H. F. MARANVILLE.

VENTILATOR.

APPLICATION FILED MAY 25, 1916.

1,322,711.

Patented Nov. 25, 1919.

2 SHEETS—SHEET 1.

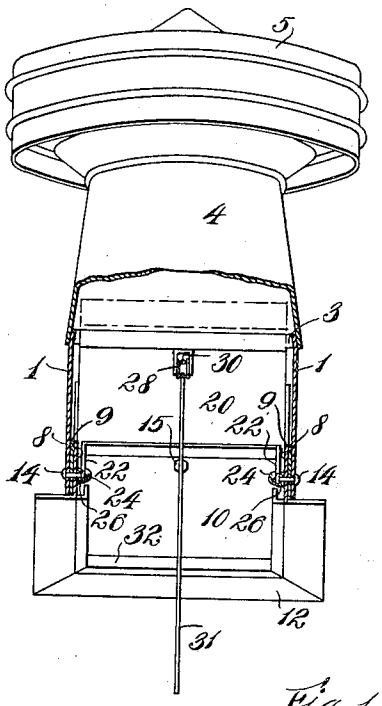


Fig. 1

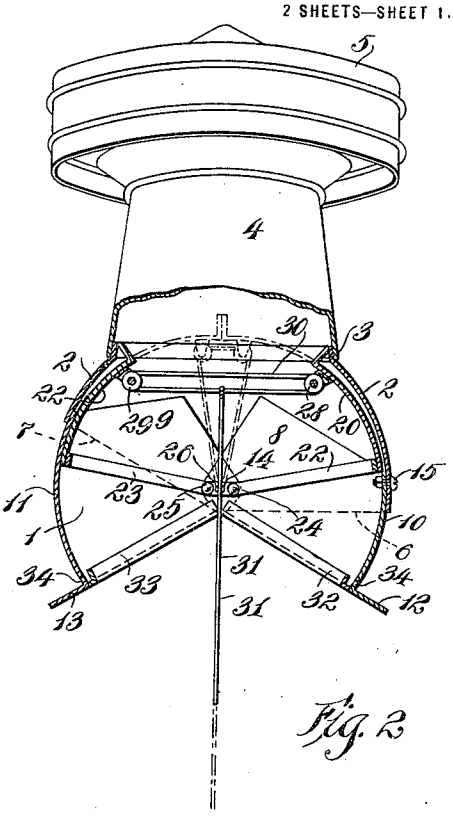


Fig. 2

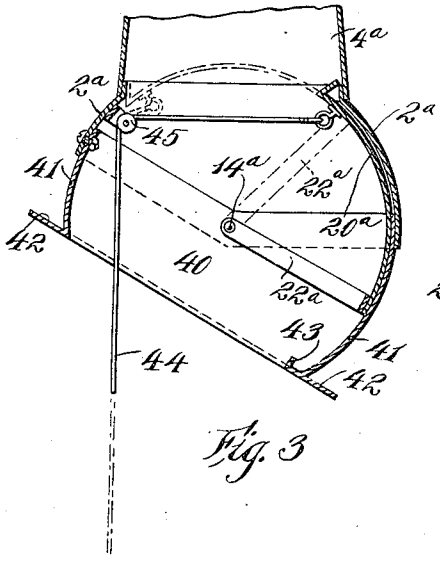


Fig. 3

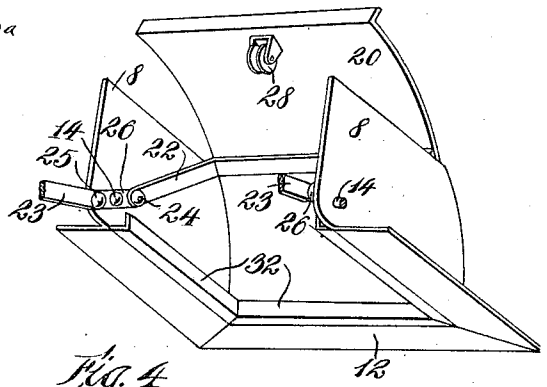


Fig. 4

Inventor

Harvey F. Maranville.

By Hull, Smith, Brock & West

Atty's.

H. F. MARANVILLE.

VENTILATOR.

APPLICATION FILED MAY 25, 1916.

1,322,711.

Patented Nov. 25, 1919.

