R. M. HILL.

VENTILATOR.

APPLICATION FILED JUNE 18, 1909.

951,609.

Patented Mar. 8, 1910.

2 SHEETS—SHEET 1.

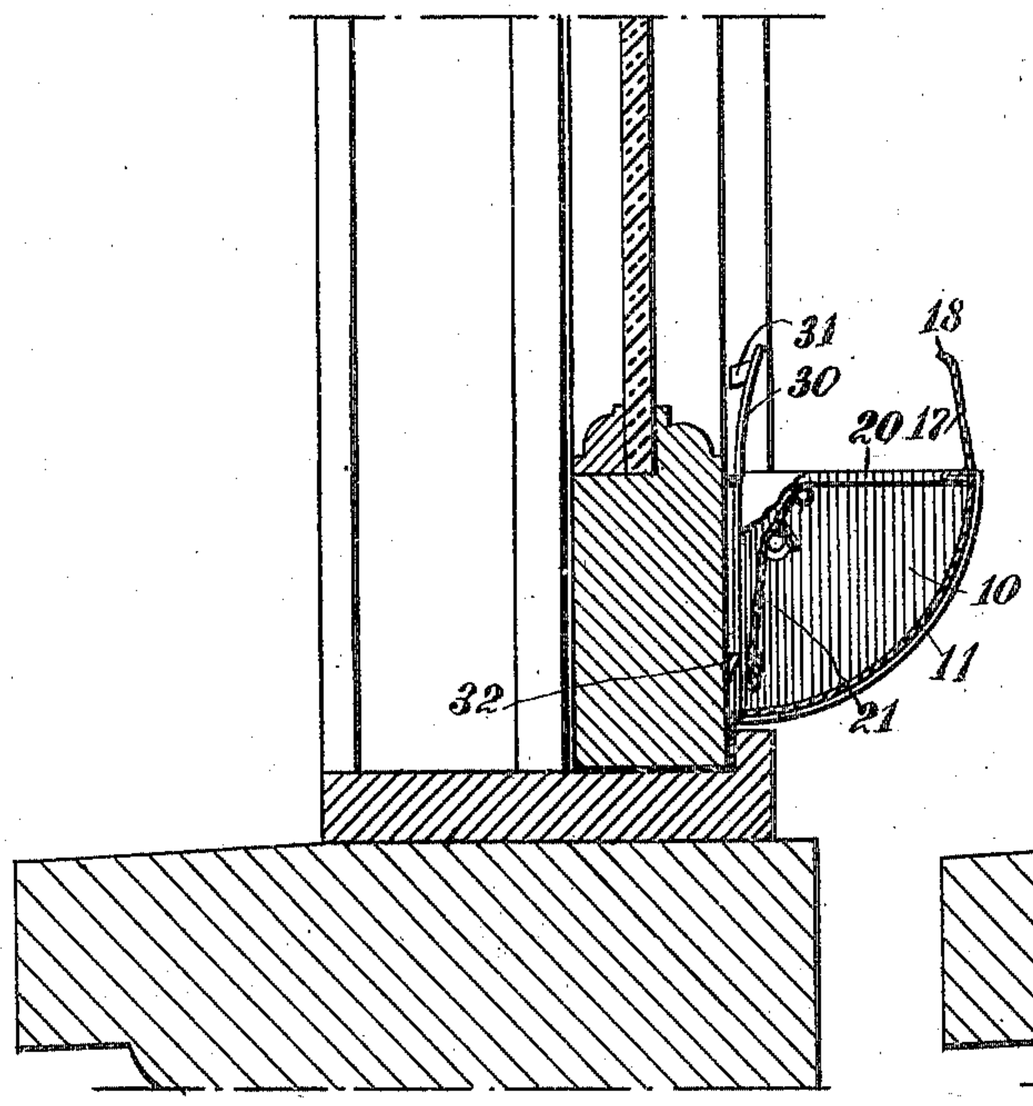

Fig. 1

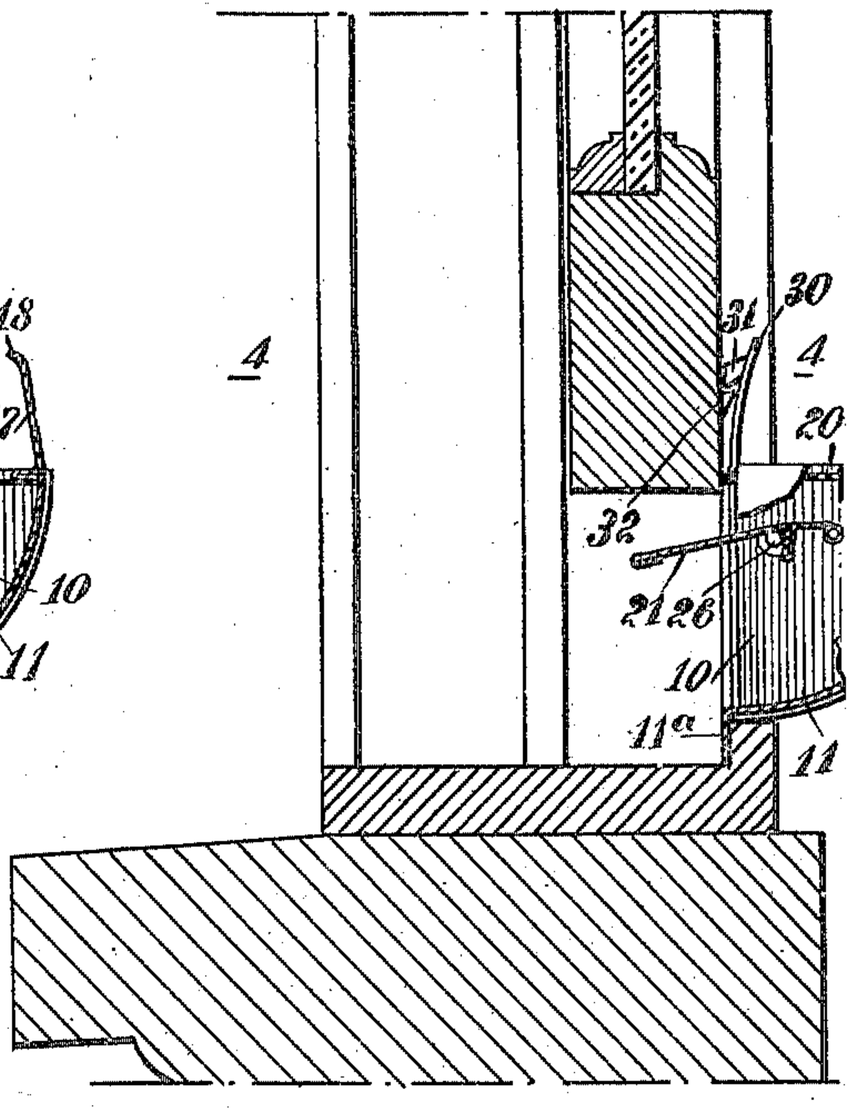

Fig. 2

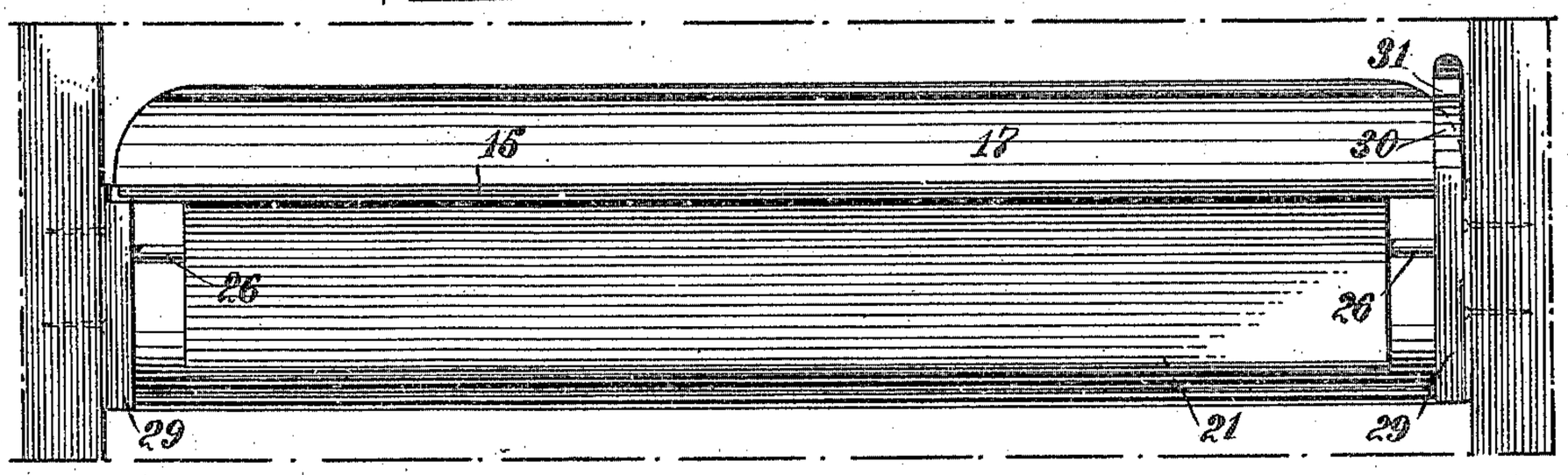

Fig. 3

