June 6, 1939. H. H. THOMAS 2,161,108

LOCOMOTIVE CAB WINDOW

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FIG. 1.

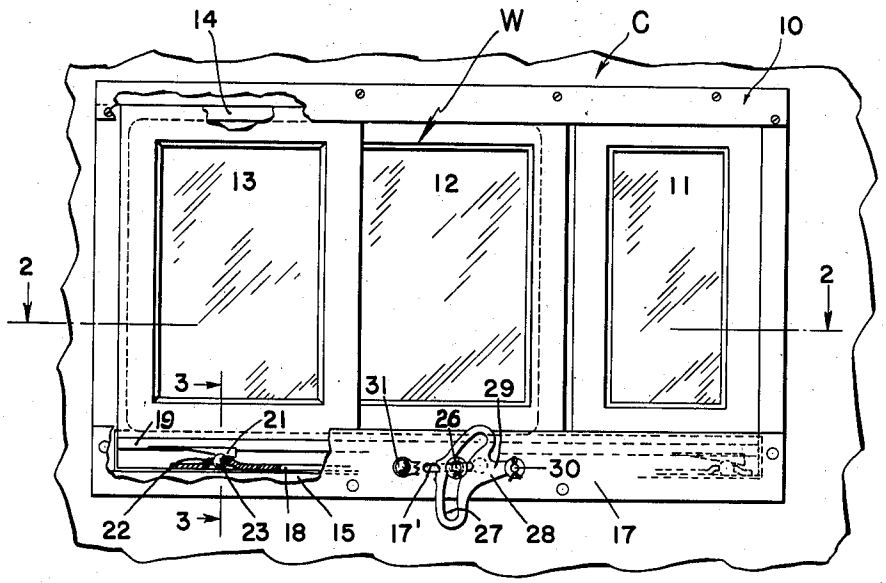


FIG. 2.

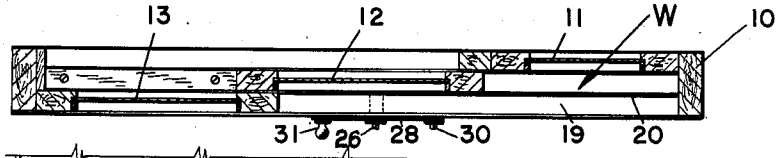


FIG. 3.

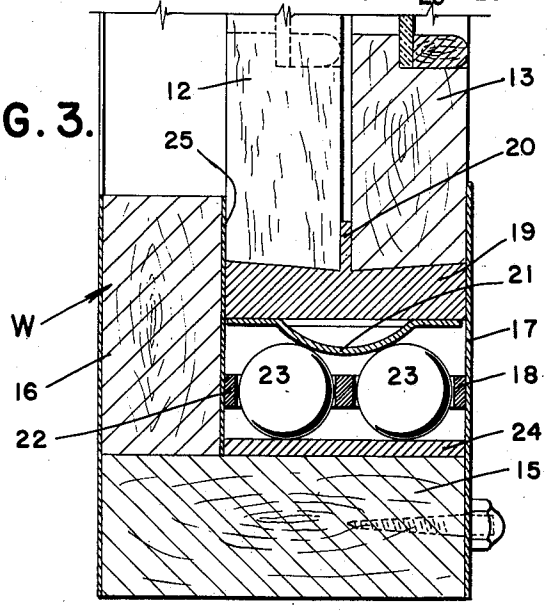


FIG. 4.

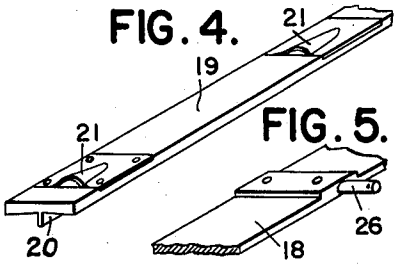


FIG. 5.

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FIG. 6.

