A. BRANDON.

VENTILATORS FOR RAILWAY-CAR WINDOWS.

No. 186,982 Patented Feb. 6, 1877.

Fig: 1.

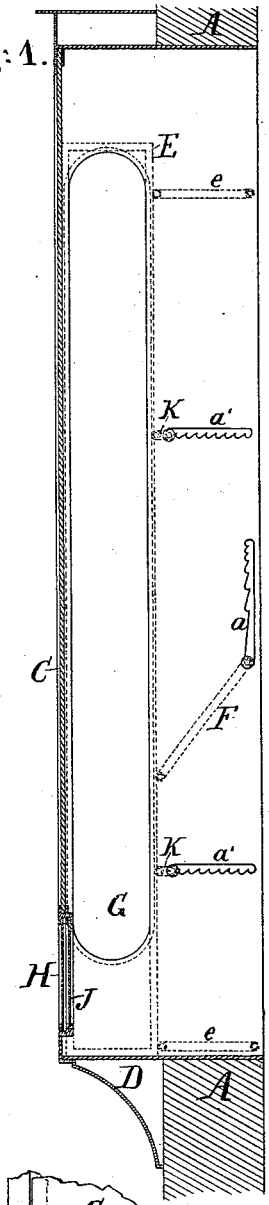


Fig: 2.

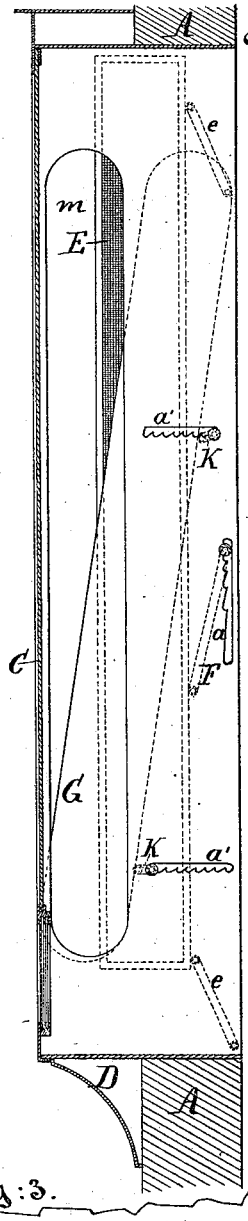


Fig: 3.

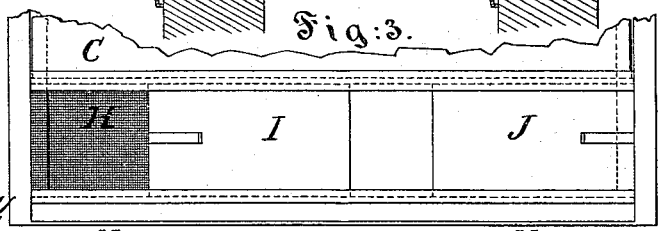
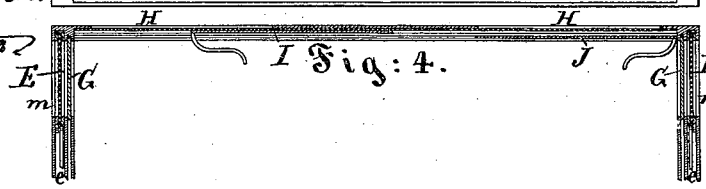


Fig: 4.



Witnesses:

C. C. Stetson

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UNITED STATES PATENT OFFICE.

ALEXANDER BRANDON, OF NEW YORK, N. Y.

IMPROVEMENT IN VENTILATORS FOR RAILWAY-CAR WINDOWS.

Specification forming part of Letters Patent No. **186,982**, dated February 6, 1877; application filed January 10, 1877.

To all whom it may concern:

Be it known that I, ALEXANDER BRANDON, of New York city, in the State of New York, have invented certain new and useful Improvements Relating to Railroad-Car Windows, of which the following is a specification:

I use the general construction set forth in my patent for railroad-car window, dated October 26, 1875, 169,140; but instead of the folding shades therein shown I use slides, and I provide a freer passage for the air than is therein provided.

I find there is sufficient thickness in the sides of cars, as ordinarily constructed, to allow a slide of sufficient width to be received in the thickness, and to be moved outward, when required, to cover the passage at the front or rear of the projecting window. I provide two slides at the front and two slides at the rear of each window. One slide is of wire-cloth, perforated metal, or other foraminous material, which will serve as a strainer or screen to exclude sparks, and admit so much air as will flow through the meshes. The other slide is a continuous sheet of metal or other tight material.

When both are opened by drawing them inward into the thickness of the side of the car, a clear space is provided for the ingress or egress of air. Under some circumstances this space may be made available by serving as an opening through which to converse with persons on the platform while standing at a station. When the perforated slide is moved out it excludes sparks, and when the solid slide is moved out it closes the opening entirely.

