Aug. 11, 1936. J. R. MIMS 2,050,362

DOOR VENTILATOR

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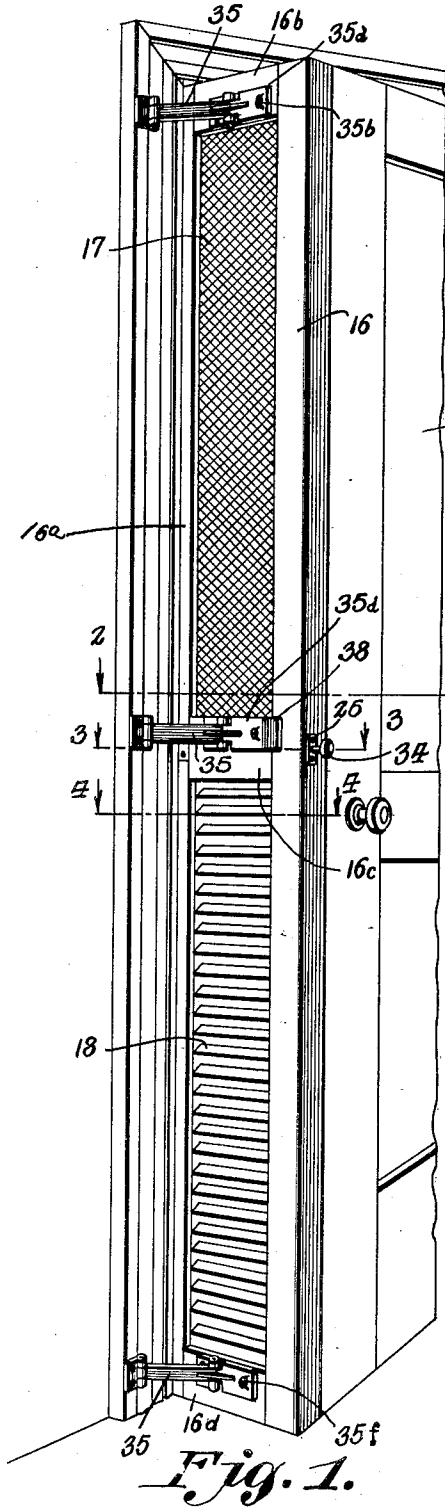


Fig. 1.

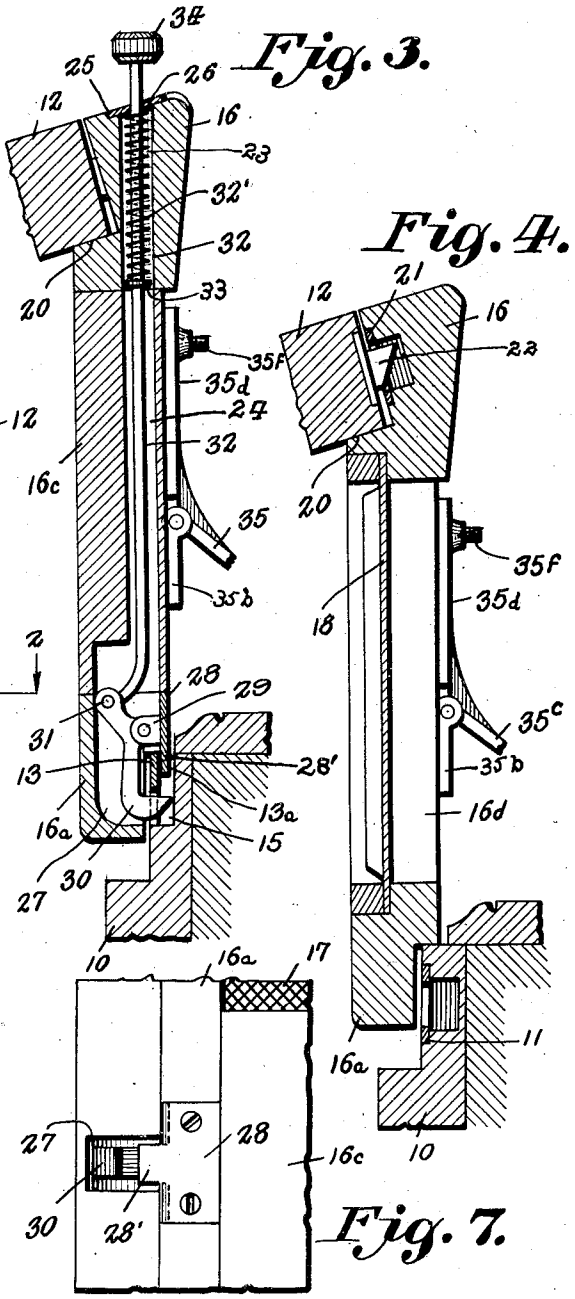


Fig. 3.

