

W. T. MANNING.
CAR VENTILATOR.
APPLICATION FILED MAY 16, 1914.

1,128,166.

Patented Feb. 9, 1915.

Fig. 1.

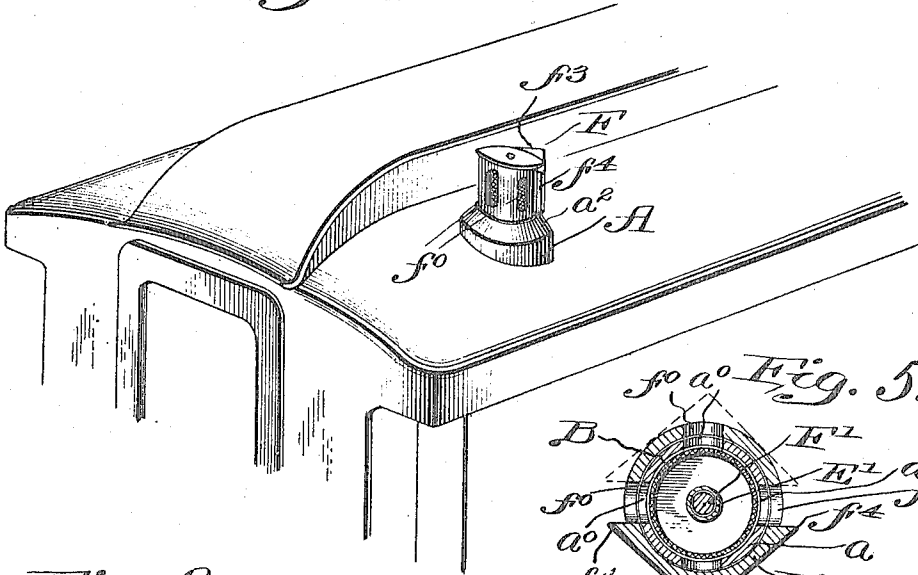
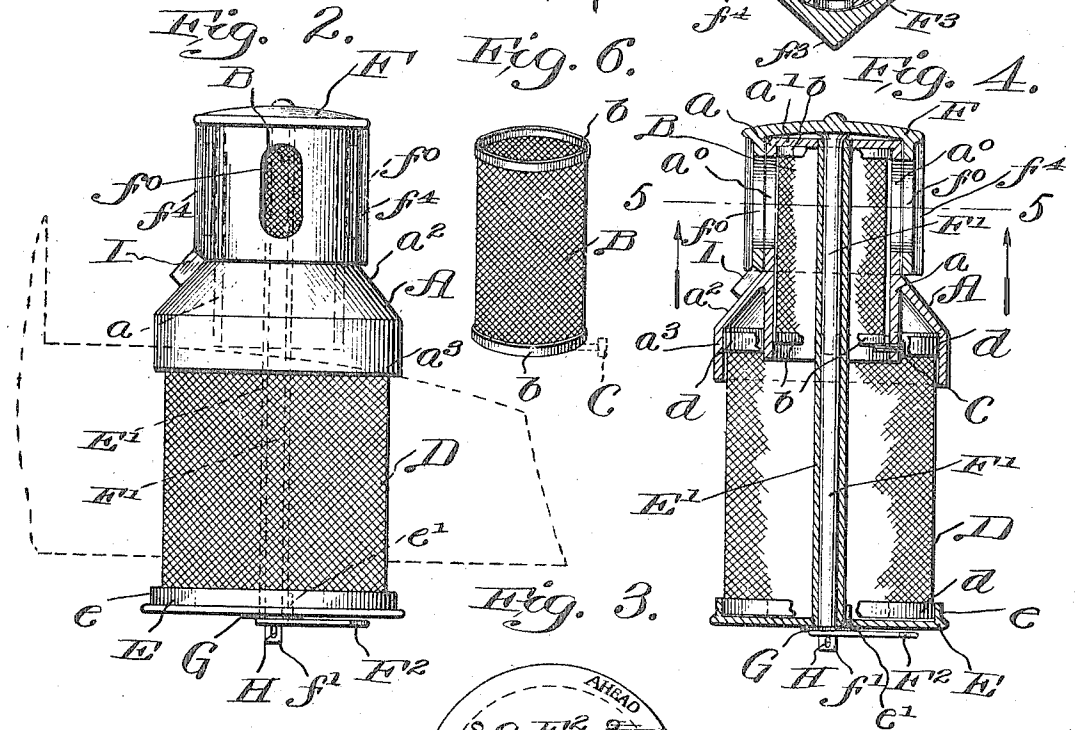
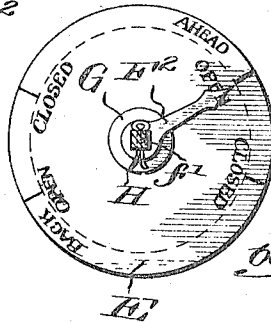


Fig. 2.

