

E. POSSON.
VENTILATOR.

APPLICATION FILED JULY 7, 1909.

Patented Sept. 19, 1911.

3 SHEETS-SHEET 1.

1,003,504.

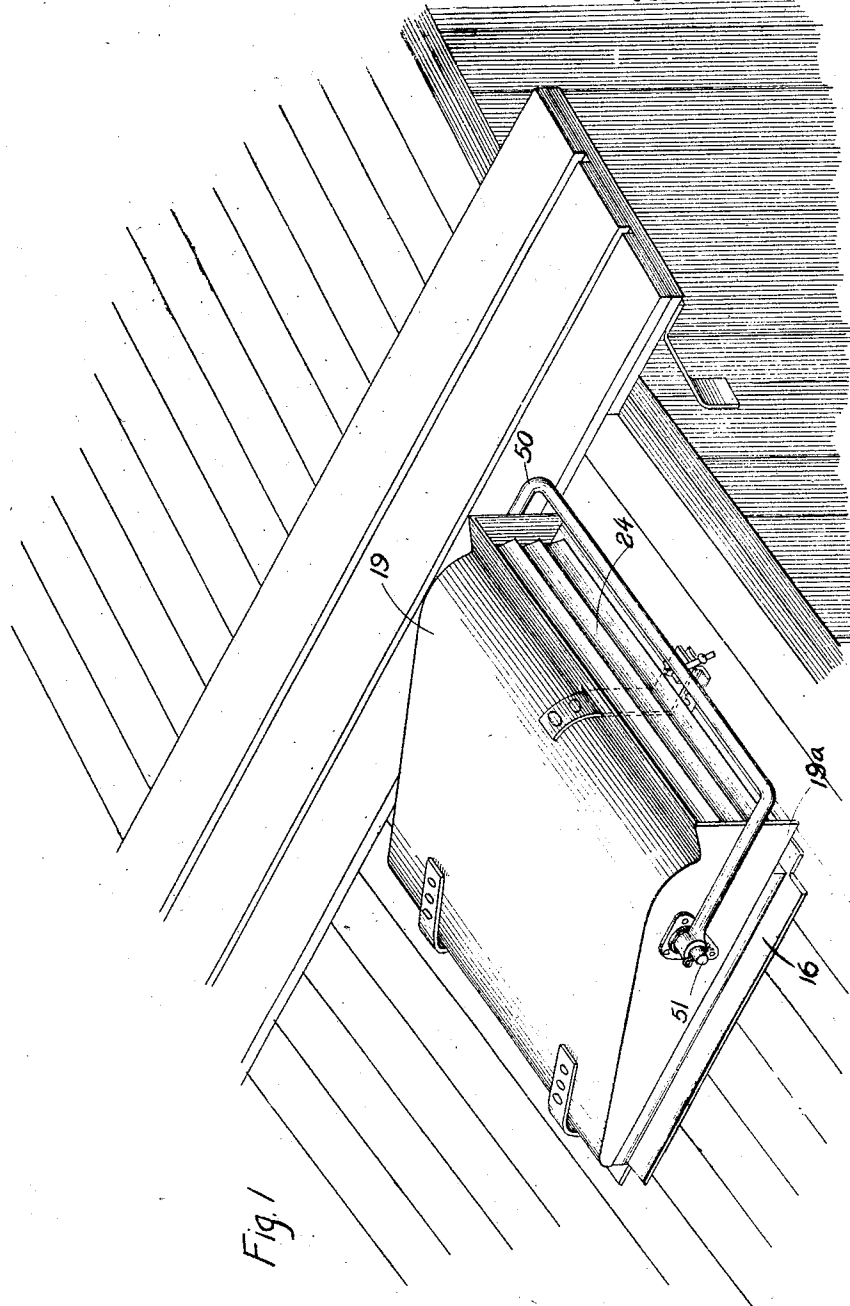


Fig. 1

Witnesses

W. L. Walton
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By

Inventor

Edward Posson

