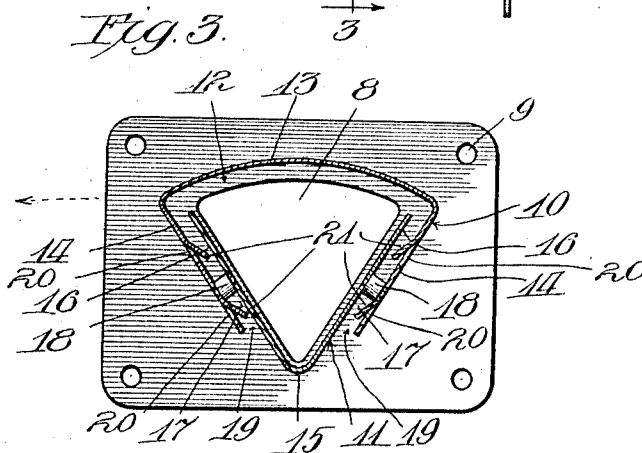
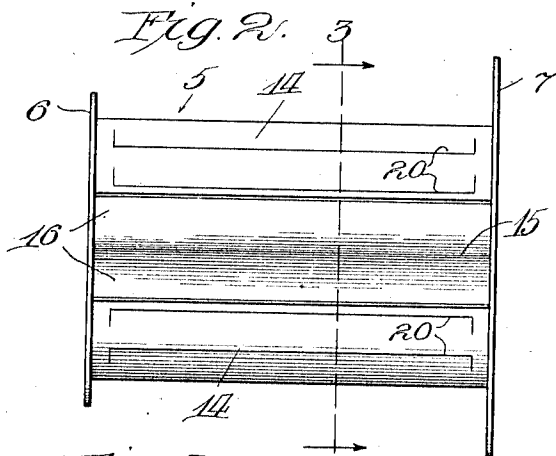
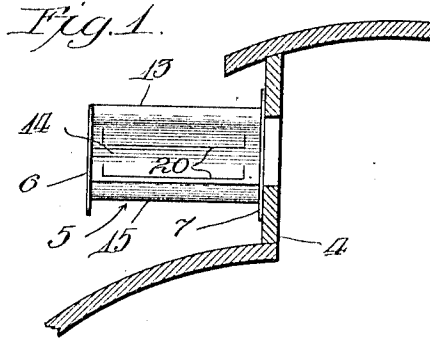


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VENTILATOR.  
APPLICATION FILED FEB. 15, 1912.

1,061,623.

Patented May 13, 1913.



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# UNITED STATES PATENT OFFICE.

JOSEPH T. MERCIER, OF CHICAGO, ILLINOIS.

## VENTILATOR.

1,061,623.

Specification of Letters Patent.

Patented May 13, 1913.

Application filed February 15, 1912. Serial No. 677,723.

*To all whom it may concern:*

Be it known that I, JOSEPH T. MERCIER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Ventilators, of which the following is a specification.

The present invention relates to a ventilator more particularly adapted for usage with a traveling conveyance, and especially designed to be placed upon the upper portion of said conveyer, as, for instance, along the deck sash of a passenger coach.

The objects of the present invention are to provide a ventilator which is cheap and simple of construction; which will prevent the ingress of dirt or other undesirable foreign matter to the interior of the car through the ventilator; which will be closed to prevent the entrance of rain, etc., to the interior of the car through the ventilator; and which will have its parts so arranged as to deflect an air current across the open end of the eduction opening, whereby a suctional force will be created within the ventilator tending to draw the air from the interior of the car out through said eduction opening.

A further object of the invention is to arrange the parts so that the air can flow in no other direction than across the eduction openings.

The invention further relates to the features of construction and to the combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is a view showing the ventilator of the present invention in operative position upon the deck sash of a car body; Fig. 2, a bottom view of the ventilator of the present invention; and Fig. 3, a section on line 3—3 of Fig. 2, looking in the direction of the arrow.

This ventilator is preferably placed along the upper portion of a car body and acts as a means for sucking or drawing air out from the interior of the car. The logical position for ventilators of this type is along the deck sash of a car body, although it may be placed upon other parts, if the conditions would warrant, or the builder desire, and still perform its office in the same manner. The particular location, therefore, of the ventilator is not deemed to be any limitation upon the scope of the invention.

In describing my invention, I will make reference to certain walls of the ventilator as being top, side, bottom, etc. It is under-

stood, however, that these terms are used only to expedite the description of the form of device used to illustrate the invention, and that they are not terms of limitation upon the scope of the invention, since, if the ventilator were placed in another position from that shown, these walls might then be more accurately identified by other terms, although the device as a whole would operate in substantially the same manner and upon the same principle as the device shown.

