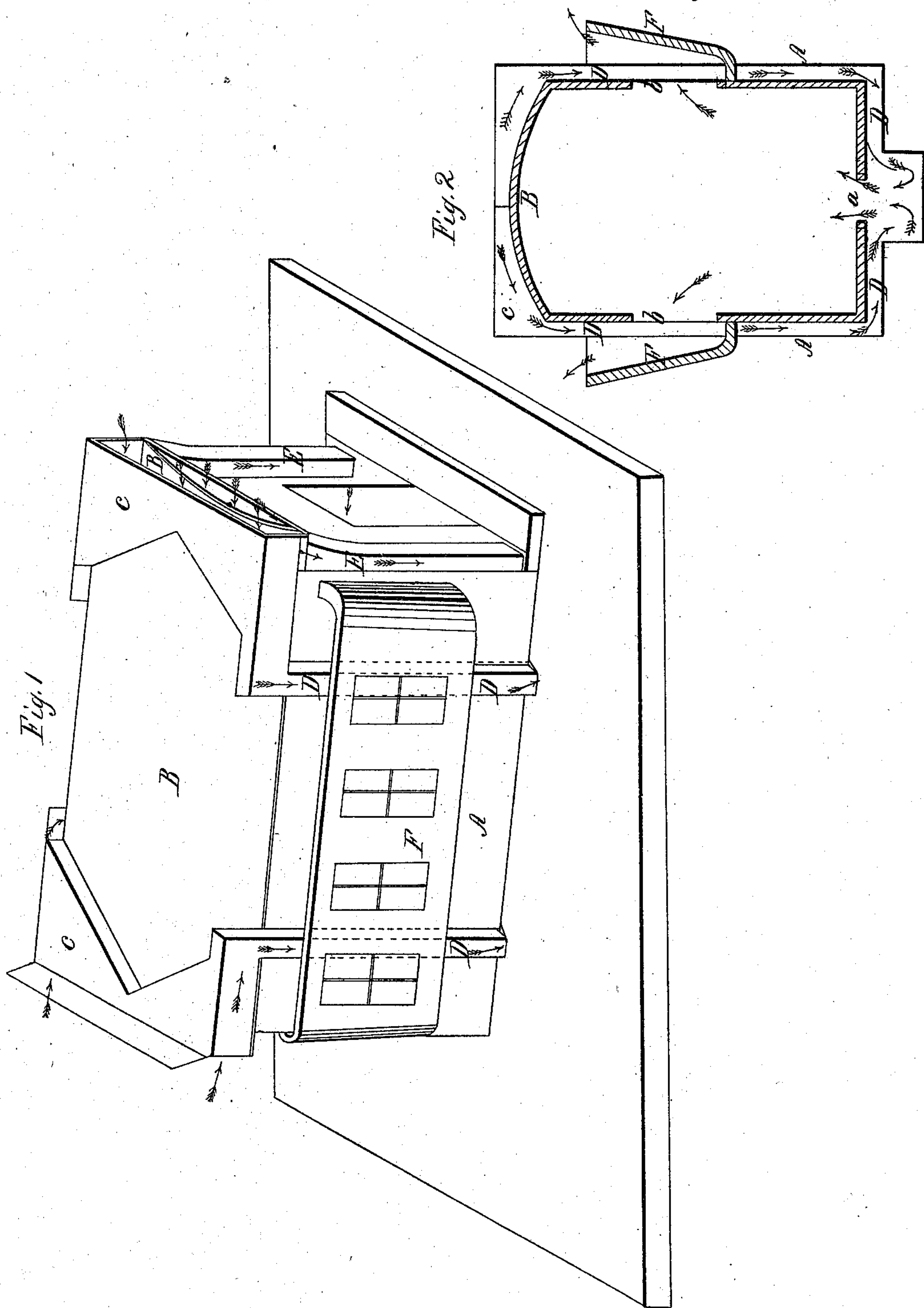


W. Pauli,
Car Ventilator.

N^o 12,827.

Patented May 8, 1855.



UNITED STATES PATENT OFFICE.

