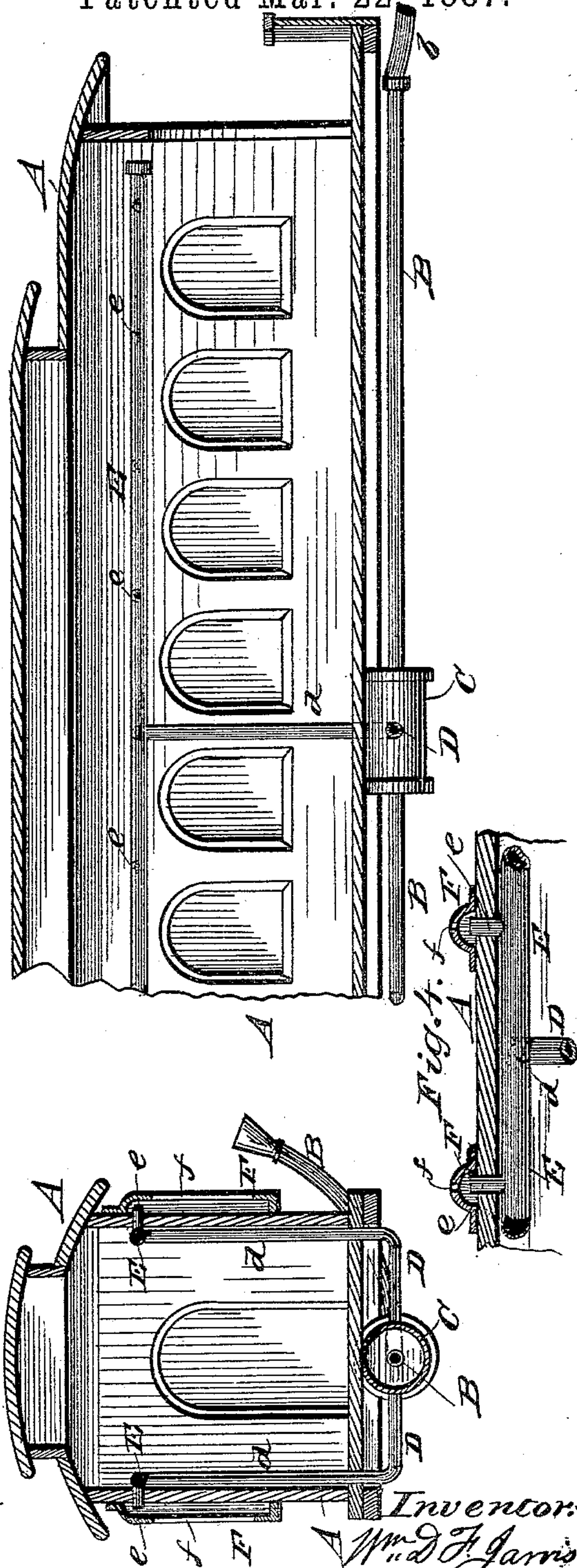
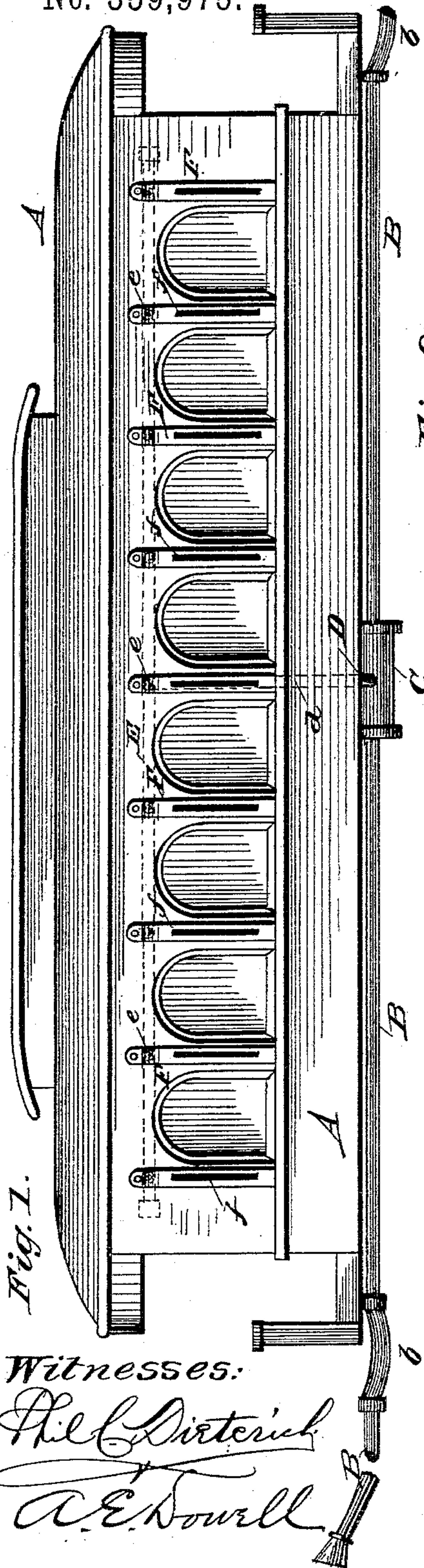


(No Model.)

W. D. F. JARVIS.
CAR VENTILATING APPARATUS.

No. 359,975.

Patented Mar. 22, 1887.



Witnesses:

Phil. Dietrich
A. E. Dowell

Inventor:

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UNITED STATES PATENT OFFICE

WILLIAM D. F. JARVIS, OF PHILIPPI, WEST VIRGINIA, ASSIGNOR TO HIMSELF AND LLOYD D. ROBINSON, OF SAME PLACE.