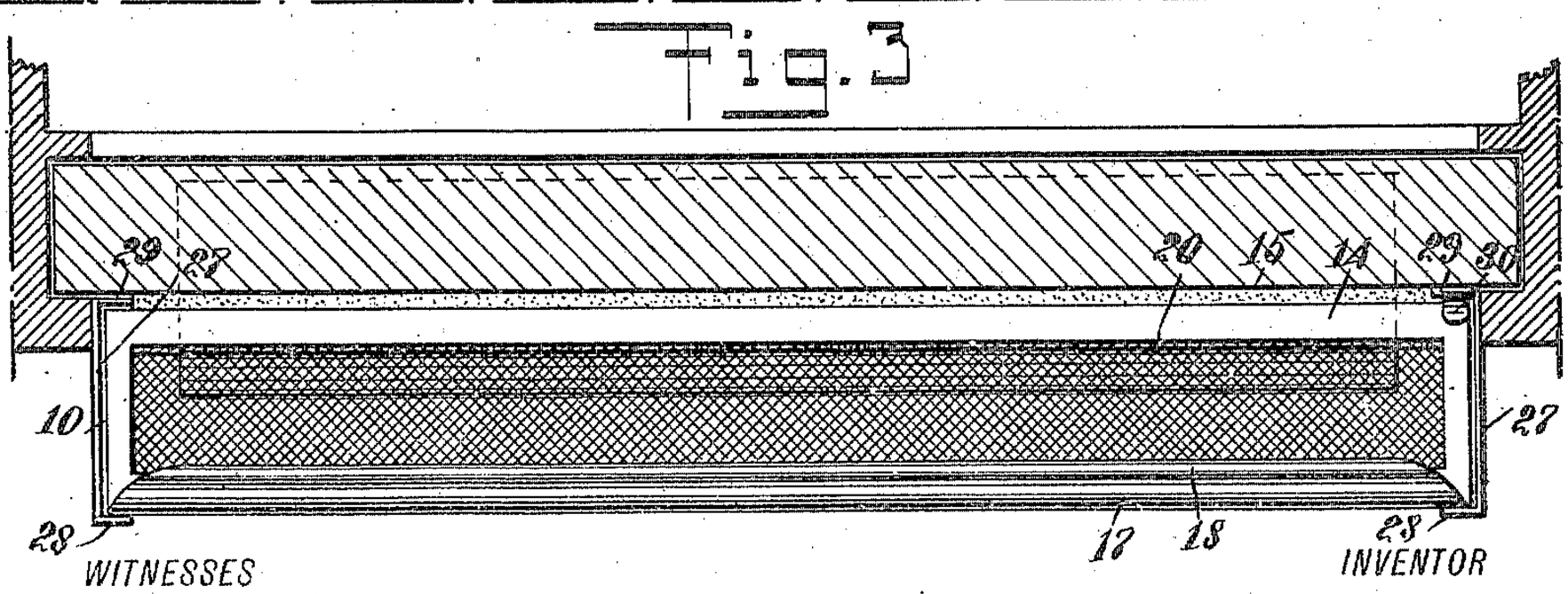

Fig. 4

WITNESSES

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2 SHEETS—SHEET 2.

