O. W. BOOTH.

Ventilators.

No. 149,190. Patented March 31, 1874.

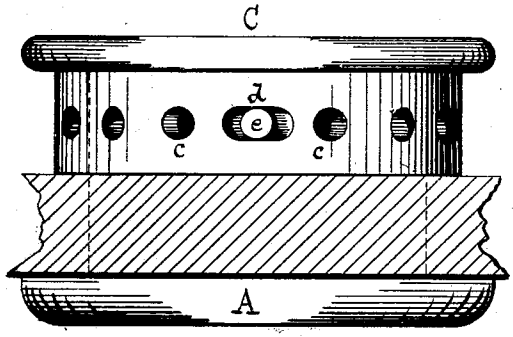

FIG. 1.

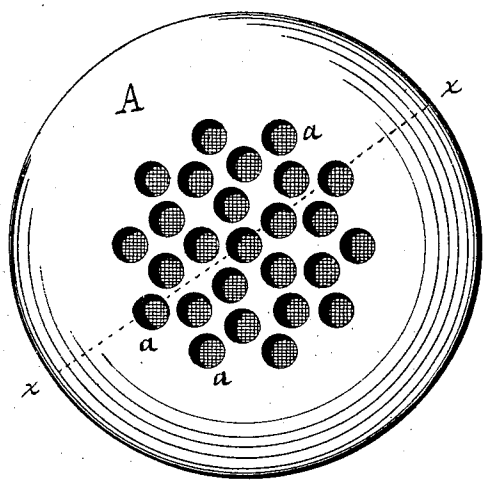

FIG. 2.

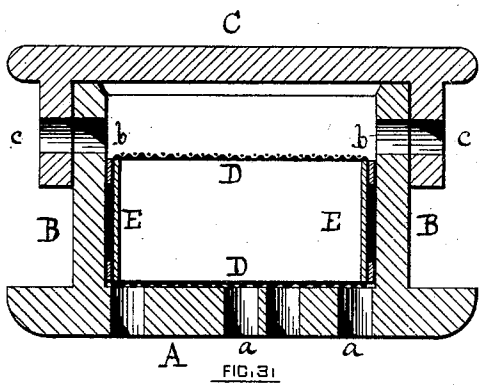

FIG. 3.

WITNESSES.

William B. M. Hallett.

INVENTOR.

Oliver M. Booth

UNITED STATES PATENT OFFICE.

OLIVER W. BOOTH, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN VENTILATORS.

Specification forming part of Letters Patent No. **149,190**, dated March 31, 1874; application filed November 21, 1873.

To all whom it may concern:

Be it known that I, OLIVER W. BOOTH, of the city and county of Providence, in the State of Rhode Island, have invented a new Improvement in Ventilators, and declare the following to be a specification thereof.

In the accompanying drawings like letters indicate like parts.

Figure 1 is a perspective view of my invention. Fig. 2 shows the external perforated cap. Fig. 3 is a transverse section on the line of the diameter *x x*.

My invention may be used for ventilating the apartments of hotels and other buildings, but is designed especially for the ventilation of railway-cars, for which purpose its construction and location render it efficient.

My improved ventilator is made of metal or other suitable material, and is inserted in the lower part of the door through an aperture of corresponding size. The circular external cap-piece A is perforated at *a a a*, for the admission of air. Connected with the cap A is a cylindrical tube, B B, which passes through the door, projecting on its inner side, where it is furnished with openings or ports *b b*. Fitting upon and about this cylinder B is a register, C, in the sides of which are ports *c c*, corresponding in size and position to those in the cylinder B, bringing the ports *b b* and *c c* opposite to each other, if desired, or closing the ports *b b* at pleasure. Within this ventilator is a screen of wire-netting, D, drawn over and across both the ends of the tube E, which serves to prevent the entrance of cinders and other substances into and through the ventilator.

I will now describe the currents of air created by the use of my ventilator, and their direction. As the car is moving forward rapidly against the wind, the air enters with much force through the openings *a a* of the external cap A. It passes through the nettings D D, and is freed from cinders and other particles. Passing through cylinder B it strikes against the inner surface of the register C, where the current is broken, being deflected at right angles, and, rushing through the ports *b b c c*, passes into the car in radiating currents from the register C. The draft thus created diffuses the air through the entire length of the car, and, if the ventilator and other openings in the rear of the car are closed, is forced upward, and makes its exit from the apertures in the roof or sides of the car. The currents of air are thus made to move in the lower part of the car, where fresh air is needed, in lines more or less parallel (according to circumstances) with the floor, but not on the floor.

In ventilating railway-cars, as heretofore attempted, the ventilators are placed upon the sides of the car or on the deck-roofs; but the circulation of the air thus effected is mostly confined to the upper part of the car, while the passengers sitting below these currents do not receive the advantage of them.

The ventilation of a car by currents of air entering from its forward end has heretofore been attended with great difficulty, the draft of air being too strong for comfort, and the cinders and flying substances caught up by the rapid movement of the cars entering into the car to the discomfort of the passengers; but in my ventilator the force of this direct current is broken in its transit and deflection within the cylinder, while the net-work clears the air as it passes, and thus the difficulties are obviated.

I claim as a novel and useful invention and desire to secure by Letters Patent—

The ventilator consisting of the perforated cap A and connected cylinder B, movable register C, ports *a a b b c c*, net D, and tube E, substantially as described.

OLIVER W. BOOTH.

Witnesses:

WILLIAM B. W. HALLETT,

J. B. THOMPSON.