

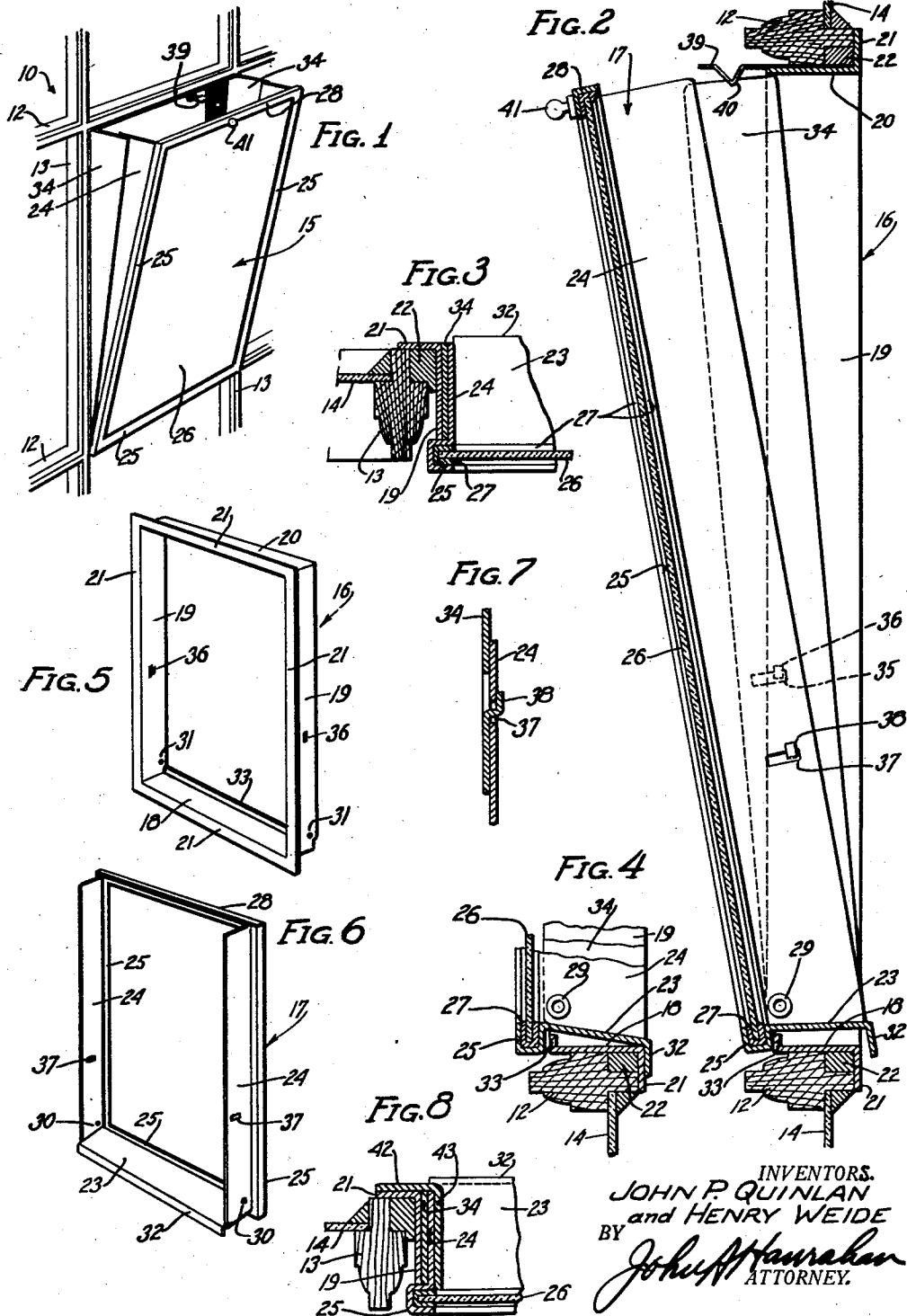
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J. P. QUINLAN ET AL

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FLEXIBLE VENTILATOR

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INVENTORS.
JOHN P. QUINLAN
and HENRY WEIDE
BY *John H. Haurahan*
ATTORNEY.

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FLEXIBLE VENTILATOR

John P. Quinlan, Stratford, and Henry Weide,
Fairfield, Conn.; said Weide assignor to said
Quinlan

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9 Claims. (Cl. 98—88)

This invention relates to new and useful improvements in ventilators and has for an object to provide a ventilator which may be substituted in a window sash for the light or for one of the
5 lights therein and which when in place functions both as a ventilator and a light.

