

S. C. MAINE.

Improvement in Railroad Car Ventilators.

No. 125,401.

Patented April 9, 1872.

Fig. 2.

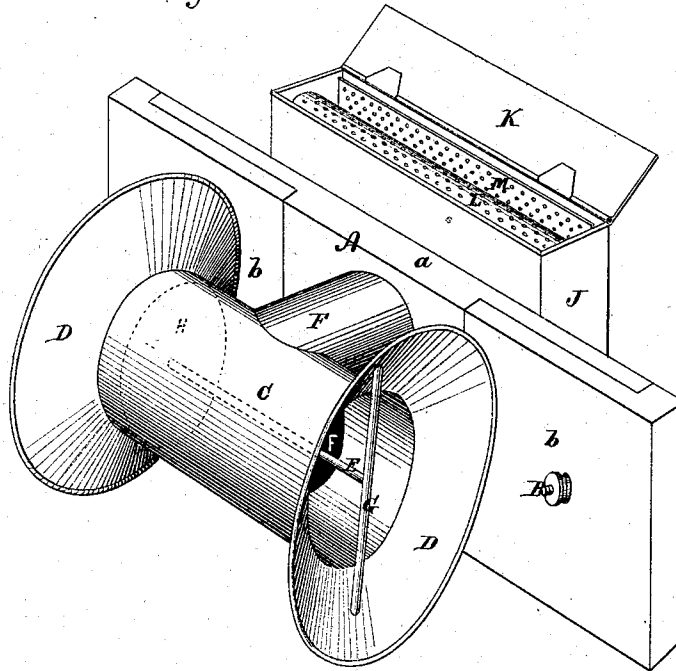
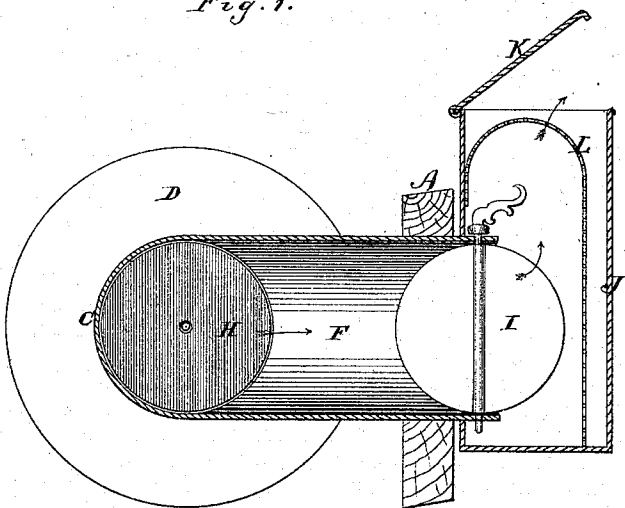


Fig. 1.



Witnesses.

Nathl Beecher Jr.

Peter Ward.

Inventor.

Sebens C. Maine.

by Leavell D. Wright & Brown.

Attys.

# UNITED STATES PATENT OFFICE.

SEBEUS C. MAINE, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN RAILROAD CAR-VENTILATORS.

Specification forming part of Letters Patent No. 125,401, dated April 9, 1872; antedated March 21, 1872.

### SPECIFICATION.

I, SEBEUS C. MAINE, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Car-Ventilators, of which the following is a specification:

Figure 1 is a sectional view of my invention, and Fig. 2 a perspective view of the same.

This invention is an improvement on my window-ventilator, patented March 1, 1870; its object being to provide a ventilator for car-windows which will admit a current of air in any desired direction and of any desired volume, and at the same time exclude all dust, cinders, &c.; and it consists in the combination, with an extensible board, (like that described in the above-mentioned patent,) of a tube passing through the same, and provided on the outside with a double-flanged elbow, like an ordinary car-chimney, and on the inside with a casing, in which said tube terminates, said casing being provided with suitable valves to regulate the supply of air admitted, and with screens of gauze or perforated sheet metal to exclude cinders, &c. The tube is also provided with a damper, whereby the same may be entirely closed; and the double elbow with a sliding valve, operated by atmospheric pressure in such manner as to close either end of the same, according to the direction in which the car is moving. The details of construction and method of operation will be more fully described hereinafter.