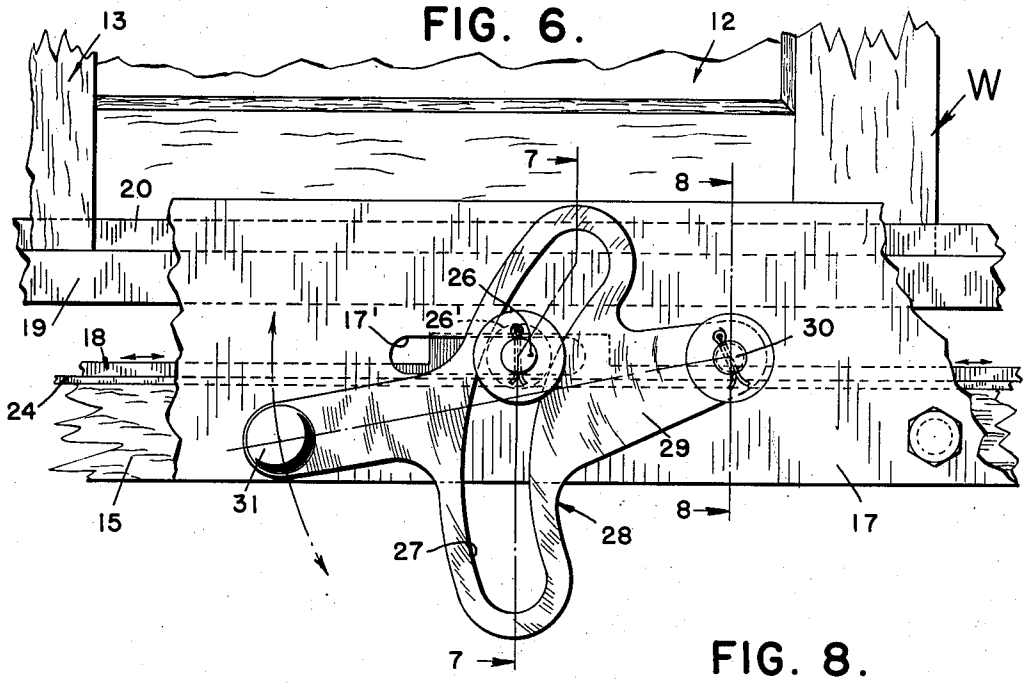


FIG. 8.

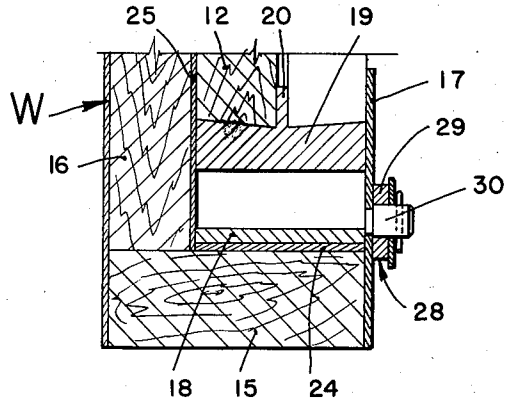
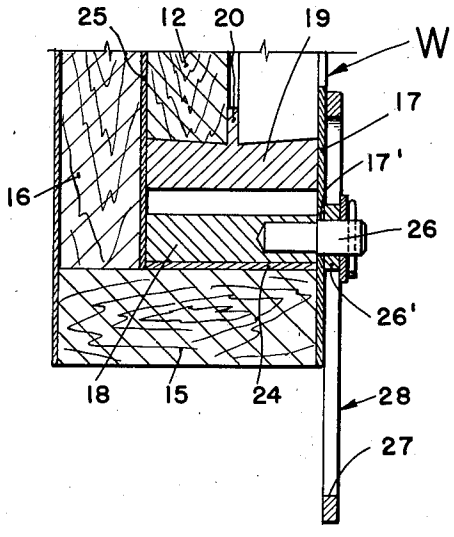


FIG. 7.



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LOCOMOTIVE CAB WINDOW

Henry H. Thomas, Clinton, Iowa

Application September 7, 1937, Serial No. 162,713

3 Claims. (Cl. 20—52.6)

This invention appertains to windows, and more particularly to a novel appliance for holding sliding window sashes against rattling, and in an adjusted, locked position against movement.

Locomotive cabs are provided with windows having the sashes thereof slidable in a horizontal plane to an open or closed position. Due to the vibration of a locomotive, and the tremendous speed developed, the window sashes rattle to a great extent, and if the sashes are at all loose, the same tend to slide back and forth. The continuous din set up by the rattling windows is extremely annoying, and the engineer or fireman use any means at hand in an attempt to stop this rattling, and to hold the sashes in a preferred position. Generally, nails are employed, and the same are driven into the sashes and frame. Naturally, this is only a make-shift arrangement, and the nails soon mutilate the windows to such an extent that the locomotives have to be taken to the roundhouse for repair. Usually two sets of windows are replaced a year, and not only is this in itself expensive, but the locomotive has to be taken off of its run.

