Oct. 29, 1935. W. W. ALLEN 2,019,378

VENTILATOR

Filed May 13, 1935 2 Sheets-Sheet 1

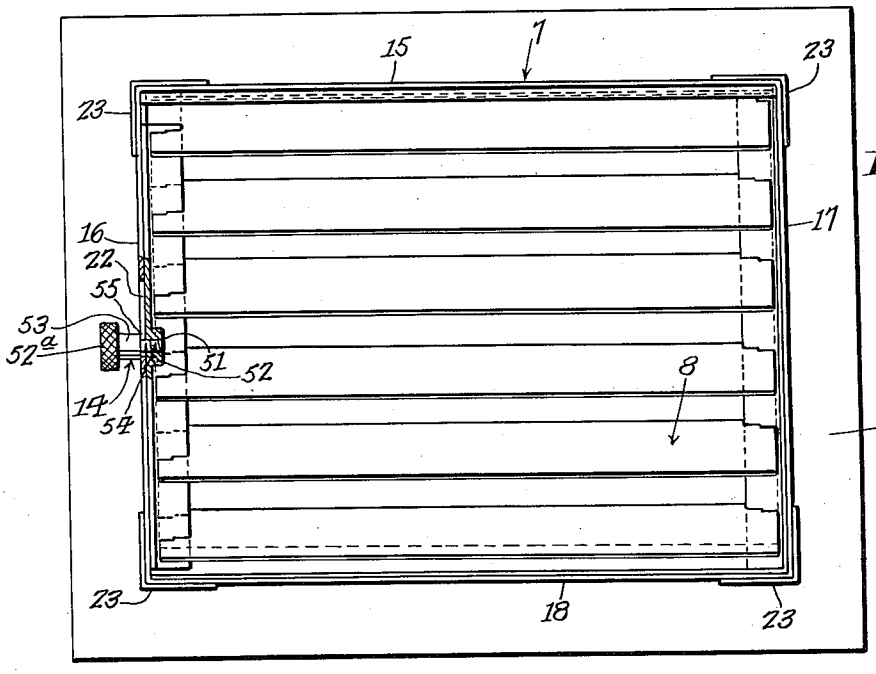

Fig. 1.

