

March 25, 1941.

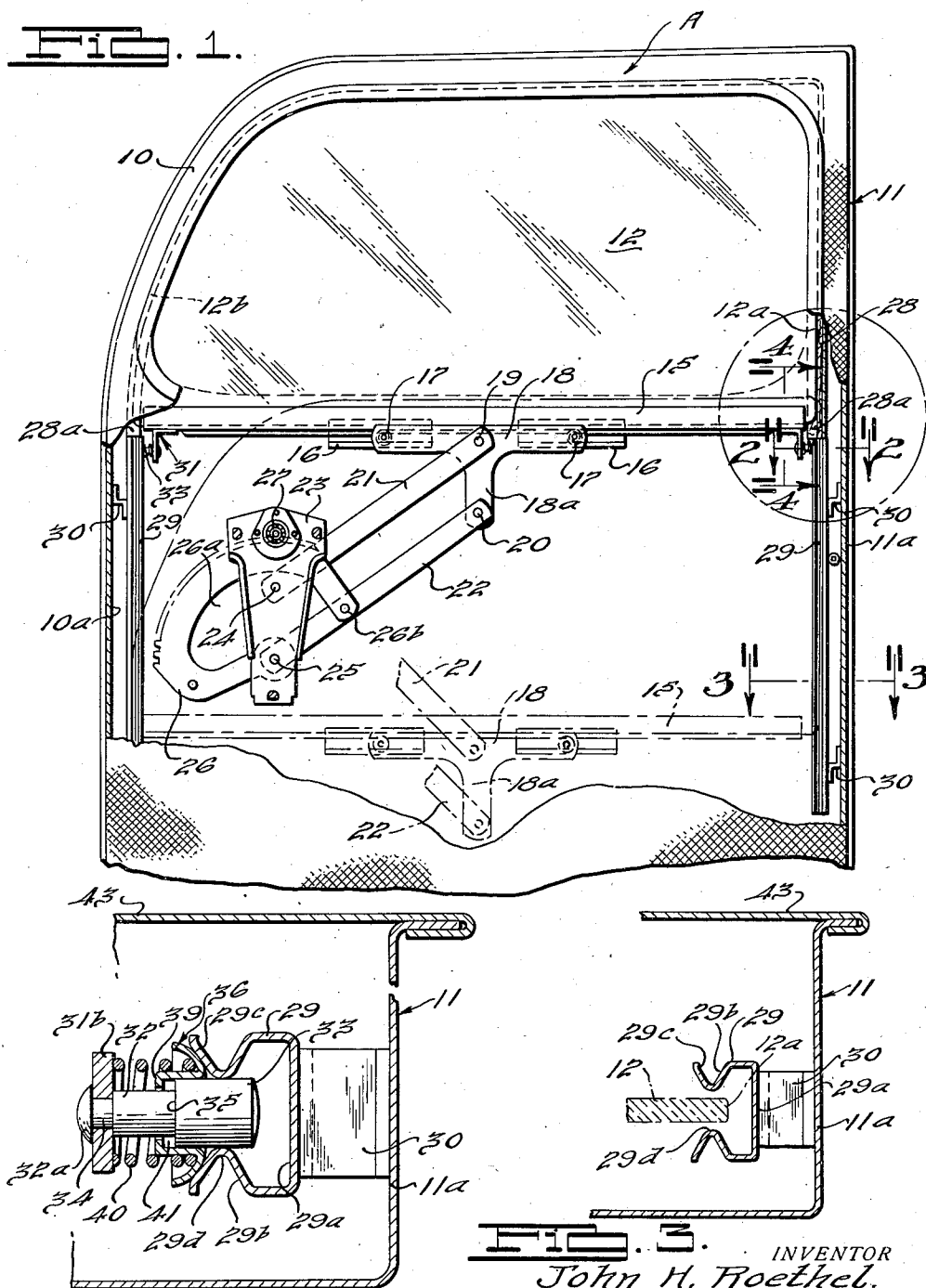
J. H. ROETHEL

2,236,447

WINDOW GUIDE

Filed Sept. 30, 1937

3 Sheets-Sheet 1



March 25, 1941.

