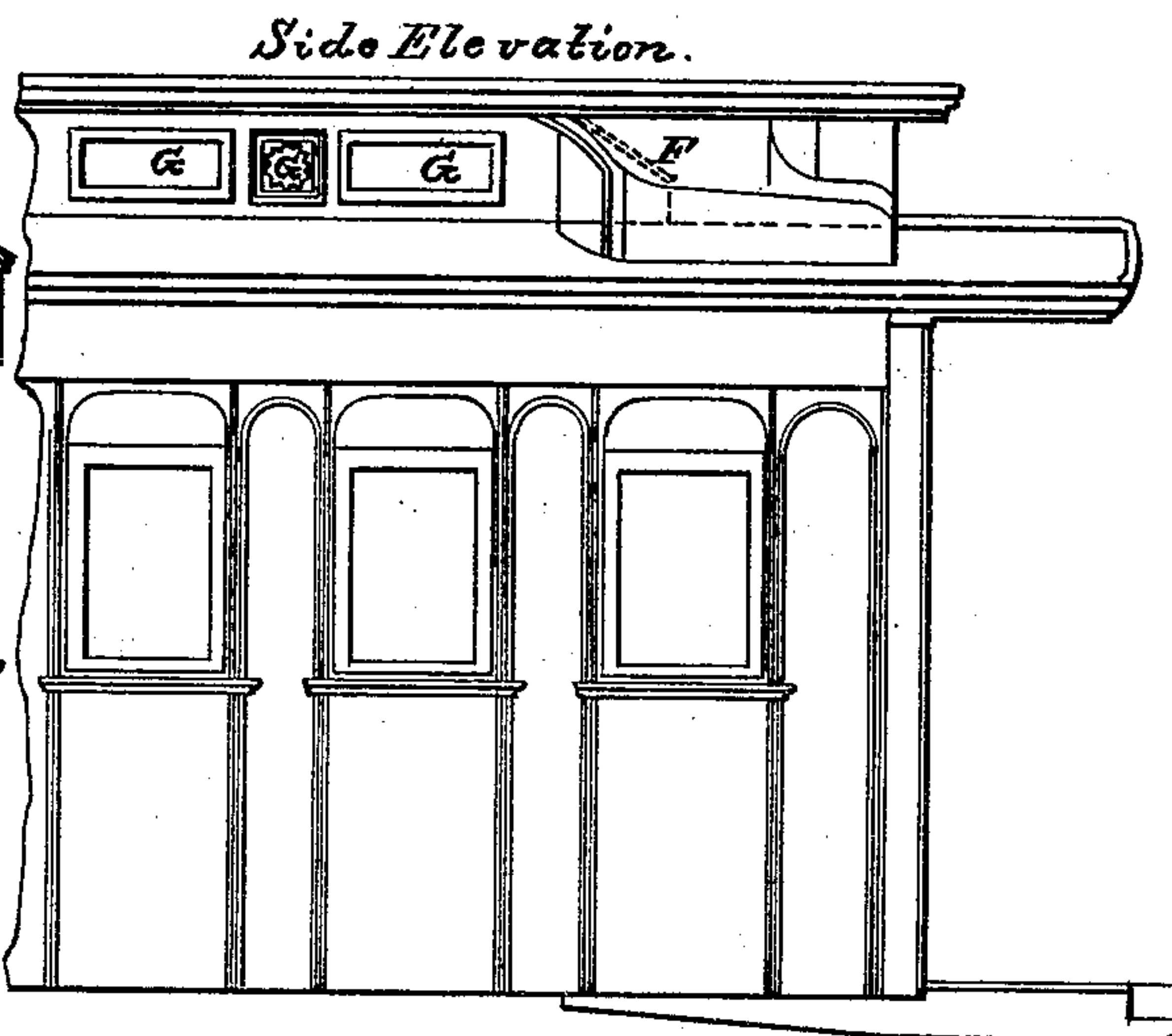