There may be circumstances under which it is desirable to ventilate in the face or outer side of the projecting window. I provide spaces guarded by wire-cloth, or the like, under the glass of the window, and cover them, when desired, and control them by solid slides.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figures 1 and 2 are vertical sections in a plane transverse to the length of the car. Fig. 1 shows the aperture closed by both slides having been moved out to their full extent. Fig. 2 shows the slides partly open, the solid slides being opened wide at the top, but wholly closed at the bottom, a condition for which my invention provides, and which is often very desirable. Fig. 3 is a means of ventilation which I provide at the bottom of the window. Fig. 4 is a horizontal section of the same.

Similar letters of reference indicate like parts in all the figures.

A is a part of the main body of the car. D D is a fixed frame-work, which supports and forms a part of the projecting window. C is a plate of glass, which extends across the whole outer face, and performs its ordinary functions. Additional provisions may be made for forming this plate in two sashes, one of which is movable, like ordinary windows; but I prefer to make this plate a permanent fixture. The front and rear of a window are precisely similar. A description of one side or edge will suffice for both.

E is a screen of perforated metal, or, preferably, wire-gauze, held in a sufficiently stout inclosing-frame, and capable of being moved inward in a recess provided in the side of the car adjacent to the window. This screen E should be of less height than the window, and is held by links *e*, pivoted to itself and to the fixed frame-work. As the screen is drawn inward it moves upward in a curved path.

F is a link, pivoted to another lug on the inner edge of the screen E, and having its opposite end bent or knobbed, and extending outward through a slot in the casing indicatted by *a*. This slot being notched as shown, the knobbed end of the link may be engaged in the different notches at will, and the position of the perforated screen E thereby adjusted to uncover any portion of the aperture *m* desired.

G is the solid screen. It is mounted interior to the perforated screen E, and is rounded at each end, as represented. Two short links, K K, each having a bent end, forming a knob, are pivoted to slight lugs on the inner edge. The lowermost should be near the lower end of the slide. The uppermost may be consid-

erably below the top, in order to be more easily reached. Slots are provided in the fixed work, as indicated by a' a', the lower edge of which slots are notched, as shown. When it is desired to open this slide the knobbed links K are lifted out of the notches in the bottom of their respective slots a', and are drawn inward toward the center line of the car. A reverse movement of these links moves the solid slide G outward, and closes it. When, as I believe will often be the case in practice, it is desired to close the bottom and open the top, that position may be easily attained by adjusting the links, as shown in Fig. 2.

It will be understood that both the slides G and E should be as thin as is consistent with strength, and they may be mounted in the same recess side by side, and touching each other. The weight of the solid slide may be supported by a suitable guide or shelf at the bottom.

H H are apertures in the exterior face of the window, below the glass. They are covered with wire-gauze, which need not be removable. In all but the coldest weather, I believe, these may stand always open. I provide for closing then, when desired, by means of two slides, I J, which may be of thin brass, German silver, or analogous metal, traversed in guides, as shown. They are guided in different planes parallel to each other. When opened, they are superposed one within the other in the bottom of the window. When it is desire to close them, they are moved the one slide I forward, and the other slide J backward. In the Figs. 3 and 4 the slide J is represented in the position to close its aperture, and the slide I is in the position to open or expose part of its corresponding aperture H. These apertures, with the provisions for controlling them described, allow more abundant ventilation than my former plan, and relieve it from objection. They allow the window to be made very tight in winter, and very open in summer; they allow the top to be open more than the bottom, or the bottom more than the top, if desired, and, especially my present construction, avoids the necessity for the swinging parts shown in my previous device.

Many modifications of the details may be made by any good mechanic. Thus the solid slide may, if desired, be placed exterior to the perforated one. Both may be hung with links like my links *e*. Both may be rounded at each end, like my solid slide G. Separate recesses may be made in the main framing to accommodate the two slides, or, in other words, the recess in which they are received may be divided by a stationary thin plate. But I prefer the construction about as herein shown. The most of the work is preferably metal.

When a dividing-plate is used between the two slides, as above suggested, there may be an advantage in making it of rubber, so as by its elasticity to prevent rattling.

The parts should be so proportioned that the bottom ventilation through the apertures H will come so far below the backs of the seats, that the wind therefrom cannot annoy persons in the seat or seats behind.

I claim as my improvement in railroad-car windows—

1. In combination with a projecting window, two slides, E G, adapted to allow of being moved inward or outward to open and close the aperture *m* at the edge of the window, as herein specified.

2. The links *e* and adjusting-links F, in combination with a screen E, mounted in the edge of a projecting window, as herein specified.

3. The screen G, formed as shown, and having separate means of adjustment for the top and bottom, in combination with the projecting window D C, as and for the purposes specified.

4. The slides I J, combined, as shown, with each other and with the apertures H under the glass C, for the purposes specified.

In testimony whereof I have hereunto set my hand this 8th day of January, 1877, in the presence of two subscribing witnesses.

ALEX. BRANDON.

Witnesses:

E. G. THOMPSON,

CHAS. C. STETSON.