March 14, 1933. A. D. MEISELBACH 1,901,114

VENTILATOR

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Fig. 1.

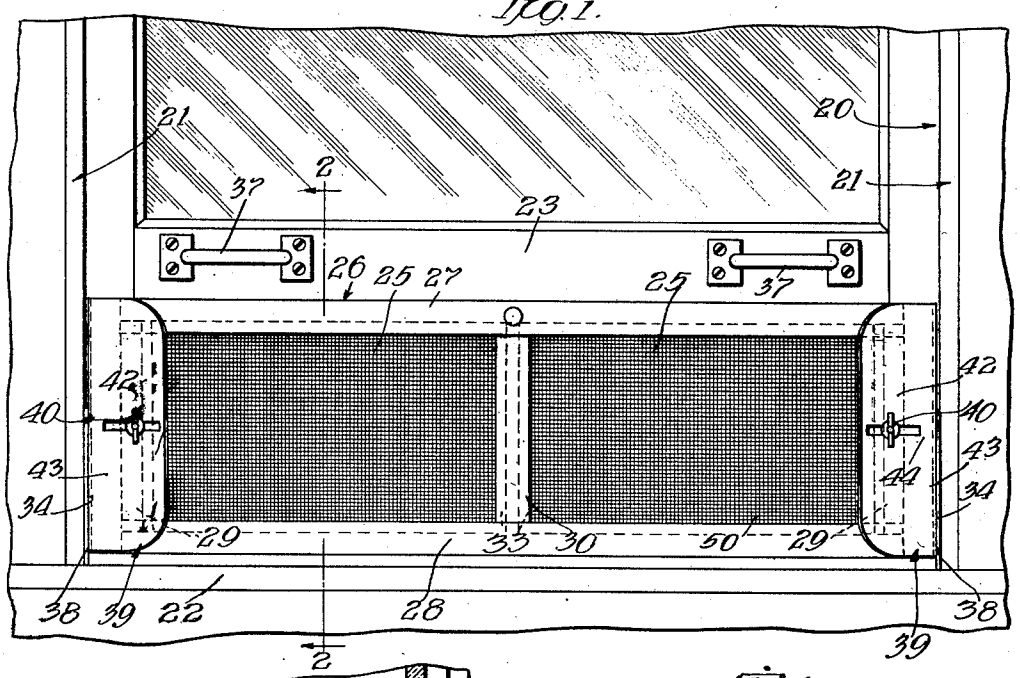


Fig. 2.

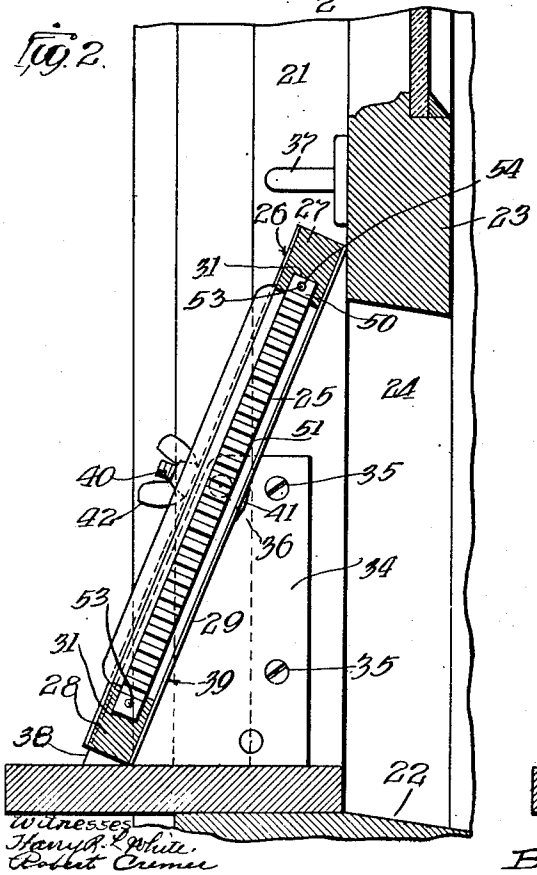
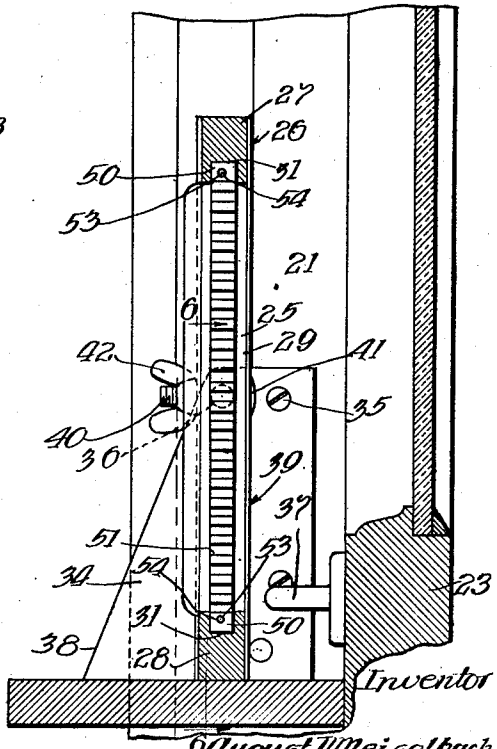


Fig. 3.



