(No Model.)

A. B. HARRIS.

CAR VENTILATOR.

No. 346,040. Patented July 20, 1886.

Fig 2

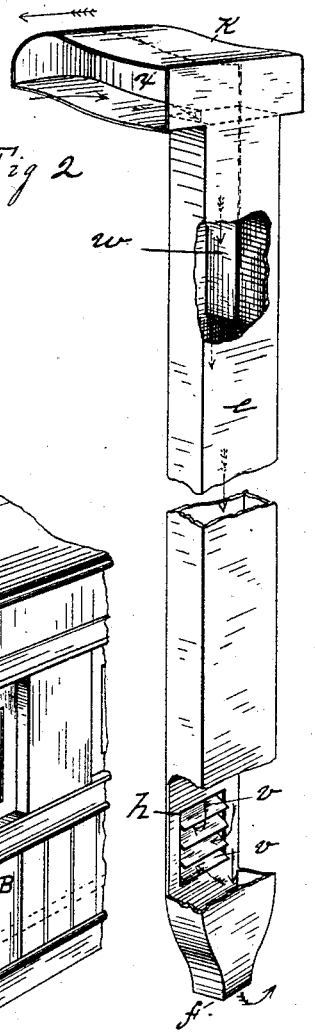
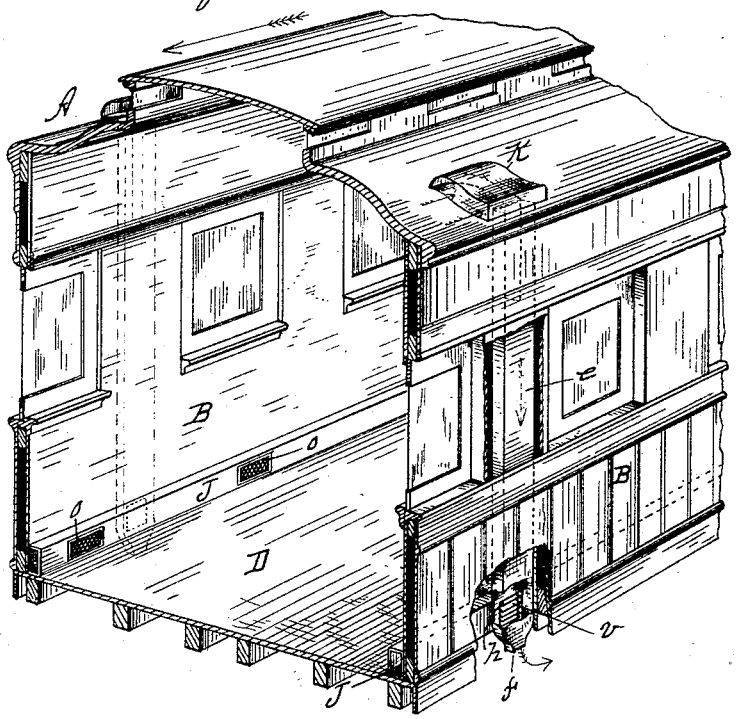


Fig 1



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AZARIAH B. HARRIS, OF SPRINGFIELD, MASSACHUSETTS.

CAR-VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 346,040, dated July 20, 1886.

Application filed December 19, 1885. Serial No. 186,133. (No model.)

To all whom it may concern:

Be it known that I, AZARIAH B. HARRIS, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Railway-Car Ventilators, of which the following is a specification.

This invention relates to improvements in car-ventilators, the object being to provide for railway-cars, particularly, a ventilator of improved construction for conducting air into a car in a pure state, or, in other words, one comparatively free from cinders and dust.

In the drawings forming part of this specification, Figure 1 is a perspective view of a portion of the body of a railway-car having applied thereto ventilating devices constructed according to my invention. Fig. 2 is a perspective view of the ventilator separate from the car, having its side broken away at two points thereon to disclose its internal construction.

In the drawings, A is said portion of a car having the ordinary roof thereon. B B are the side walls, and D is the floor.

