No. 830,829. PATENTED SEPT. 11, 1906.

S. B. GOMAN.

WINDOW VENTILATOR.

APPLICATION FILED OCT. 23, 1905.

Fig. 2.

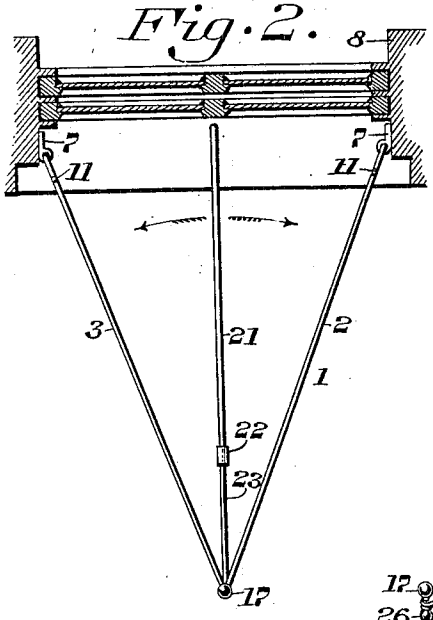


Fig. 1.

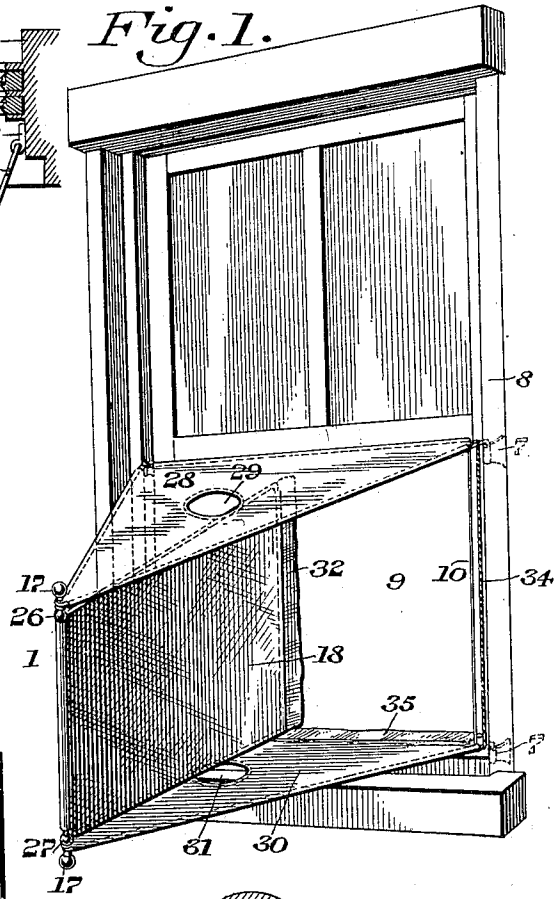
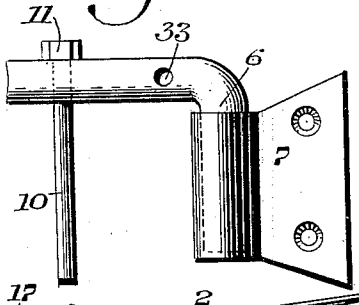


Fig. 4.



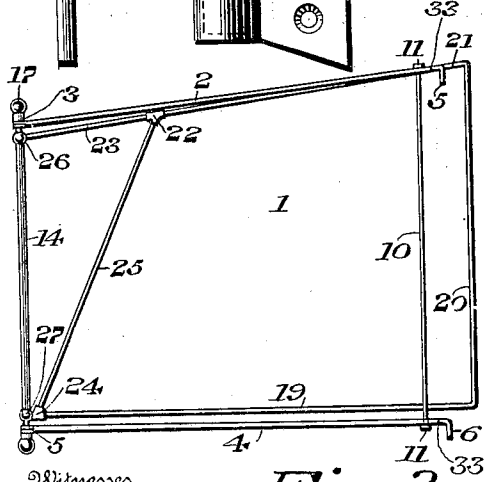


Fig. 3.

