

(No Model.)

W. SCOTT.  
VENTILATING CARS.

No. 290,710.

Patented Dec. 25, 1883.

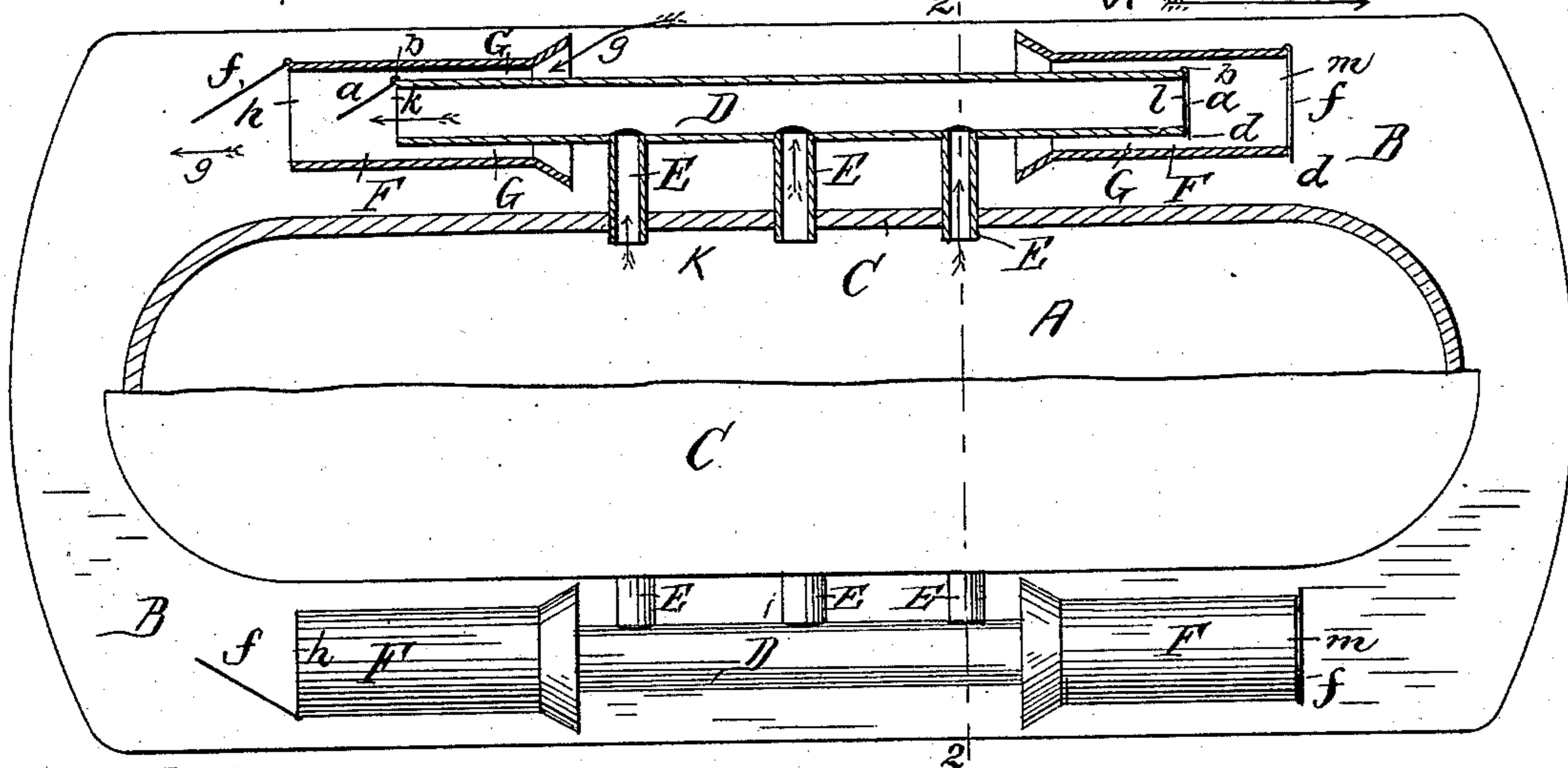


Fig. 1.

