

May 30, 1933.

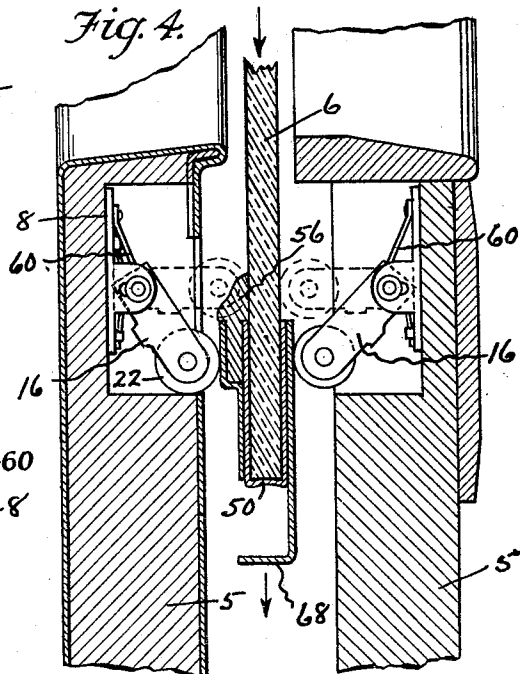
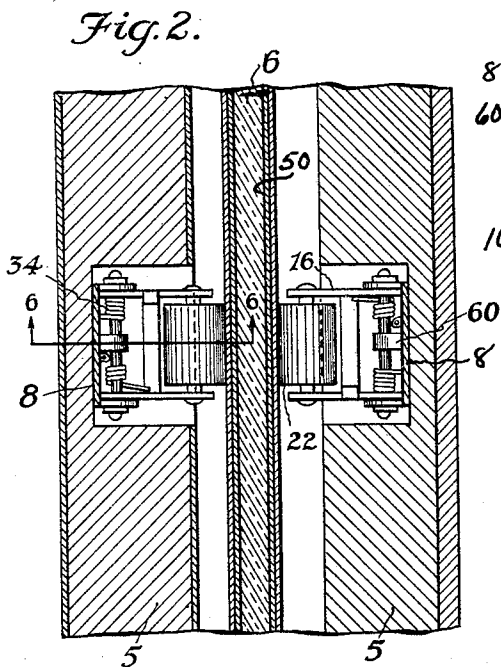
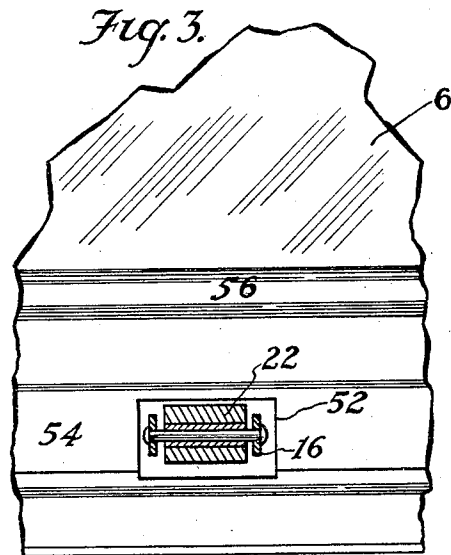
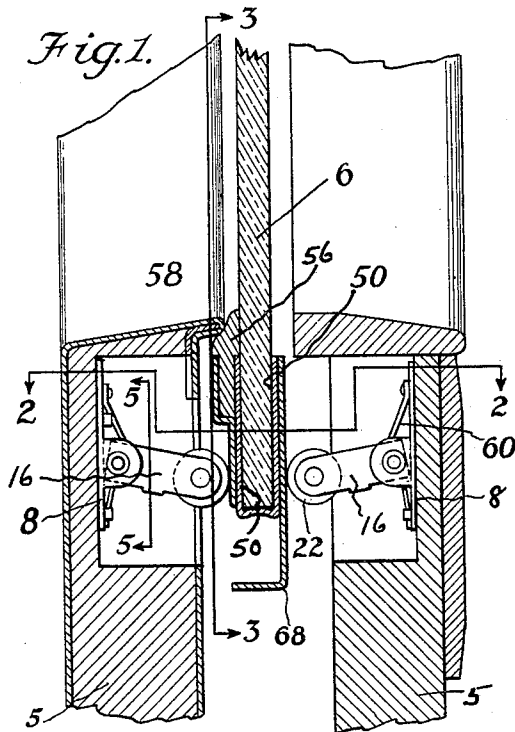
J. F. LEVAN

1,911,697

DOUBLE ACTING ANTIRATTLE FOR WINDOWS

Filed May 23, 1931

2 Sheets-Sheet 1



Inventor

John F. Levan

By Walter C. Vanderlip.

