Nov. 13, 1934. R. T. AXE 1,980,313

WINDOW POST AND GUIDE CONSTRUCTION

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Fig. 1.

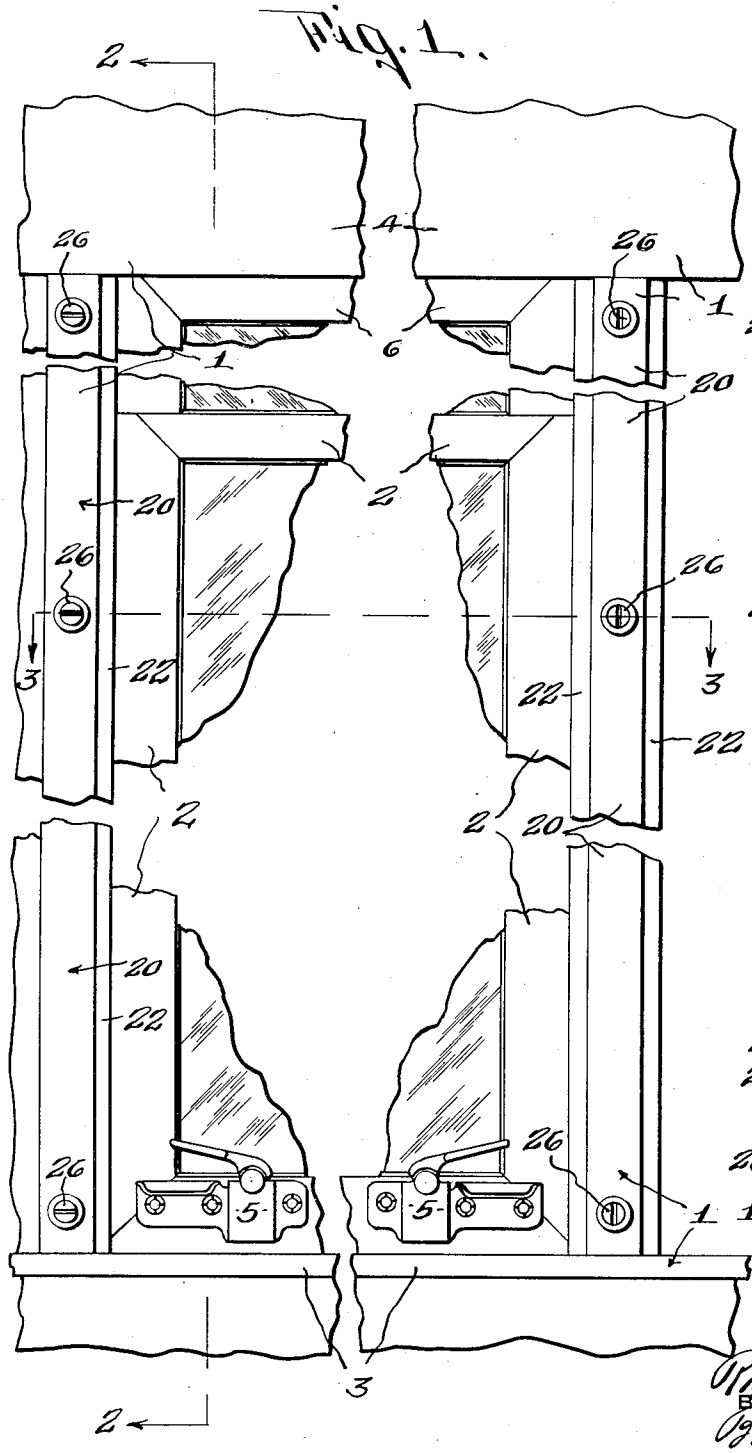
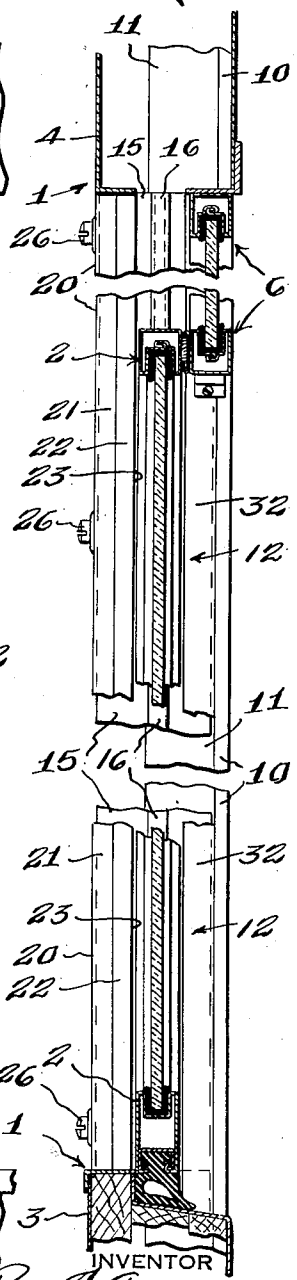


