated metal plate 41 having a right-angular flange 42 at its upper edge for connection with the window frame and end flanges as 43 for connection to the side bars of the frame and which is secured to said frame in close proximity to the upper sash S so that all danger of insects entering between the ventilator and the sash is obviated.

The intermediate ventilator 20 shown in Fig. 1 is designed to be mounted in guides 21 which here constitute a portion of the sash locking devices, although obviously they need not necessarily be so formed. These guides 21 have laterally extending fingers 22 between which the ventilator ends are designed to be inserted. As shown in Fig. 3, this ventilator 20 is carried by the lower rail R of the upper sash S, being provided with a laterally extending flange 23 which is fastened to the sash rail by tacks or other suitable fastening elements. It will thus be seen that when the upper sash is lowered or the lower sash raised this ventilator 20 will operate to effectively close the space between the two sashes and prevent all possibility of dust, dirt or insects entering at this point.

In the form shown in Fig. 6 an extensible ventilator 50 is illustrated, being composed of two telescopically engaged sections 51 and 52 which slide longitudinally on each other in overlapping relation, one being provided with inturned ears 53 and the other with similar ears 54 which form guides for the two sections in their movement toward and away from each other. By so constructing this ventilator it may be fitted to windows of varying widths which is especially desirable when the plates from which the ventilator is constructed are

made of metal. The foraminous fabric used in this form of the invention is shown as screen wire 55 which may be of any suitable or desired mesh.

In the form shown in Fig. 7, foraminous fabric sheets 56 and 57 are shown arranged on a supporting and reinforcing frame 58, being held at their ends in engagement with said frame by the metal strips 6, said frame having openings shown in dotted lines at 59 for the passage of air. This ventilator is applied in the same manner as that shown in Figs. 1 to 4, and no further description thereof is thought necessary.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains and while I have described the principle of operation of the invention together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes may be made as are within the scope of the claimed invention.

I claim:—

The combination with a window frame having vertically movable sash, of guides secured to opposite sides of said frame at its upper and lower ends, said guides each including inwardly opening laterally spaced plates, ventilators having their ends adapted to be inserted between said plates, and pliable fingers carried by said plates to be bent into engagement with said ventilators.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE W. STEIN.

Witnesses:

GEORGE W. AUGUSSTEIN,

ROBERT P. ROLLO.