(No Model.)

C. E. GAREY

WINDOW SHUTTER.

No. 255,848. Patented Apr. 4, 1882.

Fig. 1.

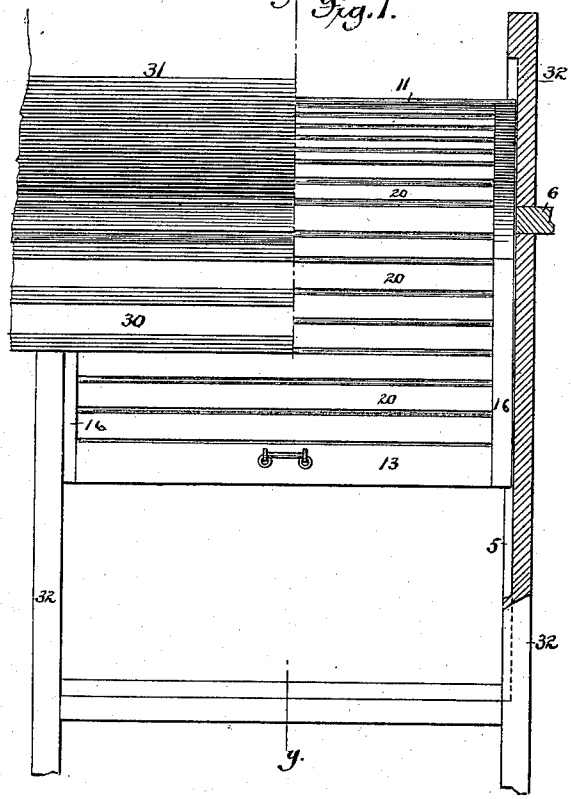


Fig. 2.

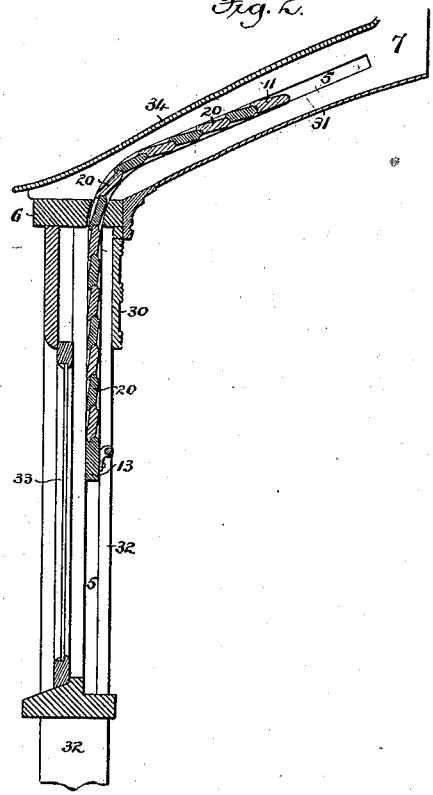


Fig. 3.

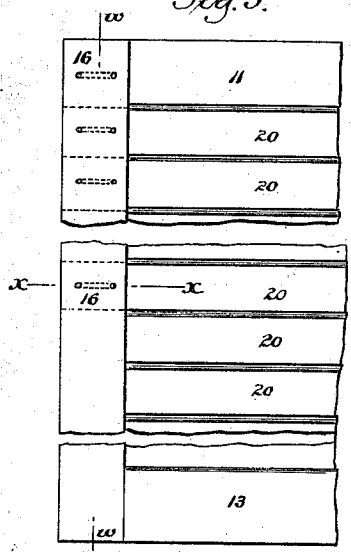


Fig. 4.

