

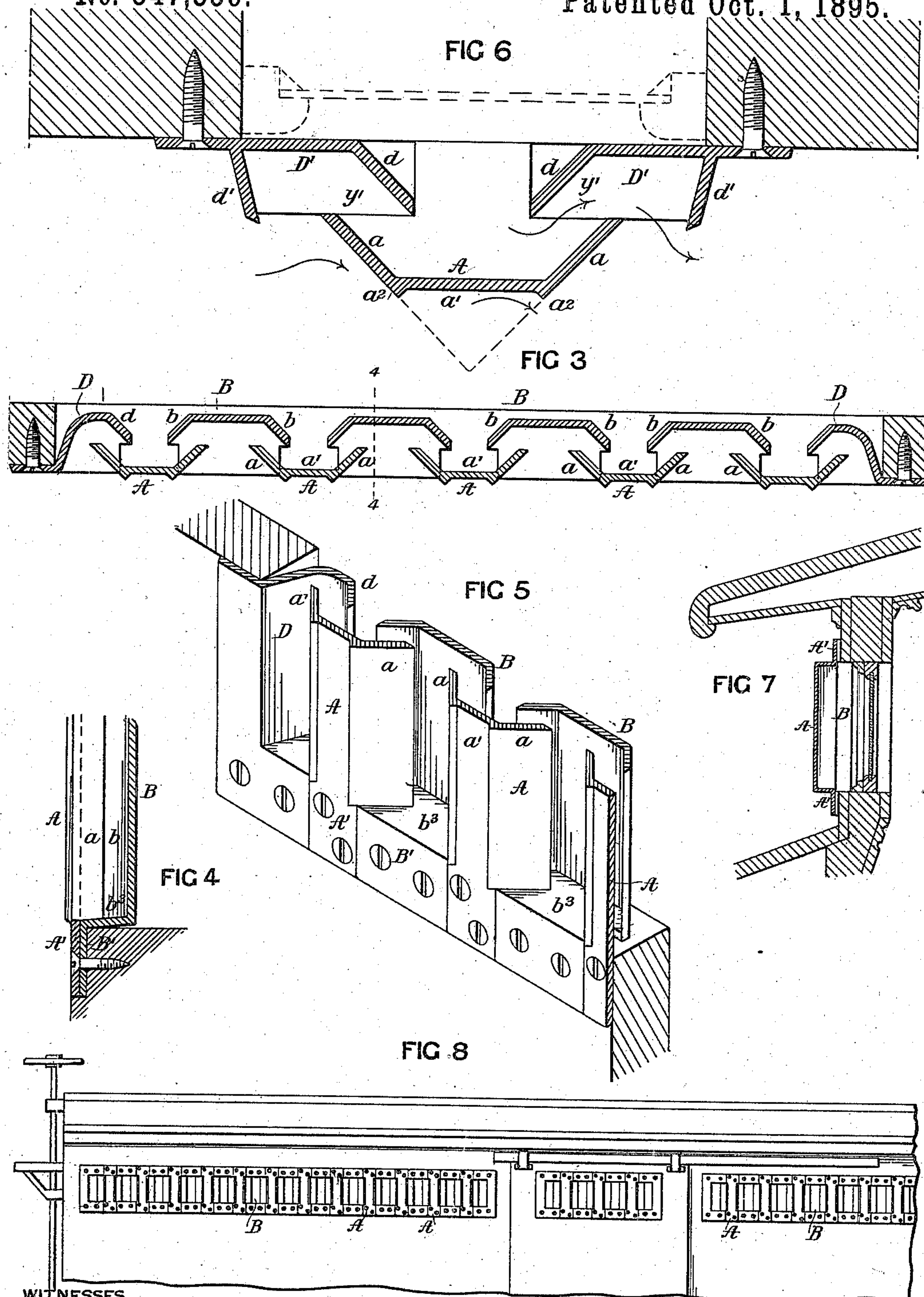
(No Model.)

2 Sheets—Sheet 2.

R. M. PANCOAST.
EXHAUST VENTILATOR FOR RAILWAY CARS.

No. 547,356.

Patented Oct. 1, 1895.



