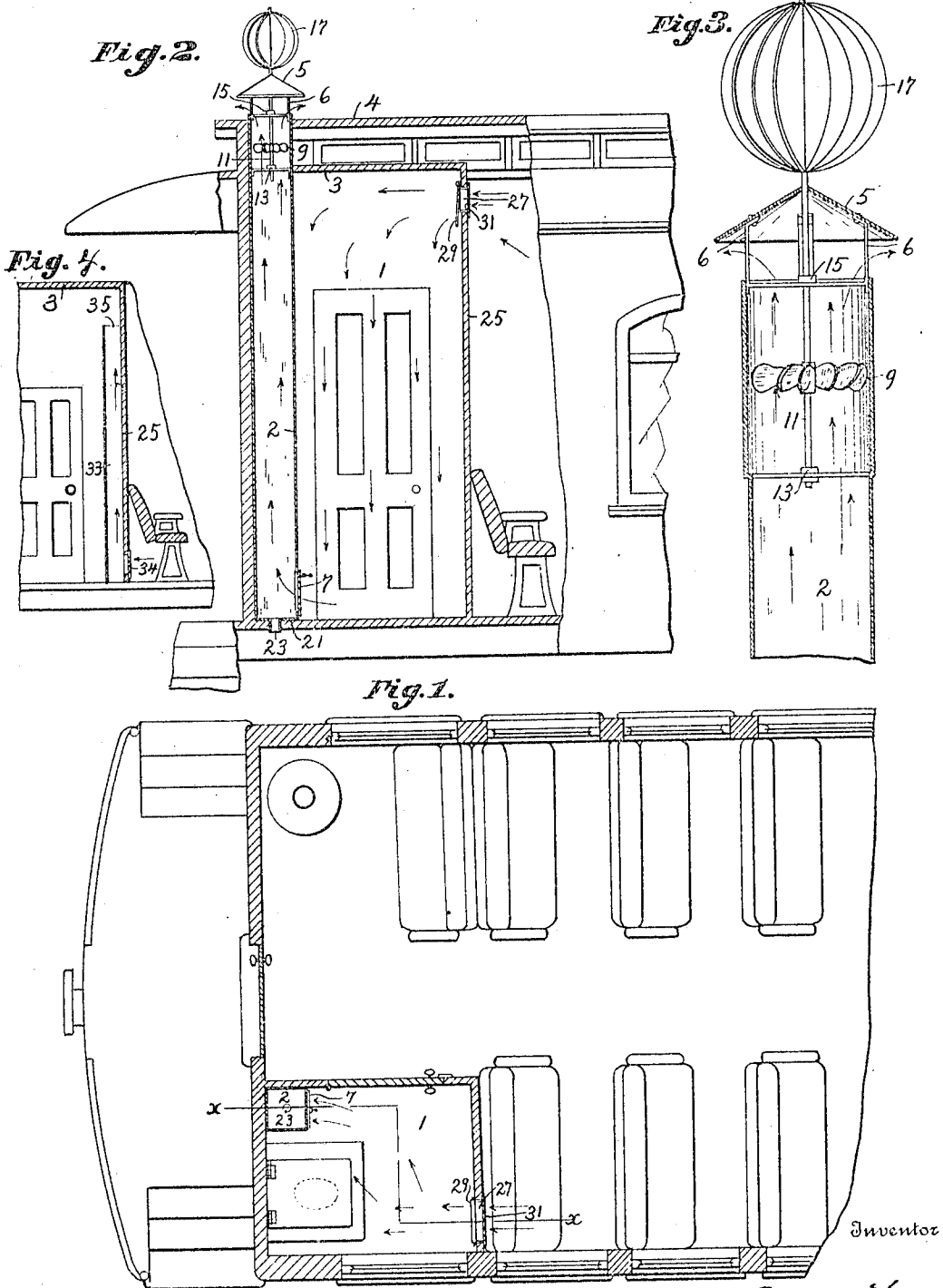


P. B. BOGART.
 VENTILATING SYSTEM.
 APPLICATION FILED MAR. 19, 1908.

949,212.

Patented Feb. 15, 1910.



Witnesses
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UNITED STATES PATENT OFFICE.

PETER B. BOGART, OF MILWAUKEE, WISCONSIN.

VENTILATING SYSTEM.

949,212.

Specification of Letters Patent. Patented Feb. 15, 1910.

Application filed March 19, 1908. Serial No. 422,005.

To all whom it may concern:

Be it known that I, PETER B. BOGART, a citizen of the United States, residing at Milwaukee, county of Milwaukee, and State of Wisconsin, have invented new and useful Improvements in Ventilating Systems, of which the following is a specification.

My invention relates to improvements in ventilating systems for the closets of railway cars.

The object of my invention is to provide means for equipping the closet of a railway car with an automatic down draft system of ventilation in which a constant ventilating current of warm air from the interior of the car will be secured at all times when the train is moving and a reversal of the air current prevented, when the train stops.