Fig. 5

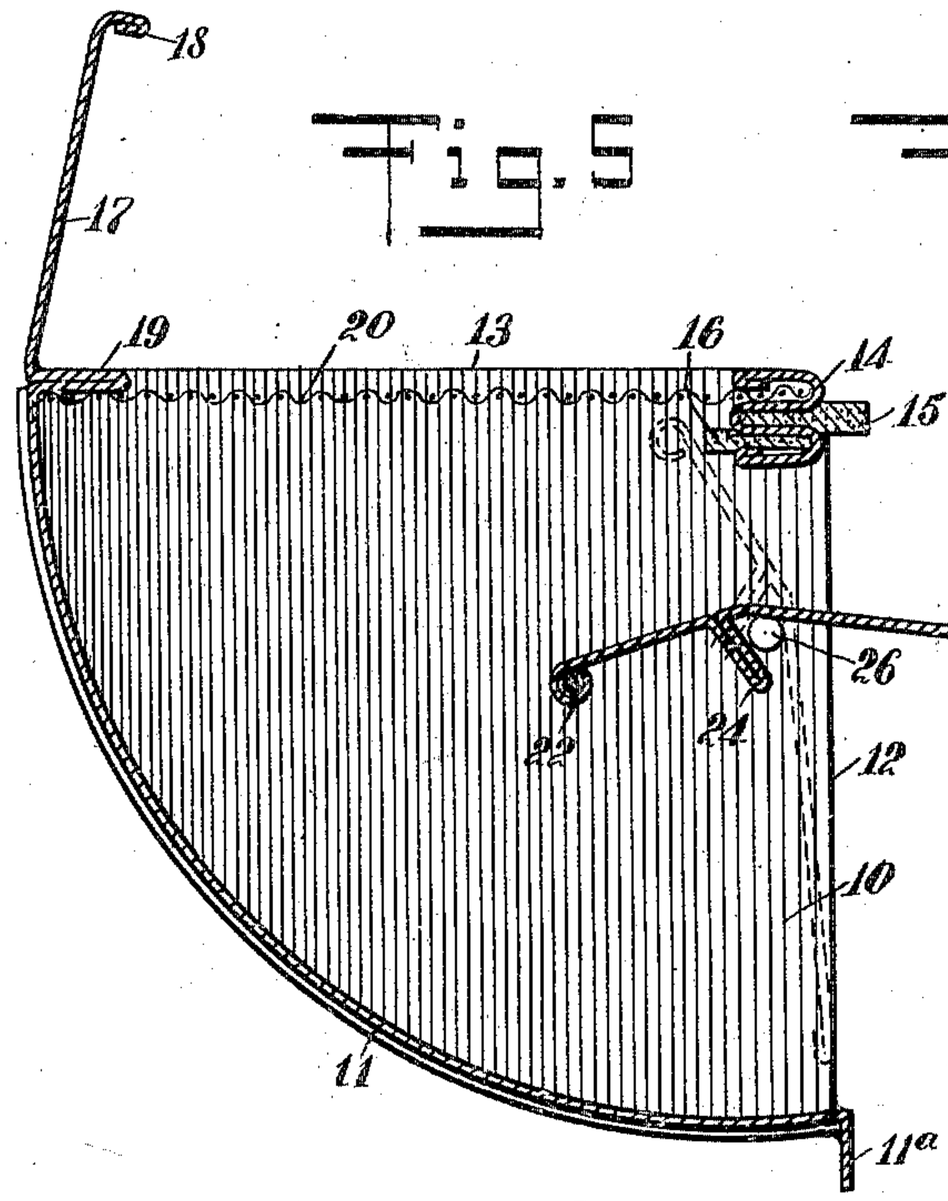


Fig. 6

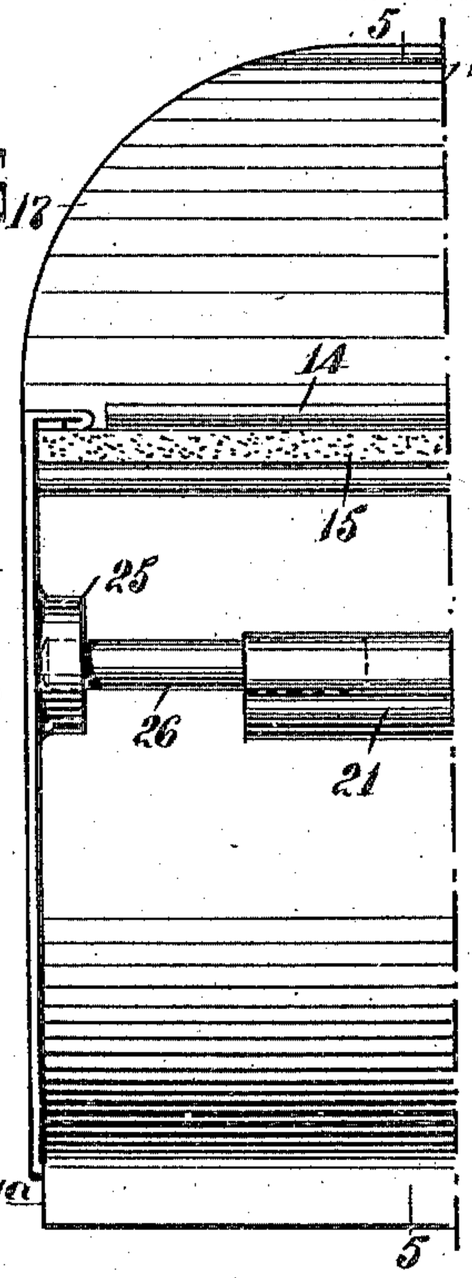


