

L. SILBERMAN.

VENTILATOR.

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933,271.

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Fig. 1.

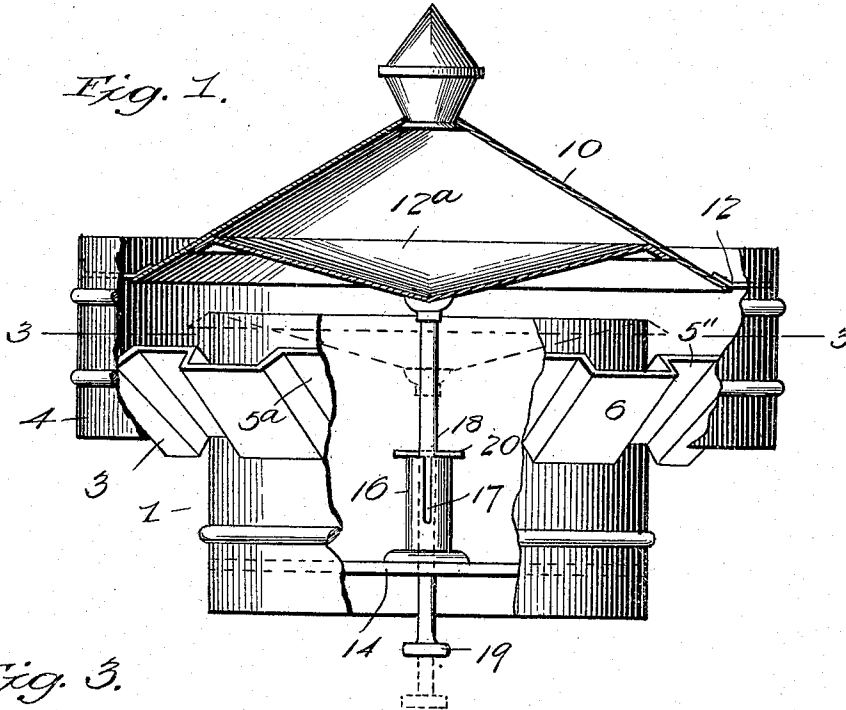


Fig. 3.

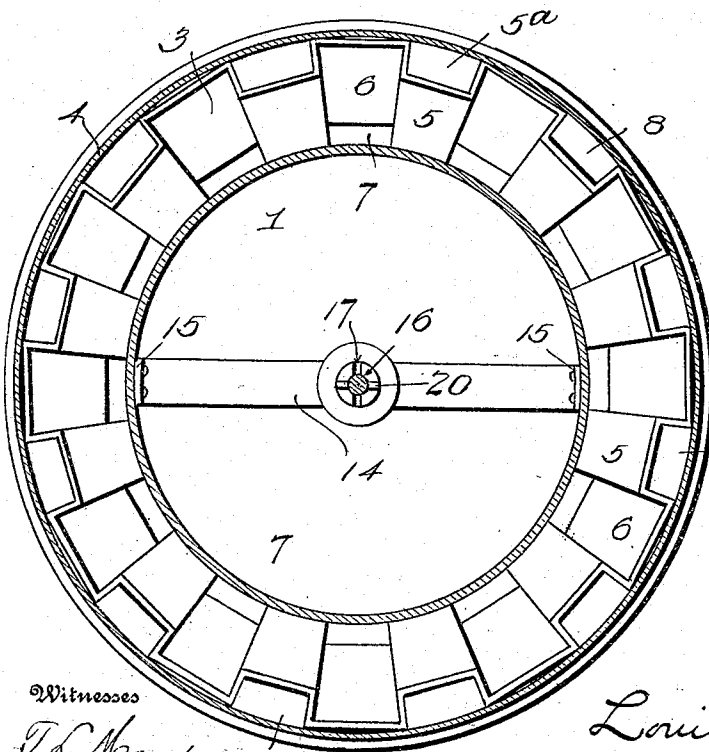
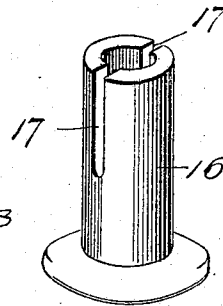


Fig. 2.



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To all whom it may concern:

Be it known that I, LOUIS SILBERMAN, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Ventilators, of which the following is a specification.

