

No. 871,938.

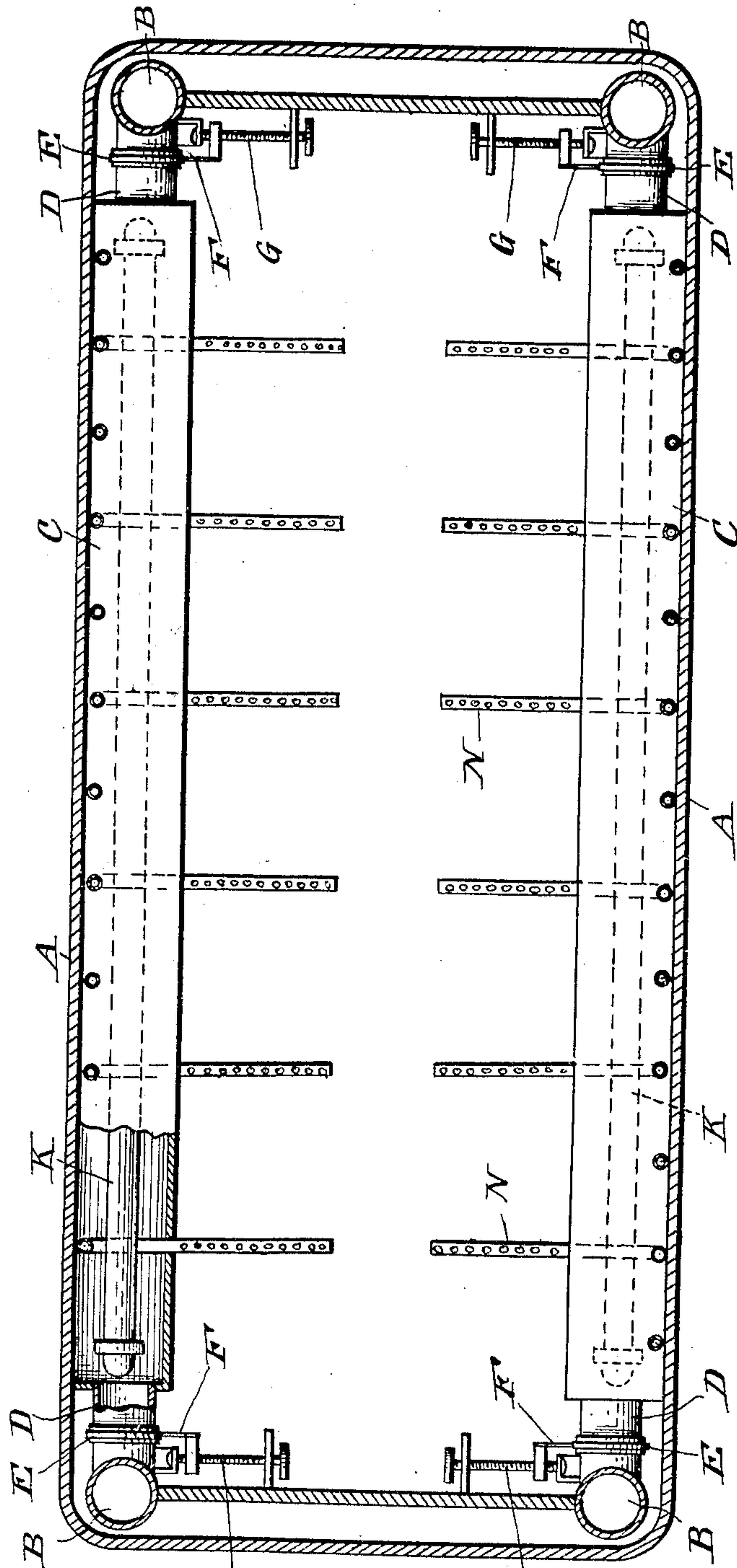
PATENTED NOV. 26, 1907.

F. D. JACOBS.
CAR VENTILATING SYSTEM.

APPLICATION FILED MAR. 6, 1906.

2 SHEETS—SHEET 1.

Fig. 1.



Inventor

Witnesses

James Blackwood
A. H. Randolph, Jr.

By

F. D. Jacobs
A. A. Gowrick
Attorney

No. 871,938.

PATENTED NOV. 26, 1907.

F. D. JACOBS.
CAR VENTILATING SYSTEM.
APPLICATION FILED MAR. 6, 1906.

2 SHEETS—SHEET 2.

Fig. 2.