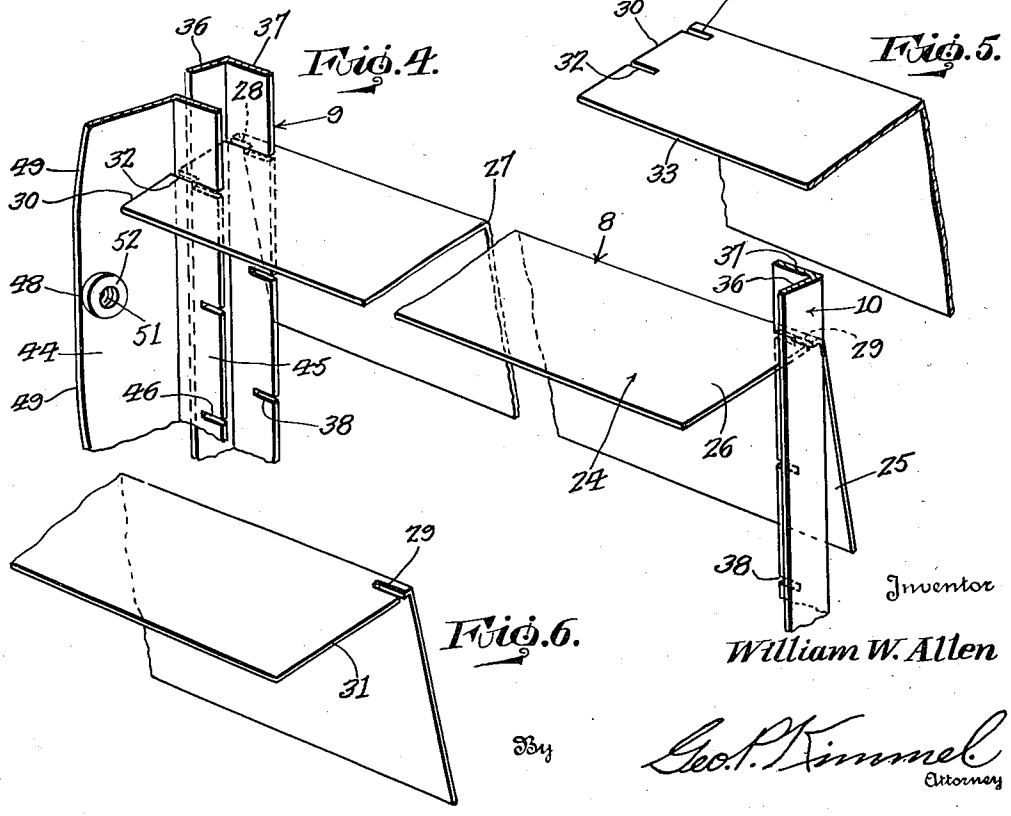

Fig. 4.

Fig. 5.

Fig. 6.

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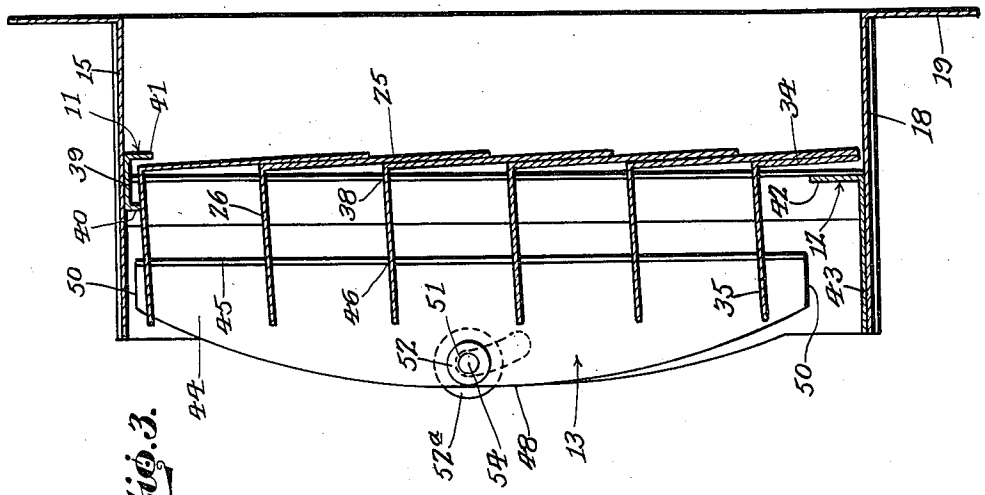

Fig. 3.

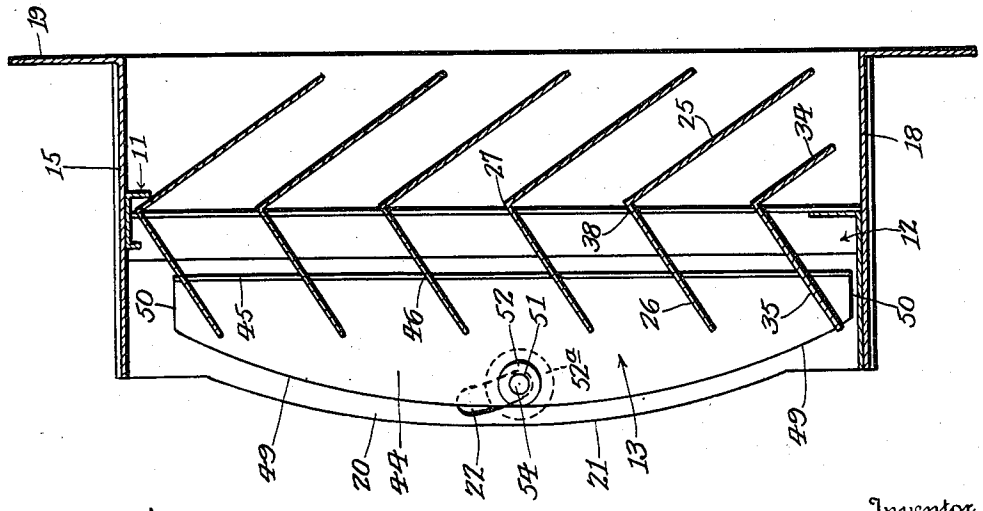

Fig. 2.

