Feb. 8, 1955 J. C. RINKER 2,701,515

WINDOW VENTILATOR

Filed June 18, 1952

2 Sheets-Sheet 1

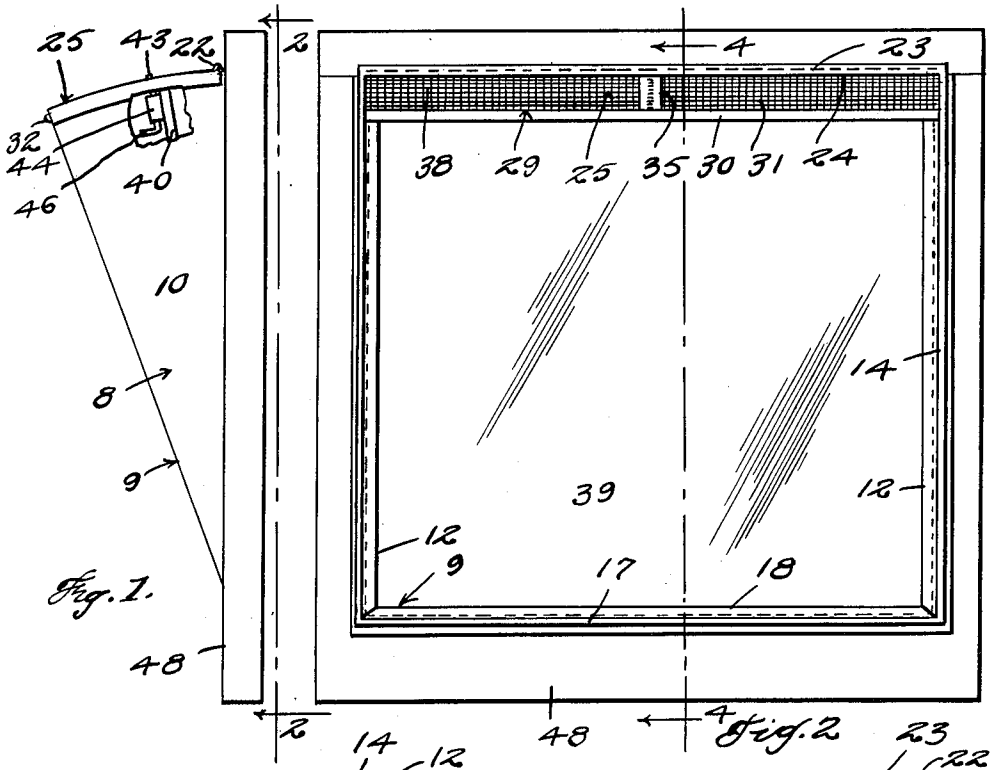

Fig. 1.

Fig. 2

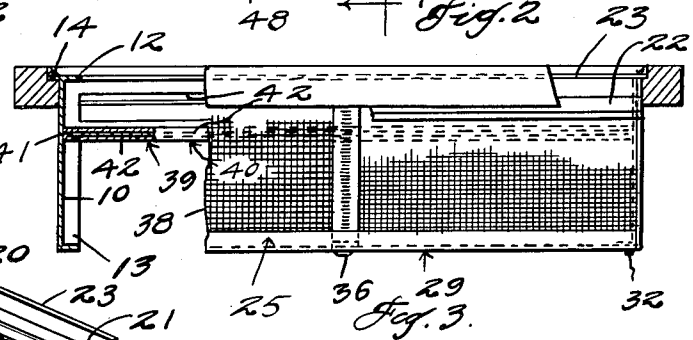

Fig. 3.

