April 18, 1933. E. H. ELLISON 1,904,654

VENTILATOR

Filed Sept. 18, 1930

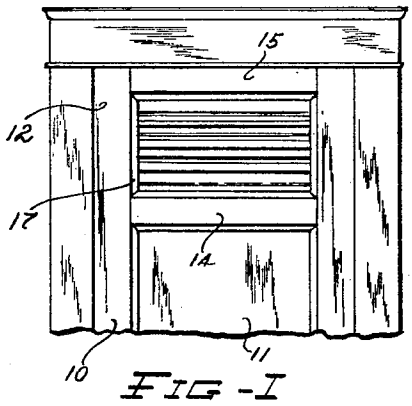


FIG-1

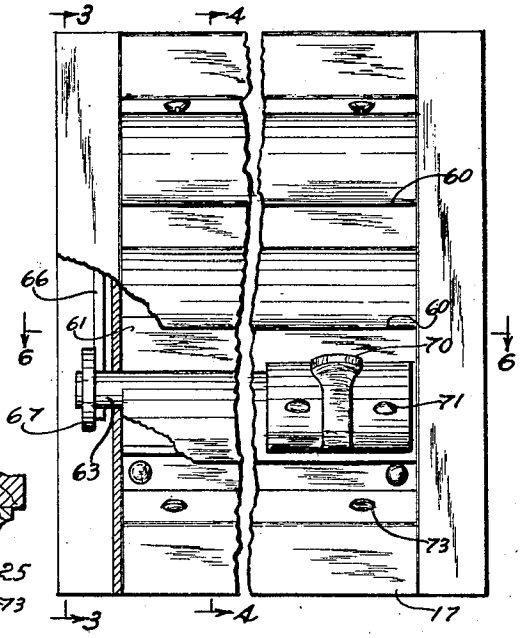


FIG-2

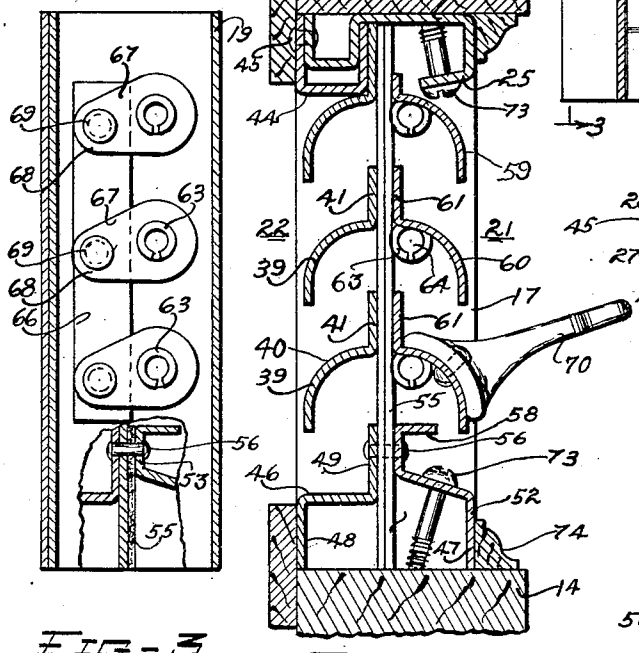


FIG-3

FIG-4

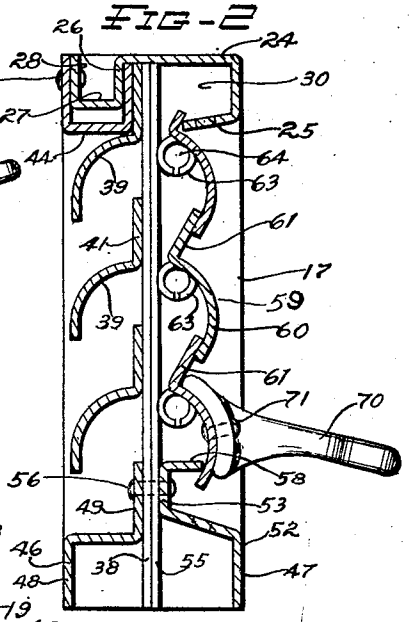


FIG-5

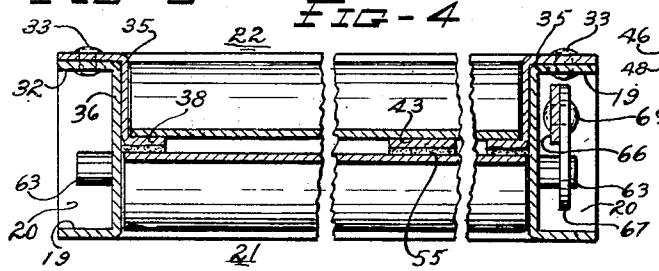


FIG-6

Inventor

Edward H. Ellison

By Richmond L. Hayes

His Attorney

Patented Apr. 18, 1933 1,904,654

UNITED STATES PATENT OFFICE

EDWARD H. ELLISON, OF JAMESTOWN, NEW YORK, ASSIGNOR TO ELLISON BRONZE COMPANY, INC., OF FALCONER, NEW YORK, A CORPORATION OF NEW YORK

VENTILATOR

Application filed September 18, 1930. Serial No. 482,764.