Attorney

May 30, 1933.

J. F. LEVAN

1,911,697

DOUBLE ACTING ANTIRATTLER FOR WINDOWS

Filed May 23, 1931

2 Sheets-Sheet 2

Fig. 5.

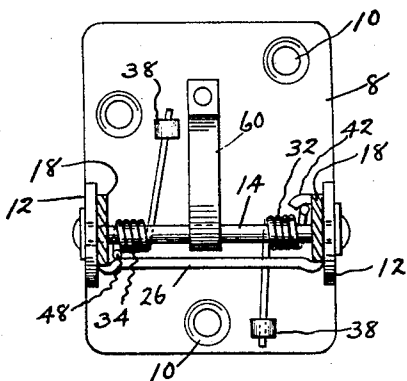


Fig. 6.

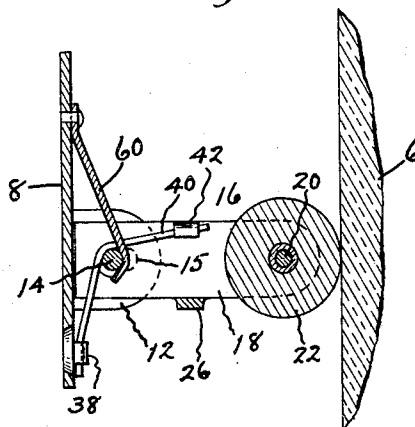


Fig. 7.

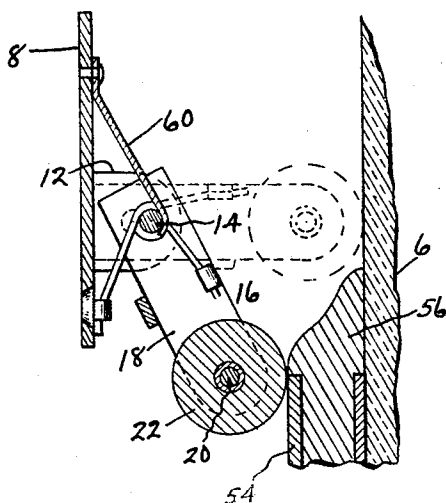


Fig. 8.

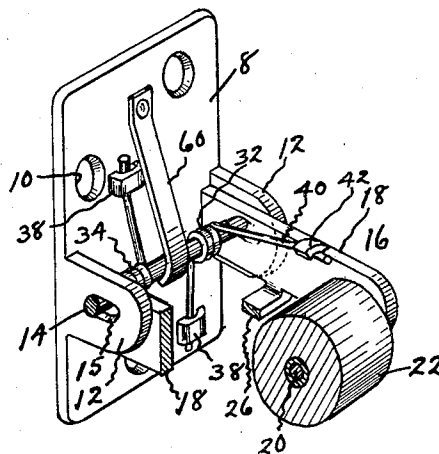
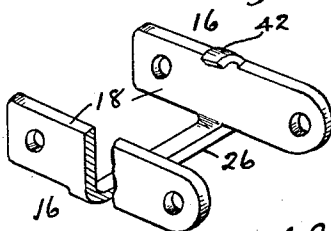


Fig. 9.



Inventor

John F. Levan

Louis C. Vanderlip.

Attorney

UNITED STATES PATENT OFFICE

JOHN F. LEVAN, OF ELKHART, INDIANA, ASSIGNOR TO EXCEL CURTAIN COMPANY, OF ELKHART, INDIANA, A CORPORATION OF DELAWARE

DOUBLE ACTING ANTIRATTLER FOR WINDOWS

Application filed May 23, 1931. Serial No. 529,525.

This invention relates to restraining devices especially adapted for use in holding slidable windows against rattling.

More specifically, the invention contemplates a window restraining device in which the window contact element is mounted for movement in a more or less arcuate path and is yieldingly held in an intermediate position so that the same may rock in either direction in response to raising or lowering of the window and is caused to have effective pressure contact with the window at all times.