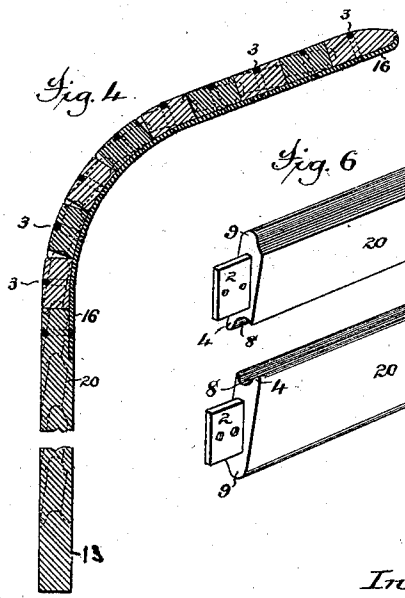
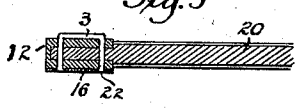


Fig. 6.

Fig. 5.



Attest;
Geo. H. Graham
T. H. Palmer

Inventor,
Caleb E. Garey,
by Munson & Philipp
Attys.

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

CALEB E. GAREY, OF NEW YORK, N. Y.

WINDOW-SHUTTER.

SPECIFICATION forming part of Letters Patent No. 255,848, dated April 4, 1882.

Application filed September 7, 1881. (No model.)

To all whom it may concern:

Be it known that I, CALEB E. GAREY, a citizen of the United States, residing in the city of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Window-Shutters, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to shutters for windows, and more particularly to that class of shutters constructed for use in railroad-cars, where the desirability of raising the shutter clear of the window-space is greatest. The improvements effected consist in a peculiar construction of shutter, whereby it is rendered flexible, so as to readily follow a curved guideway, and thus enable it to be raised with its lower edge above the window-space.

It also embraces, in combination with other features, a peculiar construction of the meeting edges of the shutter slats and rails, whereby said slats may move upon one another to follow a curved guideway, and yet maintain a close contact to form dust-tight joints; and in details of construction too fully hereinafter set forth to need preliminary description.

One embodiment of my invention is shown in the accompanying drawings, in which—

Figure 1 is a partial front and sectional elevation of a car-window provided with my improved shutter, said view also showing a portion of a lining-board, 30, and head-lining 31, belonging to the car-body. Fig. 2 is a transverse sectional elevation of the same on the line *y y* of Fig. 1. Fig. 3 is an elevation of the rear of a portion of the shutter detached. Fig. 4 is a transverse sectional elevation of the shutter, taken on the line *w w* of Fig. 3. Fig. 5 is a cross-sectional elevation of the same on the line *x x* of Fig. 3; and Fig. 6 illustrates by perspective views the shape of the edges of the slats, one of said slats being turned upside down for that purpose.

In its general features the shutter is composed of a series of horizontal slats, 20, that are superposed one upon another and confined between a rectangular top rail, 11, and a horizontal bottom rail, 13, which slats and rails are provided with tenons, as 2, at their opposite ends, (see Fig. 6,) which enter mortises in the stiles 12, to which they are secured by means of staples 3, as in Fig. 5, or in any common way. This shutter is arranged to slide up and down in ways provided for it to run in between the side pillars or posts, 32, or it may be in grooves 5 formed therein, said ways or grooves being constructed a distance inward from the ways or grooves in said posts in which the window 33 slides. This shutter is, moreover, constructed so as to be flexible, and thus capable of being raised up and lowered down in a curved guideway—such, for instance, as is shown in the drawings, which represent the shutter applied to a railroad-car—and which curved guideway is constituted by continuing the grooves 5 up into the carlings or roof-rafters 7; or it may be provided in separate pieces, continuing said grooves in a curved course between the roof 34 and its head-lining 31, a suitable opening being made in the plate 6 to allow for the passage of the shutter through it. The construction affording this flexible character is as follows: The stiles 12 are divided transversely at points that intersect the meeting edges of adjacent slats, said severed portions of the stiles being held in contact with each other by means of a thin flexible strip of metal, 16, that lines their inner faces, and which is secured thereto by the staples 3, which pass through them and are headed down, as at 22. Each slat and its separated portion of the stile is thus secured at both ends to the metal strip, whereby the edges of the slats are held in contact to form a continuous shutter. The several slats are thus held in contact and rigidly supported from distortion or being thrown out of square, for the reason that the lower ends of the metallic strips 16 are fastened by the lower ends of the stiles 12 to the bottom rail, 13; and the upper ends of said metallic strips 16 are in like manner fastened to the top rail, 11. Furthermore, these metallic strips, being of springy metal, will, through their flexibility, readily bend and follow any curvature which the guideway may have, the divided stiles readily following any curve and carrying the slats with them in the proper direction. The flexible or spring character of the metal strips 16 will also operate to cause the divided stiles to impinge upon the sides of the guideway, whether the same be