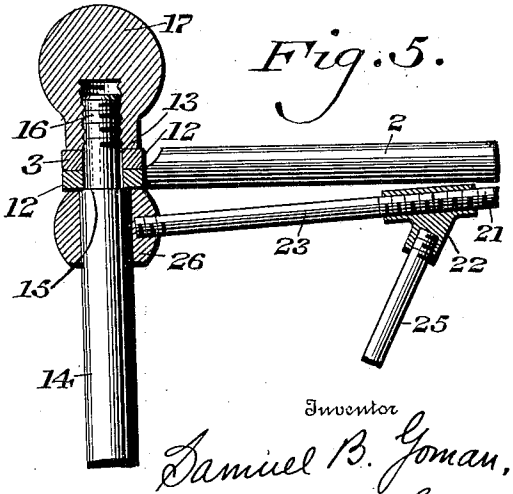


Fig. 5.

Witnesses

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WINDOW-VENTILATOR.

No. 830,829. Specification of Letters Patent. Patented Sept. 11, 1906.

Application filed October 23, 1905. Serial No. 283,878.

To all whom it may concern:

Be it known that I, SAMUEL B. GOMAN, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Window-Ventilators, of which the following is a specification.

My invention relates to a ventilator which is adapted to direct a current of air through a port or opening in which or near which a ventilating device is secured.

The invention consists of a novel construction of a frame or support adapted to be readily and easily attached at a suitable point and having open sides, a closed top and bottom, and a pivoted shutter, which latter is adapted to automatically swing from one side to the other, according to the direction of the current of air, and thus close one side of the device, so that the current of air will be deflected through the opening.

It further consists of a novel construction of a frame which may be readily assembled or disassembled when it is desired to place a new covering of material on the frame.

It further consists of a novel construction of a swinging member and of novel means for mounting the same.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

Figure 1 represents a perspective view of an air-chute or ventilator embodying my invention. Fig. 2 represents a plan view thereof having the canvas or covering removed. Fig. 3 represents a perspective view of the frame of the device having the covering removed. Fig. 4 represents in side elevation an enlarged view of a portion of the device. Fig. 5 represents in side elevation an enlarged view, partly in section, of a portion of the device.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings in the preferred embodiment of my invention herein shown, 1 designates a ventilator, the same comprising the upper frame-rods 2 and 3, the lower frame-rods 4 and 5, said rods being bent at their inner ends in order to form a hook 6, which is adapted to fit into a bracket 7, which latter is secured to the framework in any suitable manner. In the present embodiment of my invention I have shown the device as being attached to the frame of a window-opening 8, having the lower part of the window raised in order to form the opening 9 therethrough; but it will be apparent that my device may be secured in proximity to any opening through which it is desired to have a current of air deflected.

In the present instance I have shown the frame as being substantially triangular in form; but it is to be understood that I do not desire to be limited to this precise construction, since the same may be otherwise constructed and differently formed or shaped and still be within the scope of my invention, since it is only essential that the swinging member be pivoted in such a manner that it will form an angle with the opening, so as to deflect the air therein when said member is swung to one side or the other of the opening.

The top rods 2 and 3 are connected with the bottom rods 4 and 5 by rods 10 passing therethrough, said rods having their ends threaded and provided with suitable nuts 11, by means of which the desired rigidity of the frame is accomplished. The top and bottom rods at their outer ends are flattened or reduced in diameter, as best seen at 12 in Fig. 5, and have an aperture 13 therethrough.

14 designates a rod having a shoulder 15 at each end which abuts against the flattened ends of the rods 2 and 5. The extreme outer end of the rod 14 is threaded, as seen at 16.

17 designates a nut having threaded engagement with the threaded end 16 of the rod 14, said nut in the present instance being shown as substantially round or in the form of a ball and having a short neck extending therefrom, the outer end of which engages the outer rod member of the framework.

18 designates a shutter which consists of a bottom rod 19, an end rod 20, and a top rod 21, which has threaded engagement with a bracket 22, in which latter a rod 23 has also threaded engagement.

