

No. 830,749.

PATENTED SEPT. 11, 1906.

R. TAYLOR.  
VENTILATING DEVICE.  
APPLICATION FILED MAR. 12, 1906.

FIG. 1

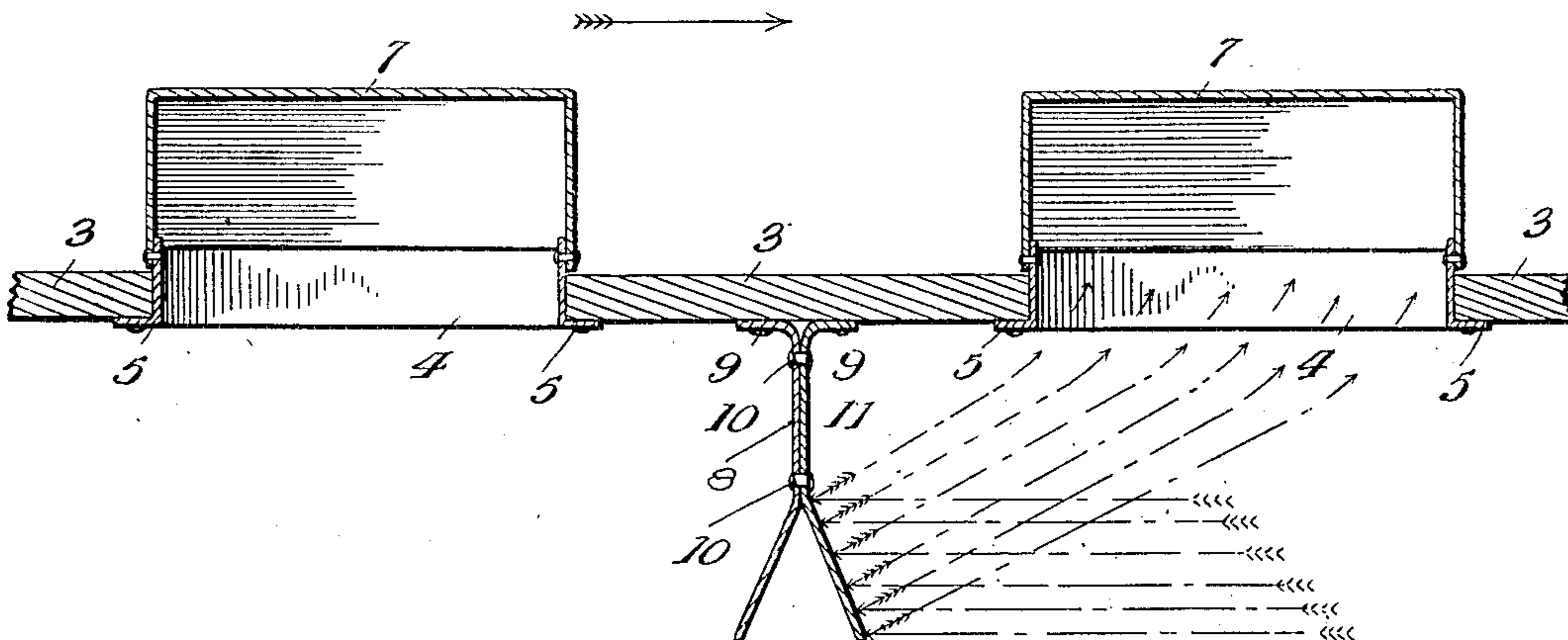
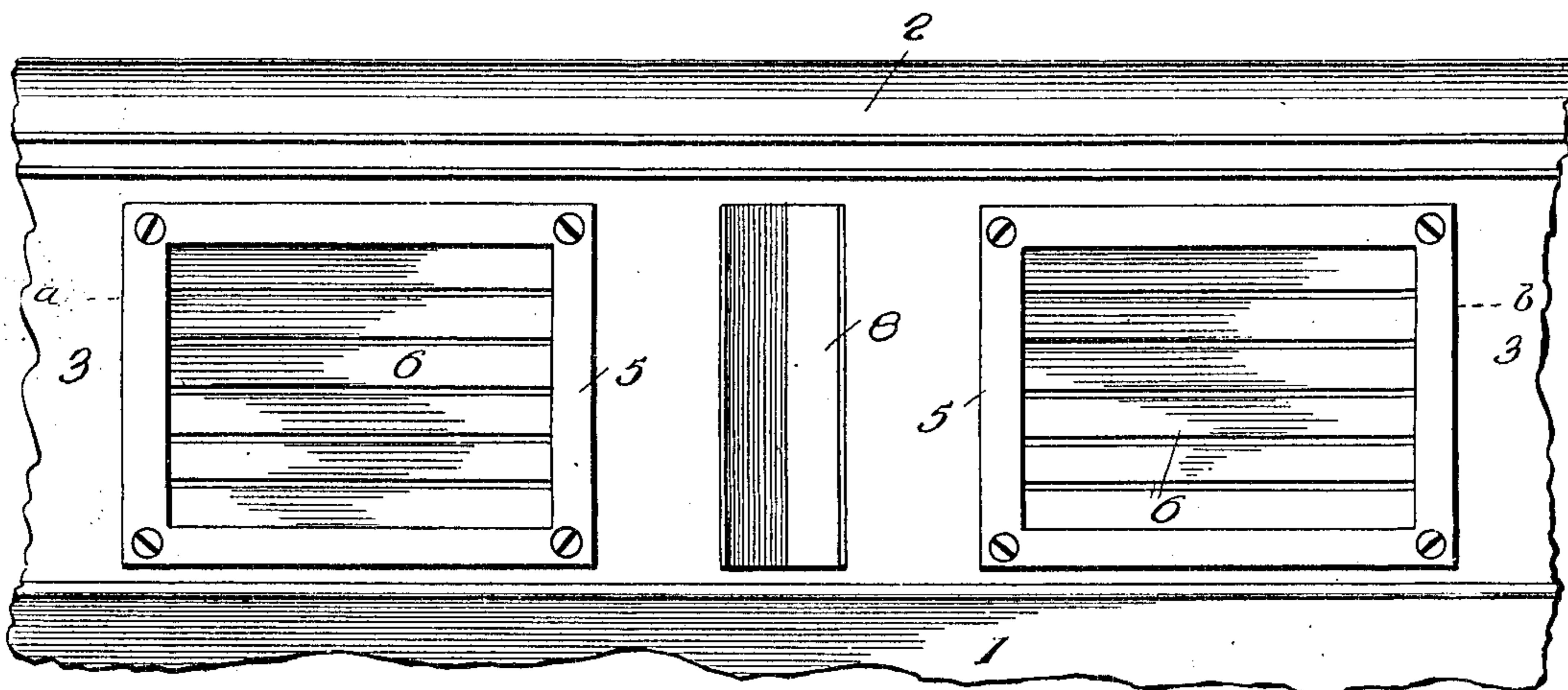


