

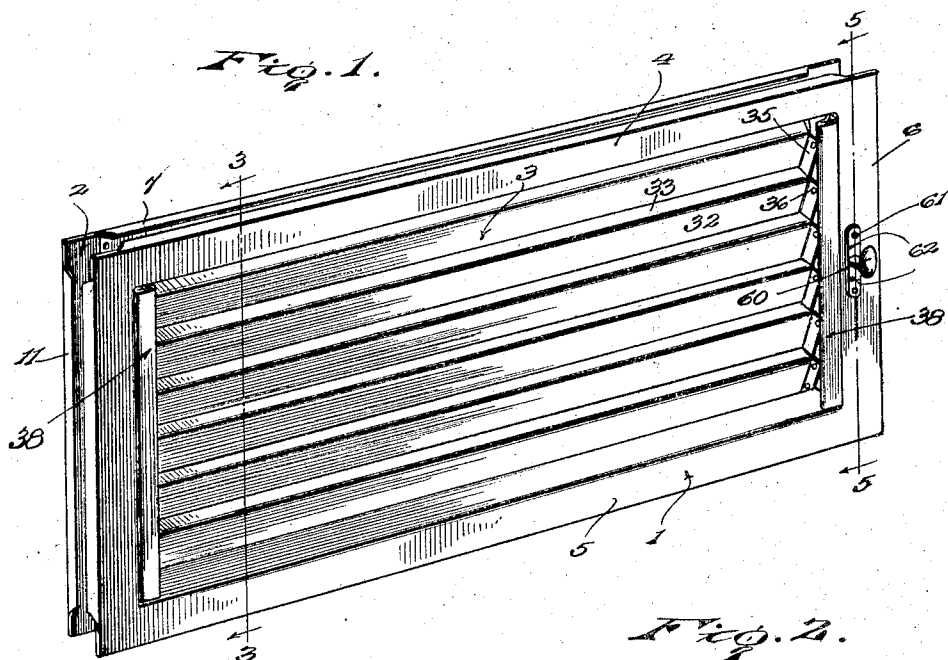
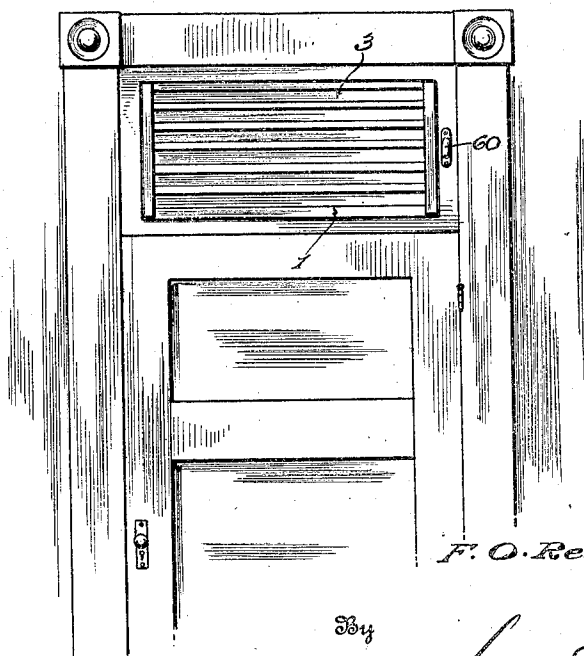
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F. O. REICHARDT
VENTILATING DOOR PANEL