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VENTILATOR

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Fig. 4.

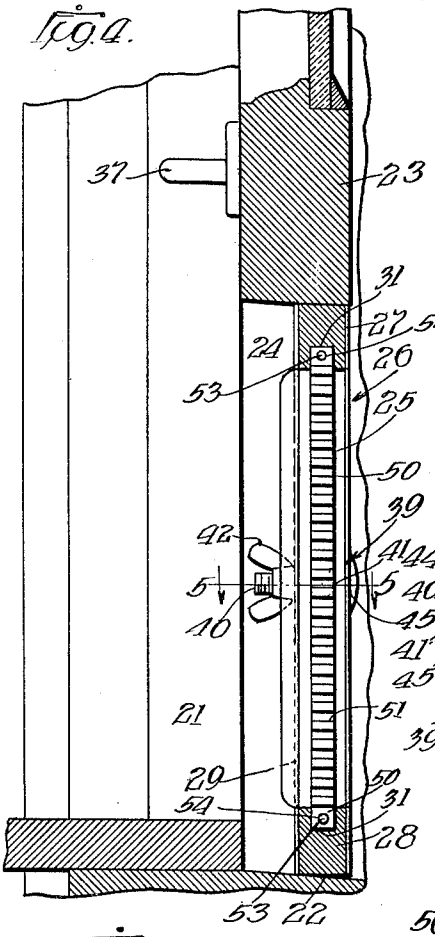


Fig. 5.

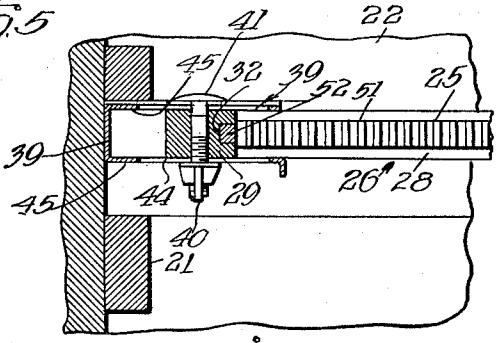


Fig. 7.

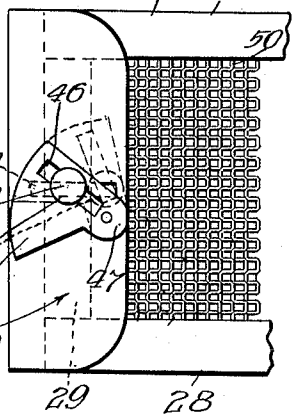


Fig. 10

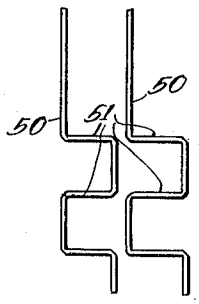


Fig. 9.

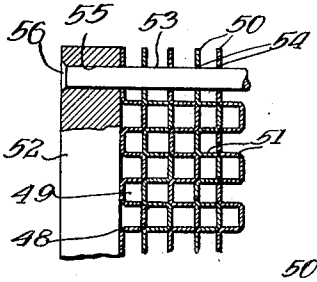


Fig. 6.

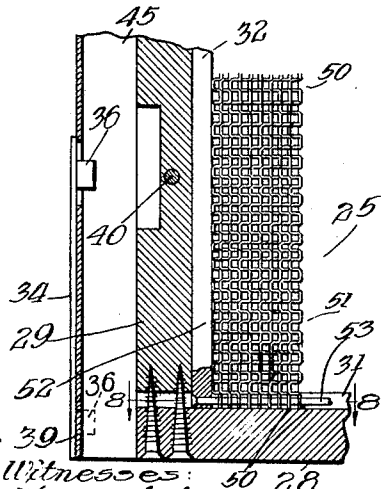


Fig. 8.

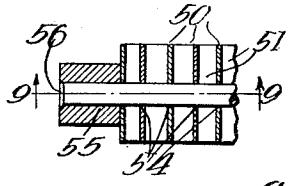
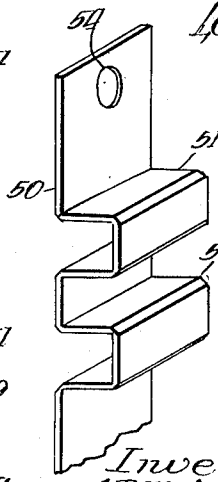


Fig. 11.