The ventilator consists of a suitable metallic or other tube, *e*, located preferably in the side wall, B, of the car, and extending from the top of the roof over said side, through the latter, as shown, to a point below the under side of the car. Said tube *e* has its lower end contracted at *f*, and left open, thereby providing an air-passage entirely through said tube, but having its extreme lower end or outlet smaller or of less sectional area than that of the tube above its lower end; and above the latter, in the side of the tube, is made an outlet-opening, *h*, which may communicate directly with the interior of the car, or with the interior of an air box or conductor, J, which is located in the corner of the car formed by the junction of the floor D and the side wall, B, which air-box is provided with suitable registers, *o*, through which the air which is conducted thereinto by the tube *e* escapes into the car. At said side outlet, *h*, of the ventilator-pipe *e* are arranged one or more inclined deflectors, *v*, separated from each other to allow air to pass between them, and extending across said outlet *h*, as shown. From the upper end of the pipe *e*, and extending downward for a certain distance within the latter, is a partition, *w*. An air-bonnet, K, of metal or other suitable material, lying preferably close to the roof of the car, as shown, is attached to the upper end of the ventilator-tube *e*, each end of which toward the ends of the car is open to admit air. A partition, *x*, in the bonnet K, between its upper and lower sides, is joined to the upper end of the partition *w* in tube *e*, and, extending from the latter, terminates in curved lines in two parts at the two upper corners of said bonnet, as shown in dotted lines.

The operation of my improvements is as follows: The ventilating devices above described operate automatically to direct air into the car, regardless of the direction in which the latter may be moving; but when the car is running in the direction indicated by the arrow above the latter and above bonnet K in Fig. 2 the course of the air-currents into said bonnet and through tube *e* and the opening *h* in the latter into the car is as indicated by the small arrows. As above mentioned, the bonnet K receives the air at both ends, and the partition *x* in the latter, combined with the partition *w* of the tube *e*, serves to convey the air into the latter and secure a strong downward movement thereof, regardless of the end of the bonnet in which the air enters.

The object in making the tube *e* with its lower end open at *f*, as described, is to provide free egress at said lower end for the cinders and heavier portions of dust which may enter said tube with the air, and thus prevent them from being carried into the car, it being found that the impetus given to such matters by the rapidly-moving air-current in tube *e* carries them quite through the latter, and causes their discharge under the car, and the deflectors *v* at the opening *h* in said tube, against which said matters are driven, serve to prevent their passage through said opening. Owing to said restricted air-passage through the lower end of the tube *e*, the air, after passing down said tube and reaching said smaller lower end, is caused to "back up" more or less, and sufficiently so to force the air, denuded of cinders and dust, through the opening *h* between the deflectors *v*, (as shown by the arrows,) into the car or the air-box J,

and if into the latter, it finds its way into the car therefrom through the registers *o*.

If desired, the deflectors *v* may be omitted; but the exclusion of dust and cinders from the car is more certain when they are retained.

I am aware of a ventilating-tube in a car extending from above the roof to a passage or pipe extending lengthwise of the car, which pipe has downwardly-projecting tapering or hopper-shaped chambers having small openings in their bottom, to serve as exits for cinders. Such I do not claim.

I am aware that it is not broadly new to provide a ventilating apparatus for cars with a dust-escape aperture below the floor of the car.

What I claim as my invention is—

1. A car-ventilator consisting of a deflecting-bonnet above the roof of the car, a continuous pipe leading from the hood down through the roof and floor of the car, and having a terminal aperture below the floor of the car of less area than the cross-sectional area of the pipe, and having an opening in the side of the pipe intermediate of the hood and the terminal aperture, said opening leading into the body of the car, substantially as described.

2. A car-ventilator consisting of a continuous air-conducting pipe extending from outside the roof of the car through the latter and below the floor thereof, having its lower end open, and an air-passage through the latter of less area than that of the pipe above said end, and an eduction-opening in its side, having one or more inclined deflectors secured therein, through which opening air enters the car, combined with a suitable bonnet, substantially as described, connected with the upper end of said tube to receive the air and direct the latter thereinto, substantially as set forth.

3. A car-ventilator consisting of a continuous air-conducting pipe extending from outside the roof of the car through the latter, and below the floor thereof, having a central partition therein from its upper end downward for a certain distance, and its lower end open, and an air-passage through the latter of less area than that of the pipe above said end, and an eduction-opening in its side, through which air enters the car, combined with a bonnet connected with the upper end of said tube to receive the air and direct the same thereinto, said bonnet having a central partition therein, located above the end of said partition in the air-tube, whereby air is directed into the latter on either side of said partition therein, all in combination, as set forth.

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Witnesses:
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