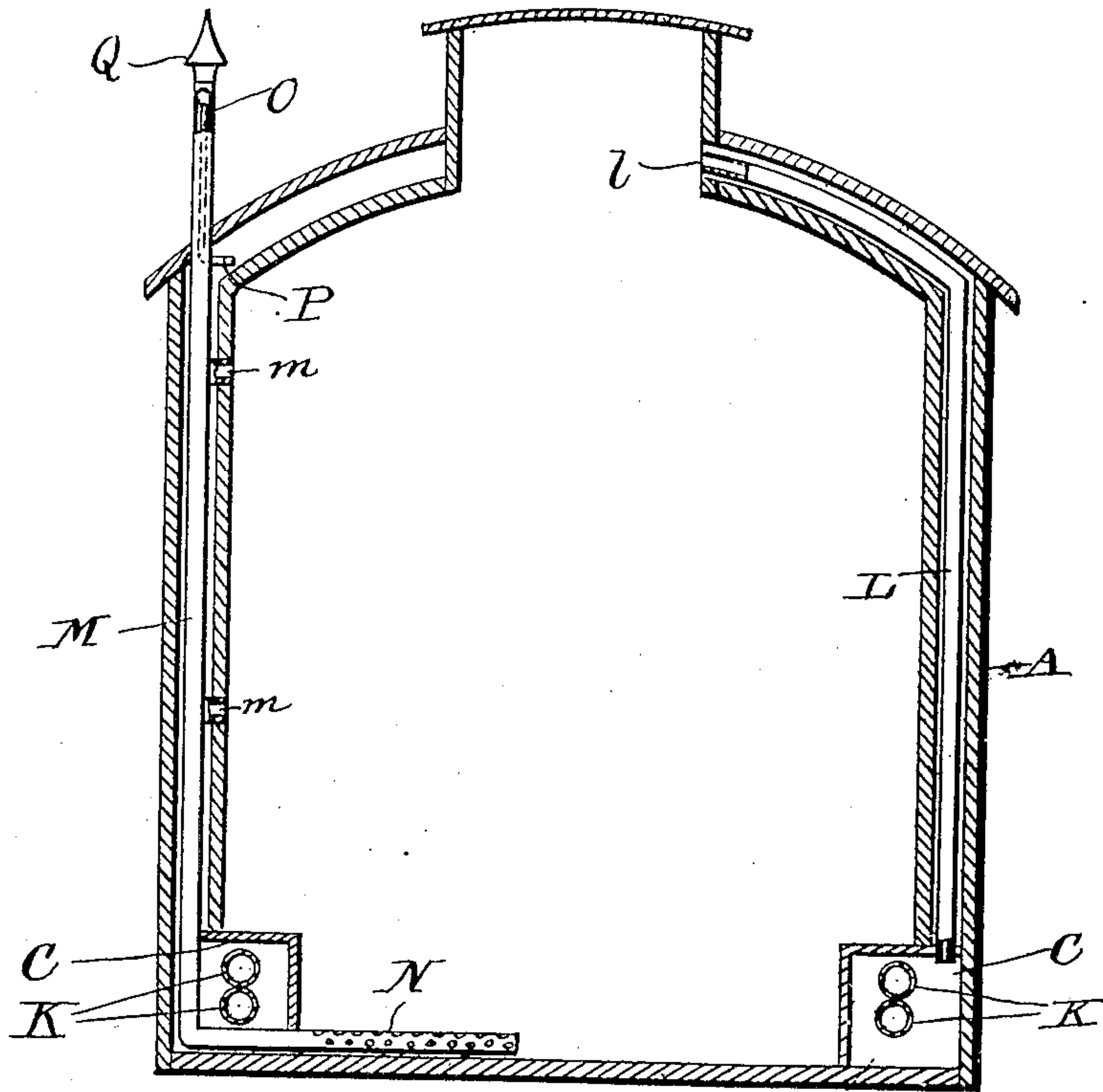
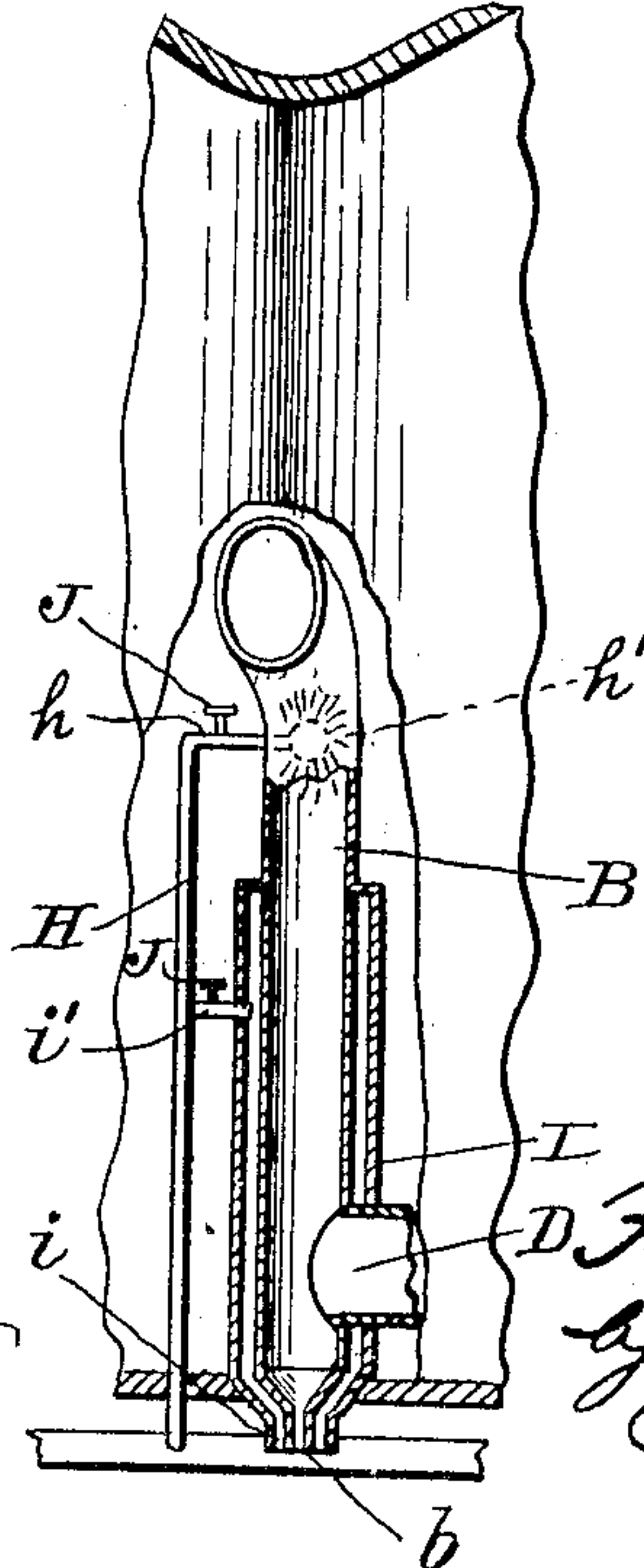


