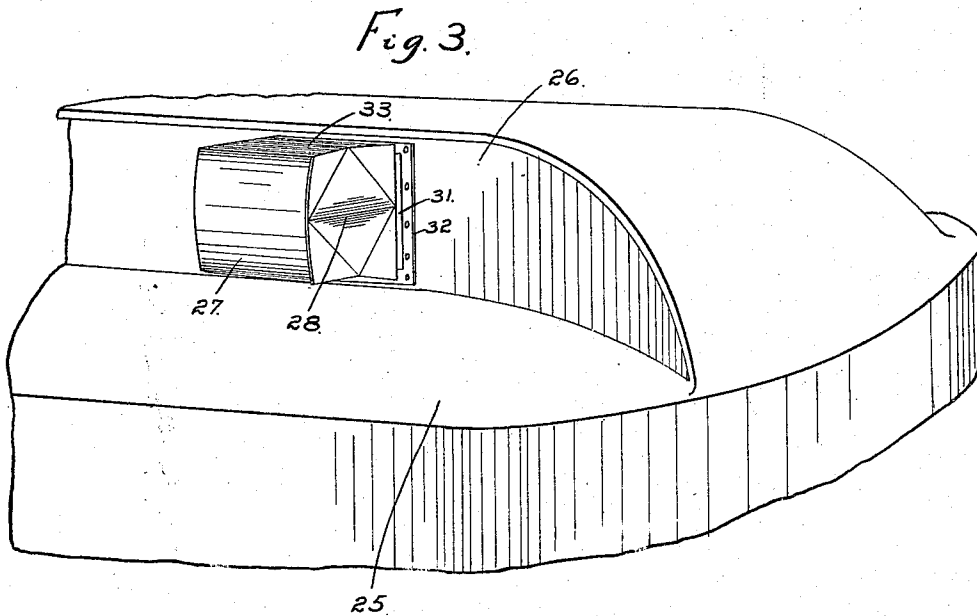
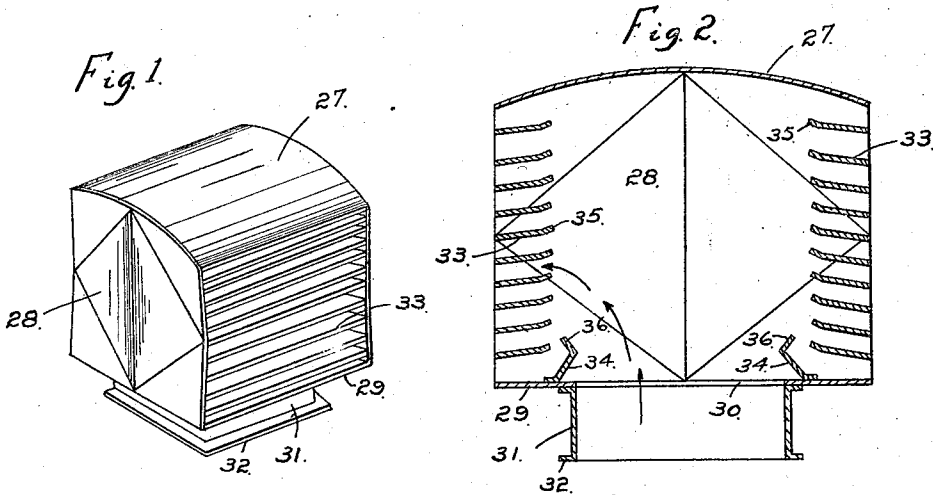


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VENTILATOR.
APPLICATION FILED JUNE 25, 1914.

1,275,211.

Patented Aug. 13, 1918.
3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.

Fig 4.