Filed Jan. 5, 1923

3 Sheets-Sheet 1



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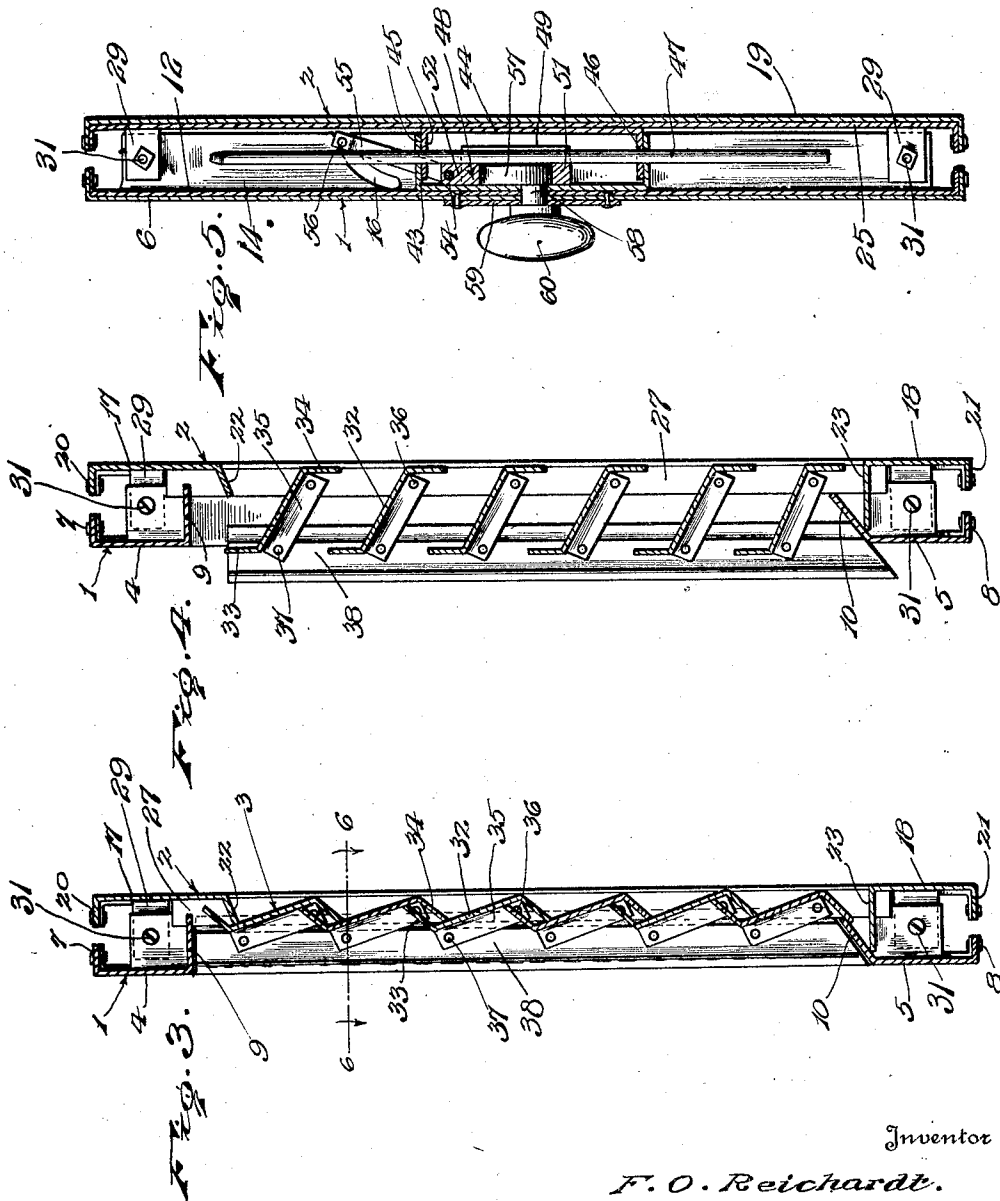
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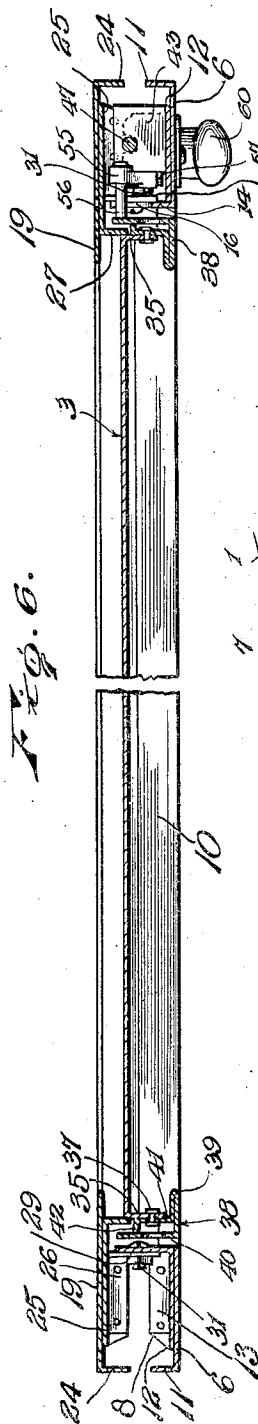
