

(No Model.)

2 Sheets—Sheet 1.

F. W. WOOD.

ANTI RATTLER FOR CARRIAGE WINDOWS.

No. 263,276.

Patented Aug. 22, 1882.

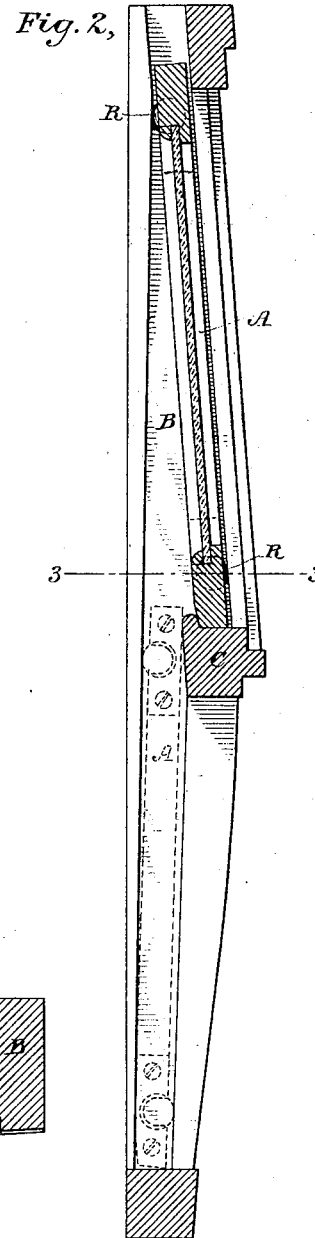
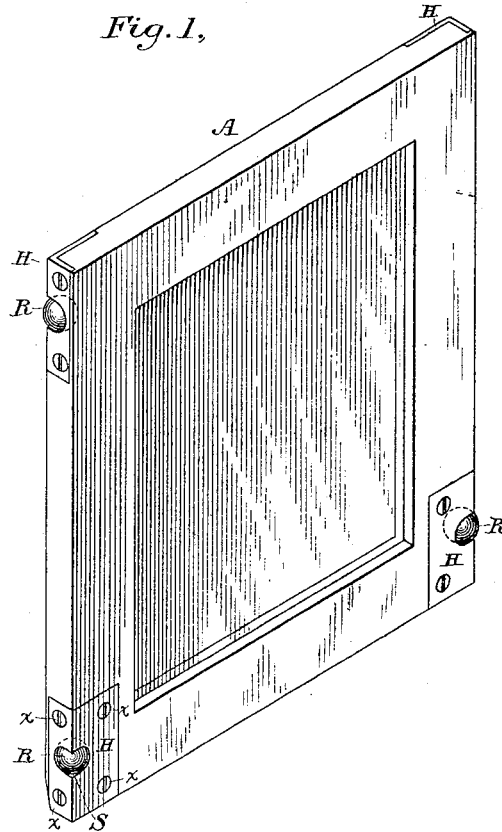
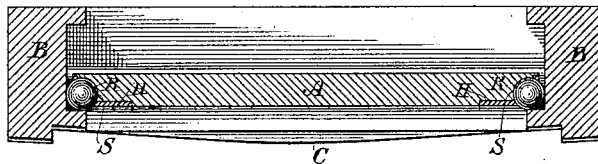


Fig. 3,



WITNESSES

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 4,

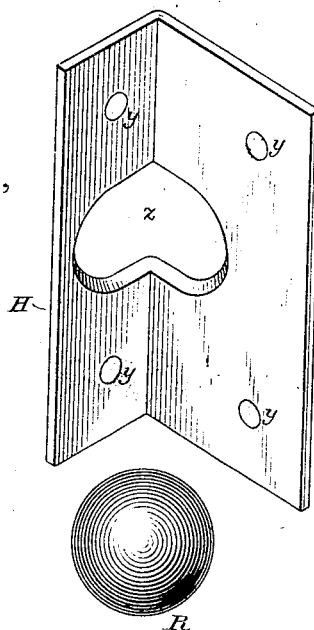


Fig. 5,

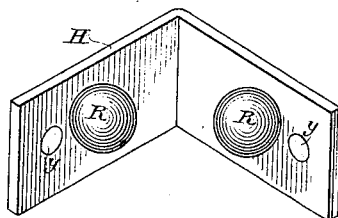


Fig. 6,

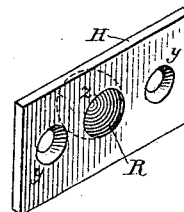
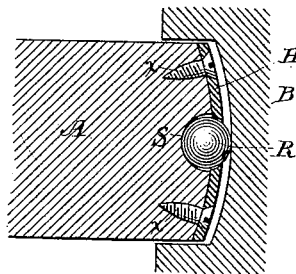


Fig. 7,



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UNITED STATES PATENT OFFICE.

