JOHN BRADLEY.

Improvement in Ventilators for Railroad-Cars and Dwellings.

No. 114,102. Patented April 25, 1871.

Fig. 1.

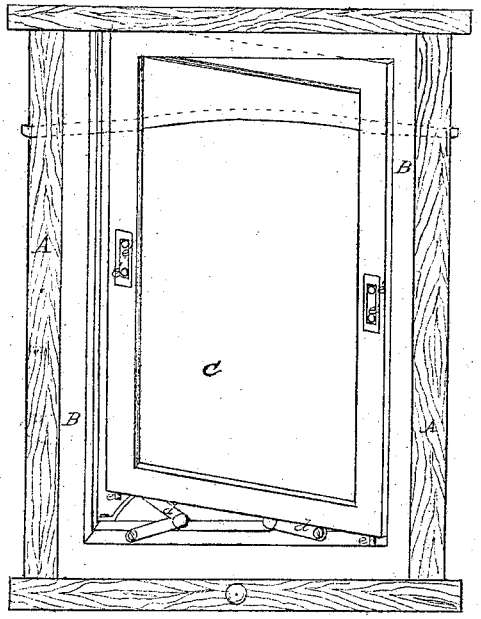


Fig. 2.

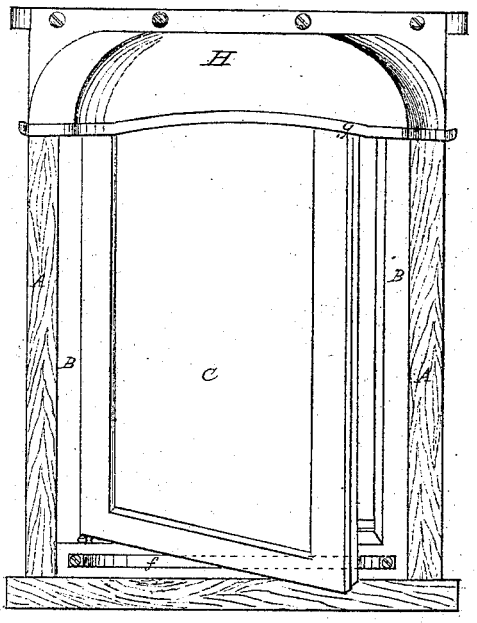


Fig. 5.

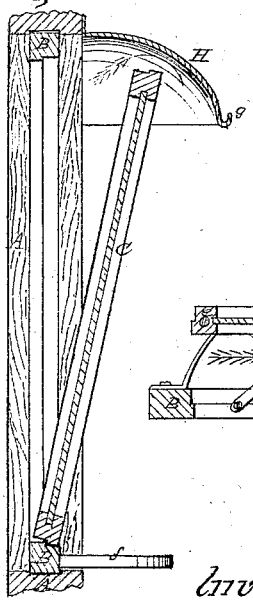


Fig. 3.

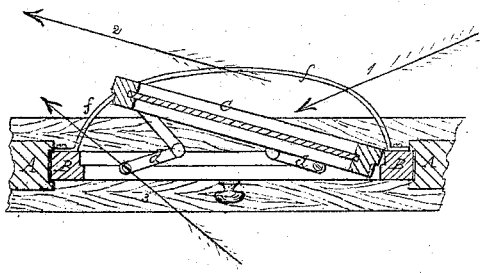
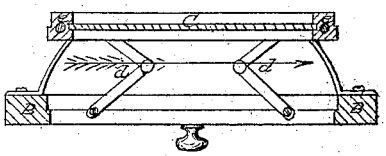


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN BRADLEY, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND FRANK I. KIMBALL, OF RAMSEY'S, NEW JERSEY.

IMPROVEMENT IN VENTILATORS FOR RAILROAD-CARS AND DWELLINGS.

Specification forming part of Letters Patent No. **114,102**, dated April 25, 1871.