J. H. ROETHEL

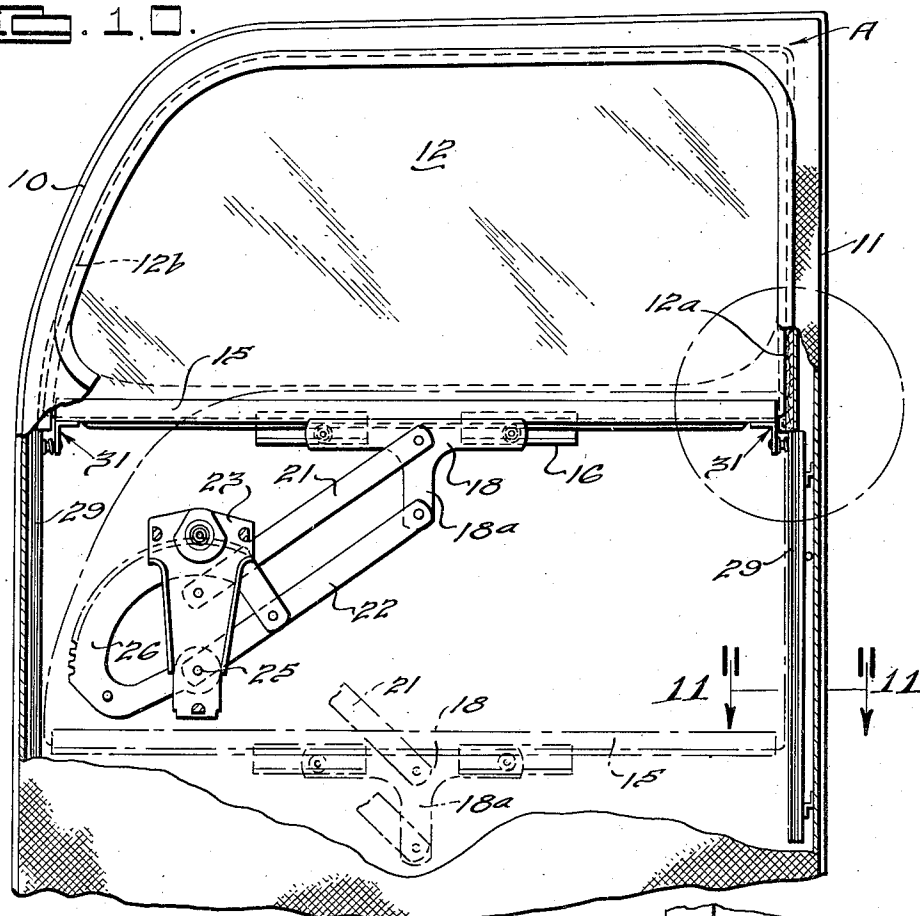
2,236,447

WINDOW GUIDE

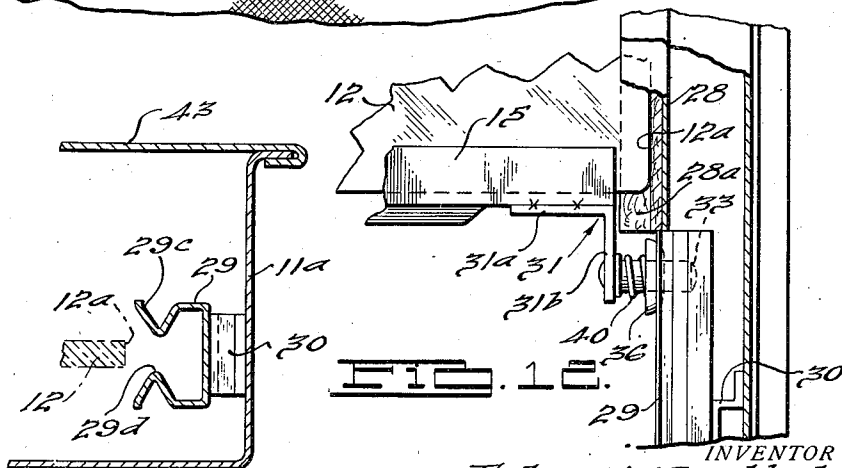
Filed Sept. 30, 1937

3 Sheets-Sheet 3

1. 1.



11. 11.



INVENTOR
John H. Roethel.
BY
Dike, Calver & Gray
ATTORNEYS.

UNITED STATES PATENT OFFICE

2,236,447

WINDOW GUIDE

John H. Roethel, Detroit, Mich., assignor to Marvel Equipment Corporation, Detroit, Mich., a corporation of Michigan

Application September 30, 1937, Serial No. 166,615

19 Claims. (Cl. 296—44.5)

This invention relates to devices for guiding and controlling glass or transparent panels of windows, particularly windows of automobiles in which the transparent panels or panes are adapted to be raised and lowered, usually through the medium of some suitable window regulator mechanism operable from the inside of the automobile body.