Fig. 7

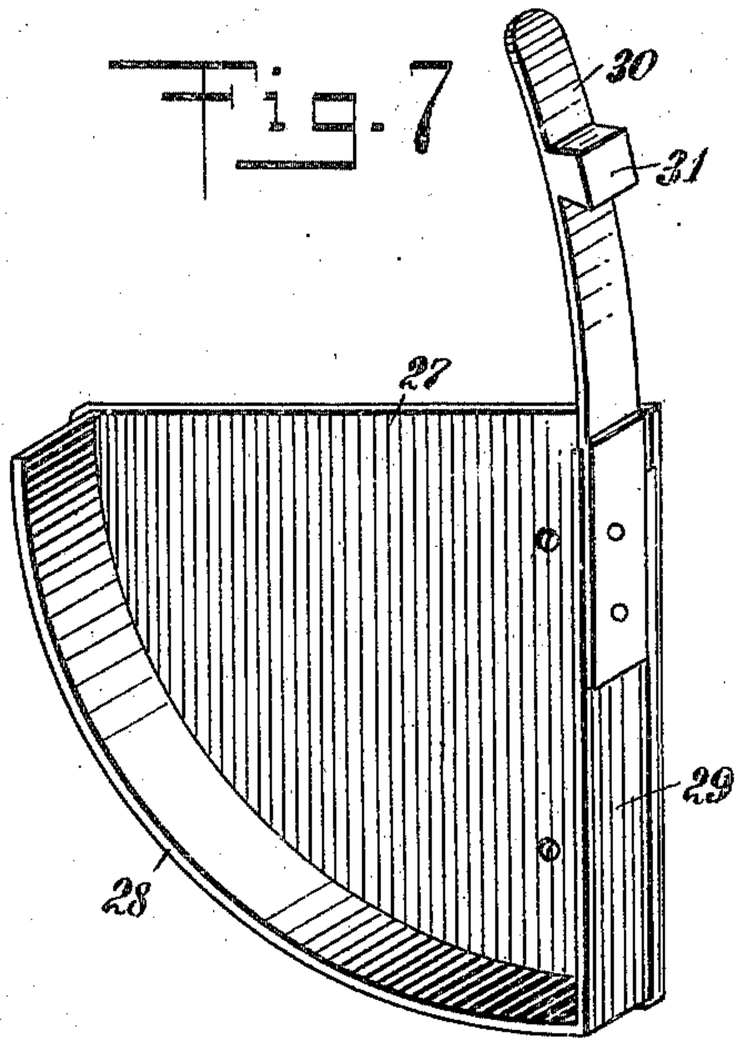
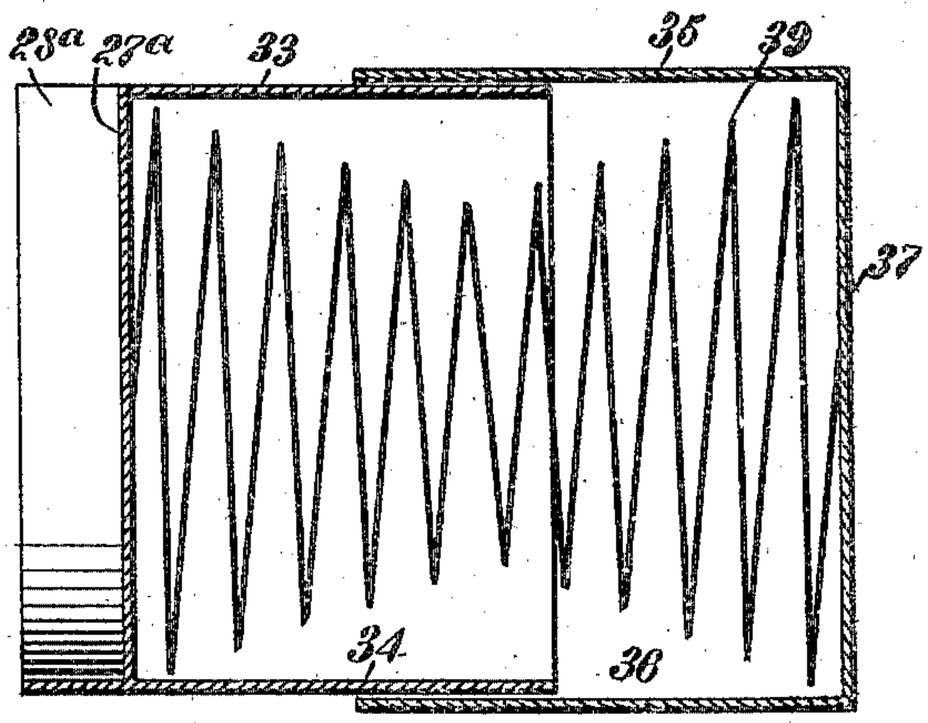


