Dec. 25, 1951 M. E. ACHLER ET AL 2,580,268

WINDOW VENTILATOR

Filed Nov. 7, 1947 2 SHEETS—SHEET 1

Fig. 1

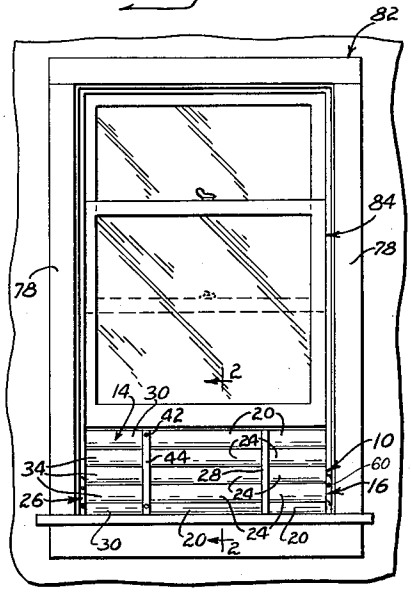


Fig. 2

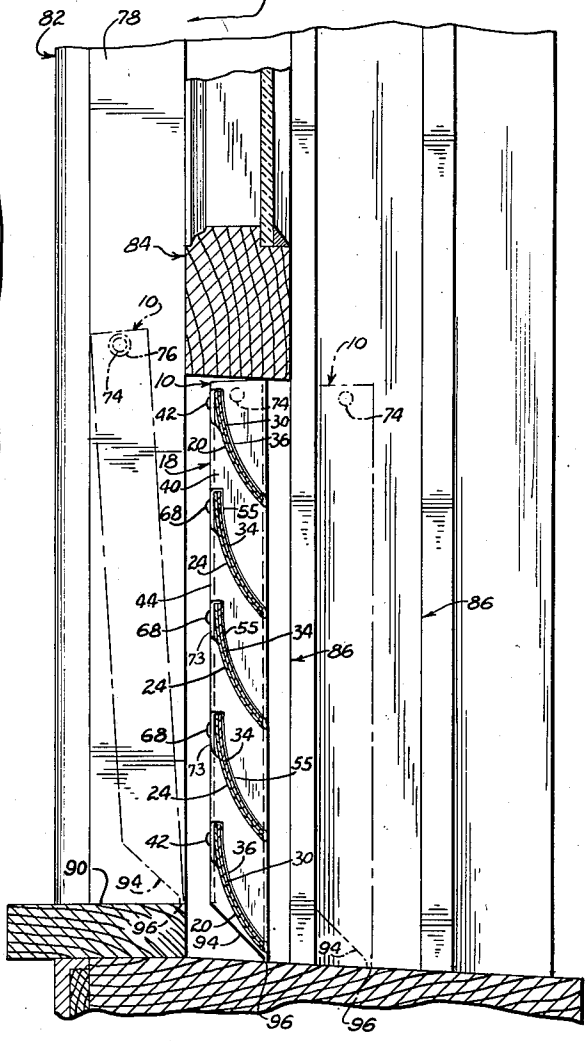


Fig. 4

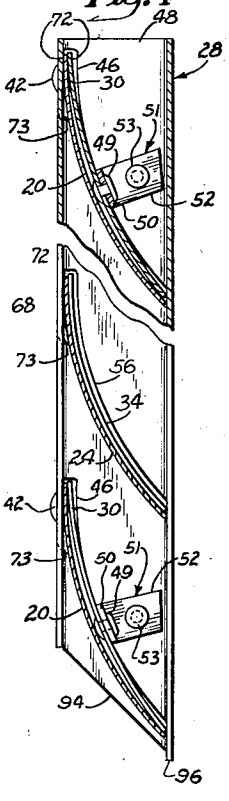


Fig. 5

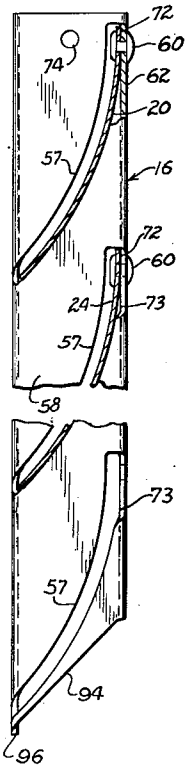
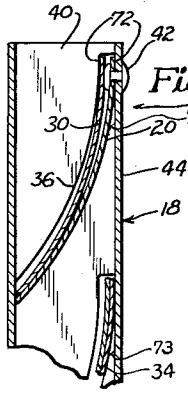