Fig. 2.



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Fig. 3.

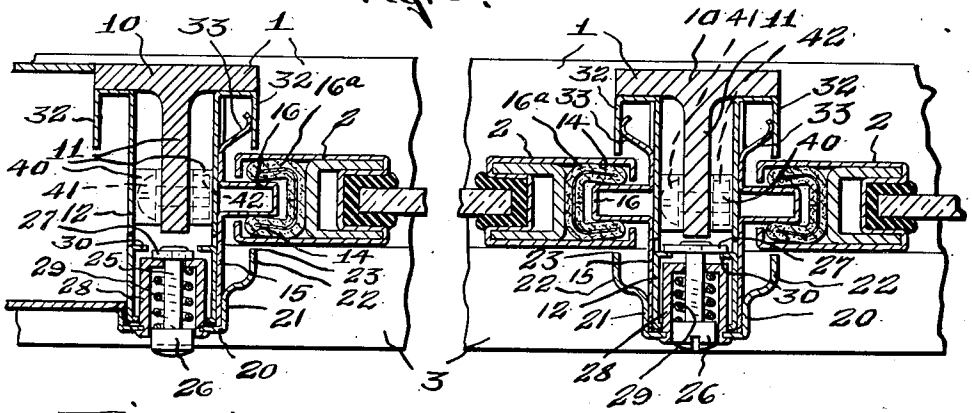


Fig. 4.

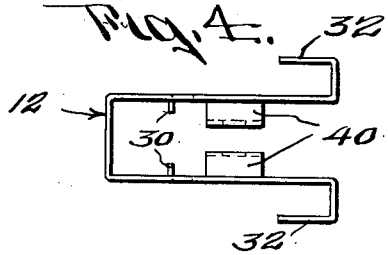
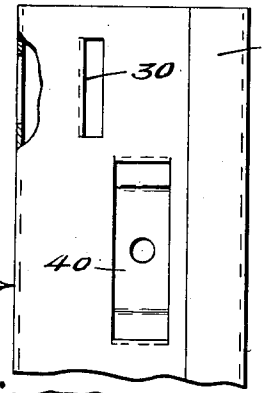


Fig. 6.





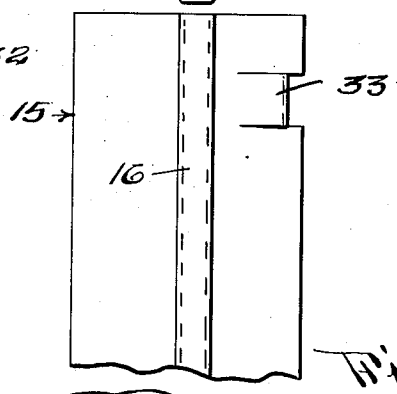
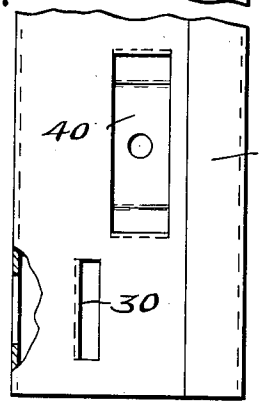


Fig. 5.



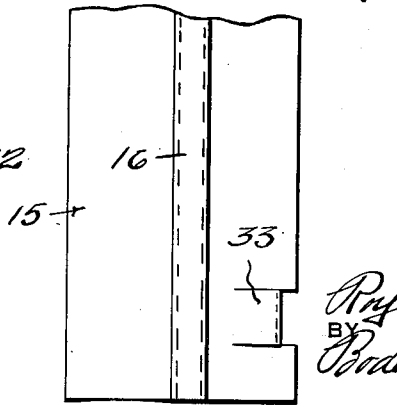


Fig. 7.