straight or curved, in such a manner as to maintain the shutter at any point to which it may be moved, thus enabling it to sustain itself in a partially or wholly raised position.

It is manifest that a flexible shutter so constructed may have a considerable portion of its lower end made rigid, as in Fig. 3, when such portion is not required to follow a curved guideway, which is accomplished by simply omitting the dividing cuts severing its stiles throughout any desired distance or number of slats at its lower end; and when the lower end is thus left rigid it will be unnecessary to continue the flexible strips 16 to any extent beyond that required to secure such strips to the rigid parts.

A shutter thus constructed may cover a window completely, and be raised to such a height as to wholly unobstruct the window-space, which is an advantage very desirable in a railroad-car, where the windows are necessarily contracted.

Window-shutters as commonly constructed are made of slats at an angle, the edge of one slat overlapping another; but such constructions afford slight recesses between the slats, which admit dust and cinders, and therefore serve ineffectually as guards other than protections against the sunlight.

One object of this invention is to so construct the shutter as to overcome this disagreeable feature, especially in railroad-car-window shutters, and the same is accomplished by the following construction:

Each slat 20 is provided on its lower outer side with a longitudinal lip, 4, behind which is formed a groove, 8, which groove fits or seats itself upon a curved tongue, 9, that is provided on the upper outer edge of such slat, behind which tongue a recess, 1, is formed by the ogee form of the edge when the slats are seated one upon another, which tongue 9 enters the groove 8 of the slat above it, and has its outer face overlaid by the lip 4, thus providing a fixed seat and overlapping guard between adjacent slats, preventing the slats separating upon any pressure applied to them, and forming practically an even and tight joint that will prevent the passage of dust and cinders.

The top rail, 11, will have a construction like the under edge of the slat, and the upper edge of the bottom rail will have a construction like the upper edge of the slats, so that throughout the shutter each horizontal joint will be tight. Such a construction of slats also admits of their oscillating movements upon each other without breaking or separating their joints, while permitting them to readily follow the curvature of the guideway 5, the tongues 9 acting as knuckles and the grooves 8 as curved seats. The tenons 2 at the ends of each slat in this particular construction will be set at an angle, as shown in Fig. 6, so as to produce the general effect of overlapping slats, such arrangement causing the slats to stand at angles with respect to each other.

It is apparent that, instead of single metallic strips 16 at the rear of each stile, each two or more adjacent sections of the stiles might be connected by independent strips of spring metal, or that the flexible strips might be placed on the slats themselves and the object of this part of my invention be fully carried out.

The following is claimed:

1. A flexible window-shutter consisting of top and bottom rails and intervening slats united together by stiles that are divided so as to render the whole or a portion of the slats capable of an oscillating movement, said divided portions being connected by flexible metallic strips, substantially as described.

2. The combination of a window-shutter having divided stiles connected by flexible strips with a frame-work provided with curved guideways, substantially as described.

3. A flexible window-shutter consisting of top and bottom rails and intervening slats, the meeting edges whereof are provided with knuckle-joints, which rails and slats are secured to stiles that are divided transversely and connected together by means of flexible metallic strips, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CALEB E. GAREY.

Witnesses:
BRADLEY N. PHELPS,
GEO. H. GRAHAM.