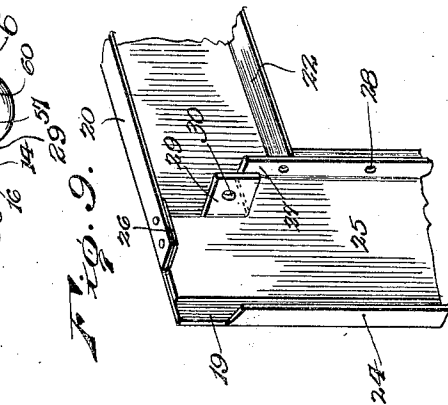
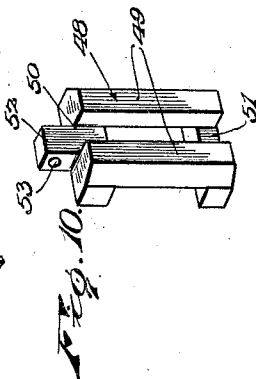
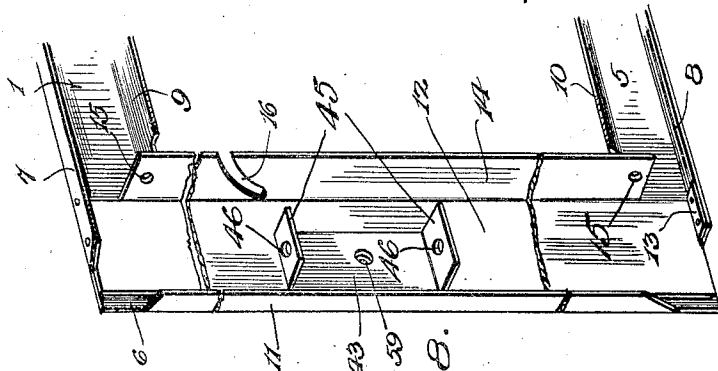
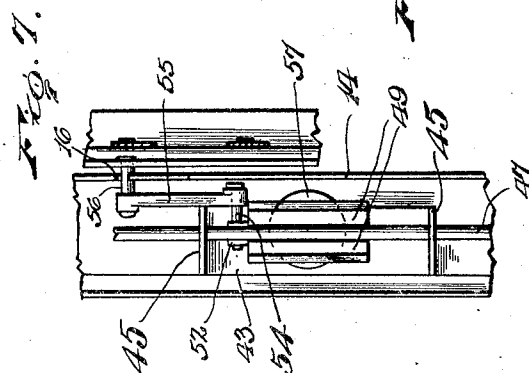
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UNITED STATES PATENT OFFICE.