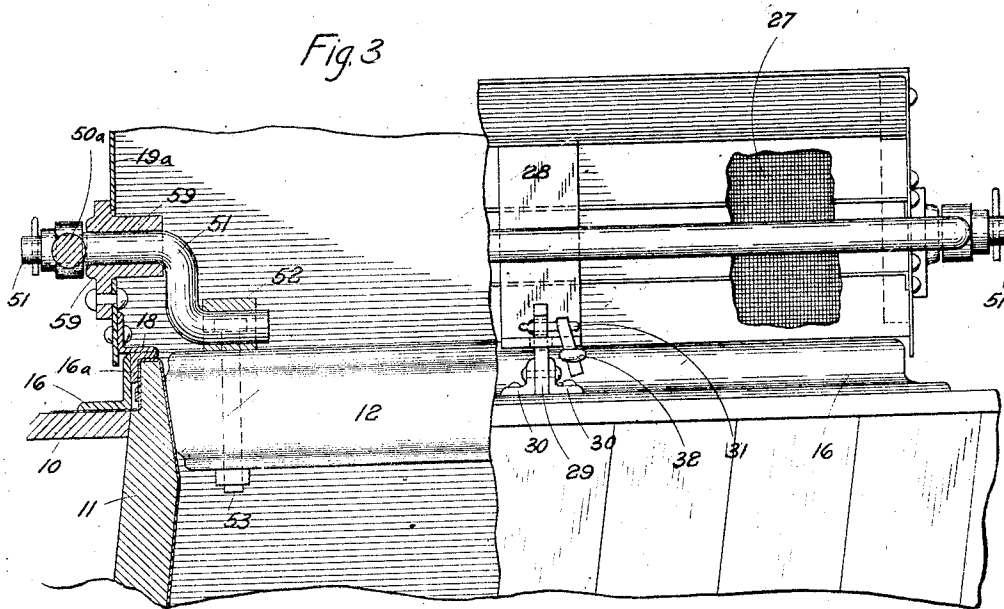
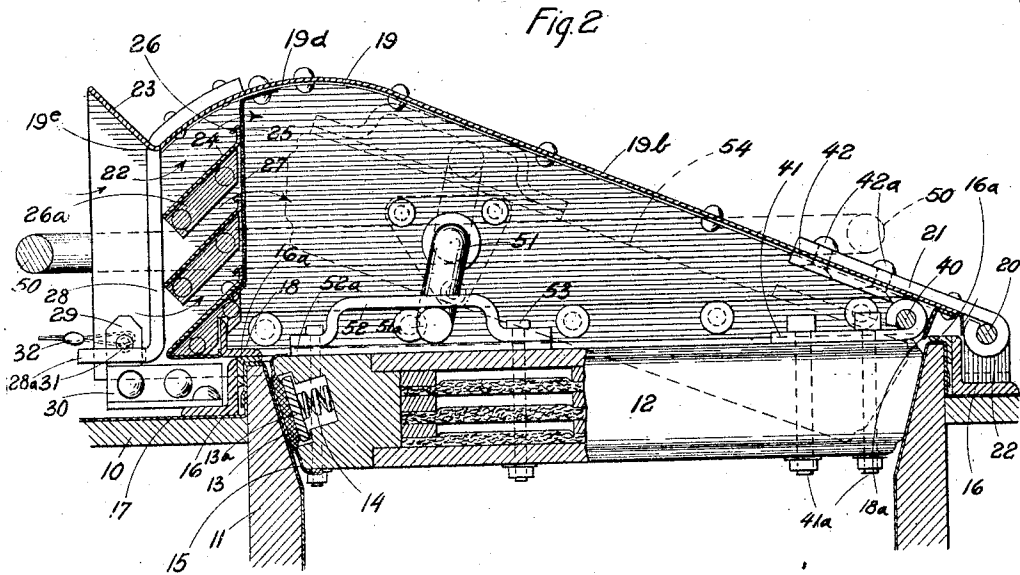
Shuridans, Wilkinson & Scott Attys

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3 SHEETS-SHEET 2.



Witnesses

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3 SHEETS—SHEET 3.