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WINDOW POST AND GUIDE CONSTRUCTION

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Fig. 8.

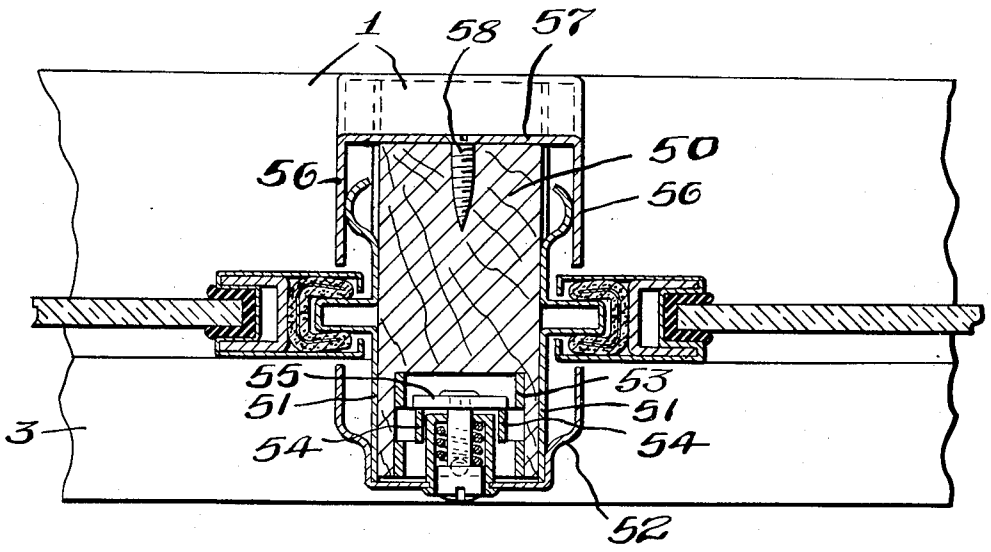


Fig. 9.

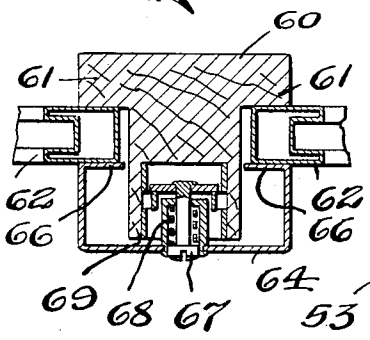


Fig. 11.

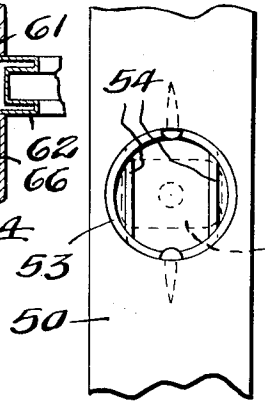


Fig. 10.

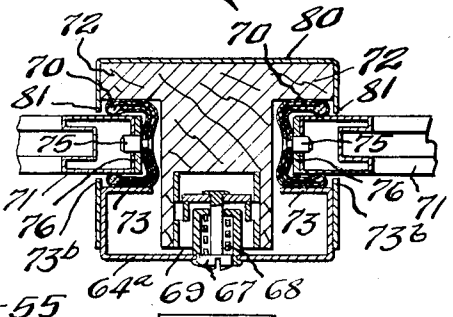
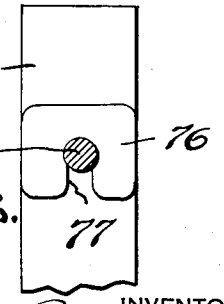


Fig. 12.



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UNITED STATES PATENT OFFICE

1,980,313

WINDOW POST AND GUIDE CONSTRUCTION

Roy T. Axe, Syracuse, N. Y., assignor, by mesne assignments, to The Syracuse Trust Company, Syracuse, N. Y., a corporation of New York, trustee

Application May 18, 1931, Serial No. 538,150

11 Claims. (Cl. 189—73)

This invention relates to a window construction, particularly for railway cars, busses, and the like, and has for its object, a particularly simple compact arrangement of the posts of the window frame, the sash guides, and a removable retaining member or members, by which the sash or sashes are readily removable and replaceable.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawings, in which like characters designate corresponding parts in all the views.

