

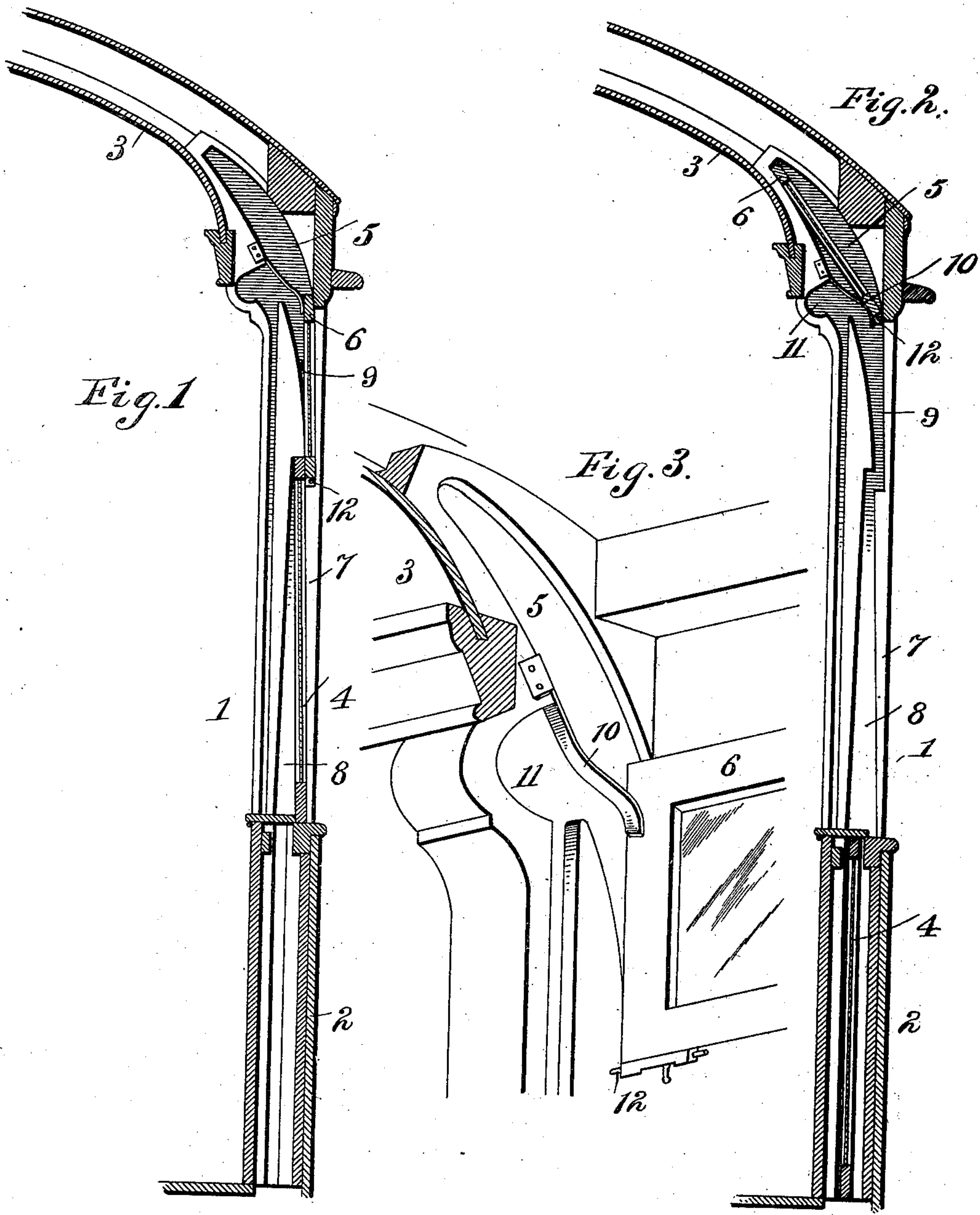
No. 693,611.

P. M. KLING.
CAR.

Patented Feb. 18, 1902.

(No Model.)

(Application filed Oct. 14, 1901.)



