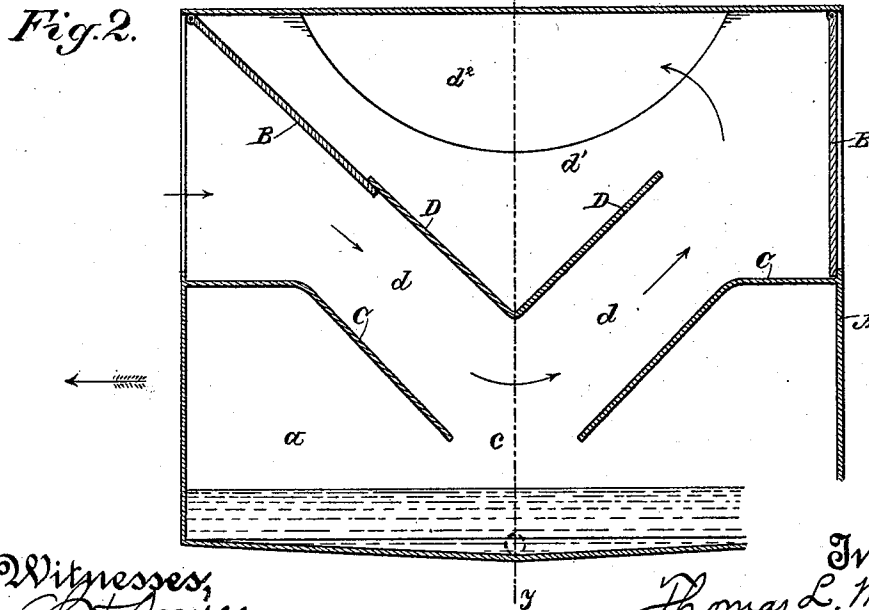
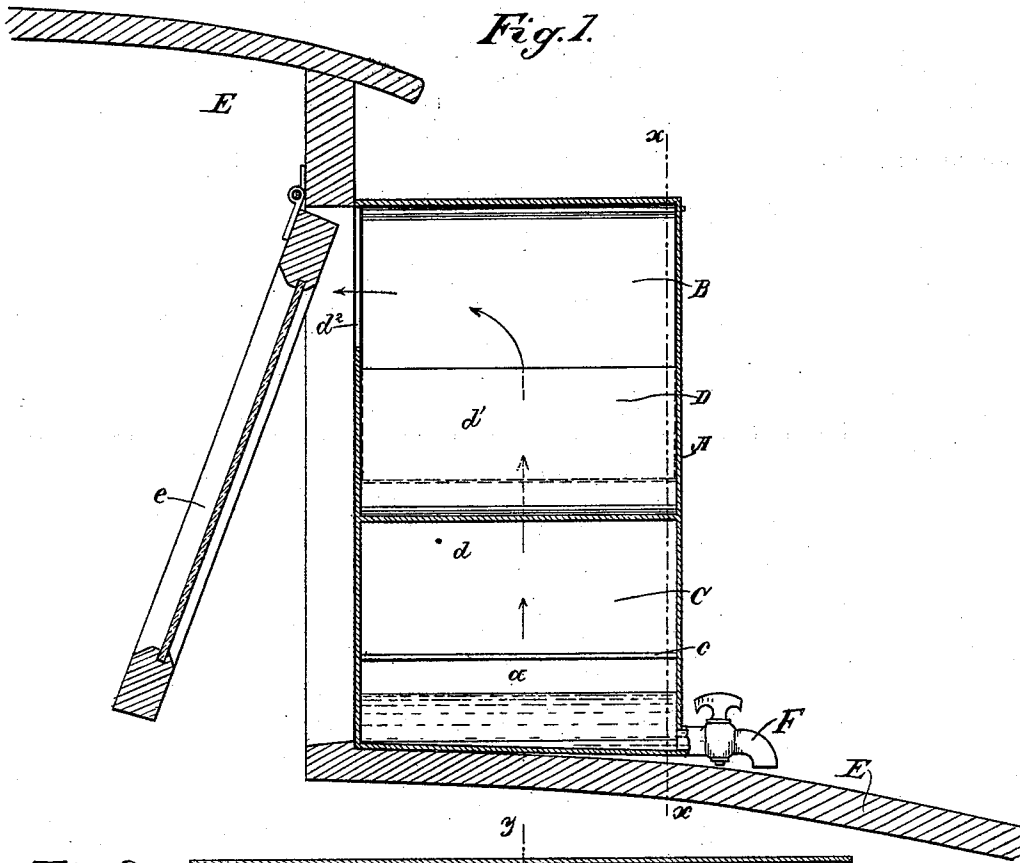


(No Model.)

T. L. MERRILL.
AUTOMATIC CAR VENTILATOR.

No. 496,270.

Patented Apr. 25, 1893.



Witnesses,
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UNITED STATES PATENT OFFICE.

THOMAS L. MERRILL, OF OAKLAND, CALIFORNIA.

AUTOMATIC CAR-VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 496,270, dated April 25, 1893.

Application filed December 20, 1892, Serial No. 455,804. (No model.)

To all whom it may concern:

Be it known that I, THOMAS L. MERRILL, a citizen of the United States, residing at Oakland, Alameda county, State of California, have invented an Improvement in Automatic Car-Ventilators; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of ventilators for cars and it consists in an externally located casing communicating through a suitable opening or passage with the interior of the car, and having an automatically operating valve, interior circuitous air passages, and dust and cinder receptacle, as I shall hereinafter fully describe, and specifically point out in the claims.

The object of my invention is to provide a means for automatically forcing air into cars, clear of dust and cinders.