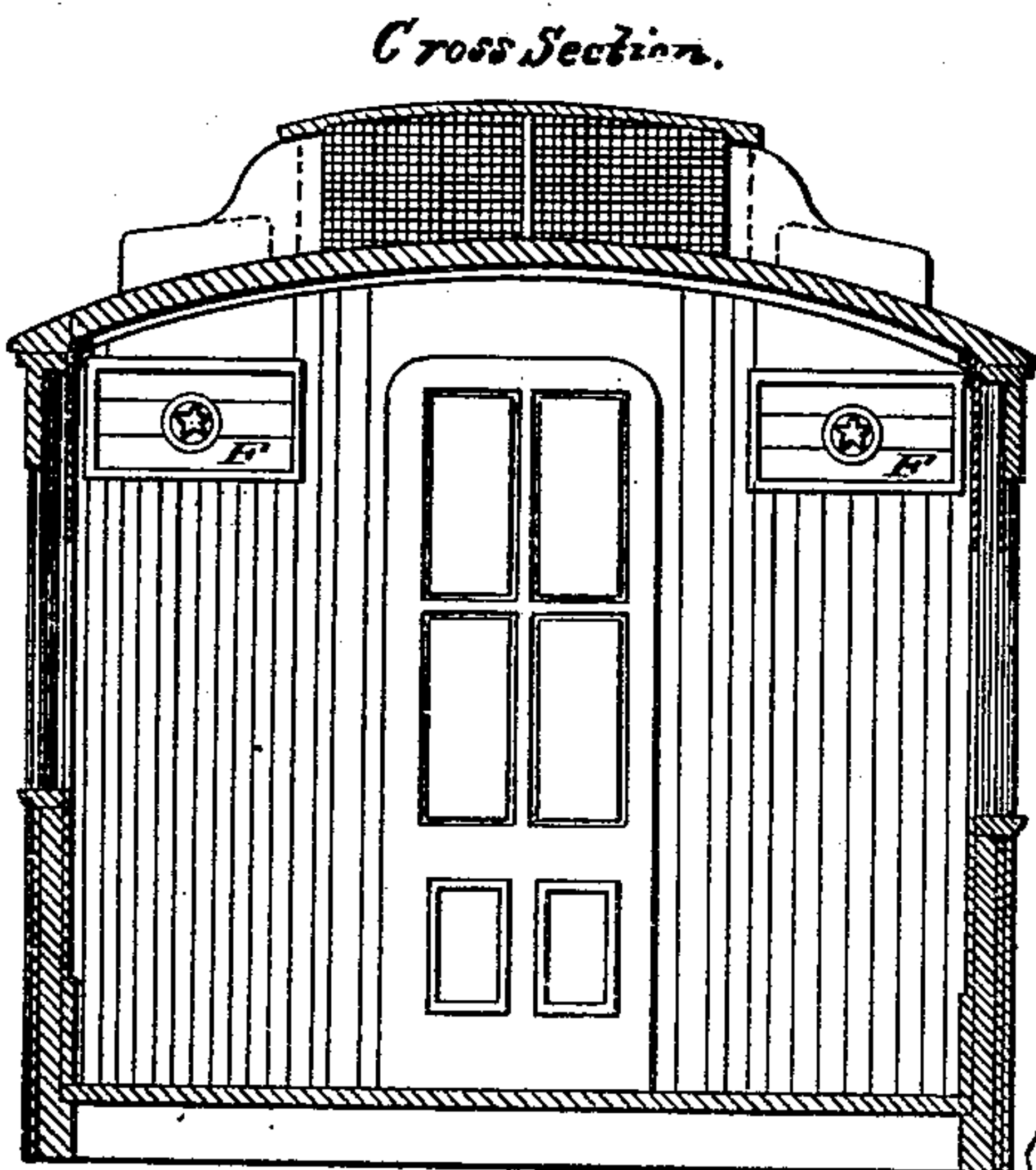
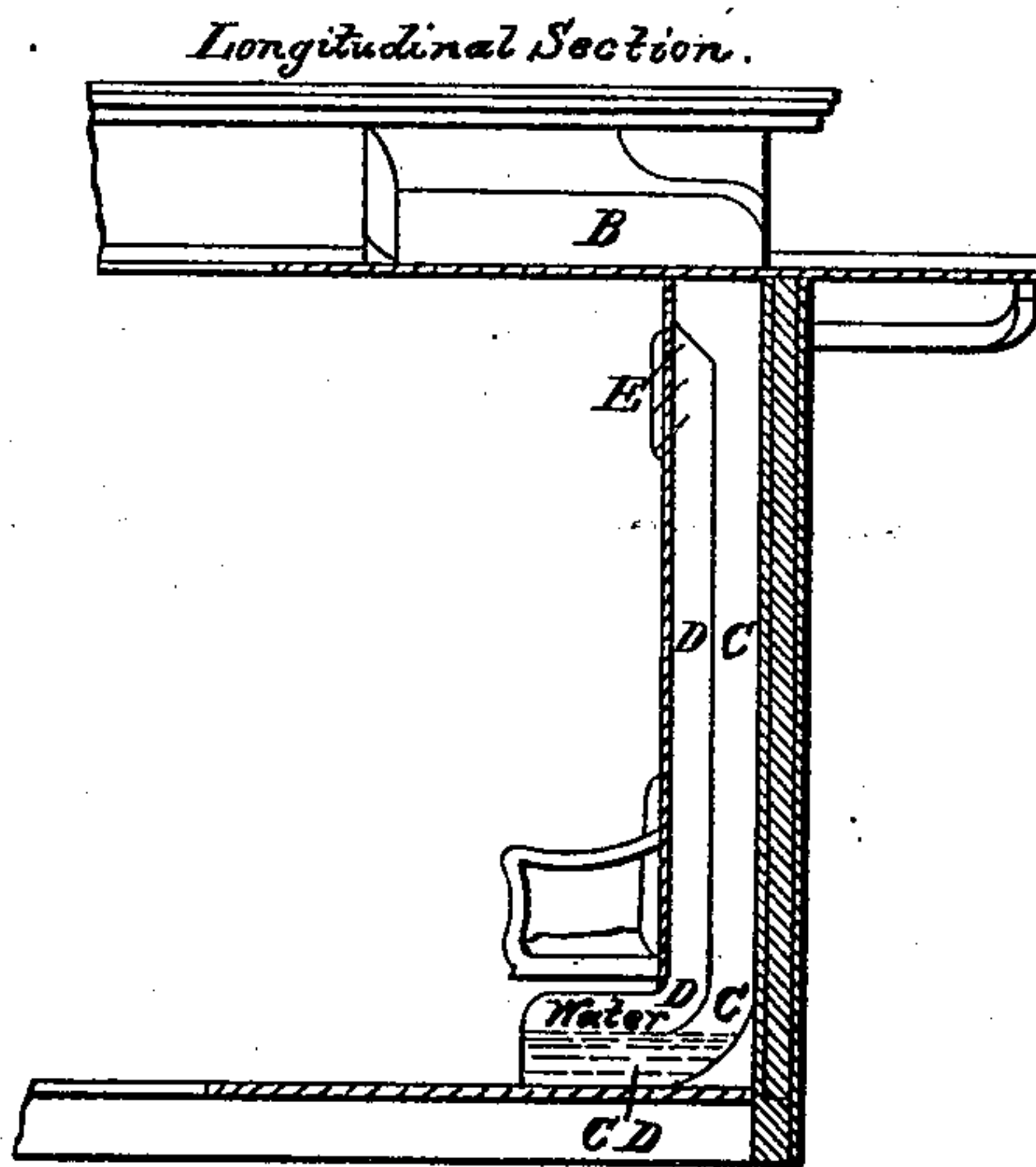