Fig. 6.

Fig. 5.



Witnesses
W. B. Primm.
E. Beller.

Inventor
William T. Manning

by Wilkinson, Giasta & MacKay,
Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM T. MANNING, OF GOVANS, MARYLAND.

CAR-VENTILATOR.

1,128,166.

Specification of Letters Patent.

Patented Feb. 9, 1915.

Application filed May 16, 1914. Serial No. 839,094.

To all whom it may concern:

Be it known that I, WILLIAM T. MANNING, a citizen of the United States, residing at Govans, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Car-Ventilators; 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 present invention relates to improvements in car ventilators, in which I provide a ventilator which may be turned on, or off, or adjusted, as desired, and in which the incoming air is strained by a double sieve arrangement in which the larger particles of dust, dirt, or the like, which manage to get into the body of the ventilator, are collected in a removable receptacle and may be thrown out when desired.

My invention is especially intended to provide a ventilator which may be conveniently cleaned out from the interior of the car without scattering the collected dust through the car. Moreover, it is so arranged that it can be set either to take in, or exhaust, air, or the ventilator at one end of the car may be caused to force in air under the pressure due to the motion of the train, and that at the rear end of the car may be caused to suck out air, due to the suction created by the motion of the train; or when desired these conditions may be reversed.

Another special feature of the device is that the air is uniformly distributed in the car from the ventilator in a horizontal direction, and the cold incoming air finds its way downward without creating direct drafts on the passengers.

My invention will be more fully understood by reference to the accompanying drawings, in which the same parts are indicated by the same reference symbols throughout the several views.

Figure 1 shows a perspective view of the upper end of an ordinary passenger car, showing the improved ventilator in place; Fig. 2 is a side elevation of the ventilator, with the car roof shown in dotted lines; Fig. 3 is an inverted plan view of the ventilator, showing the pointer arm moving over the cup-shaped part of the disk; Fig. 4 shows

a central vertical section through the ventilator; and Fig. 5 shows a section along the line 5-5 of Fig. 4, and looking in the direction of the arrows.

A represents the main body portion of the ventilator, which is attached to the roof of the car, and which comprises the following parts,—a central cylindrical shell a , having lateral perforations a^o , and a closed top a' carrying the hollow stem E' , as shown in Fig. 4.

Below the openings a^o the body portion A is in the form of a truncated cone a^2 terminating in the hollow cylindrical shell a^3 ; thus the body portion A is in the form of an inverted cup having a cylindrical central chamber with openings a^o in the sides thereof and an exterior head forming a second cylindrical chamber a^3 . Mounted in the central cylindrical chamber a of this inverted cup is a cylindrical screen B, having its ends open and provided with reinforcing rings b . The lower one of these rings is supported by the stop C, see Figs. 4 and 6, which holds the inner sieve in place, as shown in Fig. 4. A similar cylindrical sieve D fits in the larger cylindrical bore a^3 of the body portion A, and has upper and lower reinforcing rings d , the lower one of which rests on the disk E which is flanged, as at e , not only to hold the lower ring d in place, but to serve as a receptacle for the dust and gritty matter which will collect in the bottom of the cylindrical screen D. This disk E is detachably connected to the hollow stem E' which projects up through the perforations in the head a' of the body portion A. The disk E is held against turning on the stem E' in any convenient way, as by the spline e' , see Fig. 4.

Projecting down through the hollow stem E' is a rod F' , rigidly attached to the rotary cap F, which cap is in the form of a hollow cylinder closed at the top and open at the bottom, and provided with lateral perforations f^o . The rod F' is squared, as at f' , to receive the pointer arm F^2 which, for convenience of turning, is spaced away from the disk E by the washer G and is supported against falling off in any convenient way, as by the cotter pin H. This pointer also serves as a hand lever to turn the spindle F' and cap F through the desired angle, as from the open to the closed position shown

in Fig. 3, or from the position shown in full lines in Fig. 5 to that shown in dotted lines in said figure.