FIG. 2.

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# UNITED STATES PATENT OFFICE.

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## VENTILATING DEVICE.

No. 830,749.

Specification of Letters Patent.

Patented Sept. 11, 1906.

Application filed March 12, 1906. Serial No. 305,624.

*To all whom it may concern:*

Be it known that I, ROSS TAYLOR, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Ventilating Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in means for ventilating railroad-cars, ships, and other moving apartments, and is also applicable to stationary structures when natural air-currents exist.

My invention is particularly designed for use in connection with that type of ventilators known in the art as "injectors" and "ejectors," by the use of which fresh air is injected to and vitiated air ejected from the apartment to be ventilated, as fully illustrated and described in Letters Patent granted to me June 27, 1905, No. 793,403.

While I have found that the construction of the outside deflector shown and described in the Letters Patent referred to will in a large degree secure the entrance to the apartment of a large volume of fresh air, yet from extensive use of such deflectors I have discovered that a considerable portion of the fresh air arrested by such deflectors is liable under certain conditions to secondary deflection away from the opening of the apartment through which it is designed to have such air enter. I have learned from observation that this action is due to the circumstance that when the air contacts with the deflector, such as referred to, a curvilinear movement is imparted to the same, and consequently a portion of the body of the air when contacting with the back of the deflector and the wall of the car is secondarily deflected in a direction away from the opening designed to receive it.

