

(No Model.)

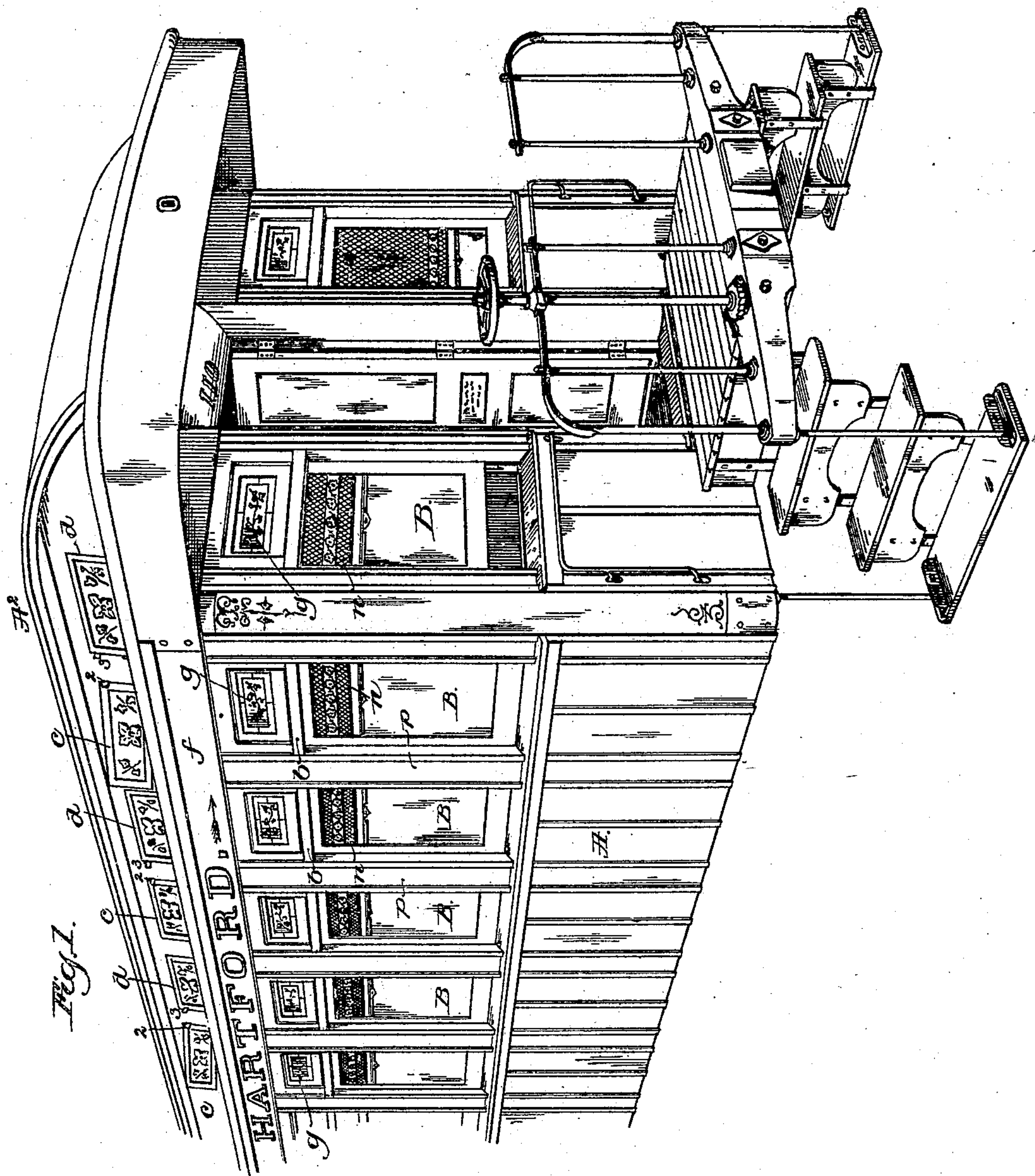
2 Sheets—Sheet 1.

N. WHEELER.

RAILWAY CAR.

No. 273,415.

Patented Mar. 6, 1883.