2 SHEETS—SHEET 2.

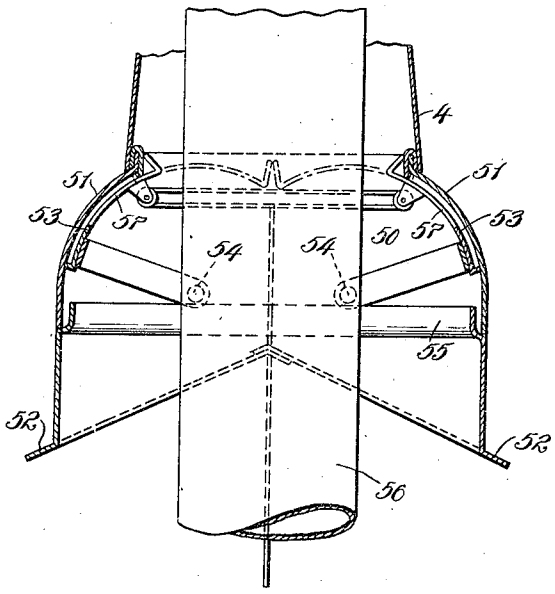
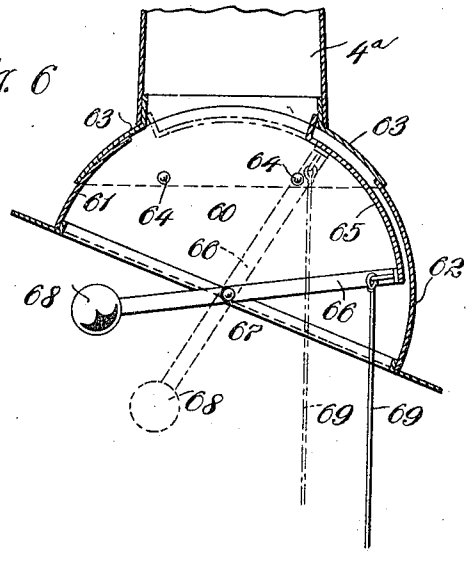


Fig. 5

Fig. 6



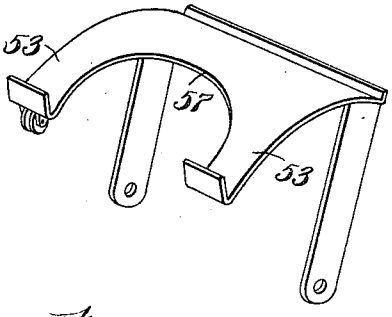


Fig. 7

Inventor
Harvey F. Maranville

By Hull, Smith, Brock & West

Atty's.

UNITED STATES PATENT OFFICE.

HARVEY F. MARANVILLE, OF AKRON, OHIO.

VENTILATOR.

1,322,711. Specification of Letters Patent. Patented Nov. 25, 1919.

Application filed May 25, 1916. Serial No. 99,721.

To all whom it may concern:

Be it known that I, HARVEY F. MARANVILLE, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented a certain new and useful Improvement in Ventilators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to ventilators and has special reference to those ventilators which are placed upon the roof of a building to permit or facilitate the escape of the air and gases within the building without admitting snow, rain or dust. It has long been attempted to provide a simple, reliable and compact damper device for such a ventilator, but the problem has been a very difficult one because of the difficulty of locating the damper device out of obstructing position when not needed.

The objects of this invention are the provision of a damper construction of great simplicity and compactness and lightness, which can be operated with a maximum of ease and which when in unobstructing position shall free the passage-way absolutely; the provision of a damper device which shall be self cleaning so as to dispose of adherent snow, frost, dust, soot, or condensed water in a cleanly and unobjectionable manner; the provision of a damper device which can be used with equal facility upon fixed base or adjustable base dampers; the provision of a damper construction of great simplicity and reliability; while other objects and advantages of my invention will become apparent as the description proceeds.

Generally speaking my invention may be defined as consisting of the combinations and constructions recited in the claims hereto annexed and illustrated in certain preferred embodiments in the drawings accompanying and forming a part of this application, wherein: Figures 1 and 2 are vertical sectional views of a preferred embodiment of my invention, taken at right angles to each other; Fig. 3 is a vertical sectional view illustrating a simple form of my invention; Fig. 4 is a perspective view showing the operative parts of the damper illustrated in Figs. 1 and 2; Fig. 5 is a vertical sectional view through a fixed base type of ventilator provided with a damper of my invention, the parts being arranged for the passage of a stove pipe; Fig. 6 illustrates another form of fixed base ventilator equipped with a simplified damper; and Fig. 7 is a perspective view of one of the damper members illustrated in Fig. 5.

Describing the parts by reference characters, first having reference to Figs. 1 and 2, I have shown a ventilator body comprising flat parallel sides 1—1 and segmental ends 2—2, which taken together define a space which is rectangular in horizontal section. The upper margins of these members cooperate to define an outlet mouth 3 above which is located the neck 4 which supports the head 5, this head being of any suitable or desired type, either stationary or rotary. I have illustrated herein a head of the stationary type, but this is merely for illustrative purposes since the character of the ventilator itself has no bearing upon the present invention.

