No. 755,485. PATENTED MAR. 22, 1904.

C. J. HARRINGTON.

VENTILATING DEVICE.

APPLICATION FILED OCT. 20, 1903.

NO MODEL.

Fig. 1.

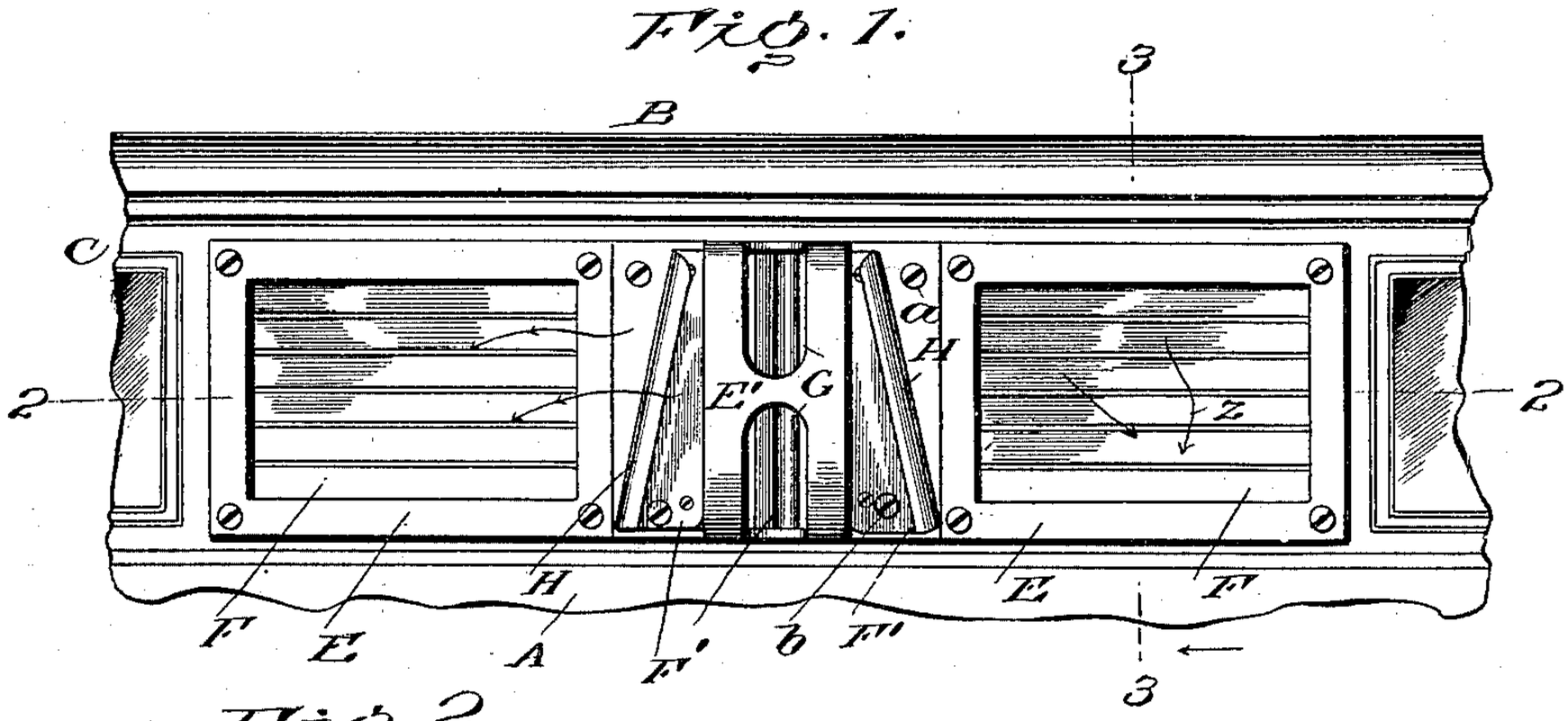


Fig. 2.

