

July 12, 1938.

S. SIGAL

2,123,751

VENTILATOR

Filed July 9, 1936

Fig. 1.

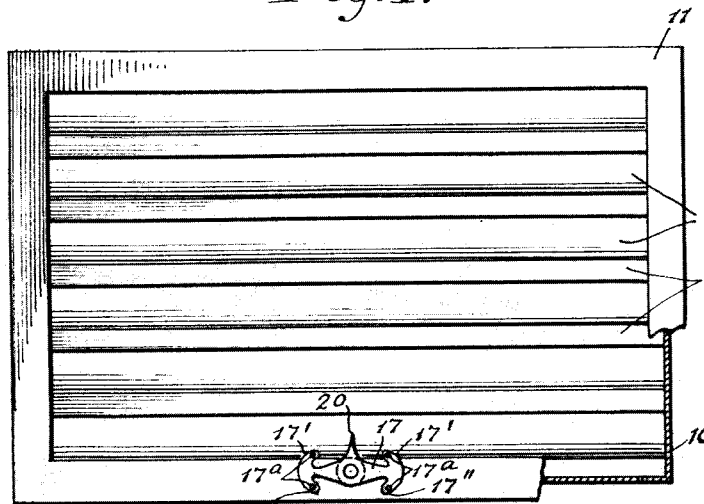


Fig. 2.

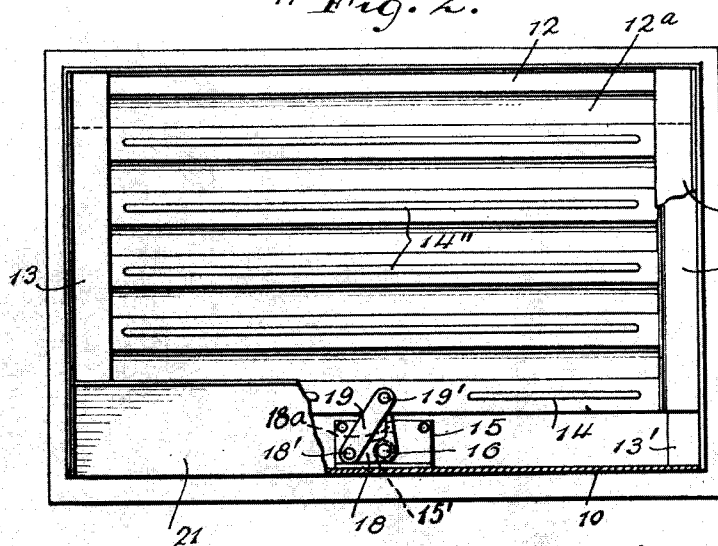


Fig. 4.

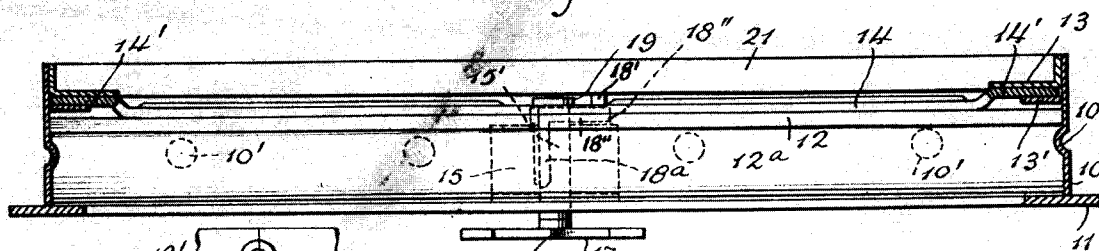


Fig. 5.

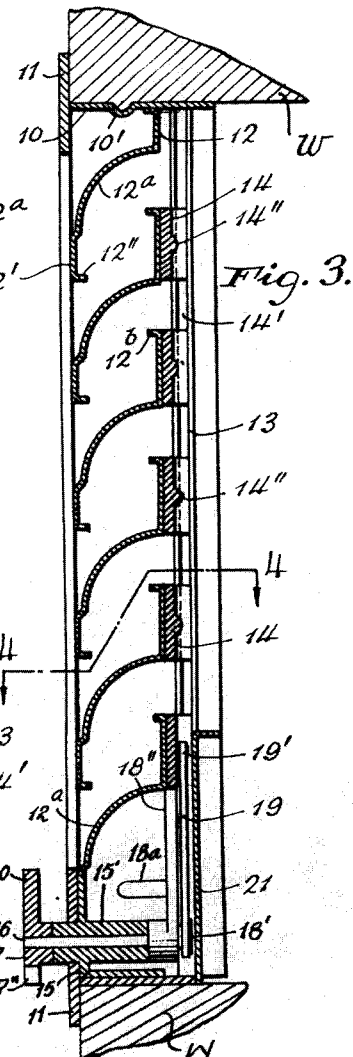
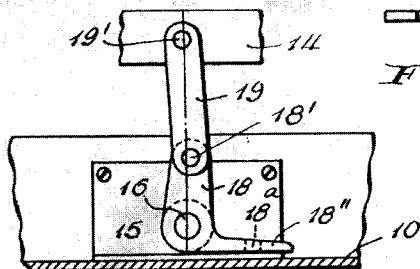


Fig. 3.