Witnesses,
Fred A. Paul
John F. C. Trunkert

Inventor
Nathaniel Wheeler
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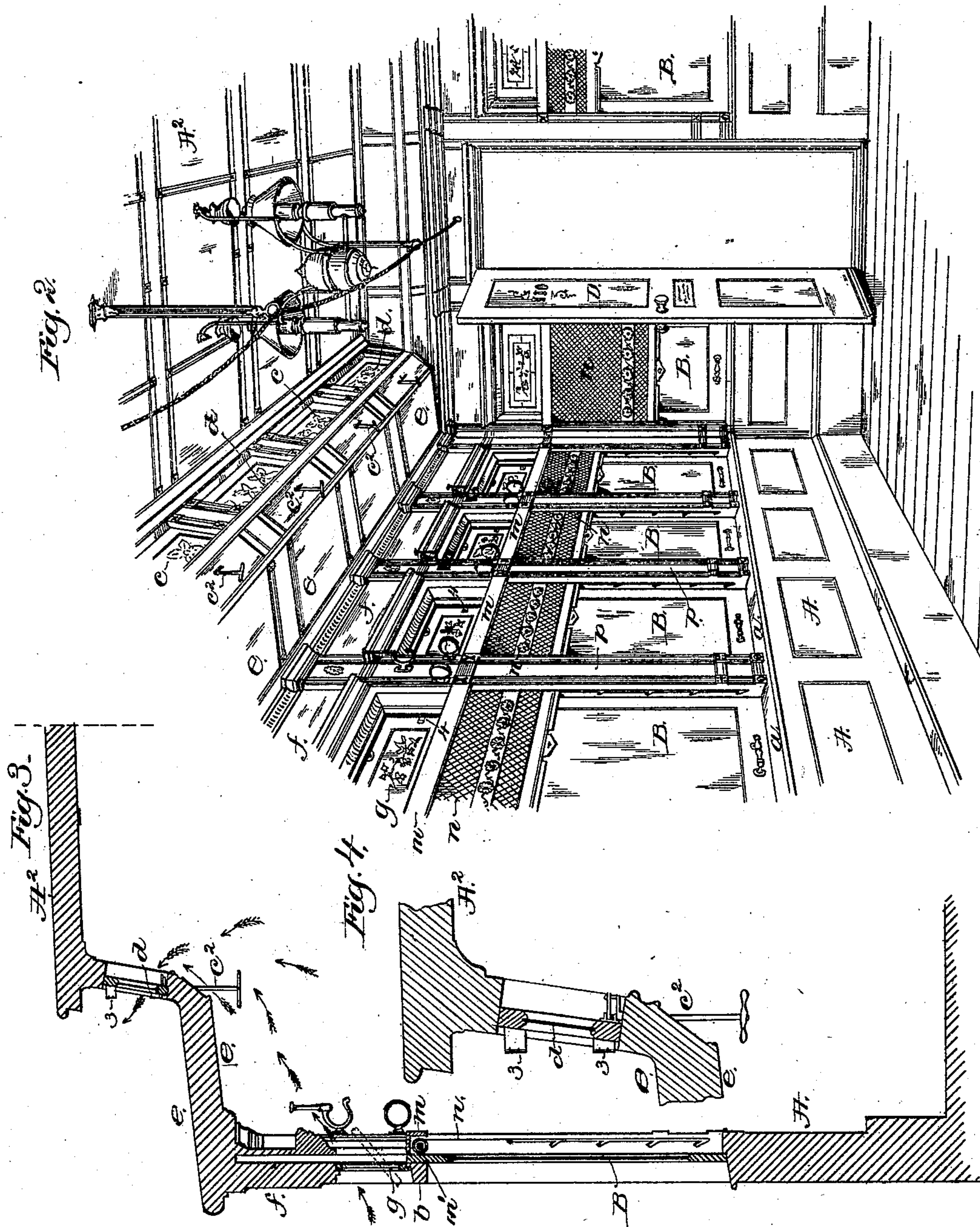
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UNITED STATES PATENT OFFICE.

NATHANIEL WHEELER, OF BRIDGEPORT, CONNECTICUT.

RAILWAY-CAR.

SPECIFICATION forming part of Letters Patent No. 273,415, dated March 6, 1883.

Application filed December 4, 1882. (No model.)

To all whom it may concern:

Be it known that I, NATHANIEL WHEELER, of Bridgeport, county of Fairfield, and State of Connecticut, have invented an Improvement in Railway-Cars, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention has for its object the production of a well-ventilated car; and it consists in providing the car with a series of hinged or pivoted transom-windows, arranged directly above the usual windows at the side of the car and at such a height from the floor of the car as to be above the heads of the occupants of the seats, which will be placed in the car, and also with a series of windows along the sides of the deck of the car, the said windows being hinged, a part of them at one end and a part of them at the other end, so that some of them may be opened outward at their rear ends, whichever way the car may be moving. When the deck-windows are open, as described, and also the transom-windows, the open rear ends of the said windows act to exhaust the air from the car, while the open transom-windows below the deck-windows and above the usual side windows supply air, thus keeping up a constant circulation of air into the space made by opening the transom-windows and out through the space made by opening the deck-windows, thus changing the atmosphere of the car and insuring proper ventilation without raising the usual side windows. In order to make this system of ventilation practicable without reducing the size of the side windows, I have made the side of the car from ten to twelve inches higher than heretofore customary, and in the space so gained above the side windows, and between them and the space occupied by the sign-board, which has also been elevated, I have placed the series of transom-windows, which I pivot preferably at each end below their centers, so that their tops open inward, and when open incline upwardly, thus acting to deflect the incoming air upward toward the roof or top of the car and prevent it striking the heads of the occupants of the car.