Fig. 4.

Fig. 7.

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Fig. 2.

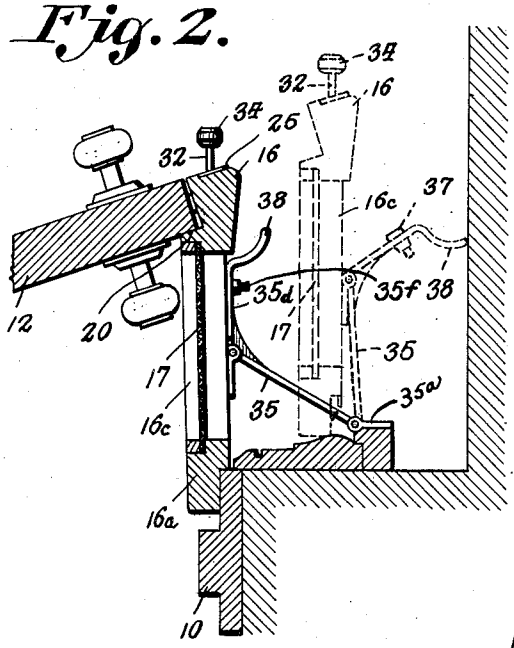
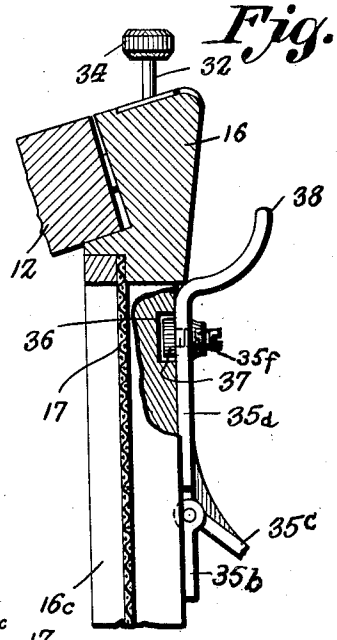


Fig. 5.



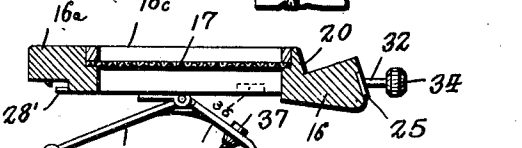


Fig. 6.

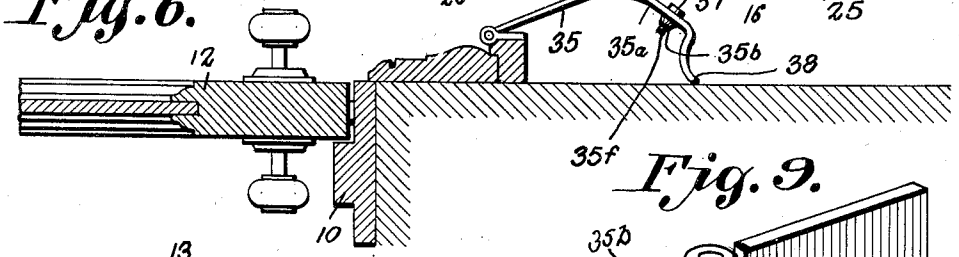


Fig. 9.

