W. A. Brown,

Car Ventilator

No. 33,979. Patented Dec. 24, 1861.

Fig: 1.

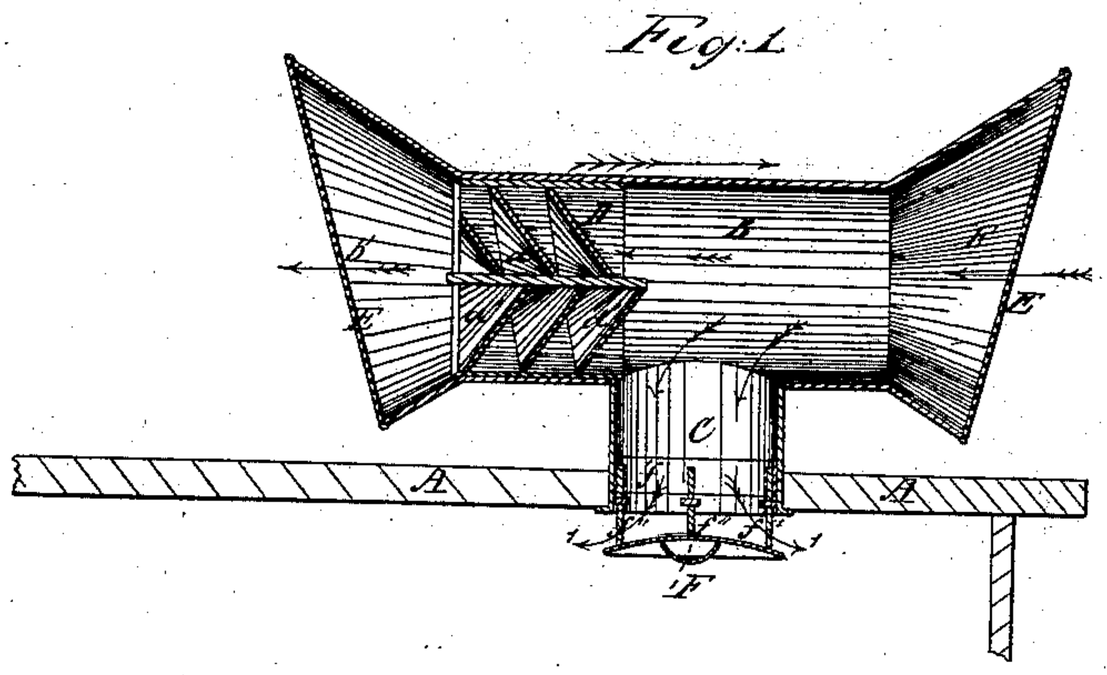
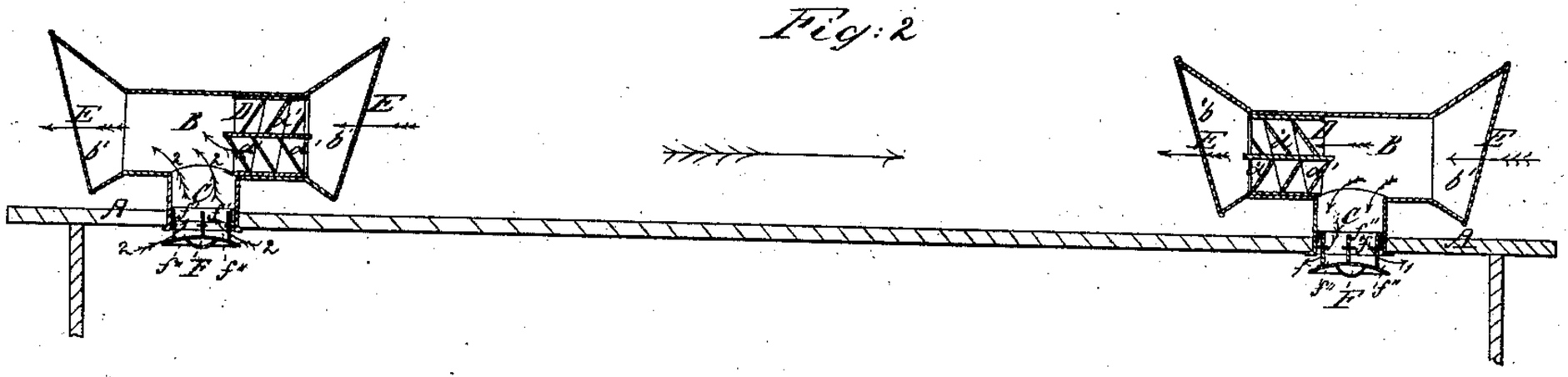


Fig: 2.