It is, therefore, one of the primary objects of my invention to provide novel means built in the window, which will be simple and easy to operate, for effectively holding the sashes firmly against any loose play, and in an adjusted position, without damaging the sashes or frame in any way whatsoever.

Another salient object of my invention is to provide means for taking up loose play in window sashes to hold the same against rattling, which means is of such a construction that the same will automatically compensate for any difference in height or size of the sashes, whereby both of the sashes will be tightly gripped by a single adjusting means.

A further important object of my invention is to provide a vertical, shiftable lift bar for supporting and guiding both of the sashes with a single means for operating the lift bar to simultaneously lock and hold both of the sashes.

A still further object of my invention is to provide novel means for mounting the vertical movable lift bar, whereby the same can rock transversely to compensate for any difference in the height of the two sashes, so that the lift bar will automatically adjust itself to said sashes.

A still further important object of my invention is to provide novel means for forming the lift bar itself, whereby the sashes will tend to gravitate toward the center parting rib of the bar, whereby the sashes will be held in close proximity to one another at all times.

A still further salient object of my invention is to provide a longitudinal, movable shift bar for operating the lift bar, with a novel eccentric cam member for operating the shift bar, whereby the shift bar will be held in an adjusted position against accidental displacement.

With these and other objects in view, the invention consists in the novel construction, arrangement, and formation of parts, as will be hereinafter more specifically described, claimed, and illustrated in the accompanying drawings, in which drawings:

Figure 1 is a fragmentary side elevation of a locomotive cab looking from the inside thereof showing my novel appliance incorporated with the window thereof, parts being shown broken away and in section to illustrate structural details.

Figure 2 is a horizontal section through the cab window taken on the line 2—2 of Figure 1, looking in the direction of the arrows.

Figure 3 is an enlarged, fragmentary, vertical section through the window, taken on the line 3—3 of Figure 1, looking in the direction of the arrows.

Figure 4 is a detail, fragmentary, perspective view of the lift bar, showing the same in an inverted position to illustrate the novel cam lugs carried thereby.

Figure 5 is a detail, fragmentary, perspective view of the lower shift bar.

Figure 6 is an enlarged, fragmentary, side elevational view illustrating the novel mechanism employed for actuating the shift bar.

Figure 7 is an enlarged, fragmentary, transverse sectional view taken on the line 7—7 of Figure 6, looking in the direction of the arrows, illustrating the operating mechanism.

Figure 8 is an enlarged, fragmentary, transverse sectional view taken substantially on the line 8—8 of Figure 6, looking in the direction of the arrows, illustrating the pivotal support for the operating lever.

Referring to the drawings in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter C generally indicates a portion of a locomotive cab having a window W incorporated therewith. The window W includes a frame 10 for receiving a stationary sash 11, and sliding sashes 12 and 13. The stationary sash 11 is shown with a glass panel, but in some cabs the window is provided with an opaque panel. In all instances the sliding sashes are provided with glass panes, but obviously these details form no part of the present invention. The upper edges of the sashes 12 and 13 are mounted in suitable guide tracks formed by the window frame and by a parting bead 14 formed on or secured to the lintle of the frame. The lower part of the window frame includes a sill or bottom rail 15, and this sill or rail carries an outer stop bar 16. A cover plate 17 is secured to the inner face of

the sill or bottom rail, and this cover plate can extend the same height as the stop bar 16.

In accordance with my invention I mount for longitudinal sliding movement above the sill or bottom rail 15, and between the stop bar 16 and the cover plate 17, a shift bar 18. Mounted above the shift bar 18 is the vertically movable lift bar 19. This lift bar 19 forms a guide for the bottom edges of the sliding sashes 12 and 13, and the same has formed thereon a center parting rib 20. I prefer to taper the upper face of the lift bar 19 toward the rib 20, so that the sashes 12 and 13 will normally tend to gravitate toward one another, and will thus be held in close proximity.

The lower face of the lift bar 19 has formed thereon or secured thereto at the longitudinal center thereof cam or wedge lugs 21, at spaced points. All of these lugs incline toward one end in the same direction, as can be clearly seen by referring to Figures 1 and 4. Particular attention is called to the fact that these lugs are curved transversely, and this curve serves an important purpose, as will be later set forth.