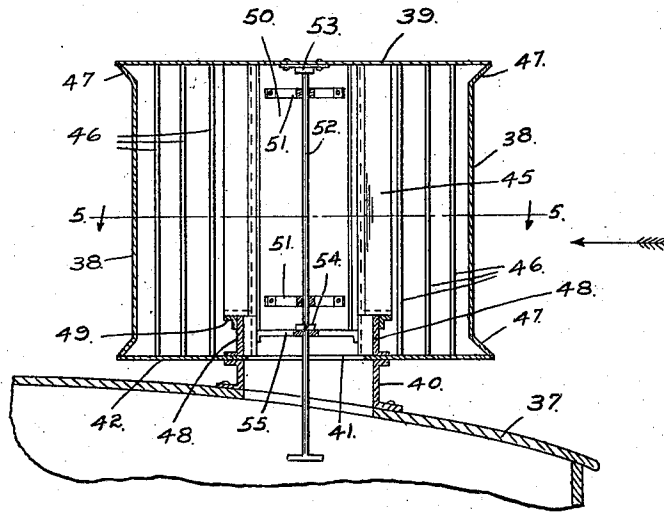
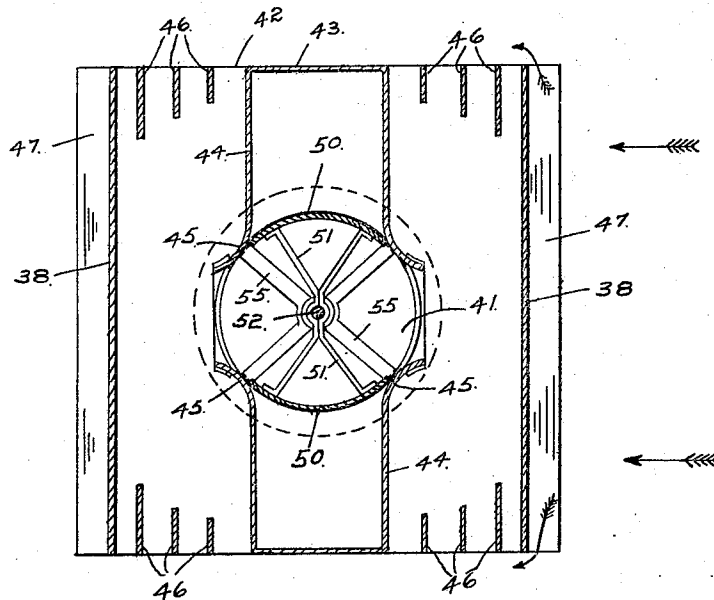


Fig 5.



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3 SHEETS—SHEET 3.

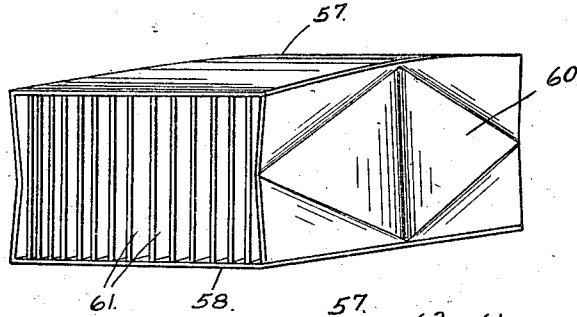


Fig. 6.

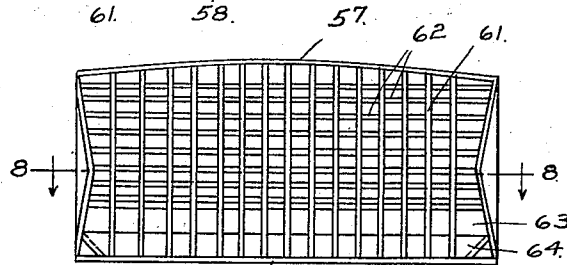


Fig. 7.

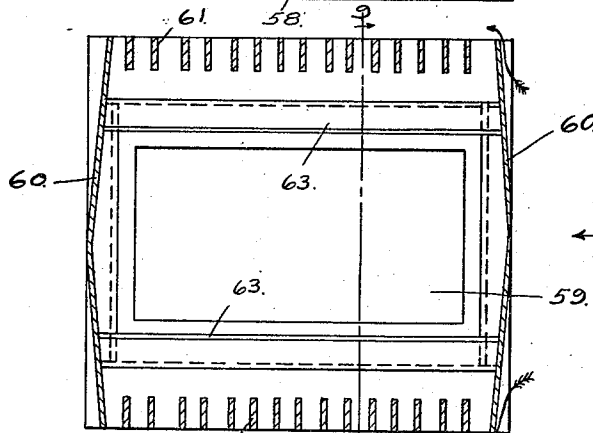


Fig. 8.