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VENTILATING DOOR PANEL.

Application filed January 5, 1923. Serial No. 610,830.

This invention relates to improvements in ventilating panels for doors, and has as its object to provide an improved ventilating panel for installation in the transom opening of a door or in the door itself, and which will be capable of ready manipulation to adjust the louvers to obtain the desired ventilation or completely cut off the draft.

One of the primary objects of the invention is to provide an improved means for effecting adjustment of the louvers, the means being simple in construction, positive in action, and capable of having its component parts readily assembled.

Another object of the invention is to provide a ventilating panel which will be substantial in construction and attractive in appearance and at the same time inexpensive to manufacture.

In the accompanying drawings:

Figure 1 is a perspective view of a ventilating panel constructed in accordance with the present invention;

Figure 2 is a view in elevation of the panel installed in the transom opening of a door;

Figure 3 is a vertical transverse sectional view on the line 3—3 of Figure 1, the louvers being shown closed;

Figure 4 is a similar view illustrating the louvers open;

Figure 5 is a detail vertical transverse sectional view on the line 5—5 of Figure 1 looking in the direction indicated by the arrows;

Figure 6 is a horizontal sectional view substantially on the line 6—6 of Figure 3;

Figure 7 is a fragmentary view in elevation illustrating the adjusting means for the louvers;

Figure 8 is a perspective view of one end of the front frame of the panel;

Figure 9 is a perspective view of one corner of the rear frame of the panel;

Figure 10 is a detail perspective view of one member of the louver adjustment.

Generally speaking, the panel embodying the invention includes, in its structure, a front frame indicated in general by the numeral 1, a back frame indicated in general by the numeral 2, louvers 3, which are

mounted in the frames, and an adjusting means for the louvers, as will presently be explained. The frames and louvers are preferably stamped or pressed from sheet metal and the front frame comprises upper and lower rails 4 and 5 and vertical stiles 6, the frame being of general rectangular form. The rails and stiles of the front frame are preferably integral and the frame may be formed from a single sheet of metal. The upper and lower rails 4 and 5 are provided at their upper and lower edges respectively with intumed flanges 7 and 8, and the lower edge of the rail 4 is provided with a flange 9 which extends the length of said edge and projects inwardly at a right angle to the plane of the said rail. A flange 10 is provided along the upper edge of the lower rail 5 and inclines upwardly and rearwardly from the plane of said rail, as shown in Figs. 3 and 4. Flanges 11, corresponding to the flanges 7 and 8, are formed along the outer vertical edges of the stiles 6 of the frame, and plates 12 are disposed against the rear sides of the said stiles 6 and are provided at their upper and lower ends with rearwardly directed flanges 13 which are riveted or otherwise secured to the flanges 7 and 8 respectively, as shown most clearly in Figs. 5, 6 and 8. Flanges 14 are provided at the vertical inner edges of the plates 12 and project rearwardly at right angles from the planes of the respective plates and are provided near their upper and lower ends with openings 15 for a purpose to be presently explained. Also for a purpose to be presently explained, the flange 14 at one end of the frame is formed with an arcuate slot 16 which opens at one end through the free vertical edge of the flange and curves downwardly and forwardly from its said end.

The rear frame of the panel comprises upper and lower rails, indicated respectively by the numerals 17 and 18, and vertical end stiles 19. The said rails and stiles are integral, as in the case of the front frame of the panel, and the upper and lower rails 17 and 18 are provided respectively with forwardly directed flanges 20 and 21 which oppose the flanges 7 and 8 of the front frame

of the panel. See Figs. 3, 4 and 5. The rail 17 of the rear frame is provided along its lower edge with a flange 22 which is inclined downwardly and forwardly and is located in spaced relation below the flange 9 of the front frame. See Figs. 3 and 4. A flange 23 is provided along the upper edge of the rail 18 and projects forwardly at right angles from the plane of this rail and at its free edge is received within the bend forming the flange 10, as clearly shown in Figure 3. The vertical stiles 19 of the back frame are provided at their outer free edges with forwardly directed flanges 24 which oppose the flanges 11 of the front frame 1. Plates 25 are disposed against the forward faces of the stiles 19 and are provided at their upper and lower ends with flanges 26 which are riveted or otherwise secured to the flanges 20 and 21. See Figs. 4 and 6. These plates 25 are provided at their inner vertical edges with forwardly projecting flanges 27 having openings 28 formed therein at intervals. Ears 29 are formed upon the plates 25 near their upper ends and have openings 30 formed therein and when the two frames are assembled the ears 29 will overlap the flanges 14 and the openings 30 will register with the openings 15 so that small bolts or other fastening elements 31 may be engaged therethrough for the purpose of securing the frames together in their assembled relation, as shown in Fig. 6.