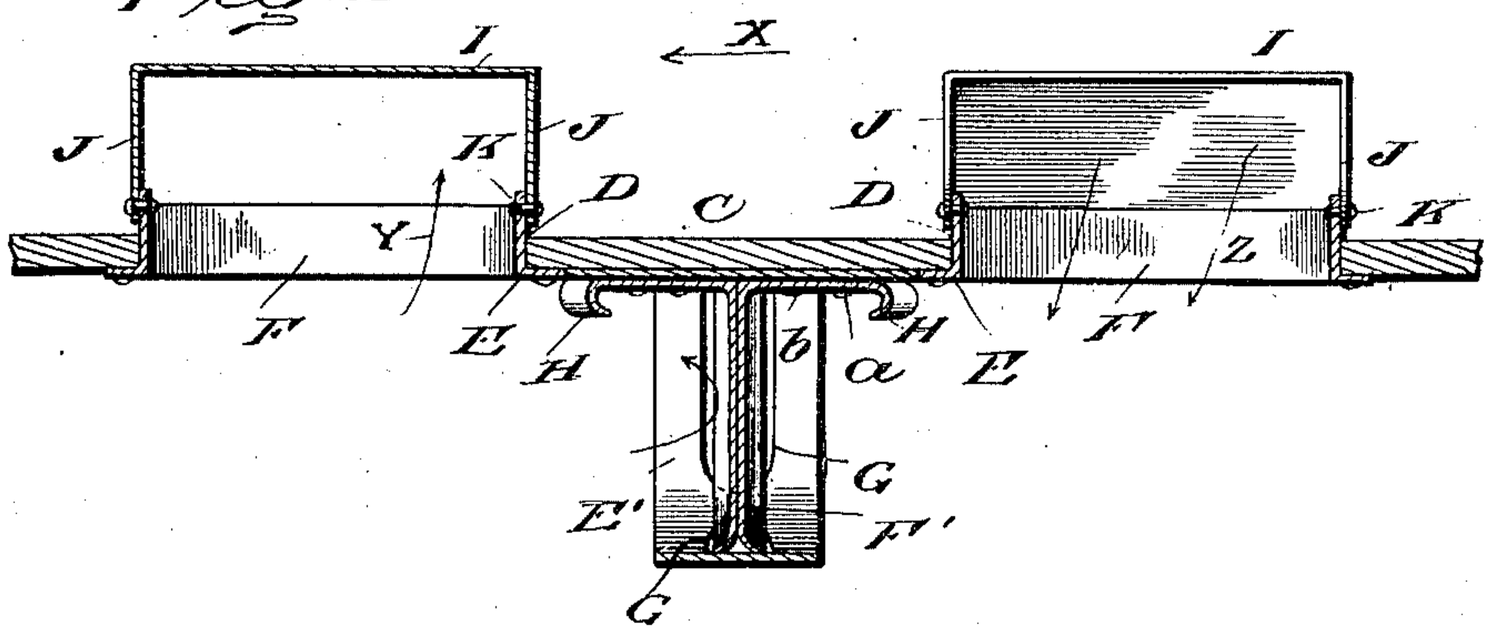


Fig. 3.

