(No Model.)

R. FOULSHAM.

VENTILATOR.

No. 288,564. Patented Nov. 13, 1883.

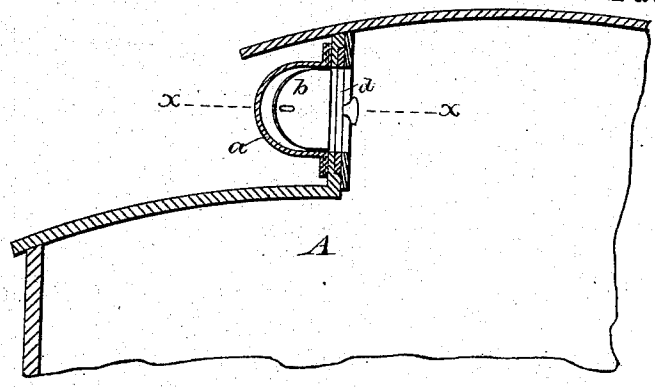

Fig. 1.

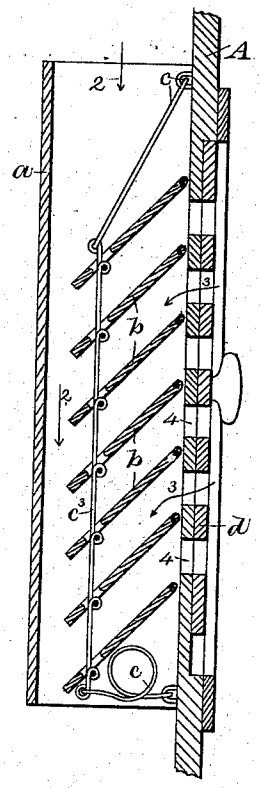

Fig. 2.

WITNESSES
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UNITED STATES PATENT OFFICE.

ROBERT FOULSHAM, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO ROGER J. ELA, OF SAME PLACE.

VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 288,564, dated November 13, 1883.

Application filed April 4, 1883. (No model.)

To all whom it may concern:

Be it known that I, ROBERT FOULSHAM, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Ventilators, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention relates to a ventilator more especially intended for cars, vessels, or moving conveyances or vehicles of any kind, it being automatically operated by the current of air produced by the movement of the said vehicles.

The invention consists, essentially, in the combination of a shield and a series of vanes pivoted therein and connected together, and operated automatically by a current of air passing through the shield, substantially as hereinafter specifically set forth and claimed.

The building or vehicle to be ventilated is provided with openings, covered by the said shield, and the action of the current of air passing therethrough and by the ends of the vanes is such as to produce an outward current from the building or vehicle, thus removing the foul air. The extent of the openings through which the foul air thus escapes may be controlled by any suitable register.

Figure 1 is a transverse section of a portion of a car provided with a ventilator embodying this invention, and Fig. 2 a longitudinal section thereof on line *x x* on a larger scale.

The ventilator (shown in this instance as applied to a railway-car A,) consists of a shield, *a*, U-shaped in cross-section, and containing a series of pivoted vanes, *b*, and being adapted to be fastened upon the side of the car or other building or structure to be ventilated, in such a manner that the movement of the said car produces a current of air longitudinally through the said shield *a*. (Indicated by the arrows 2, Fig. 2.)

The vanes *b* are pivoted at that side of the shield adjacent to the car or building, and their free ends are thus acted upon by the current of air entering either end of the said shield, the vanes being turned on their pivots by the said current, so as to slant in the direction of the said current, which, in passing by their ends, forms an exhaust, causing the air in the car or building to be drawn outward between the said vanes, thus producing an outward current of air from the interior of the car or building, as indicated by the arrows 3, the said air passing through openings 4, connecting the interior of the structure with the interior of the ventilator-shield *a*. The vanes of the series are joined by a rod, c^3, or equivalent, by which they are maintained parallel or uniformly spaced, and the extent of the movement of the vanes *b* on their pivots in either direction is limited by a suitable stop, (shown in this instance as cords or chains *c*, connected at one of their ends with the building or shield, and at their other end with the outermost vanes.)

The amount of air flowing out from the car or building may be controlled by a suitable slide or register, *d*, operated in any suitable or usual manner to wholly or partially cover the openings 4, or to leave them wholly open, according as more or less ventilation is required.

It will be seen that the vanes *b* and shield *a* afford a complete protection for the openings 4, so that it is impossible for dust or cinders to pass to the interior of the building or car.

When the ventilator is used upon a stationary structure or building, it may be necessary in some instances to produce an artificial current of air through the shield *a*.

I claim—

1. The combination of the shield *a* and the series of vanes *b*, pivoted therein and connected together, and operated automatically by the current of air passing through the shield, substantially as described.

2. The combination of the shield *a*, adapted to be fixed to the structure to be ventilated, the series of pivoted vanes *b*, the rod c^3, for connecting said vanes, and the stops *c*, for limiting the motion of such vanes, substantially as shown and described.

3. The combination, substantially as shown and described, of the U-shaped shield *a*, the pivoted vanes *b*, connected by a rod, c^3, at their outer ends, so as to move together, and provided with suitable stops and the register *d*, for controlling the inflow of the air from the shield and vanes, as set forth.

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

ROBERT FOULSHAM.

Witnesses:
G. W. GREGORY,
W. H. SIGSTON.