24 designates a bracket with which the outer end of the rod 19 has threaded engagement.

25 designates a stiffening-rod, one end of which has suitable engagement with the bracket 24, the other end of said rod having suitable engagement with the bracket 22.

The rod 23 has threaded engagement with a collar 26, loosely mounted on the rod 14, and has its upper and lower faces flattened to form a substantially plane surface. 27 designates a similar collar with which the rod 19 has threaded engagement, said rod, as seen in Fig. 3, passing directly through the bracket 24.

28 designates the top cover of the device, which may be made of canvas or any other suitable material, and this material is lapped over and stitched, so as to form a pocket through which the upper rods 2 and 3 pass. This top is provided with a vent-hole 29 for a purpose which will hereinafter appear.

30 designates the bottom of the device, which is constructed in a similar manner to the top cover and is provided with a vent-hole 31.

The shutter or swinging member 18 is covered with canvas or other suitable material. This material passes around the rod 14, as seen in Fig. 1, and may be lapped over and stitched, so as to form a pocket, or a double thickness of the material may be used, as desired. The cover of the swinging member 18 extends beyond the rod 20, so as to form a flap, as seen at 32, in order that when the swinging member is at one side or the other of the frame this flap will completely close the said side.

33 designates an opening in the top and bottom rods between the stiffening-rod 10 and the hook 6, through which a rope 34 is adapted to pass, said rope also passing through a pocket in the upper and lower canvas. By means of this rope the extent of the opening between the top and bottom of the side contiguous the window-opening may be regulated and the strength of the structure increased. It will be apparent that when the rope 34 is drawn taut the upper cover 28 and the bottom cover 30 will be held substantially rigid, while if the rope or cord 34 is loosened the size of the opening will be increased, since the cover 28 will be permitted to be deflected or pressed upwardly by the current of air and the bottom cover 30 will be permitted to move outwardly and downwardly for the same reason.

The bottom cover 30 may also be provided with a flap 35, if desired.

It is to be noted that in the present instance the apices of the triangles are nearer together than their bases, since such a construction is less liable to be distorted or bent out of shape by the force of the current of air, and the device may be more readily placed in position and removed therefrom by a person within the room in which the window is located.

I wish to call attention to the fact that in the present instance the distance between the two collars 26 and 27 is less than the length of the rod 20 and the stiffening-rods 10 and that each of the top rods and each of the bottom rods converge toward each other, as seen in Figs. 1 and 3.

The operation is automatic and will be readily apparent. The wind or other current of air in whichever direction it is coming will strike against the shutter 18 and cause it to swing to the opposite side and close said side, and the current of air will be deflected through the opening 9. It will be apparent that in whichever direction the current of air is coming the swinging member 18 will be automatically shifted from one side to the other and close one of the sides, and as the top and bottom of the device are suitably covered practically the whole current will be deflected into the room. In order to prevent the current of air from straining or twisting out of shape the frame of the device, I place a vent-hole in both the top cover and the bottom cover, so that when the pressure or strain becomes abnormal the air will be allowed to escape through said holes.

It will be seen that either the top or bottom cover of the swinging member may be easily and readily replaced when desired, since the device may be quickly dissembled by simply unscrewing the ball-nuts 17 and the rods which form the support readily withdrawn from the pocket of the material through which they pass. The bracket 22 may be placed so that the rod 25 will form any desired angle with the rods 19 and 21 of the frame of the shutter according to requirements.

While I have shown in the present instance the preferred embodiment of my invention and the same as being secured to a window-frame, it will be apparent that it may be secured to any moving object, such as an electric car, the port-hole of a ship, or in proximity to any opening in a moving object and the operation of the device will be precisely the same. It will be further apparent that the angle in which the top and bottom converge toward each other may be varied according to requirements and also that the form or shape of the framework may be altered without departing from the scope of my invention, and I do not, therefore, desire to be limited in every instance to the exact construction herein shown and described.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a ventilator, a frame comprising a closed top having converging sides, a closed bottom angularly inclined to said top and having converging sides, the frame being open between said top and bottom, a connection adapted to hold said top and bottom in suitable relation, and a member loosely mounted on said connection for automatically closing the space between the top and bottom at one side of the frame.