My present invention has for its object to overcome this action and to positively direct substantially the entire body of air into and through the inlet-opening and at the same time provide a quiescent space or locality wherein the heavy bodies, such as cinders and dust, and any smoke or gases held in suspension may be eliminated from the air and permitted to readily escape.

With these ends in view my invention consists in the employment, in connection with the inlet and outlet openings of the apartment, of an exterior deflector located between such openings having a portion of its body at a right angle to its base and the remaining or outer portion at an acute angle thereto, the acuteness of the angle being predeterminedly such with reference to the distances between the deflector and the openings in the wall of the car that the air contacting with such portion of the deflector will be deflected directly toward such openings and at the same time a zone of quiescence established within which the heavy bodies, gas, and smoke may be effectively eliminated, as will be hereinafter and more fully explained.

In order that those skilled in the art to which my invention appertains may fully understand the same, I will proceed to describe the peculiarities of construction and the operation of my improved devices, referring by numerals to the accompanying drawings, in which—

Figure 1 is a side elevation of a portion of the roof-deck of an ordinary railroad-car with my improvement connected therewith, and Fig. 2 is a horizontal section on the line *a b* of Fig. 1.

Similar reference-numerals indicate like parts in both figures of the drawings.

1 represents a portion of the main roof of a car, and 2 the upper or deck roof, the latter supported upon the vertical sides or walls 3, in which the ordinary ventilating-sashes are located.

4 represents openings in the vertical walls arranged at predetermined distances apart, and within such openings sashes 5, having louver-boards 6, are located and secured. On the inside of the sashes 5 are arranged horizontally-adjustable air-current deflectors for controlling and directing the ingoing fresh air and the outgoing vitiated air, all as substantially shown and described in the Letters Patent hereinbefore referred to.

8 is an exterior deflector composed, preferably, of two sheet-metal plates formed with a base portion adapted to be secured in position upon the wall of the car and midway between the openings 4 by suitable fastenings 9, and these two plates are secured together back to back by rivets 10. These plates are of the

form clearly shown in Fig. 2 and have that portion next to the base at right angles thereto and the remaining or outer portion at an acute angle to said base, so that the air contacting with the outer portion will be deflected toward and directly into the opening 4 in front of said deflector, as clearly indicated by the series of arrows shown in Fig. 2. This movement of the air establishes an angular zone between the deflected air and the wall of the car, as indicated at 11, into which heavy bodies, such as cinders and dust, and any gases or smoke held in suspension in the air are delivered and which are free to gravitate and ascend, respectively, and are thus prevented from entering the car through the opening 4.

I have found from practical experience that the deflector-plates perform their desired function when, as shown in Fig. 2, the rear and outer portions are of about equal area, so that the volume of air impinging upon the rear portion will be housed, as it were, by the body of air deflected from the outer portion and held in a quiescent condition and which in turn will protect the body of air deflected by the outer portion against a secondary deflection tending, as hereinbefore stated, to cause it to travel in a path away from the side of the car, and consequently failing to enter the opening 4.

It is of absolute importance that the line of juncture of the two portions of the body of the deflector should constitute a well-defined angle to produce the action above stated, for if such line of juncture should be curved the air contacting with the deflector would be directed in a curved line toward the

body of the car and a secondary deflection would occur, as heretofore explained.

Having described the construction and advantages of my improvements, what I claim as new, and desire to secure by Letters Patent, is—

1. The herein-described means for ventilating a car or other compartment, consisting of separated openings through the wall of such compartment and provided upon the inside thereof with adjustable deflectors, and an exterior deflector having a closed back located between the openings in the wall and having a portion of its area at a right angle to the base, and the remaining and outer portion inclined at less than a right angle and adapted to deflect fresh air directly toward the openings in the wall, substantially as and for the purpose set forth.

2. In means for ventilating a car or other compartment having ingoing and outgoing air-ducts in the wall thereof, and an exterior deflector located between said air-ducts and consisting of two sheet-metal plates secured together back to back, the contact portions of said plates at right angles to the base, and the remaining outer portions at a predetermined angle to the base and of less than ninety degrees, substantially as and for the purpose set forth.

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

ROSS TAYLOR.

Witnesses:

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MAHLON A. FREEMAN.