In accordance with conventional automobile body construction the door or other side wall portion of the body is provided with a window opening adapted to be closed or partially so by means of a glass panel which may be lowered into a well below the window opening. In conventional practice the front and rear upright edges of the glass panel are guided within the well by means of channels lined with felt or equivalent material which receive and embrace the edges of the glass. To provide proper guiding of the glass within the window well and also to prevent rattling of the glass when partly or fully lowered it is necessary in practice to provide a relatively snug fit of the edge of the glass in the felt or otherwise lined channel. Owing to allowable tolerances in production and manufacturing variations or inaccuracies it has been difficult to secure uniformly the desired fit of the edges of the glass within the guide channels. If the glass fits too tightly excessive friction is set up rendering it more difficult to raise and lower the glass and placing undue strain on the regulator mechanism, and since this condition occurs frequently in production it has been necessary to make the window regulators stronger than need be, thereby increasing their cost. Since these felt lined channels, mounted in the window well, are exposed to the weather and become wet as a result of water running down the edges of the window opening into the channels during rainy weather or when the car is washed, even greater effort is required under such conditions to operate the window.

It will thus be seen that an accurate sliding fit of the glass within the guide channels is extremely difficult to obtain owing to variations due not only to manufacturing conditions but also to the wet or dry condition of the channel linings. Moreover, such lined guide channels are relatively expensive not only from a manufacturing standpoint but also from the standpoint of increased labor expense due to difficulties in installing the glass therein on the assembly line.

An object of the present invention is to provide improved means for guiding the window glass into and out of the window well, which means is relatively simple in construction, capable of ef-

fecting substantial savings in material and labor costs, and more efficient in use.

A further object is to provide an improved window glass guide which eliminates the necessity of directly guiding the upright edge of the glass into and out of the window well, which provides more accurate control of the glass regardless of manufacturing variations, and which automatically accommodates or compensates for such variations without appreciably increasing the effort required to move the glass up and down.

Another object is to provide guiding means at, but independent of, the opposite upright edges of the glass which permits and also takes up slight end play, i. e. edgewise movements of the glass in its plane, frequently caused by the throw of the window regulator or resulting from small inaccuracies in the window regulator construction.

Still another object of the invention is to provide an improved window glass guide permitting easy and economical installation of the glass, providing easier operation of the glass and, as a consequence, permitting the use of window regulators of less rugged and, therefore, less expensive construction.

Another object of the invention is to provide improved guide mechanism within the window well of a vehicle body, which mechanism preferably includes a channel member for retaining the lower edge of the glass or window panel, such channel member, which may be in one or more sections, having guiding means, such as devices on the bottom thereof, adapted to travel up and down upon fixed guides in the window well, yielding means being associated with the guiding means to assist in holding the glass in proper position while at the same time permitting slight edgewise movement of the glass in a longitudinal direction, the guide devices, however, cooperating with the fixed guides to oppose or resist displacement of the glass or window panel in a direction transverse to the plane of the panel.

A further and more specific object of the invention is to provide improved guide mechanism within the window well of a vehicle body including a glass retainer channel for the lower edge of the window glass having a projecting guide member or members on the bottom of the channel cooperating with a fixed upright guide or guides within the window well, the guide member preferably embodying a device, such as a stud and a spring pressed compression member slidable thereon, extending longitudinally of the vehicle body and yieldable in a longitudinal direction under the influence of its spring. The guide

mechanism further preferably includes a fixed upright channel guide or guides within the window well upon which the guide device or devices are adapted to travel, the construction and arrangement being such that the upright edge of the glass during operation will not contact the channel guide and the cooperation of the guide device and channel guide being such that movement or displacement of the glass in a direction transverse to the plane of the panel is resisted.

The above and other objects of the invention will appear from the following description and appended claims when considered in connection with the accompanying drawings forming a part of this specification.

Fig. 1 is a side elevation, partly broken away and partly in section, illustrating a door, such as an automobile door, constructed in accordance with one embodiment of the invention.

Fig. 2 is an enlarged section taken through lines 2—2 of Fig. 1 looking in the direction of the arrows.

Fig. 3 is an enlarged section taken through lines 3—3 of Fig. 1 looking in the direction of the arrows.

Fig. 4 is an enlarged sectional view taken substantially through lines 4—4 of Fig. 1 looking in the direction of the arrows.

Fig. 5 is an enlarged view of the portion included within the circle of Fig. 1.

Fig. 6 is a perspective view, partly in section, of one of the cup-shaped compression members.

Fig. 7 is a perspective view of one form of glass retainer channel member.

Fig. 8 is a view similar to Fig. 2 illustrating an embodiment of somewhat different construction.