2. In a device of the character described, a frame consisting of a triangular top, a triangular bottom angularly inclined thereto, a rod connecting said top and bottom and a swinging member loosely mounted on said rod adapted to close one side of said frame.

3. In a device of the character described, a top, a bottom angularly inclined to said top

and a shutter pivoted at its outer end between said top and bottom and automatically moved from one side to the other of the device by the current of air to close said side.

4. In a device of the character described, a top comprising a triangular frame suitably covered, a bottom comprising a triangular frame suitably covered and angularly inclined to said top, connections between said top and bottom near the vertices of the angles, the sides of said device being open and a shutter loosely mounted and adapted to freely swing from one side to the other to close one side of the device.

5. In a device of the character described, a closed top, a closed bottom angularly inclined thereto and suitably connected therewith, the sides of said device being open, means for supporting said device and a side member pivoted at its outer end between said top and bottom in a plane at right angles to said supporting means.

6. In a ventilating device, a top comprising a plurality of rods, angularly inclined to each other, a bottom comprising a plurality of rods angularly inclined to each other, a connection between said top rods and said bottom rods at their inner ends, a connection between the two top rods and the two bottom rods at their outer ends, the connection at said outer end being of less length than the connections at said inner end, a covering for said top and for said bottom, a substantially rectangular frame mounted on said outer connection, a covering therefor, and means at the inner ends of said top and bottom rods for securing the device in place.

7. In a ventilating device, top rods angularly inclined to each other and flattened at their outer ends, a hook at their inner ends, bottom rods angularly inclined to each other and flattened at their outer ends, a hook at their inner ends, an aperture through the flattened ends of said rods, a rod passing therethrough adapted to hold said top and bottom in suitable relation, collars loosely mounted on said connecting-rod, rods secured to said collars and extending inwardly therefrom, said rods being connected at their inner ends, a covering for said top and for said bottom and a covering for the frame secured to said collars.

8. In a device of the character described, a triangular closed top having an aperture therethrough, a triangular closed bottom having an aperture therethrough, a connection between said top and said bottom at the vertices of the angles, the sides of said device being open, means for attaching one of said sides in proximity to an opening, a swinging member pivoted between said top and bottom and automatically moved from one side to the other to close a side, and means for regulating the extent of the opening between the top and bottom contiguous said first-named opening.

9. In a device of the character described, a top having an aperture therethrough, a bottom having an aperture therethrough and angularly inclined to said top, and a shutter pivoted at its outer end between said top and bottom and automatically moved from one side to the other of the device by a current of air to close said side.

10. In a device of the character described, a top having an aperture therethrough, a bottom having an aperture therethrough, and angularly inclined to said top, said bottom having an inwardly-extending flap and a shutter provided with an inwardly-extending flap pivoted at its outer end between said top and bottom and automatically moved from one side to the other of the device to close one side thereof.

11. In a ventilating device, a top comprising a plurality of rods angularly inclined to each other, a bottom comprising a plurality of rods angularly inclined to each other, a connection between said top rods and said bottom rods at their inner ends, a connection between the two top rods and two bottom rods at their outer ends, a covering for said top and for said bottom, there being apertures through said rods at their inner ends, a swinging member mounted on said outer connection and automatically moved from one side to the other to close a side, and a cord passing through said apertures and engaging said top and bottom cover for regulating the extent of the opening therebetween on the side contiguous the opening in proximity to which the device is secured.

12. In a ventilating device, a top comprising a plurality of rods angularly inclined to each other, a bottom comprising a plurality of rods angularly inclined to each other, connections between said top rods and said bottom rods at their inner ends, a connection between the two top rods and the two bottom rods at their outer ends, a covering for said top and for said bottom and a frame pivoted on said outer connection adapted to freely swing from one side to the other to close one side of the device, said frame comprising an end rod, a top rod, a bottom rod and a stiffening-rod in suitable connection with said top rod and said bottom rod and angularly inclined thereto.

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Witnesses:
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