In the following description reference is had to the accompanying drawings in which,—

Figure 1 is a view in horizontal section of one end of the car equipped with my invention. Fig. 2 is a vertical sectional view drawn on line X—X of Fig. 1. Fig. 3 is a detail view showing the air suction pipe in vertical section and also showing the wind mill and suction fan. Fig. 4 is a detail view of a modified inlet duct.

Like parts are identified by the same reference characters throughout the several views.

1 is the closet of a railway car. A pipe 2 extends vertically from a point at or near the floor through the ceiling 3 of the closet and through the roof 4. Above the roof it is provided with a canopy 5 below which are lateral openings 6 for the discharge of the ventilating air currents. The lateral opening near the lower end of the pipe is provided with an ordinary register 7, the valved register being preferred although this is not material to my invention.

A suction fan 9 is located in the pipe 2 upon a vertically disposed shaft 11, the shaft being mounted in suitable supporting bearings at 13 and 15. This shaft 11 extends vertically through the apex of the canopy 5 and upon its exposed upper end is provided with a wind mill 17, preferably of the globular type, with fixed vertically extending peripheral wings, tangentially dished and adapted to catch the wind on one side only. Any suitable style of wind actuated motor may, however, be employed if desired. The globular type illustrated is, however, espe-

cially suited to this purpose since it is immaterial which direction the car runs and no vanes are required to turn the device in the proper direction.

The bottom of the pipe 2 is preferably provided with a base 21 having a tubular stem 23 which extends through the floor of the car and is adapted for the discharge of rain water which may enter through the opening 6. This stem 23 is of small capacity so that it will not interfere materially with the draft through the register 7.

The interior wall 25 of the closet is provided with an opening 27 near the ceiling whereby air is permitted to enter from the top of the car. An interior flap valve 29 is employed which is adapted to drop by gravity whenever the inwardly moving air current is interrupted, thus preventing the passage of any air from the interior of the closet into the car. An exterior grating 31 is preferably employed to cover the opening 27 of the outer surface of the wall 25.

It will be observed that when the wind mill 17 is in operation, the suction fan 9 will draw air from the bottom portion of the closet through the register 7 and air will therefore be drawn from the top of the car into the closet through the aperture 27. As long as the car is in motion the wind mill 17 will turn, since the resistance of the air to the motion of the car will always be effective to rotate the wind mill. When the car stops, if there is any breeze, the wind mill 17 will still turn, but if the air should be absolutely quiet the flap valve 29 will drop to closing position and prevent any circulation from the interior of the closet through the aperture 27. This flap valve is made as light as possible so that it will lift under light inward pressure.

In Fig. 4 the wall 25 is provided with a grated aperture 34 at the bottom which may be used as a substitute for the opening 27. In this case a duct within the closet leads from the grated aperture 34 to a point in the upper portion of the closet where it is provided with an opening 35. With this construction the air may be drawn from the floor of the car instead of from the upper portion. With this construction also a valve such as the flap valve 29 will probably not be required.

The closets of all ordinary cars are small in cross, or horizontal section and the arrangement is therefore such that by the ad-

mission of air in the upper portion, and its exhaust from the lower portion, a down draft is created throughout the area of the closet which effectually removes all noisome vapors, and renders the air in the closet pure and wholesome at all times, any air entering through the closet ducts will be turned directly downwardly and will never rise appreciably above the level of the point of admission. Where the air admitted to the upper portion of the closet is taken from the body or seating portion of the car, my apparatus serves the triple purpose of ventilating the car, ventilating the toilet room, and keeping the same warm with air at the car temperature.

The specific means for withdrawing the air is not essential to my invention, neither is it essential that a mill be employed at all, since any arrangement for causing a suction current in pipe 2 sufficient to create a down draft throughout the area of the closet is all that is necessary.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is,—

1. The combination with a portable car, of a closet, a ventilating duct leading from the lower portion of the closet through the roof and arranged for the withdrawal of air from the bottom portion of the closet through the roof, and means for admitting

air to the upper portion of the closet,—said closet being of sufficiently small diameter to secure a down draft throughout the area thereof by means of the admission of air at the top and the withdrawal of air through said duct.

2. The combination with a portable car, of a closet occupying a portion of the body of the car, and an exhaust ventilating duct leading from the lower portion of the closet to the exterior through the upper portion, said closet having an air admission opening communicating from another portion of the body of the car to the upper portion of the closet, and said closet being of sufficiently small diameter to secure a down draft throughout the area thereof.

3. The combination with a portable car, having a closet occupying a portion of the body thereof, and provided with an exhaust ventilating duct arranged to withdraw air from the lower portion of said closet, means for admitting air to the closet from the body of the car, and means for accelerating the movement of the air through the ventilating duct when the car is in motion.

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

PETER B. BOGART.

Witnesses:

LEVERETT C. WHEELER,
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