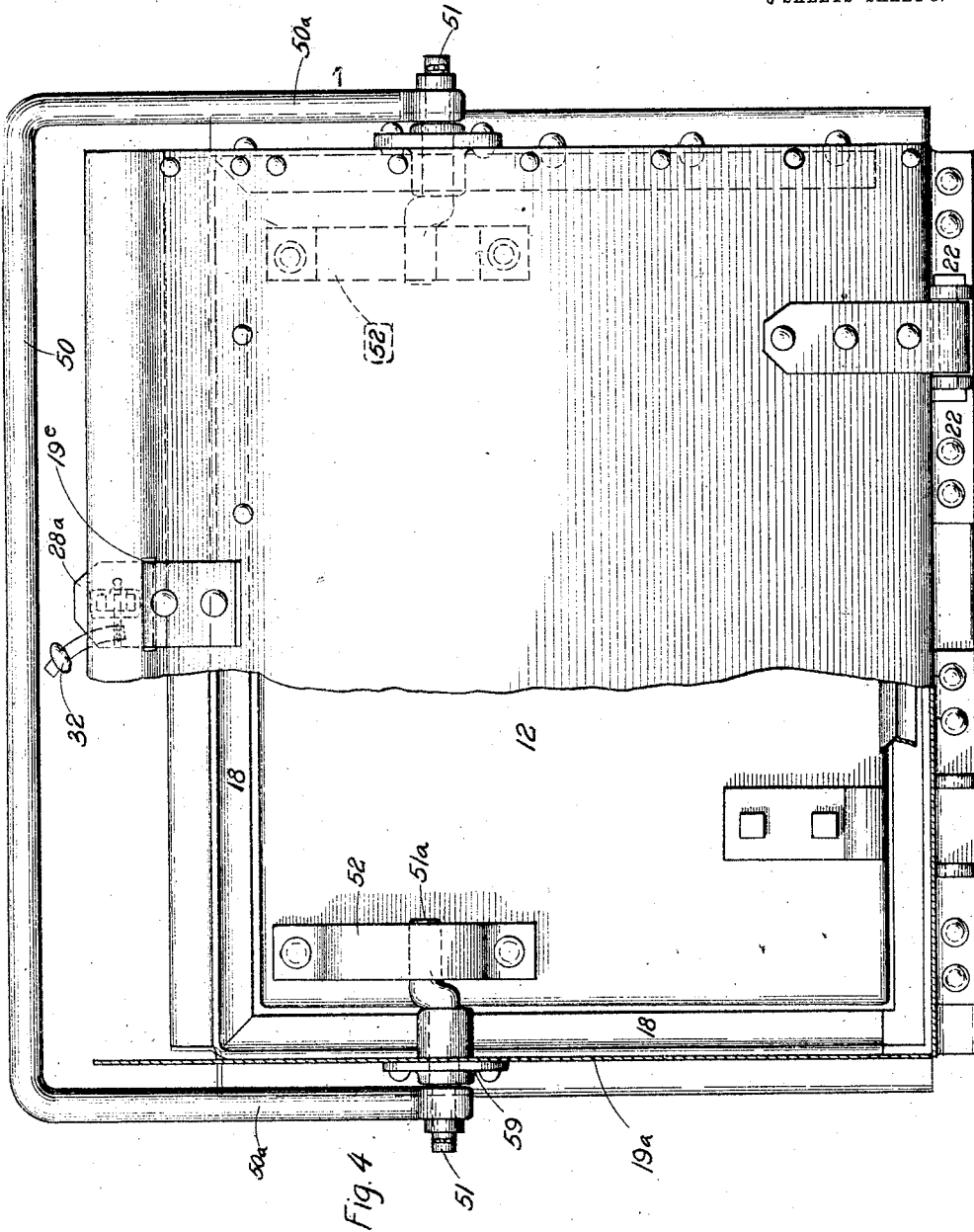


Fig. 4

Witnesses

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UNITED STATES PATENT OFFICE.

EDWARD POSSON, OF CHICAGO, ILLINOIS.

VENTILATOR.

1,003,504.

Specification of Letters Patent. Patented Sept. 19, 1911.

Application filed July 7, 1909. Serial No. 506,292.

To all whom it may concern:

Be it known that I, EDWARD POSSON, 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 object of my invention is to provide a ventilator for refrigerator cars or the like.

A particular object of my efforts has been to devise an appliance which can be used in conjunction with the hatch and plug commonly employed in car roofs. These hatches are used for the convenient replenishing of the car with ice. As now commonly employed, these hatches are closed by a closely fitting and packed member called a plug which fits snugly within the beveled walls of the hatch. Above the plug is commonly found a cover resting upon the framing of the hatch. At present it is necessary to raise both the cover and the plug when it is desired to ventilate the car through these hatches. When thus open, there is no protection against the entrance of rain, cinders, &c. to the interior of the car.

