E. H. WINCHELL.

Railroad-Car Ventilator-Valve.

No. 204,271. Patented May 28, 1878.

FIG. 1.

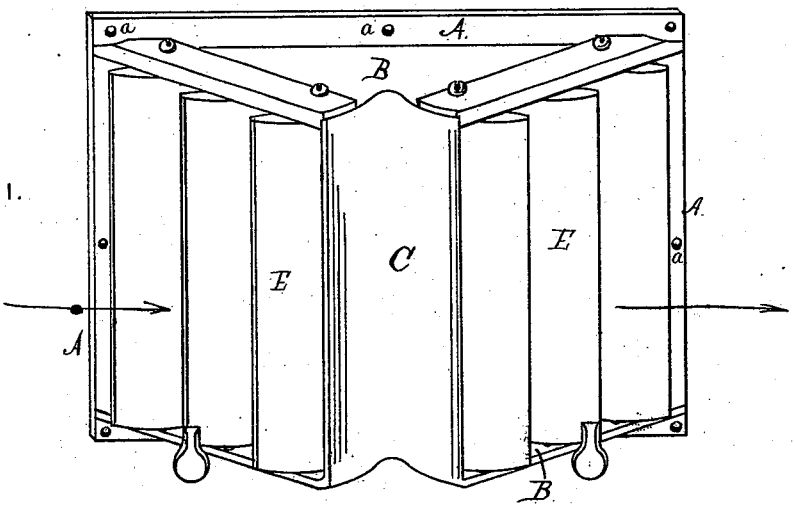


FIG. 2.

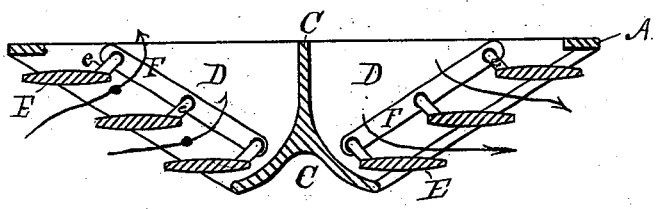
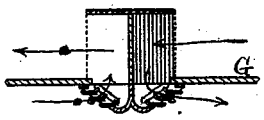


FIG. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

EDWIN H. WINCHELL, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN RAILROAD-CAR-VENTILATOR VALVES.

Specification forming part of Letters Patent No. **204,271**, dated May 28, 1878; application filed November 17, 1877.

To all whom it may concern:

Be it known that I, EDWIN H. WINCHELL, of Chicago, in the county of Cook and State of Illinois, have invented certain Improvements in Valves for Ventilators for Railroad-Cars, of which the following is a specification:

In the accompanying drawings, which form a part of this specification, Figure 1 is a perspective view of the improved valve or register. Fig. 2 is a horizontal section of the same. Fig. 3 is a similar section, showing the method of applying the valve in connection with a ventilator.

Like letters of reference denote like parts in the several figures.

In the said drawings, A represents a rectangular frame, open at the rear, and provided at top and bottom with horizontal triangular projecting plates B B, which are connected by a vertical central partition, C, running from one to the other, thus forming two triangular chambers, D D', which are open at the back and at the diagonal sides. The openings at the diagonal sides are furnished with a series of slats, E, pivoted at the top and bottom to the plates B B, and so connected together by links *e* and a bar, F, that they may be moved all at once to set them at any required position within the limit of their motion.

The apparatus thus constructed is to be secured by means of the frame A, which has screw-holes *a*, to the air inlet and outlet of the car. I prefer to use it in connection with a ventilator applied to the exterior of the raised central portion or deck of the car, and I prefer to use the Morton ventilator, which projects from the side of the deck, and gathers air at one side and discharges it at the other by the motion of the car; and at Fig. 3 I have shown a section of the Morton ventilator and of my improved valve, the former being attached to the outside of the car-body G, and the latter to the inside thereof; but I may use my invention with other ventilators, or even without any exterior apparatus.

It will be seen by the arrows upon the drawings—of which the plain ones indicate the incoming or pure air, and the ones with a blot upon the shaft the outgoing or impure air—that the incoming current does not tend to blow across the car upon the passengers seated opposite, or perhaps lying in their berths, as may be the case in a sleeping-car, but that said incoming current, by reason of the form of the valve-casing, and by reason of the slats, is compelled to turn and flow in the direction of the length of the car.

In the case of an exterior ventilating apparatus, like the Morton ventilator, being used in conjunction with my valve, the latter greatly assists the rapid and perfect diffusion of the pure air and the elimination of the foul, because, in such case, as shown by the arrows at Fig. 3, the incoming pure air is thrown by slats toward the front of the car, while the impure air is taken from toward the rear of the car, both incoming and outgoing currents being parallel to the length of the car and at the sides of the raised deck. The result is that the cold pure air thrown to the front, being heavier than the warmer impure air, tends to descend by its weight, and also to flow to the rear by reason of its greater inertia, thus creating, without any sensible or positive drafts, a perfect diffusion of the pure air.

In case no forcing and exhausting apparatus is applied to the exterior, my valve operates to prevent cross-car currents, and thus permits the natural flow of the air by weight and inertia to take place in the same manner, but in less marked degree, and without disturbing influence, or the discomfort to the passengers occasioned by cross-drafts.

Having thus described my invention, I claim—

1. An interior valve for car-ventilators, projecting in the form of a triangle into the car, and provided with vertical adjustable slats at the diagonal sides, substantially as specified.

2. The interior valve for car-ventilators, having double oblique sides, vertical adjustable slats, and a central partition dividing it into two chambers, substantially as specified.

3. The combination, with an exterior ventilator, of the interior valve, having double oblique sides, vertical slats, and a central partition, substantially as specified.

EDWIN H. WINCHELL.

Witnesses:

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FORDE R. SMITH.