

No. 869,159.

PATENTED OCT. 22, 1907.

W. F. BRITTON.
VENTILATOR.

APPLICATION FILED JAN. 3, 1907.

Fig. 1.

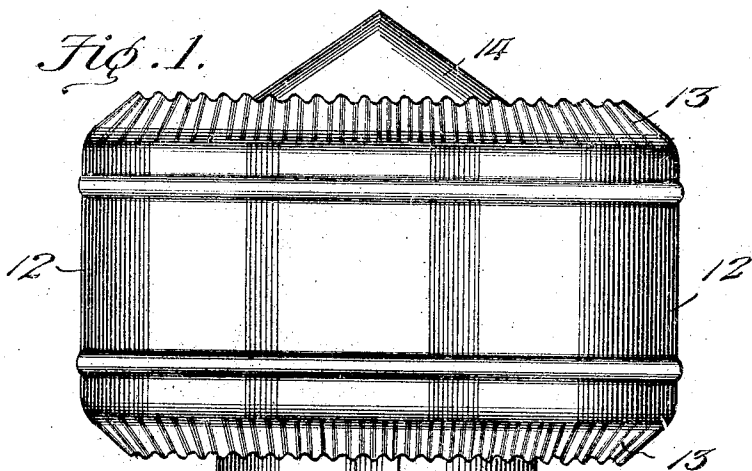


Fig. 3.

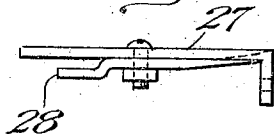
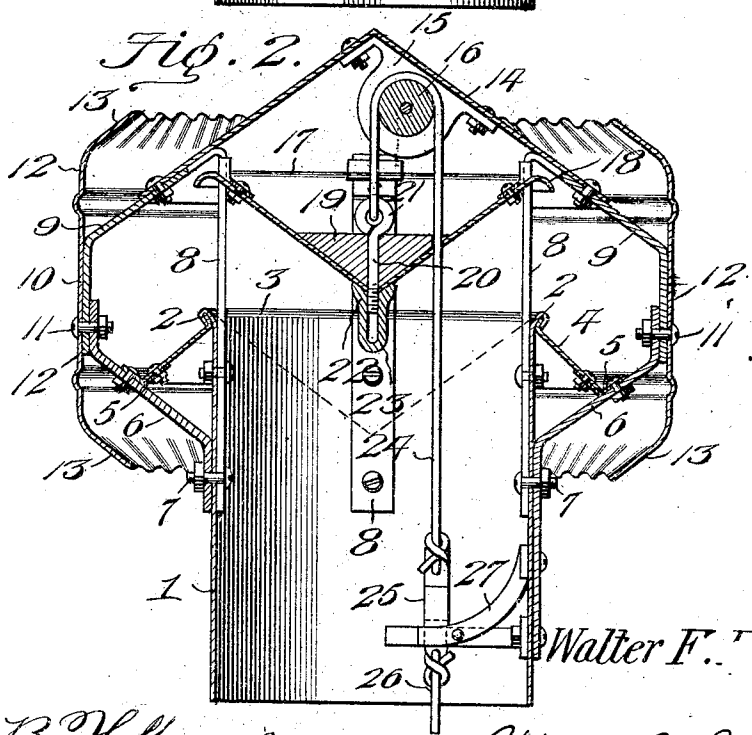


Fig. 2.



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VENTILATOR.

No. 869,159.

Specification of Letters Patent.

Patented Oct. 22, 1907.

Application filed January 3, 1907. Serial No. 350,580.

To all whom it may concern:

Be it known that I, WALTER F. BRITTON, a citizen of the United States, residing at Anniston, in the county of Calhoun and State of Alabama, have invented new and useful Improvements in Ventilators, of which the following is a specification.

This invention relates to ventilators of the type employed on the ventilating shafts or flues of warehouses, factories and other buildings, being especially directed to a cut-off member or valve sustained in the ventilator and adapted for closing the upper end of the flue for cutting off the draft therethrough when circumstances require.

The invention has for its objects to provide a comparatively simple, inexpensive device of this character whereby an induced or forced draft will be maintained through the flue, one whereby the entrance of exterior currents of air into the flue is effectually prevented, and one wherein the cut-off valve will, under the action of fire in the flue, be automatically released and thereafter moved by gravity to a closed position.

Further objects of the invention are to provide a device of this class wherein the valve will move freely to closed position and be properly guided in its movements, one in which the valve will be normally locked in open position, and one wherein the valve may be manually released and closed at will.

With these and other objects in view, the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings: Figure 1 is a side elevation of a ventilator embodying the invention. Fig. 2 is a vertical section taken centrally and longitudinally therethrough. Fig. 3 is a detail view of the keeper.