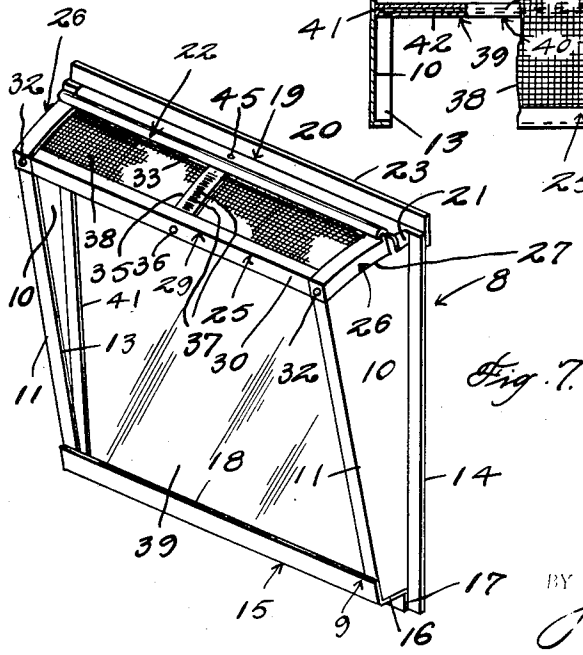

Fig. 7.

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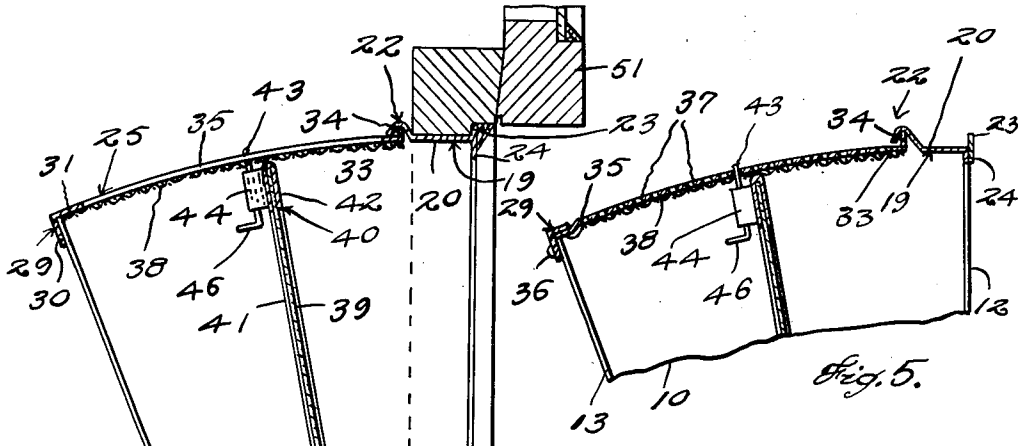

Fig. 5.