Figure 1 is a fragmentary elevation of a window structure embodying this invention.

Figure 2 is a sectional view on line 2—2, Figure 1.

Figure 3 is an enlarged sectional view on line 3—3, Figure 1.

Figure 4 is an end view of the channel member of the corner post construction.

Figure 5 is a fragmentary elevation, partly broken away, of the channel member shown in Figure 4.

Figure 6 is an end view of one of the sash guides.

Figure 7 is a fragmentary elevation thereof.

Figure 8 is a sectional view similar to Figure 3, of a modified form of post construction.

Figure 9 is an enlarged cross sectional view of another post and sash construction embodying my invention.

Figure 10 is a view similar to Figure 9 of a fourth form of post construction.

Figure 11 is a fragmentary inner edge view of the post shown in Figure 8.

Figure 12 is a detail view illustrating a filler strip forming part of the widthwise adjustable means of the sash shown in Figure 10.

This window construction comprises generally, a window frame which includes posts, a sash or sashes movable along the posts, means on the posts for guiding and holding the sash or sashes from displacement including a removable retaining strip or member which extends lengthwise of one edge, usually the inner edge of the post and embraces the same, and not only serves to hold the sash from removal, but also as a facing for the inner edge of the post, and also the side faces, and as a weather strip facing covering the joint, or joints, between the sash, or sashes, and the posts.

1, Figure 1, designates the window frame as a whole, and 2 the sashes, the frame including posts on opposite sides of each sash, a sill 3, and a top framing 4.

The sash 2 is usually capable of being raised and lowered, and for this purpose is provided with sash latches 5 for holding the sash open at different elevations, and also for latching it closed. The window structure here shown also includes a small sash or panel 6 located in the upper part of the frame, the bottom rail of the sash 6 lapping the top rail of the sash 2 when the sash 2 is closed.

This window construction is particularly adapted to railway cars and busses, where there are a series, or several windows arranged side by side along the sides of the car or body separated by the posts so that each two intermediate sashes have frame posts in common.

In Figure 3, each post comprises a body member 10 usually formed of metal and T shaped in cross section, with the head of the T presented toward the outer side of the car, and the leg 11 of the T extending inwardly, and channel shaped members 12 enclosing the leg of the T and arranged with the open side of the channel toward the head of the T, the sides of the channel abutting against the inner faces of the head of the T. The channel member 12 extends lengthwise of the body 10, at least the height of the window structure, although the body 10 may continue downwardly below the level of the window openings and constitute part of the framing of the vehicle, and also continue above the window opening and form part of the roof structure of the vehicle. The terms "inner" and "outer" as applied to the edges of the posts are used for convenience and brevity. The outer edge is toward the outer side of the car body, and the inner edge on the inside of the car body. The bodies of the posts and the retaining members are preferably toward the outer and inner sides of the car body respectively, although their positions may be reversed if it is desirable to remove the sashes from the outside of the car body.

Each sash 2 is mounted between two posts, there being one post at each edge of each sash. Each post has sash guiding and retaining means for the sashes located on opposite sides thereof, with the exception of the end posts for the endmost windows. Or, in other words, all the intermediate posts of the car structure are common to two windows.

In the form shown in Figure 3, each sash is formed with a channel 14 in each edge thereof, and the guiding and retaining means comprise a guide member 15 on the post having a rib 16

projecting from the base thereof and extending into the channel 14 in the edge of the sash. Usually a U shaped weather strip 16a is located in the channel 14 of the sash for embracing and coacting with the rib 16. Each guide member 15 is detachably mounted on the post, or the channel member 12 thereof, and is detachably held in position by a retaining strip or member extending lengthwise of the inner edge of the post and acting to clamp the guide member in position.