Fig. 9 is a view similar to Fig. 3 but illustrating the window glass guide shown in Fig. 8.

Fig. 10 is a view similar to Fig. 1 but illustrating a slight modification in which the vertical guide channels within the well are offset slightly beyond the path of movement of the upright edges of the glass.

Fig. 11 is a section taken substantially through lines 11—11 of Fig. 10 looking in the direction of the arrows.

Fig. 12 is an enlarged fragmentary view of that portion of Fig. 10 included within the circle on said figure.

Before explaining in detail the present invention it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation, and it is not intended to limit the invention claimed herein beyond the requirements of the prior art.

In the drawings there are illustrated certain embodiments of the invention applied, by way of example, to an automobile door. It will be understood, however, that the invention is not so limited and that the embodiments thereof are susceptible to changes and other applications and may be utilized in other relations. In Fig. 1 there is illustrated an automobile door A which may be a front door including a sloping front pillar 10 and a rear vertical pillar 11, the upper portion of the door being provided with a main window opening adapted to be closed by means of a vertically slidable glass or other transparent panel 12. It will be understood that the term "glass"

is used herein in a generic sense and is intended to comprehend any panel regardless of material movable up and down to close or open a window opening. Secured to the lower edge of the window glass panel 12 is what is herein termed a glass retainer member or bar 15 which comprises a rolled channel member having a liner of felt or other material embracing the lower edge of the glass and secured thereto. To the back side of the channel member or bar 15 is spot welded a pair of longitudinally spaced rolled metal rail sections 16 which are spaced apart at 16a between their inner ends to permit assembly of the window regulator. These sections 16, if desired, may be made in one length with a notch or aperture through the bottom thereof corresponding to the space 16a to permit passage of one of the regulator studs 17 when the window glass is lowered into the window frame and assembled with the regulator in the extreme lowered position of the latter. The rail sections 16 are formed to provide longitudinal guideways for the headed studs, rollers or the like 17 carried at the outer end of the window regulator, the studs travelling or sliding in the guideways of sections 16 when the window is raised and lowered.

Any suitable window regulator may be utilized and in the present instance a regulator of the parallel arm type is shown for the purpose of providing through the medium of the spaced projecting studs 17 a support for the window panel 12 at two horizontally spaced points. A single arm regulator or other type of two arm regulator may be used if desired. The illustrated regulator comprises a horizontal bar 18 to which the studs 17 are secured as by riveting, this bar having a depending angular extension 18a. Pivoted at vertically spaced points 19 and 20 to the angle bar 18 are a pair of parallel swinging arms 21 and 22, the inner ends of which are pivoted to a mounting plate 23 at vertically spaced points 24 and 25 corresponding to the spacing of the pivots 19 and 20, the mounting plate being secured by screws to the inner door panel 42. A gear sector 26 is fastened to the pivot 25 and hence to the arm 22 for swinging the same and this sector is driven through the medium of a pinion mounted on the handle shaft 27. The sector 26 has a central opening 26a within which the pivot 24 is located and is riveted also at point 26b to the driving arm 22. Upon turning the handle shaft 27 through the medium of a handle at the inner side of the door, the gear 26 will be rotated and the arms 21 and 22 will be swung in parallel relation to raise and lower the window 12.

The rear upright edge 12a and front upright edge 12b of the glass panel 12 may be guided within the window opening through the medium of felted or otherwise lined channels 28 which are designed to embrace the edges of the glass and seal the opening when the glass is fully raised. These channel guides 28 terminate at or slightly below the lower edge of the window opening as indicated at 28a. Within the well below the window opening the window glass 12 is guided in its up and down path of movement substantially entirely through guiding means which is operative independently of the edges 12a and 12b of the glass. For this purpose there is mounted within the window well a pair of upright or vertically extending fixed guide members 29, one substantially beneath the forward upright edge of the glass and the other substantially beneath the rear edge thereof. In the