The front and back frames when assembled are secured together to define a rectangular opening in which are arranged the louvers 3, and each of these louvers is preferably formed from sheet metal and comprises a body 32 provided at its forward edge with a longitudinal upstanding flange 33 occupying a plane at an obtuse angle to the upper side of the louver, and at its other longitudinal edge with a corresponding flange 34 occupying a plane at an obtuse angle to the under side of the louver. The body of the louver is further formed at each end with a flange 35 projecting downwardly at a right angle to its under side, and these flanges of all of the louvers are pivotally connected at one end, as at 36, to the flanges 27 of the back frame section, the pivots 36 being fitted through the openings 28 in said flanges. The flanges 35 of the louvers are pivotally connected, as at 37, at their other ends, to operating rails 38. Each of the rails 38, as illustrated in Figure 6 of the drawings, is formed from a sheet metal blank folded upon itself longitudinally, as at 39, and having its portions extended at right angles to provide spaced flanges 40 and 41, the longitudinal edge of the flange 41 being turned laterally, as at 42, to abut the inner side of the flange 40. The pivots 37 are secured through the flanges 35 of the louvers and through the flanges 41 of the operating

rails. By reference to Figure 3 of the drawings it will be observed that when the rails 38 are in elevated position, the flange 33 of each louver will overlap the flange 34 of the louver next above it, except in the case of the uppermost louver, the flange 33 of which will overlap the flange 22 of the upper rail 17 of the back frame of the panel. In like manner, in this position of the louvers, the flange 34 of the lowermost louver will underlap the flange 10 upon the bottom rail 5 of the front frame of the panel. Therefore, when the louvers are so adjusted, the opening defined by the frames will be completely closed and draft will be prevented from passing through the panel. By reference to Figure 4 of the drawings it will be observed that the louvers are adapted to be adjusted so as to provide for the passage of draft, and when so adjusted the rails 38 will be moved downwardly carrying with them the connected upper portions of the louvers and positioning the louvers substantially as shown in the said figure with the flanges 34 abutting and being limited in their movement by the inner side edge portions of the stiles 19.

The numerals 43 and 44 indicate brackets which are secured upon the inner faces of the plates 12 and 25, respectively, at one end of the panel and which have right angularly turned upper and lower ends 45, which overlap, in the assembled relation of the parts, and are formed with registering openings 46 through which is fitted a guide rod 47. The numeral 48 indicates in general a slide comprising spaced portions 49 and connecting top and bottom abutment portions 50 and 51, the portions 49 being straight and parallel to each other and receiving between them the rod 47, the portions 50 and 51 being offset from the plane of the spaced portions 49 and riding against the inner face of the bracket 43, the slide being in this manner guided for vertical movement. The top connecting portion 50 of the guide is provided with an upstanding lug 52 having an opening 53 therein through which is fitted a pivot pin 54 passing also through the lower end of a link 55. This link at its upper end is pivotally connected to a stud 56 which projects laterally inwardly from the respective lifting rail 38 and which works in the slot 16. The numeral 57 indicates an eccentric disc having a spindle 58 projecting from one face thereof and rotatably fitted through an opening 59 formed in the front of the front frame 1 of the panel, the disc rotating between the connecting abutment portions 50 and 51 of the slide 48 and rotation being effected by the manipulation of a knob 60 provided upon the outer end of the spindle 58.

From the foregoing it will be understood that upon rotating the knob 60 in one direc-

tion, assuming the louvers to be open, as shown in Figure 4 of the drawings, the eccentric 57 will be so rotated as to move the slide 48 upwardly upon the rod 47 thus thrusting upwardly upon the link 55. As this link is connected with one of the rails 38 to which the louvers are pivoted and as it is guided at its upper end for movement in the arcuate slot 16, the rails will be elevated and the louvers will be moved to the closed position shown in Figure 3. With the louvers in this position, reverse rotation of the knob 60 will of course effect a reverse movement of the parts and the louvers will be opened as shown in Figure 4. If desired, a face plate 61 may be secured upon the forward face of the stile of the frame 1 through which the eccentric spindle 58 extends, and may have arrows 62 stamped or otherwise marked thereon to indicate the direction the knob 60 is to be turned in either opening or closing the ventilator.