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Patented Mar. 14, 1933 1,901,114

UNITED STATES PATENT OFFICE

AUGUST D. MEISELBACH, OF CHICAGO, ILLINOIS

VENTILATOR

Application filed July 7, 1930. Serial No. 465,861.

This invention relates to improvements in ventilators of the screen type and especially to flat ventilator panels or members adapted to be arranged to obstruct a window opening or the like, and permit the passage of air, but prevent or hinder the passage of dust, water or insects.

An important feature of the invention relates to the construction of the body of the ventilator which is of relatively considerable thickness and consists of air passages of relatively small area separated by relatively thin walls.

The body of the ventilator may be aptly described as of a very fine honey-comb construction.

Other features of importance relate to simple means for adjusting the dimensions of the screen to fit various spaces, means for mounting the screen in relation to a window so that it can be inclined at various angles, and means for constructing the body of the screen.

The invention will be more readily understood by reference to the accompanying drawings forming part of this specification and in which:—

Fig. 1 is a fragmentary elevational view of a window equipped with a ventilator embodying the invention in one form;

Fig. 2 is a fragmentary vertical sectional view on the line 2—2 of Fig. 1;

Fig. 3 is a view similar to Fig. 2 but showing the ventilator in a different position;

Fig. 4 is a sectional view similar to Fig. 2 but showing the ventilator applied in a different manner;

Fig. 5 is a fragmentary horizontal sectional view on the line 5—5 of Fig. 4;

Fig. 6 is a fragmentary vertical section on the line 6—6 of Fig. 3;

Fig. 7 is a plan elevational view of the outer side of one end of the ventilator;

Fig. 8 is a fragmentary horizontal sectional view of the screen proper taken on the line 8—8 of Fig. 6;

Fig. 9 is a fragmentary vertical sectional view on the line 9—9 of Fig. 8;

Fig. 10 is an enlarged fragmentary side elevation of two of the strips of which the ventilator proper is made, indicating the manner in which they are associated in building the ventilator; and

Fig. 11 is a fragmentary perspective view of one end of one of the strips of which the ventilator proper is constructed.

In said drawings 20 indicates an ordinary window frame having side parts 21 and a sill 22, and in which a window sash 23 can slide up and down.

In Fig. 2 the sash 23 is shown moved up from the sill to provide an opening 24 below the sash.

The ventilator shown in the drawings, and which is adapted to obstruct the opening 24, consists of a foraminous body 25 which may be divided into a number of parts, as shown in Fig. 1, the foraminous body mounted in a rigid frame 26. The frame 26 consists of upper and lower bars 27 and 28, respectively, and end bars 29. In the form shown in Fig. 1, there is also a center bar 30. The upper and lower bars, as shown in Fig. 3, are provided with centrally located grooves 31 on their inner edges and the end bars are likewise provided with grooves 32 on their inner edges. Similarly the center bar 30 is provided with grooves 33 on its two sides. These grooves are for the purpose of receiving the ventilator bodies 25 in a manner to be further described hereinafter. For mounting the ventilator as a whole in relation to the window, thin sheet metal brackets 34 are provided of somewhat triangular shape, as best shown in Fig. 2, adapted to be secured by screws 35 to the side parts of the window frame and provided with inwardly extending projections 36 upon which the ventilator, as a whole, can be mounted to swing out and in, from and toward the window. In Fig. 2, the ventilator is swung in against the lower bar of the sash to prevent any entrance of air into the room except through the ventilator and in Fig. 3 the ventilator is shown as swung into vertical position to let the window sash with the handles 37 be lowered to closed position. It is obvious that the ventilator may be tipped more or less, that is, between the two positions shown to allow for more or less di-

rect ventilation as well as ventilation through the ventilator itself.

The thin metal brackets 34 have inclined extensions 38 on their edges which extend into the room so that, when the ventilator is inclined, as shown in Fig. 2, no opening will be provided at the ends between the ventilator and the side bars of the window frame.