A window restraining device embodying the invention will also be found to provide novel means by which the window contact element is yieldingly held in a predetermined position in pressure contact with the glass against the contrary influence incident to the stresses transmitted through the glass when the motor vehicle equipped with the device is in rapid motion or is travelling over rough roads.

Another aim of the invention is to provide a restraining device for windows which, although primarily designed for installation during the manufacture of an automobile, may be applied at any time thereafter without marring the appearance of the vehicle or material change in design.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings forming a part of this application and in which like numerals are employed to designate like parts throughout the same;

Figure 1 is a side elevation illustrating the application of a pair of the improved restraining devices, the window in connection with which the devices operate being shown in an elevated position.

Figure 2 is a horizontal sectional view taken on line 2—2 of Figure 1, the view being taken in the direction of the arrows;

Figure 3 is a vertical sectional view taken

on line 3—3 of Figure 1, the view being taken in the direction of the arrows.

Figure 4 is a side elevation illustrating the application of a pair of the improved restraining devices, the window in connection with which the devices are employed being partly lowered.

Figure 5 is a plan view of the improved restraining device, the carrier for the window contact element being shown in section to afford a view of the spring arrangement by which the window contact element is yieldingly held in an intermediate position, preferably at right angles to the plane of the window.

Figure 6 is a vertical transverse sectional view taken on line 6—6 of Figure 2,

Figure 7 is a vertical sectional view through the device applied, the window contact element being shown in a lowered position in response to movement of the associated window.

Figure 8 is a perspective of the improved restraining device, portions of the window contact element and the carrier thereof being in section.

Figure 9 is a perspective of the carrier for the window contact element, the same being partly broken away.

In the drawings wherein for the purpose of illustration is shown a preferred embodiment of the invention, the numerals 5 designate spaced frame members defining a compartment for the reception of a window 6.

As illustrated in Figures 1 and 4, the spaced frame members 5 may be provided with opposed sockets for the reception of the restraining devices. Although a pair of the improved restraining devices are shown, one on each side of the window, it is clear that one alone may be employed and, since each of the restraining devices are alike, the description of one will be found to suffice for both.

Each restraining device is provided with

a base 8 having suitably spaced apertures 10 for the passage of fastening screws or other means by which the base may be mounted as shown in Figure 1. More specifically, the base 8 is adapted to be secured to the inner upright side walls of the socket in which it operates.

As shown in Figure 8, the base 8 is provided along opposite longitudinal edges thereof with upstanding ears 12 receiving the terminal portions of a pivot pin 14. It is shown that the ears 12 are provided with slots 15 extending at right angles to the plane of the base and freely receiving the terminal portions of the pin 14 so that a pivotal and sliding connection is provided between the pin and the base, such connection being for a purpose that will hereinafter appear.

Figure 8 also illustrates that a carrier 16 is provided with a pair of spaced parallel flat legs 18 located between the ears 12 and mounted on the pivot pin 14. The outer portion of the legs 18 of the carrier 16 are joined by a roller pin 20 upon which a roller or window contact element 22 of rubber or other yieldable material is mounted. With reference to Figures 1, 4 and 7, it will be apparent that the window contact element 22 is mounted to freely turn on the supporting pin 20 thereof so that the roller may rotate freely in response to the raising and lowering of the window 6. The sides or legs 18 of the carrier 16 are joined by a transverse connecting member 26.

From Figures 1, 4 and 7 it will also be apparent that the window contact element 22 is mounted for movement in an arcuate path so as to respond readily to intentional movement of the window and as brought out in the opening paragraphs of the specification, the window contact element is yieldingly and normally held in an intermediate position in engagement with the window. In explaining this, attention is invited to Figures 5 and 8 in which it is illustrated that oppositely wound helical springs 32 and 34 are mounted on the pin 14 and are provided with arms engaging the base and the carrier 16. The base engaging arms of the helical springs 32 and 34 are anchored in place through the medium of fastening elements 38 that may be in the form of eyes struck up from the base although, it is obvious, that any means found expedient may be employed to hold the base engaging arms of the springs 32 and 34 in place.