My invention has relation to new and useful improvements in ventilators for roofs, and particularly to the type employed in connection with the roofs of buildings for the purpose of providing a more perfect scheme of natural ventilation, also as a means for drawing off gases, smoke or heated air generated within said buildings.

The principal object of the invention is to provide a closure for the ventilator which will automatically close in case of conflagration within the building so as to cut off the draft which would ordinarily tend to accelerate the combustion.

A further object of the invention is to provide a closure for the ventilator having improved and simplified operating mechanism for moving the same to open and closed position.

A further object is to provide an operating means including a fusible device for holding the same in position when the closure is open, which device when subjected to excessive heat as that arising from fire within the building, will be melted and permit the ventilator closure to move to closed position.

A further and important object is to provide an operating device for the ventilator closure from which all chains and levers and similar connecting devices will be eliminated, so that there will be no likelihood of the closure being held open by entanglement or sticking of the chains or levers when circumstances demand that the ventilator opening should be closed promptly and effectively.

To the ends above stated, the invention consists in the improved construction of the parts and their arrangement in operative combination to be fully described hereinafter and the novelty of which will be particularly pointed out and distinctly claimed.

I have fully and clearly illustrated my invention in the accompanying drawings to be taken as part of this specification and wherein—

Figure 1 is a view showing a ventilator in vertical central section, the same embodying the improvements of my present invention. Fig. 2 is a detailed perspective view of one

of the elements of the invention. Fig. 3 is a transverse section on the line 3—3 of Fig. 1.

Referring to the drawings by numerals of reference—1 designates an air flue, the upper part of which constitutes the throat of the ventilator, the same being preferably cylindrical in form, and may be projected through an opening in the roof of the building (not shown) or may be supported in any suitable manner upon the roof and placed in communication with a flue leading from the building.

Surrounding the flue or throat 1 is an annular supporting plate 3, secured to the flue at its inner edge and at its outer edge supporting an annular, vertically disposed casing wall 4, said wall and plate 3 being secured together in any suitable manner. This supporting plate 3 is fluted, or reversely corrugated so as to provide alternate raised and depressed portions shown at 5 and 6 respectively. The annular plate is so disposed with relation to the flue 1 as to be inclined upwardly and outwardly therefrom to the point at which said plate connects with the wall 4, so that the upper channels 6 open at their lower ends into open spaces 7 adjacent the flue 1, and the under channels 5^a, formed by the raised portions 5, open through spaces adjacent the wall 4. By this construction it will be apparent that water from rain or snow will not collect upon the upper surface of the plate 3 but will flow down the upper face of the plate and escape through the open spaces 7 above described. It will also be apparent that the air currents directed against the outer face of said plate will follow the channels 5^a formed by the raised portions 5 and pass out through the open spaces 9 at the ends of said channels, thus providing for a continuous draft through the flue-pipe 1, without regard to the direction from which the wind blows.

Arranged above and spaced from the upper edge of the flue 1 is a conical cover or shield 10 the lower edge 11 of which is supported in position by means of brackets 12 secured to said cover and wall. Located in the space between the upper end of the flue pipe 1, and the cover 10 is a valve element 12^a to control the flow of air currents through the said flue pipe. This valve element is formed of sheet metal and is conical in general contour being arranged with its apex downwardly, said valve being of a

diameter greater than that of the upper end of the flue pipe, and being formed with a circumferential flange 13, which when the valve is in position to close the flue, rests upon the upper edge of said flue.

Within the flue 1, is a transversely disposed bar 14 having its ends securely and rigidly connected to the flue, as at 15; said bar constituting a support for a hollow, tubular post 16, mounted on said bar and extending vertically from the latter, said post being formed with oppositely disposed alining, longitudinally extending slots 17, which extend from the upper end of the post to a point intermediate the ends of the latter.

Extending loosely through the post 16, and capable of both rotary and reciprocatory movement therein, is a bar 18 constituting an operating member, the upper end of which may be rigidly connected to the valve member 12^a at the apex of the latter, and the lower end of which projects below the lower ends of the tubular post 16, and is formed with a hand grasp 19 of any desirable design. It will be seen that by reciprocating the bar 18 vertically the valve element 12^a may be moved up and down to rest upon the upper edge of the flue 1 and close the same, or be raised upward to permit draft through the flue.