This invention relates to an improvement in louver ventilators for use in connection with doors, transoms, windows, etc.

The preferred embodiment of this invention provides a ventilator adapted to be mounted as a unit in a door or other opening provided therefore. Ventilators made in accordance with this invention may be readily installed, easily operated and are, by reason of the arrangement of the fixed and movable louvers, believed to constitute a greatly improved method of ventilating. These and other objects of the invention will be more clearly understood from a consideration of the following specification which is taken in conjunction with the accompanying drawing, and in which

Fig. 1 is a fragmentary front elevation of a door fitted with one modification of this invention;

Fig. 2 is an enlarged front elevation of the device showing the operating lever, parts being broken away to more clearly disclose certain of the structural details;

Fig. 3 is a vertical sectional view taken substantially on the line 3—3 of Figure 2, showing the means by which all of the movable louvers are simultaneously operated;

Fig. 4 is a vertical sectional view taken substantially on the line 4—4 of Figure 2 and shows the structure of the fixed and movable louvers as well as the method of mounting the ventilator in an opening provided therefore;

Fig. 5 is a vertical sectional view showing the movable louvers in closed position; and

Fig. 6 is a horizontal sectional view taken substantially on the line 6—6 of Figure 2, showing the method of mounting the fixed and movable louvers.

Referring to Figure 1 of the drawing, the present invention is shown mounted for use in a door 10. The usual panels 11 are fitted between the door stiles 12 and above the uppermost panel rails 14 and 15 are provided, between which a ventilator opening is created. The ventilator 17 is mounted in the opening thus provided, being securely held in place in any desired manner, preferably, however, as hereinafter described.

The ventilator is comprised of channeled stiles 19, the open faces of which are projected in opposite directions and adapted to form, with the door stiles 12, closed vertical pockets 20. For the purpose of description, the ventilator 17 is considered as having inner and outer faces 21 and 22, the movable and fixed louvers being on the inner and outer faces respectively. To complete the rectangular frame of the ventilator, a top rail 24 is provided, being secured in any desired manner to the stiles 19. Adjacent the inner face 21 of the ventilator, the rail 24 is formed with a downwardly and inwardly projecting flange 25. Adjacent the outer face 22 of the ventilator, the rail 24 is bent downwardly, outwardly and upwardly to form flanges 26, 27 and 28 respectively. By reason of the flanges 25 and 26, a partially closed pocket 30 is created, the purpose of which will be more clearly understood from a further description of the invention. Joined to the flanges 32 of the stiles 19 in any suitable manner, as by rivets 33, are angular elements 35. The elements 35 follow the contour of the stiles to the approximate center of the inner wall 36, whence they project inwardly to form supporting flanges 38.

The fixed louvers 39 are formed with a generally curved portion 40 terminated along one edge by a flange 41. The ends of the flanges 41 are welded or otherwise suitably joined to the flanges 38 of the elements 35 (see Figure 6). Should the ventilator 17 be of considerable length, it is deemed necessary to provide a central supporting strip 43 to which the flanges 41 of the fixed louvers 39 are welded or otherwise secured. The flanges 38 of the elements 35, at their upper ends, approach the flange 26 of the rail 24, producing small pockets within the pockets 30. Into these small pockets the ends of the upper louver 39 are projected. A channel plate 44 is mounted on the portion of the rail 24 defined by flanges 26, 27 and 28, being secured by rivets 45 to the flange 28. This plate provides a rail finish similar in contour to the lower rail, hereinafter to be described.

Beneath the lowermost louver 39 and forming the lower rail of the ventilator are angular elements 46 and 47. The element 46, located adjacent the face 22, is reversely bent to produce vertical flanges 48 and 49. The flange 48 is flush with and forms part of the base of the ventilator and the flange 49 at its ends abuts the flanges 38. The inner element 47 is likewise bent to produce a flange 52 which forms part of the base of the ventilator. The vertical flange 53 of this element is spaced from the flange 38 by a felt or other silencing material 55. Rivets 56 join the elements 46 and 47 together through the felt 55 and at the ends of the ventilator through the flanges 38. The upper edge of the element 47 terminates in an outwardly extending flange 58 which constitutes a stop or limit to the movement of the ventilator from opened to closed position.