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UNITED STATES PATENT OFFICE

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VENTILATOR

William W. Allen, Jacksonville, Fla.

Application May 13, 1935, Serial No. 21,251

3 Claims. (Cl. 98—121)

This invention relates to a ventilator of the louver type.

The object of the invention is to provide, in a manner as hereinafter set forth, a ventilator of the louver type whereby it may be completely opened or closed or partly opened or closed and when locked in any position of adjustment, keeping out sight.

A further object of the invention is to provide, in a manner as hereinafter set forth, a ventilator of the louver type having the louvers formed with interlocking pivots and a shifting lever for the louvers interlocking with the latter.

A further object of the invention is to provide, in a manner as hereinafter set forth, a ventilator of the louver type having its louvers of right-angled contour and with the pivots therefor located on the short leg of the louver in proximity to its apex.

A further object of the invention is to provide, in a manner as hereinafter set forth, a ventilator of the louver type having its louvers superposed, of right-angled contour and with the one end of the short leg of each upper louver and the long leg of the lowermost louver formed with a pair of spaced notches to provide a pair of interlocking pivots, one for engagement with a stationary element upon which the louver pivots and the other for engagement by a notched, latchable shiftable lever for adjusting the louver.

A further object of the invention is to provide, in a manner as hereinafter set forth, a ventilator of the louver type including louvers, a shifting or adjusting lever common to the louvers and travelling in an elliptical path, and with the lever and louvers having coacting interengaging parts providing pivots between the lever and louvers.

A further object of the invention is to provide, in a manner as hereinafter set forth, a ventilator of the louver type including a frame-like structure for housing the louvers and with said structure including means to prevent the louvers from binding against the sides thereof.

A further object of the invention is to provide, in a manner as hereinafter set forth, a ventilator of the louver type including a frame-like structure for housing the louvers and with weather proof strips within the frame to act as spacers for and to prevent the louvers from binding against the sides of said structure.

A further object of the invention is to provide, in a manner as hereinafter set forth, a ventilator of the louver type whereby it may be completely or partly opened and locked in its adjusted open position and when so locked allowing for passage of air and, at the same time, keeping out sight.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a ventilator of the louver type which is simple in its construction and arrangement, strong, durable, compact, expeditiously adjusted, conveniently assembled, of light weight and comparatively inexpensive to manufacture.

With the foregoing objects in view, and to others which may hereinafter appear, the invention consists of such parts and such combination of parts as will be specifically described and illustrated in the accompanying drawings, wherein is shown the preferred embodiment of the ventilator, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawings:

Figure 1 is a rear elevation of the ventilator,

Figure 2 is a vertical sectional view of the ventilator when open,

Figure 3 is a vertical sectional view of the ventilator when closed,

Figure 4 is a fragmentary view in perspective of the ventilator,

Figure 5 is a fragmentary view in perspective, illustrating the form of one end of each louver, and

Figure 6 is a view similar to Figure 5 illustrating the form of the other end of each louver.

The elements of the ventilator may be constructed from any suitable material and by way of example, they are shown as being constructed of metallic material.