Figure 1 represents in perspective the body of part of a railway-car containing my invention; Fig. 2, a perspective view of part of the interior of my improved car; Fig. 3, a vertical

transverse section of one-half of the car shown in Figs. 1 and 2; and Fig. 4 is a detail, showing a hinged deck-window and its operating crank-rod.

The car-body A, with its side windows, B, and the deck A², with its windows *c d*, those *c* hinged at one end at 2 and those *d* hinged at their opposite ends at 3, and the hand-rods C² to open and close the said windows, are all as usual.

I have made the side of the car higher by from ten to twelve inches than heretofore, so as to afford a space above the usual side windows, B, and the roof part *e* of the car, which is thus inclined but very little, to enable the introduction between the tops of the said windows B and the space occupied by the sign-board *f* of a row of transom-windows, *g*, pivoted at each end, preferably below their centers, at 4, to permit the said transom-windows to be opened inward at their tops from the full to the dotted line position, Fig. 3, thus admitting air into the car above the closed windows B, the air so admitted, by striking against the transom-windows *g*, turned to occupy inclined positions, as stated, being deflected upward above, and thus prevented from striking the heads of the occupants of the usual seats of the car. (Not shown.)

When the car is traveling in one direction—as, for instance, in the direction of the arrow marked thereon in Fig. 1—a part of the series of deck-windows *c* may be opened at their rear ends, according to the state of the atmosphere; but when the car is traveling in the opposite direction a greater or less number of the series of windows *d* may be opened at their rear ends. The transom-windows *g*, when opened, admit air, and the open rear ends of the windows *c* or *d* operate in such manner as to exhaust the air from the interior of the car, thus keeping up a circulation of air in the direction of the arrows, Fig. 3, which effectually carries out of the car the vitiated warm air and supplies fresh air in quantity as required.

Making the side of the car higher than heretofore and dispensing with the usual curved roof between the sign-board and the deck-roof, besides increasing the area of the interior of the car and affording space for the transom-windows directly above and in line with the side windows, B, and between them and the

sign-board, also affords a most excellent opportunity to beautify the car—as, for instance, by making the transom-windows of stained glass or as ornamental windows, as shown in the drawings.

The lower edge of each pivoted transom-window is placed substantially at the level of the top of one of the side windows, B, but a little farther out with relation to the car-body, as shown in Fig. 3, so that the window B, when raised, will pass the transom-window *g*.

The box or portion *m*, to receive the roll *m'* for the curtain *n*, is located at the level or junction of the transom and side windows, B, and the curtain is thus always kept below the transom-window, so as not to obstruct the admission of light or of air through the transom-window above the window B, as would be the case were the curtain hung from the top of the window *g* and across it.

The vertical pilasters or posts *p*, appearing at both the inner and outer sides of the car, are braced by the bars, (see Figs. 1 and 3,) which, secured to the pilasters, form sills for the lower edge of the sash of the transom-windows *g* and brace and stiffen the structure.

The window B, when raised, passes the rigid bar *b* and the rail or bar *m*, (see Figs. 2 and 3,) which constitute part of the curtain-box.

I claim—

1. The combination, with the body and roof or deck of a railway-car, of side windows, B, a series of pivoted transom-windows, *g*, arranged directly over the said side windows and between the side windows and the sign-board, just under the roof, and of a series of deck-windows, hinged or pivoted as described, to be opened at their rear ends with relation to the forward movement of the car, to operate substantially as described.

2. The combination, with the car-body, of the series of side windows, B, the series of transom-windows *g*, arranged directly over them, and adapted to be opened into the car at their upper ends to receive the incoming air against their inclined sides, and of the series of deck-windows *c d*, the windows of one of the

said series of deck-windows being adapted to be opened outward at one end, and those of the other set to be opened outward at the other end, to operate as and for the purposes described.

3. In a car-body, the series of side windows and the series of transom-windows, placed directly over the side windows and between the tops of the said side windows and the sign-board, combined with the series of curtains, their rollers, and boxes *m* to receive the said rollers, the curtain-boxes being arranged at the junction or level of the lower ends of the transom-windows and the tops of the side windows, all as shown, and for the purposes set forth.

4. In a railway-car, the vertical pilasters *p*, extended between the body A and the sign-board, and the rigid bars or sills *b*, between the said pilasters, to form sills for the transom-windows and brace the pilasters, combined with the transom-windows, pivoted at their ends, and with the series of windows B, arranged directly under the transom-windows, between the pilasters, all substantially as shown and described.

5. In a railway-car, the vertical pilasters *p*, extended between the body A and the sign-board, and the rigid bars or sills *b*, between the said pilasters, to form sills for the transom-windows and brace the pilasters, combined with the transom-windows pivoted at their ends, and with the series of windows B, arranged directly under the transom-windows, between the pilasters, and with the row of curtain-boxes *m*, arranged and fixed opposite the bars or sills referred to, and between the lower edges of the transom-windows and the tops of the closed lower windows, B, all substantially as described and shown.

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

NATHANIEL WHEELER.

Witnesses:

ISAAC HOLDEN,
LOUIS H. BAKER.