The body illustrated in Figs. 1 and 2 is similar to that described and claimed in my application filed February 5, 1916, Serial No. 76,239, in that it is adapted to be adjusted angularly depending upon the pitch or configuration of the roof to which it is applied. To this end the lower edge of the body member is made substantially horizontal for about half its width as shown at 6 in Fig. 2, and is beveled away upwardly for the remainder of its width as shown at 7 in Fig. 2. With this body member are employed two base members, which comprise a pair of flat parallel side plates 8—8, 9—9 respectively connected at one end by the segmental end members 10, 11 respectively, and terminating at their lower edges in outturned roof-engaging flanges 12, 13 respectively. These base members are pivoted to the sides 1—1 by means of suitable bolts 14 in such wise that the ends 10, 11 may swing closely within the segmental ends 2—2 of the body, thus permitting the device to be attached in a vertical position to roofs of greatly varying pitches. When the proper adjustment has been obtained the parts may be rendered rigid by the employment of bolts 15 or in any other suitable manner. It will be seen that the mouth 3 will remain unobstructed under all ordinary conditions of adjustment.

In order to control the passage through this mouth I support inside this body one or more segmental plates whose curvature is substantially the same as that of the body

ends and whose pivot centers coincide substantially with the axes of curvature of those ends. In Figs. 1 and 2 I have illustrated the damper device as comprising two leaves 20, 21, extending the full width of the body, and of a combined length equal to the extent of the opening 3. These members are provided with radial arms 22, 23 respectively, here shown as pivoted at 24, 25 to opposite ends of a member 26 which is carried by the bolt 14, the length of this member being such that the pivots 24, 25 will be substantially concentric with the adjacent ends 2—2 of the base. If the base is low and the portions 2—2 inclined sharply inwardly, the member 26 will obviously be of considerable length, while if the base be high, it may easily be that the centers would coincide and the dampers be hinged about a single axis as might be done in Fig. 3. The location of these pivots upon a separate member 26 permits them to occupy the same position relatively to the body 2 regardless of the position of the base members, the bolt 14 being obviously tightened up after the adjustment has been completed.

When it is desired to close these dampers, their adjacent ends are drawn together as shown by dotted lines in Fig. 2, any suitable arrangement being employed, such as the pulley members 28, 29 carried by the dampers and receiving the looped end 30 of the cord 31.

When the damper is closed as shown in dotted lines, it will ordinarily collect a certain amount of dust, and also more rain, snow and frost than would enter the ventilator when the air passage was open, which might drip upon the floor below in the form of dirty water, or upon the opening of the ventilator might splash into the room beneath. To overcome this possibility I preferably provide suitable gutters, in the present instance illustrated at 32, 33, arranged beneath the latter and rear edges of the dampers at all positions of their adjustment and communicating with the exterior through small apertures 34.

While the double damper arrangement above described is particularly useful in connection with the double adjustable base member, and in ventilators in which the two sides of the body are curved about different axes, there are certain instances in which the same ultimate result can be obtained by the employment of a single damper member of the same general construction, and my invention extends to and comprehends such a modification. An instance of this is shown in Fig. 3 wherein the body part of the ventilator is formed with segmental portions 2^a—2^a, both of which are concentric to the bolt 14^a, upon which bolt are pivoted the arms 22^a of the single damper member 20^a. Instead of the two base members in Figs. 1 and 2, I have shown a single base member having flat sides 40 terminating at each end in segmental walls 41—41 which fit within the parts 2^a—2^a, the damper 20^a swinging within the higher of the walls 41. The lower part of the base member is provided with the roof flanges 42 as before, and also with the gutter 43 for the purpose above described. The damper is operated by means of a cord 44 passing around a pulley 45 affixed to the ventilator at the side opposite the damper, and the dimension of the ventilator upon its higher side is sufficient to accommodate this entire damper as shown in Fig. 3.

Obviously my improved dampers are not restricted to use with ventilators of the adjustable base type, and in Fig. 5 I have illustrated the use of the same with a fixed base ventilator, here shown as of the type adapted for use upon the ridge of a pitch roof, the body part having flat sides 50 and rounded ends 51—51 as before but terminating in fixed flanges 52—52 suited to the roof angle. The dampers 53—53 swing freely within the ends 51—51 without the necessity of allowing for base flanges, the pivots 54—54 being located concentrically of these respective ends. The gutter 55 is here arranged horizontally without need of allowing for any adjustability, and encircles the sides as well as the ends of the body. The opening and closing movement is effected as before, excepting that I have illustrated a stove pipe 56 as passing up through the neck 4, the dampers 53—53 being suitably notched as at 57 to embrace this pipe snugly when in closed position.