The ventilator as a whole is made adjustable as to length so as to be fitted nicely between the brackets 34 or within the window frame beneath the sash, as shown in Fig. 4, by means of U-shaped end plates 39 which, as shown in Fig. 1, are as long as the width or heighth of the ventilator and are wide enough to provide the necessary endwise adjustment. These end members are adapted to be clamped upon the ends of the frame of the ventilator by means of screws 40 having heads 41 on the outer side of the ventilator and thumb nuts 42 on their inner ends. The side plates 43 of the end plates 39 are slotted, as shown at 44, to permit the adjusting of the plates longitudinally of the ventilator on the bolts 40. In some instances, the slots 44 might be opened beyond the outer edges of the end bars 29 and thus permit unobstructed passage through the ventilator. For the purpose of preventing this or covering the slots, I provide a cover plate 45 arranged upon the outer side of each of the end members 39, having slots 46 to permit the passage of the bolts 40 but pivoted at 47 out of alignment with the slots 44 so that, as the bolts pass through the slots 46 in the cover plates, they are swung on the pivots 47 and cover the outer ends of the slots 44. This present invention relates more particularly to the construction of the body of the ventilator. This body, as best shown in Figs. 9 to 11, inclusive, comprises a foraminous body which has considerable thickness and is made up of relatively thin walls 48 which are so arranged and spaced apart that they provide openings 49 through the body from face to face, the openings being of relatively small diameter and relatively long, that is, they are of length to extend from face to face of the body of the ventilator.

While such a foraminous body might be made in different ways, I prefer to make it, in the manner shown, out of relatively narrow long strips 50 of thin sheet metal which are corrugated transversely, as shown at 51, Figs. 10 and 11, to provide transversely extending alternate grooves opening on opposite sides of the corrugated strip. These corrugated strips 50 are assembled face to face, as best shown in Figs. 9 and 10, and when thus assembled and held in position, they form the elongated passages 49 which are of relatively small area. In practical screens of this kind, these openings may be from one-quarter of an inch to three-eighths of an inch long and about one-sixteenth of an inch in area. For the purpose of holding the assembled strips in position, rigid bars 52 are provided, shown at each end of the series, and these are clamped together by clamping rods 53 which extend through openings 54 provided in the ends of the strips and through openings 55 provided in the ends of the bars. These clamping rods may be secured in any suitable manner, such as by riveting or soldering their ends in position, as shown at 56, Figs. 8 and 9. The foraminous bodies being thus prepared, they are mounted in the grooves 31, 32 and 33 of the frame before one of the side bars is placed in position and then the loose side bar is secured in position and the ventilator structure is complete. A screen or ventilator having the ventilator proper provided with such elongated passages of relatively small area has features in relation to ventilation not possessed by any screen which is relatively thin and has openings of very limited lengths.

It has been found that screens of this character, that is, the ones with the relatively small area passages prevents the free blowing through of a strong wind, but does not prevent the comparative free passage of air back and forth through the ventilator. Another feature of importance is that the passages are so small in area that the surface attraction of the walls of the passages seems to prevent the forcing of water through the screen, especially if the screen is in position at the time of a rain storm so substantially no water passes through the screen, even with a strong wind blowing against the outer surface of the screen. Another feature of importance is that soot or other dirt does not seem to pass through the screen but is held on same and can be readily washed off by water, particularly if the screen is held below a stream of water and the water is allowed to pass through the screen. A further feature of importance is that, although the screen can be looked through if the lines of sight are parallel with the openings, the sight is hindered by a very slight angular position of the screen, consequently, the screen is useful in many places where ventilation is desired but it is not desirable to permit free sight, as, for instance, in the upper part of doors.

While I have shown and described the body of the screen as being made of thin corrugated strips of sheet metal, I do not wish to be limited to this construction as it is obvious that such a foraminous body, that is, one of appreciable thickness and substantially filled with passages extending through from face to face, separated by thin walls, could be produced in other ways and as many modifications of the invention will readily suggest themselves to one skilled in the art, I do not limit or confine the invention to the specific combinations of parts or structures

or specific features of construction herein shown and described.

I claim:

1. A ventilator body made up of relatively narrow strips of thin sheet metal, the strips formed into transversely extending corrugations, and the strips nested together to provide relatively long small passages extending through the body from face to face, the passages separated by relatively thin walls.

2. A window ventilator of the kind described and comprising a flat ventilator body provided with relatively long ventilating passages of relatively small area, means for pivotally mounting the ventilator body at its ends to tip horizontally, and means for preventing air passing the ends of the body when same is arranged in an inclined position.

3. In a window ventilator of the kind described, a ventilator body shorter than the space to be filled, slotted adjustable end members for making the body of desired length, and automatic means for closing said slots when the end members are arranged in extended positions.

4. The invention as defined in claim 3, the automatic closure means including plates pivotally mounted on the end members and adapted to be swung by the movement of the end members.

5. In a foraminous structure of the kind described and made up of a plurality of substantially parallel strips, the strips made of thin sheet metal and corrugated transversely and nested together, the strips being interlocked longitudinally by the nesting and means holding the strips thus nested.

In witness that I claim the foregoing as my invention, I affix my signature this 2nd day of July, 1930.

AUGUST D. MEISELBACH.