The shift bar 18 has struck up therefrom, at spaced points, cages 22 for the reception of anti-friction bearing members 23. These bearing members are located on opposite sides of the longitudinal center of the shift bar, and are adapted to engage under and on opposite sides of the lugs 21. In the present instance I have shown the anti-friction members to be balls, and such is the preferred arrangement, but obviously rollers can be provided for engaging the lugs, or any desired means, in fact, can be provided for engaging the opposite sides of the lugs.

A wear iron 24 can be placed upon the sill or bottom rail 15 to permit the easy sliding of the shift bar 18 with its ball bearings 23. Also, a wear iron 25 can be carried by the inner face of the stop bar 16 so as to prevent undue wear thereon by the sashes and the operating parts of my appliance.

Formed on or secured to the shift bar 18 is a laterally extending operating pin 26, which slidably extends through a slot 17' formed in the cover plate 17. This pin is received in an arcuate slot 27 formed in the eccentric radius cam lever 28. This cam lever carries an arm 29, which is rockably mounted on a pivot 30 carried by the cover plate 17. The cam lever also has formed thereon, in line with the pivot arm 28, an operating handle 31. It is to be noted that the arcuate slot 27 is arranged eccentrically to the pivot pin 30, and that when the lever is raised or lowered, the pivot pin 26 of the shift bar will be moved back and forth in the slot 17, and carry the shift bar therewith. The sliding movement of the shift bar will carry the bearing members 23 away from or under the wedge lugs 21 of the lift bar 19.

In operation of my improved appliance, the lever is raised when it is desired to manipulate the sashes 12 and 13, and the raising movement of the lever will shift the slide bar 18 to the left (see Figure 1), and the bearing members 23 will then rest on the flat portion of the lift bar 19. The lift bar will be in a lowered position. With the lift bar in a lowered position, sliding movement of the sashes is easily accomplished, and the bearing members rest on the flat part of the lift bar and hold the lift bar against rocking movement.

After the sashes have been moved to an adjusted position, and it is desired to hold the sashes against accidental movement and rattling, the operating lever is forced to a lowered position, and the shift bar 18 will be moved to the right with the bearing members 23 riding under the lugs on opposite sides of the center thereof. This will raise the lift bar 19 into a firm clamping position against the sashes, and the sashes will be positively held against rattling and shifting movement.

Very often variations in height occur in the sliding sashes, and in such case the lift bar 19 will automatically compensate itself for such variations as the rounded surfaces of the lugs 21 on the lift bar will rock on the bearing members. Thus, the lift bar can tilt transversely until the same engages both of the sashes.

The operating lever with its arcuate slot forms an effective means for shifting the shift bar, and for holding the shift bar against accidental movement, as can be readily understood by a person skilled in the art.

While I have shown and described one preferred embodiment of my invention, it is to be understood that changes in construction can be made thereto, providing the same do not depart from the spirit or the scope of my claims.

I claim:

1. In a window having a pair of sliding sashes, a single guide member therefor movable toward and away from the sashes, a longitudinally movable shift bar, tapered lugs on the guide member, bearing members carried by the shift bar movable into and out of engagement with the tapered lugs, and means for moving the shift bar to bring the bearing members into and out of engagement with the tapered lugs, said lugs being curved transversely, and said bearing members being adapted to engage on opposite sides of the lugs whereby the guide member can rock transversely to compensate for variations in size in the sash.

2. In a locomotive cab window, a pair of horizontally slidable sashes, a lift bar mounted below the sashes and having guide surfaces for the lower edges of the sashes, a shift bar mounted for sliding movement below the lift bar, tapered cams on the lower surface of the lift bar at spaced points, bearing races on the shift bar at spaced points, bearing members in said races movable into and out of engagement with the tapered lugs upon movement of the shift bar, and an operating lever for actuating the shift bar.

3. In a locomotive cab window, a pair of horizontally slidable sashes, a lift bar mounted below the sashes and having guide surfaces for the lower edges of the sashes, a shift bar mounted for sliding movement below the lift bar, tapered lugs on the lower surface of the lift bar at spaced points, bearing races on the shift bar at spaced points, bearing members in said races movable into and out of engagement with the tapered lugs upon movement of the shift bar, and an operating lever for actuating the shift bar, said lugs being curved transversely, and the bearing members being adapted to engage on opposite sides of the longitudinal center of the lugs whereby when the bearing members are in engagement with the lugs the lift bar can rock transversely, as and for the purpose specified.

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