Witnesses.
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UNITED STATES PATENT OFFICE.

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CAR.

SPECIFICATION forming part of Letters Patent No. 693,611, dated February 18, 1902.

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To all whom it may concern:

Be it known that I, PETER M. KLING, a citizen of the United States, residing at Elizabeth, in the county of Union, State of New Jersey, have invented certain new and useful Improvements in Cars, of which the following is a specification.

My invention is particularly intended for electric cars of that class known as "convertible"—that is to say, cars adapted for use in different seasons and adapted to be made either open or closed at will when desirable by reason of the condition of the weather. It is desired in such cars to have capacity for tight closing in wintry and wet weather and for complete opening of the sides in bright weather.

The object of my invention, therefore, is the production of a car which has the greatest possible expanse of window-surface, means for completely closing the windows, and means enabling the windows to be completely pushed out of the way, so as to make the sides of the car practically open.

In the accompanying drawings, Figure 1 shows in vertical section a part of the car embodying my improvement, the windows being closed. Fig. 2 is a similar view thereof, the windows being shown open. Fig. 3 is a perspective view of a portion of the upper part of the car.

The car 1 may be of any usual or preferred construction, except that the sides are, as shown, open from the panels 2 entirely to the roof 3. The side panels 2 extend from the car-floor to substantially the height of the seat-backs (not shown) and are doubled to afford a casing for one part 4 of the window. This lower part 4 of the window is of substantially the full size of the ordinary car-window. I have found that by careful management of the space I can provide in the angle or curve of the roof 3, between the outer sheathing and the inner lining, a casing 5 for a second window-section 6. The car-posts 7 have guideways 8 for the lower sash and 9 for the upper, so arranged that when the window is closed, as in Fig. 1, the sash-sections will overlap the upper section outside of the lower to shed water. When in the lower or closed position, the upper sash

rests on the bottom of guide-grooves 9. The said guide where it enters the car-roof is on its outside curved to conform to the car-roof and to force the upper end of the sash inward, so that it will lie against the flat inner side of the groove, as shown in Fig. 2. Spring extensions 10 from the lower ends of said flat sides of the guide-groove hold the upper edge of sash 6 firmly in place when the window is closed, as shown in Fig. 1, guide the sash to proper position, and holds it out of the curtain-space 11 while it is being raised, and guides and forces its lower end over to the position shown in Fig. 2 when it is completely open. At this position it may be held up by a bolt 12, carried by the sash and adapted to enter a hole or seat in the car frame or post. It will be seen that when the sash 7 is lowered and the sash 5 raised they will, as shown in Fig. 1, completely close the side of the car; but when they are thrown, respectively, up and down into their casings the side of the car will be practically unobstructed and the car will therefore be converted from a closed to an open car. It will also be seen that the obtaining of a higher window-space with my construction results from the dividing of the window horizontally and utilizing for storing it in the open condition not only the lower casing in the panel, but an upper casing provided in the roof of the car.

While the shortening of the lower sash enables me to use a low car-panel, the shortening of the upper sash enables me to construct the upper part of the car with the minimum of side panel or letter-board; also, the upper sash will move freely past the corner of roof and letter-board without requiring such a casing as would take up valuable space in the interior of the car.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. In a car in combination with a window having upper and lower meeting sashes, a casing for the lower sash in the side panel, a casing for the upper sash in the car-roof between the outer roof-sheathing and the inner roof-lining, and car-posts having guides for said sashes, the lower one straight and the upper one inclined, the latter adapted to guide the

upper sash through an inclined path to its position in the roof-casing, substantially as set forth.

2. In a car, the combination of a side panel
5 having a window-casing, a window-section adapted to occupy the same, a car-roof having a window-casing, and a window-section adapted to occupy the same, the said roof-casing having inclined guides for the upper window-
10 sections.

3. In a car, the combination of a side panel

having a window-casing, a window-section adapted to occupy the same, a car-roof having a window-casing, and a window-section adapted to occupy the same, the said roof-casing 15 having inclined fixed guides and curved spring-guides.

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Witnesses:

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