The principal object of my invention, therefore, is to provide means for permitting the hatch to be opened without giving access thereto to rain, cinders, &c.

A further object is to so construct the device that the hatch can be opened for ventilating purposes or closed again with the minimum of labor on the part of the trainmen.

A further object is to so construct the device that both the plug, and the ventilating appliance which I add, may be moved to a position leaving the hatch widely open, for the charging of the car with ice with the minimum of labor. It has also been my aim to make the device positive in its action so that the movement of the car will not jar the hatch closed when it is desired to keep it open for ventilating purposes, or to jar it from a closed position. For this purpose, I provide a handle for operating said hatch which will be so attached that the weight of said handle will act in a manner to hold said plug in either of said positions.

Other objects will be made apparent in

the following specification and claims, taken in connection with the accompanying drawings, in which—

Figure 1 is a perspective view of my invention showing its exterior appearance as applied to a car. Fig. 2 is a sectional view taken approximately through the center. Fig. 3 is a view partly in section and partly in elevation looking in the direction of the air intake. Fig. 4 is a plan view partly in section.

In the drawings, the hatch frame 11 is inserted in an aperture in the roof 10. The inner faces of the hatch frame 11 are beveled in such manner as to receive the plug 12 whose edges are correspondingly beveled to fit said frame 11. The edges of the plug are provided with a self adjusting packing comprising a flexible sheet or band 15 of suitable material. Against the inner surface of this band through suitable flexible pads 13 and plates 13^a, the springs 14 act to press said band 15 outwardly against the hatch frame 11. The angle bar 16 is placed around the protruding edges of the hatch frame and is fixed to the roof. One leg of the angle bar 16 is placed in a vertical position adjacent the hatch frame and carries at its upper edge a smaller angle bar 16^a fitted over the outer edge of said hatch frame 11. One leg of said smaller angle bar 16^a projects inwardly over said hatch frame 11 and serves to reinforce or protect its edge. It also serves to provide a bearing surface upon which the ventilator or cover described later may find a support.

The casing or cover 19 is adapted to protect the hatch against the entrance of rain, cinders, &c. and is pivoted or hinged at one edge to pins 20 carried by brackets or lugs 22 fixed to the angle bar 16. The hinge members 21 are riveted to the sloping top 19^b of said casing or cover body 19 and engage the pins 20. The vertical side walls 19^a are fixed to the top sheet 19^b and are provided with an angle bar 18 on their inner faces, one leg of said angle bar being horizontally disposed and adapted to bear upon the angle bar 16^a previously described. The two vertical walls 19^a are connected near their bottom edges by another part of the said angle bar 18. The said angle bar is given two right angular bends as seen best in Fig. 4. A small angle bar 18^a is fixed

to the sheet 19^b near the hinge 20 and has a leg standing in an inclined position and resting against the angle bar 16^a. This small angle bar 18^a may be thin and flexible in order to permit it to maintain contact with the edge of the bar 16^a regardless of inaccuracies in the hinge 20. The angle bar 18^a extends across one side of the hatch opening while the angle bar 18 extends around the other three sides of said opening. This construction forms a rigid framework for the casing or cover 19 at its base.

The upper sheet 19^b of the casing or cover 19 is turned downwardly at 19^c at its hinged edge to form a protecting flange at that side. The main body of the sheet 19^b slopes upwardly from the hinged edge at a sufficient angle to permit the hatch plug 12 to be opened to a small extent beneath it. The sloping portion of the sheet 19^b merges gradually into a curved form near the side opposite the hinged edge as shown at 19^d and finally terminates in a more steeply inclined or flaring portion 23.

The inclined part 23 in connection with the adjacent side walls 19^a forms an air intake or open side 22 in the casing. Across this opening 22 and a considerable distance within it are placed deflecting plates 24 for the current of air. These plates are inclined upwardly and are provided with a vertical portion 25 and a backwardly and downwardly bent edge or shoulder 26. They are secured to the side walls 19^a by means of rivets in their flanged ends 26^a. The deflectors 24 cause the current of air which enters the ventilator to take an upward direction, and to become separated from particles of water which it may carry. The shoulders 26 prevent the water from being driven over the upper edge of the deflectors and into the hatch. The water will then flow downwardly and out upon the roof. The wire screen 27 is attached to the casing 19 and extends across said opening 22 behind the deflectors 24. The upper edge is attached to the sheet 19^b and the lower edge to the lowermost of the deflectors 24. This wire screen 27 effectually prevents the entrance of cinders, while permitting the free entrance of air.

