

No. 631,902.

Patented Aug. 29, 1899.

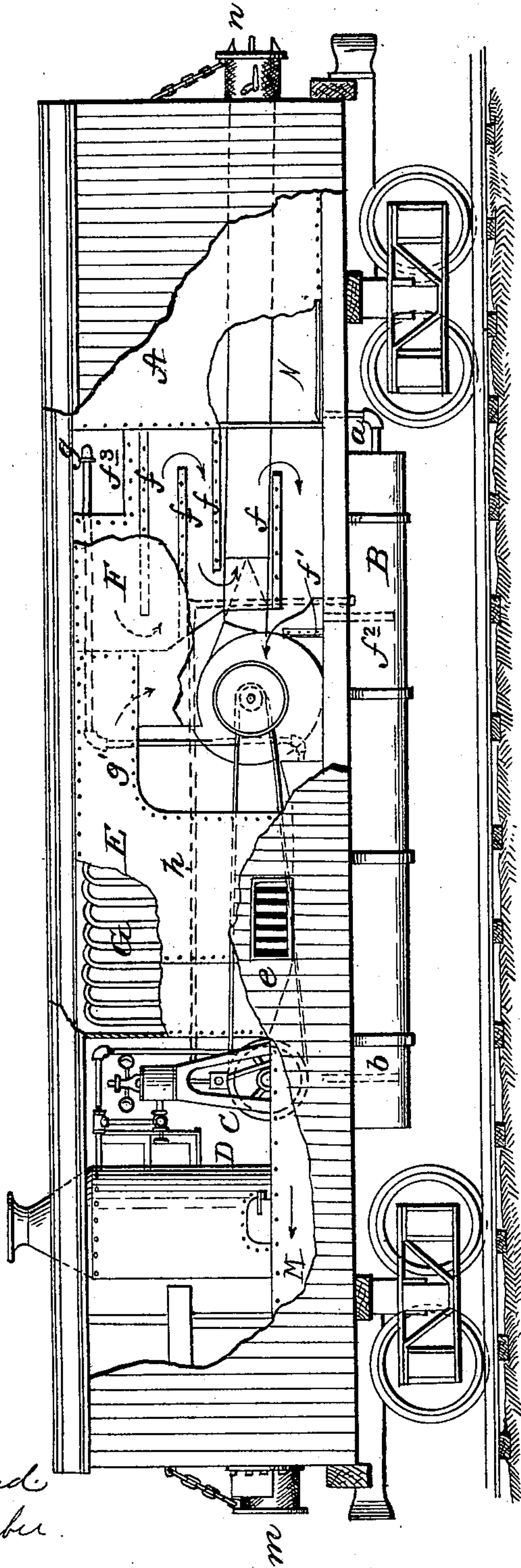
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RAILWAY CAR OR TRAIN VENTILATION.

(Application filed May 27, 1898.)

(No Model.)

3 Sheets—Sheet 1.



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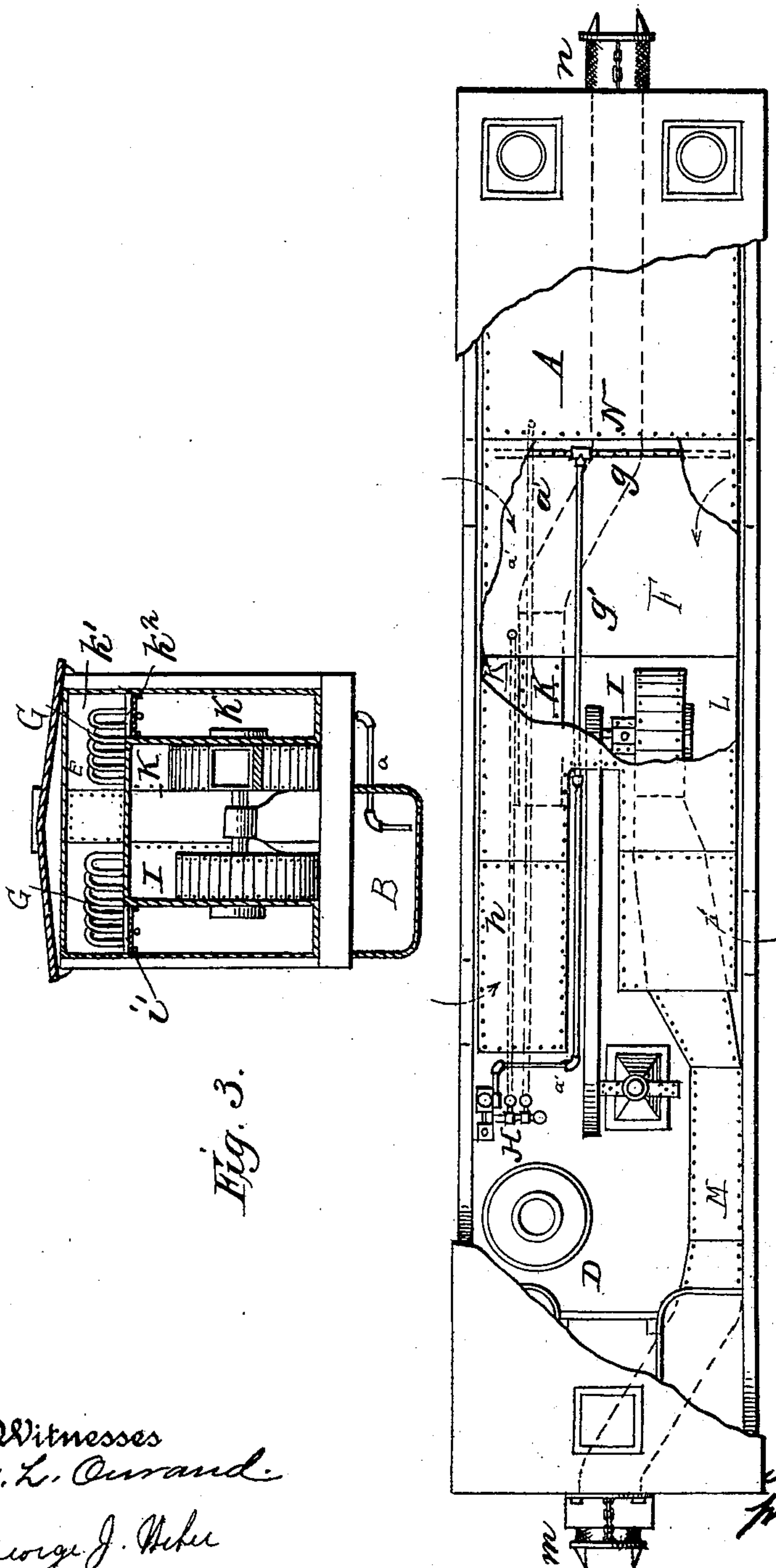