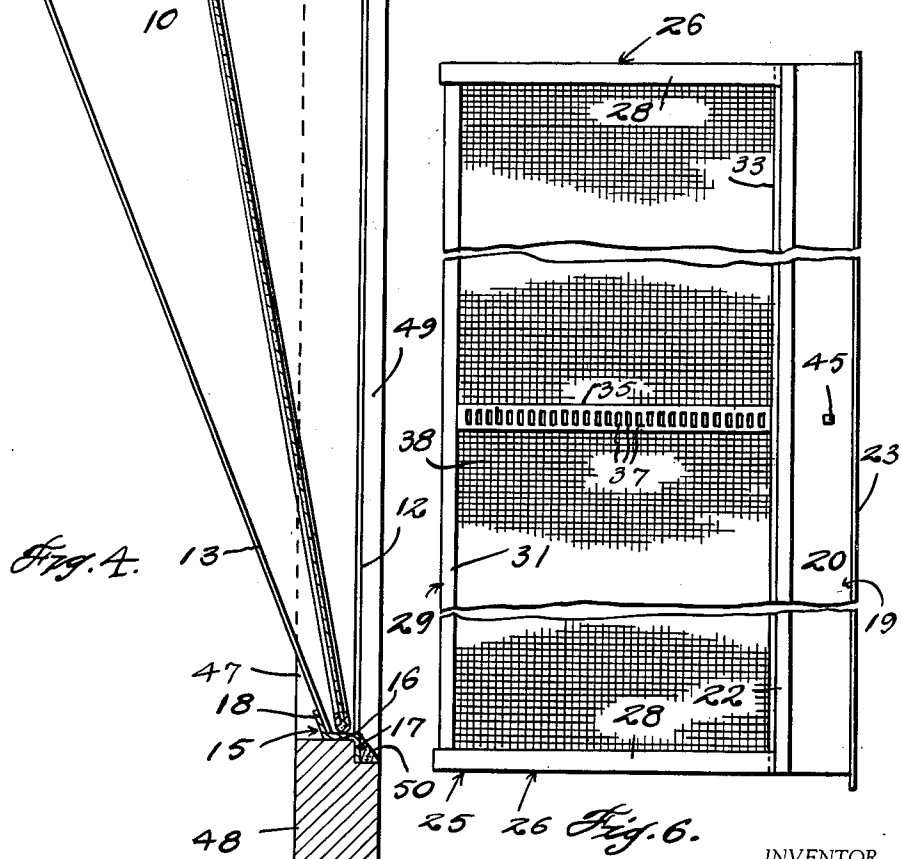

Fig. 4. Fig. 6.

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United States Patent Office 2,701,515
Patented Feb. 8, 1955

2,701,515

WINDOW VENTILATOR

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Application June 18, 1952, Serial No. 294,170

3 Claims. (Cl. 98—88)

This invention relates to a novel window ventilator for a bottom sliding sash and more particularly to a window ventilator of extremely simple construction which may be readily mounted in the windowpane opening of a bottom sliding sash by removal of the windowpane therefrom and without in any way modifying the construction of the sash frame.

More particularly, it is an aim of the present invention to provide an all metal window ventilator for a bottom sliding sash which will not interfere with opening and closing of the top and bottom sashes and which provides a pane of substantially the same size as the window frame opening which is adjustable to admit air through the bottom sash while in a closed position, and to vary the amount of air admitted therethrough and into an enclosure over the upper edge of the ventilator pane.

Still another object of the invention is to provide a ventilator having a screen through which the air passes when the ventilator pane is in an open position to exclude insects and bugs.

Still a further object of the invention is to provide a ventilator including a frame which may be readily dismantled partially for applying and removing the ventilator pane.

A further object of the invention is to provide a window ventilator which may be left open in inclement weather to admit air while effectively excluding rain water.

Still another object of the invention is to provide a window ventilator having novel drainage means for draining rain water from the ventilator frame while the ventilator is in an open position.

Other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawings, illustrating a presently preferred embodiment thereof, and wherein:

Figure 1 is an edge elevational view of a bottom sliding window sash showing the ventilator applied thereto;

Figure 2 is a side elevational view looking toward the outer side of the sash or looking in the direction as indicated by the line 2—2 of Figure 1;

Figure 3 is a top plan view, partly in section of the window sash and ventilator;

Figure 4 is an enlarged vertical sectional view taken substantially along a plane as indicated by the line 4—4 of Figure 2 and showing the bottom sash equipped with the ventilator associated with the lower portion of a top sash;

Figure 5 is a fragmentary vertical sectional view taken substantially centrally through the upper portion of the ventilator and showing the ventilator removed from the sash;

Figure 6 is a top plan view of the ventilator as it appears removed from the sash, and

Figure 7 is a perspective view thereof looking toward the inner side of the ventilator.

Referring more specifically to the drawings, the novel ventilator in its entirety and comprising the invention is designated generally **8** and includes a frame, designated generally **9**, having corresponding side walls **10** the inner edges **11** of which are inclined downwardly and inwardly toward the opposite, outer edges of said side walls, so that the side walls **10** are substantially wider at their upper ends than at their lower ends. The side walls **10** are provided with inturned side flanges **12** and **13**, the inner flanges **13** extending inwardly from the inner edges

11 and being disposed in downwardly converging relationship to the outer flanges **12**. The flanges **12** and **13** combine with the side walls **10** to form inwardly opening side channels of the frame **9**. The sides **10** at their outer edges and contiguous with the flanges **12** are provided with outturned flanges **14**.

