

E. H. WINCHELL.
CAR-VENTILATOR.

No. 172,232.

Patented Jan. 11, 1876.

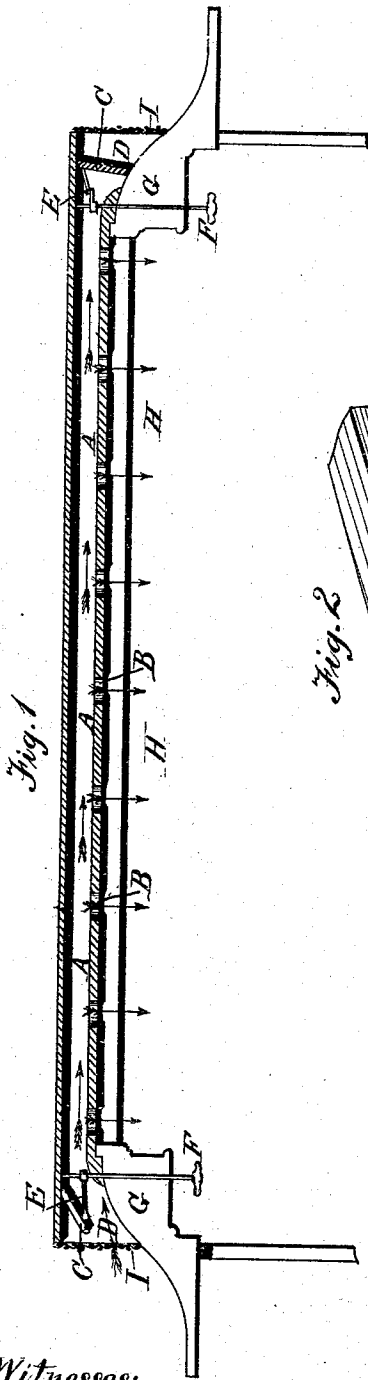


Fig. 1

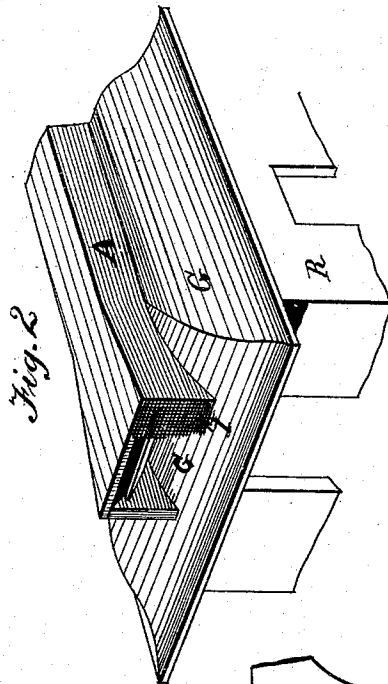


Fig. 2



Fig. 4

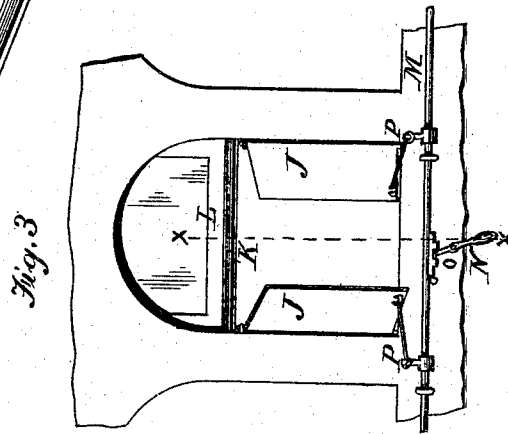


Fig. 3

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UNITED STATES PATENT OFFICE.

EDWIN H. WINCHELL, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN CAR-VENTILATORS.

Specification forming part of Letters Patent No. **172,232**, dated January 11, 1876; application filed January 4, 1876.

To all whom it may concern:

Be it known that I, EDWIN H. WINCHELL, of Chicago, in the State of Illinois have invented certain Improvements in Railroad-Car Ventilators; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of the top of a railway-car and the ventilating devices therein; Fig. 2, a perspective view of a portion of the top of a railway-car, showing an end view of the ventilating air-chamber; Fig. 3, a side elevation of one of the windows, showing the deflectors, their connections, and method of operation; and Fig. 4, a vertical section on the line *xx* of Fig. 3.