Having thus described the invention, what is claimed as new is:

1. In a ventilating device of the class described, a frame, swinging louvers mounted in the frame, a slide mounted in the frame and guided thereby for movement in a rectilinear path, operative connections between the slide and the louvers, the slide having an abutment portion across its end, a manually operated guiding element, and an eccentric mounted on said element and arranged parallel with the face of the slide to ride upon the abutment portion of the slide.

2. In a ventilating device of the class described, a frame, swinging louvers mounted in the frame, a slide mounted in the frame and guided thereby for movement in a rectilinear path and having vertically spaced transverse abutment portions, operative connections between the said slide and the louvers a manually operable spindle mounted in the frame, and an eccentric secured upon the inner end of the spindle parallel with the face of the slide and operating between and engaging the said abutment portions of the slide.

3. In a ventilating device of the class described, a frame, bracket members secured within the frame and having overlapping apertured end portions, a guide rod fitting through the apertures in said overlapping portions of the brackets, a slide mounted within the frame between said brackets and guided by said rod and a wall of the frame, swinging louvers mounted in the frame and operatively connected with the slide, and means for adjusting the slide.

4. In a ventilating device of the class described, a frame having an internal flange provided with an arcuate slot, swinging louvers mounted within the frame, a stud projecting through the arcuate slot in the flange

of the frame and connected with the louvers, a slide mounted within the frame, a link pivotally connected at one end to the slide and at its opposite end to said stud, and means for moving the slide.

5. In a ventilating device of the class described, a frame having an opening therethrough and comprising assembled front and rear sections, the rear section having an inwardly and downwardly inclined flange at the upper side of the opening through the frame and the front section having an upwardly and inwardly inclined flange at the lower side of the opening through the frame, a plurality of louvers pivotally mounted in the rear section of the frame, the louvers being provided at their opposite longitudinal edges with flanges extending in opposite directions at obtuse angles, one of the flanges upon the uppermost louver being arranged to overlap the downwardly inclined flange on the rear section of the frame when the louvers are closed and one of the flanges upon the lowermost louver being arranged to underlap the upwardly inclined flange on the front section of the frame when the louvers are closed, the oppositely extending flanges of adjacent louvers being arranged to mutually overlap in closed position of the louvers, and means for simultaneously adjusting all the louvers.

6. In a ventilator, a frame having an opening therethrough and consisting of front and back sections, inwardly extending projections on the sections, means for connecting said projections to detachably secure the sections together, inwardly projecting flanges on the side portions of the back section spaced from the inner side edges of the section, an inwardly projecting flange on the back section along the upper side of the opening therethrough, an inwardly projecting flange on the front section along the lower side of the opening therethrough, a plurality of louvers pivoted at their back ends to the inwardly projecting flanges on the side portions of the back section, there being oppositely extending flanges along the front and rear edges of the louvers at obtuse angles thereto, the flanges at the rear edges of the louvers abutting the inner side edge portion of the back section in open position of the louvers to limit the movement of the louvers and said flanges, in closed position of the louvers, underlapping the flanges at the upper edges of adjacent louvers and the inwardly projecting flange on the front section of the frame respectively with the upper flange on the uppermost louver overlapping the inwardly projecting flange on the back section of the frame along the upper side of the opening therethrough, and a rail pivoted to and connecting the front ends of the louvers.

7. In a ventilator, a frame having an

opening therethrough and consisting of assembled front and back sections, a plurality of louvers pivoted at their rear edges upon the back section, and rails arranged adjacent the front edge of the louvers at the ends thereof and consisting of front webs and spaced flanges projecting rearwardly from said webs with the terminal portions of the inner flanges extending laterally to abut the outer flanges, the front edges of the louvers being pivoted to said inner flanges. 10

In testimony whereof I affix my signature.

FREDERICK O. REICHARDT. [L. s.]