20 designates the retaining member which is formed up of sheet metal in the general form of a channel, and is arranged astride the bottom portion of the channel member 12 and detachably secured thereto, this retaining member 20 having the angular side flanges 21 of its channel formation extending over, or lapping the sash sides of the post and the margin of the base of the guide member 15 and thus holding the guide member in position. The flanges 21 are also provided with offsets 22 which provide weather strip facings for covering and shielding the joints between the sashes and the posts, the offset being spaced apart toward the center of the sash from the post and terminating at 23 near the inner face of the sash.

The intermediate part of the channel shaped retaining member 20 is secured to the post, or the channel member 12 preferably by fastening members exposed on the inner edge of the post. These fastening members are here shown as spring pressed buttons 25 which interlock with the post, or the channel member 12, by successive endwise and rotary movements. As here illustrated, each button comprises a stem having a screw slotted head 26 at its outer end, and a cross bar 27 at its inner end, the head being slidably mounted in a thimble 28 secured to the intermediate part of the channel shaped retaining member. A spring 29 is located between the head 26 and the bottom of the thimble and tends to press the stem, head 26 and cross bar 27 outwardly. The cross bar interlocks with lugs 30 struck from the walls of the channel member 12.

In operation, when the head 26 is turned by means of a screw driver, the ends of the cross bar are moved out of alinement with the lugs 30 so that the spring can react carrying the cross bar between the lugs. Hence, the retaining member 20 can be removed. Upon the reverse of this movement, the cross bar 27 is interlocked with the lugs 30. The base of the guide member 15 is interlocked at its outer edge with the post, or an inwardly facing channel with which the post is provided. These channels are formed by outwardly and reversely bent marginal portions of the sides of the channel member 12 providing inturned flanges 32 which terminate near the outer faces of the sashes and form a weather strip for covering and shielding the joints between the sashes and the post.

Each guide member 15 is here shown as interlocked in the channels, or with the flanges 32, by means of tongues 33. These are here shown as projecting from the base of the guide member 15, and are preferably struck from the base flanges of the guide members or strips 15, and arranged to engage and press against the inner faces of the flanges 32.

In operation, upon the releasing of the buttons 25, the retaining strip or member 20 can be separated from the posts, thus permitting the sash to be moved outwardly carrying the guide strips 15 therewith. The sashes are replaced by the reverse of this movement.

The weather strip 16a and the rib 16 per se, form no part of this invention. Also, the construction of the button 25 per se, forms no part of this invention.

The channel member 12 is secured to the T shaped body 10 by lugs 40 struck from the side flanges of the channel member 12 at suitable intervals, and secured to the leg 11 of the T shaped post by fastening members, as screws 41 extending through the lugs and threading into nuts 42. These lugs 40 are in the form of loops.

As seen at the left of Figure 3, the post for the endmost window is unprovided with a window guide on one side thereof, but the walls or lining of the car structure abut against the post, and one angular flange 21 of the retaining member with its offset 22 is cut away, or omitted.

In the form shown in Figure 8, the body 50 of the post is wood. The guide members 51, corresponding to the guide members 15, lie against the wood part, and the retaining strip 52, corresponding to the retaining strip, or member 20, is practically the same as shown in Figure 3, but interlocks with a bushing 53 located in suitable recesses in the wood post 50 and formed with lugs 54 behind which the cross bar 55 of the buttons interlock. Also, in the form shown in Figure 8, the flanges 56, corresponding to the flanges 32, are provided on a U shaped facing strip 57 enclosing the outer edge of the post 50 and extending inwardly to shield the joint between the sashes and the post. This strip 57 is secured to the post by screws 58. The outer edges of the post incline slightly outwardly from the top of the window opening toward the bottom, and the members 57 and 51 are shaped to conform to the incline.

In the embodiments of my invention shown in Figures 3 and 8, the guide members coact with grooves in the sashes, which open through the edges of the sashes.

In Figures 9 and 10, a structure is shown embodying the retaining member of this invention, where the sashes are guided in channels in the posts, and a retaining member, quite similar to that shown in Figures 3 and 8, is employed to hold the sash, or sashes, from removal.

In Figure 9, 60 designates a post formed with outer window stops 61. 62 designates the sashes at opposite sides of the post and coacting with the outer stop 61.