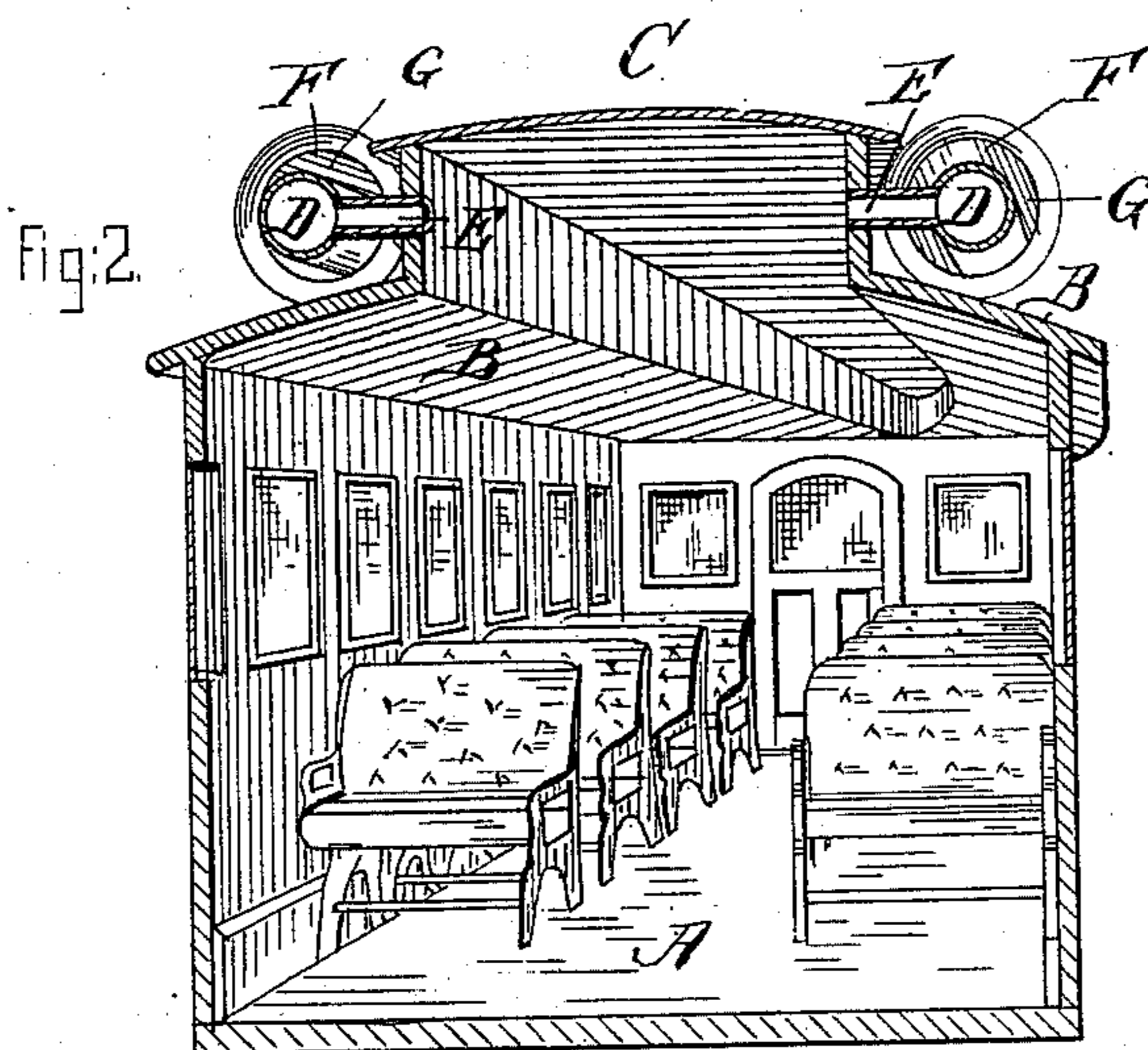


Fig. 2.

