(No Model.) 2 Sheets—Sheet 1.

W. A. GAY.

CAR VENTILATOR.

No. 490,960. Patented Jan. 31, 1893.

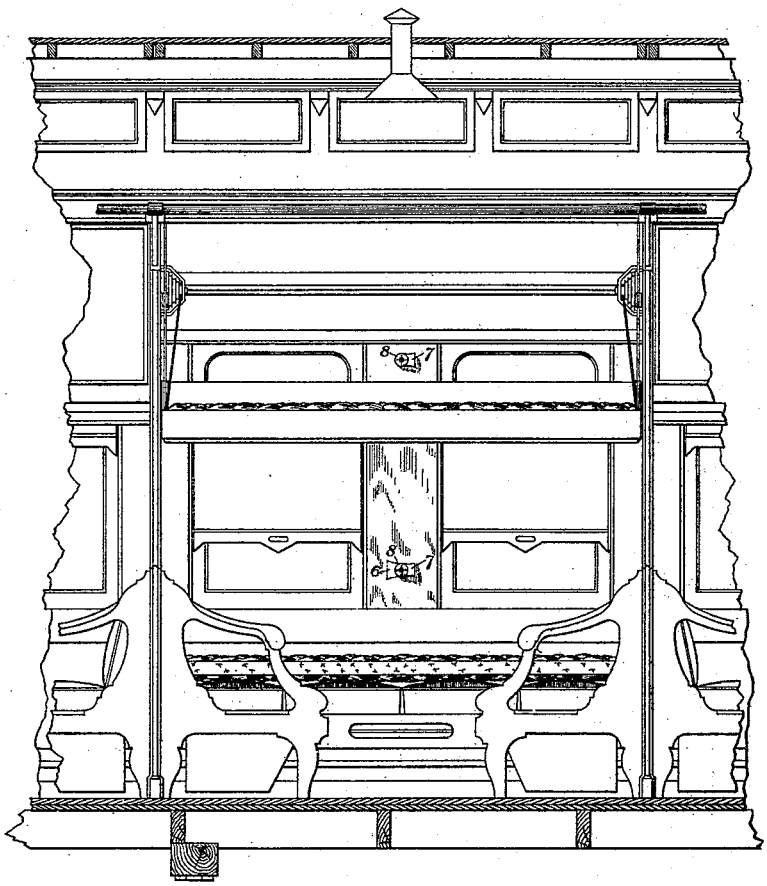

Fig. 1.

WITNESSES

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his Attorneys

(No Model.)

2 Sheets—Sheet 2.

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Fig. 5.

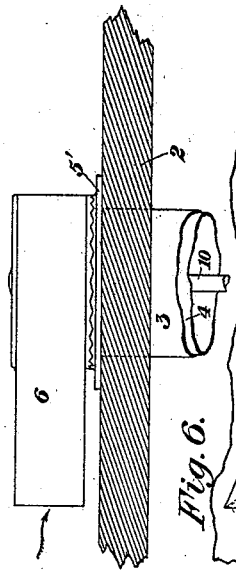


Fig. 6.

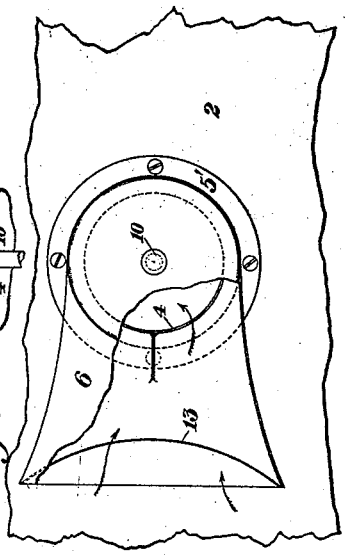


Fig. 7.

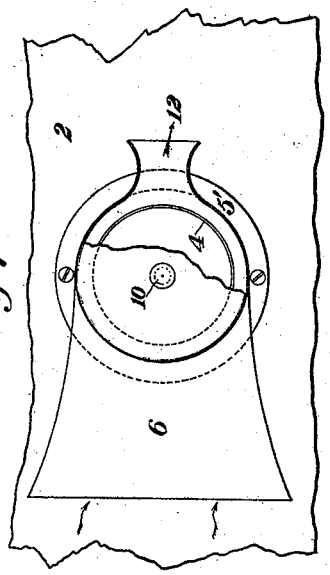


Fig. 3.