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UNITED STATES PATENT OFFICE

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VENTILATOR

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5 Claims. (Cl. 98—121)

My invention relates to ventilators, particularly such as are intended for use in buildings, and has for its object to provide an improved construction of great simplicity and effectiveness, which will permit ready adjustment of the device to either the open or the closed position.

Other features of the invention will appear from the description following hereinafter.

Without desiring to restrict myself to the particular details illustrated, I will now explain a typical satisfactory embodiment of my invention, with reference to the accompanying drawing, in which Fig. 1 is an elevation of my improved ventilator, with parts broken away and parts in section; Fig. 2 is a view similar to Fig. 1, but looking in the opposite direction; Fig. 3 is a vertical section through the central portion of Fig. 1, upon an enlarged scale; Fig. 4 is a horizontal section on line 4—4 of Fig. 3, and Fig. 5 is a detail elevation illustrating a different position of the parts shown at the central bottom portion of Fig. 2.

The ventilator represented in the drawing comprises a stationary member or casing having ventilating passages, a movable member controlling said passages, and mechanism for controlling said movable member.

In the example illustrated, the stationary member or casing consists of a rectangular frame 10 adapted to be set in a suitable opening, wherever the ventilator is to be located, for instance in the wall W of a building. A flange member 11 projecting outwardly beyond the frame 10 forms a stop to secure a proper positioning of the casing within the opening of the wall or other structure to which the ventilator is secured. When the ventilator is to be set within a brick wall, I prefer to provide a plurality of suitable pockets or recesses in each of the four members (top, bottom, and both sides) of the rectangular frame 10, for instance as indicated at 10'. These recesses or pockets will receive some of the mortar applied to the inside of the wall opening, and such mortar when hardened or set will form keys holding the ventilator casing in place securely. When the frame 10 is made of sheet metal, as illustrated, the recesses or pockets 10' are preferably formed by a stamping or like operation which bends the material, as shown best in Fig. 4 and at the upper portion of Fig. 3. These pockets may be of hemispherical or any other suitable shape.

Within the frame 10 I have shown a series of superposed spaced, transversely horizontal members or louvres which are suitably secured to said frame so as to be rigid therewith. In the particular embodiment illustrated, each of the louvres has a vertical upper portion 12, a vertical lower portion 12' with an inwardly extending flange 12'' and an inclined, preferably curved portion 12^a which connects the lower edge of the

upper portion 12 with the upper edge of the lower portion 12'. The lower portion 12', at its ends, abuts against the flange member 11 of the frame 10 and is suitably secured thereto. When the ventilator is set in the outer wall of a building or other structure, the flange member 11 will be located on the outside, so that the inclined portions 12^a will shed outwardly any rain that may strike the louvres.

Within the frame 10 are located at each side thereof, stationary vertical guides 13 and 13' which are spaced to receive between them the vertical edge portions 14' of a movable member or shutter. This shutter may consist of a rectangular frame, of which the edge portions 14' are the side members and which in addition has slat members 14 which extend transversely from side to side in a horizontal direction as shown best in Figs. 2, 3, and 4. The slat members 14 are in a vertical plane different from that of the edge portions 14', as shown best in Fig. 4, and are adapted to move close to, or even in actual contact with, the vertical upper portions 12 of the louvres. The height of the slat members 14 is preferably approximately equal to that of the vertical portions 12, and the spaces between adjacent slat members 14 as well as the spaces between the upper portions 12 of two adjacent louvres, are preferably about equal to the height of the slat members 14. Thus in the position illustrated by Fig. 3, the slat members will clear the spaces between adjacent louvres, so that the ventilating passages between the louvres will be fully open. It will also be understood from Fig. 3, that by lifting the movable member having the slats 14, said slats can be brought to a position in which they close the ventilating passages.

The mechanism for moving the slats 14 is constructed as follows: At the lower central portion of the frame 10 there is secured thereto a bracket 15 having a boss 15' extending horizontally in a direction from front to rear. In this bracket is journaled a shaft 16 to the outer end of which is secured rigidly an operating member or handle 17. As shown in Fig. 1, this operating member is provided at its ends with a pair of upwardly extending hooks 17' and also with a pair of downwardly extending hooks 17''. By inserting a suitable tool, such as a pole having a projecting stud at its end, into one or the other of these hooks, and then pushing or pulling with the pole, as the case may be, the shaft 16 may be given a rocking movement. Such movement may also be obtained in other ways, if desired, for instance by means of chains connected with the operating member 17, and in Fig. 1 I have indicated two pairs of openings 17^a at which actuating chains may be connected with the operating member 17. At its inner end, the shaft 16 carries rigidly a crank member 18 having a pivotal

connection at 18' with a link 19 pivotally connected at 19' with the lowermost of the slats 14. The crank member 18 is also provided with an extension or arm 18'' which, in the position illustrated by Figs. 2 and 3, is adapted to engage the lowermost slat 14 so as to support the movable member of the ventilator in the open position. From the arm 18'' extends laterally, in a direction parallel to the shaft 16, a projection 18^a, adapted to engage the horizontal member of the bracket 15 when the ventilator is in the closed position; Fig. 5 illustrates the relative arrangement of the parts 10, 14, 15, 18, 19 in the closed position of the ventilator.