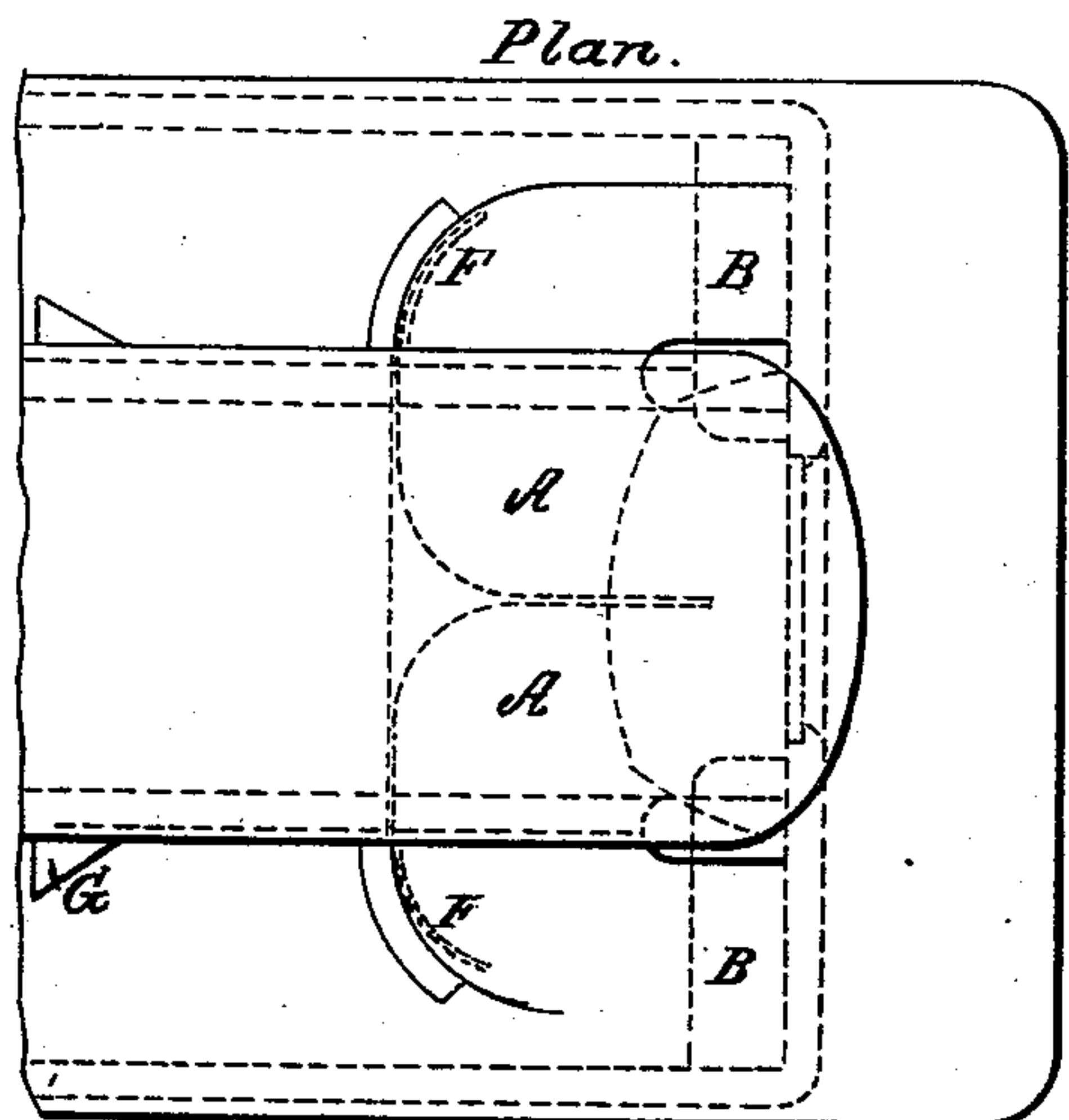