The casing is held in a closed position by the flat bar 28 curved at its upper end and fixed to the top of the casing, then passing through an aperture 19^e therein, then extending vertically downward and terminating in a horizontally disposed end part 28^a. In the latter part 28^a is an aperture to receive the tongue 29 which is fixed to, and supported by, angle pieces 30 riveted to the angle bar 16. A pin 31 is passed through a hole in the tongue 29 and a seal 32 passed through a slot in said pin 31 locks the casing in a closed position.

The plug 12 is hinged at one edge to the

casing 19 a short distance from the hinge of said casing. The hinge member 41 on the plug and a like member 42 on the under side of the top sheet 19^b of the casing are pivotally joined by the pin 40. There are preferably two of these hinge connections on the hinged edge of the plug 12, and a like member on the hinged edge of the casing 19. The hinge members 21 and 42 are fixed to the casing sheet 19^b by the rivets 42^a which are used in common by both said hinge members. The hinge members 41 on the plug 12 are secured to said plug by the bolts 41^a.

The handle 50, of yoke form, is joined at the end of each of its parallel sides 50^a to a crank iron 51, journaled in the side walls 19^a, the journal bearing pieces 59 being riveted to the walls and serving to support the crank irons 51. The crank pin portion 51^a of said crank irons 51 are inserted in a slide formed by the flat yoke shaped piece 52 and the straight piece 52^a. The bolts 53 secure both the pieces 52 and 52^a to the plug 12. There are two slides of the above described form, on the corners of the plug 12 opposite the hinged edge of the plug.

The handle 50 is fixed to the crank irons 51 in such relation that when the plug is in a closed position the handle takes the position shown in the drawings. This position is opposite to the hinged edge of the plug. The crank irons 51 are of such length relatively to the height of the journal bearings 52 above the slide bars 52 and 52^a that when the plug is closed the crank portions of said crank irons do not come to a right angular position relatively to the said slide bars 52 and 52^a. Their close approach to this right angular position, however, gives them a powerful mechanical advantage in their duty of tightly pressing the plug 12 into a closed position. The close approach to a right angular position also gives them a valuable locking effect in holding the plug closed. A further advantage in the arrangement of the handle 50 in its relation to the cranks consists in the fact that the weight of the handle tends to hold the plug closed. It is fixed upon the crank iron 51 in such relation that it does not move downwardly far enough to rest upon the roof when the plug is closed. To open the hatch by raising the plug 12 the handle 50 is lifted by the operator and swung to the other side of the casing 19 to a position near to the hinges of said casing. The action of the handle in opening and holding the plug open is very similar to that taking place when closing it and holding it closed. The movement of rotation is imparted to the crank iron 51, and the pins 51^a raise the plug, the movement being accompanied by a sliding of the pins 51^a between the slide bars 52 and 52^a. The movement continues until the upward movement of the plug is

arrested by the cover sheet 19^b against which the bars 52 come in contact. In the open position also, of the plug 12, the crank portion of the crank iron 51 approaches a right-angular relation to the slide bars 52 and 52^a. This position gives a locking effect serving to prevent the plug becoming closed by the shaking or jarring of the car. The weight of the handle 50, as shown in the dotted line position in Fig. 2, also greatly enhances the locking effect. Both the friction of the crank pin 51^a against the slide bar 52, and the weight of the handle 50 would have to be overcome before the plug could close.

To open the hatch for the purpose of replenishing the car with ice it is only necessary to break the seal 32 and remove the pin 31 when both the casing 19 and the plug 12 may be swung together about the hinged edge of the casing. The relative positions of the hinges of the casing and of the plug are very effective for permitting this combined movement, while at the same time permitting an independent movement of the plug within the casing.

I claim:

1. In a car of the class described having a hatch, a plug for said hatch, a cover for said hatch, said plug and cover being so hinged that they may be opened together or that the plug may be opened independently, and a handle for operating the plug adapted to hold the plug open or closed by its weight.

