

F. H. Furniss

Car Ventilator

N^o 33,302.

Patented Sept. 17, 1861.

Fig. 2.

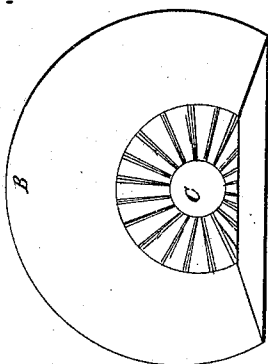


Fig. 4.

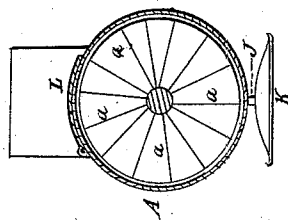


Fig. 1.

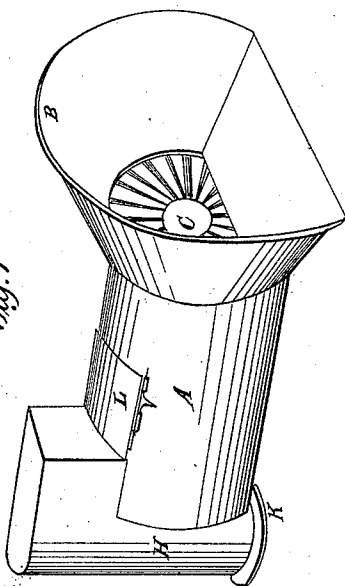
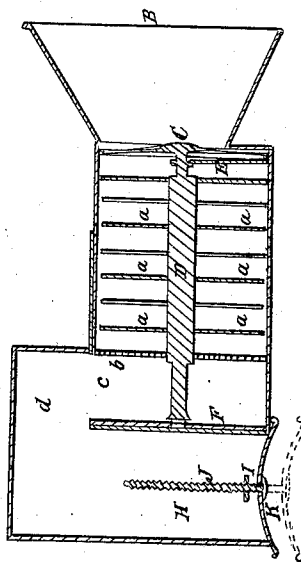


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

F. H. FURNISS, OF CLEVELAND, OHIO.

IMPROVEMENT IN RAILROAD-CAR VENTILATORS.

Specification forming part of Letters Patent No. 33,302, dated September 17, 1861.

To all whom it may concern:

Be it known that I, F. H. FURNISS, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Railroad-Car Ventilators; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view. Fig. 2 represents the front end. Fig. 3 is a longitudinal vertical section. Fig. 4 is a transverse vertical section.

The same letters of reference in the different views refer to like parts.

The nature of my invention relates to an improvement in the mode of ventilating cars, which consists of having the current of air produced by the rapid motion of the car or any other analogous way pass into a flaring mouth through a wind-wheel revolving it that is connected to a shaft, on which are a number of radiating arms and a perforated disk. The shaft and arms revolve in a case forming a water-chamber and are constantly wet, and the particles of dust in the air coming in contact with them will adhere, and in this way the air will be cleansed from all impurities when it passes down through an opening fresh and cool into the car.

In the drawings, A represents the case, made of any suitable form and material; B, the flaring mouth attached to the front end of the case, and where the mouth opens into the case is arranged the wind-wheel C, as shown in Figs. 1, 2, and 3. To this wheel is connected the shaft D, that is supported by the divisions E and F, in which it revolves.

a, Figs. 3 and 4, represents radiating arms, and b a perforated disk secured to the shaft, each row of arms alternating with the preceding row, so that the air in passing through will come in contact with as much surface as possible.

E is a division fitting closely to the inside of the case near the wind-wheel and extending up far enough to prevent the water in the chamber from running out.

To the back end or division F of the case is attached the pipe or flue H, which opens into

the car and connects with the inside of the case by the chamber d through the opening c, as shown in Fig. 3.

As the current of air passes into the case it revolves the wheel C, turning the shaft, and comes in direct contact with the radiating arms, and as they revolve in a water-chamber they are kept constantly wet and the dust in the air adheres to them, and as the arms are placed alternately with each other the portion of air that passes by one arm will strike the next, and so on, passing through the perforated disk b, the holes of which are dripping with water, when the air will be perfectly freed from all impurities. It then passes up through the opening c into the chamber d and down through the pipe H into the car fresh and pure, fit for breathing.

I is a bar placed across the pipe, through which screws the stem J, that raises and lowers the valve K, by means of which the amount of fresh air admitted into the car can be regulated, as indicated by the dotted lines in Fig. 3. It also deflects the current of air and disseminates it equally over the car, so that there will be no current coming down in one particular place upon the heads of the passengers.

The case is placed on the top of the car, the mouth B opening in the direction in which the train is moving.

L is a lid on the top of the case, by means of which the chamber is supplied with water.

With this arrangement the cars will be sufficiently and well ventilated with the doors and windows closed when the train is in motion.

What I claim as my improvement, and desire to secure by Letters Patent, is—

1. The fan-wheel C, revolving the radiating arms a, when combined with the disk b and water-chamber, all arranged and operating substantially as described.

2. The gate-valve K and flue H, in combination with the water-chamber and revolving arms a, and disk b, in the manner and for the purpose set forth.

F. H. FURNISS.

Witnesses:

W. H. BURRIDGE,
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