WILLIAM PAULI, OF ALEXANDRIA, VIRGINIA.

VENTILATING RAILROAD-CARS.

Specification of Letters Patent No. 12,827, dated May 8, 1855.

To all whom it may concern:

Be it known that I, WILLIAM PAULI, of the city and county of Alexandria and State of Virginia, have invented certain new and useful Improvements in Ventilating Railroad-Cars; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my improvement consists in the creation of an artificial draft of air through the cars by means of a hood upon the roof thereof, to which is connected descending tubes or pipes delivering the air at the lower portion of the car body and from which in rising it is directed therefrom by a stationary glazed frame, placed a short distance from the outside of the sash usually employed in giving light and air. By means of the draft thus leaving the cars by an upward current the dust is effectually prevented from entering, and from the ends and lower portion of the outside sash being made close or tight there can be no air or dust admitted at these points, while the air leaving the car as above stated necessarily carries off with it the more highly heated and impure portions thereof. The hoods, viz, the one having connection with the descending tubes, and those having immediate connection with the upper portion of the car combined with those opening at the lower parts of the cars, may be provided with suitable wire gauze or other material if deemed necessary. The advantages of this improvement will be apparent, when it is taken into consideration, that any and all air, entering the cars will escape over the sash guards on the side, and should it be desirable in winter to close entirely the openings in front, by lowering the shutter of that hood the rear one may be left open, and thus an escape be obtained through its agency. These double sash also produce a beneficial effect in winter, as all direct draft into the cars when an inside sash is raised is prevented and when those inside ones are kept closed, the temperature of the cars is more effectually kept up. The roof of the cars may be projected sufficiently far beyond the outside sash, so as to prevent the cinders when heavy, from falling between this outside sash and the inside ones, the greater portion of dust that enters the cars, passes upwards upon the sides thereof, flowing in

at the lower edge of the opening, this is effectually prevented by the close connection of the outside, or guard sash and the side of the cars, so that any dust entering an open window must necessarily pass through the strong outward current of air, indicated by the arrows in Figure 2.

In the drawings A, A, represent the sides of the cars provided with the ordinary openings *b*, and sliding sash to close them.

B, is the roof of the car.

c, c, are hoods formed of metal or other suitable material. These are placed on the ends of the roof; and may be provided with shutters to close the hoods.

D, D, are tubes for conveying the air received in the hoods to the floor of the car, the body of which it enters by a longitudinal opening *a*; in the caps over doors and ends of the cars, delivering it near the floor. All of these tubes may have suitable registers for controlling the passage of air.

F, F, are guard sash, formed of suitable frames and glazed; they are united closely with the sides of the cars at their ends and lower edge, and being set at an angle inclining from the bottom to the top of the car, an opening is allowed at the top of the guard sash for the exit of air from the cars, when the inside sash are raised.

In Fig. 2, which is a central cross section of the body of the car, hood, and descending pipes or tubes, also the guard sash F, F, are shown in section; in this drawing the intervening current of air is shown by descending darts, while the exit thereof is shown by darts ascending, passing through *b*, the ordinary sash window and over the top of guard F.

To prevent the dust from entering the hoods or caps below them, there may be placed a sheet of cloth or other suitable substance extending from the lower edge of the cap of one car to that of another, and thus any rising dust between the two cars will be prevented from entering.

I am aware that the ventilation of cars by a bonnet and conducting tubes is not new, neither is the deflection of air on the outside by hinged sash new, as both these methods have been used, but without accomplishing the object, inasmuch as the air is drawn or sucked in when a window is opened rather than being blown in, and with the air the dust as before observed passes in the opening.

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

5 The arrangement of guard sash F F on the sides of the cars in connection with descending tubes D D and hood C, upon the top thereof, by which the dust is prevented from entering a window when opened, while the exit of the air and ventilation of the car

is not affected by said guard sash, substantially in the manner as described. 10

In testimony whereof I have hereunto signed my name before two subscribing witnesses.

WM. PAULI.

Witnesses:

JOHN F. CLARK,
W. S. CLARK.