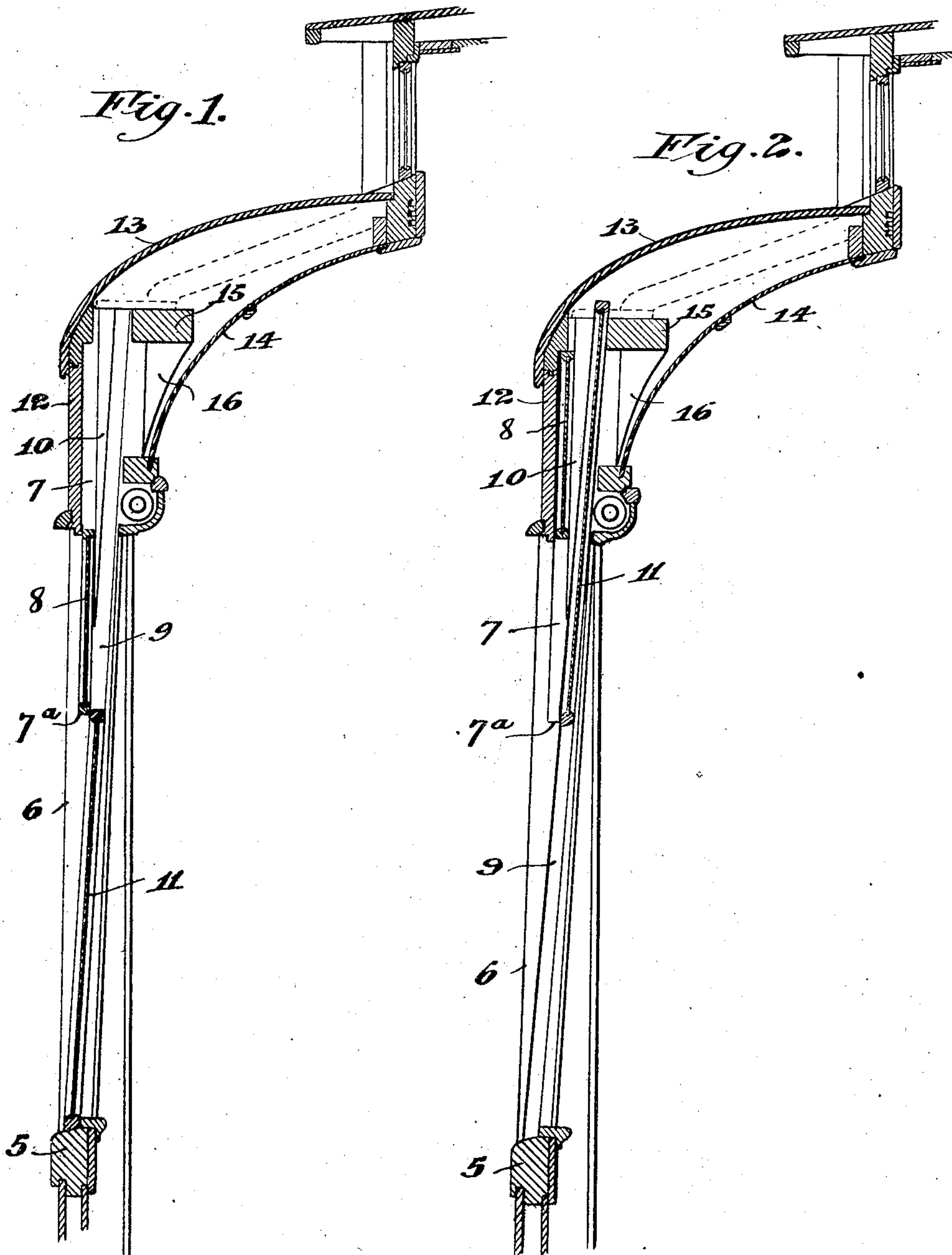


L. J. BERG.
CAR WINDOW.

APPLICATION FILED OCT. 24, 1908.

955,123.

Patented Apr. 19, 1910.



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UNITED STATES PATENT OFFICE.

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CAR-WINDOW.

955,123.

Specification of Letters Patent.

Patented Apr. 19, 1910.

Application filed October 24, 1908. Serial No. 459,418.

To all whom it may concern:

Be it known that I, LARS J. BERG, a citizen of the United States, residing at Pullman, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Windows, of which the following is a specification.

This invention relates to improvements in window constructions, having reference more particularly to that type of window employed in railway cars consisting of a main lower sash and a comparatively short upper sash.

Owing to the limitations as to height of the sides of railway cars, and particularly street railway cars, the problem of the disposition of the sash members of the window when the latter is opened has heretofore presented some difficulty. In some cases the main sash is dropped into a pocket below the window sill. In other cases it is raised and stored in a tipped or inclined position in a chamber formed between the outer or main roof and the interior roof finish of the car.

My invention has for its principal object to provide an improved construction of car window which will permit the opening of the window to the full extent or height of the lower or main sash, when desired, without necessitating any increase in the height of the side wall or the disposition of the main sash in either of the ways above indicated.