Fig. 8



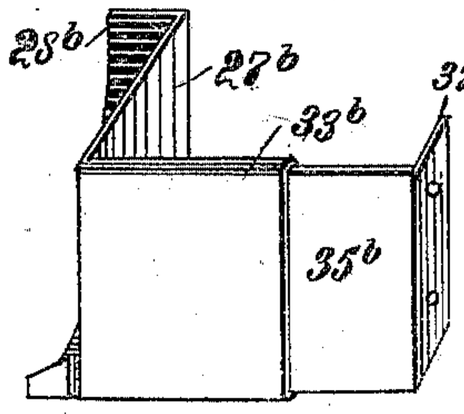


Fig. 9

WITNESSES

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ROLLA M. HILL, OF NEW YORK, N. Y.

VENTILATOR.

951,609. Specification of Letters Patent. Patented Mar. 8, 1910.

Application filed June 18, 1909. Serial No. 502,901.

To all whom it may concern:

Be it known that I, ROLLA M. HILL, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Ventilator, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in window ventilators adapted to be detachably secured to the window casing, so that the window may be opened a short distance to permit the entrance or escape of air, and, at the same time, to prevent direct drafts or unusually strong currents, and to prevent the admission of rain, hail, snow, sleet, and foreign bodies.

One of the main features of my invention is the automatic valve or damper for controlling the flow or air through the ventilator. This valve or damper is so mounted that when the window is opened a short distance, the valve will swing to a substantially horizontal position to permit the passage of air on either side thereof, but the stronger the blast of air through the ventilator, the more the valve will tend to assume a vertical position. Upon closing the window the sash engages with the edge of this valve to positively return the latter to its horizontal position, irrespective of any air currents.

Another important feature of my invention is the means employed for securing the casing in place. The casing is preferably substantially quadrant-shaped in section and at each end I provide a bracket receiver or retainer which is secured to the window casing and which is of substantially the same shape as the body of the ventilator. The brackets or receivers may be permanently secured in place and the main portion of the ventilator removed or inserted at will without necessitating the employment of any tools or of skilled labor.

A further important feature is the utilization of one or more of these brackets or receivers as a lock to limit the extent to which the window may be opened. One or both of the brackets are preferably so constructed as to be extensible and to permit the use of standard lengths of ventilators with windows of varying widths.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, and in which—

Figure 1 is a vertical section through a window and window casing provided with my improved ventilator, the window being in closed position; Fig. 2 is a view similar to Fig. 1, but showing the window in open and locked position; Fig. 3 is an elevation of the outer side of my improved ventilator secured in place; Fig. 4 is a top plan view of my improved ventilator, the window and casing being shown in section on the line 4—4 of Fig. 2; Fig. 5 is a vertical transverse section through the body portion of my improved ventilator on the line 5—5 of Fig. 6; Fig. 6 is a face view of one end thereof; Fig. 7 is a perspective view of one form of my improved supporting bracket; Fig. 8 is a longitudinal section through one form of longitudinally extensible bracket, and Fig. 9 is a perspective view of a second form of longitudinally-extensible bracket.

My improved bracket is adapted for use in connection with any form of sliding window and may be used either at the lower edge of the lower sash or at the upper edge of the upper sash. The specific form illustrated is shown only in connection with the lower sash of the window, but I do not wish to be limited to any of the details of the window or to the particular position of use.

My ventilator includes a body substantially quadrant-shaped in cross section and having two quadrant-shaped ends 10 and a curved outer wall 11. Each end piece 10 has a substantially vertical edge 12 and a substantially horizontal edge 13, intersecting in a right angle corner, and extending from the corner of one end to the corresponding corner of the other end is a bar 14. This bar is preferably formed of a piece of sheet metal bent to present several plies or folds to stiffen or reinforce the same, and to hold in place two packing strips 15 and 16. These strips extend lengthwise of the ventilator and extend outwardly in opposite directions from the strip or bar 14. When the ventilator casing or body is secured in position, the vertical edge 12 of each end comes closely adjacent the surface of the window sash and the packing strip 15 extends out into engagement with the surface of the sash, so as to prevent the ventilator from

scratching the window, and to prevent the window from rattling the ventilator against the sash to make a disagreeable noise. The other packing strip 16 extends out into the body of the ventilator and may contact with the valve or damper, to prevent the latter from rattling, as will be set forth more fully hereinafter.