Referring to the drawings, 1 designates the ventilating shaft or flue having at its upper end a flared stiffening bead 2, which constitutes a valve seat 3 and in which is connected the upper end of a downwardly and outwardly inclined frusto-conical guard member or apron 4 attached at its lower edge by means of clips 5 to upwardly and outwardly inclined supporting arms 6 in turn attached to the flue 1, there being also attached to said flue and by means of the fastening bolts 7, which secure the arms 6 in place, a plurality of vertical guide members or standards 8 terminated at their upper ends in overturned, downwardly and outwardly inclined frame members 9 having vertically depending portions 10 attached at their lower ends to the outer ends of the supporting arms 6 and forming in conjunction therewith a frame or super-structure carried by the flue.

Attached to the frame by means of the fastening members or bolts 11 which unite the frame portions 10 and arms 6 is a hollow sheet metal drum 12 arranged to inclose the upper end of the flue 1 and having inwardly inclined upper and lower end portions or flanges 13 formed by fluting or corrugating the metal in the opera-

tion of constructing the drum, while sustained above and suitably remote from the upper end of the flue is a conical protecting cap 14 attached at its lower end to the frame members 9, there being fixed in the cap a bearing 15, on which is journaled a pulley 16 for a purpose which will presently appear.

Slidably sustained on the guides 8 is an inverted conical cut-off member or valve 17 provided at its upper edge with a downturned flange 18, there being arranged on the upper face of the valve a weight 19 secured in place by means of an eye-bolt 20 provided at its upper end with an eye 21 and having tapped onto its lower end a nut 22 provided with an eye 23 for a purpose which will presently appear, there being arranged for travel on the pulley 16 a wire or other flexible connection 24 engaged at one end with the eye 21 and at its other end with a coupling piece 25 composed of fusible material and to which is also attached a flexible connection 26 which extends downward through the flue.

The coupling piece 25 is adapted for engagement with a keeper 27 comprising a pair of bracket arms attached in the flue and having their ends spaced as at 28 to form a recess into which the piece 25 may be entered by a transverse movement for fixing the parts in position with the valve 17 raised to open position, as shown in Fig. 2.

In practice, the valve stands normally open to permit free passage of warm or foul air upward through the flue 1 into which external air is prevented from entering by means of the drum 12 and protecting cap 14, it being noted in this connection that currents of air striking the drum will be deflected upward or downward by the inclined end portions 13, thereby drawing the air from the interior of the drum and causing an induced or forced draft upward through the flue, and further that currents of air passing directly upward or downward will be prevented from entering the flue respectively by the apron 4 and cap 14. Should it be desired at any time to close the flue for cutting off the ventilation therethrough, the member 25 may, by manipulating the connection 26, be disengaged from the keeper 27, thus allowing the valve 17 to move to closed position, as illustrated by dotted lines in Fig. 2, under which conditions the valve will rest evenly on the seat 3. When the parts are in normal position if a fire starts in the flue the fusible coupling piece 25 will be melted, thereby releasing the connection 24 and permitting the valve to close automatically by gravity under the influence of weight 19. Under some conditions, if found desirable the weight 19 may be dispensed with and a traction cord or wire engaged with the eye 23 of the nut 22 to permit of the valve being manually moved to closed position.

Having thus described my invention, what I claim is:

1. In a device of the class described, a flue, a hollow drum sustained upon and surrounding the upper end of the flue, a protecting cap mounted over and remote from the

upper end of the flue, a cut-off valve slidably sustained above the latter, means including a fusible piece for holding the valve in open position, said valve being adapted to close automatically when released, and means for guiding the valve in its movements.

2. In a device of the class described, a flue, vertical guide members arising therefrom, a protecting cap mounted over the flue and sustained by the guide members, a cut-off valve slidably mounted on said guides and adapted for closing the upper end of the flue, and means including a fusible piece for holding the valve in open position.

3. In a device of the class described, a flue expanded at its upper end to form a valve seat, a valve suitably guided for vertical movement, means for normally supporting the valve above the seat, a protecting cap supported above the flue and the valve, and a frusto conical guard supported upon the flue adjacent to its upper extremity.

4. In a device of the class described, a flue expanded at its upper end to form a valve seat, a valve guided for vertical movement, means for normally supporting the valve above the seat, a protecting cap supported above the flue and the valve, a frusto conical guard mounted upon the

flue adjacent to its upper extremity and a hollow drum disposed about the flue, the protecting cap and the guard, spaced therefrom and having inwardly inclined flanges at its upper and lower ends.

5. In a device of the class described, a flue expanded at its upper end to form a valve seat, a frusto conical guard mounted upon the flue adjacent to its upper extremity, vertical guides secured upon the flue, frame members connecting the guides with the frusto conical guard, a valve mounted for vertical movement upon the guides, a protecting cap supported upon the guides above the valve, a hollow drum mounted upon the frame members and having inwardly inclined flanges at its upper and lower ends which extend above the protecting cap and below the guard respectively, and means for normally supporting the valve above the seat.

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

WALTER F. BRITTON.

Witnesses:

JOHN L. FLETCHER,
K. ALLEN.