Fig. 6



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Fig. 3

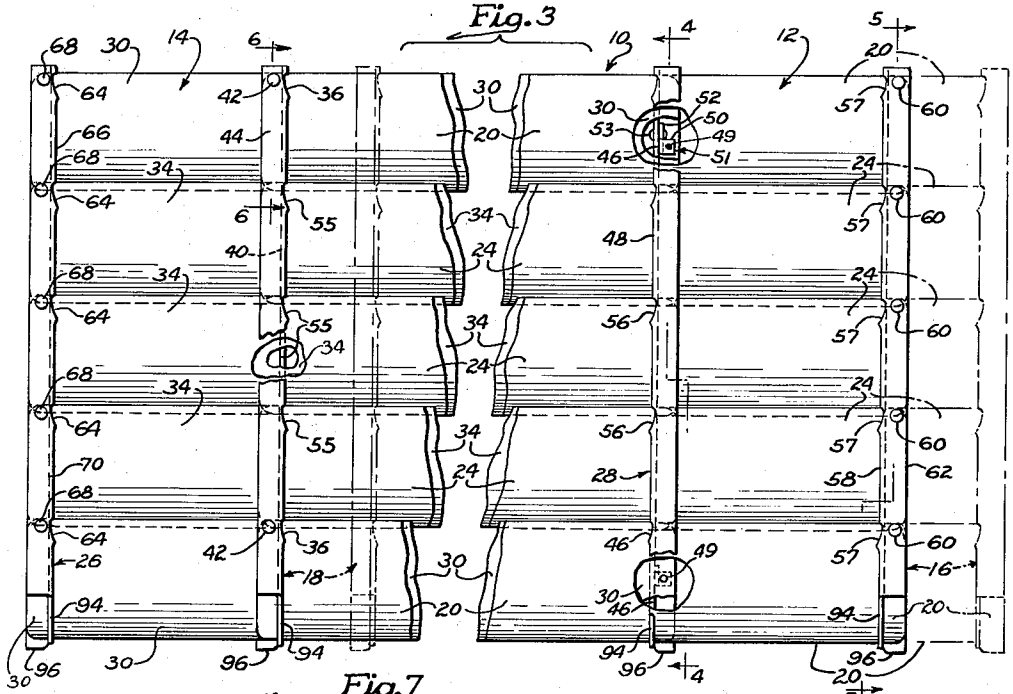


Fig. 7

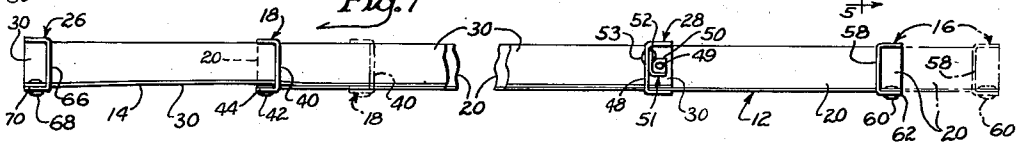


Fig. 8

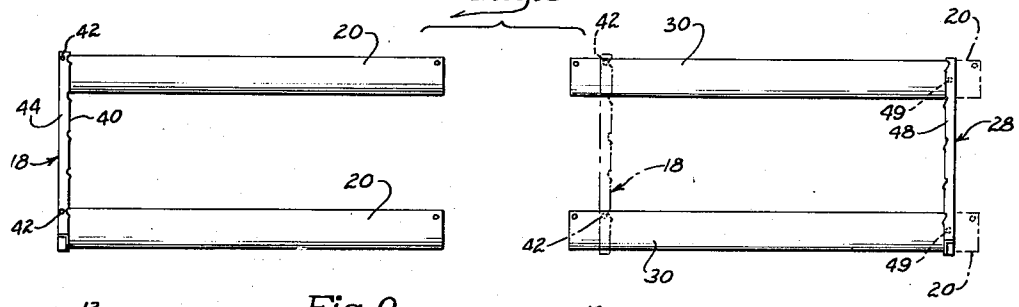
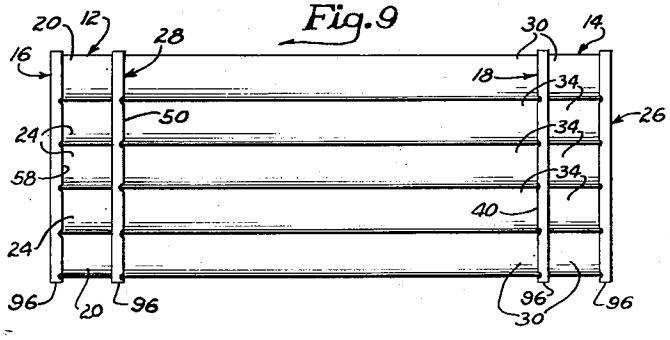


