R. R. LEE.

WINDOW GLASS GUIDE FOR VEHICLES.

APPLICATION FILED FEB. 16, 1920.

1,370,894. Patented Mar. 8, 1921.

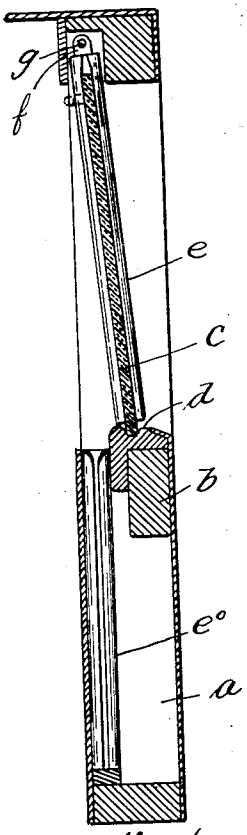


Fig. 1.

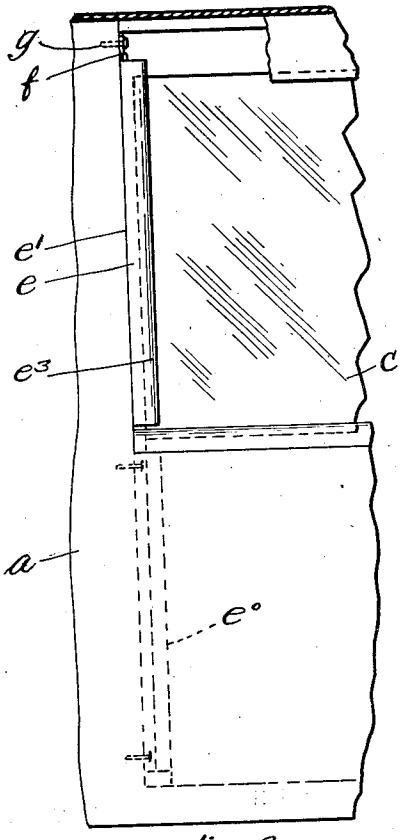


Fig. 2.

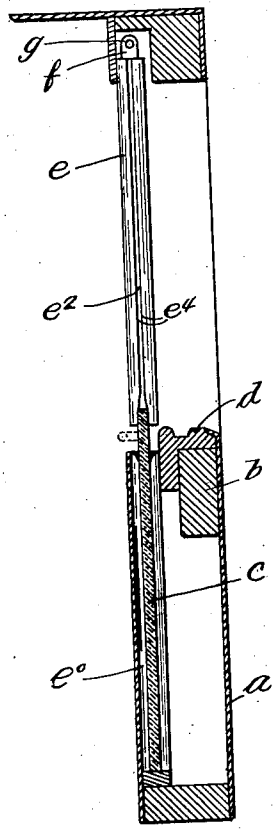


Fig. 3.

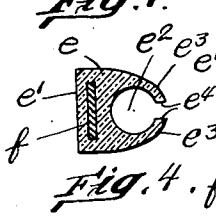


Fig. 4.

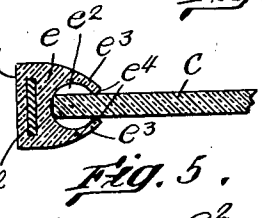


Fig. 5.

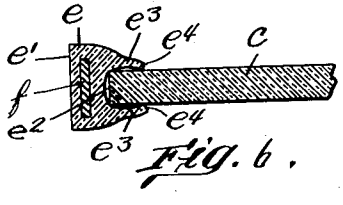


Fig. 6.

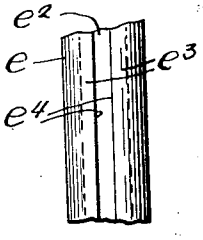


Fig. 7.

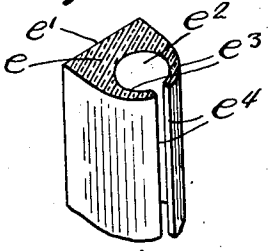


Fig. 8.

Inventor,
Richard R. Lee
by L. H. Manning
Atty

UNITED STATES PATENT OFFICE.

RICHARD R. LEE, OF MERRIMAC, MASSACHUSETTS.

WINDOW-GLASS GUIDE FOR VEHICLES.

1,370,894. Specification of Letters Patent. Patented Mar. 8, 1921.

Application filed February 16, 1920. Serial No. 359,140.

To all whom it may concern:

Be it known that I, RICHARD R. LEE, a citizen of the United States, and a resident of Merrimac, county of Essex, State of Massachusetts, have invented an Improvement in Window-Glass Guides for Vehicles, of which the following is a specification.

This invention relates to constructions for holding window glass in vehicles, and which are especially designed to prevent rattling.

Prior to my invention it has been attempted to prevent noise, due to rattling of the window glass, by providing guide ways therefor, which are composed of noise deadening material, such as felt or rubber. The chief objection to this construction is that the grooves in which the glass slab is held, and which are lined with the sound deadening material referred to, are made to fit the square edges of the glass slab, and, unless the fit is practically exact, this arrangement is a source of trouble and annoyance for the reason that if the fit is too tight, the glass can only be raised and lowered with difficulty, and if it is too loose, vibration will be permitted, which will cause noise. Moreover, in construction factories, much difficulty is encountered on account of variations in thickness of the glass which is employed, so that it is necessary to provide guiding means for the glass having grooves of different widths, thus adding greatly to the expense of construction.