The bottom of the frame **9** is formed by a strip **15** of angular cross section including a substantially flat horizontal intermediate portion **16**, the ends of which are secured to the bottom edges of the sides **10**. The strip **15** has a depending outer portion forming a flange **17** which is disposed between the bottom portions of the flanges **14**. The other side edge portion extends upwardly and away from the intermediate portion **16** to form an inner flange **18** which is disposed substantially parallel to the inner flanges **13** the ends of which overlie and are suitably secured to said flanges **13**. Likewise, the ends of the outer depending flange **17** may be similarly secured to the bottom portions of the side flanges **14**.

The frame **9** includes a top portion, designated generally **19**, including an elongated strip **20** which extends between and overlies the portions of the upper edges of the sides **10** which are disposed adjacent the outer flanges **12**. The ends of the strip **20** are turned downwardly over the outer sides of the side walls **10** to form flanges **21**. The inner longitudinal edge of the strip **20** is provided with an inverted channel portion **22**, as best seen in Figures 4 and 5 and which is of substantially inverted V-shape in cross section. The inverted channel portion **22** constitutes the inner edge of the top portion **19** and extends to adjacent the two side walls **10**. The top portion **19** also includes an upstanding flange **23** and a depending flange **24** disposed at the outer edge of the strip **20**, which flanges **23** and **24** are disposed in substantially the same plane as the flanges **12** and are preferably formed integral with the strip **20**. As clearly illustrated in Figures 4 and 5, the inverted channel portion **22**, constituting the inner edge of the top portion **19**, is spaced a substantial distance from the inner flanges **13**.

The frame **9** also includes a screen supporting frame, designated generally **25**, which extends between the sides **10** and from the inverted channel **22** to the inner flanges **13**. The screen frame **25** includes corresponding end portions **26** each of angular cross section having an outer side **27** overlying the upper portion of the outer side of one of the walls **10** and an inwardly extending upper side **28** overlying and extending inwardly from the upper edge of said side wall **10**. The frame **25** also includes an inner longitudinal member, designated generally **29**, the ends of which are connected to the inner ends of the end members **26**. The longitudinal inner frame member **29** is likewise of angular cross section and includes a depending flange **30** the ends of which overlie the upper portions of the inner flanges **13**, and a top flange **31** which extends inwardly from the upper edge of the depending flange **30**. The ends of the flange **30** are detachably secured by screw fastenings **32** to the inner flanges **13**. The top frame **25** includes an inner strip **33** which extends between and is secured at its ends to the inwardly extending flanges **28** at the inner ends of the end frame portions **26**. The inner frame member **33** is provided with an upturned flange **34** which engages in the inverted channel **22**. A strip **35** extends between the intermediate portion of the longitudinal frame members **25** and **33** and is secured at one end to the frame member **33** and is secured by means of a screw fastening **36** at its opposite end to the frame member **29**. The strip **35** is provided with a series of longitudinally spaced openings **37**, for a purpose that will hereinafter become apparent. A strip of mesh wire fabric **38** is secured to the ends **26** and sides **29** and **33** of the top screen frame **25** and covers the inner portion of the top of the ventilator frame **9**. From the foregoing it will be readily apparent that the screen frame **25** is detachably mounted on the ventilator frame **9** by the two fastenings **32** and the engagement of the inverted channel shape portion **22** over the upstanding strip **34**. Accordingly, by removing the fastenings **32** the inner end **29** of the screen frame may be swung upwardly to disengage the frame portion **34** from the inverted hook or channel **22** to remove the screen frame **25** for exposing

