

Dec. 30, 1924.

1,520,742.

A. M. BASMAN

VENTILATOR

Filed June 26, 1922

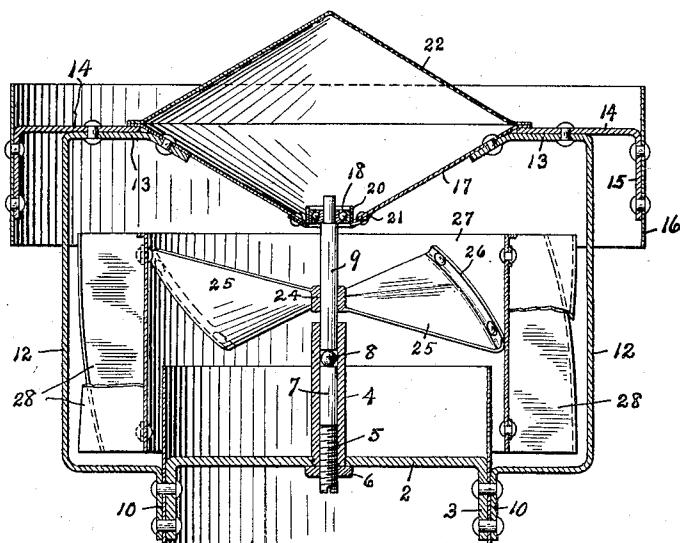


Fig. 1.

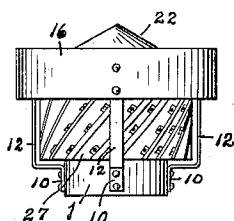


Fig. 3.

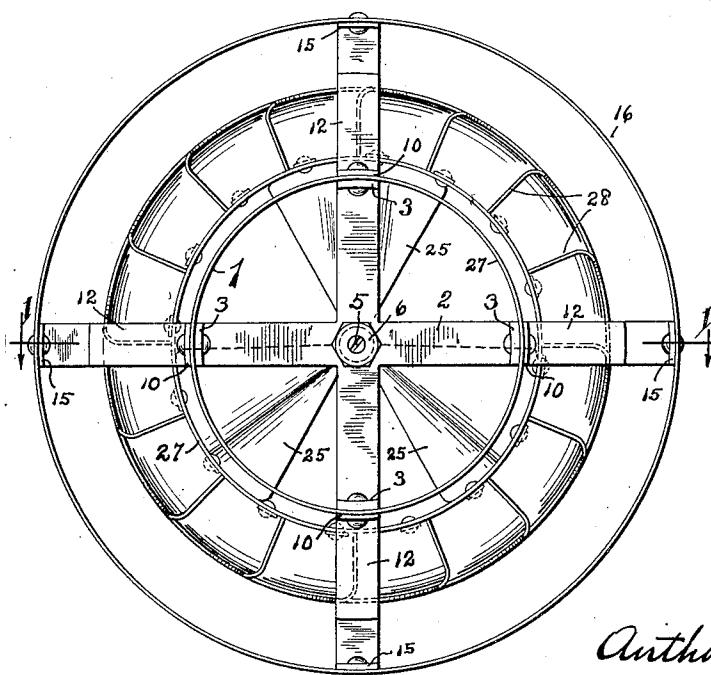


Fig. 2.

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UNITED STATES PATENT OFFICE.

ANTHONY M. BASMAN, OF DETROIT, MICHIGAN.

VENTILATOR.

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To all whom it may concern:

Be it known that I, ANTHONY M. BASMAN, a citizen of the United States, and residing at Detroit, in the county of Wayne 5 and State of Michigan, have invented a new and Improved Ventilator, of which the following is a specification.

This invention relates to means for assisting the upward flow of air and other gases 10 through vertical pipes and flues and for restraining the flow of outside air downward through such conduits, and its object is to provide a device of this character which will be effective in operation, simple in construction and little liable to get out of 15 order.