Another object is to provide a ventilator as stated and which is of improved and simplified construction and which may be easily inserted and
10 secured in a sash in lieu of the light in the sash or in lieu of one of the lights in the sash or in lieu of any desired number of lights therein should the sash contain more than one light.

An additional object is to provide a ventilator
15 having the characteristics indicated and which is easy to operate and which may be so positioned as not to cause a draft on persons in a room and which may be opened more or less as desired to give the required ventilation.

20 Other objects and advantages will become apparent from a consideration of the following detailed description taken in connection with the accompanying drawing wherein a satisfactory embodiment of the invention is shown. However, it
25 will be understood that the invention is not limited to the details disclosed but includes all such variations and modifications as fall within the spirit of the invention and the scope of the appended claims.

30 In the drawing:

Fig. 1 is a perspective view showing a portion of a sash having one of the ventilators of the present invention substituted for one of its lights, the ventilator being shown open;

35 Fig. 2 is a vertical sectional view through the ventilator of Fig. 1 and on an enlarged scale;

Fig. 3 is a transverse sectional view through one side of the ventilator, the latter being in closed position;

40 Fig. 4 is a vertical sectional view through the lower portion of the ventilator showing the same in closed position;

Fig. 5 is a perspective view of the mounting frame of the ventilator;

45 Fig. 6 is a perspective view of the inner or glass carrying portion of the ventilator;

Fig. 7 is a sectional view illustrating a detail of construction; and

50 Fig. 8 is a view similar to Fig. 3 but showing a slightly modified arrangement.

Referring in detail to the drawing, at 10 is generally indicated a portion of the window sash to which the invention is shown applied. In the present instance the sash is shown as including
55 horizontal rails 12 and vertical rails 13 dividing

the sash into a series of rectangles each receiving a piece of glass 14. However, it is to be understood that if desired the sash might be of a construction receiving but one large pane of glass or the sash may be of any other desired construction
60 either wood or steel.

In Figs. 1, 2, 3 and 4 my improved ventilator generally designated 15 is shown as mounted in the sash 10 and the ventilator may be described as comprising two main portions including an open
65 mounting frame 16 and an inner or adjustable frame or member 17 adapted to be mounted in the frame 16. The frame 16 is formed of a metal of suitable gauge depending on the size required and may be made up in all standard sizes whereby it
70 may be readily installed. Also, it may be made to fit and for installation in custom built sashes.

Frame 16 includes a bottom rail or sill piece 18, side members or bars 19 and an upper or top
75 bar 20, the said parts being formed of suitable gauge sheet metal and rigidly connected whereby to form a solid frame. About the forward edge of the frame a flange 21 is provided and when the frame is inserted in place in the sash 10 the
80 said flange 21 abuts the outer faces of the rails 12 and 13 as clearly shown and the frame may be secured in place with putty or the like at 22 whereby to form a weather tight joint.

Inner frame 17 includes a lower rail or apron 23 and vertical side rails 24 and these portions
85 have channels 25 pressed therein, the said channels being substantially U-shaped in cross section as clearly shown in Figs. 3 and 4 and this channel 25 receives a pane of glass 26 in the manner best illustrated in Figs. 2, 3 and 4. The glass is
90 secured in the frame by putty as at 27 whereby to provide a water tight joint. As the channels 25 are formed or pressed from the members 23 and 24 it will be appreciated that the entire inner
95 frame 17 is stiffened by said channels, and forms a unit. A top bar 28 having a channel opening through its inner edge co-operates with the channel portions 25 whereby all of the edges of the glass 26 are received and protected and puttied
100 in place.

The inner frame or unit 17 is disposed in the mounting frame 16 and is pivoted thereto as by
rivets 29 passing through openings 30 in the members 24 and the openings 31 in the members
105 19. The forward edge of the member or apron 23 is down-turned as at 32 whereby to prevent water entering over the sill or rail 18 when the ventilator is closed as in stormy weather. At their lower inner portions the side members 19 of frame 16 are cut away and the inner edge of sill
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18 is upturned as at 33 to prevent the entrance of water, the ends of said portion 33 being secured, as by soldering to the side bars 19.

The lower channel portion 25 or that channel portion 25 formed in the inner portion of rail or apron 23 is disposed at the inner side of ledge 33 when the device is assembled and the rivets 29 are located almost directly above such ledge whereby the device may be moved open and closed as will be described. From Fig. 4 it will be apparent that the apron 23 is arranged at considerable of an angle when the ventilator is closed and a good water shed is thus provided. Also, the lip or down-turned portion 32 prevents water entering between the sill 18 and apron 23 when the ventilator is closed.