The curved wall 11 has one edge terminating in a flange 11ª at the lower edge of the end members 10, while its opposite edge extends upwardly above the horizontal edges of the end members to form a baffle 17. This baffle may be curved or bent to lie in any desired direction dependent upon the strength of the prevailing wind, but it preferably is curved or bent over the body of the ventilator to a limited extent. The free edge of this baffle is preferably bent back upon itself to form a reinforced or stiffened flange 18, and at the line of intersection of the baffle and the body portion of the curved wall 11, there is formed a plate or corrugation 19, constituting a bar substantially parallel to the bar 14. Extending from the bar 19 to the bar 14, and from one end member 10 to the other, I provide a wire screen 20, which prevents the passage of solid foreign bodies through the ventilator. One edge of the screen may be secured to the bar 19 in any suitable manner, for instance, by soldering, and the opposite edge of the screen may extend into a plicature or fold in the bar 14. The horizontal side of the ventilator is thus permanently open, save for the screen 20, but the horizontal edge is provided with a valve or damper 21, which may be opened or closed depending upon the position of the window. This valve or damper is formed of sheet metal or other suitable material folded to form reinforced edges 22 and 23, and an intermediate reinforcing corrugation or fold 24. The end members 10 of the ventilator are provided with sockets 25 adapted to receive journals 26, which support the valve or damper. These journals are soldered or otherwise rigidly secured to one side of the valve, preferably in the angle between the body of the valve and the reinforcing corrugation or fold 24. The valve or damper is hinged closely adjacent the vertical edge of the body and the valve itself is so hung that it will normally tend to assume a position in a substantially horizontal plane. The edge 23 of the valve extends out beyond the body of the ventilator and into the path of movement of the window. When the window is open, the ventilator valve will assume the position indicated in Figs. 2 and 5, but when the window is closed, it contacts with the outer free edge of the valve and forces the latter downwardly to the position indicated in Fig. 1, and in dotted lines in Fig. 5. With the window opened a short distance, as indicated in Fig. 2, the outside air may flow through the open side of the ventilator past the valve and upwardly through the screen into the room. If the blast of air be too strong, it will contact with the under side of the inner edge 22 of the valve and tend to swing the latter upwardly and partially close the otherwise open side of the body. When the valve is in closed position, the upper edge comes adjacent the packing strip 16, which latter prevents the upper edge of the valve from violently contacting with the strip 14. The valve is preferably somewhat shorter than the casing, as is indicated in Figs. 3 and 6. This permits the admission of a certain amount of air at the ends, even though the valve be swung to closed position by the pressure of the air.

For supporting the body or casing of the ventilator in position, I provide suitable brackets or receivers, one form of which is shown in Fig. 7. In this bracket or receiver, I provide an end wall 27, adapted to be rigidly secured to the window casing by screws or in any other suitable manner. This end wall 27 is of substantially the same shape as the end wall 10 of the body, but is slightly larger in size. At its curved edge it carries a short curved wall 28, and at its vertical edge it carries a narrow vertical wall 29. The end of the ventilator is adapted be received between these two walls 28 and 29, which serve to support said end and prevent it from rotating or from moving laterally. The brackets are permanently secured to the casing, but as the upper edge of each bracket is open, the ventilator proper may be lifted out of the brackets and removed whenever it is desired. Likewise it may be inserted with equal facility. The bracket preferably carries a spring extension 30, having a catch or lug 31 on the side toward the window. The window itself may be provided with one or more lugs or catches 32, which engage with the lug 31 when the window is opened and limit said opening movement. A single lug 32 may be employed for preventing the window from being raised from the position indicated in Fig. 2, or an additional lug may be employed for holding the window in closed position as indicated in Fig. 1. Whenever it is desired to raise the window, all that is necessary is to press the spring extension 30 away from the window, so that the lugs or projections may pass, but as this spring extension is upon the inside of the window, a burglar or other intruder could not readily gain access thereto from the outside of the window. In case the window is of slightly greater width than some one of the standard sizes in which the ventilator may be made, I preferably provide a bracket which is extensible so as to support the ventilator even though the end of the latter be at a distance from the

window casing greater than the width of the walls 28 and 29 of the bracket shown in Fig. 5.