The primary object of my invention is to provide a glass slab guiding and holding means which is adapted to receive and hold against noisy vibration, glass slabs which vary to a relatively wide extent in thickness, without readjustment on account of such variations, and which, while reducing to a minimum the noise due to vibration, will also reduce the frictional engagement of the glass with the guide ways, as compared with prior devices of a somewhat similar character, so that the force of frictional engagement will not be too great.

I accomplish this object by providing grooved guide ways of flexible rubber, the opposite sides of the grooves thereof being formed to extend convergently and being inwardly curved and adapted to yield, to correspond to the thickness of the glass, and to engage the surface of the glass at their edges only.

For a more complete understanding of my invention, reference is made to the accompanying drawing in which:

Figure 1 is a vertical sectional view of a window casing embodying my invention and showing the window in closed position.

Fig. 2 is a front elevation thereof.

Fig. 3 is a view, similar to Fig. 1, showing the glass in open position.

Figs. 4, 5 and 6 are detail sectional views of a preferable form of the rubber guideway which I employ.

Fig. 7 is a detail view of the front side thereof, and Fig. 8 is a perspective view of a slight modification.

Referring to the drawings, the window casing *a* is of common form, being provided with the usual sill *b*, above which is the opening, which is normally closed by the glass slab *c*, and beneath which is a pocket, to receive the slab when the window is opened, said sill having a grooved cap *d*, to receive the bottom edge of the slab when the opening is closed.

According to my invention I provide a guideway *e*, of soft, flexible rubber, at each side of the casing opening, each having a flat base *e'*, adapted to seat against the sides of the casing and a groove e^2, adapted to receive the glass slab, said groove being of circular form, transversely, so that the inner surfaces of the side walls e^3 of the groove, are normally, concave. The outer surfaces of said walls are convexly curved, so that said walls are transversely curved, and extend convergently. The edges of said walls thus form the opposite sides of a narrow slot, which leads to the substantially wider circular portion of the groove, the normal width of said slot, between said edges e^4, being somewhat less than the thickness of any glass slab which is likely to be placed therein, and the width of the circular portion of the groove being at least as great as the thickness of any such slab.

With this construction, when the slab edge portion is pressed into the groove, the side walls e^3 will yield to the necessary extent to permit such insertion, so that the inner corners of the edges e^4 of the entrance slot will press against the surface of the slab at a distance from the extreme edge of the slab, while the intermediate portion will not be engaged, as indicated in Figs. 5 and 6, in which the action with slabs of different thicknesses is indicated.

The base portion of the guideways is further provided with a metal stiffening strip, *f*, which is embedded therein, as indicated in Fig. 4, and the guideway sections, which are at opposite sides of the casing opening, are pivoted at their upper ends by passing a pivot screw *g* through the upper end portion of the strip *f*, (from which the rubber may be cut away, if necessary), so that said guideways may be swung to permit the slab to swing from the position in which its lower edge rests in the groove of the cap piece *d*, as in Fig. 1, to a vertical position, in which it may be lowered into the pocket beneath the sill, said guideways being of sufficient length to clear the cap piece *d* and retain the upper edge portion of the slab when the latter is resting on the bottom of the pocket.

Another guideway section e^0 is provided at each side of the pocket, in line with the other sections when in vertical position, to receive the glass slab when lowered therein, as shown in Fig. 3. As these sections e^0 are fixed and may be secured in any suitable and convenient manner, guideways having the embedded metal strips need not be used. That is, these guideways may be made of solid rubber, as indicated in Fig. 8, means for holding the guideways against bending being unnecessary in this relation, although its presence would not be detrimental, and would form a convenient means of securing the rubber strip in position.

I claim:

1. In combination with a window frame, a glass slab, and a guideway for the slab comprising a rubber strip having a longitudinal groove to receive the edge portion of the slab, the sides of said groove extending convergently to yieldingly engage the surface of the slab at a distance from the extreme edge thereof without engaging the intermediate portion thereof.

2. In combination with a window frame, a glass slab, and a guideway for the slab comprising a rubber strip having a longitudinal groove to receive the edge portion of the slab, the inner surface of the sides of said groove being concaved and said sides extending toward each other into a proximity, at their edges, substantially less than the thickness of the slab, to permit said edges to engage the surface of the slab and hold the intermediate portion of said sides out of engagement with the said surface.

3. In combination with a window frame, a glass slab and a guideway for the slab comprising a rubber strip having a longitudinal groove therein to receive and guide the side edge portion of the slab, the sides of said groove being transversely curved and extended toward each other into relatively close proximity at their extreme edges, so that said groove increases in width inwardly, and said edges are adapted to be yieldingly engaged with the sides of the glass at a distance from the edge thereof.

4. In combination with a window frame, a glass slab for the window opening, said frame having a pocket beneath the opening to receive the slab when lowered and a support at one side of the pocket for holding the slab in closed position, and a longitudinally grooved resilient rubber guideway strip, to receive the side edges of the slab, said strip having a stiffener embedded therein and extending longitudinally thereof, and said stiffener having a pivotal connection at its upper end, with the frame to permit said strip to be swung with the slab, from its position on said support to the position in which it may be lowered into the pocket.

In testimony whereof, I have signed my name to this specification.

RICHARD R. LEE.