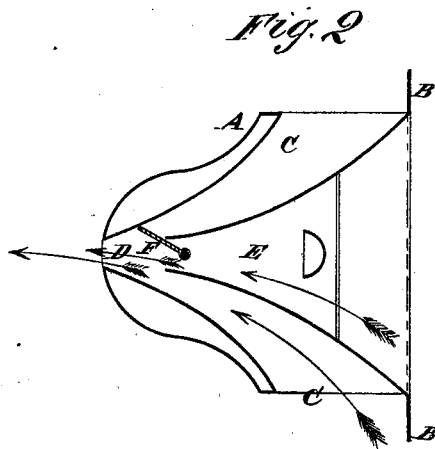
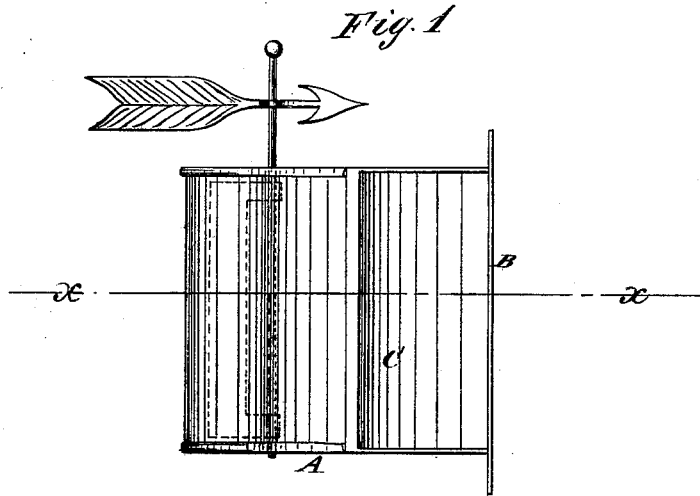


J. SANDALL, Jr.
VENTILATOR.

No. 186,062.

Patented Jan. 9, 1877.



WITNESSES:

A. H. Almqvist
John Goethals.

INVENTOR:

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UNITED STATES PATENT OFFICE.

JOHN SANDALL, JR., OF ST. JOHN, NEW BRUNSWICK, CANADA.

IMPROVEMENT IN VENTILATORS.

Specification forming part of Letters Patent No. **186,062**, dated January 9, 1877; application filed May 16, 1876.

To all whom it may concern:

Be it known that I, JOHN SANDALL, Jr., of St. John, in the Province of New Brunswick, Canada, have invented a new and Improved Ventilator, of which the following is a specification:

The object of my invention is to provide a ventilator for cars, to be attached to the upper part of a car, and which will be equally effective in both directions in which the cars run.

It consists, essentially, of a case projecting laterally from the side of the car, and it may project vertically from the top, with an opening on two sides, near the base, into a passage which curves from the side to the outer end or top, the two passages uniting with each other a short distance from the outlet, where there is also the outlet of an exit-passage from the car, in which draft is established by the air rushing through one of the side passages, and making a vacuum in the middle passage from the car, and at the junction of the passage is a valve, which is opened automatically to the advancing side, and closed to the other side, by the wind.

Figure 1 is a side elevation of my improved ventilator. Fig. 2 is a sectional elevation on line *x x* of Fig. 1.

A is the case, which is attached, by the base B, to the side or top of the car, as preferred; C, the inlet-passages at opposite sides; D,

outlet-passage at the end or top; E, outlet-passage from the car, in which draft is generated by the air rushing through one of the passages C, and F is the valve for opening the front passage C and closing the other. The inlet-openings of passages C are considerably wider than the outlets, to contract the volume and increase the velocity of the air, and the passage E is similarly contracted for similarly accelerating the escape of the air.

The arrangement is calculated to be much more effective than those which merely open from the inside to the outside of the car, and it is practically much better adapted for attachment to a car than the monk's-hood ventilators sometimes used, besides being more effective.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The passages C for exterior air, entering opposite sides of the ventilator, near the base, and discharging at the end or top D, in combination with the middle passage E, entering from the car and terminating at the junction of the passage C, below or inside of the discharge D, substantially as specified.

JOHN SANDALL, JR.

Witnesses:

JOHN E. IRVINE,
J. V. TROOP, Jr.