To limit the inward movement of the inner frame or unit 17 and to close the side spaces between it and the mounting frame 16 vanes or shutters 34 may be employed. Such vanes are also movable about the pivots 29 and as shown in the drawing each vane 34 has a slot 35 through which extends a lug 36 pressed from the side portions or members 19 of the mounting frame 16. This slot and lug connection limits movement of the vane relative to the mounting frame. A corresponding slot 37 is formed in each of the side members 24 of the inner frame and through these slots extend lugs 38 pressed from the vanes 34 whereby movement of the inner frame relative to the vanes is limited.

With this construction it will be seen that the inner frame 17 has but a limited inward movement relative to the mounting frame 16 and the sash in which said frame may be mounted. Of course, if desired, additional vanes 34 may be added the number being a matter of convenience and expense and enough vanes may be inserted to permit of the inner frame 17 being swung through an arc of 90° or into a horizontal position. Attention is directed to the fact that the ventilator of the present invention also forms a light and that any desired number of such ventilators might be incorporated in a sash and that such ventilators might be mounted in the upper sash of a window or in the upper tier of lights of the lower sash of a window. In fact, the ventilators may be mounted at any point desired and in addition to providing ventilation also forms lights.

As the ventilators of the present invention may be readily substituted for a window light in either steel or wood sashes it will be appreciated that according to the present invention any desired ventilation may be cheaply provided for. Further, it will be understood that the present ventilator also functions as a light and when the device is installed in a sash does not detract from the illumination obtained through the sash. Since the channels for receiving the edges of the glass 26 are pressed from the material of the inner frame member such channels serve to strengthen or make more rigid said frame member.

Additionally, when the ventilator is closed water is prevented from entering between the sill 18 and the apron 23, the flange 32 serving for this purpose and in addition since the apron is arranged at a relatively high angle it forms an excellent water shed and the putty about the glass 26 prevents the entrance of water at the edges of said glass. The outer or mounting frame 16 is secured in place by the putty 22 arranged entirely about the frame and thus the entrance of water between this frame and the sash rails is effectively

prevented. When the ventilator is open a sort of pocket is formed and the air blowing against the glass 26 creates an upward pressure whereby considerable quantities of air will enter through the open end of the device.

A spring clip 39 or other suitable means may be provided for securing the ventilator in closed position and the spring clip here disclosed is secured between the upper rail 20 of frame 16 and the adjacent rail or bar 12 of the sash extending inwardly of the mounting frame 16. When the ventilator is closed a V-shaped portion 40 of this clip will be disposed at the inner side of the upper or connecting bar or rail 28 and the ventilator will be held closed. A knob or other hand piece 41 may be provided for pulling the ventilator open, the inner end portion of the spring clip being forced upwardly to permit the ventilator to open.

Also, the mounting frame 16 may be constructed as suggested in Fig. 8. In that figure transversely L-shaped members including arms 42 and 43 are applied to the frame, the arms 42 of said members engaging and secured to the flanges 21 of the frame and the arms 43 of the members being disposed in spaced relation to the sides 19 of the frame. Thus, a pocket is formed at each vertical edge of the frame and the vanes 34 and side flanges 24 of the pivoted frame 17 are received in such pockets when the ventilator is closed and the entrance of moisture between the sides 19 and 24 of frames 16 and 17 and the vanes 34, is prevented.

Having thus described the invention, what is claimed is:

1. In a ventilator, in combination, a mounting frame to be disposed in a glass receiving opening in a sash, said frame including flat side and end portions whereby the frame may be slipped into a glass opening of a sash and lie flat against the edges of said opening, a laterally extending flange at the outer edge of each of said side and end frame portions to engage the outer surface of the sash about the glass opening therein, a second frame, pivot means mounting said second frame on the mounting frame for movement between closed and open positions, said second frame including portions engaging the inner edge of the side and end portions of the mounting frame when the second frame is in closed position, a pane of glass carried by said second frame and closing the same and forming a window light, and means to secure the second frame in closed position.

2. In a ventilator, in combination, a mounting frame to be disposed in a glass receiving opening in a sash said frame including flat side and end portions whereby the frame may be slipped into a glass opening of a sash and lie flat against the edges of said opening, a laterally extending flange at the outer edge of each of said side and end frame portions to engage the outer surface of the sash about the glass opening therein, a second frame, pivot means mounting said second frame on the mounting frame for movement between closed and open positions with respect to the mounting frame, said second frame including portions engaging the inner edge of the side and end portions of the mounting frame when the second frame is in closed position, a pane of glass carried by said second frame and closing the same and forming a window light, flat vanes arranged in side-by-side contacting engagement and connecting the side portions of said frames and serving to close the spaces between said side portions when the second frame is in open position, and means to secure the second frame in closed position.