It is clearly illustrated in Figures 5 and 8 that the outer end of the spring 32 is provided with an arm 40 engaging a lug 42 extending from one edge of one of the side members 18 while the other spring 34 has the outer portion thereof provided with an arm 48 engaging the transverse connecting member 26. As previously stated, the helical springs 32 and 34 are oppositely coiled and

when properly tensioned by the connection of the arms thereof to the base and to the carrier as clearly shown in Figure 5, will hold the carrier approximately at right angles to the plane of the glass.

As might otherwise be expressed, the pivotally mounted glass contact roller 22 is movable in an arcuate path by reason of the pivotal mounting of the carrier thereof and is normally held in what might be said to be an intermediate position through the employment of the oppositely coiled springs 32, one of which acts against the contrary influence of the other. By thus mounting the glass contact element 22, the same may be rocked in either direction in response to the raising or lowering of the window.

That is to say, the window contact element 22 and more particularly the carrier thereof is pivotally mounted and is yieldingly held in an intermediate position so that the same may rock in either direction to allow of the passage of the clip 50 which binds the lower edge of the window.

It might be added that the outer side of the channel shaped clip 50 is provided with a fastening strip 54 having the upper portion thereof offset outwardly to cooperate with the adjacent portion of the clip 50 in the formation of a channel or groove for the reception of the attaching portion of a rubber gasket 56, the latter being adapted to engage an overhanging portion 58 of the window frame to cooperate therewith in excluding water from the interior of the vehicle body or door in which the window is located.

With further reference to the mounting of the carrier 16, it is pointed out that the slidable connection between the carrier and the base, brought about by the provision of the slots 15, allows the flattened rear ends of the side members or legs 18 to flatly engage the base so that the carrier is normally held perpendicular to the window against the contrary influence of the stresses incident to travel of the vehicle equipped with the restraining device. That is to say, rapid travel of the vehicle or movement of the same over rough roads is conducive to rattling or vibration of the windows and this in turn tends to rock the carrier 16 notwithstanding the presence of the helical springs 32 and 34.

The squared rear ends of the legs 18 are held flatly and yieldingly against the base 8 by a leaf spring 60 shown to be anchored to the base and having one terminal portion thereof curved about the intermediate portion of the pin 14. Clearly, the spring 60 urges the squared ends of the legs 18 flatly into engagement with the base so that the carrier is normally held at right angles to the plane of the window. When the window is raised or lowered, a protruding portion thereof of such, for example, as the clip 50 may easily

pass the roller 22 since the carrier 16 is mounted to yield in either direction.

A window restraining device constructed in accordance with this invention may be applied with facility to the locations shown in Figure 1 or to other places where the same may be employed to advantage. More particularly, the device may be applied either during manufacture of the automobile or at any time thereafter and provides a simple and durable means by which the tendency of the window to rattle is effectively combated. The employment of the improved restraining devices does not in any way interfere with the motion transmitting means by which the window is raised through the manual operation of a crank or the like, it being apparent that the member 68 is employed in connection with the raising and lowering mechanism.

In summarizing, it will be seen that the invention embodies a window contact element which is pivotally and at the same time slidably connected to a supporting means and is yieldingly held between the ends of the arc in which it moves so that the same is free to rock in either direction in response to raising or lowering of the window, there being means by which ordinary vibration of the glass as distinguished from the actual raising and lowering of the glass is prevented from rocking the glass contact element. Of course, since the roller 22 is of rubber or other yieldable material this part may yield the required extent in response to minor vibration of the glass and in that way avoid the rattle that would otherwise take place.

Having thus described the invention, what is claimed is:

1. In a restraining device for windows, a glass contact element, means pivotally and slidably supporting the glass contact element, spring means yieldingly holding the glass contact element in a predetermined position and embodying a pair of oppositely acting springs urging the glass contact element in opposite directions, yieldable means normally urging the glass contact element in a direction contrary to the window, and means for limiting such movement of said glass contact element.

2. In a restraining device for windows, a window contact element, a carrier supporting the window contact element, a base, means pivotally and slidably connecting the carrier to the base, a leaf spring carried by said base and having association with the carrier to urge a portion of said carrier flatly into contact with the base to yieldingly hold the carrier in a predetermined position, and oppositely acting springs engaged with said carrier and cooperating with said first named spring to yieldingly hold the carrier in a predetermined position.

3. In a restraining device for windows, a

base, a carrier having legs pivotally and slidably connected to the base, oppositely acting springs engaged with said carrier and urging the carrier in opposite directions, there being means urging said legs flatly into engagement with said base to hold the carrier normally in a predetermined position, and a window contact element mounted on said carrier.