J. L. HOWARD.
Railroad Car Ventilator.

No. 39,925.

Patented Sept. 15, 1863.



Witnesses:

Wm. Kean
Edw. F. Brown

Inventor:

James L. Howard

UNITED STATES PATENT OFFICE.

JAMES L. HOWARD, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN RAILROAD-CAR VENTILATORS.

Specification forming part of Letters Patent No. **39,925**, dated September 15, 1863.

To all whom it may concern :

Be it known that I, JAMES L. HOWARD, of Hartford, in the county of Hartford and State of Connecticut, have invented a new and Improved Mode of Ventilating Railway Passenger-Cars; and I do hereby the following to be a full and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

Within two or three years railway passenger-cars have been greatly improved by the device of raising the central portion of the roof—usually about four feet in width—to a height of about eighteen inches, putting in the sides of the raised portion small windows, ventilating registers, or other expedients, to aid the outward passage of the heated and impure air from the interior of the cars.

The design and nature of my improvement consists in adapting and using this raised roof to aid in the ventilation by extending it to a suitable length to create of its front an air-receiver, A, and, by means of the passages B, C, and D, to conduct the air so received over water C D, at or below the level of the floor, thus purifying it from dust and cinders, and passing it, finally, through the large registers E into the car, supplying the passengers with fresh and pure air and filling the vacuum

caused by the exhaust of the ventilating-registers, windows, &c., incidentally changing the raised fronts from a resistant to the passage of the cars into an important aid to the comfort of passengers.

In connection with the air-chamber A and passage B, I have arranged the automatic doors F, so that the rear passages B, C, and D shall be supplied through them with air, while the front end is supplied through the main chamber A, the pressure of the air in passing opening or closing the automatic doors to accord with the direction the car is running.

The passage of air over water is, I am aware, common to many expedients for ventilating railway-cars, and I make no claim for that.

What I claim as my invention, and for which I desire to obtain Letters Patent, is—

The air-chambers A, produced by the extension of the raised or elevated roof of railway passenger-cars, as shown in the drawing, in combination with the automatic doors F and air-passages B, C, and D and registers E, when constructed and operating substantially as described.

JAMES L. HOWARD.

Witnesses:

EDM. F. BROWN,
J. A. MCKEAN.