This invention consists of a frame adapted 20 to be attached to the upper end of a ventilator pipe or flue, of a vertical shaft rotatably mounted in said frame, fan blades attached to the shaft, a cylindrical drum carried by the fan blades, and inclined vanes attached to said shell.

It further consists in a double cone carried 25 by the frame above the ventilator pipe and an external band of greater diameter than the shell and the vanes attached thereto, the upper ends of the vanes and the lower end of the external band being approximately in the same horizontal plane.

It also consists in the details of construction illustrated in the accompanying drawing and particularly pointed out in the claim.

In the drawing, Fig. 1 is a vertical section of this improved ventilator on the line 35 1—1 of Fig. 2. Fig. 2 is a bottom plan view of the ventilator. Fig. 3 is an elevation of the ventilator on a smaller scale.

Similar reference characters refer to like parts throughout the several views.

The ventilator shown in the drawing embodies a thimble 1 of any desired length which may be a part of or be attached to 45 the ventilating flue, pipe or smoke stack of a building. A metal cross bar 2 having down-turned ends 3 attached to the thimble has a tube 4 screw-threaded into its middle portion and this tube is internally threaded 50 to receive the adjustable supporting screw 5 which may be locked in position by the jamb nut 6. A short stem 7 rests on this screw and carries the ball 8 which serves as a bearing for the shaft 9.

Attached to the thimble 1 are the lower

ends 10 of the arms 12, whose intermediate portions are parallel to the shaft 9 and whose upper ends 13 are turned toward each other. Attached to these ends 13 are short bars 14 whose down-turned ends 15 support 60 the cylindrical band 16. The ends 13 also support a cone 17 having a central opening to receive the ball bearing 18 for the shaft 9. This bearing is preferably secured in a separate stamping consisting of a cylindrical portion 20 and a conical flange 21 attached to the cone 17. In order to prevent water filling this cone, a second cone 22 is attached to the first, point upward.

A fan structure comprising a hub 24 and 70 blades 25 is attached to the shaft 9 and the outer ends 26 of these blades are bent to fit against the shell or drum 27 which extends down below the top of the thimble 1 and outside thereof. Attached to this 75 drum are a series of vanes 28 which are inclined in the same direction to the vertical as the blades of the fan. The outer edges of these vanes are curved to stiffen the vanes and to prevent the air between them 80 from being readily thrown out by centrifugal force, which may result in a down flow of air and a stopping of the fan.

When this ventilator is connected to or mounted on a flue, pipe or stack wherein the 85 air is warmer than the outside air, this outside air becomes heated by the inside air and rises, and in doing this, presses against the vanes 28 and rotates the drum 27 and the fan therein. The ascending warmer air 90 in the flue, pipe or stack is cooled by the outside air and its velocity is reduced so that the action of the fan blades 25 is to increase this current.

As there is usually at least a slight wind, 95 the curvature of the ends of the vanes 28 causes the drum 27 and the vanes thereon to rotate and to act as a wind motor for the purpose of turning the shaft 9 and the blades 25 thereon, thus increasing the efficiency of this ventilator. The band 16 prevents such wind from striking the lower cone 17 and being deflected downward against the blades 25 thereby.

Instead of having four arms to the cross 105 2 and four arms 12, the supporting frame may be formed with any other number of arms, and their shape may be varied as desired. In fact, all the details and proportions may be changed by those skilled in 110

the art without departing from the spirit of my invention as set forth in the following claim.

I claim:—

- 5 In a ventilator, the combination of a vertical thimble, a frame mounted thereon, a vertical shaft rotatably mounted in the frame, means mounted on the shaft to cause movement of air through said thimble and embodying a cylindrical drum and inclined blades attached thereto, said drum extending down around the upper end of said thimble, a series of vanes inclined to the
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axis of the ventilator and spaced throughout their length and attached to the outer surface of the drum whereby ascending currents of air may rotate the drum and shaft, a cylindrical band of greater diameter than the outer circle of the vanes carried by the frame above the upper end of the drum, and a downwardly tapering cone supported by the frame above the drum and spaced therefrom to permit the outward and upward passage of air.

ANTHONY M. BASMAN.