

June 24, 1930.

R. S. BUSBY

1,766,876

VENTILATOR FOR BUILDINGS

Filed Aug. 24, 1929

Fig. 1.

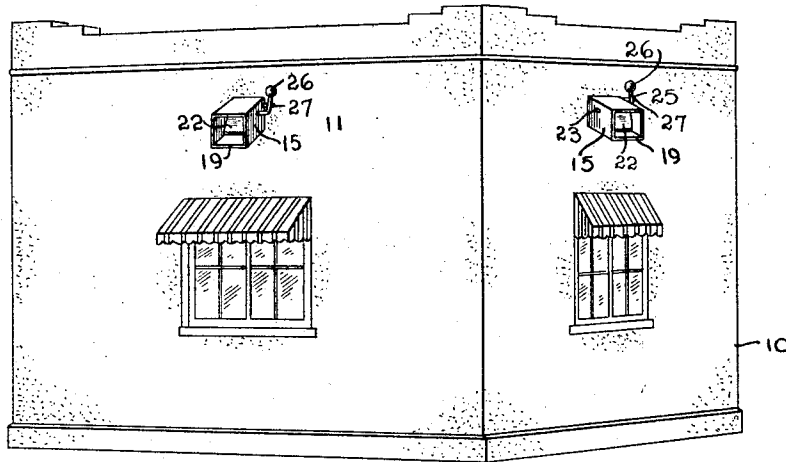


Fig. 2.

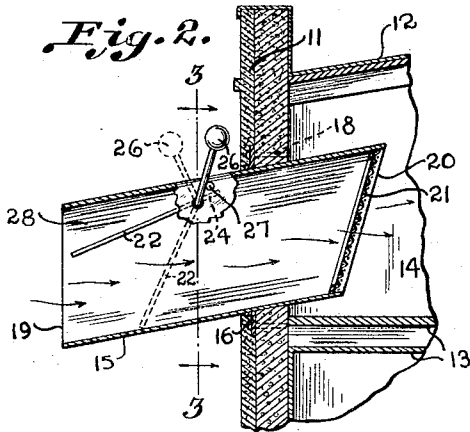


Fig. 3.

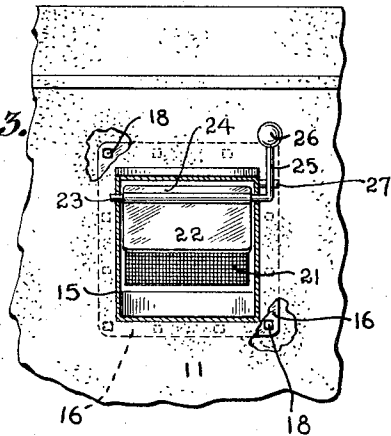


Fig. 4.

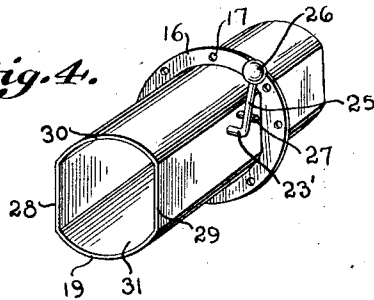
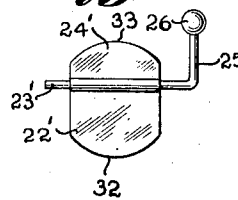


Fig. 5.



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VENTILATOR FOR BUILDINGS

Application filed August 24, 1929. Serial No. 333,182.

The present invention relates to improvements in ventilators for buildings, and has for an object to provide an improved ventilator more particularly for use in connection with the ventilating spaces in buildings of the Spanish style having roofs set inside parapet walls.

It is another object of the invention to provide an improved ventilator constructed to close automatically or manually thereby preventing a large volume of air at high pressure from entering between the roof and ceiling and damaging or lifting out the roofing and the sheathing.

A further object of the invention is to provide an improved ventilator so constructed and angularly set in the building as to avoid the entrance of rain, snow and sleet.

A still further object of the invention is to provide an improved ventilator that may be inexpensively made of sheet or cast metal, and which will be durable and enduring and faithful in operation.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claims appended hereto.

In the drawings, wherein like symbols refer to like or corresponding parts throughout the several views,

Figure 1 is a perspective view of a building of the Spanish type showing the improved ventilators.

Figure 2 is a vertical section through a portion of the building showing the improved ventilator with parts broken away and parts in section.

Figure 3 is a vertical section taken on the line 3—3 in Figure 2.

Figure 4 is a perspective view of the improved ventilator apart from the building and showing a slight modification, and

Figure 5 is a plan view of the improved valve and counter-weight apart from the ventilator and for use in connection with the device shown in Figure 4.

Referring more particularly to the drawings 10 designates generally a building of the Spanish type, such as largely constructed

in tropical and semi-tropical climates, which are subject to temperate weather conditions and occasional storms with high winds.

The building is constructed with a parapet wall 11, and with a roof 12 disposed in spaced relation above the ceiling 13 of the room below. A ventilating space 14 is included between the roof 12 and the ceiling 13.