Witnesses:

Benj. Thompson,

R. F. Shattuck

Inventor

Wm. A. Brown

UNITED STATES PATENT OFFICE.

WILLIAM A. BROWN, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN RAILROAD-CAR VENTILATORS.

Specification forming part of Letters Patent No. **33,979**, dated December 24, 1861.

To all whom it may concern:

Be it known that I, WILLIAM A. BROWN, of the city of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Ventilators for Railroad-Cars; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figures 1 and 2 are vertical longitudinal sections of the said improved ventilator applied, like parts when in the different figures being indicated by like letters.

My invention has a twofold objects—*i. e.*, the introduction of fresh and the discharge of impure air through the roof of a car in motion on the track; and it consists in constructing and applying, substantially in the manner hereinafter described and specified, a ventilator, so that during the forward motion of the car to which it is applied a regular current of fresh air can be introduced thereby at a point near the forward end of the car and the impure air continuously discharged at a point near the rear end of the same.

In the drawings, A represents a central longitudinal section of the roof of a car; B, a hollow cylinder of sheet metal, which has a hollow conical frustum b' fixed at each end, and is supported in a fixed horizontal position and longitudinally in relation to the car, at a short distance above the roof A of the same, by means of a short hollow cylinder C, which is fixed vertically in the said roof, so as to afford through it and the cylinder B above an open communication between the interior of the car and the external air.

D is a short hollow cylinder, which is adjustably fixed in the rear end of cylinder B, and provided with a deflecting-partition d', constructed and secured therein so as to produce a spiral passage-way of two or three turns from one end to the other of the same.

The outer ends of the frusta b' b' are covered each by a diaphragm E of wire-gauze to preclude sparks from the engine.

The lower end of the vertical cylinder O′ is fitted with an adjustable valve, consisting of a curved disk F, attached to a sliding ring f' in the cylinder by means of wire stems f'' f'', or in any other suitable manner, so that the mouth of the cylinder C may be either closed or opened at pleasure by adjusting the said valve by hand from the inside of the car.

Operation: One of these ventilators being fixed in the roof near each end of the car in the manner described, and so, also, that the ends which respectively contain the adjustable cylinders D shall directly face each other, as seen in Fig. 2, the forward motion of the car will cause a constant current of fresh air to pass directly through each ventilator, and, the valves F F of the cylinders C C being open, the principal portion of the air entering the forward ventilator will be deflected, in consequence of the resistance of the spiral partition d', into the car through the vertical cylinder C, as indicated by the arrows 1 1, its volume being in accordance with the size of the valve-opening in the latter, while at the same time the current of air which is forced through the rear ventilator is deflected by the spiral passage-way in the cylinder D in such a manner that in leaving the same it passes obliquely upward and over the mouth of the vertical cylinder C, producing an exhaustive effect in the said cylinder C, and consequently a regular outward flow through it of the impure air of the car, as indicated by the arrows 2 2 in Fig. 2. The apparatus thus constructed and applied will therefore always be in condition for action in whichever direction the car may be required to run, is entirely effective for the purposes designed, and is not liable to derangement in use.

Having thus fully described my improved ventilator for railroad-cars and shown the manner in which the same is to be applied and used, what I claim as new therein, and desire to secure as my invention by Letters Patent, is—

A ventilator consisting of the horizontal cylinder B, with its conical frusta b' b', the interior spiral passage formed by the partition d' in the rear end of cylinder B, and the vertical cylinder C, with its adjustable valve F, the said parts being constructed and combined together with each other, substantially as described, and applied near each end of the roof A, so as to operate in combination with the car in motion on a track, in the manner set forth and described, and for the purposes specified.

WM. A. BROWN.

Witnesses:
BENJ. MORISON,
R. F. SHATTUCK.