Fig. 3.



Witnesses

Joseph H. Blackwood
W. H. H. H. Jr.

Inventor

Fred D. Jacobs
by *D. H. Gourick*
Attorney

UNITED STATES PATENT OFFICE.

FRED DAVIS JACOBS, OF PAW PAW, MICHIGAN.

CAR-VENTILATING SYSTEM.

No. 871,938.

Specification of Letters Patent.

Patented Nov. 26, 1907.

Application filed March 6, 1906. Serial No. 304,604.

To all whom it may concern:

Be it known that I, FRED DAVIS JACOBS, a citizen of the United States, residing at Paw Paw, in the county of Van Buren and State of Michigan, have invented certain new and useful Improvements in Car-Ventilating Systems, of which the following is a specification.

My invention relates to the ventilation of railway cars and has for its object the provision of a device by which the motion of the car is utilized in supplying it with fresh air, a ventilator stack being positioned in each corner of the car and connected with ducts containing steam-heating pipes and having supply pipes running therefrom to the top of the car through which the air is distributed to the interior thereof.

In order to cleanse the air of particles of dust, cinders, etc., I provide a steam jet in each stack, the water of condensation therefrom escaping through an outlet in the lower ends of the stacks. The foul air is removed from the car by means of ducts having perforated extensions under the car seats and, in the case of sleeping cars, connections with each berth so as to exhaust the foul air therefrom. To maintain a draft in the foul air pipes I place an ejector therein connecting with a tank of compressed air or with the steam-heating pipes.

My invention will be described in detail hereinafter and illustrated in the accompanying drawings, in which—

Figure 1 is a horizontal sectional view of a car showing my ventilating system therein, Fig. 2, a cross section of the car, Fig. 3, a detail view partly in section of one corner of the car showing the stack for supplying fresh air to the car.

In the drawings similar reference characters indicate corresponding parts throughout the several views.

The car is represented by the character A and in each corner thereof is positioned a ventilator stack B having its upper end opening through the corner of the car intermediate of its roof and floor and extending downwardly to the floor of the car.

