

B. L. WOOD.  
Car Window.

No. 201,859.

Patented March 26, 1878.

Fig. 1.

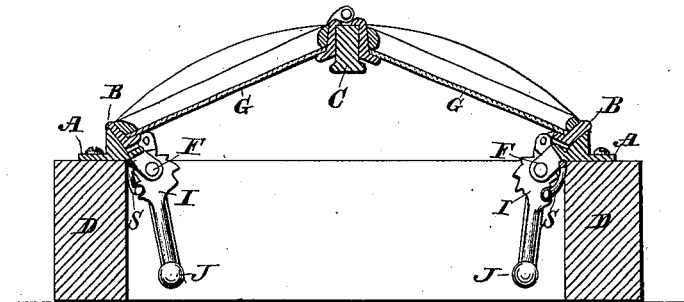


Fig. 2.

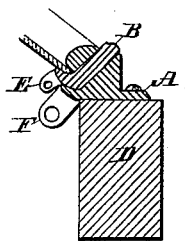


Fig. 3.

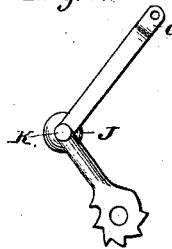
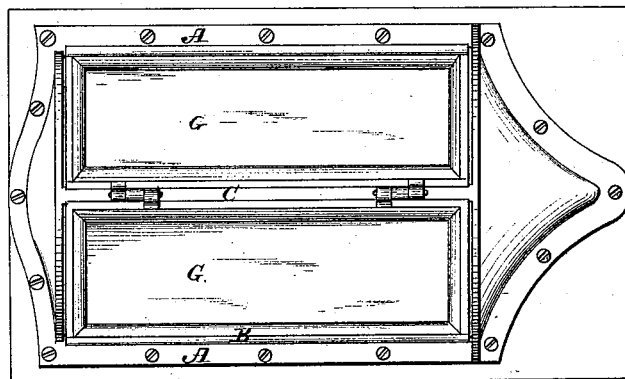


Fig. 4.



Attest.

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN CAR-WINDOWS.

Specification forming part of Letters Patent No. 201,859, dated March 26, 1878; application filed November 20, 1877.

*To all whom it may concern:*

Be it known that I, BENJAMIN L. WOOD, of Taunton, in the county of Bristol and State of Massachusetts, have invented certain Improvements in Windows and Window-Frames for Passenger-Cars, of which the following is a full description:

The object of my invention is to so arrange and operate the several parts of the windows as to obtain a more perfect and thorough ventilation, and prevent the ingress of sparks, dust, or smoke, and open and close with ease.

The window frame and sash may be made of wood; but when lightness of appearance, combined with strength, is desired, it is better to make them of metal.

The whole arrangement may be made and finished independent of the car, and be attached thereto at any time, thus making the invention applicable to cars now in use as well as to new work.

For the better understanding of the invention, reference may be had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a sectional view; Fig. 2, an enlarged sectional view, showing the parts to which are attached the jointed lever used in opening the sash, which jointed lever is shown in Fig. 3. Fig. 4 shows the whole as affixed to the car.

A is the frame; B, the sash; G, the glass; C, the center bar of the frame; D-D, the side of the car. E and F are projections or "ears" on the sash and on the frame; S, a spring; I, the enlarged outer end of the short arm of the jointed lever, having upon its outer edge a number of ratchet-teeth; J, the knob or handle, at the junction of the two arms of the jointed lever K.

It will be seen by Fig. 1 that this window projects or stands out from the side of the car. In ordinary cases a projection of six inches is sufficient. I prefer this form, although my improvement can be used without any projection whatever.

The sashes may be made to use common flat plate-glass, or circular glass, as desired. Two sashes are required to each window, both of which are hinged to the upright center bar

C. This center bar and the hanging of the sashes on opposite sides of it is an important feature of my invention, as thereby the sashes open in opposite directions, necessary to the accomplishment of the result herein-after shown.

Upon the inner side of the sash, opposite to the hinges, is the ear or spur E. A very little higher up, upon the inner side of the frame, is a corresponding ear, F. The jointed lever K is secured to these ears by loose rivets or screws—the longer arm of the lever at O to the ear E, and the opposite end of the shorter arm to the ear F.

On the inner side of the frame A is secured the spring S, which spring presses into the ratchet I with sufficient force to hold the sash open at any distance desired.

After the several parts are put together, by moving the knob J in or out the sash is closed or opened. The extreme distance that it can be opened is regulated by the extreme length of the jointed lever K.

It is evident that immediately upon opening the rear sash a complete ventilator is formed, extending the whole height of the sash; but for any purpose, should the ingress, rather than the egress, of air be required, the forward sash may be opened, and the desired object is at once attained.

By the use of these windows more complete control can be had of the air within the car than has heretofore been the case; and what is also found a great convenience in their use is the ease with which the sash may be opened and closed, when compared with the ordinary car-window that slides in grooves.

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

The frame A, with its center bar C, the sashes B, and the jointed lever K, or its equivalent, when combined together, for the purpose and in the manner substantially as herein set forth, forming a detachable car-window, as a new article of manufacture.

BENJAMIN L. WOOD.

Witnesses:

T. C. SPROAT,  
BENJAMIN L. WOOD, Jr.