64 designates the retaining member corresponding to the retaining member 20 or 52, this embracing the inner edge of the post and being secured thereto in the same manner as the retaining member 52, that is, by spring pressed buttons 67. In the construction shown in Figure 9, the retaining member is formed with angular flanges extending over, or overlapping the sash sides of the post and provided with inturned flanges 66 which constitute the inner stops. The outer stop 61, and inner stop 66 form the sides of a channel on each side of the post for guiding the sashes. The springs 68, corresponding to the springs 29, act on the retaining member 64 to press the flanges, or inner stop 66 against the sash, and press the sash against the outer stop 61 to make the sash non-rattling and weather tight.

In the form shown in Figure 10, each sash is provided with a wear or weather strip 70 in the form of a channel embracing the margins of the sash 71 and coacting with the channel formed between the outer stop 72 and the inner stop 73 corresponding to the outer and inner stops 61, 66, Figure 9 the inner stops

being provided on a retaining member 64a. This weather strip is of a fibrous material with a resilient insert therein and is adjustable laterally relatively to the sash in order to adjust the sash to small variations in the widthwise spacings of the posts. The weather strip is shown as secured to the edge of the sash by pins 75 carried by the intermediate part of the strip 70 and located in suitable perforations in the edge of the sash, and this weather strip can be adjusted widthwise. It may be held in its adjusted position, or from being displaced toward the edge of the sash by spacers or inserts of fiber, or suitable material placed around the pins. In Figure 10, the retaining member 64a is shown as provided with lips 73b overhanging the edges of the strips 70. The facing strip 80 on the other side of the post is provided with similar lips 81.

In Figures 9 and 10, a clearance space 69 is left between the retaining members 64, 64a and the posts to permit the spring 68 to press the inner stops 66, 73 against the sash.

76 designates the spacers or inserts, which are in effect shim plates formed with slots with contracted entrances 77, so that they can be slipped over the pins, or removed therefrom, and be held in position by the contracted entrances. These shims 76 can be shifted around to suit conditions and if the post is slightly out of the vertical, two shims may be used at the bottom, and one at the top of the weather strip 70, or vice-versa, and to effect the widthwise adjustment, the strip on one side of the sash may be bolstered outwardly by means of shims, and that on the other placed in position without the shims, or two or more shims may be placed on each pin on one side of the sash, and one shim on each pin on the other side of the sash.

Various other arrangements of the shims or fillers can be imagined in order to fit the sash to conform to variations in the spacings and the alinements of the posts.

The weather strip construction 70 and its adjustment widthwise, and the filler or shim 76 forms no part of this invention, and forms the subject matter of another application.

In any form of my invention, the retaining members extend lengthwise of the inner edges of the posts and are common to two sashes, except of course, the strips on the endmost posts, and the strips are held in position by fastening members exposed on the inner edge of the post, and in this embodiment of my invention, extending at a right angle to the plane of the sashes.

In any form of this invention, the sashes are initially installed and afterwards readily removable and replaceable for the purpose of replacing broken glass, or for any other purpose, by removing the retaining members or strips 20, 52, 64 or 64a, and replacing the same after the sash has been replaced, and the retaining strips are on the post structure, instead of on the sash as in my Patent Number 1,904,602.

What I claim is:

1. In a window construction, a frame including posts, a sash, means on the post for guiding and holding the sash from displacement including a removable retaining member extending lengthwise of the post and embracing and covering the same, forming a facing therefor and having an angular portion extending over the sash side of the post and opposed to the margin of the sash, and spring means acting on the retaining member in a direction at a right angle to the plane of the sash to press the same toward the post and the angular portion toward the sash and means for detachably securing the removable retaining member to the post, said means extending through the portion of said member which covers and forms the facing for the post.

2. In a window construction, a frame including posts, sashes arranged on opposite sides of each post, a removable sash guide member mounted on each side of the post, a removable holding member embracing the inner edge of the post and coacting with each of the guide members to hold them in position, and fastening means on the intermediate part of the holding member which overlies the inner edge of the post for coacting with the post and securing the holding member in position, said fastening means including springs acting to press the holding member toward the post and the sash in a direction at substantially a right angle to the plane of the sashes.