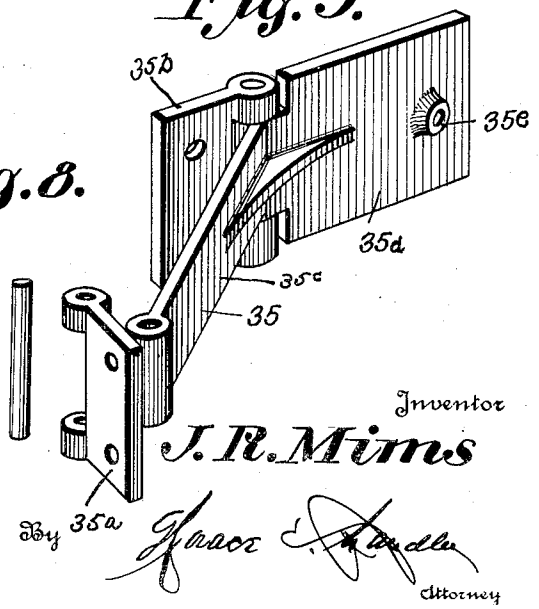
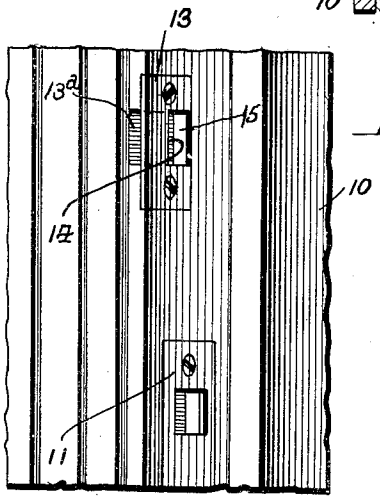


Fig. 8.



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Patented Aug. 11, 1936 2,050,362

UNITED STATES PATENT OFFICE

2,050,362

DOOR VENTILATOR

James R. Mims, Luray, Va.

Application August 25, 1932, Serial No. 630,445

9 Claims. (Cl. 98—87)

This invention relates to new and useful improvements in ventilating devices, and particularly to ventilating devices for use in connection with door openings.

It is well known that great difficulty is experienced in providing ventilation in rooms where the doors thereof open into public halls, such as in apartment houses, hotels, ships, and the like. It is necessary to leave the door open to a comparatively small extent, to permit air to pass into and out of the room or apartment, but in so doing the room is open to the gaze of passersby. Slatted or slotted doors have been used, but these have been found unsatisfactory because of their high cost, and also because they do not provide the necessary passage of air. Furthermore, in the use of prior devices, in connection with doors which are left ajar, the means for holding the devices to the free edges of the doors, and to the door-jambs, have been very unsatisfactory, as well as unsafe, as such devices can be easily removed, thus permitting access to the room.

It is therefore the principal object of the present invention to provide a ventilating device which is placed between the free edge of a door, which is ajar, and the door-jamb, and which overcomes all of the objections enumerated above.

Other objects and advantages will be apparent from the following description when taken in connection with the accompanying drawings.

In the drawings:

Figure 1 is a perspective view of a portion of a door and the door-jamb thereof, showing the invention in place.

Figure 2 is an enlarged horizontal sectional view on the line 2—2 of Figure 1.

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

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

Figure 5 is a detail view showing means for adjusting the position of the ventilator.

Figure 6 is a horizontal section showing one position of the ventilator when out of use.

Figure 7 is a detail, in elevation, showing the face of the inner vertical side member 16*a* with the latching mechanism carried thereby.

Figure 8 is a perspective view illustrating the keeper for the usual door latch and the parts which receive the latching mechanism illustrated in Figure 7.

Figure 9 is a perspective view of one of the hinges, partly disassembled.

Referring particularly to the accompanying drawings, 10 represents the door-jamb of a door-frame which carries the usual keeper plate 11, for the lock and latch of the door 12.

Sunk into the face of the door-jamb 10, midway of the height thereof, is a metal plate 13, having in its inner vertical edge a notch 14, for a purpose which will be later described, and formed in said jamb face, behind said notch, is a recess 15.

The ventilator proper comprises a rectangular frame including the vertical side members 16 and 16*a*, and the top and bottom and intermediate transverse members 16*b*, 16*d*, and 16*c*, respectively. Secured to the frame, above and below the intermediate member 16*c*, are the ventilating members 17 and 18, which may be of the slotted type, or of any other construction that may be suitable. The ventilating device is placed between the edge of the door 12, when said door is placed ajar, and the door-jamb 10, of the door-frame. Formed longitudinally in one face of the vertical member 16, of the frame of the ventilator, is a rabbet 20, which receives the free edge of the door, and attached to the outer vertical edge portion of said member 16 is a keeper 21, in which is received the beveled nose of the door latch 22. It will be understood that the keeper 21 is arranged at the proper level to receive the latch bolt of the door, and does not interfere with the successful operation of the mechanism to be described later herein.

Formed transversely in the said outer member 16 of the ventilator frame is a passage 23, communicating with a similar passage 24 through the transverse member 16*c* and secured to the outer face of the said member 16, in covering relation to the outer end of the passage 23, is a plate 25 having a perforation 26 therein.

