

*Russell & Holmes,*

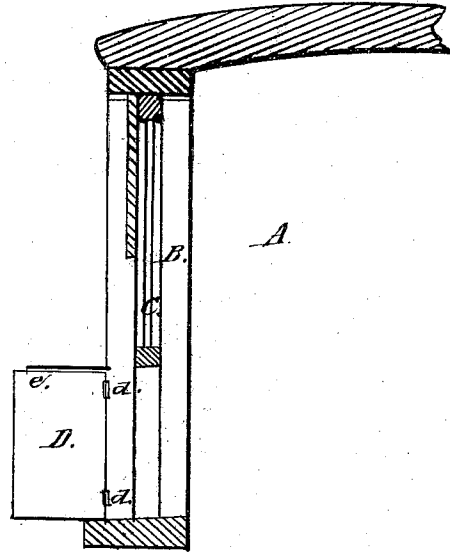
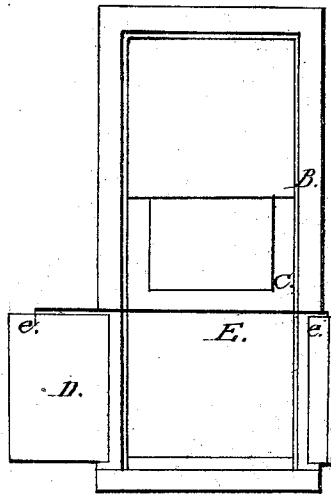
*Car Ventilator.*

*No. 86,780.*

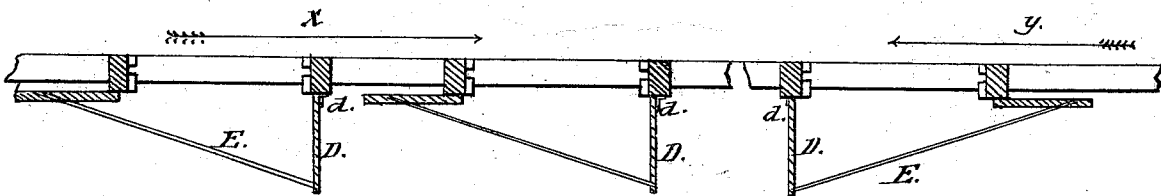
*Patented Feb. 9, 1869.*

*Fig. 2.*

*Fig. 1.*



*Fig. 3.*



*Fig. 4.*



*Witnesses:*

*Edwin James*

*John S. Hollingshead Jr.*

*Inventors:*

*Wm. M. Russell and D. E. Holmes*

*per. Holmead & Hollingshead*  
*Attorneys*

# United States Patent Office.

WILLIAM M. RUSSELL AND D. E. HOLMES, OF CINCINNATI, OHIO.

*Letters Patent No. 86,780, dated February 9, 1869.*

## RAILROAD-CAR VENTILATOR.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:* \*

Be it known that we, WILLIAM M. RUSSELL and D. E. HOLMES, both of Cincinnati, county of Hamilton, and State of Ohio, have invented certain new and useful Improvements in Railroad-Car Ventilators; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, and the letters of reference marked thereon, making part of this specification, in which—

Figure 1 is a front view of a car-window with my improvement attached.

Figure 2 is an end view of a car-window with the same attached.

Figure 3 is a top or edge view of a car with the same attached, *x x* representing the position of the wings or blinds when the car is going in one direction, and *y y* when it is going in the opposite direction, the direction being indicated by arrows.

Figure 4 shows the connecting-rod, which operates the wings or blinds.

The object of our invention consists in a simple and practical arrangement, whereby we are enabled to deflect the dust, smoke, sparks, and cinders, and at the same time create a strong draught of air from the interior of the car.

We are aware that many efforts have been made, and plans suggested, the object of which was to attain the result accomplished by our arrangement; but it is an admitted fact that they are all either so complicated, expensive, cumbersome, and unwieldy, as to fail to gain for them that degree of popularity which promises their adoption, to any great extent, by railroad companies.