One side of the cap is made cylindrical and concentric with the shell a , and is preferably provided with three perforations f° , while the cylinder a has four such perforations a° , as shown in Fig. 5, and the other side of said cap is in the form of a deflecting shield, as shown at F^3 in Fig. 5, having the sharp edge f^3 and the shoulders f^4 , as shown in said figure.

By turning the pointer to the position marked "Open" in Fig. 3, the cap F will be brought to the full open position, with all three perforations f° registering with three of the four perforations a° , shown in Figs. 2, 4 and 5, while if the pointer F^2 be swung to the position marked "Closed" in Fig. 3, then the openings a° and f° will no longer register, and the openings a° will all be masked or closed.

If it is desired to force in air, as when the train is going ahead, the shield F^3 should be turned to the position opening to the rear of the train as shown in Fig. 5, in which case the motion of the train would force the air in through the openings and through the screen B down in the screen D, and laterally through the meshes of this last screen into the body of the car. If, on the other hand, it is desired to draw out air by suction, throw the shield F^3 toward the front of the train, to the position shown in dotted lines in Fig. 5, and the suction caused by the motion of the train will tend to suck air out through the openings a° and f° .

It will be seen that if it is desired to force in air at the front end of the car, and suck out air at the rear end of the car, this might be done by turning the shield for the ventilator at the front end of the car to the position shown in full lines in Fig. 5, and by turning the shield for the ventilator at the rear end of the car to the position shown in dotted lines in Fig. 5. It will be obvious that the position of the shield may be reversed if the train is backing, or if the car is shifted to a train running in the opposite direction. It will also be obvious that the openings for the passage of air in each ventilator may be adjusted by turning the arm F^2 to the desired position.

A suitable stop I is provided to limit the movement of the cap to substantially 180° , and on the bottom face of the disk E the words "Ahead," "Open and close" and "Back" may be shown to indicate to the operator the desired position for turning the pointer arm F^2 , and with it the cap F .

If desired, the screen B may be made of coarser mesh than the screen D, which latter would screen out the larger particles of dust entering through the former. In any event, the air entering the central screen B is de-

flected downward, and the solid particles will tend to drop to the bottom of the screen D and fall on the cup-shaped disk E where it will be collected until such time as it is convenient to clean out the ventilator.

In order to clean out the ventilator, it will only be necessary to withdraw the cotter pin H and take off the pointer arm F^2 and remove the washer G, which will enable the cupped disk E' and the screen D to be removed and cleaned out. Then if it is desired to clean the upper part of the ventilator, take out the pin C and the screen B will drop down and may be removed by hand. The screens B and D may then be conveniently cleaned and restored to place by reversing these operations.

It will be obvious that various modifications in the herein described apparatus might be made which could be used without departing from the spirit of my invention.

Having thus described my invention what I claim and desire to secure by Letters Patent of the United States is:—

1. A car ventilator comprising a body portion adapted to be attached to the top of the car and provided with two concentric chambers, the inner chamber being adapted to project upward above the roof of the car, and provided with lateral perforations, and the outer chamber being adapted to project downward below the roof of the car, and a removable screen mounted in each of said chambers, substantially as described.

2. A car ventilator comprising a body portion adapted to be attached to the top of the car and provided with two concentric cylindrical chambers, the inner chamber being adapted to project upward above the roof of the car, and provided with lateral perforations, and the outer chamber being adapted to project downward below the roof of the car, and a cylindrical screen removably mounted in each of said chambers, substantially as described.

3. A car ventilator comprising a body portion adapted to be attached to the top of the car and provided with two concentric chambers, the inner chamber being adapted to project upward above the roof of the car, and provided with lateral perforations, and the outer chamber being adapted to project downward below the roof of the car, and a removable screen mounted in each of said chambers, with a cup-shaped disk removably mounted below and closing the end of the lower and outer screen, substantially as described.

4. A car ventilator comprising a body portion adapted to be attached to the top of the car and provided with two concentric cylindrical chambers, the inner chamber being adapted to project upward above the roof of the car, and provided with lateral

perforations, and the outer chamber being adapted to project downward below the roof of the car, and a cylindrical screen removably mounted in each of said chambers, with a cup-shaped disk removably mounted below and closing the end of the lower and outer screen, substantially as described.