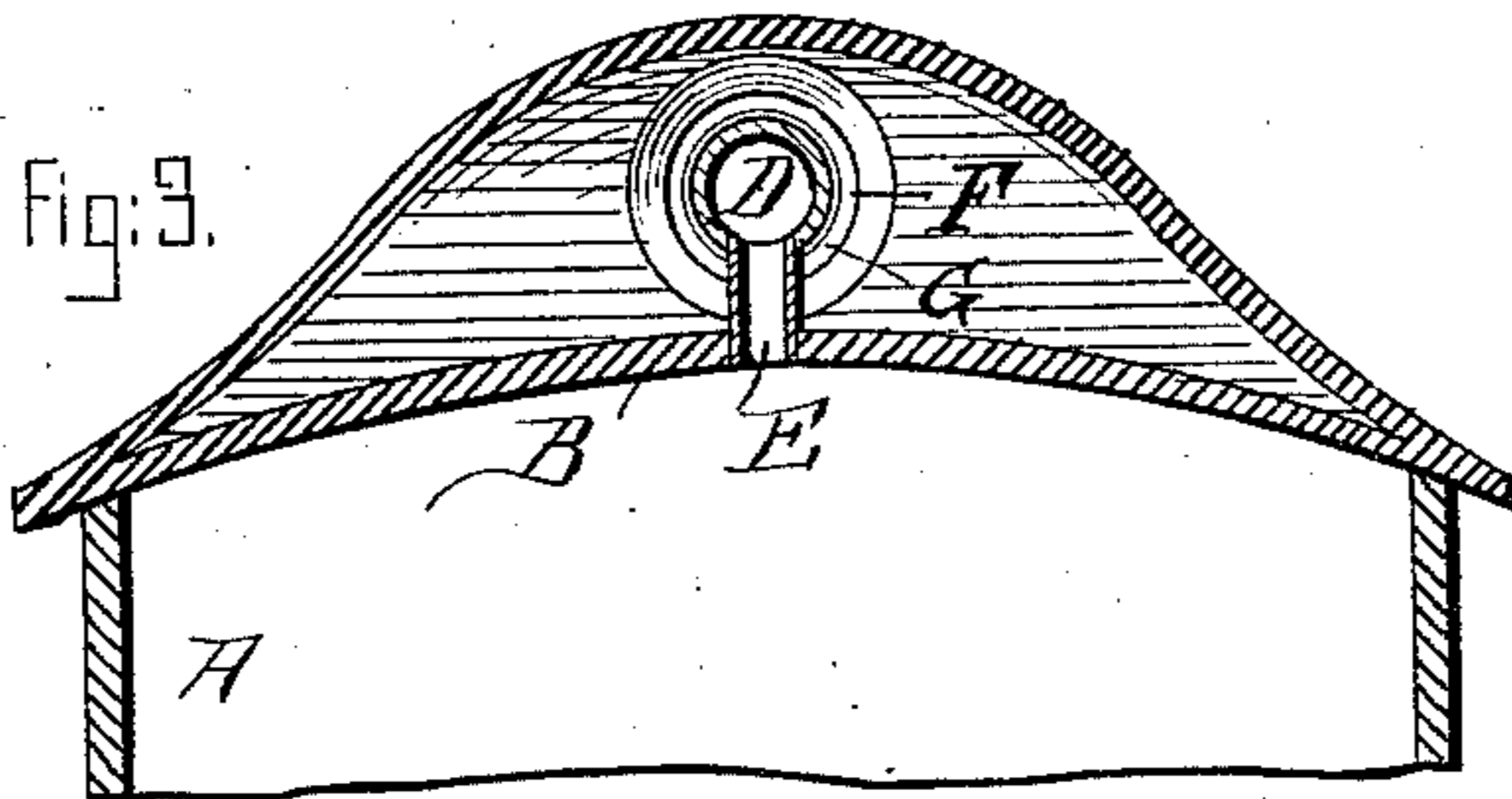


Fig. 3.

Witnesses:

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# UNITED STATES PATENT OFFICE.

WILLIAM SCOTT, OF MALDEN, MASSACHUSETTS.

## VENTILATING CARS.

SPECIFICATION forming part of Letters Patent No. 290,710, dated December 25, 1883.

Application filed March 13, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM SCOTT, of Malden, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Ventilating Cars, of which the following is a full, clear, and exact description.

This invention relates to ventilating cars and other conveyances; and it consists of a ventilator composed of inner and outer pipes, the inner pipe being in communication with the outer pipe and with the interior of the car or other conveyance, and the outer pipe with the external air, and each pipe is provided with a valve or valves, all substantially and to operate as hereinafter described.

In the accompanying plate of drawings the present invention is illustrated as applied for the ventilating of a railway-car.

Figure 1 is a plan view in one half and a longitudinal horizontal section in the other half of a railway-car body; Fig. 2, a transverse vertical section on line 2 2, Fig. 1; Fig. 3, a detail transverse vertical section, showing a modification in arrangement, to be hereinafter referred to.

In the drawings, A represents a car-body, and B its main roof, having a monitor-roof, C, all as usual.