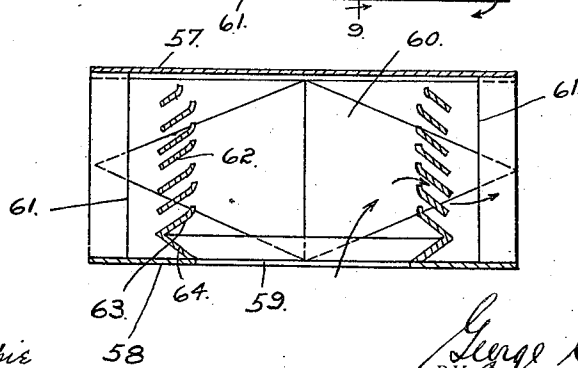


Fig. 9.

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UNITED STATES PATENT OFFICE.

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1,275,211.

Specification of Letters Patent.

Patented Aug. 13, 1918.

Original application filed April 23, 1913, Serial No. 763,047. Patent No. 1,104,472, July 21, 1914. Divided and this application filed June 25, 1914. Serial No. 847,201.

To all whom it may concern:

Be it known that I, GEORGE C. BREIDERT, 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.

My invention relates to a ventilator for railway cars, or other moving structures, of the general type shown in patents granted to me on May 19, 1914 and June 9, 1914, and numbered respectively 1,097,387 and 1,099,838. Ventilators of this type consist of box-like structures adapted to be arranged on the outside of a railway car, for example, on the deck of the car, projecting horizontally from the deck sash, if the car be of the monitor deck construction, and are provided with one or more, preferably two, air collecting or ramming faces disposed substantially at right angles to the line of travel of the car, and with exhaust passageways communicating with the car and terminating at the edges of said air ramming faces. The air collected or impinging against the forward air ramming face of the ventilator when the car is in motion is forced to make a substantially right angle turn over the edges of the same along said exhaust openings and creates a suction through the exhaust passageway or passageways of the ventilator which withdraws the foul air from the car.

The present invention has for one its principal objects to provide certain novel constructions, arrangements and devices in a ventilator of this type whereby the ventilating function is effectively performed without danger of choking and whereby the openings or passageways from the car to the ventilator are protected against the possibility of an outside wind blowing into the car through the ventilator.

A further object of the invention is to provide a ventilator which will be inexpensive to manufacture.

A further object is to provide, in a ventilator of this type, a valve which, if need be, may be closed so as to stop the operation of the ventilator.

The invention has for further objects: the provision of such other improved arrangements, constructions and devices in ventilators for railway cars, or other moving structures, as will be hereinafter described and claimed.

The invention is illustrated, in certain preferred embodiments, in the accompanying drawings wherein—

Figure 1 is a view, in perspective, of one of these embodiments.

Figure 2 is a sectional view of the same.

Fig. 3 is a fragmentary view, in perspective, of the end of a car of the monitor deck type with the ventilator shown in Figs. 1 and 2 attached to the deck sash.

Fig. 4 is a vertical sectional view of a modified form of ventilator constructed in accordance with the principles of the invention.

Fig. 5 is a sectional plan taken on line 5—5 of Fig. 4.

Fig. 6 is a view, in perspective, of another modified form,

Fig. 7, a side elevation,

Fig. 8, a sectional plan taken on line 8—8 of Fig. 7, and

Fig. 9, a sectional view on line 9—9 of Fig. 8.

Like characters of reference designate like parts in the several figures of the drawings.

Referring first to Figs. 1, 2 and 3, 25 designates a railway car of the monitor deck type to the deck sash 26 of which the ventilator is attached. The ventilator consists, in this embodiment of the invention, of a box-like structure formed with an outer imperforate end 27, a pair of oppositely disposed air ramming faces 28, and an inner side or base 29 having a central opening 30 and provided around this opening with a neck 31 having a flange 32 for attaching the ventilator to the deck sash 26. The other two sides of the structure are open and are provided with sets of substantially parallel louvers 33. Projecting inwardly from the base 29 is a flange or rim 34 constituting, in effect, a continuation of the neck 31. The structure is arranged on the car, as will be seen from Fig. 3, so that the air ramming faces 28 stand substantially at right angles to the line of travel of the car, one face coming into action when the car moves in one direction, the other when the car moves in the opposite direction. I have shown the faces 28 as having the configuration described and claimed in my Patent No. 1,099,838 referred to above, whereby the air collected thereon is prevented from spilling over the edges lying along the imperforate outer end 27 and is directed toward the edges