I, JOHN BRADLEY, of the city, county, and State of New York, have invented certain Improvements in the Mode of Ventilating Dwellings and other places, of which the following is a specification:

The object of my invention is to provide means for the exit of heated and impure air and the admission of fresh air, and exclude dust from entering the apartment; and it consists in the arrangement, in connection with the window-sash, of an adjustable inner sash or panel, which may be inclined from the plane of the window in either direction, or may be projected outwardly on a plane parallel therewith or inclined thereto, as circumstances may require, said panel or panels being held by jointed arms to the sash, so as not to prevent the raising and lowering of the windows, and being provided with a curved way or track on which they are supported when thrown out; and it consists, also, in the combination therewith of a hood, cap, or guard to the window above the adjustable sash, to prevent rain, snow, dust, or other matter from entering through the opening at the top of the inner sash.

Figure 1 shows the interior of a window with the inner sash opened obliquely. Fig. 2 is an external view, the inner sash being in the same position. Fig. 3 is a horizontal section in like position. Fig. 4 is a horizontal section, showing the inner sash projected out on a plane with the window. Fig. 5 is a vertical section, showing the hood and the top of the inner sash inclined outwardly.

As represented in the drawing, A is the window-frame, and B an ordinary sliding sash. C is an adjustable inner sash, (made to contain glass,) of the same thickness as the outer sash, and rabbeted into the opening of the latter, and is connected therewith by the jointed arms *d d*, a pair of which is placed preferably at the top and one at the bottom, or they may be placed on either or both sides. These jointed arms admit of the inner sash being moved outwardly on one side, thus placing it on a plane oblique with the window, or of its being projected outwardly on a parallel plane with the latter.

Spring or other bolts *e e* are provided, a pair to each side of the inner sash. When it is to be opened obliquely one pair is withdrawn by pressing together the thumb-catch *e' e'*, or other device, when those on the other edge of the inner sash serve as pivots, on which it swings as if hinged. When to be opened on a parallel plane both sets of bolts have to be withdrawn.

A track or way, *f f*, preferably of curved or segmental form, in horizontal section, is attached to the outside of the window-sash, which supports the adjustable inner sash when open, and relieves the arms and bolts of its weight.

When the wind is in a direction which would enter an apartment if the window were open, as shown by the arrow 1, Fig. 3, the inner sash should be set obliquely, so that the current will be deflected from the direction of arrow 1 to that of arrow 2. This produces a partial vacuum at the opening formed, and the air in the interior of the apartment will move in the direction of the arrow 3, thus making its exit from the room, while its place will be filled with fresh air entering through innumerable interstices.

In this manner the overheated and impure air of a room is gradually changed without direct draft being admitted, as when an ordinary window is opened, and whatever dust, snow, or extraneous matter may be brought in contact with the inner sash is excluded.

In certain directions of the wind—as, for instance, on a plane with the window—the inner sash may be projected outwardly on a parallel plane, allowing the draft to pass directly through from side to side, as indicated by the arrow in Fig. 4.

In applying the window to railway-cars and steamboats, in order to entirely prevent rain, dust, &c., from entering through the opening from the top, I provide a hood or canopy, H, over the top of the window, so that nothing can enter from above. The lower edge has a flange, *g*, turned up to form a gutter, which carries off the rain on either side by directing it against the side of the car or vessel, which prevents its being blown in through the ventilator.

The hood does not interfere with the exit of

air, which escapes in the manner indicated by the curved arrow in Fig. 5.

The adjustable inner sash may be of any size adapted to the exterior sash, and may be filled with one or more lights of glass, as desired. It is rabbeted on the inside, and the sash-frame is correspondingly rabbeted on the outside, forming a weather-tight joint when closed.

This improvement is particularly adapted to sleeping-apartments to secure ventilation without admitting drafts, and also to sleeping and day cars for railway travel, and for the state-rooms and cabins of steamboats and other vessels.

I claim as my invention—

1. The adjustable inner sash, C, provided with the duplicate pair of jointed folding arms *d d*, in combination with the sash B, arranged and operating as and for the purposes set forth.

2. In combination with the adjustable inner sash, C, provided with the pairs of jointed arms *d d*, the projecting way or track *f f*, substantially as set forth.

3. In combination with the adjustable inner sash, C, the hood or guard H, when applied to railway-cars or steamboats, substantially as set forth.

4. In combination with the hood H, the flange or gutter *g*, for use on railway-cars and vessels, substantially as set forth.

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Witnesses:

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