Another object of the invention is to secure such a disposition of the main sash as will permit it to be fully raised without necessitating any narrowing of the interior of the car either at the roof or in the region of the window sills, and without necessitating any widening of the sash guide-grooves, or the use of springs or other devices to prevent rattling of the sash when raised.

To these ends my invention resides in a new and improved construction characterized chiefly by the employment of a pair of sash guide-grooves in the usual post forming one vertical member of the window casing, one of said grooves being vertical and accommodating the short upper sash, and the other groove being straight and of uniform width throughout and inclined or oblique relatively to said vertical groove and at its upper end lying inwardly of the latter, and accommodating the lower or main sash; and in connection with this construc-

tion and arrangement of guide grooves, and to facilitate the raising of the lower edge of the lower sash to the full height of the opening closed thereby, I locate the usual roof plate somewhat inwardly of the outer edge of the roof and some distance below the latter, so that the oblique guide groove for the main sash at its upper end lies outside of the plate, thus permitting the upper end of the main sash to be carried above said plate and practically to the under side of the outer roof covering.

I have illustrated a practical construction embodying my invention in the accompanying drawing, in which,—

Figure 1 is a vertical section through the side of a street railway car above the level of the window sill, the section being taken through the sash members of the window and showing the post and sash guides in elevation, with both sash members in their lowered position in which the window opening is completely closed. Fig. 2 is a similar view but showing both sash members in fully raised position.

Referring to the drawing, 5 designates the usual lower sill of the window opening, and 6 designates as an entirety one of the usual side posts, the opposite sides of which are usually grooved or channeled to form guides for the window sashes. In this case the opposite sides of the post are provided with a relatively short upper guide groove 7 which terminates at 7^a and accommodates the short upper sash 8, and with a relatively long straight groove or channel which, it will be observed, is of uniform width throughout and slightly inclined or oblique relatively to the vertical channel 7, at its upper portion lying inwardly of said channel 7 and separated therefrom by a tapered and downwardly narrowed parting strip 10, said groove or channel 9 accommodating the lower or main sash 11.

12 designates the outer sheathing or covering of the side wall of the car above the window opening, 13 the outer roof covering, and 14 the interior roof finish. Between the roof members 13 and 14 is the usual longitudinal plate 15 which is supported upon the post 6 and an inwardly lying bracket 16 glued or otherwise secured to the inner edge of said post to form an extended rest for the plate 15.

It will be observed as constituting an im-

portant feature of the present invention that the guide-groove 9 for the lower sash 11 extends straight upwardly opposite and adjacent to the outer edge of the plate 15; thus permitting the raising of the main sash in a straight line by and beyond said plate, to the extent permitted by the roof 13 as illustrated in Fig. 2, showing the raised position of the lower sash 11, in which position the window opening guarded by said main sash when the window is closed, is fully opened or exposed.

The mounting of the short upper sash 8 in the vertical guide-grooves 7 has an important function in that it allows the short upper sash to be raised to afford ventilation in the upper part of the car and above the heads of the passengers where temperature or weather conditions prohibit the opening of the main sash 11.

Aside from the advantages above pointed out accruing from the location of the plate 15 inwardly of the upper end of the guide-groove 9, the formation of said groove on an incline which intersects the vertical plane of the upper guide-groove 7 conduces to an economy in space in that it permits the car to be made wider in the region of the sills than would be the case were the guide-grooves both vertical and parallel with each other.

By running the main sash up on a straight line, instead of tipping it into a pocket in the car roof or guiding it in tapered or flaring guide-grooves, as has heretofore been proposed, economy of space in the roof region of the car is secured, since the interior roof finish may be made wider than where the sash is accommodated in a storage chamber in the roof, as above referred to.

I claim:

1. In a car window construction, the combination with upper and lower sashes, of a sash guide having a straight vertical guide-groove for the upper sash and a straight in-

clined groove of uniform width for the lower sash the upper portion whereof lies inwardly of said vertical guide-groove, substantially as described.

2. In a car window construction, the combination with upper and lower sashes, of a sash guide having a straight vertical guide-groove for the upper sash, and a straight inclined groove of uniform width for the lower sash, the upper portion of said inclined guide-groove lying inwardly of said vertical guide-groove and its lower portion crossing the vertical plane of said vertical guide-groove, substantially as described.

3. In a car window construction, the combination with upper and lower sashes, of a roof plate supported on the upper part of the sash guide some distance below the roof, and a sash guide having a straight vertical guide-groove for the upper sash, and a straight inclined groove of uniform width for the lower sash, the upper portion of said inclined guide-groove lying inwardly of said vertical guide-groove and outwardly of the outer edge of said plate, substantially as described.

4. In a car window construction, the combination with upper and lower sashes, of a roof plate supported on the upper part of the sash guide some distance below the roof, and a sash guide having a straight vertical guide-groove for the upper sash, and a straight inclined groove of uniform width for the lower sash, the upper portion of said inclined guide-groove lying inwardly of said vertical guide-groove and outwardly of the outer edge of said plate, and the lower portion thereof crossing the vertical plane of said vertical guide-groove, substantially as described.

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