In the jamb engaged face of the inner vertical member 16*a*, at the end of the passage 24, is a recess 27, and secured to the said vertical member, and partly covering said recess, is a plate 28, having apertured lugs 29 extending into said recess. Pivotally mounted between these lugs, intermediate its ends, is a latch member 30, the outer end of which engages an edge of the plate 13, through the notch 14. Disposed through the plate 25, the passage 23, and the passage 24, is a rod 32, the inner end of which enters the recess 27 where it is pivotally connected to the inner end of the latch 30, as at 31.

Disposed within the recess 23, and encircling the rod 32, with one end bearing against the plate 25 and the other against a disk 33, secured to the rod, is a coil spring 32′ which normally, thru the medium of the rod 32, urges the latch 30 into

engagement with the plate 13. On the outer edge of the plate 28 is an extension 28' which enters an opening 13a in the outer face of the door jamb 10, behind the keeper plate 13, and communicating with the recess 15, whereby to hold the jamb engaged edge of the ventilator from being forced away from the jamb, which would result in disengaging the latch 30 from the plate 13.

On the outer end of the rod 32 is a nob 34, by means of which the rod may be drawn outwardly, against the action of the spring 32', so as to swing the latch 30 out of engagement with the plate 13, when it is desired to remove the ventilator.

The ventilator is pivotally supported on the wall, adjacent the door opening, by means of hinges 35, each of which includes a base plate 35a, attached to a portion of the wall, an outer plate 35b, attached to one of the transverse members of the ventilator frame, and a brace member 35c to the ends of which the said plates are pivoted. Projecting from an end of the brace member, beyond the outer plate 35b, is an extension 35d, provided with a threaded opening 35e, in which is supported a screw 35f having a relatively large head 37, at one end, which rests in a recess 36 in the adjacent transverse member when the ventilator is in use. The opposite end of this screw is kerfed, to receive a screw driver, for an adjustment to be described later herein. It will be noted that, while the outer edge of the ventilator may be swung in a direction away from the extension 35d, the said extension will prevent its being swung in the opposite direction.

Formed in each of the transverse members of the ventilator frame and in a position to receive the head 37 of the screw 35f, when the ventilator is in use, is a recess 36.

The structure of the hinges 35 is illustrated in Figure 9 of the drawings. They are identical in construction, excepting that the hinge attached to the central transverse member 16c has its extension 35b elongated, and this elongated portion is bent outwardly to form a fingerpiece 38, as illustrated in Figure 5, which figure also illustrates the screws 35f.

When not in used, the ventilator is swung on its hinges to occupy a position in close proximity to the adjacent wall, as shown in Figure 6, and in dotted lines in Figure 2. To place the device in operative position, its outer edge is grasped, with the fingers engaging the fingerpiece 38 and the thumb engaging the side member 16. The ventilator is then swung into position in the space between the door jamb and the free edge of the door, which latter has been set ajar to the required degree. The ventilator is then manipulated so that the projection 28' enters the opening 13a, behind the keeper plate 13, the latch member 30, at the same time, being permitted to snap over the plate 13, so as to engage its inner edge, within the notch 14. The door 12 is then caused to swing in a closing direction until its free edge enters the rabbet 20 and until its latch 22 engages beyond the keeper 21. The ventilator is now held in proper position between the door and the door jamb, so that air can readily pass therethrough, to provide proper ventilation. It will be noted that the extensions 35d prevent swinging of the ventilator away from the free edge of the door, to cause disengagement of the latch 22.

If the free vertical edge of the door is not parallel with the vertical face of the door jamb with which it abuts, when in closed position, the vertical side member 16 will not lie snugly against said door edge, from top to bottom, when the ventilator is in the position shown in Figure 1. Instead, the member 16 will engage the door edge only at the top or bottom and there will be a gradually increasing space extending upwardly or downwardly from said point of engagement. If this point is at the bottom of the door, the space may be closed by adjusting the top and intermediate screws 35f so as to cause their heads 37 to bear against the top and intermediate cross members 16b and 16c, respectively, to such a degree as to spring the member 16 into position against the lower edge.

When the ventilator has been placed in position, as described, the door is held securely, through engagement of its latch 22 with the keeper 21 and through the engagement of the latch 30 with the keeper 13.