embodiment illustrated in Figs. 1 to 7 inclusive the fixed upright guide members 29 are arranged substantially in vertical alinement with the edges 12a and 12b of the glass panel. Each guide 29 may be spaced inwardly from the base 10a or 11a of the pillar 10 or pillar 11 and supported therefrom through the medium of angle brackets 30 spot welded to the pillar and to the guide channels 29. The glass retainer member or bar 15, one embodiment of which is illustrated in Fig. 7, is provided at opposite ends with projecting guide members adapted to cooperate with the vertical guides 29. The channel 15 is ordinarily rolled in the form of a V-shape along the base thereof. At opposite ends, however, the base of the channel 15 is formed flat as illustrated in Figs. 4 and 5, and spot welded to each of these flattened portions is the horizontal flange 31a of an angle bracket 31, see Figs. 4 and 5. The angle bracket 31 is located at each end of the retainer member 15 and has a depending flange 31b to which is riveted at 32a a shank 32 of a stud 33, the shank of the stud being reduced at 34 (see Fig. 2) and headed over at 32a, there being an annular shoulder 35 between the shank 32 and the cylindrical end or headed portion 33 of the stud. Mounted on the stud 33 is a compression member in the form of a cup-shaped washer 36, see Fig. 6. This washer preferably has a convex semi-spherical or crowned contact face 37 pressed centrally to provide an inwardly extending cup-shaped recess 38. The cylindrical or annular side wall 38a of this recess fits over the head 33 of the stud and has a sliding fit thereon. The wall 38a terminates in an inwardly extending flange 39 apertured to fit freely over the shank 32. The crowned face of the member 36 forms an annular recess at the back thereof to receive and retain one end of a compression spring 40, the opposite end of the spring bearing against the flange 31b.

Each guide member 29 is in the form of a channel having a base 29a and parallel side walls terminating in inwardly converging portions 29b. The guide members 29 are preferably in the form of rolled sections and converging portions 29b terminate in constricted neck portions 29d, the metal thence being bent outwardly to provide diverging track portions 29c. When the window is installed the heads 33 preferably have a sliding fit in two directions against the constricted neck portions 29d, i. e. vertically and longitudinally. The crowned faces of the washers 36 contact the flaring or diverging portions 29c of the guides and at this time the springs 40 are under compression thereby spacing the flanges 39 from the shoulders 35 of the heads of the studs as shown at 41 (Fig. 2). Sufficient clearance space 41 is normally provided so as to permit slight longitudinal sliding of the washer on the stud during operation of the window to compensate for slight variations in the vertical guides and in the spacing apart thereof.

In conventional construction the door or body is provided with an inner pressed metal panel 42 and an outer pressed metal panel 43, the panel 42 supporting a garnish molding 44 which extends around the window reveal. Between the upper downwardly flanged edges of the garnish molding 44 and outer panel 43 is a longitudinal slot along the lower edge of the window opening through which the glass slides, and below the window opening between the outer and inner panels is the window well 45 within which the guides 29 are located.

In Figs. 8 and 9 there are illustrated some

modifications in the above described embodiment. In this instance the guide channel 29 is replaced by means of a channel 46 which may be secured and located in the same manner through the medium of the angle brackets 30. Each channel 46 has a bottom wall 46b and parallel side walls 46a which terminate in outer flared track portions 46c. There may be mounted upon the stud 33, a compression member or cup-shaped washer 36 which is similar to the washer of the previous embodiment except that it is preferably die cast instead of pressed sheet metal. The construction of the washer, stud, spring and the mounting thereof is the same as above described. The crowned face of the washer slidingly engages the outer flared or tapered portions 46c of the channel. In this instance the channelway in member 46 is somewhat wider than the channelway in the member 29 due to the omission of the constricted neck 29d and hence the head of the stud 33 is spaced from and does not engage the side walls 46a, the entire engagement of the guide being accomplished through the washer 36 and flared contact surfaces 46c.

In practice the glass retainer member, such as illustrated in Fig. 7, is secured to the lower edge of the glass panel 12. This structure can then be readily assembled within the door or body by passing the lower edge of the glass together with the glass retainer member through the slot at the lower edge of the window opening between the flange 42a of the inner door or body panel and the flange 43a of the outer panel. The edge 33 of the studs will pass into the upper open ends of the channel guides 29 or 46. At this time when the crowned or convex faces of the washers 36 engage the upper end edges of the channel guides the washers will be forced back upon the shanks 32 of the studs thereby placing the springs 40 under compression. The studs and washers will, therefore, readily travel into the upper ends of the channel guides into the position shown in Fig. 1. When the window glass is lowered by means of the window regulator it will be seen that the front and rear upright edges of the glass will travel down through the open mouths of the channel guides 29 or 46, see Figs. 3 and 9. The edge of the glass will pass freely between the side walls 46a or the constricted necks 29d of the channel without contact therewith.