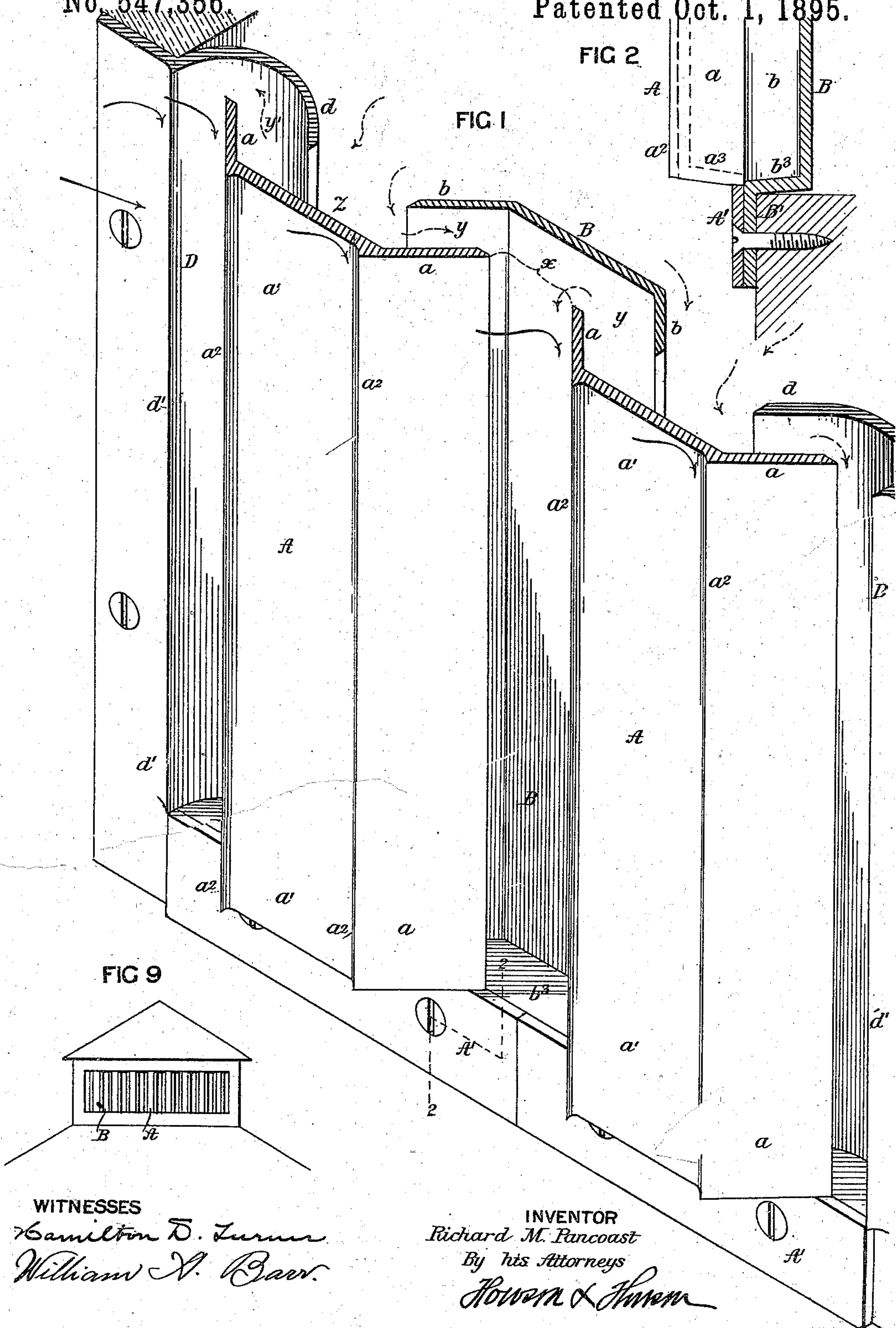
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UNITED STATES PATENT OFFICE.

RICHARD M. PANCOAST, OF CAMDEN, NEW JERSEY.

EXHAUST-VENTILATOR FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 547,356, dated October 1, 1895.

Application filed May 14, 1894. Serial No. 511,155. (No model.)

To all whom it may concern:

Be it known that I, RICHARD M. PANCOAST, a citizen of the United States, and a resident of Camden, Camden county, New Jersey, have
5 invented certain Improvements in Exhaust-Ventilators for Railway-Cars, of which the following is a specification.

The object of my invention is to construct
10 a ventilator for both passenger and freight railway-cars, and for vessels or other moving structures where the motion of the structure so draws them through the outside air as to render them strong exhausts of the inside atmosphere, and also for chimneys, roofs of
15 houses, and other stationary structures where they permit a free passage of air but prevent entrance of rain, cinders, &c. This object I attain in the following manner, reference being had to the accompanying drawings, in
20 which—

Figure 1 is a perspective view with the upper portion in section, illustrating my improved exhaust-ventilator. Fig. 2 is a section on the line 2 2, Fig. 1. Fig. 3 is a sectional
25 plan view showing the ventilator set into the ventilating-opening so that the outer surface will be flush with the sides of the car. Fig. 4 is a sectional view on the line 4 4, Fig. 3. Fig. 5 is a perspective view showing a modification of the method of fastening the plates
30 shown in Fig. 3. Fig. 6 is a sectional plan view illustrating a single ventilator. Fig. 7 is a sectional view showing the ventilator applied to the clear story of the passenger-car. Fig. 8 is a view showing the ventilator applied to the side of a freight-car under the
35 roof-eaves, and Fig. 9 is a side view showing the ventilator applied to a skylight of a building.