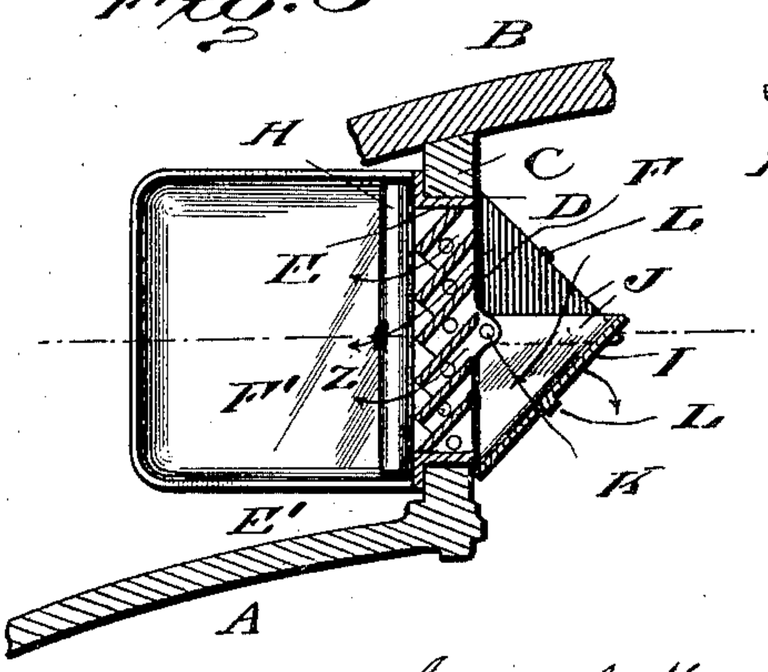
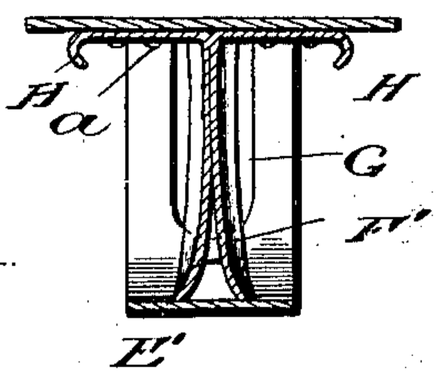


Fig. 4.



Inventor

Curtis J. Harrington

Witnesses

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Attorney

No. 755,485. Patented March 22, 1904.

UNITED STATES PATENT OFFICE.

CURTIS J. HARRINGTON, OF NEW YORK, N. Y., ASSIGNOR TO THE AUTOMATIC CAR VENTILATOR COMPANY, OF NEW YORK, N. Y., A CORPORATION OF MAINE.

VENTILATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 755,485, dated March 22, 1904.

Application filed October 20, 1903. Serial No. 177,787. (No model.)

To all whom it may concern:

Be it known that I, CURTIS J. HARRINGTON, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Ventilating Devices, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in the means for ventilating railroad-cars and other vehicles, ships, and other moving structures and is also applicable to houses or other stationary structures when the natural air-currents are sufficient to produce induced currents through the structures.

My invention has for its object simplicity and economy of construction, ready adaptability to the purpose for which it is intended, and whereby fresh air divested of dust and other heavy bodies may be injected into the compartment to be ventilated and the vitiated air at the same time withdrawn from such compartment.

With these ends in view my invention consists in the details of construction and arrangement hereinafter more fully set forth.

In order that those skilled in the art to which my invention appertains may fully understand the same, I will proceed to describe the construction and arrangement of my improved ventilating devices, referring by letters to the accompanying drawings, in which—

Figure 1 is a detail elevation of the roof-deck of an ordinary railroad-car with my improved devices connected therewith. Fig. 2 is a horizontal section taken on the line 2 2 of Fig. 1. Fig. 3 is a vertical section taken on the line 3 3 of Fig. 1; and Fig. 4 is a central horizontal section of the outside deflector, but showing a modification in the construction thereof.

Similar letters of reference indicate like parts in the several figures of the drawings.

A represents the main roof of the car, and B the upper or deck roof, supported upon the vertical sides or walls C and in which are usually arranged the ordinary ventilator-sashes.

At suitable distances apart openings D are formed in the vertical walls C, and in said openings are located frames or sashes E, which are preferably provided with louver-boards F, although such louver-boards may be dispensed with and wire-gauze or other suitable screens may be substituted therefor. Intermediate of the openings D and upon the outer surface of the walls C are attached by screws *a* or otherwise deflectors consisting of a rectangular box or frame E′, composed of sheet metal or other suitable material, and deflector-plates F′, arranged back to back and having their outer faces dish-shaped, the upper and outer vertical edges of said plates being curved or bent at an angle to the main body portion to produce this effect.