Since the washers 36 preferably each have a two-point contact with the guide, the washer can yield slightly in any direction and will move in and out against the compression of the springs due to slight tilting or longitudinal movements of the window glass in the plane of the glass. By thus providing a guide device, such as stud 33 and compression member 36, having in effect a limited universal movement with respect to guide 29 or 46 while yieldingly held against rattling or vibration by springs 40 which are constantly under compression, a very easily functioning guide is produced which has a relatively tight fit at all times, yet will yield slightly as needed in all directions, will not bind or produce undue friction at any time under any conditions, and will permit easy and quick installation of the glass. It is preferred that the clearance space between the outer end of the stud 33 and the base 29a or 46b of the channel guide be slightly less than the clearance between the edge of the glass and the base of the channel, thereby preventing engagement of the glass with the bottom of the channel at any time. Due to the two point con-

tact of each washer or compression member with the portion 29c or 46c very little friction will be set up between the stud and washer devices and the vertical channel guides 29, and as the glass is lowered out of the upper channels 28 the amount of frictional resistance to the downward movement of the glass will gradually diminish, and in any case the total frictional resistance to the operation of the window glass will be materially less than heretofore where it was necessary to provide felted or otherwise lined guides 28 extending the full distance of travel of the glass or substantially so.

Referring to the embodiment illustrated in Figs. 10 to 12 inclusive, it will be noted that the construction is substantially the same as that shown and described in the previous embodiment with the exception that the vertical guides 29 within the window well are located out of the vertical path of movement of the edges 12a and 12b of the panel 12. In the previous embodiment the guides 29 are shown in such positions that the upright edges 12a and 12b of the window panel will pass down through the channelways in the members 29 but free of contact therewith. In the embodiment shown in Figs. 10 to 12 inclusive these upright edges of the glass do not pass down through the channelways in the guide members 29 but in spaced relation thereto. As illustrated in this embodiment the guides 29 are also mounted on the pillars as by means of angle brackets 30. The angles 31 secured to the opposite ends of the glass retainer channel 15, as well as the guide studs 33 which carry the spring pressed compression members 36 together with the vertical guides 29, are so arranged that the edge 12a or 12b of the glass will travel in the longitudinal plane of the guide 29 but in front or rear thereof without passing through the channelway in the guide. Thus, as shown particularly in Fig. 12, the upper glass runway or channel 28 within the window opening terminates at 28a as in the previous embodiment near the lower edge of the window opening but in this instance the guide 29 is offset with respect to the upper guide 28 so that the channelways in the two guides 28 and 29 extend out of vertical alignment.

I claim:

1. A combined retainer and guide structure for a vehicle window panel adapted to be mounted in a window frame for up and down sliding movement, comprising a metal channel member adapted to be secured to the lower edge of the panel and having means for connection thereto of a window regulator, and a guide member secured to the bottom of said channel member and projecting in a direction longitudinally of the channel member beyond one end thereof and adapted to cooperate with a fixed guide carried by the window frame, said guide member comprising a projecting stud and a spring pressed compression device slidable on the stud in a direction longitudinally of the channel member and adapted to slidably engage a fixed upright guide on the window frame.
2. A glass retainer and guide structure for a substantially vertically slidable vehicle window glass, comprising a metal channel member adapted to be secured to the lower edge of the glass, means on said member for connecting thereto a mechanism for raising and lowering the glass, a guide stud secured at one end of said channel member below the same and projecting substantially in the vertical plane of the glass in a direction longitudinally of the channel member to a

point beyond the end of the latter, and a spring pressed cup-shaped compression member slidable longitudinally on the stud and adapted for up and down sliding engagement with a fixed upright guide mounted in a window well of a window frame.

3. A glass retainer and guide structure for a substantially vertically slidable vehicle window glass, comprising a metal channel member adapted to be secured to the lower edge of the glass, means on said member for connecting thereto a mechanism for raising and lowering the glass, a guide stud secured at one end of said channel member below the same and projecting substantially in the vertical plane of the glass in a direction longitudinally of the channel member to a point beyond the end of the latter, a spring pressed cup-shaped member slidable longitudinally on the stud, and an upright guide channel adapted to be mounted within a window frame and cooperable with said guide stud and compression member for guiding one upright edge of the glass in its up and down movement.

4. A glass retainer and guide structure for a substantially vertically slidable vehicle window glass, comprising a metal channel member adapted to be secured to the lower edge of the glass, means on said member for connecting thereto a mechanism for raising and lowering the glass, a projecting guide device secured to one end of said channel member and extending horizontally in a direction longitudinally of the channel member beyond the end thereof and adapted to cooperate with a fixed upright guide channel within a window well for guiding an upright edge of the glass in a generally vertical direction, said projecting guide device comprising a stud and a spring pressed washer-like compression member having a limited sliding movement upon the stud.