Considerable difficulty has been heretofore experienced in the proper ventilation of this space 14 owing to the fact that open ventilation leaves this space accessible to high winds during the occasional storms referred to which are apt to damage the roof and the ceiling and to lift out such roof.

In accordance with the present invention a ventilator is placed through the wall 11 communicating both with the outside atmosphere and with the internal space 14, so that during normal weather conditions air may freely enter through the ventilator into the space 14, but when abnormal conditions occur in wind velocity the ventilator will automatically close and prevent the entrance of the high destructive winds.

The ventilator may be constructed of sheet metal or other appropriate material and involves a casing 15 of round, square or other form, and of a tubular shape being closed at its sides and open at both ends. The ventilator is provided with a flange 16 having the perforations 17 to receive the fastenings 18 by which the ventilator casing is secured through the wall 11 of the building. It is preferred that the flange 16 will be embedded in the cement, concrete or other plastic material of which the outside of the building is constructed. The casing is preferably set angularly in the building, so that the same inclines downwardly and outwardly or avoid the entrance of rain, snow and sleet to the ventilating space 14. The outer end 19 of the casing is preferably cut off at a slight angle to the axis of the casing 15 to bring this end more nearly vertical. The inner end 20 of the casing is cut off also at an angle to the axis of the casing, but whereby its upper portion projects to a greater extent into the ventilating space 14 within the lower portion thereof, whereby to direct the in-

coming ventilating air, as indicated by arrows in Figure 2, in more nearly a horizontal direction. This inner inclined end 20 of the casing is preferably covered with a screen or filter 21 in order to exclude dust and other foreign matter from the building space 14. This foreign matter, on account of the inclination of the screen, will tend to slide down to the inclined bottom of the casing, and by such inclined bottom will be directed downwardly and outwardly of the building.

Within the casing is a damper or valve 22 shown more particularly in Figure 5 and constructed of a flat vane having a major portion below the shaft 23 and a smaller portion 24 disposed above the shaft 23. This shaft 23 extends to opposite sides of the damper and is journaled rotatably in openings made through the side walls of the casing 15. It will be understood that the valve or damper 22 is affixed to the shaft 23. Externally of the casing 15, the shaft 23 at one end is provided with an arm 25 carrying a counter-weight 26. Preferably this arm projects in an upper substantially vertical direction in order that it may function as hereinafter described and cooperate with a stop pin 27 projecting from the casing at the building side of the counter-weight arm 25.

In the use of the device, the ventilator having been mounted in the building in the position shown in the drawings, the counter-weight 26 is so set with respect to the valve and to the vertical that it will normally seek a position against the stop 27 thus holding the damper in the open position shown in full lines in Figure 2. Gentle currents of air may thus enter freely through the casing 15 past the screen 21 and into the building ventilating space 14 whereby to properly ventilate the building.

However, should sudden high winds arise, they will, of course, enter the space 28 within the casing above the damper part 22, as shown in Figure 2, and due to the high velocity they will drive this damper downwardly to the dotted closed position against the influence of the counter-weight 26, which will be rocked by the actions of these high winds to the dotted position shown in Figure 2, which is to the other side of the central vertical neutral position, and consequently thereafter the counter-weight 26 will tend to retain the damper 22 closed until such time as it is manually shifted back to the open position.

Of course, the dampers may be closed at any time by manual actuation. These dampers are easily accessible in this type of house and the counter-weighted arms 25 are exposed, so that they may be moved by an appropriate implement in the hands of the operator from the ground.

In Figures 4 and 5 a slight modification is shown in that the casing is formed with substantially vertical side walls 28 and 29 and

with curved upper and lower walls 30 and 31. The upper wall 30 is convex as to its upper side for facilitating the shedding of rain, sleet and snow. The interior of the lower wall 31 is concave to facilitate drainage from the interior of the casing. The side walls 28 and 29 are, however, preferably not curved in order to better sustain the shaft 23' which carries the damper.

The damper parts 22' and 24' are of substantially the same construction as heretofore described, except that the lower edge 32 of the damper part 22' and the upper edge 33 of the smaller damper part 24' are curved to conform to the interior curvature of the upper and lower walls 30 and 31 of the casing, whereby to form a tight fit in the casing to exclude high winds and the elements. The other parts are the same as heretofore described in conjunction with Figures 1, 2 and 3, and the same have been given identical reference characters.

It is obvious that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claims.

What is claimed is:—

1. An improved ventilator comprising a casing adapted to be inserted angularly through the wall of the building and projecting downwardly and outwardly from said building with its outer end more nearly vertical within a right angle to the axis of the casing and having its inner end cut off at a greater acute angle to the axis of the casing with its higher part innermost, and a counter-weighted valve in said casing.

2. An improved ventilator comprising a casing adapted to be inserted through the wall of the building at an inclination and having an inclined lower portion, and having an acutely angled inner end, an inclined screen carried by such inner end, a counter-weighted valve in the casing, and means for holding the valve in a partially open condition.

3. An improved ventilator comprising a casing, a shaft journaled through the casing, a counter-weighted arm on the shaft externally of the casing, a stop pin adjacent the arm, and a valve adapted to be held in a partially open position by said stop pin and projecting forwardly from the shaft.

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