The ventilator includes a frame element 7, a set of superposed spaced pivoted louver elements 8 which are arranged in element 7, a pair of oppositely disposed angle-shaped supporting elements 9, 10 suitably secured to the inner faces of the sides of frame 7, an inverted channel-shaped stop element 11 for the upper louver element of the set and which is secured to the lower face of the top of element 7, an angle-shaped stop element 12 for the lower louver element of the set and which is secured to the upper face of the bottom of the frame, an adjusting element or lever 13 common to the louvers and which is slidably arranged against the inner face of one side of the element 7 and a locking or latching element 14 for element 13. The elements 9, 10, 11 and 12 act as weather proof means located between the set of louver elements and the element 7. The elements 9, 10 prevent the binding of the

louvers against each side of the element 7. The elements 11, 12 prevent respectively the abutting of the upper louver element of the set against the top and the front leg of the lower louver element of the set extending rearwardly beyond the pivot for such louver.

With reference to Figures 1, 2 and 3, the frame element 7 includes a top wall 15, a pair of side walls 16, 17, a bottom wall 18 and an outwardly directed right angularly disposed endless flange 19 at the front of the said walls. The wall 16 is formed with a rearward extension 20 which is spaced from the top and bottom thereof and provided with a convex edge 21. The wall 16 is formed with an upstanding slot 22 upon an elliptical curve. The base of slot 22 is below and in proximity to the transverse median of wall 16. The walls 15, 16, 17 and 18 are reinforced by corner pieces 23 which, at one end thereof, abut flange 19.

The upper louver elements 8 of the set are of like construction and each consists of a horizontally disposed one-piece body 24 (Figure 4) of right-angled contour having front and rear legs or angles 25, 26 respectively. The leg 25 is of greater length than leg 26, but corresponds in width to that of the latter. The apex of body 24 is indicated at 27. The leg 26 is provided in proximity to apex 27 with a pair of oppositely disposed short notches 28, 29 extending lengthwise thereof and opening at its side edges 30, 31 respectively. The leg 26 is further provided with a short notch 32 extending lengthwise thereof, arranged in spaced relation to notch 28 and the rear end edge 33 of leg 26, as well as opening at the said edge 30.

The lowermost louver element 8 of the set is of the same construction and contour as that of the other elements with the exception that the front leg or angle 34 of such lowermost louver is of less length than the rear leg or angle 35 thereof. The rear leg 35 of the lowermost louver is notched in the same manner as the rear leg 26 of the other louvers. The louvers 8 are normally arranged in overlapping relation and are capable of being adjusted relative to each other to provide for the front legs thereof moving towards and from each other.

The supporting elements 9, 10 are of like form and each consists of a one-piece body formed of a pair of vertically disposed legs 36, 37 disposed at right angles to each other. The leg 36 is adapted to be secured by any suitable means to an inner face of a side of the element 7. The leg 37 extends inwardly at right angles to the forward side of the leg 36. The leg 37 is formed transversely thereof with spaced superposed notches 38 opening at its inner side edge. The number of notches 38 in leg 37 correspond to the number of louvers 8. The notches 38 in the leg 37 of element 9 align with the notches 38 in the leg 37 of element 10.

The notches 28, 29, 38 coact to provide interengaging or interlocking pivots for the louvers 8. In this connection it will be stated that the notches 28, 29 provide for legs 26 to overlap the legs 37 and the notches 38 for the legs 26 to overlap legs 37. The walls of notches 28, 29, 38 coact to form pivots for the elements 8 relative to elements 9, 10.

The element 11 extends from one side to the other of element 7 and comprises a top portion 39, a rear side portion or flange 40 and a front side portion or flange 41 of greater height than the portion 40. The upper ends of the elements 9, 10 are arranged within and are overlapped in spaced relation by the portions 40, 41 of element 11. The flanges 37 of elements 9, 10 are arranged between the longitudinal median of the portion 39 and portion 41.

The element 12 includes a vertical and a horizontal flange 42, 43 respectively. The flange 42 is secured against the rear faces of legs 37 of the members 9, 10 and is arranged rearwardly of and in the path of the leg 34 of the lowermost louver 8. The flange 42 is arranged at the outer end of flange 43. The latter is secured to the upper face of bottom 18 and extends from side 16 to 17 rearwardly of the legs 36.

