March 12, 1929. E. A. ROSELL 1,705,418

VENTILATOR

Filed Sept. 12, 1927

Fig. 1.

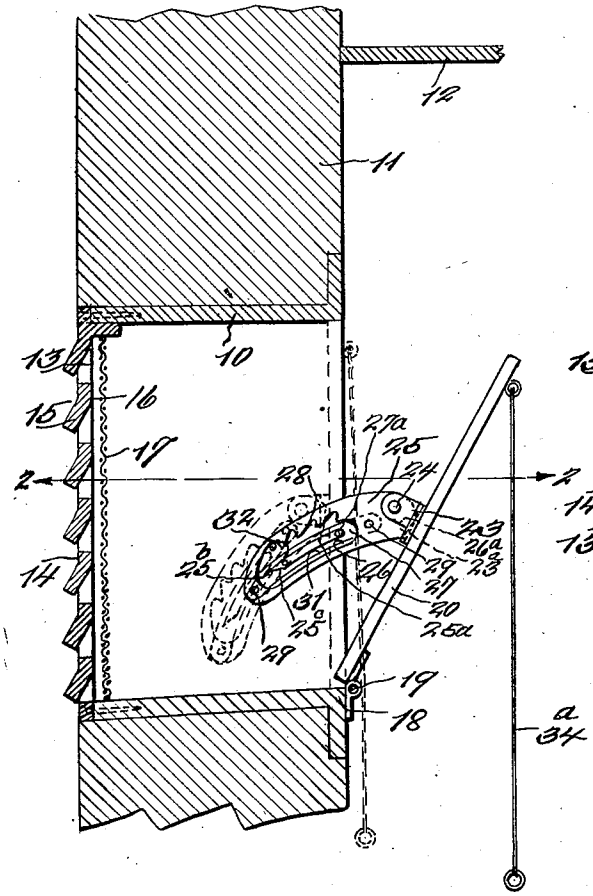


Fig. 2.

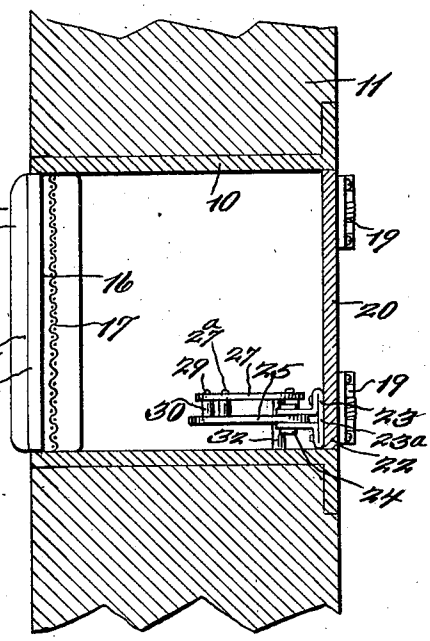


Fig. 4.

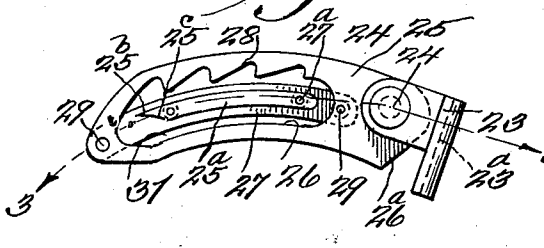
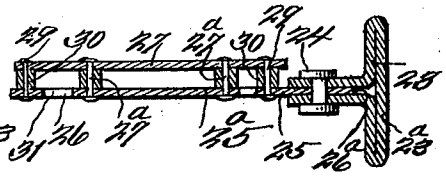


Fig. 3.



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WITNESS:

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UNITED STATES PATENT OFFICE.

ERIC A. ROSELL, OF UPPER DARBY, PENNSYLVANIA.

VENTILATOR.

Application filed September 12, 1927. Serial No. 219,138.

This invention relates to ventilators, and more particularly to a ventilator and casement therefor which is built into a brick wall or analogous structures. The principal object of the invention is to provide a ventilator and casement therefor with an automatic arrangement, whereby the door of the ventilator may be opened or closed by a successive downward pull on a depending cord or chain which is connected to the ventilator door.

Another object of the invention is to provide a ventilator as specified, which is simple in construction, cheap to manufacture, readily operable at all times, requires no auxiliary appliances for operation, and one which is practical and effective for the purpose for which it is designed.

It is to be understood that the particulars herein given are in no way limitive, and that while still keeping within the scope of the invention, any desired modification of details and proportions may be made in the construction of the appliance according to circumstances.

The invention comprises further features and combination of parts to be hereinafter set forth, shown in the drawings and claimed.

In the drawings:—

Figure 1—is a vertical section through the ventilator as positioned in a wall.

Figure 2—is a section on the line 2—2 of Figure 1.

Figure 3—is a cross sectional view through the rack structure.

Figure 4—is a detail view of the rack.