4. In a window restraining device, a base having ears provided with slots, a carrier having a pivot pin slidable in said slots to allow the carrier to both rock and slide with respect to said base, oppositely wound helical springs on said pivot pin and having arms engaged with the base and said carrier to urge said carrier in opposite directions, said carrier being provided with a flattened portion adapted to engage a portion of said base to yieldingly hold the carrier in a predetermined position, and a window contact element mounted on said carrier.

5. In a window restraining device, a base having ears provided with slots, a carrier having a pivot pin slidable laterally in said slots to allow the carrier to both rock and slide with respect to said base, oppositely wound helical springs on said pivot pin and having arms engaged with the base and said carrier to urge said carrier in opposite directions, said carrier being provided with a flattened portion adapted to engage a portion of said base to yieldingly hold the carrier in a predetermined position, a window contact element mounted on said carrier, and a spring carried by said base and having means engaging said pivot pin to urge the flattened portion of said carrier into engagement with said base.

6. In a window restraining device, a base having ears provided with slots, a carrier having a pivot pin rotatable and slidable in said slots, spring means mounted on said pin and urging said carrier in opposite directions, spring means engaged with said pivot pin and yieldingly holding the same against sliding movement, and a window contact element mounted on said carrier.

7. In a window restraining device, a carrier provided with spaced legs and a pivot pin joining the legs, a base to which said pivot pin is slidably and pivotally connected, said legs being provided with angular ends, means engaging said pivot pin to urge the said ends of said legs into contact with said base to yieldingly hold the carrier against oscillation, oppositely acting springs mounted on said pivot pin and engaged with said carrier to urge the same in opposite directions, and a window contact element mounted on said carrier.

8. In a window restraining device, a carrier element provided with spaced legs and a pivot pin joining said legs, a base element to which said pivot pin is slidably connected,

said legs being provided with seats, means acting upon said pivot pin to urge said leg seats into contact with said base element to yieldingly hold the carrier against casual oscillation, oppositely acting springs to urge said carrier in opposite directions, and a window contact element mounted on said carrier.

9. In a window restraining device, a carrier element provided with spaced legs and a pivot pin joining said legs, a base element to which said pivot pin is slidably connected, said legs being provided with seats, means acting upon said carrier element to urge said leg seats into contact with said base element to yieldingly hold the carrier against casual oscillation, oppositely acting springs to urge said carrier in opposite directions, and a resilient window contact element mounted on said carrier.

10. In a window restraining device, a base element provided with bearing ears having slots, a carrier element provided with trunnions which are slidable laterally in said ear slots to allow the carrier to both rock and slide with respect to said base, oppositely wound helical springs engaged with said base and carrier element to urge the latter in opposite directions, said carrier being provided with a seat adapted to engage a portion of said base, a window contact element mounted upon said carrier, and spring means acting upon said carrier element to urge said leg seat into contact with said base to yieldingly hold the carrier against casual oscillation.

11. In a restraining device for windows, a glass contact element, and means pivotally and slidably supporting the glass contact element, said means including yieldable means to restrain said pivotal means, and means independent of said yieldable means and contributing to restrain oscillation of said glass contact member supporting means, said means exerting a pressure on the pivotal support of the glass contact element to slidably actuate the latter.

12. In a restraining device for windows, a glass contact element, means pivotally and slidably supporting the glass contact element, spring means yieldingly holding the glass contact element in a predetermined position, and yieldable means normally holding the glass contact element support substantially perpendicular to the window against casual contrary influence, said means acting upon said pivotal means.

13. In a restraining device for windows, a glass contact element, means pivotally and slidably supporting the glass contact element, spring means yieldingly holding the glass contact element in a predetermined position, and yieldable means normally holding the glass contact element support substantially perpendicular to the window against casual

contrary influence, said means acting directly upon the pivotal support of the glass contact element to slidably actuate the latter.

14. In a restraining device for windows, a glass contact element, a carrier for said glass contact element, a base to which said carrier is pivotally and slidably connected, springs engaged with said carrier and having means urging the carrier in opposite directions, and a pressure element urging said carrier into a flat relation with a portion of the base to yieldingly hold the glass contact element against pivotal movement.

JOHN F. LEVAN.