2. In a car of the class described having a hatch, a plug for said hatch and a cover for said hatch, said plug and cover being so hinged that they may be opened together or that the plug may be opened independently.

3. In a car of the class described having a hatch, a plug for said hatch, and a cover for said hatch, said plug being hinged to said cover, and said cover being hinged to the roof in such manner that both plug and cover may be swung together about the hinge of said cover, or said plug may be swung independently about its hinge on said cover.

4. In a car of the class described having a hatch, a casing hinged to the roof and carrying a plug fitted to said hatch and hinged to said casing adjacent the hinge thereof and adapted to swing therewith when said casing is widely opened.

5. In a car of the class described having a hatch, a casing hinged to the roof and carrying a plug fitted to said hatch and operated within said casing by a handle exterior to said casing, said casing and said plug being adapted to be swung together about the hinge of said casing when it is desired to entirely uncover said hatch.

6. In a car of the class described having a hatch, a casing for covering said hatch and serving as a ventilator, a plug in said

hatch and a handle exterior to said casing journaled therein and attached to a crank within said casing, said crank being adapted to open and close said plug and hold said plug open or closed by its weight.

7. In a car of the class described having a hatch, a metal frame around said hatch, a casing bearing upon said frame and hinged thereto at one edge, said casing adapted to admit air but to exclude water and solid bodies, a plug having a self adjusting packing for said hatch, and a handle for opening and closing said plug.

8. In a car of the class described provided with a hatch, a metal frame around said hatch, a casing bearing upon said frame and hinged thereto at one edge, and open on one side for the admission of air, but having means to prevent entrance of water and solid bodies, a plug for said hatch hinged to said casing, and a handle exterior to and journaled in said casing and actuating a crank in the interior for opening and closing said plug.

9. In a car of the class described provided with a hatch, a metal frame covering the edge of said hatch and fixed to the roof, a casing hinged to said frame and having a frame opposed to and bearing upon said first named frame, a plug fitting said hatch, said plug being hinged to said casing adjacent the hinged edge of said casing, an air intake provided with means for preventing entrance of water and solid bodies, and a handle journaled in said casing for opening and closing said plug.

10. In a car of the class described provided with a hatch, an angle bar fitted over the edge of said hatch and joined to another angle bar fixed to the roof, both angle bars surrounding the said hatch, and a casing hinged to said second named angle bar and carrying a plug fitting said hatch and hinged to said casing adjacent said hinge on said casing, said casing being provided with an air intake having means for preventing entrance of water and solid bodies.

11. In a car of the class described provided with a hatch, an angle bar fitted over the edge of said hatch, a second angle bar joined to said first named angle bar and fixed to the roof, a casing hinged to said second named angle bar and having an angle bar opposed to and adapted to bear upon said first named angle bar and a plug fitting said hatch and hinged to said casing.

12. In a car of the class described provided with a hatch, an angle bar around said hatch, a casing hinged to said angle bar, an angle bar on said casing opposed to said first named angle bar, and a plug fitting the hatch and hinged to said casing.

13. In a car of the class described provided with a hatch, a cover for said hatch hinged at one edge and provided with an