Fig. 9



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WINDOW VENTILATOR

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Application November 7, 1947, Serial No. 784,590

1 Claim. (Cl. 160—223)

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This invention relates to window ventilators.

The conventional type of window ventilator commonly in use comprises a rectangular glass panel whose ends are slidably fitted in upwardly and inwardly inclined channels extending from brackets fastened to the lower inner end portions of the window frame stiles. Such a panel is, of course, rather expensive and fragile, requires special brackets, is not adjustable and hence must be custom made to fit the particular width of window frame, and admits air only in a single upwardly inclined stream between it and the window sash, such stream being oftentimes too remote from the occupant of the room to do him much good.

It is an object of our invention to provide a ventilator of the character referred to free of one or more of the foregoing objections.

It is another object of our invention to provide a ventilator constructed to produce a substantially greater draft than is obtainable with the conventional ventilator.

Another object is to provide a ventilator adapted to be held in place by a window sash.

A further object is to provide a ventilator which is adapted to be interchangeably mounted in, or in planes other than, the plane of a window sash.

It is also an object to provide a ventilator which is readily adjustable to fit window frames of different widths.

Further objects and advantages of our invention will appear as the description proceeds.

The invention will be better understood upon reference to the following description and the accompanying drawings, showing an illustrative form of the invention and wherein:

Fig. 1 is an inside view of a ventilator constructed in accordance with our invention and installed in service in assembly with a window.

Fig. 2 is an enlarged fragmentary sectional view taken as indicated by the line 2—2 in Fig. 1 and showing our ventilator in full lines held in place by a window sash and in dash-dot lines in two other possible positions.

Fig. 3 is an enlarged view of the ventilator as shown in Fig. 1.

Figs. 4, 5 and 6 are enlarged sectional views taken as indicated by the lines 4—4, 5—5 and 6—6 in Fig. 3.

Fig. 7 is a top plan view of Fig. 3.

Fig. 8 is an inside elevational view showing two parts of the ventilator before and after assembly.

Fig. 9 is an outside elevational view of the ventilator.

Referring now more particularly to the drawings, there is shown at 10 a ventilator embodying features of our invention and comprising a pair of similar generally rectangular telescopically connected sections or shutters 12 and 14. The shutter 12 may comprise outer and inner end rigid channel brackets 16 and 18, bridged by top and bottom slats or vanes 20 and intermediate slats or vanes 24. The shutter 14 may comprise outer and inner end rigid channel brackets 26 and 28, bridged by top and bottom slats or vanes 30 and intermediate slats or vanes 34.

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The shutters 12 and 14 may be constructed and assembled as follows. Each channel bracket is formed with a series, say five, of preferably substantially arcuate openings for the reception of the several slats. As shown in Fig. 8, two slats 20 are passed respectively through the top and bottom arcuate openings 36 in the web 40 of the inner end bracket 18 of the shutter 12 (Fig. 2) and an end of each such slat is secured as at 42 to the inside flange 44 of said bracket; and, as shown in Figs. 3, 4 and 7, two slats 30 are passed respectively through the top and bottom arcuate openings 46 in the web 48 of the inner bracket 28 of the shutter 14, an end of each such slat 30 being secured as at 49 preferably to the leg 50 of an angle bracket 51, the other leg 52 of which is secured as at 53 to the web 48. The free ends of the slats 20 and then passed through the openings 46 in the web 48 of the channel bracket 28 at the same time that the free ends of the slats 30 are passed through the openings 36 in the web 40 of the channel bracket 18, as indicated at the right in Fig. 8, so that the slats 20 are respectively overlapped with the slats 30, the slats 20 being placed in front. Now the intermediate slats 24 are passed similarly to the slats 20 but through the intermediate arcuate openings 55 and 56 in the webs of the inner brackets 18 and 28, respectively, and the intermediate slats 34 are passed similarly to the slats 30 but through the intermediate openings 56 and 55, respectively, of the inner brackets 28 and 18. All of the slats 20 and 24 are then passed through the arcuate openings 57 in the web 58 of the outer end bracket 16 and the ends of said slats secured as at 60 to the inside flange 62 of said bracket. All of the slats 30 and 34 are passed through arcuate openings 64 in the web 66 of the outer end bracket 26 and the ends of said slats secured as at 68 to the inside flange 70 of said bracket. Of course, the sequence of assembly may be varied.