CAR-VENTILATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 359,975, dated March 22, 1887.

Application filed August 31, 1886. Serial No. 212,319. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. F. JARVIS, of Philippi, in the county of Barbour and State of West Virginia, have invented certain new and useful Improvements in Means for Preventing Cinders and Dust from Entering Cars; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a side view of a railroad-car body having my invention applied thereto. Fig. 2 is a central vertical longitudinal section, partly broken away, of the same, showing the interior arrangement of the tubing. Fig. 3 is a cross-section of Fig. 1, showing the connection of the tubing or piping with the air-directors F. Fig. 4 is a sectional detail of the same.

This invention relates to improvements in smoke and dust excluding apparatus for cars, being especially designed for use on railroad-coaches; and it consists in the novel construction of the air-directors, hereinafter described, and arrangement of parts, as will be fully understood from the following description, when taken in connection with the accompanying drawings, and specifically designated in the claim.

In the drawings, A designates the body of a railway-car, which may be of usual ordinary construction. To the bottom of body A, underneath the floor thereof, I secure in suitable manner an air drum or receiver, C, of proper size. This receiver may be placed either centrally of the bottom, as shown, or in other convenient situation, as may be desired.

B designates pipes running, respectively, from each end of receiver C to the ends of the car-body. These pipes are provided at their ends with suitable valved flexible coupling-tubes, b, which may be similar to the couplings used in the present system of air-brakes.

D D designate pipes extending from drum C, at right angles to pipes B, beneath the floor of the car, to the sides thereof, where they bend upward into or are connected with vertical pipes d, which rise vertically within the side walls of the car, or on the inside faces of these walls, to a point above the tops of the windows

of the car, where they connect and open into longitudinal or horizontal air-distributing pipes E, which extend lengthwise of the car-body, over the windows thereof, on each side, as shown.

Between each adjoining pair of window-frames, or in the closed space between the windows, and on a level with the horizontal distributing-pipe E, is a short pipe or joint, e, of relatively-small diameter to pipe E, with which each joint e connects and opens, the joints e passing through the side walls of body A, as shown.

F F designate the air-jet directors, into which the outer ends of pipes e open, and they are made as follows: Each director F is formed or stamped from a sheet of springy metal, or of rubber, and is rounded in cross-section and semi-tubular in longitudinal section, as shown in Figs. 3 and 4, its ends being closed and properly flanged, as well as its side edges, so that it can be secured in place by suitable fastenings, such as screws. Each director F has its longitudinal semicircular portion slit-
ted, or provided with a narrow aperture, f, as shown. The directors F should be of sufficient length to have their slits f correspond in length to the height of the windows, between which the jet-directors are secured by the described means, one director F being placed between each pair of windows, on the outside of the car-body, and one director at the outer side of each end window of the car, as shown, with the slits f outward and parallel to the vertical sides of the windows. The object of having the jet-directors F made of springy material, as described, is to regulate the passage of air through the slits, as hereinafter described, so that when air is forced into the directors under heavy pressure the slits will widen, and when under less pressure they will contract, so that the force of the jet of air escaping from the slits in the directors will be about equal in velocity, though not in quantity, notwithstanding the variations of pressure in the directors F.

The manner of supplying air to the directors F is as follows: The car A, forming one of a series of similarly-equipped cars in a train, and connected therewith by the flexible coup-

lings *b*, so that all the receivers *C* and directors *F* will receive, and have a corresponding air-pressure. The front car of the series is connected by its flexible coupling to an air-condensing or air-compressing engine, preferably similar to the pumping-engines used in connection with the Westinghouse air-brake, and under control of the engineer. This pump being started, the compressed air will flow through the tubes or pipes *B* to the receivers *C* in each car, whence it will be conducted through pipes *D* and its bend or connection *d* to the delivering-pipes *E*, from which it is delivered through joints *e* into the jet-directors *F*, from which it escapes through the slits *f* in thin sheets at right angles to the car-body. Now when the cars are in motion, the sheets of air escaping through the directors *F*, as described, will be curved backward by the currents of air created by the motion of the train; but the pressure will be such that the jets will extend several inches from the sides of the car, and any cinders from the engine or dust from the road-bed will be blown outward by them from the windows and prevented from entering the same while the windows are open and the apparatus is working, as described, thus adding greatly to the comfort of passengers. The means for supplying compressed air to the receivers *C* and thence to the directors, as described, may be varied, the means described, though preferable, not being an essential element of the invention, which is principally in the novel construction of the jet-directors *F* and their connections with the receivers.

I am aware that devices have been employed for directing currents of air from the sides of the car, between the windows thereof, to prevent the passage or entrance of dust and smoke therein; and I am also aware that ventilating devices have been employed having an air-receiver located beneath the car-floor. Therefore I do not claim such devices, broadly; but

What I do claim as new is—

In a railroad-car, the combination of the vertical jet-directors *F*, made of flexible material and provided with the vertical slits *f*, as described, and located between the windows of the car-body, outside thereof, the air-drum situated below the car, the longitudinal pipes below the car to convey air to said drum from a suitable condensing-pump, and similar tubes or pipes extending from the drum on each side and running up on the inside walls of the car and connecting with and opening into horizontal delivery-pipes situated just above the tops of the car-windows, on the inside thereof, and communicating with the directors *F* by suitable joints, *e*, all substantially in the manner and for the purpose specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

W. D. F. JARVIS.

Witnesses:

W. P. SCOTT,
GRAN. E. TAFT.