FREDERICK W. WOOD, OF NEW YORK, N. Y.

ANTI-RATTLER FOR CARRIAGE-WINDOWS.

SPECIFICATION forming part of Letters Patent No. 263,276, dated August 22, 1882.

Application filed March 8, 1882. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. WOOD, a citizen of the United States, residing at New York, in the State of New York, have invented a new and useful Improvement in Anti-Rattlers for Carriage-Windows, &c., of which the following is a specification.

This invention relates to improvements in means for keeping sliding window-sashes, and more particularly those of carriages or private coaches, stage-coaches, and street-cars, from rattling in their guides. The jolting or jarring incident to the motion to wheeled vehicles renders their windows peculiarly noisy if not effectually guarded against rattling, as is well known, and the necessary looseness of the style of windows commonly used in coaches and street-cars, which I will term "coach-windows," their irregular and frequently violent movements of the window-sash, and the peculiar construction of the sash-guides have hitherto rendered it difficult to accomplish said end at all permanently in fitting these windows.

Various forms of anti-rattlers or "sash holders and tighteners," including some especially designed for coach-windows, have been proposed and patented by others.

The present invention consists in certain peculiar combinations of parts, all of which may be and have been embodied in a preferred form of "anti-rattler attachment," as applied to a coach-window, the same embracing "roller-balls" of elastic material, held in smooth unyielding seats in the edges of the sash or sliding "frame," and adapted to rotate freely within said seats in any direction, while they protrude at all times to cushion the sash and deaden sound, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of the sash of a coach-window provided with said preferred species of my improved anti-rattlers. Fig. 2 represents a vertical longitudinal section of a coach-door, with panels omitted, showing said sash in its guides. Fig. 3 represents a horizontal section on the line 3 3, Fig. 2. Fig. 4 is a perspective back view of one of the anti-rattlers on a larger scale, with its parts separated. Fig. 5 is a perspective back view of an anti-rattler of modified form. Fig. 6 is a perspective face view of

another form; and Fig. 7 represents a horizontal section through the edge of a sash and its guide, showing another form of the same device—

Like letters of reference indicating corresponding parts in the several figures.

A A, Figs. 2, 3, and 7, represent the wooden sashes or frames of carriage-windows; B B, guide-grooves of customary matching forms; and C, Figs. 2 and 3, the customary middle sill of a coach-window.

Each of my said anti-rattlers consists of one or more roller-balls of elastic material (shown at R) and a metallic housing-plate therefor, preferably of brass, (shown at H in each figure.) These are attached to the edges of the sashes A by means of wood-screws *x* passing through said housing-plates, and the balls coact with the ordinary internal surfaces of the guides B.

The sashes A have their edges recessed to form smooth unyielding ball-seats S S, preferably fitted to said roller-balls so as to resist change of shape, but loosely enough to allow the balls to rotate freely in any direction; and these seats may be lined with a graphite composition or with steatite or the like, to insure the rotation of the balls by reducing friction. The particular locations of said ball-seats, determining those of the roller-balls, will vary with the style of window and the form of the anti-rattlers. Each ball-seat is formed within a depression, rendering the corresponding housing-plate flush, as shown in Figs. 1-3.

The sash-guides B B, Figs. 2 and 3, are formed within the pillars of the coach-door, which also support the middle sill, C; and the bead of the latter coacts with the beveled lower edge of the sash A when the sash is raised to close the window, as shown in full lines in Fig. 2, in customary manner. To effectually guard the sash against rattling when so raised, and also when lowered, (within the door,) as shown in dotted lines in Fig. 2, a pair of my roller-balls, R R, are arranged at the outer lateral edge-corners of the sash near its bottom, and another pair at the inner lateral edge-corners of the sash near its top, as clearly shown in Fig. 1. The lower roller-balls coact with the outer walls of the guides while the sash is raised, and with the lateral surfaces or main walls of the guides, as shown in

Figs. 2 and 3, being pressed against the former in the act of engaging the lower edge of the sash with said bead of the middle sill, while the upper roller-balls rest against the inner walls of the guides, as shown in full lines in Fig. 2, and also in contact with said main walls. When the sash is lowered the upper roller-balls are pressed tightly against the inner walls of the guides by the middle sill in contact with the outer surfaces of the sash at top, as shown in dotted lines in Fig. 2, and the lower roller-balls rest against the outer walls of the guides.