Referring more particularly to the drawing, the invention comprises a casing 10 of rectangular formation which is built into a wall 11 in close proximity to a ceiling 12, or which may be similarly inserted into a wall by suitable alterations thereto. The outer end of the casing 10 is provided with a perforated cover 13 which consists of a sheet metal member 14 with a plurality of angularly disposed punched-out portions 15, which extend outwardly from said cover. The inner side 16 of the cover 13 is provided with a suitable facing of wire mesh or screening 17 for keeping out flies, etc. The inner end of the casing 10 is provided at its lower edge 18 with a suitable spring influenced hinge 19 to which the ventilator door is secured.

Suitably attached to the inner face of the door 20 in close proximity to the one side edge 22 of the door 20, is a clevis bracket 23 having pivotally connected thereto at 24, an arcuately formed member 25, which extends into the casing 10 and is provided with an arcuate slot 26.

This member 25 carries an arcuate plate 27, which is secured to the member 25 by the headed pins 29 passing through spacing sleeves 30. By means of these sleeves the plate 27 is held spaced to one side of the member 25, and carried by the plate 27 through the medium of headed pins 27^a is an arcuate guide rack 25^a. This guide rack 25^a is concentric with the slot 26, and is so spaced in the slot 26 as to form an endless arcuate path 31, in which a pin 32 is positioned. When the door 20 is moved to an open position or to a closed position, the member 25 operates so that the pin 32 traverses the slot 26, the pin 32 guides about the guide rack 25^a. One edge of the slot 26 has ratchet teeth 28, and since the member 25 is pivoted at 24 to the bracket 23, the teeth 28 travel over the pin 32 as the door opens. The travel of the teeth is step by step movement, so that the door may open from one position to another. As the door opens from a closed position to its extreme open position, as approximately in Figure 1, and then back to a closed position, the member 25 operates, so that the pin 32 completes a circuit through the slot 26.

When the door 20 is opened to a position as in Figure 1, the pin 32 engages the last tooth 28 adjacent the inner end of the slot 26.

The arcuate member 25 has an angular abutment edge 26^a, which at times, engages with the base 23^a of the bracket 23. When it is desired to close the door 20 from the full line position in Figure 1 to the closed dotted line position, and as in full lines in Figure 2, the chain or cord 34^a may be pulled. The angular abutment edge 26^a will engage with the base 23^a of the bracket, thereby tending toward forcing the member 25 until the pointed end 25^b of the rack 25^a moves above the pin 32, allowing the beveled edge 25^c to cam over the pin 32, allowing the latter to traverse the lower part of the slot 31, while the door moves to a closed position. When the pin 32 traverses the lower part of the slot 31, the angular abutment edge 26^a assumes a position out of engagement with the base 23^a of the bracket 23. In this manner the door operates from an open position to a closed

position. Said guide rack 25ª projects into and is fixedly placed in the arcuate slot 26 by means of the plate 27, so that the pin 32 may guide through the endless path 31. The pin 32 is secured to and carried by one side of the casing 10, as shown in Figure 2, and as previously stated extends into the arcuate path 31, so as to engage step by step with the teeth 28. The pin 32 is adapted for engagement with the ratchet teeth 28 against the spring influenced hinge upon the closing movement of the ventilator door to which the arcuate member 25 is attached, and by means of the spring action of the hinge 19 the door will close. When the door 20 reaches a closed position, the pin 32 will have engaged with the upper end portion of the path 31, as shown in dotted lines in Figure 1, and when the door 20 is opened the arcuate member 25 will move with it and the teeth will travel over the pin 32 until the pin 32 reaches the last ratchet tooth and then upon a further movement of the door the plate 25 will position so that the pin 32 will engage the lower end of the path 31, or rather the arcuate plate 25 will move so that the curved or beveled edge 25ᶜ will pass over the pin 32, so that the door may move to a closed position.

The bracket 23 is made from a single piece of metal bent upon itself to form the base 23ª, the bent portions being disposed flat against the base 23ª, and then projected to parallel spaced positions forming the ears, between which the arcuate plate 25 is pivoted on the headed fulcrum 24.

From the foregoing it will be noted there has been provided a ventilator which may be opened and closed in a rapid effective manner.

The invention having been set forth, what is claimed is:

1. In a ventilator, the combination with a casing having a passage, of a closure to close one end of the passage, an arcuate plate pivotally and operatively mounted on the closure and provided with an arcuate continuous endless path, a pin projecting inwardly of the passage from the side thereof and positioned to engage within the path, one edge of the path having ratchet teeth to operatively move over the pin step by step, so that the closure may assume different open positions, and a guide rack positioned within the path to enable the pin to travel through the path.

2. In a ventilator having a casing lined passage with a grating at one end, a spring tensioned closure at the other end, an arcuate member pivotally and operatively mounted on the closure and provided with an endless continuous path, on one edge of which ratchet teeth are provided, a projection extending from one side of the casing and positioned within the endless arcuate path and over which the ratchet teeth ride as the closure moves from a closed position to an open position, an arcuate guide rack carried by the arcuate member and projecting within the endless path to permit the arcuate member to move and allow the pin to move from the last tooth and traverse the lower part of the endless path as the closure moves to a closed position.

In testimony whereof I affix my signature.

ERIC A. ROSELL.