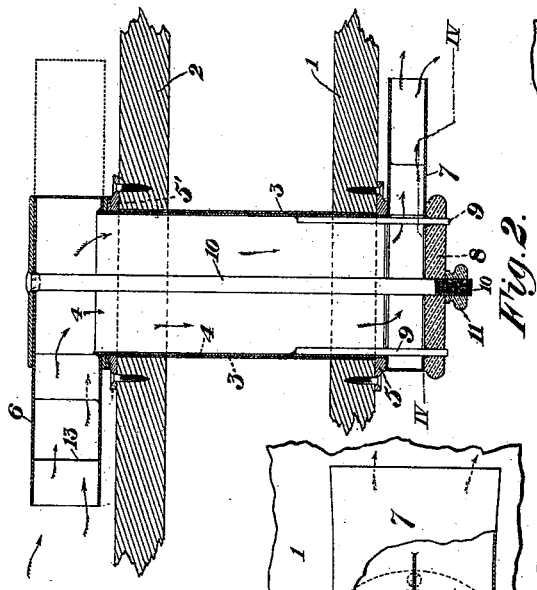


Fig. 2.

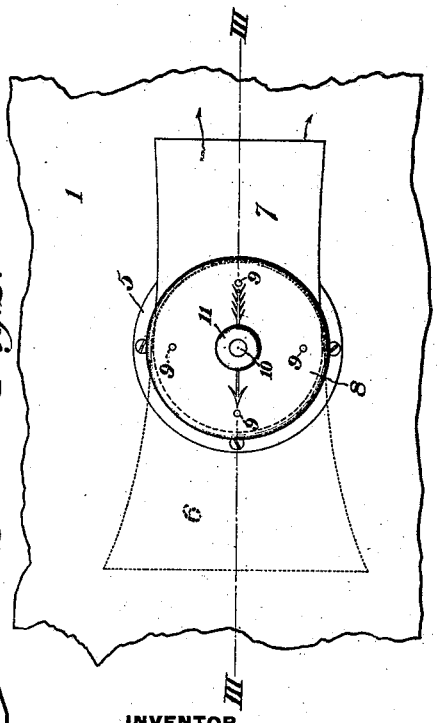
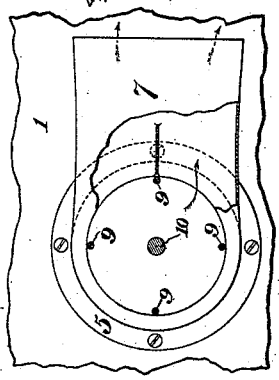


Fig. 4.



WITNESSES

H. M. Corwin

H. P. Swartz

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his Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM ALFRED GAY, OF CORRY, PENNSYLVANIA.

CAR-VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 490,960, dated January 31, 1893.

Application filed February 3, 1892. Serial No. 420,176. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ALFRED GAY, of Corry, in the county of Erie and State of Pennsylvania, have invented a new and useful Improvement in Car-Ventilators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a longitudinal sectional view showing the interior of a sleeping-car berth provided with my improved ventilating apparatus. The figures on the second sheet of the drawings are made on a larger scale and illustrate in detail the construction of the ventilator. Fig. 2 is an elevation of that part of the ventilating apparatus which is on the inside of the car. Fig. 3 is a horizontal section on the line III—III of Fig. 2, showing the parts on the inside and outside of the car. Fig. 4 is an elevation, partly in section, on the line IV—IV of Fig. 3 of the hood on the inside of the car. Fig. 5 is a plan view of the outer hood. Fig. 6 is an elevation of the outer hood, shown partly broken away; and Fig. 7 is an elevation, partly in section, of an outer hood of modified construction.

Like symbols of reference indicate like parts in each of the views.

The object of my invention is to provide means for ventilating railway-cars, which will enable the individual passengers to regulate the degree of air current admitted, and so to direct the same that it may effectually accomplish the purpose of supplying fresh air without the creation of injurious drafts, which are the occasion of so much discomfort and danger in the systems of ventilation now commonly used.

The present practice of opening windows in railway cars for the purpose of securing a supply of fresh air is especially unsatisfactory, since the occupant of the seat behind must receive the full force of the entering current regardless of his wishes or physical condition. The greatest need for improvement is in the ventilation of sleeping-car berths. No forcing in or forcing out process now in use can bring relief to the occupants of the lower berths, and all known appliances have been not only unsatisfactory, but accomplish their work to the discomfort of those using the upper berths. For the purpose of removing these unpleasant features of modern travel, I have devised my system of individual ventilation, which is adapted to any public vehicle, but more especially to sleeping-cars.

I shall now proceed to describe in detail the construction of that form of my improved apparatus which I believe to be the best for the purpose, premising that the invention is not limited strictly thereto and that the apparatus is capable of modification in various ways.

In Fig. 3, 1, 2, represent respectively the inner and outer partition of the usual double wall of a railway car, and 3 is a horizontal tubular casing which extends through opposite openings therein, and is open at both ends, being held in place by facing rings 5, 5′. This casing, while convenient and lending strength to the apparatus, is not essential. Within this casing is a tube 4 open at the ends and rotatory axially in the casing. On the outer side of the car and fixed to the tube is a hood or funnel 6 communicating with the tube at one end and open at the outer end so as to receive or discharge the air current as hereinafter explained. On the inner end of the tube inside the car is an air-distributing tube or hood 7, which is likewise open at its outer end, but is not fixed to the tube, being rotatory independently thereof.