Referring to the drawings, and particularly to Fig. 1, a portion of a car body 4 is illustrated, to the deck sash of which is secured a ventilator 5, which forms the subject matter of the present invention. The ventilator comprises a front plate 6, and a rear plate 7, the former being of an imperforate nature and closing the front end of the ventilator; that is, the end farthest removed from the side of the car body. The rear plate is provided with an opening 8, best shown in Fig. 3, which may be termed the induction opening of the ventilator. This opening communicates with a suitable opening leading into the interior of the car body. In the construction shown, the plate 7 is provided with holes 9, through which suitable fastening members may be inserted to secure the ventilator in position. The ventilator in the form illustrated consists of an outer section 10 and an inner section 11. These sections provide a chamber or conduit 12, which communicates with the opening 8 in the plate 7; and through this conduit air flows from the interior of the car through the eduction openings in a manner hereinafter described. The outer section in the construction shown consists of a top wall 13 and converging side walls 14. As will be seen from Fig. 3, these side walls do not meet, and the lower termini are spaced apart from one another. The inner section comprises a bottom wall 15 and diverging side walls 16. The latter walls terminate clear of the wall 13 of the section 10, to provide a suitable space therebetween. By this arrangement there is formed between the walls 14 and 16 oppositely disposed channels 17, which constitute the eduction openings of the ventilator; and, if desired, suitable members 18 may be positioned between these walls to reinforce them and maintain them the desired distance apart. The termini of the eduction openings is indicated by the numeral 19 in Fig. 3. As will be seen

from the drawings, the two sections lie or rest one within the other, and since the closed end of one is at the top and the closed end of the other is at the bottom, they may be described as being arranged in reverse order to one another.

The principle of operation of the present invention is to cause a current of air to pass across the lower end of the eduction opening, whereby a suction or draft will be created in the eduction passages 17, tending to pull or draw the air through the opening 8, into the conduit 12, and through the passages 17, from whence it discharges to the outside air. It is necessary to so arrange the parts as to direct as great a volume of air as possible across the end of the eduction opening; and to secure this, the plates 6 and 7 extend to the outside of the walls of the sections 10 and 11, as will be clearly seen from a study of the figures of the drawing. Suppose the conveyance to be traveling in the direction indicated by the dotted arrow in Fig. 3. The current of air would strike the wall 14 facing the direction of travel, and, owing to the slope of said wall, would be deflected downward. The tendency of the air, however, would be to spread along this wall and pass off laterally therefrom; and to prevent this, the plates 6 and 7 are made to extend outside of the walls of the sections 10 and 11. These plates serve to check the lateral flow of the air along the walls 14, thus amassing or embanking the air upon said plate; and, as heretofore stated, owing to the slope of the wall 14, this mass of air is directed downward and across the lower end 19 of the eduction opening 17. Means must be provided, however, to prevent the air passing across said opening from curling back and flowing upward in said opening; and the preventive means shown consist of the lower termini of the walls 16 of the section 11, which, as shown, extend below the lower ends 19 of the eduction openings, and the air striking the lower end of the wall 16 will be deflected downwardly and away from the opening 19, thus insuring a steady rush of air by said opening and preventing the curling back of the air, whereby it would flow upward in the eduction opening, thus destroying the efficiency of the device in so far as it relates to the sucking or drawing of air out through the eduction passages.

With the arrangement of parts shown, the ventilator is particularly adapted for use with traveling conveyances, since no matter in which direction the conveyance is moving, the ventilator will work with equal efficiency, both sides being alike. As will be

seen from the drawings, all of the walls of the ventilator are smooth, whereby no pockets or crevices are present in which dust might accumulate.

By referring to Fig. 3, it will be noted that the side walls 14 are provided with a series of openings 20 communicating with the eduction passage 17; and extending from each of these openings and into said passage is a deflecting or baffle plate 21. By this arrangement the air passing down the wall 14 can enter said openings and flow downwardly and out through said eduction passage, thereby producing a very strong draft or current and obtaining a heavy suctional power for drawing the air out from the interior of the car.

I claim:

1. In a ventilator of the class described, the combination of an inner section of V-shaped formation, having its narrow end downward and its upper end open, the outer section being of triangular formation with its narrow end downward, the lower end of said outer section being cut away to provide an open lower end, the adjacent walls of said sections being spaced apart from one another to provide air passages therebetween, the upper wall of the outer section forming a cap-piece to prevent the entrance of matter into the interior of the ventilator, the outer section terminating adjacent the lower end of the inner section, and means for joining the sections together, substantially as described.

2. In a ventilator of the class described, the combination of an inner section of V-shaped formation, having its closed narrow end downward and its upper end open, the outer section being of triangular formation with its narrow end downward, the lower end of said outer section being cut away to provide an open lower end, the adjacent walls of said sections being spaced apart from one another to provide air passages therebetween, the upper wall of the outer section forming a cap-piece to prevent the entrance of matter into the interior of the ventilator, the outer section terminating adjacent the lower end of the inner section, lines struck from the side walls and extending inwardly and providing air openings communicating with the air passages between said sections, and baffle plates from said openings, and means for joining the sections together, substantially as described.

JOSEPH T. MERCIER.

Witnesses:

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