The sliding friction between the slats of the respective shutters is preferably such that self-adjustment, as when the ventilator is suspended

vertically, is insured against, but the ventilator can be manually adjusted. The slats may be initially flat and manually bowed to fit in the various web openings, but it is preferred to initially permanently set them into transversely bowed form so that they can be readily slipped into such openings. The upper margins **72** of each set of the slats preferably lie in substantially the same plane, which is preferably parallel to the median plane of the ventilator. The upper outer end portions of the arcuate openings are offset at **73** for that purpose. The various slats may be stiff or resilient, as desired, and the various web openings are preferably generally arcuate, substantially as shown. The web openings in each bracket are cut so that their respective ends are in parallel lines, and also so that the slats fitted therein overlap slightly, in an up-and-down respect, to preclude the outside air from entering the room in a horizontal path, even when the median plane of the ventilator is somewhat inclined to the vertical. The outer end brackets **16** and **26** may be formed with holes **74**, preferably in the upper ends of their webs **58** and **66**, respectively, to receive nails, screws or the like **76** for fastening the ventilator to the stiles **78** of a window frame **82**.

The ventilator constructed in accordance with our invention is telescopic and hence capable of adjustment to fit windows of various widths. When disposed in the plane of the window sash **84** with the outer end brackets **16** and **26** disposed in the stile grooves **86**, the ventilator may be held in place by the window sash, or the ventilator may rest in either stile groove at any desired angle independently of either window sash. When disposed on the window sill **90** within the window casing, the ventilator may be secured to the casing vertically or at any desired inclination. The bottoms of the brackets are preferably bias cut, as shown at **94**, providing a fulcrum in the form of a series of alined bracket flange edges **96** adapted to firmly grip the surface on which the ventilator rests and to allow the ventilator readily to be tilted about such fulcrum to the desired inclination.

The echelon arrangement of the slats provides for the incoming air a plurality of rising paths or flues of gradually increasing slope and decreasing size, diverting the air upward and hence away from immediate contact with occupants of the room, the air issuing from each flue exerting suction on the air at the outlets of the immediately adjacent flues, so that all of the air is accelerated into the room.

The slats may be made of steel or aluminum or other suitable metal, or of wood, plastic or other suitable material, having any desired finish and color. The brackets may be made of metal or other suitable material. The slats are preferably secured to the brackets by rivets, as shown, but may be spot-welded or otherwise secured thereto.

Various modifications coming within the spirit of our invention may suggest themselves to those skilled in the art, and hence we do not wish to be limited to the specific form shown or uses mentioned, except to the extent indicated in the appended claim, which is to be interpreted as broadly as the state of the art will permit.

We claim:

A rectangular window ventilator having air inlet and discharge faces and comprising shutters telescopically connected together for adjustment to fit windows of different widths, each shutter comprising two end brackets, one being disposed between the end brackets of the other shutter, the outermost end brackets being channels, the flanges of each channel extending away from the other channel, each of the innermost end brackets having a web and a flange, the webs of all of said brackets having successively overlapping series of arcuate openings arranged in echelon and respectively in register with the arcuate openings in the other webs, each shutter having transversely concavo-convex slats extending through its openings, all of said slats being of gradually increasing slope upward toward said discharge face of the ventilator, an end of each slat of each shutter terminating within and secured to one of said channels, the other end of each of the top and bottom slats of each shutter terminating within and being secured to the innermost end bracket of the same shutter, the slats of each shutter slidably passing through the openings in the innermost end bracket of the other shutter, the tops of said brackets being normal to the axes of said brackets, the bottoms of all of said brackets being mitered so as to provide alined bottom edges defining a fulcrum to facilitate tilting of the ventilator to a vertical or inclined position in a window frame.

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