3. In a ventilator, in combination, a mounting frame, a second frame including side vane portions, pivot means engaging said side vane portions and pivotally mounting the second frame on the mounting frame, said second frame movable on said pivot means between closed and open position with respect to the mounting frame, said second frame including portions pressed laterally beyond said side vane portions and forming a channel receiving the edge of a pane of glass closing the frame and forming a window light, said laterally pressed portions arranged to engage the inner edge of the mounting frame to close the mounting frame when the second frame is in closed position, and means to secure the second frame in closed position.

4. In a ventilator, in combination, a mounting frame including side portions, a second frame including side portions, pivot means passing through said side portions and mounting said second frame on said mounting frame, said second frame movable on said pivot means between a closed position within the mounting frame and an open position with respect to the mounting frame, a pane of glass carried by said second frame and closing the same and forming a window light, said mounting frame including a sill piece connecting the lower ends of its side portions, said second frame including an apron connecting the lower ends of its side portions and arranged over said sill piece and at an angle to form a water shed, said apron having its outer edge portion downturned to provide a flange over-lapping the sill piece and closing the space between the apron and sill piece, and means to secure the second frame in closed position.

5. In a ventilator, in combination, a mounting frame, a second frame, pivot means mounting said second frame on said mounting frame, said second frame movable on said pivot means between closed and open position with respect to the mounting frame, a pane of glass carried by said second frame and closing the same and forming a window light, said mounting frame including a sill piece, said sill piece up-turned at its inner end, said second frame including a portion inwardly of the up-turned end of the sill piece and an apron arranged over said sill piece and at an incline to form a water shed, said apron having its outer edge down-turned to provide a flange overlapping the sill piece and closing the space between the apron and sill piece, and means to secure the second frame in closed position.

6. In a ventilator, in combination, a mounting frame, a second frame including side vane portions extending into said mounting frame, pivot means engaging said side vane portions and mounting said second frame on said mounting frame, said second frame movable on said pivot means between closed and open position with respect to the mounting frame, said second frame including a portion pressed laterally beyond said side vane portions and forming a channel receiving the edge of a pane of glass closing the frame and forming a window light, means securing the

edge portion of said glass in said channel and forming a water seal, said laterally pressed portions arranged to engage the inner edge of the mounting frame to close the mounting frame when the second frame is in closed position, and means to secure the second frame in closed position.

7. In a ventilator, in combination, a mounting frame, a second frame, pivot means mounting the second frame within said mounting frame, said second frame movable on said pivot means between closed and open position with respect to the mounting frame, said second frame including pressed out portions forming a channel receiving the edge of a pane of glass closing the frame and forming a window light, said channel extending to abut the inner edges of said mounting frame to fully close the mounting frame when the second frame is in closed position, and means to secure the second frame in closed position.

8. In a ventilator, in combination, a mounting frame, a second frame, pivot means mounting said second frame on said mounting frame, said second frame movable on said pivot means between a closed and an open position with respect to the mounting frame, a pane of glass carried by said second frame and closing the same and forming a window light, said frames each including side portions of substantial width, said second frame arranged with its side portions within the side portions of the mounting frame when the second frame is in closed position, vanes arranged between and connecting the side portions of the second frame with the side portions of the mounting frame and co-operating with said side portions and with said pane of glass to provide a pocket open at its top when the second frame is in open position, said second frame including portions engaging the inner edges of the vanes and the side portions of the mounting frame when the second frame is in closed position, said mounting frame including a sill piece extending between its side portions, said second frame including an apron connecting its side portions and arranged over said sill piece at an incline to form a water shed, said apron having its outer edge down-turned to provide a flange over-lapping the sill piece and closing the space between the apron and sill piece, and means to secure the second frame in closed position.

9. In a ventilator, in combination, a mounting frame, a second frame, pivot means mounting the second frame within said mounting frame, said second frame movable on said pivot means between closed and open position with respect to the mounting frame, said second frame including lateral projecting portions forming a channel receiving the edge of a pane of glass closing the frame and forming a window light, said laterally extending portions over-lapping the inner edges of said mounting frame when the second frame is in closed position, and means to secure the second frame in closed position.

JOHN P. QUINLAN.
HENRY WEIDE.