lying along the exhaust openings in the top and bottom of the ventilator. The louvers 33 are preferably inclined toward the outer imperforate end faces 27, the inner edges 35 of the louvers being preferably given a slight bend toward the same. The imperforate end is preferably bowed or convex exteriorly. By this arrangement cinders, rain and the like, falling through the ventilator when positioned as shown in Fig. 3, are deflected away from the opening leading to the car. Moreover, the arrangement prevents any possible choking of the ventilator. This is particularly so if the ventilator, as is contemplated by my invention, is arranged in a vertical position on top of the car (in the position of the ventilator shown in Fig. 4). In such position a side wind will blow through the ventilator from one side to the other. In such case, the louvers being oblique, deflect the wind toward the outer, in this case the upper, end of the ventilator so that the cross draft does not check the outflow from the car. The bulging or convexity of the end gives additional space in the center of the ventilator, that is, opposite the opening 30 through which the stream of exhaust air passes. The flange 34 preferably has an inward inclination and then is flared, as indicated at 36, so that the currents of foul air are directed out through the spaces between the louvers 33.

The construction shown in Figs. 4 and 5 is intended more especially to be mounted on the top of the car. 37 designates one end of the roof of a car on which the ventilator is mounted with its air ramming faces 38 disposed at right angles to the line of travel of the car, one facing the front and the other the back. The top 39 is flat. The neck 40 is shown as circular and also the opening 41 in the base 42. In the open sides of the ventilator are arranged three-sided structures 43, the exterior sides of which do not project out beyond the outer edges of the air ramming faces 38. The transverse walls 44 of these structures terminate in curved bends 45. Between these walls and the air ramming faces 38 are sets of parallel louvers 46, the louvers nearest the walls 44 being the narrowest and the others progressively wider. The air ramming faces 38 are depressed so as to form projections 47 between the air collecting portions of the air ramming faces and the top and base plates 39, 42. These projections check the waste of air over the upper and lower edges of the air ramming faces. The curved or lip portions 45 of the walls 44 do not project down to the base member 42. In the space below the lips are arranged curved strips 48 provided at their upper edges with outturned angle pieces 49. This arrangement prevents water from entering the car through opening 41.

A pair of curved valves 50 are supported by arms 51 on a rod 52. The upper end of the rod turns in a bearing piece 53 secured to the under side of the top of the member 39 and is provided with a collar 54 which rests upon a spider 55 secured to the walls 44. By turning rod 52, which for that purpose is provided with a handle 56, the valves 50 may be made to close the openings between the three-sided structures 43 so as to put the ventilator out of operation. This ventilator might be set in horizontal position instead of in the vertical position shown if desired.

Figs. 6 to 9 inclusive show another modified construction built, however, upon the same general principles. This ventilator is intended particularly to be put flatwise on the top of a car and therefore is not shown as provided with a neck although it might be constructed with a neck and placed in the same position as the ventilator shown in Fig. 3. The structure as shown consists of a bowed or exteriorly convex imperforate upper or outer end 57, a base 58 having an opening 59 communicating with the interior of the car, and oppositely disposed air ramming faces 60. Each open side is provided with a set of vertical louvers 61 and within the same a second set of horizontally disposed louvers 62 which are preferably inclined toward the imperforate upper end 57 of the structure. The lowermost of these louvers 63 is shown as formed integrally with a flange or interior neck member 64 which surrounds the central opening 59 so as to prevent water from entering the car through the center opening. This arrangement of two sets of louvers, one transverse to the other, effectively prevents rain, dust, cinders, and the like, from blowing into the car even when there is a strong side wind, such foreign matter being completely baffled by the louvers.

While I have described my invention in certain preferred embodiments it will be realized that further modifications might be made without departure from the principles of the invention. Therefore I do not wish to be understood as limiting the invention to the precise constructions and arrangements shown and described except so far as such limitations are expressed in the claims.

This application is a division of application Serial No. 763,047, filed April 23, 1913 (patented as Patent No. 1,104,472, July 21, 1914).

I claim:

1. In combination with a car or like vehicle, a ventilator secured to the exterior of the car so as to project from the same comprising a box-like structure having an opening communicating with the interior of the

car and formed opposite said opening with an outwardly curved imperforate outer end wall and air-ramming faces disposed opposite to each other and transversely to the direction of travel of the car and with exhaust openings between said air-ramming faces, and louvers spaced apart in said exhaust openings.