The movable louvers 59, being similar to the fixed louvers 39, are formed with curved portions 60 and upstanding flanges 61. These louvers are formed with blank ends which are curved to form hollow pins 63, the purpose of which is to provide pivotal support therefore. Adjacent the flanges 38, the walls 36 of each of the stiles 19 are provided with a number of uniformly spaced, vertically alinged openings 64, the openings corresponding to the number of movable louvers. The pins 63 project through the openings 64 and extend well into the closed pockets 20. It is pointed out that the bearing support for the ends of the movable louvers 59, being produced directly from the louvers themselves, greatly reduces the manufacturing and installation costs.

Within one of the closed pockets 20 is located a longitudinally extending rod 66 having spaced openings therein corresponding to the number of movable louvers. Mounted on each of the pins 63, and secured thereto against rotation, are links 67 having ends 68 formed with openings corresponding in size with the openings in the rod 66. Rivets 69 pivotally connect the links to the plate. It is obvious that by opening or closing one of the louvers, the other movable louvers, being connected to the operated louver through rod 66 and links 67, will open or close together.

It will be noted that the movable louvers 59 are so arranged that the curved portion 60 of the upper louver overhangs the flange 61 of the louver mounted therebeneath when the ventilator is opened as shown in Figure 4. When the louvers are moved to closed position (see Figure 5) the flanges 61 move outwardly and the curved portion 60 moves inwardly. Consequently, opposite portions of adjacent louvers overlap thus completely closing the ventilator.

To facilitate the manipulation of one of the louvers, an operating handle 70 is joined to the face of the lowermost louver by rivets 71. The present embodiment of the invention discloses a ventilator fitted in the upper part of a door at which height it is easily operated by the handle 70. If, however, the ventilator is mounted above the door, in a transom for example, or in the upper part of a window opening, suitable linkages are provided by which to actuate the operating handle 70.

The device, as described, comprises a complete unit which is mounted in the opening provided therefore. When so mounted, screws 73 secure the ventilator to the lower and upper rails 14 and 15 of the door. Suitable moulding 74 may be added to effect a finished installation.

Although applicant has disclosed but one modification of his invention and only one application of use thereof, it is not intended that he be limited thereto, since it is obvious to those skilled in the art that other modifications or applications of the device may be made without departing from the spirit and scope of the invention as defined by the hereunto annexed claims.

Having thus set forth my invention what I claim as new and for which I desire protection by Letters Patent is:

1. A ventilator unit of the class described comprising stiles, oppositely disposed fixed and movable louvers mounted between said stiles, axial pins formed integral with the ends of said movable louvers and projecting through said stiles, links fixed to said pins, and a plate connecting said links whereby manipulation of one louver causes all of said movable louvers to be actuated.

2. In a ventilator unit of the class described, a set of fixed louvers, outwardly and downwardly curved portions projecting below the upper edge of the louver therebeneath, a set of similarly formed reversely disposed movable louvers, said movable louvers being arranged in the same horizontal plane with said fixed louvers, and means pivotally supporting said movable louvers, said means being adapted to permit actuation of said movable louvers without permitting the passage of light from one side of the ventilator unit to the other.

3. A ventilator unit comprising stiles, oppositely disposed fixed and movable louvers mounted between said stiles, co-axial pins formed integral with the ends of said movable louvers and projecting into said stiles, said pins being located centrally of the edges of said movable louvers so that adjacent edges of said movable louvers may overlap and contact with each other whereby to prevent the passage of air through said ventilator.

4. A ventilator unit comprising stiles, oppositely disposed fixed and movable louvers mounted between said stiles, co-axial pins formed integral with the ends of said movable louvers and projecting into said stiles, said pins being located substantially centrally of

the edges of said movable louvers to provide a pivotal support therefor, links secured to the ends of said pins and a plate connecting all of said links, said plate being adapted to synchronize the movement of all of said movable louvers whereby adjacent edges thereof will contact with each other to prevent the passage of air through said ventilator.

5. A ventilator unit comprising stiles, oppositely disposed fixed and movable louvers mounted between said stiles, co-axial pins formed integral with and projecting beyond the ends of said movable louvers, said pins being located substantially centrally of the edges of said louvers and provide a pivotal support therefor, links joined to said pins and concealed in said stiles, said links being connected to each other so that movement of any one of said louvers causes simultaneous movement of all of said movable louvers.

In testimony whereof I have affixed my signature.

EDWARD H. ELLISON.