the upper end of the ventilator frame 9, inwardly of the top channel portion 19, so that a windowpane 39 forming the ventilator closure may be inserted downwardly into the frame 9, after which the screen frame 25 is re-applied to retain the windowpane 39 in the ventilator frame. The pane 39 is mounted in a frame 40 formed of metal strips of channel shape cross section in which the edges of the pane 39 are seated. The frame 40 includes side portions 41 extending from top to bottom of the pane 39 and top and bottom portions 42 extending between and abutting against the ends of the frame sides 41. The pane 39 provides a smooth surface to allow said frame to swing in the ventilator frame 9 between the outer flanges 12 and inner flanges 13 and with the frame bottom 42 resting and fulcruming on the portion 16, as best illustrated in Figure 4. As seen in Figure 4, the pane 39 including its frame is wider than the spacing between the flanges 12 and 13 of the two sides 10 but is of a width slightly less than the spacing between the sides 10 to allow the pane 39 to swing freely in the ventilator frame 9. The upper portion of the ventilator frame 9 including the screen frame 25 is arcuately bowed upwardly to conform to the arc described by the upper portion of the frame 40 in its swinging movement. The frame 40 is of a height to fit between the bottom portion 16 and the top portion 20 and against the flanges 12 and 24 when the pane is in a closed, upright position and is likewise sized to fit between the bottom portion 16 and the portion 31 when the pane is in a fully open position, in which last mentioned position the pane frame 40 rests against the inner flanges 13 and depending flange 30. The bottom of the pane frame 39 is prevented from sliding from left to right of the ventilator frame 9 by the lower portions of the outer flanges 12. A spring projected latch bolt 43 is reciprocally mounted in a housing 44 and is spring projected upwardly. The housing 44 is secured to the inner side of the upper frame portion 42, intermediate of its ends, and the latch bolt 43 is spring biased upwardly to engage one of the keeper openings 37 to adjustably lock the pane 39 in various open positions. Likewise, the pane 39 may be locked in a fully closed position by the latch bolt 43 engaging an opening 45 in the strip 20. The latch bolt 43 has a handle 46 at its lower end by means of which the latch bolt may be displaced downwardly to a released position to allow the pane or closure 39 to be swung clockwise as seen in Figure 4 toward a closed position or counterclockwise toward an open position.

The ventilator 8 is adapted to be mounted in a pane opening 47 of a bottom sash 48, after removal of the conventional pane, not shown, said pane opening being of conventional shape and construction and having an enlarged outer portion 49 in which the pane is normally secured and seated by putty. The ventilator 8 is applied from the outer side of the sash 48 and the upper part of the frame inserted initially to engage the flange 23 against the upper part of the enlarged portion 49, after which the bottom portion of the ventilator frame may be swung into and partially through the sash opening 47 to seat the bottom flange 17 against the bottom of the recessed portion 49 and the side flanges 14 against the sides of the recessed portion 49. When thus disposed, as illustrated in Figure 4, the strip 20 will engage against the top of the sash opening 47 between its enlarged portion 49 and the inner face of the sash and the inverted channel portion 22 will be disposed inwardly of the sash, so that the top portion 19 defines an upwardly opening channel in which a portion of the top rail of the sash 48 fits. The ventilator frame 9 is secured in the sash 48 by applying putty as indicated at 50 against the exposed sides of the flanges 14, 17 and 23 and in the same manner that a windowpane would be secured in the enlarged portion 49 of the sash. It will thus be apparent that the sash 48 can slide upwardly relatively to a top sash 51 or the sash 51 may slide downwardly relatively to the bottom sash 48 without the ventilator 8 interfering with the normal sliding movement of the sashes. The ventilator 8 affords a screened opening through which any desired amount of air may be permitted to enter through the sash 48 over the pane or closure 39 and into an enclosure through the screened opening 38 to thus effectively exclude bugs and insects. It will likewise be readily apparent that the ventilator may be disposed in an open position during inclement weather without risk of rain beating in through the ventilator 8, since any

rain entering through the outer portion of the ventilator frame 9 will strike the pane or closure 39 and will flow downwardly into the bottom 15 of the ventilator frame. The outer portion of the bottom 15 is open above the strip 16 between the two outer side flanges 12 so that water may readily drain from the bottom of the ventilator frame 9 off of the outer side of its bottom portion 16 and over the bottom flange 17 and the putty 50 covering said bottom flange to thereby effectively prevent water collecting in the ventilator frame bottom 15.

It will also be apparent that the screen frame 25 may be removed from the ventilator frame while the ventilator is applied to the sash 48, in the manner as previously described, for replacing the pane or closure 39 or merely for the purpose of cleaning said pane. It will also be apparent that the ventilator 8 may be constructed entirely of metal, except for the pane 39.