In all the figures similar letters represent similar parts.

The invention consists of an air-chamber arranged in or upon the raised deck or roof of a railway-car, and along nearly the entire length of the same, with broad flaring ends, having adjustable cut-off gates therein, and a series of registers or holes in its under side opening into the chamber of the car; also, of a series of deflectors hinged at the sides of the windows, and of a drop-sash attached to the lower end of the window-sash, the deflectors being operated by certain novel contrivances, as hereinafter explained.

The object of the invention is to thoroughly ventilate a railway-car, when in motion, by having currents of air pass through an air-chamber in its roof, and then into and through the body of the car, and, at the same time, to keep it free from dust, cinders, smoke, &c.

To accomplish this an air-chamber, A, extending nearly the whole length of the car R, is constructed in or upon the roof or raised deck G of the same, as clearly shown in Figs. 1 and 2. The ends C of the chamber reach over a portion of the sloping ends of the deck G, and their sides are made flaring, so as to give or present a broad open mouth for catching or receiving the air when the car is in motion, as shown in the same figures. Across the ends or mouths of the chamber wire-gauze screens I are placed, as shown, to prevent the entrance of dust, smoke, cinders, or other foreign sub-

stances, and in them are pivoted or hung gates D, arranged to be operated by means of a lever, F, provided with a ball-joint—that is, an arm, E, having a ball on its end—or with any other suitable device for adjusting the gates at any desired angle, or for closing them entirely, so as to admit the passage of any desired volume of air, or to cut off the same. In the under side of the air-chamber are a series of registers or holes, B, opening into the body of the car. On each side of each of the windows deflectors J, made of metal or of glass with metallic frames, are fixed in a vertical position, so as to swing on gudgeons working in brackets on the sides of the windows, as shown in Fig. 3. They are connected, by links P P, to a rod or bar, M, arranged horizontally on the side of the car, so as to be moved longitudinally by means of a lever, N, pivoted to the body of the car at O, as shown in the same figure. These deflectors are so connected to the bar M that in whichever direction it moves, all on the same side of the windows will have the same relative motion and position as regards each other—that is, by the same movement of the bar, the deflectors on the same side of all the windows will have the same position. The breadth of the deflectors is about equal to one-fourth of the breadth of the window, and their height about that to which the sash is usually raised, as shown in Figs. 3 and 4. The lower side of the window-sash L has attached to it a drop sash or shelf, K, in such a manner that it will turn up against the window-sash when it is down, but when the latter is up will turn out and extend over the top of the deflectors, as clearly shown in Fig. 4.

The operation of these devices will now be readily understood. When the car is in motion, the front gate of the air-chamber is opened, and the one in the opposite end closed. At the same time the deflectors on the side of the windows in the direction in which the car is moving are placed at an angle of about forty-five degrees, while those on the opposite take a position parallel with the side of the car and the window-sash. If the latter is raised, the drop-sash will extend over the deflectors, as shown. When the parts are thus adjusted and the car in motion, the air

will pass in large volume into the air-chamber and be distributed through the body of the car, as shown by the arrows in the drawings, and will pass out through the windows. At the same time the smoke, dust, sparks, cinders, &c., flying along the side of the car, will be turned from the windows by the deflectors and carried away by the currents of air passing out of the same, while the drop-sash will either catch or turn away such as would incline to come in from above.

It is obvious that the gates and deflectors may be adjusted as required, and that the air-chamber may be constructed in or upon the roofs or decks of cars already built, or may be made an integral part of the same when constructed originally.

Having thus described my invention, what I claim is—

1. A ventilating air-chamber, A, constructed in or upon the raised deck or roof of a railway-car, as herein described, with broad flaring ends C, flush with or below the level of

the top of the car, provided with adjustable gates D, and a series of holes, B, opening into the body of the car, as and for the purpose set forth.

2. In combination with the deflectors J, the devices for operating the same, consisting of the links P P, bar M, and lever N, as described.

3. In combination with the deflectors J and window-sash L, the drop-sash K, constructed and arranged substantially as and for the purpose set forth.

4. The combination of the ventilating air-chamber A, constructed and arranged to operate as described, with the drop-sash and deflectors at the windows, constructed and operating substantially as set forth.

The above specification of my said invention signed and witnessed, at Chicago, this 16th day of December, A. D. 1875.

EDWIN H. WINCHELL.

Witnesses:

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