The box or frame E′ is formed with openings G in its top, bottom, and sides for the purpose hereinafter explained. The deflector-plates are bent or returned at a right angle to coincide with the inner face or side of the box or frame E′ and are secured thereto by screws or rivets *b* or in any other desirable manner, and the extreme edges are turned rearwardly to constitute vertically-disposed guards H, which guards preferably trend outwardly from the top toward the bottom, as clearly shown at Fig. 1; but they may, if desired, trend in a vertically straight direction. The box or frame E may be dispensed with, if desired, and in such event the deflector-plates F′ are then secured directly to the wall C.

The guards H instead of being formed integral with the deflector-plates may be formed independently thereof and secured in any desired position by screws or rivets, or if deemed not to be absolutely essential they may be entirely dispensed with.

On the inside of the openings D are arranged current-deflectors consisting of a plate or board I, having secured to its ends triangular pieces J. The ends of these deflectors are pivoted or hinged, as shown at K, Fig. 3, about centrally of the openings D, and said deflectors are provided with a suitable knob or handle L, by means of which they may be vibrated upon their pivots or hinges in order

that they may be placed in positions shown in solid and partly in broken lines, so that the air entering or discharging through the openings D may be directed in a plane either above or below the plane of the pivot or hinge of said deflectors, and consequently, the ingoing and outgoing currents of air moving in different planes or at different altitudes, a more perfect circulation is obtained.

Instead of placing the deflector-plates F′ back to back and in contact with each other, as shown most clearly at Fig. 2, they may be placed in inclined relation, as shown at Fig. 4, to accentuate the deflection of the air-current.

Having described the construction and arrangement of my improved ventilating devices, I will now explain their action. Assuming that an ordinary car is equipped with the ventilating devices and that it is traveling in the direction indicated by the arrow X at Fig. 2 and that the pivoted deflector on the interior of the advance opening D is in the position shown in solid lines at Fig. 3 and that the similar deflector on the interior of the rear opening is in the position shown partly in dotted lines at Fig. 3, the air will strike the face of the dish-shaped deflector-plate F′ and be deflected and caused to enter the advance opening D, as indicated by the arrow Y, Fig. 2, and the interior deflector being in the position described the current of ingoing air will be directed upward toward the deck roof or ceiling B. Behind the deflector-plates F′ a partial vacuum is produced, and consequently the vitiated air within the car, which occupies a lower strata than the fresh air taken in at the advance opening, escapes through the under side of the interior pivoted deflector, as shown by the arrows *z*, the position of the interior deflector preventing the escape of the fresh air. When the box or frame E′ and guards H are employed, the air strikes the deflector-plate F′, and any solid matter, such as cinders or dust, held in suspension in the air is arrested by the deflector-plate F′, a part falling by gravity through the opening in the bottom of the box or frame, a part passing out through the similar openings G, and the remainder is intercepted by the guard H and falls by gravity.

It will of course be understood that if the car is moved in a direction opposite to that described the deflectors will operate reversely.

While I have described the operation of my improved devices in connection with a moving vehicle, it will be readily understood that they may be used in connection with stationary compartments when the natural air-currents have a velocity sufficient to produce the results described.

Many changes may be made in the details of construction without departing from the spirit of my invention, which resides in combining with the exterior deflector arranged between two openings leading into the car or apartment to be ventilated of an interiorly-arranged deflector adjustably connected with said openings.

What I claim as new, and desire to secure by Letters Patent, is—

1. The herein-described means for ventilating a car or other compartment, consisting of an exterior projecting air-deflector having a closed back and located between two adjacent and separated openings through the wall of the car or compartment, and adjustable deflectors arranged upon the inside of each of the said openings, whereby fresh air may be conducted through one of said openings into the interior of the car or compartment, and vitiated air withdrawn through the other of said openings, substantially as set forth.

2. In combination with a car or other compartment having adjacent, separated openings in the wall thereof, a projecting deflector having a closed back and located between said openings, and horizontally-adjustable deflectors arranged upon the inside of each of said openings, and adapted to direct ingoing and outgoing currents of air in different and independent horizontal planes, substantially as hereinbefore set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 16th day of October, 1903.

CURTIS J. HARRINGTON.

Witnesses:
F. A. STEWART,
C. E. MULREANY.