When raised the sash of a coach-window is inclined in one direction, and when lowered inclines in the opposite direction, as clearly illustrated in Fig. 2. The complex motion of the sash in changing from one of these positions to the other is fully provided for by my roller-balls, which rotate equally well in any direction and preclude binding.

To enable the roller-balls R to so operate as cushions and as universal rollers, they may be made of any suitable "elastic" material or composition, so as to have a smooth exterior and sufficient rigidity for rotation, being of spherical shape, with sufficient elasticity and "deadness" to vibration to insure the preservation of their shape and the cushioning of the sash in the manner aforesaid. A suitable article of "rubber" has been used.

The housing-plates H are constructed with holes y, "countersunk" on the outside to receive the screws x, and with holes z, of suitable shape and size, countersunk on the inside to allow the roller-balls to protrude therethrough and to rotate freely in any direction without allowing them to escape.

The preferred form of housing plate for coach-windows and for other windows of small or moderate size in which a square-edged sash slides in guides which have walls substantially at right angles to each other is shown separately in Fig. 4. This housing-plate embraces the edge-corner to which it is applied, materially strengthening the sash, while the ball-hole formed in its angle provides for the aforesaid location of each roller-ball so as to coact with two guide-surfaces.

The modification illustrated by Fig. 5 is designed for heavier or thicker sashes and those which are more tightly fitted. The housing-plate H is angular like the first, but has a ball-hole in each wing, and its roller-balls R R may be quite small, as represented. It is obviously adapted to operate the same as the form first described.

For other windows flat housing-plates H may be provided, as illustrated by Fig. 6, each being fitted with a roller-ball R of proper size, and two of these attachments may be used together as a substitute for either of the said angular forms; or they may be disposed in various ways to prevent rattling without obstructing the movements of sliding window-sashes.

For a class of carriage-windows in which the sashes A have rounded lateral edges, the guides B being of corresponding shape, as shown in cross-section in Fig. 7, I propose, as illustrated by this figure, to locate roller-balls R centrally in said edges of each sash by means of properly-arranged seats S and curved housing-plates H, substantially as shown. Roller-balls so applied, tending to follow the deepest part of the guides, will support the sash out of contact with the other surfaces of the guides while the sash is at rest, and thus prevent rattling.

I am aware that what may be termed a "roller-ball" has been proposed for use in a hole in the edge of a sliding window-sash, in connection with a spiral spring behind it, and "such stops as will force the said ball into the hole when the sash is pushed either up or down," the whole being described as an "elastic friction apparatus for furniture, window-sashes, &c." I am also aware that balls of elastic material (rubber) have been proposed for use as stops in sash-supporters; also, that journaled "rollers" and knobs partly of elastic material have been used in coach-windows as anti-rattlers, and that the adaptation of each anti-rattler attachment to coact with two guide-surfaces is not broadly new. All the said pre-existing devices are hereby disclaimed.

I claim as new and of my own invention and desire to protect under this specification—

1. Anti-rattling roller-balls of elastic material, as herein specified, in combination with a sliding window-sash provided with smooth unyielding ball-seats at its edges, within which said roller-balls are free to rotate in any direction while they are caused to protrude at all times as cushions, substantially as herein described, for the purpose set forth.

2. In a coach-window as herein specified, the combination, with the sash or sliding frame, of anti-rattling roller-balls of elastic material held in smooth unyielding seats in the lateral edges of said sash by means of housing-plates, having openings through which said roller-balls are caused to protrude at all times as cushions while they rotate freely in any direction, as herein described, for the purpose set forth.

3. Anti-rattling roller-balls of elastic material and angular housing-plates having openings at their angles, through which said roller-balls project, in combination with a sliding window-sash provided with ball-seats at its edge-corners, and guides for said sash having surfaces substantially at right angles to each other to coact with each of said balls, as herein described, for the purpose set forth.

FREDERICK W. WOOD.

Witnesses:

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JOHN BINDER.