5. A car ventilator comprising a body portion adapted to be attached to the top of the car and provided with two concentric chambers, the inner chamber being adapted to project upward above the roof of the car, and provided with lateral perforations, and the outer chamber being adapted to project downward below the roof of the car, a removable screen mounted in each of said chambers, and a rotary cap mounted over said body portion and having perforations adapted to register with those in said body portion, with means for turning said cap through the desired angle relative to said body portion, substantially as described.

6. A car ventilator comprising a body portion adapted to be attached to the top of the car and provided with two concentric cylindrical chambers, the inner chamber being adapted to project upward above the roof of the car, and provided with lateral perforations, and the outer chamber being adapted to project downward below the roof of the car, a cylindrical screen removably mounted in each of said chambers, and a rotary cap mounted over said body portion and having perforations adapted to register with those in said body portion, with means for turning said cap through the desired angle relative to said body portion, substantially as described.

7. A car ventilator comprising a body portion adapted to be attached to the top of the car and provided with two concentric chambers, the inner chamber being adapted to project upward above the roof of the car, and provided with lateral perforations, and the outer chamber being adapted to project downward below the roof of the car, a removable screen mounted in each of said chambers, with a cup-shaped disk removably mounted below and closing the end of the lower and outer screen, and a rotary cap mounted over said body portion and having perforations adapted to register with those in said body portion, with means for turning said cap through the desired angle relative to said body portion, substantially as described.

8. A car ventilator comprising a body portion adapted to be attached to the top of the car and provided with two concentric cylindrical chambers, the inner chamber being adapted to project upward above the roof of the car, and provided with lateral perforations, and the outer chamber being adapted to project downward below the roof of the car, a cylindrical screen removably

mounted in each of said chambers, with a cup-shaped disk removably mounted below and closing the end of the lower and outer screen, and a rotary cap mounted over said body portion and having perforations adapted to register with those in said body portion, with means for turning said cap through the desired angle relative to said body portion, substantially as described.

9. A car ventilator comprising a body portion adapted to be attached to the top of the car and provided with two concentric chambers, the inner chamber being adapted to project upward above the roof of the car, and provided with lateral perforations, and the outer chamber being adapted to project downward below the roof of the car, a removable screen mounted in each of said chambers, and a rotary cap mounted above and inclosing the upper end of said body portion and provided with perforations adapted to register with the perforations in said inner cylindrical chamber, and also provided with a wind shield in one side thereof, with means for turning said cap relative to said body portion, substantially as described.

10. A car ventilator comprising a body portion adapted to be attached to the top of the car and provided with two concentric cylindrical chambers, the inner chamber being adapted to project upward above the roof of the car, and provided with lateral perforations, and the outer chamber being adapted to project downward below the roof of the car, a cylindrical screen removably mounted in each of said chambers, and a rotary cap mounted above and inclosing the upper end of said body portion and provided with perforations adapted to register with the perforations in said inner cylindrical chamber, and also provided with a wind shield in one side thereof, with means for turning said cap relative to said body portion, substantially as described.

11. A car ventilator comprising a body portion adapted to be attached to the top of the car and provided with two concentric chambers, the inner chamber being adapted to project upward above the roof of the car, and provided with lateral perforations, and the outer chamber being adapted to project downward below the roof of the car, a removable screen mounted in each of said chambers, with a cup-shaped disk removably mounted below and closing the end of the lower and outer screen, and a rotary cap mounted above and inclosing the upper end of said body portion and provided with perforations adapted to register with the perforations in said inner cylindrical chamber, and also provided with a wind shield in one side thereof, with means for turning said cap relative to said body portion, substantially as described.

12. A car ventilator comprising a body
portion adapted to be attached to the top of
the car and provided with two concentric
cylindrical chambers, the inner chamber
5 being adapted to project upward above the
roof of the car, and provided with lateral
perforations, and the outer chamber being
adapted to project downward below the roof
of the car, a cylindrical screen removably
10 mounted in each of said chambers, with a
cupshaped disk removably mounted below
and closing the end of the lower and outer
screen, and a rotary cap mounted above and
inclosing the upper end of said body por-

tion and provided with perforations adapt- 15
ed to register with the perforations in said
inner cylindrical chamber, and also pro-
vided with a wind shield in one side thereof,
with means for turning said cap relative to
said body portion, substantially as de- 20
scribed.

In testimony whereof, I affix my signa-
ture, in presence of two witnesses.

WILLIAM T. MANNING.

Witnesses:

ERNEST WILKINSON,
S. W. SCHARFF.