The bar 18 is provided with a shoulder or projection, which may be of fusible material and which coöperates with the hollow post 16 to hold the valve element 12^a in open or raised position. This shoulder or projection preferably consists of a pin 20 adapted to removably engage an opening 21 extending transversely through the bar 18, said pin projecting laterally on both sides of the said bar, and being arranged to rest upon the upper edge of the tubular post 16 and thereby support the valve element in raised position. This pin 20 is of less diameter than the width of the slots 17 in the post 16, and it will therefore be seen that the valve may be manually moved to closed position by the operator merely grasping the bar 18 and rotating the same until the projecting parts of the pin 20 register with the upper ends of the slots 17 when the ventilator will drop of its own weight to closed position, the downward movement being limited by the pin striking the lower ends of said slots.

In case of conflagration, it will be apparent, that the fusible pin 20 will be melted when the heat reaches a determined point and the support for the valve element being destroyed, the latter will drop to its closed position automatically and cut off the draft through the flue 1.

It is believed that the operation of the invention as above described will be apparent, but it may be briefly stated as follows—The parts being as described, and it being premised that the valve is to be placed in open

position, a pin is placed in the opening 21, and the operating bar 18 is manipulated until said pin rests upon the upper edge of the tubular post 16, whereby the said valve will be maintained in open position during normal conditions. Should it become necessary to close the flue 1, it is only necessary to rotate the bar 18 until the pin 20 registers with the slots 17 when the valve element will be permitted to drop to closed position. When the valve is to be raised to open the flue 1, it is only necessary to push the bar 18 upward until the pin 20 clears the upper end of the tubular post 16, when the member 18 is rotated to carry the said pin over the upper position. In case of conflagration, the ends of the pin 20 are melted off, and the operating member 18 is free to move down through the tubular member, thus shutting off all draft through the air flue 1.

What I claim is:—

1. In a ventilator of the character described, the combination with a flue, of a closure therefor, a guide element, a vertically reciprocating operating member coöperating with the guide element and engaging the closure, and a projection rigidly connected to said member and adapted to engage a part of the guide element to maintain the closure in open relation to the flue.

2. In a ventilator of the character described, the combination with a flue, of a closure therefor, a guide element, a vertically reciprocating operating member coöperating with the guide element and engaging the closure, and a projection of fusible material rigidly connected to said member and adapted to engage the guide element to maintain the closure in open relation to the flue.

3. In a ventilator of the character described, the combination with a flue, of a closure therefor, a guide element, a vertically reciprocating operating member coöperating with the guide element and engaging the closure, said member having an opening therethrough and a removable pin mounted in said opening and adapted to engage a part of the guide element to maintain the closure in open relation to the flue.

4. In a ventilator of the character described, the combination with a flue, of a closure therefor, a tubular guide element supported on the flue, a vertically reciprocating operating member working in the guide element and engaging said closure, and a projection on said member adapted to engage the tubular guide element to maintain the closure in open relation to the flue.

5. In a ventilator of the character described, the combination with a flue, of a closure therefor, a vertical tubular guide element having a longitudinally extending slot, a vertically reciprocating operating member working in said guide element, and a removable projection carried by the operat-

ing member and adapted to engage a part of the guide element to maintain the closure in open relation to the flue, said operating member being rotatable to bring the projection into register with the slot whereby the closure may be moved to close the flue.

6. In a ventilator of the character described, the combination with a flue, of a closure therefor, a vertical tubular guide element supported within the flue and having oppositely disposed longitudinal slots, a vertically reciprocating and rotary operating member working in said guide element and a removable pin carried by the operating member projecting laterally therefrom in opposite directions above said guide element and cooperating with the upper edge thereof to support the closure in open relation to the flue and adapted to be brought into register with said slots, to permit the closure to be operated to close the flue.

7. In a ventilator of the character described, the combination with a flue, of a closure therefor, a vertical tubular guide element having a longitudinally extending slot and a shoulder, a vertically reciprocating operating member extending through said guide element and connected to the closure, and a fusible projection on the operating member cooperating with the shoulder on the guide element to maintain the closure in open relation to the flue, said operating member being rotatable whereby said projection may be brought into register with the slot in the guide element.

In testimony whereof I affix my signature, in presence of two witnesses.

LOUIS SILBERMAN.

Witnesses:

W. B. GODDARD,
C. H. BOLLES, Jr.