8 is a cap which is set inside the car opposite to the end of the tube and is connected with the tube by arms 9 which pass through an opening in the hood on the inner side of the cap, and are adapted by their connection of the tube and cap to enable the former to be turned by rotating the latter. For the purpose of fixing the outer hood so that it shall not be easily displaced when properly adjusted, I employ a rod 10 which is fixed to the outer hood, passes through the tube and through the cap, and is threaded at its inner end, on which is set a nut 11. By screwing up this nut the rod is caused to draw the hood against its seat on the ring 5′, and the cap is forced against the inner hood, thus binding all the parts in place. By loosening the nut, the outer hood may be turned by rotating the cap, or the inner hood may be turned directly by hand. In order to render the setting of the outer hood more secure, I prefer to pro-

vide the meeting faces of the hood and the ring 5′ with teeth, as shown in Fig. 5. The inner hood and its seating ring may be similarly constructed. I preferably provide the outer hood with a screen or sieve 13, as shown in Figs. 3 and 6, which serves to prevent the entrance of cinders or dust particles with the ingoing air when the funnel is used as an injector. This screen may extend partly or entirely across the open end of the hood. The shape and preferred details of construction of the hood are sufficiently illustrated in in the figures on Sheet 2 and need no further explanation.

In practice, ventilating apparatus of this construction are set in the side of the car at convenient places near to the position of the passengers, it may be between the car-windows, as shown in Fig. 1. If the passenger should wish a current of fresh air directly from the outside, the outer hood 6 is turned as above explained so that its open end is directed toward the engine, as shown in Figs. 3, 4, 5 and 7, whereupon an air current will enter this hood, and will pass through the tube, being introduced into the car through the inner hood 7, which is turned so as to deliver the current in any direction desired. If however, the inward current is not desirable, an outward air current may be created by turning and fixing the outer hood so that its mouth shall be directed away from the engine. The motion of the car will then, by suction, induce an outward current of air through the tube.

In making the device the inner hood may be reduced in form to a mere opening under the cap 8; or it may be lengthened into a tube of rubber or other device which will deliver the air to or remove it from any part of the berth in which it is placed.

In Fig. 1, I show the application of the apparatus to a sleeping-car berth. It may also be used with advantage in the ventilation of smoking cars and water-closets by exhaustion of air. When used in water-closets, the ventilator should be placed near the urinal.

If a number of ventilators, say twenty or thirty, were used in each car and directed so as to exhaust the air, they would create an inward draft at the air-inlet to the heaters so that hot air would be diffused to every part of the car.

In Fig. 7 I show a modification of my invention, which consists in forming a small opening 12 at the end of the outer hood opposite to the large end opening. This opening affords a passage through which cinders and dust-particles entering the hood will discharge, while the air will pass on through the tube into the car.

I claim:—

1. A car ventilating apparatus, comprising a rotatory external hood, a passage leading therefrom through the side of the car, and a rotatory tube or hood at the inner end of the passage; substantially as and for the purposes described.

2. A car-ventilating apparatus, comprising a rotatory external hood, a tube leading into the car, an inner tube or hood, means for rotating the outer hood, and a clamp to fix the same; substantially as and for the purposes described.

3. A car-ventilating apparatus, comprising a rotatory external hood, a tube leading into the car and fixed to said hood, an inner hood rotatory independently of the tube, a cap secured to the tube and adapted to rotate the same, and a clamp; substantially as and for the purposes described.

4. An individual car-ventilating apparatus, comprising an outer ventilating hood, a passage leading therefrom into the car, and an inner discharge tube, movable to direct the air as desired; substantially as and for the purposes described.

5. In car-ventilating apparatus, an outer ventilating hood, having an open end for indraft of air, an opposite smaller opening, and a passage leading into the car; substantially as and for the purposes described.

6. The combination with a sleeping-car berth, of an individual ventilator leading thereinto, said ventilator having a rotatable deflector upon its inner end; substantially as and for the purposes described.

7. A car-ventilating apparatus, comprising a rotatory external hood provided with means for preventing the entrance of cinders and dust, a passage leading therefrom through the side of the car, means for rotating said hood from the interior of the car; and a rotatable deflector at the inner end of the passage substantially as and for the purposes described.

8. A car-ventilating apparatus, comprising a rotatory external hood, a tube leading into the car, an inner hood, and a rod passing through these parts and arranged to adjustably clamp the same together; substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 25th day of January, A. D. 1892.

WM. ALFRED GAY.

Witnesses:
MAUD E. HOFFMAN,
HARRY AUER.