In the drawing, A represents an extensible board, which is constructed of three parts, as shown in Fig. 2, the main portion *a* being provided with longitudinal slots, through which pass bolts B which attach the same to parts *b* in such manner as to permit the whole to be extended at will—this being the equivalent of the board described in my former patent above referred to. The upper and lower edges of board A are beveled to correspond with the bevel of the bottom of a window-sash and the ledge thereof. Through the center of the board A passes a tube, F, which is provided at one end with a horizontal double elbow, C. This latter is provided with flanges D D, and is constructed like the top of an ordinary car-chimney. The double-elbow C is provided with a rod, E, which runs horizontally through the same, and is supported at each end by braces G which are attached to flanges D, as shown in Fig. 1. H represents a

disk or valve which is located on rod E, and slides freely back and forth thereon. Said valve is of sufficient size to nearly fill the elbow C without coming in contact therewith. The inner end of tube F is provided with a damper, I. J represents a box or casing in which the tube F terminates, said box being located on the opposite side of board A from elbow C. The box J is provided with a hinged lid, K, which may be raised or lowered to any desired extent, being so constructed as to remain at any angle. L represents a screen of gauze or perforated sheet metal, which intervenes between the mouth of tube F and the remainder of said casing. This screen may be duplicated to any extent, a number of them being arranged in layers, if necessary, to exclude fine cinders, &c. For the outer portion—that is, the double-elbow—may be substituted any ornamental shell, casing, or guard, covering an aperture through the wall of the car to the box J. The eddy in the box, caused by the motion of the air, effectually removes cinders, &c., and prevents them from accumulating, as might be supposed.

### Operation.

The board A is placed in the frame of a car-window, being adjusted to suit the width of the same as above mentioned, the sash resting on the upper end thereof; or it may be set in the wall of a car, in which case the board A would be dispensed with, *a* representing the wall. When the car is set in motion the pressure of the air forces the valve H to the rear end of the double-elbow C, as shown in dotted lines, Fig. 2, making the same, in effect, a single elbow, and forcing all the air that enters the forward end to rush through the tube F and into casing J, where it passes through screen L, and is cleared thereby from all coarser impurities; and thence, coming in contact with the side of casing J, it passes upward through the top of the same and into the car. By changing the angle of the lid K the current of air may be deflected so as to enter the car horizontally, or nearly so, or at any desired angle; so that if any occupant of the car desires to receive the full benefit of the current it is only necessary to nearly close the lid K; while by opening the same to its utmost extent the current enters the car perpendicularly, and is not

immediately felt by the occupants, although the air is obviously kept in a pure condition, without the annoyance of dust, &c. When the ventilator is designed to operate as above described the lid opens outward—that is, toward the side of the car—as shown in Fig. 1. I may, however, provide the casing J with an opening on the inner side near the top, and cover the same with gauze or perforated metal M, as shown in Fig. 2, in which case the lid opens inward, and may be closed entirely when it is designed to admit the air horizontally, and opened to admit the same vertically. To shut off the air entirely it is only necessary to close the lid K.

It will be readily seen that this arrangement can be placed in the window of any car by adjusting the extensible board to correspond with the width of the same, while the means of adjustment are so perfect that any desired amount of air may be admitted, from the faintest breath to the full force of the current induced by the rapid motion of a train of cars. The apparatus is equally serviceable when set in the wall of a car as in the window.

The gauze-screen or screens prevent the action of malaria from the night air in malarial districts. It has been demonstrated by eminent scientific authority that a net-work of gauze will prevent the action of malaria; this proposition being accepted, my car-ventilator

becomes an important invention to the traveling public, not only as a ventilator, but as a protector against disease.

This invention embodies the same principle—*i. e.*, taking air into a room on vertical lines—as my former patent mentioned above, but, in this case, the air is taken through a box and filtered, as it were, this construction being an adaptation to cars, and requiring different arrangements to secure the results desired.

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

1. The case J, provided with adjustable lid K, hinged at the back, and screens L M, substantially as described.

2. The combination of case J, constructed substantially as described, with tube F and double-elbow C, substantially as set forth.

3. The combination of the ventilating apparatus, constructed substantially as described, with the extensible board A or the wall of a car, substantially as described.

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

SEBEUS C. MAINE.

Witnesses:

CARROLL D. WRIGHT,  
C. F. BROWN.