Various modifications and changes are contemplated and may obviously be resorted to, without departing from the spirit or scope of the invention as hereinafter defined by the appended claims.

I claim as my invention:

1. The combination with a sliding lower window sash having a windowpane opening provided with an enlarged outer portion, of a ventilator including a frame having an outer portion fitting in said sash opening including outturned flanges seated and secured in the enlarged outer portion of the sash opening, said frame having side walls provided with inner and outer edges having complementary flanges extending inwardly from the side walls, said side walls extending inwardly from the window sash, the inner edges thereof and the inner flanges being inclined downwardly and outwardly toward said flanges of the outer edges, a closure mounted for swinging movement in the ventilator frame and having a bottom edge resting and fulcruming on a bottom portion of the frame and having side edge portions disposed adjacent said side walls for swinging movement between the inwardly extending side wall flanges between a substantially upright closed position against the flanges of the outer edges and an upwardly and inwardly inclined fully open position against the flanges, of said inner edges, said ventilator frame including an upwardly open channel shaped top portion disposed in the upper part of the window sash opening and receiving therein a portion of the top rail of the window sash and an open inner top portion disposed inwardly of said channel shaped top portion, and a mesh wire fabric screen and screen frame detachably mounted on the top of the ventilator frame and covering the open top thereof, said screen and screen frame being transversely bowed upwardly to conform to the arc described by the swinging movement of the upper edge of the closure, said top portion of the frame having an inner edge defining a downwardly open channel, and said screen frame having an upturned flange extending into said downwardly open channel and connecting the screen frame to said top portion of the ventilator frame.

2. A ventilator comprising a ventilator frame including corresponding side walls having vertical outer edges, said outer edges having flanges extending outwardly and inwardly of the frame, said side walls having inner edges inclined downwardly and toward said outer edges, said inner edges having flanges extending inwardly of the frame, the outwardly extending flanges of the outer edges constituting parts of a substantially upright outer portion of the frame which is adapted to be mounted in an opening of a sliding window sash, said outwardly extending flanges extending into putty grooves of the window sash, said ventilator frame including a bottom portion disposed in the bottom portion of the window sash opening and an upwardly open channel shaped top portion disposed in the upper part of the window sash opening and receiving therein a portion of the top rail of the window sash, said bottom portion and top portion being secured to lower ends and upper ends, respectively, of both side walls, said top portion of the ventilator frame having an inner edge provided with an upwardly and inwardly inclined flange portion engaging an inner edge of the sash above the opening, a closure mounted in the ventilator frame and having a bottom edge resting and fulcruming on the bottom portion of the ventilator frame for swinging movement of said closure between the inwardly extending flanges of the inner and outer edges of said side walls, said inwardly extending flanges forming stops between which the side edges of the closure are disposed

for limting the swinging movement of the closure between a fully closed position against the inwardly extending flanges of the outer edges of said side walls and a fully opened position against the inclined inwardly extending flanges of the inner edges of said side walls, the inner edge of the top portion of the frame and said inwardly extending flanges of the inner edges of the side walls defining an open top portion of the ventilator frame through which said closure is slidably movable into and out of engagement with the frame, and a mesh wire fabric screen including a screen frame for closing the open top portion of the ventilator frame, said screen frame having end portions secured to the ends of the screen and of angular cross section to engage the outer sides and upper edges of the side walls, and an inner screen frame portion secured to a longitudinal edge of the screen and extending between corresponding ends of the end portions of the screen frame and detachably secured to the flanges of the inner edges of the side walls, said screen and screen frame being arcuately bowed in cross section to conform to the arc described by the swinging movement of the upper edge of the closure, and said upper edge of the closure being disposed adjacent

the screen frame and screen in its different open positions.

3. A ventilator as in claim 2, said top portion of the ventilator frame having a downwardly open channel portion adjacent its inner edge and offset upwardly from an adjacent part of said top portion and of which said upwardly and inwardly inclined flange portion constitutes a part, and said screen frame including an upturned flange extending upwardly into said downwardly open channel portion to detachably retain said inner frame portion in engagement with the flanges of the inner edges of the side walls.

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