5. A glass retainer and guide structure for a substantially vertically slidable vehicle window glass, comprising a metal channel member adapted to be secured to the lower edge of the glass, means on said member intermediate the ends thereof for connecting thereto a mechanism for raising and lowering the glass, projecting guide devices secured to opposite ends of said channel member and extending horizontally in opposite directions longitudinally of the channel member beyond opposite ends thereof and adapted to cooperate with fixed upright guide channels within a window well for guiding opposite upright edges of the glass in a generally vertical direction, said projecting guide devices comprising studs lying substantially in the vertical plane of the glass and a spring pressed washer-like compression member having a limited sliding movement on each stud.

6. A guide structure for an up and down sliding window panel, comprising spring pressed compression devices, means adapted to be mounted to the bottom of the panel at opposite ends thereof for guiding said devices for relative longitudinal movement in a substantially horizontal direction, fixed upright guides cooperable with said devices and adapted to hold them yieldingly pressed in toward one another when the window panel is installed, said guides and devices cooperating to hold the panel against material displacement in directions angular to the path of travel of the compression devices along the guides, said means comprising cylindrical studs slidably carrying said spring pressed compression devices.

7. The combination of a glass retainer channel for the lower edge of a window glass and an

upright channel guide adapted to be fixed in a window well of a window frame within which said window glass is mounted for up and down sliding movement, said retainer channel having a guide member at either or each end thereof projecting longitudinally of the retainer channel immediately below the glass and said upright channel guide being adapted to receive said guide member for up and down movement of the guide member, said guide member embodying a longitudinally and horizontally extending stud and a spring pressed compression member slidable thereon, said compression member having a convex working face slidably contacting flared track portions on said channel guide and being centrally recessed to provide a cylindrical wall having a sliding fit on said stud, said recess terminating in a centrally apertured annular flange movable toward and from a shoulder on said stud.

8. Guiding means for a vehicle window panel adapted to be mounted in a window frame for up and down sliding movement, said window frame having a window well; comprising a channel adapted to be secured horizontally to the lower edge of the window panel, a guide device mounted upon an exterior portion of said channel comprising a supporting member extending below the channel, a pressure element, and spring means carried by said supporting member; a fixed upright guide within the window well comprising a metal strip having flange means adapted to project longitudinally within the well; said pressure element adapted to travel upon the outer edge portion of said flange means at a distance from the base of said metal strip, said supporting member being mounted to said channel exteriorly of the flange means and said spring means being adapted to press said element against said edge portion, said element being movable bodily by or against the action of said spring means in a longitudinal direction relatively to the panel and said supporting member, and said guide device and guide having cooperating means to resist displacement of the panel in a direction transverse to the plane of the panel.

9. Guiding means for a vehicle window panel adapted to be mounted in a window frame for up and down sliding movement, said window frame having a window well; comprising a channel adapted to be secured horizontally to the lower edge of the window panel, a guide device mounted upon an exterior portion of said channel comprising a supporting member extending below the channel, a pressure element, and spring means carried by said supporting member; a fixed upright guide within the window well comprising a metal strip having flange means adapted to project longitudinally within the well; said pressure element adapted to travel upon the outer edge portion of said flange means at a distance from the base of said metal strip, said supporting member being mounted to said channel exteriorly of the flange means and said spring means being adapted to press said element against said edge portion, said element being movable bodily by or against the action of said spring means in a longitudinal direction relatively to the panel and said supporting member and entirely below said channel, said element having a portion overlapping said flange means to resist displacement of the panel in a direction transverse to the plane of the panel.

10. Guiding means for a vehicle window panel adapted to be mounted in a window frame for

up and down sliding movement, said window frame having a window well; comprising a channel adapted to be secured horizontally to the lower edge of the window panel, a guide device mounted upon an exterior portion of said channel comprising a supporting member extending below the channel, a pressure element, and spring means carried by said supporting member inwardly of said pressure element; said pressure element adapted to travel upon the edge portion of an upright guide within the well and being movable bodily by or against the action of said spring means in a longitudinal direction relatively to the panel and said supporting member and below said channel, and said guide device and guide having cooperating means to resist displacement of the panel in a direction transverse to the plane of the panel.

11. Guiding means for a vehicle window panel adapted to be mounted in a window frame for up and down sliding movement, said window frame having a window well; comprising a channel adapted to be secured horizontally to the lower edge of the window panel, a guide device mounted upon an exterior portion of said channel comprising a supporting member extending below the channel, a pressure element, and spring means carried by said supporting member; a fixed upright channel guide within the window well comprising a metal channel strip having spaced flange means adapted to project longitudinally within the well; said pressure element adapted to travel upon the outer edge portions of said flange means at a distance from the base of said metal strip, said spring means and the supporting member therefor being mounted exteriorly of the flange means and said spring means being adapted to press said element against said edge portions, said element being movable bodily by or against the action of said spring means in a longitudinal direction relatively to the panel and said supporting member, and said guide device and guide having cooperating means to resist displacement of the panel in a direction transverse to the plane of the panel.