Referring to the accompanying drawings for a more complete explanation of my invention,—Figure 1 is a vertical cross section of my ventilator on the line $y-y$ of Fig. 2, showing its application to the car. Fig. 2 is a longitudinal section on line $x-x$ of Fig. 1.

A is a casing having in its end an inwardly swinging valve B. To render the device a double ender capable of operation, without reversal, when the car is moving in either direction, there is a valve B at each end. Within the lower portion of the casing is a partition C, which is open at its middle portion, as shown at c . This partition leaves a chamber a between it and the bottom of the casing. The partition extends horizontally from each end a short distance, and thence inclines downwardly to its central opening. This form leaves a capacious space under each end, while still properly providing for conducting the air down to the central opening c of the chamber.

Within the casing A are the downwardly inclined plates D. These begin below the top of the casing, and on a line near enough to the path of movement of valves B to be overlapped by said valves when swung inwardly, and yet removed therefrom sufficiently when said valves hang vertically, and closed to provide a passage behind said valve. The two plates join below in a ridge line lying just

above the center of the opening c in the bottom partition. The arrangement of all these parts is such that a circuitous air passage d is formed in each end of the casing between the plates D and partition C, said passages communicating below directly above opening c , and their outer ends opening either to the exterior air when the valves B are swung inwardly and open, or when the valves are closed, opening into a space d' above and between said plates D in the upper central portion of the casing. This main space d' is closed at one end when the contiguous valve is swung inwardly whereby the valve forms a continuation of the wall of the air passage, and said main space has an outlet d^2 in the side of the casing. This device is intended to be secured to the car exteriorly and in any position desired, and to be so located that its outlet d^2 shall communicate with an opening into the car, or an air passage leading into said car. Thus it may be placed in the car end under the hood, or in the car side and communicate with a passage in the car walls leading down between the windows and opening to the car interior between said windows. But its preferable location, and the one in which I have here shown it, is in connection with the outside of the side transoms e in the roof of the car E.

Its operation is as follows:—By the movement of the car, the air forces inwardly the forward valve B and closes the rear valve. The forward valve B, moving inwardly, comes in contact with and overlaps the end of adjacent plate D, and thus closes the air passage d into the main space d' , but opens said passage d directly down between the plate D and partition C. The air is thus forced down said passage d , and its dust and cinders fall through the opening c into bottom chamber a and are collected therein. It is best to fill chamber a with water, and the air by passing over and in contact with the exposed surface of the water in opening c is relieved of its accompanying dust and cinders. The air thence passes into the other end of passage d and up and around behind the closed valve B in the rear end and over the top of rear plate D into the main space d' , from which it flows through outlet d^2 into the car through the opening or

passage with which said outlet communicates. It thus reaches the car purified and free from dust and cinders. When the car moves in the opposite direction, the course of the air is reversed.

These ventilators may be placed opposite each transom or only in connection with such as may be desired.

F is a drain faucet for the water in chamber *a*.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A car ventilator, consisting of a casing secured exteriorly to the car and having an outlet communicating with the interior of said car, the downwardly inclined plates *D* below the top of the casing, a swinging valve within the casing having its lower end adapted to engage the upper end of the contiguous plate *D* to close the space above the plate, and a chamber in the bottom of the casing to collect dust and cinders and having a centrally disposed top opening below the junction of the inclined plates, substantially as herein described.

2. A car ventilator, consisting of a casing to be secured exteriorly to the car and having an opening leading to the interior of the car, a partition in the lower portion of the casing having a downwardly inclined middle portion with a central opening *c*, said partition forming a chamber below it for the reception of dust and cinders; the downwardly inclined plates *D* above the partition forming between itself and the latter a circuitous air passage, and a valve controlling the inlet to the casing having its lower end adapted to overlap the upper portion of the contiguous plate *D* and to form a wall of the circuitous air passage when the valve is open, substantially as herein described.

3. A car ventilator consisting of a casing secured exteriorly to the car and having an outlet in its side, in communication with an opening or passage into the car interior, an inwardly swinging valve in the end of the casing, and inclined plates within the casing forming a circuitous air passage communicating at one end with the valve opening and at the other end with the outlet into the car opening or passage, said valve adapted to open against the inclined plate to close the

space above it and to form a continuation of one of the walls of the air passage substantially as herein described.

4. A car ventilator consisting of a casing secured exteriorly to the car and having an outlet in its side in communication with an opening or passage into the car interior, an inwardly swinging valve in the end of the casing, a partition in the lower portion of the casing extending horizontally from each end thereof and inclining downwardly at its center said partition having an open center and forming a chamber for the collection of dust and cinders, and inclined plates within the casing above the partition forming a circuitous air passage communicating at one end with the valve opening, and at the other end with the outlet into the car opening or passage, said passage in its course being exposed to the collecting chamber and said valve opening against the upper end of the inclined plate to close the space above the latter and to form a continuation of one of the walls of the air passage, substantially as herein described.

5. A car ventilator consisting of a casing secured exteriorly to the car and having an outlet in its side in communication with an opening or passage into the car interior, the inwardly swinging valve in the end of the casing, the partition in the lower portion of the casing extending horizontally a portion of its length from each end of the casing and thence inclining downwardly said partition having an open center and forming a chamber in the bottom of the casing, the downwardly inclined plates *D* in the casing, forming an air passage over the partition and its open center, and communicating at its ends with the valve opening and with the main space above the plates, said main space being in communication with the outlet into the car opening or passage and said valve swinging inwardly against the contiguous inclined plate to close one end of the main space and to form a continuation of the wall of the air passage, substantially as herein described.

In witness whereof I have hereunto set my hand.

THOMAS L. MERRILL.

Witnesses:

S. H. NOURSE,
J. A. BAYLESS.