To place the ventilator in inoperative position, the rod 32 is drawn outwardly, by means of the nob 34, so as to disengage the latch 30 from the keeper 13, after the door 12 has been released from the edge of the ventilator by turning its nob and swinging it on its hinges in the usual manner. Having disengaged the latch 30, the outer edge of the ventilator and the fingerpiece 38 are grasped in the same manner as when placing the ventilator into operative position, and the device is then manipulated so as to withdraw the extension 28' from behind the keeper 13, after which it is swung on its hinges into a position away from the door opening, as already described.

It will be noted, by reference to Figures 2 and 6, that the hinge construction will permit the ventilator to lie parallel with the adjacent wall, when not in use, whether the said wall is in the plane of the door opening or at right angles thereto. It will also be noted that the bracing construction of the hinges will prevent jimmying of the ventilator, at its outer edge, to force the latch 22.

What is claimed is:

1. A ventilating device for use between a door-frame and the free edge of a partly opened door, comprising a ventilating member having openings therethrough, means for releasably connecting the ventilating member to the door, means pivotally supporting the ventilating member in operative position, and means for engagement with the door-frame for releasably locking the ventilating member in position for use.

2. The combination with a door-frame having a keeper and a partly opened door provided with a latch, of a ventilating member disposed between said door and door-frame, a keeper on the ventilating member for receiving the door latch, a latch on the ventilating member for engagement with the door-frame keeper, and a projection on the ventilating member for engagement with the door-frame keeper.

3. The combination with a door-frame having a keeper and a partly opened door having a latch, of a ventilating member disposed between the door and door-frame, said ventilating member including a frame, means on the ventilating member for releasably engaging the latch of the door, means carried by said member for releasable engagement with the door-frame, means pivotally supporting said member, and means carried by said supporting means for adjusting an edge of the ventilating member with respect to the door.

4. The combination with a door-frame having a keeper, and a partly opened door, of a ventilating member disposed between said door and

door-frame, a latch on the member for engagement with the door-frame keeper, a pivotally mounted brace pivotally connected to the ventilating member for holding the latter in position, spring pressed means for holding the latch in keeper engaged position and operable to release said latch, and means for holding the door in engagement with the ventilating member.

5. The combination with a door frame having a keeper, and a partly opened door provided with a latch of a ventilating member disposed between said door and door frame, a keeper on the ventilating member for receiving the door latch, a latch pivoted to the ventilating member for engagement with the door frame keeper, an operating rod connected to said latch and extending transversely of and beyond the ventilating member, means for holding said pivoted latch in normally latched position, and a projection on the ventilating member for engagement with the door frame keeper to prevent pivotal movement of the ventilating member.

6. In a device of the class described, the combination with a door casing or the like having a door or the like swingably carried thereby, of a ventilator comprising a substantially rectangular frame, screen material disposed in said frame, means for pivotally connecting said ventilator to the casing whereby the ventilator may be swung into an operative position intermediate the free edge of the door when in a partially opened position and the corresponding edge of the casing, and the ventilator being further swingable to an inoperative position to one side of the casing out of engagement with the door, and means for removably securing one edge of the ventilator to the casing when disposed in operative position.

7. In a device of the class described, the combination with a door casing or the like having a door or the like swingably carried thereby, of a ventilator comprising a substantially rectangular frame, screen material disposed in said frame, means for pivotally connecting said ventilator to the casing whereby the ventilator may be swung to an operative position intermediate the free edge of the door when in a partially opened position and the corresponding edge of the casing, and the ventilator being further swingable to an inoperative position to one side of the casing out of engagement with the door, and latch means for removably securing one edge of the ventilator to the casing when disposed in operative position.

8. A ventilating device adapted to be positioned for operation between and connected to a door frame and a partly opened door including a frame member, means pivotally supporting said frame member, means for releasably connecting the door to the frame member, means carried by the frame member and adapted to co-operate with the door frame to prevent pivotal movement of the frame member when in operating position, and latch means releasably connecting the frame member to the door frame for preventing said frame-carried means from being withdrawn from operative position.

9. A ventilating device adapted to be positioned between a door frame and a vertical edge portion of a partly opened door, including a frame member, means for supporting said frame member, and manually operable means carried by the supporting means for springing an edge portion of said frame member into parallel relation with said edge portion of the door, said manually operable means being mounted on said supporting means for adjustment therethrough and adapted to engage said edge portion of the frame member.

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