12. Guiding means for a vehicle window panel adapted to be mounted in a window frame for up and down sliding movement, said window frame having a window well, comprising a fixed upright guide within the window well, said guide comprising a metal strip having flange means adapted to project longitudinally within the well, a member adapted to be mounted upon the lower edge of the panel, a guide device secured to said member below the same and including a pressure element adapted to travel upon the outer edge portion of said flange means at a distance from the base of said metal strip, a spring adapted to press said element against said edge portion, said element being movable bodily against the action of said spring in a longitudinal direction relatively to the window panel and below said member, and said guide device and guide having cooperating means to resist displacement of the panel in a direction transverse to the plane of the panel.

13. Guiding means for a vehicle window panel adapted to be mounted in a window frame for up and down sliding movement, said window frame having a window opening and a well therebelow, comprising longitudinally spaced fixed upright guides within the window well, each guide comprising a metal strip having flange means adapted to project longitudinally within the well, a member adapted to be mounted upon the lower edge of the panel, longitudinally spaced guide de-

vices secured to said member below the same and each including a pressure element adapted to travel upon the outer edge portion of said flange means at a distance from the base of said metal strip, a spring adapted to press said element against said edge portion, said element being movable bodily against the action of said spring in a longitudinal direction relatively to the window panel and below said member, and said guide device and guide having cooperating means to resist displacement of the panel in a direction transverse to the plane of the panel.

14. Guiding means according to claim 9 in which said supporting member is adapted to extend in overlapping relation to said flange means past the pressure element toward the base of the guide.

15. Guide means for a vehicle window panel mounted for up and down sliding movement in a window frame having a well therebelow, comprising a fixed upright channel guide adapted to be mounted in the well, said guide comprising a base and side flanges extending in substantially the same direction from the base, a guide device mounted exteriorly of a member secured to the lower edge of the panel and comprising a bodily movable resiliently urged element adapted to travel along the outer edge portions of said flanges at a distance from the base, said device having means adapted to coact with a side flange or said flanges to hold the element against sidewise movement with relation to said guide.

16. Guide means for a vehicle window panel mounted for up and down sliding movement in a window frame having a well therebelow, comprising a fixed upright channel guide adapted to be mounted in the well, said guide comprising a base and side flanges extending in substantially parallel relation from the base longitudinally of the vehicle, a guide device mounted exteriorly of a member secured to the edge of the panel and comprising a longitudinally and bodily movable resiliently urged element adapted to travel along the outer edge portions of said flanges at a distance from the base, said element having a portion overlapping a side flange or said side flanges to hold the element against sidewise movement with relation to said guide.

17. Guide means for a vehicle window panel mounted for up and down sliding movement in a window frame having a well therebelow, comprising a fixed upright channel guide adapted to be mounted in the well, said guide comprising a base and side flanges extending in substantially the same direction from the base, a guide device mounted exteriorly of a member secured to the edge of the panel and comprising a bodily movable resiliently urged element adapted to travel along said flanges at a distance from the base, said side flanges terminating in reversely tapered edge portions and said element having tapered tracking portions engaging said tapered edge portions and effective to hold the element against sidewise movement relative to said guide.

18. In a vehicle having a window opening and a window glass movable vertically to cover and uncover the opening, and a channel assembly on the lower edge portion of the window glass, a runway for guiding an up and down edge of the window glass in the region of the opening, a rigid guideway below the window opening, and a compensating and guiding device carried by said channel assembly and cooperating with said guideway, said device including a guide stud and a spring pressed cup shaped element slidable longitudinally of said stud and adapted slidably to engage said rigid guideway.

19. A guide adapted to be mounted within a window well for guiding an up and down sliding window panel, comprising a channel having spaced side flanges formed with bearing portions longitudinally thereof and terminating in spaced parallel edges, a guide device adapted to be mounted on the lower edge of the panel comprising a member insertable between said bearing portions and free of interlocking engagement therewith and a spring pressed compression element mounted on said member and arranged to travel along said edges at a distance from the base of the channel, said member cooperating with said flanges to resist displacement of the panel in a direction transverse to the plane of the panel.

JOHN H. ROETHEL.