(No Model.)

J. M. PALMER.

VENTILATING RAILROAD CARS.

No. 297,835. Patented Apr. 29, 1884.

FIG. 1.

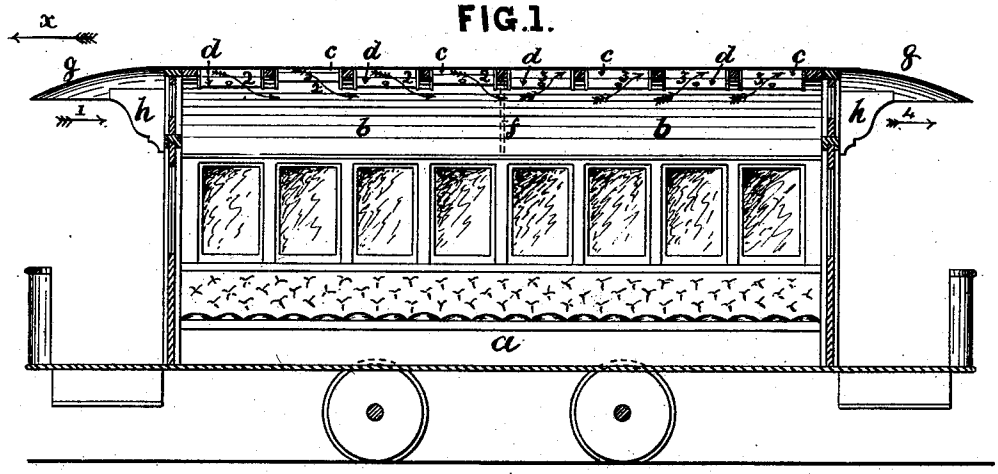


FIG. 2.

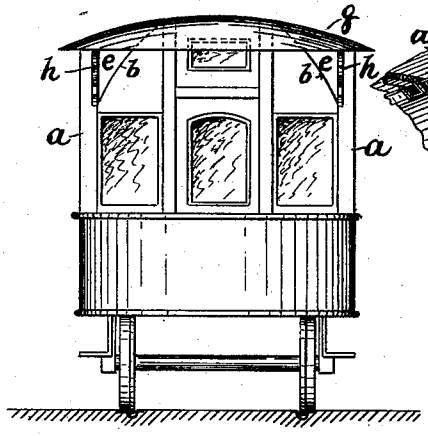


FIG. 4.

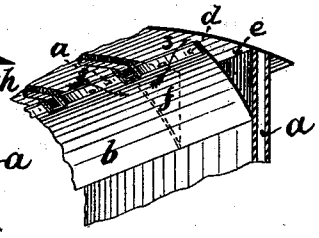
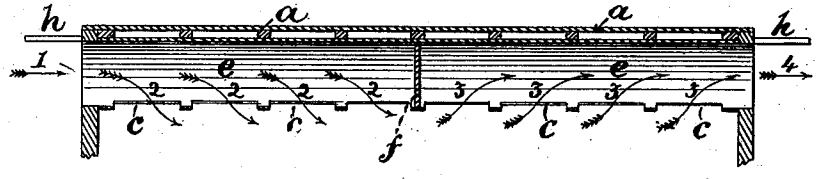


FIG. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

JAMES M. PALMER, OF CAMBRIDGE, MASSACHUSETTS.

VENTILATING RAILROAD-CARS.

SPECIFICATION forming part of Letters Patent No. 297,835, dated April 29, 1884.

Application filed December 11, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. PALMER, a citizen of the United States, residing at Cambridge, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Ventilating Railroad-Cars, of which the following is a specification.

The necessity of a better and more adequate means for ventilating cars than those now in use is too manifest to need more than a simple statement.

The object of my invention is to provide a more efficient means for ventilating steam and street cars, whereby an adequate amount of fresh air is admitted into, while an equal amount of impure or vitiated air is caused to escape simultaneously from the car.

The invention consists of a flue or passage-way arranged at the upper corner on each side of the car, which passage-way extends from end to end of the car and is open at both ends to the outside atmosphere. In the center of the length of each passage-way is fitted a partition, so as to arrest the current of fresh air and compel it to pass out of the passage-way into the car through openings formed in the upper edge of the passage-way, which openings are provided with slides to regulate the quantity of air admitted, the impure or vitiated air escaping through similar openings into the passage-way at the rear of the partition, and thence out of the rear opening.

Referring to the accompanying drawings, Figure 1 represents a longitudinal vertical section of a car with my improved appliance. Fig. 2 is an end view of the same. Fig. 3 is a longitudinal horizontal section of one side of the car taken just under the roof. Fig. 4 is a perspective view of a portion of the inside of a car, showing the passages for the air.

a represents the sides of a car. *b* is a partition extending from end to end of the car and preferably of a curved form, as shown, one side of the partition being attached to the side of the car and the other side to the roof, or beams carrying the roof. Apertures *c c* are left along the upper edge of the partition *b*, which apertures are fitted with slides *d*, so that the said apertures can be opened or closed, as desired.

Although I have shown sliding covers, any other kind may be employed.

The space of the back of the partition *b* forms a passage-way or flue, *e*, from one end of the car to the other end, and open at both ends to the outer atmosphere. This passage-way *e* is divided in the center by a partition, *f*, and the openings at each end of the car are protected by the projecting ends of the roof *g g*, and by bracket-like pieces or shields *h*, fitted under the roof on the outer side of the openings, thus preventing the ingress of rain or dust.

Instead of arranging the passage-ways at the upper part of the inside sides of the car, as described, they may be placed on the outside or be connected with any part of the roof.

In the drawings, the car is represented as going in the direction of the arrow *x*, and the fresh air enters the passage-way *e* in the direction of the arrow 1, on both sides of the car, and is arrested by the partitions *f f*, which cause it to pass out of the apertures *c c*, as indicated by the arrows 2, and the currents of fresh air from each side of the car meeting each other are broken up, commingle together, and diffused throughout the car, thereby preventing any draft upon the passengers. The entrance of the fresh air into the car forces out an equal or proportionate amount of vitiated air through apertures *c c* into the rear half of passage-way *e*, as indicated by arrows 3, and from thence out of the rear opening in the direction of the arrow 4. If too much air is being admitted to the car, one or more of the slides *d*, in the forward part of the car, can be wholly or partly closed. Should the car be going in the opposite direction to that described, the currents of air will be reversed.

By means of the projecting pieces *h* and extension of the roof *g*, the entrances to the passage-ways *e* are protected so that neither snow, rain, nor dust can enter said passages, or wire-gauze may be fitted over said entrances to prevent the entrance of dust, &c.

It will be seen that by my method of ventilating street or steam cars a constant supply of fresh air is admitted to, and an equal or proportionate amount of vitiated air expelled from, the car when the latter is in motion, and

at the same time the passengers are protected from any direct draft.

What I claim as my invention is—

1. In a steam or street car, the passage-way *e*, open at both ends, and provided with a partition, *f*, at or near the center of its length, and apertures *c*, communicating with the interior of the car, substantially as and for the purposes described.

2. In a steam or street car, the passage-way *e*, open at both ends, and provided with a partition, *f*, at or near the center of its length, and apertures *c*, fitted with slides *d*, for regulating the supply of fresh air admitted to the interior of the car, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES M. PALMER.

Witnesses:
JOS. H. ADAMS,
E. PLANTA.