Various different forms of extensible brackets may be employed, and they may be constructed so as to remain permanently or only temporarily in adjusted position. One form which the ventilator bracket may assume is illustrated in section in Fig. 8, although I wish it understood that I am not limited to this particular form. In this form there is provided an end wall 27^a, similar to the end wall 27 and having a similar curved wall 28^a and a vertical wall, not shown. This wall 27^a is provided with rearwardly-extending top and side walls 33 and 34, which are adapted to telescope into outwardly-extending top and side walls 35 and 36 carried by an end plate 37. Between the walls 37 and 27^a, is a coil spring 39, which normally tends to press the plate 27^a outwardly. The plate 37 is secured in position to the window casing and the spring will force the plate 27^a outwardly to the desired distance to engage with and support the end of the ventilator proper.

Another form of extensible bracket is shown in perspective in Fig. 9. This bracket has an end wall 27^b and a curved flange 28^b corresponding to the wall 27 and the flange 28 shown in Fig. 7. The vertical edge of the wall 27^b toward the window is provided with a wall 33^b disposed substantially parallel to the plane of the window and extending toward the window casing. The wall 33^b and the flange 28^b are upon opposite sides to the wall 27^b. This wall 33^b is provided with marginal flanges which hold a wall or plate 35^b in engagement with the former but permitting the parts 33^b and 35^b to move longitudinally relatively to each other. The wall or plate 35^b is provided with a terminal flange 37^b, by means of which it may be rigidly secured to the window casing. It will be noted that in the form shown in Fig. 8 and also in the form shown in Fig. 9, the bracket is formed of two sections longitudinally movable relatively to each other, and one of these sections has means for securing it to the window casing, while the other section has means for detachably supporting the ventilator casing.

Various changes may be made in the construction and combination of my improved ventilator and within the terms of the appended claims, without departing from the spirit of my invention.

Having thus described my invention I claim as new and desire to secure by Letters Patent:

1. A window ventilator, comprising a casing substantially quadrant-shaped in cross section and having end walls, an open vertical side and a screen-covered horizontal side, and brackets separate from the casing for securing said casing in position, each of said brackets having an end wall, an outwardly-extending curved flange for engaging with the curved side of the casing, and a straight flange for engaging with one of the straight sides of the casing.

2. A window ventilator having a curved outer wall, an open vertical side, a screen-covered horizontal side, and a vane or damper within said ventilator and normally tending to assume a substantially horizontal position and movable to a substantially vertical position by the closing of the window.

3. A window ventilator, comprising a casing having quadrant-shaped end walls, a curved outer wall, a bar connecting the corners of said end walls opposite to said curved wall, and a valve or damper pivotally connected to said end walls substantially parallel to said bar and having one edge thereof normally extending out through the open side of the casing.

4. A window ventilator, including a casing having quadrant-shaped end walls and a curved outer wall, and a screen extending across one side of said casing, said curved wall having a plait or fold constituting a bar to which one edge of the screen is secured, and having an extension beyond said screen and constituting a baffle or shield.

5. A window ventilator, including a casing and brackets for supporting the same, one of said brackets having an end wall, outwardly-extending flanges to receive the casing, and means for adjustably supporting said end wall.

6. A window ventilator, including a casing having an air passage therethrough, and brackets for supporting said casing, one of said brackets being formed of two sections slidably connected together, one of said sections being adapted to detachably support one end of the casing and the other of said sections being adapted to be rigidly secured to the window casing.

7. A window ventilator, including a casing having an air passage therethrough, and brackets for supporting said casing, one of said brackets being formed of two sections slidably connected together, one of said sections being adapted to detachably support one end of the casing and the other of said sections being adapted to be rigidly secured to the window casing, and a spring within said bracket and normally spreading said sections apart.

8. The combination, with a window casing and a window slidably mounted therein, of a ventilator extending transversely of the window adjacent one edge thereof, a bracket secured to the casing for supporting the ventilator, and a window lock for securing together the bracket and window and independent of the ventilator.

9. A window ventilator, including a casing having a curved outer wall, a screen extending across one side of the casing and disposed substantially radially of the curved wall, said curved wall having a baffle or screen integral therewith and extending upwardly above said screen and at an acute angle thereto.

10. A window ventilator, including a casing having end walls and brackets for supporting said casing, each of said brackets having a wall adjacent to the corresponding end wall of the casing, coacting flanges for securing the end walls of the casing to the walls of said brackets and permitting the removal of the casing by an upward movement thereof, and means for securing said brackets to the window casing.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROLLA M. HILL.

Witnesses:
CLAIR W. FAIRBANK,
PHILIP D. ROLLHAUS.