- air intake in which means are provided for excluding water and solid bodies, and a plug fitting said hatch and hinged to said cover adjacent the hinged edge of said cover.
14. In a car of the class described provided with a hatch, a cover for said hatch hinged at one edge and provided with means for admitting air but preventing entrance of water and solid bodies, a plug fitting said hatch and hinged to said cover adjacent the hinged edge of said cover, means for holding said cover closed, and provisions for permitting sealing said holding means.
15. In a car of the class described provided with a hatch, a casing for said hatch hinged at one edge and provided with an air intake and with means for preventing the entrance of water and solid bodies through said air intake, a plug fitting said hatch and hinged to said casing, means for operating said plug independently of said casing, and means for sealing said casing.
16. In a car provided with a hatch, a hinged cover for said hatch, a plug hinged to the said cover and fitting said hatch, means for admitting air to said cover, means for excluding rain and means for excluding cinders, a handle for opening and closing said plug without moving said cover, and a lock for said cover.
17. In a car of the class described having a hatch, a hinged cover for said hatch, a plug hinged to the inner side of said cover and adapted to tightly close said hatch, an opening in said cover for the admission of air, said opening being provided with means for preventing entrance of rain and cinders, a handle adapted to open and close said plug from the outside of said cover and adapted to hold the plug open or closed by its weight, and a lock and a seal for said cover.
18. In a car of the class described having a hatch, a hinged cover for said hatch having an air intake, a plug for said hatch hinged to said cover, deflectors in said intake having shoulders adapted to prevent entrance of water, a screen across said intake, a handle adapted to operate said plug to open or close same through said casing and to hold said plug open or closed by its weight, and a lock for said casing provided with means for attaching a seal.
19. In a car of the class described having a hatch, a casing for said hatch hinged to the roof having an air intake, a plug for said hatch pivoted to the casing, deflectors in said intake and said casing, a screen in said intake, a handle journaled in said casing and adapted to open said plug, and also adapted to hold said plug open or closed by its weight, and a lock for said casing provided with connections for a seal.
20. In a car of the class described having a hatch in its roof, a casing covering said hatch hinged at one edge and provided with an air intake, a plug hinged at one edge to the casing and adapted to tightly close said hatch, deflectors in said intake inclined upwardly and having a shoulder at their upper edges, a screen across said intake, a crank pivotally attached to said casing and slidably attached to said plug, a handle attached to said crank and held at either extremity of its movement by its weight, a lock for said casing, and seal connections for said lock.
21. In a car of the class described having a hatch in its roof, a casing covering said hatch and hinged to said roof, said casing being provided with an air intake, a plug hinged at one edge to said casing adjacent the hinged edge of said casing and provided with a yielding packing around its periphery in contact with the walls of said hatch, deflectors upwardly and inwardly inclined in said intake and having a shoulder at their upper edges, a screen across said intake, cranks journaled in said casing and having sliding connection with said plug, a handle attached to said cranks in such angular relation that its weight retains said plug in either a closed or an open position, and a lock for said casing provided with means for the attachment of a seal.
22. In a car of the class described having a hatch in its roof, a casing covering said hatch hinged at one edge to the roof and provided with an open side opposite said hinge to form an air intake, a plug hinged at one edge to said casing adjacent the hinge of said casing, said plug being adapted to close said hatch and provided with a yielding packing around its periphery for making a tight joint in said hatch, slide bars on said plug for permitting a sliding connection of cranks therewith, deflectors upwardly inclined and having a shoulder at the inner upper edge of each to stop rain water beating into said casing through said air intake, a screen across said air intake, cranks journaled in said casing and sliding in said yokes, a handle attached to said cranks in such angular relation that its weight retains said plug in either an open or a closed position, and a lock for said casing provided with means for the attachment of a seal.
23. In a device of the class described, the combination of a car body having a downwardly tapered ventilating opening formed in the roof thereof, a cover for said opening, having a corresponding downwardly extending taper, a housing surrounding said opening and having a funnel-shaped mouth formed therein for the admission of air, and an operating arm entered through said housing and attached to said cover, for raising

ing and lowering said cover to open and close the ventilator, substantially as described.

24. In a device of the class described, the combination of a car body having a downwardly tapered ventilating opening formed in the roof thereof, a cover for said opening having a corresponding downwardly extending taper, a housing surrounding said opening and having a funnel-shaped mouth formed therein for admission of air, baffle plates secured adjacent to said mouth, wire screening secured adjacent to said baffle plates, and an operating arm entered through said housing and attached to said cover, for raising and lowering said cover to open and close the ventilator, substantially as described.

25. In a device of the class described, the combination of a car body having a downwardly tapered ventilating opening formed in the roof thereof, a cover for said opening having a corresponding downwardly ex-

tending taper, a housing surrounding said opening and having a mouth formed therein for the admission of air, and an operating arm consisting of a portion lying outside of the housing, and a portion formed at substantially right angles thereto lying inside of the housing and connected to said cover, substantially as described.

26. In a car of the class described having a hatch, a casing for covering said hatch and serving as a ventilator, a plug in said hatch, and a handle exterior to said casing journaled therein and attached to a crank within said casing, said crank being adapted to open and close said plug, and said casing and plug both being removable to permit ice to be introduced through said hatch.

In testimony whereof, I have subscribed my name.

EDWARD POSSON.

Witnesses:

EDYTHE M. ANDERSON,
ANNA L. WALTON.