Fig. 3.

Fig. 2.

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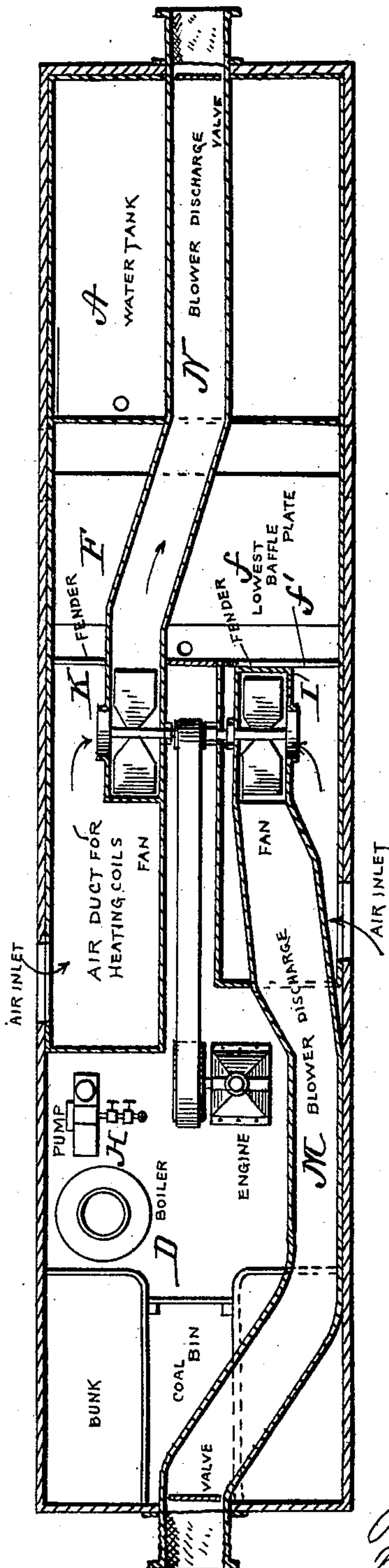


Fig. 4

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UNITED STATES PATENT OFFICE.

JOSEPH MCCREERY, OF TOLEDO, OHIO.

RAILWAY CAR OR TRAIN VENTILATION.

SPECIFICATION forming part of Letters Patent No. 631,902, dated August 29, 1899.

Application filed May 27, 1898. Serial No. 681,949. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH MCCREERY, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Railway Car or Train Ventilation; 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.

This invention relates to ventilating railway-cars, more particularly freight-cars, and has for its object to so temper the air in the car that it shall be of the proper degree of temperature and moisture, keeping the articles of freight in good condition during transportation.

The object of the invention is accomplished by means of a device to be hereinafter described.

Figure 1 represents a side view, partly in section, of an apparatus car; Fig. 2, a top view, part of the roof being broken away to show the interior construction; Fig. 3, a transverse view taken through the car where the blowers are placed; Fig. 4, a horizontal longitudinal section taken through the middle of the blowers and their ducts.