Referring in the first instance to Figs. 1 and 2, A are channel-shaped plates having
40 flaring sides α and arranged in a vertical position, the body α' of the plate being preferably flat. At the junction of the flaring sides with the body I form deflecting-ribs α^2 , by
45 which when the outside air impinges upon the surface α' it is deflected, as indicated by the arrows in Fig. 1. The plates A are arranged at a given distance apart, so as to leave a space α for the passage of air from the
50 interior of the car, and directly back of this

space are channel-shaped plates B, having flaring sides b , so proportioned that channels y are formed between the plates A and B for the passage of exhaust-air from the interior of the car, the deflection of the outside air by the plates A creating a suction
55 sufficient to cause the necessary draft.

The device shown in Fig. 1 consists of two outer plates and one inner plate, and at each
60 side are vertical plates D, which preferably extend to a point in line with the inner edge of the outside plate, preventing the inrush of air through the channel y' , except when the air is coming squarely against the ventilator, and I form on the side plate D deflectors d ,
65 which correspond with the side b of the channel-plate B, so that if air should gain access to the passage y' it will be deflected across the space z and carried out through the passage y . I preferably form a lip d' on the edge
70 of the side plate D, so as to deflect the outer air as much as possible from the passage y' .

By the above arrangement rain and dirt will be prevented from gaining access to the
75 interior of the car through the ventilator, and when the device is mounted on a car or boat the current of outside air will tend to create a draft sufficient to make the device a strong exhaust-ventilator.

In the drawings I have shown the ventilator made in sections, the several plates A having flanges A' at their extremities and the plates B having flanges B' at their extremities. The extensions A' fit over the extensions B' and break joints with said extensions,
85 and the screw-holes in each extension are formed so that they will be in line when the sections of the ventilator are set up, and when the screws are inserted they properly
90 space the deflecting-plates A and B.

In Figs. 1 and 2 the outer plates A extend beyond the side of the car-body, whereas in the device shown in Figs. 3 and 4 the plates are flush with the side of the car. This latter arrangement is especially applicable to freight-cars when the ventilator is placed in the side of the car near the roof, as shown in Fig. 8,
95 so that the door can slide past the ventilating-opening without interfering. This arrangement also protects, to a certain extent, the ventilator. When the device is used in a
100

clear story of a passenger-car, however, or on a building, it may be made as shown in Fig. 1 or as shown in Fig. 6, which illustrates both plates on the outside. This latter construction can be used where the opening is provided with a sash. (Shown by dotted lines in Fig. 6.) The bottom portions a^3 and b^3 of the plates are preferably inclined, as shown in Fig. 2, so as to carry off any water that may gain access to the space between the plates.

In Fig. 5 I have shown the extensions of the plates A alternating with the extensions of the plates B. In this case the distance between the plates will have to be regulated by the width of the extensions or by independent measurements, so that the exhaust-openings will be uniform.

The ventilator can be extended as desired. Any number of plates A and B may be used, and at each end I preferably mount the end plates D or D'.

The ventilator may extend the full length of a car, as shown in Fig. 8, or may extend over one or more openings in the side of a clear story, without departing from my invention.

While I preferably make the plates of cast metal they may be made of sheet metal or other material without departing from my invention. In some instances the plates A and B may be V-shaped, as shown by dotted lines in Fig. 6; but I prefer to make them in

the form of channel-plates, as much better results are obtained.

I claim as my invention—

1. The combination of the outer channel plates A having flaring sides and having deflecting ribs at the junction of the sides with the body, and plates at the back forming with the outer plate exhaust channels, substantially as described.

2. The combination of the outer channel plates A and the inner channel plates B alternating with the said outer channel plates, extensions on each plate, screw openings in the extensions so arranged that when the plates are adjusted in position the confining screws will pass through the extensions of both inner and outer plates, thus properly spacing the plates, substantially as described.

3. The combination in an exhaust ventilator, of the outer channel plate or plates, the inner channel plates, with independent channeled end plates forming a continuation of the inner channel plates, substantially as described.

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

RICHARD M. PANCOAST.

Witnesses:

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