With the operating member 17 in the position illustrated by Figs. 1, 3 and 4, the ventilating passages are fully opened. In order that this position may be indicated more clearly, the operating member 17 may be provided with a pointer 20, which in the position just explained extends vertically upward. By giving the operating member 17 a quarter turn, so that the pointer 20 will extend horizontally, the parts are brought to the position shown in Fig. 5, raising the movable member having the slats 14 to a position in which such slats close the passages between the stationary members of the louvre. As is shown clearly in Fig. 5, the projection 18^a on the arm 18'' of the crank 18 will in this position rest on the horizontal member of the bracket 15 so as to support the member having the slats 14 in its raised position. Fig. 5 furthermore shows that in this position the pivotal connection 18' will be slightly to one side of the vertical plane passing through the shaft 16, namely, to the same side on which the arm 18'' projects. In the embodiment illustrated, the pivotal connection 19' is in the same vertical plane with the axis of the shaft 16 so that in the position illustrated by Fig. 5, the pivotal connection 18' will be to one side of the plane which extends through the axes of the shaft 16 and the pivotal connection 19'. It will be understood that with the arrangement described the parts when brought into the position in which the ventilator passages are closed, will tend to remain in that position, thereby guarding against any accidental dropping of the movable slat members of the ventilator after they have been raised to the closed position.

In order to stiffen the slat members 14, I prefer to provide them with reinforcing ribs 14'', preferably formed by pressing or stamping. The inwardly extending flanges 12'' at the bottom of the lower louvre portions 12' and similar outwardly-extending flanges 12^b at the top of the upper louvre portions 12, serve as additional safeguards against the entrance of snow or rain, especially when driven by high winds.

The mechanism for lifting and lowering the movable member of the ventilator is preferably covered by a plate or shield 21 suitably secured to the frame 10, preferably in a removable manner so as to permit access to said mechanism.

While I have shown the actuating member 17 as located on the outer side of the wall W in which the ventilator is arranged, I do not wish to restrict myself to this specific location.

My improved ventilator is primarily intended to be set in the walls of a building, and particularly the outer walls thereof. I desire it to be understood, however, that my invention may be used in other locations wherever a ventilator is desirable, and that various modifications may be

made without departing from the nature of my invention as set forth in the appended claims.

I claim:

1. A ventilator comprising a casing provided with spaced stationary louvre members forming ventilating passages between them and including portions located in a common vertical plane, and spaced vertical guides at each side of said plane, a movable member having portions fitted between said guides to engage them and slats offset laterally from said guide-engaging portions toward said portions of the stationary louvre members, said slats controlling said ventilating passages, and mechanism for controlling said movable member.

2. A ventilator comprising a casing provided with ventilating passages, a movable member controlling said passages, and mechanism for controlling said movable member, said mechanism comprising a shaft journaled in said casing and operatively connected with said movable member, and an operating member connected with said shaft and provided with a pair of upwardly directed hooks and a pair of downwardly directed hooks affording a purchase to an actuating implement.

3. A ventilator comprising a casing provided with ventilating passages, a movable member controlling said passages, and mechanism for controlling said movable member, said mechanism comprising a rock shaft journaled in said casing, a crank member on said shaft, a link pivotally connected with said crank member and with said movable member, and means connected to move in unison with said crank member and movable out of engagement with a stationary part of the ventilator when the said movable member is moved toward its lower position, said means being movable into supporting engagement with said stationary part when said movable member is in its upper position, the position of said means when in such supporting engagement being such that the weight of the movable member will tend to hold such movable member stationary.

4. A ventilator comprising a casing provided with ventilating passages, a movable member controlling said passages, and mechanism for controlling said movable member, said mechanism comprising a rock shaft journaled in said casing, a crank member on said shaft, a link pivotally connected with said crank member and with said movable member, and a projection connected with said crank member and adapted to become supported on the casing to one side of said shaft, when the movable member is in its upper position and the pivotal connection of the link with said crank member is on the same side of said shaft that the said projection is supported on the casing.

5. A ventilator comprising a casing provided with ventilating passages, a movable member controlling said passages, and mechanism for controlling said movable member, said mechanism comprising a rock shaft journaled in said casing, a crank member on said shaft operatively connected with said movable member, and an arm connected with said crank member and arranged for supporting engagement with said movable member when the latter is in its lower position.

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