D D are horizontal pipes arranged upon the car-roof B, one at each side of the monitor-roof and parallel therewith and along the length of the car. Each pipe D has a series of transverse pipes, E, each of which makes communication between the pipe D and the interior of the car-body A. Each pipe D at each end is open, but each end is similarly adapted to be closed by a lid or valve-plate, *a*, which is hung at one edge upon a hinge, *b*, to the open end of the pipe, so as to swing outwardly or away from said open end to open it, and inwardly or toward said open end to close it; and each valve-plate is of a size that when closed against the end of the pipe it will project beyond the outer periphery of the pipe, as shown at *d*, Fig. 1. Each pipe D at its open ends, closed and opened by valves *a*, as above stated, enters and passes partly through a pipe of larger diameter—one pipe, F, for each end of the inner pipe, D—and the ends of these pipes are open; but one end of each pipe—to wit,

the end beyond the ends of the inner pipe having a valve—is provided with a lid or cover, *f*, hinged at one edge, as has been described, for the valves of the inner pipe to swing outwardly to open the end of the outer pipe, F, and to swing inwardly to close the same.

G is a space within the outer pipes between them and the inner pipe, D. The ends of the two outer pipes which are toward each other are open and preferably made flaring or bell shape.

In the movement of the car in the direction of the arrow H, (see Fig. 1,) necessarily the air is made to draw or pass in the opposite direction, as shown by arrows *g*, Fig. 1, through the outer pipe, which is at the rear of the car in its said travel, entering at the open end and passing through the space G and escaping at the other open end, *h*; and as a consequence a current of air is established running from the inside of the car A through the cross-pipes E into the inner pipe, D, to and out of the open end *k* thereof into the outer pipe, and thence out at the open end of said outer pipe, F, thus securing a ventilation of the car, while at the same time the valves or lids *a* to the other open end, *l*, of the inner pipe, D, and the valve or lid *f* to the open end *m* of the other outer pipe, F, are kept closed, as is obvious. This action of the outer and inner pipes, D F, is the same as to both sets of the pipes, and should the car be traveling in the opposite direction to that above indicated by the arrow H, Fig. 1, a similar action of the air would occur through the outer pipe, F, and inner pipe, D, but at the other end of said inner pipe, D—that is, its end *l*—and with the other outer pipe at the right hand of Fig. 1, as shown.

A separate inner pipe may be provided for each outer pipe, F, in lieu of one in common for the two outer pipes, as described and shown; and again, outer and inner pipes arranged, as above described, may be incased along their length within the top portion of the car, but of course exposed to the air at their ends so as to secure a current of air through the outer pipes, F, so as thereby to obtain, as described, the outward drawing of air from the interior of the car first through an inner pipe, D, and thence through an outer pipe, F, and out of the same.

Each valve-plate *a f* preferably is made, as described, a little larger than the ends of the pipes which it is to close, in order to present projecting edges or surfaces *d* beyond the outside of the pipe for the air to strike against to insure their opening; but it is not intended to limit this invention thereto.

In the operation of the pipes, as herein described, it is plain that only those valve-lids *a f* are opened as are at the rear end of the pipes relative to the direction in which the car is traveling, and that those at the front end thereof at such times necessarily are closed and kept closed.

The tubes may be of various shapes in cross-section, and as to their length may be made either straight, as shown, or tapering.

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

1. The combination, with a railway-car or other conveyance and an outer pipe, *F*, which has a valve, *f*, at one end and is open at the other end, of an inner pipe, *D*, which is in communication with the interior of the car or other conveyance and with the outer pipe, *F*, and is provided with a valve, *a*, substantially as described, for the purpose specified.

2. The combination, with a railway-car or other conveyance, of an outer pipe, *F*, which has a valve, *f*, at one end, that, when closed, projects at its edge *d* beyond the outer periphery of said pipe, and an inner pipe, *D*, which is in communication with the interior of the car or other conveyance and with the outer pipe, *F*, and is provided with a valve that, when closed, projects at its edge *d* beyond the outer periphery of said inner pipe, substantially as described, for the purpose specified.

3. The combination, with a railway-car or other conveyance, of two outer pipes, *F F*, each having a valve at one end and open at the other end, of an inner pipe, *D*, common to both outer pipes, and in communication with the interior of the car or other conveyance and with the outer pipe, *F*, and provided with a valve at opposite ends, substantially as described, for the purpose specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM SCOTT.

Witnesses:

EDWIN W. BROWN,  
WM. S. BELLOWS.