The element 13 consists of a vertically disposed plate 44 arranged at the inner face of side 16 of element 7 and formed at its front side with an inwardly extending right angularly disposed flange 45 of uniform width from end to end. The flange 45 is provided with a series of superposed spaced transverse notches 46 opening at the free side edge 47 thereof. The number of notches 46 correspond to that of the louvers 8. The rear side edge of plate 44 has a straight central edge portion 48 and a pair of oppositely curved edge portions 49 extending from the ends of edge portion 48 to the end edges 50 of the plate 44. The height of element 13 is less than that of the side 16 of element 7. In proximity to the edge portion 48, and at the transverse median of plate 45, the latter is formed with an opening 51. Secured to the inner face of plate 45 is an interiorly threaded collar 52 having its inner edge forming a continuation of the edge or wall of opening 51. The notches 32 of the rear legs of the louvers provide for the said legs overlapping flange 45 and the notches 46 of the flange 45 provide for the said flanges overlapping the rear legs of the louvers whereby the said rear legs and flange 45 will interengage or interlock and provide pivoted connections between the flange 45 and the louvers.

To facilitate the shifting of, as well as for locking lever 13 in its adjusted position, the element 14 is employed. The element 14 also constitutes a latching member for lever 13. The element 14 consists of a head 52^a and a shank 53 formed with a reduced inner portion 54 which is peripherally threaded. The reduced portion 54 extends through slot 22 and opening 51 and adjustably engages with collar 52. The element 14 has a peripheral shoulder 55 adapted to bind against wall 16 to bind lever 13 and wall 16 together to detachably retain lever 13 in its adjusted position. The element 14, when shifting lever 13, travels in an elliptical path.

The ventilator may be made to operate automatically by leaving off all of the locking mechanism and shortening short leg 26, placing notch 32 closer to notch 28, thus shortening distance between said notches, and using the operating coupling mechanism the same as previously described, and the weight of leg 25 would keep ventilator closed. However, the passage of air either blown in or pulled through by exhausting would operate all the vanes at the same time.

What I claim is:

1. A ventilating mechanism comprising a frame, oppositely disposed upstanding supports secured to the inner faces of the sides of the support and each including an inwardly extending flange formed with superposed notches, a series of superposed louvers arranged in overlapping spaced relation within the frame, each of said louvers being of angled contour and including a

front and a rear leg, each louver having its rear leg notched at each side rearwardly of and in proximity to its apex, the notches of the flanges and rear legs coacting to provide for the overlapping of the louvers relative to and for pivotally supporting the louvers from the said supports, an upstanding shiftable adjusting structure for and arranged at one side of said series of louvers, said structure positioned in close proximity to the inner face of one of the sides of said frame, said structure being slidably connected to the said side and formed with an inwardly extending flange provided with a series of superposed notches, each louver having its rear leg at one end provided with a notch rearwardly of the other notches therein, and the said rear notches of the louvers and the notches of the flange of said structure coacting for pivotally connecting the set of louvers to said structure.

2. In a ventilating mechanism, a series of superposed angle-shaped louvers arranged in overlapping spaced relation, a frame-like supporting structure having said louvers arranged therein, said structure and louvers being slotted to provide interengaging means for supporting and pivoting the louvers adjacent their apices, a lever for shifting the louvers in unison, and said lever and louvers being slotted to provide interengaging means for pivotally connecting the lever to the louvers.

3. In a ventilating mechanism, a series of superposed angle-shaped louvers arranged in overlapping spaced relation, a frame-like supporting structure having said louvers arranged therein, said structure and louvers being slotted to provide interengaging means for supporting and pivoting the louvers adjacent their apices, a lever for shifting the louvers in unison, said lever and louvers being slotted to provide interengaging means for pivotally connecting the lever to the louvers, and each of said levers including a short and a long leg disposed at right angles to each other.

WILLIAM W. ALLEN.