The nature of our invention consists in attaching directly to the side of a car, by means of an ordinary hinge, or other equivalent device, a series of wings, or deflectors, so arranged that every window is provided with a pair, one being secured at each side of the same. Each pair of these wings, or deflectors, is so connected, by means of a bent connecting-rod, that it operates automatically, its relative position and action depending entirely on the motion of the train and the direction in which the same is travelling.

It will be observed that, by our arrangement, one of the wings or blinds always occupies a position directly alongside of the car, and nearly parallel thereto, while the position of the other is at right angles to the side of the car, its inner surface being in a direct line with the side of the opening in which fits the window-frame and sash.

Our invention is especially valuable in this regard: It is attached directly to the car, and the same can be done at a most trifling expense, its construction and the material used being of the cheapest character.

The successful operation of our ventilator depends in no manner upon any arrangement of mechanism, frame-work, or casing, and the wings or blinds being

united and operated, as they are, by independent rods, should occasion require a seat to be reversed, or, for any other reason, should it be deemed desirable to change the position of the wings or blades, the same can readily be done simply by moving the rod, when the position of the wings will instantly be reversed, and this accomplished without affecting in the slightest degree the relative position of any other of the series.

Another great advantage of our plan is found in the fact that the ventilator can be attached to any car now in use, no matter what its plan of construction may be, and should it be desirable, for any reason, to remove the ventilator, the same can be done quickly, by loosening the screws which fasten the hinges to the framework of the car-window.

To enable others skilled in the art to make and use our invention, we will now proceed to describe its construction and operation.

A is a railroad-car, B, the window-frame, and C, the sash, all constructed and operated in the usual manner.

D D is a series of blinds or deflectors, which are attached immediately to the sides of the cars by means of ordinary hinges, *d d*, or other equivalent device. These blinds D D are made of smooth plank, or other suitable material, and are oblong in form. They may be varnished, painted, or stained by any ordinary process, so as to represent any desired color. They may also be made perfectly straight, but we prefer to make them slightly wedge-shaped, as by this means we are enabled to obtain a broad bearing against the car, which, of course, will require less resisting-force on the part of the hinges, and with but a trifling addition to the weight of the blinds. These wings D D, it will be observed by reference to fig. 3, are so hinged that one of the same is always held at right angles to the side of the car, its inner surface being on a direct line with the side of the opening in which fits the window-frame or sash. This position of the wing securely guards the open window from the influx of sparks, &c., by forming a vacuum outside of the window, thus causing a current from the inside of the car outwardly, while, at the same time, the other wing is folded against the side of the car.

E is a straight metallic rod, its ends being bent down in the form of elbows, as clearly shown in fig. 4.

The bent ends of this rod fit in suitable openings, *e e*, arranged in the upper surface of the wings or blinds. These rods are applied in the manner clearly shown, and firmly unite the blinds together. Thus, it will be seen that a rod at each window connects a pair of blinds, and the action of each set of deflectors is rendered purely independent, and in no manner depends on the adjoining set, on either side, for its operation or relative position.

The blinds or wings being thus united, the motion of the car will operate them automatically, so that they

will be in the position shown at *xx*, fig. 3, when the car travels in the direction of the arrow, and at *yy* of the same figure when travelling in the opposite direction, so that the cinders, smoke, sparks, &c., are all entirely excluded from the car, and a strong current of air is formed along the outside of the same, thoroughly ventilating the car by drawing out, as it does, the heated and impure air.

Having thus fully described our invention,

What we claim therein as new, and desire to secure by Letters Patent of the United States, is—

A series of wings or deflectors, *DD*, attached directly to the side of the car, when each pair is so united,

by an independent bent rod, that while one is folded against the car the other is held at right angles to the side of the same, its inner surface being on a line with the side of the opening in which fits the window-frame or sash.

In testimony whereof, we have signed our names to this specification, in the presence of two subscribing witnesses.

WM. M. RUSSELL.  
D. E. HOLMES.

Witnesses:

N. MARCHANT,  
S. N. FOWLER.