2. In combination with a car or like vehicle, a ventilator secured to the exterior of the car so as to project from the same comprising a box-like structure having an opening communicating with the interior of the car and formed with an imperforate outer end wall and air-ramming faces disposed opposite to each other and transversely to the direction of travel of the car and with exhaust openings between said air-ramming faces, and louvers extending across said exhaust openings from one air-ramming face to the other, the inner longitudinal edges of which are inclined toward said imperforate outer end wall, said imperforate outer end wall being convex exteriorly from the exhaust openings on one side of the structure to that on the other.

3. In combination with a car or like vehicle, a ventilator secured to the exterior of the car so as to project from the same comprising a box-like structure having an opening communicating with the interior of the car and formed with air-ramming faces disposed opposite to each other and transversely to the direction of travel of the car and with exhaust openings between said air-ramming faces, and louvers extending across said exhaust openings having an inclination outwardly from the opening communicating with the interior of the car; the wall of said structure toward which said louvers are inclined being convex exteriorly.

4. In combination with a car or like vehicle, a ventilator secured to the exterior of the car so as to project from the same comprising a box-like structure formed with an exhaust passageway terminating at opposite edges in exhaust openings and communicating centrally with the interior of the car, said structure being provided with an imperforate air-ramming face transverse to the direction of travel of the car having edges positioned so that the air accumulated on said face when the car is in motion is forced to make a substantially right angle turn over said edges and across said exhaust opening, and louvers in said exhaust openings having an inclination away from the opening communicating with the car, the wall of said ventilator toward which said louvers are inclined being exteriorly convex.

5. In combination with a car or like vehicle, a ventilator secured to the exterior of the car so as to project from the same comprising a box-like structure having an out-

wardly curved, imperforate outer end wall, air-ramming faces disposed opposite to each other and transversely to the direction of travel of the car, a base having a central opening communicating with the interior of the car, a neck surrounding said opening, substantially parallel louvers arranged in the open sides of said structure and having an inclination toward said outer end wall, and an interior neck projecting from said base toward the imperforate outer end wall.

6. In combination with a car or like vehicle, a ventilator secured to the exterior of the car so as to project from the same, comprising a box-like structure having an opening communicating with the car and formed with air-ramming faces disposed opposite to each other and transversely to the direction of travel of the car and with exhaust openings between said air-ramming faces, and louvers spaced apart in said exhaust openings.

7. In combination with a car or like vehicle, a ventilator secured to the exterior of the car so as to project from the same, comprising a box-like structure having an opening communicating with the car and formed with air-ramming faces disposed opposite to each other and transversely to the direction of travel of the car and with exhaust openings between said air-ramming faces, and louvers spaced apart in said exhaust openings which do not project beyond the edges of said air-ramming faces.

8. In combination with a car or like vehicle, a ventilator secured to the exterior of the car so as to project from the same, comprising a box-like structure having an opening communicating with the interior of the car and formed with an imperforate outer end wall and air-ramming faces disposed opposite to each other and transversely to the direction of travel of the car and with exhaust openings between said air-ramming faces, and louvers extending across said exhaust openings from one air-ramming face to the other, the inner longitudinal edges of which are inclined toward said imperforate outer end wall.

9. In combination with a car or like vehicle, a ventilator secured to the exterior of the car so as to project from the same, comprising a box-like structure having an outer imperforate end wall, a base formed with an opening communicating with the interior of the car, air-ramming faces disposed opposite to each other and transversely to the direction of travel of the car, and open sides; said air-ramming faces being depressed so as to form projections between the edges thereof and the adjoining edges of the outer end wall and base.

10. In combination with a car or like vehicle, a ventilator secured to the exterior of the car so as to project from the same,

comprising a box-like structure formed with a base having an opening communicating with the interior of the car, an imperforate end wall opposite said base, and imperforate air-ramming faces disposed opposite to each other and transversely to the direction of travel of the car, said structure having oppositely disposed open sides between

said air-ramming faces, louvers arranged in said open sides, and an interior neck around the opening in the base and projecting toward said imperforate outer end wall.

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Witnesses:

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H. M. GILLESPIE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."