C represents a casing running the full length of the car at each side and connected with the stack B at the ends of the car, and the corresponding side thereof, by means of short lengths of pipe D having valve casings E therein in which are slidably mounted gate

valves F having threaded sockets to receive a screw shaft G for returning said valve.

H represents a steam pipe connected with any source of steam supply such as the locomotive boiler and having branch pipes *h* leading therefrom to a jet *h'* in the stack B.

Inasmuch as all the air that enters the mouth of stacks B passes through the steam from jets *h'* it is apparent that the air is cleansed of dust and impurities and that the dust and impurities are carried away in the water of condensation therefrom. The amount of dust, etc., that enters the stacks B is minimized, however, by the position of their openings, intermediate the floor and roof of the car, as they are too low to catch the smoke and soot from the locomotive, and too high to catch much of the dust raised by the passage of the train.

The lower ends of the stacks B are formed conical-shaped with central openings *b* for the outlet of the water from jet *h'*, and, to prevent freezing of said water and the consequent stoppage of the flow, I incase the lower end of each stack with a jacket I, having its outlet *i* surrounding the opening *b* and connect the upper end of the jacket I with the pipe H by means of a length of pipe *i'*.

J represents valves of any suitable construction in pipes *h* and *i'* to control the flow of steam therethrough, it being understood that the gate valves F and the steam valves J at the rear end of the car are always closed, and in warm weather the valves J in pipes *i'* at the forward end of the car are also closed.

K represent heating pipes in each casing C having connections with steam pipe H and a suitable return pipe (not shown) for the water of condensation.

L represents conduits connecting the casing C with openings *l* at the top of the car for conveying fresh air thereto.

The foul air is conducted from the car through pipes M having horizontal extensions N located under the car seats with small holes therein so that no draft is created by the passage of the air into the extension N. Near the upper end of each pipe M is placed an ejector O connected by means of pipe P with a compressed air tank (not shown) or the pipes P may be connected with the steam pipe H if desired.

Q represents a hood on the upper end of each pipe M to prevent the ingress of rain or snow and at the same time will prevent out-

side air from entering the car through said pipe M. When my ventilating system is applied to sleeping cars I provide connections *m* from each foul air pipe M to the adjacent berth section so that each berth is ventilated if desired by the applicant, the openings to said connections *m* being capable of being closed by a damper of suitable construction.

10 Having thus described my invention what I claim is—

1. In a ventilating system, a vertical inlet stack, a steam jet located in said stack to clarify the air passing therethrough, and an outlet in the lower end of the stack for the exit of water of condensation from the steam jet aforesaid together with impurities extracted from the air, substantially as shown and described.

20 2. In a ventilating system, a vertical inlet stack, a steam jet located in said stack, an outlet in the lower end of the stack, and a jacket for holding steam surrounding the lower end of said stack and having an outlet surrounding the outlet to the stack, substantially as shown and described.

3. In a car ventilating system, a casing at each side of the car, inlet stacks in the corners of the car and connected with said casings, a steam jet located in each stack, an outlet in the lower end of the stack for water of condensation, and conduits connected with said casings leading to the upper portion of the car, substantially as shown and described.

35 4. In a car ventilating system, a casing at each side of the car, a steam jet located in each stack, an outlet in the lower end of the stack for water of condensation, inlet stacks

in the corners of the car, connecting pipes between said stacks and casings, valves in said pipes, and conduits connected with said casings and leading to the upper portion of the car, substantially as shown and described.

5. In a car ventilating system, a casing at each side of the car, inlet stacks in the corners of the car and having their openings between the roof and floor of the car, steam jets in said stacks, connecting pipes between said stacks and casings, valves in said pipes, conduits connected with said casings and leading to the upper portion of the car, foul-air pipes in the walls of the car and horizontal perforated extensions from the lower ends of said pipes and located under the seats of the car, substantially as shown and described.

6. In a car ventilating system, a casing at each side of the car, inlet stacks in the corners of the car and having their openings between the roof and floor of the car, steam jets in said stacks, connecting pipes between said stacks and casings, valves in said pipes, conduits connected with said casings and leading to the upper portion of the car, foul-air pipes in the walls of the car, horizontal perforated extensions from the lower ends of said pipes and located under the seats of the car, connections with said pipes located in the walls of the car, and an ejector located in the delivery end of each foul-air pipe, substantially as shown and described.

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

FRED DAVIS JACOBS

Witnesses:

THORN B. MORGAN,
JOHN H. HANSEN.