In the drawings the letter A represents a water-tank placed at one end of the car and communicating by a pipe *a* with another tank B beneath the car. At the other end of the car is an engine C, such engine being operated by a boiler D. Between the engine-room and the tank A there are placed side by side and communicating with each other a heating-room E and an air cooling and cleansing device F. In the heating-room E are placed ordinary coils of steam-piping G, receiving steam from the boiler D in the usual way. The heating-chamber E also has an air-inlet *e* communicating with the outside of the car. The air cooling and cleansing device F is provided with a number of alternating baffle-plates *f* and a water-fender *f'* at the bottom. There is also a drain-pipe *f''*, leading from the bottom into the water-tank B. At the sides of the car there are air-inlets *f'''*, leading into the air cleansing and cooling device. Extending transversely across the air cleansing and cooling device at these openings *f'''* is a per-

forated pipe *g*, which communicates by a pipe *g'* with the pump H. This pump H is not only connected with the tank B by the pipe *b*, but is also connected with the tank A by a pipe *a'*. There is also another pipe *h*, leading from the tank B to the pump H.

Two blowers I and K are placed in casings in proper juxtaposition to the air cooling and cleansing device F, the intakes of these blowers being adjacent to the top of the water-fender *f'*. The intakes of these blowers also open into two vertical shafts *i* and *k*, which themselves open at the top into a cross-duct *k'*, opening into the heating-chamber E, there being valves *i'* and *k''* at the top of the ducts *i* and *k*, such valves being operated by suitable rods extending within the car. The ducts *i* and *k* are also connected near their bottoms with the side of the air cleansing and cooling chamber F; but there are no valves placed where they connect, as they are not needed at this point, because no air may be drawn from the chamber F when the openings *f'''* are closed. The two blowers I and K have their exits connected with pipes M and N, which pass to the ends of the car, such pipes having at their ends outside of the car suitable couplings *m* and *n* for connection with an adjacent car. The blowers I and K are arranged so that one has a bottom and the other a top discharge. As shown in the drawings, pipes M and N are curved or bent so as to have their exits along the middle line of the car.

When it is desired to use this car as a heater, the openings *f'''* are closed by the shutters, so that no air will pass through the air cleansing and cooling device, and the valves *i* and *k''* are open, so that air may pass through the heating-chamber. The engine C is put into operation, steam is admitted to the coils G, flow of water to the pump H through the pipes *b* and *a* is cut off by suitable valves, air is admitted to the heating-chamber E through the air-inlet *e*, and the blowers I K are operated by the engine. As the air passes through the inlet *e* into the heating-chamber E it passes amidst the coils G and is heated, such coils being supplied with steam from the boiler and the boiler supplied with water by the pump H through the pipe *h* from the tank B. As the valves *i* and *k''* are open the blow-

ers I and K draw the heated air down the ducts i k and force it off through the pipes M and N through the cars in the train. Two inlets e are used, one on each side of the car, 5 so that the air may be drawn in from the less dusty side of the train, the inlet on the other side being closed. When it is desired not to use the heating device, but the air cleansing and cooling device, the valves i' and k^2 are 10 closed and the openings f^3 are open, and the pipe connection b is open to the pump H. With this arrangement the pump will force water along the pipes g' g , and it will enter the air cleansing and cooling device as spray 15 at the top. This water will commingle with air entering at the openings f^3 and pass to the bottom of the air cleansing and cooling device, where the water passes off by the drain-pipe f^2 in the tank B, while the air enters the 20 blowers I and K and is forced in a moistened and cooled condition along the pipes M N throughout the train. As the water in tank B is consumed water from the tank A passes through the pipe a into the tank B, or when 25 the water in said tank B becomes soiled through frequent use water may be drawn directly from tank A by means of the pipe a' . Of course it is to be understood that the water in these tanks is to be replenished or renewed 30 at convenient places and distances where suitable water may be obtained.

A car so constructed is to be placed in the midst of a train, so that air may be forced in both directions. However, if desired, the 35 pipes M and N may be provided with any suitable cut-off valve, so that the air will be forced only in one direction.

Having described my invention, what I claim is—

40 1. A car provided with a water-tank, an air cleansing and cooling device having air-in-

lets, a pump for forcing water from the tank into the air-cooling device, a heating-chamber provided with means for heating the same, a 45 blower having its intake connected with both the heating-chamber and the air cleansing and cooling device, and means such as described for cutting off either the heating-chamber or the air cleansing and cooling de- 50 vice from such blower, as set forth.

2. A car provided with a heating-chamber, and means for heating the same, two blowers having their intakes in communication with the interior of the heating-chamber, pipes 55 leading in opposite directions from the exits of the blowers whereby the heated air may be driven in opposite directions through the train, as set forth.

3. A car provided with a heating-chamber, and means for heating the same, two air- 60 ducts leading from such chamber, two blowers, the intake of one communicating with one duct and the intake of the other communicating with the other duct, and pipes lead- 65 ing in opposite directions from the exits of the blowers whereby the heated air may be driven in opposite directions through the train, as set forth.

4. A car provided with two tanks, one above the other, and a pipe connecting them, an air 70 cleansing and cooling device having air-inlets at its top, a pump, pipes leading from the two tanks to the pump, and a water-pipe leading from the pump to the said air cleansing and cooling device and having its outlet near the 75 air-inlet, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH McCREERY.

Witnesses:

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