In Fig. 6 I have illustrated an adaptation of my improved damper to a yet different form of ventilator body, in which are provided two flat semicircular sides 60 connected by segmental end plates 61, 62, spaced apart to provide an aperture of considerably greater extent than that of the neck 4^a. The lower end of the neck is formed with a shoulder piece 63 suited in size and inclination to the base member and adapted to fit thereover and to be secured by suitable bolts 64—64 which can easily be punched through the side walls at any point. A segmental damper 65 is provided as before and is pivoted by means of arms 66 to a bolt or rivet 67 concentric with said semicircular base. This damper member is of an angular extent not greater than that of the walls 62 and is shown as provided with a counterweight 68 arranged normally to hold it closed and a cable 69 whereby it may be opened.

Having thus described my invention, what I claim is:—

1. In a ventilator, a body part having a pair of upright parallel side walls and a pair of transverse end walls, each of said

end walls being a segment of a cylindrical surface, the diameter of which is greater than that of the ventilator passage whereby the body part projects laterally to each side thereof, a pair of dampers each formed as the segment of a cylindrical surface and pivoted within said body upon an axis substantially coincident with the axis of one of said end walls, said dampers being arranged when drawn together to close the passage through the ventilator and when moved apart to lie one beneath each end wall out of line with the passage and means for operating said dampers.

2. In a ventilator, a body, a segmental base member adjustably pivoted thereto, and a damper pivoted therein and arranged to project across said body, and to be swung beneath the segmental ends of said base member.

3. In a ventilator, a body portion and a neck, said neck having diverging ends which project laterally beyond said body portion to form shoulders, and a pair of segmental dampers pivoted inside said body portion upon a substantially horizontal axis beneath and substantially parallel to said ends and adapted to swing beneath said shoulders and across the passageway.

4. In a ventilator, a body having segmental ends, a base member having side walls pivoted to the sides of said body and a segmental end wall which laps the segmental end of said body, and a damper pivoted inside said body upon an axis substantially parallel with the axis of curvature of the end wall of said base member and adapted to be swung beneath said end wall and across the passageway.

5. The combination with a ventilator having a lower body with side walls and segmental ends, of a base member having side walls secured within said first side walls and also having segmental ends which lap the segmental ends of the body, and a damper also of segmental form and pivoted within said body upon an axis substantially parallel to and coinciding with the axis of curvature to one of said segmental end walls, said damper being adapted to swing beneath that end wall and to project across the ventilator passageway.

6. In a ventilator, a base member having end walls formed as the segments of cylinders, a body having end walls mating to the end walls of said base member, means for securing the lower edges of said body to said base member and those of said base member to a roof, and a damper of segmental form pivoted within said body upon an axis parallel with the axis of curvature of one of said segmental walls and adapted to be swung beneath said wall and across the passageway.

7. In a ventilator, a body adapted to be secured to a roof, a hollow neck projecting upwardly from the upper portion of said body when so secured, a damper within said body, said damper arranged to project across said neck and to be moved to one side thereof, and a gutter carried by the interior of said body and overlapping the edges of said damper, said gutter having discharge outlets leading to the exterior of said body.

8. In a ventilator, a base having a pair of upright parallel flat sides a part of whose edges lie on the arc of a circle centered adjacent the bottom of said sides, said base also having end walls following such arcuate curvature, a body member having flat parallel sides adapted to overlap and engage the side walls of said base and having arcuate ends adapted to overlie and engage the end walls of said base, said body also having a radial hollow neck, and a damper member forming the segment of a cylinder and located inside said body substantially parallel with the end wall thereof, said damper member being pivoted upon an axis substantially coincident with the center of curvature of said end wall and adapted to swing within the end wall of said base whereby it may be swung into and out of obstruction position as regards said neck irrespective of the adjustment between said base and body.

9. In a ventilator, a body having a hollow discharge neck arising therefrom, said body projecting laterally farther than said neck to form a shoulder, a damper arranged for lateral movement within said body so as to obstruct said neck and to be moved beneath said shoulder, and gutters carried by the inner base of said body, the gutters upon the side walls of the body being located beneath the lateral edges of said dampers at all times, and the gutter traversing the end walls of the body, each wall being located beneath the rearward edge of said damper when the same is in non-obstructing position.

In testimony whereof, I hereunto affix my signature.

HARVEY F. MARANVILLE.