3. In a window construction, a frame including posts comprising body members T shaped in cross section with the head of the T located at the outer side of the post and the leg of the T extending inwardly, a channel shaped frame member embracing the leg of the T and enclosing the leg of the T with the ends of the side flanges of the channel abutting against the head of the T formation, and a sash guide member having a base mounted on one side of the channel member, a sash coacting with the guide member, a retaining member extending lengthwise of the inner edge of the post and embracing the bottom of the channel member and coacting with the base of the guide member to hold it in position, and means for detachably securing the retaining member to said channel member.

4. In a window construction, a frame including posts comprising body members T shaped in cross section with the head of the T located at the outer edge of the post, and the leg of the T extending inwardly, a channel shaped frame member enclosing the leg of the T formation with the ends of the side flanges of the channel abutting against the head of the T formation, and a sash guide member having a base mounted on one side of the channel member and having means for interlocking with the channel member toward the head of the T, a sash coacting with the guide member, a retaining member extending lengthwise of the inner edge of the post and embracing the bottom of the channel member and coacting with the base of the guide member to hold it in position, and means for detachably securing the retaining member to the channel member.

5. In a window construction, a frame including posts comprising body members T shaped in cross section with the head of the T located at the outer edge of the post, and the leg of the T extending inwardly, a channel shaped frame member enclosing the leg of the T formation with the edges of the side flanges of the channel abutting against the head of the T formation, sash guide members mounted on opposite sides of the channel member and having means for interlocking with the channel member toward the head of the T, sashes on opposite sides of each post and coacting with the guide members, a retaining member extending lengthwise of the inner edge of each post and embracing the bottom of the channel member and coacting at opposite sides of the post with the guide members to hold them in position, and means for

detachably securing the retaining member to the channel member.

6. In a window construction, a frame including posts comprising body members T shaped in cross section with the head of the T located at the outer edge of the post, and the leg of the T extending inwardly, a channel shaped frame member enclosing the leg of the T formation with the edges of the side flanges of the channel abutting against the head of the T formation, sash guide members mounted on opposite sides of the channel member and having means for interlocking with the channel member toward the head of the T, sashes on opposite sides of each post and coacting with the guide members, a retaining member extending lengthwise of the inner edge of the post and embracing the bottom of the channel member and coacting at opposite sides of the post with the guide members to hold them in position, and means for detachably securing the retaining member to the channel member, the portion of the channel member abutting against the head of the T formation being formed with inwardly facing channels, and the guide members being interlocked at their margins in said channels.

7. In a window construction, a frame including posts, each comprising a body member and a channel shaped frame member abutting against the body member with the open side of the channel toward the body member, the post having sash guiding and holding means including a retaining member embracing the bottom portion of the channel member, and means extending through the retaining member and the bottom of the channel member for detachably securing the retaining member in position.

8. In a window construction, a frame including posts, each comprising a body member and a channel shaped frame member abutting against the body member with the open side of the channel toward the body member, the post having sash guiding and holding means including a retaining member embracing the bottom portion of the channel member, the channel member being formed with inwardly extending projections on the interior thereof, and the retaining member having means for detachably interlocking with the projections.

9. In a window construction, a frame including posts, sash guiding and holding means on the posts, a sash coacting with the same, the post having an angular offset flange on the sash side of the post and spaced apart from the major part of the post, and a sash guiding and holding means including a member having a flange extending under said offset and provided with spring tongues for coacting with the same.

10. In a window construction, a frame including a post, sashes arranged on opposite sides of the post, the post having means for holding and guiding the sash including strips in the form of channels extending lengthwise of the inner and outer faces of the post and enclosing the same, forming facings covering the inner and outer edges of the post, the bottoms of the channels being opposed to said faces of the post and the side flanges of the channels extending along the sash sides of the post and covering the joints between the sashes and the post, and means extending through the bottoms of the holding and guiding channels and into the post and operable from the outer sides of said bottoms to remove and replace said strip.

11. In a window construction, a frame including a post, sashes arranged on opposite sides of the post, the post having means for holding and guiding the sash including strips in the form of channels extending lengthwise of the inner and outer faces of the post and enclosing the same forming facings covering the inner and outer edges of the post, the bottoms of the channels being opposed to said faces of the post and the side flanges extending along the sash sides of the post and covering the joints between the sashes and the post, and spring means pressing one of said strips toward the post and the angular flanges thereof toward the sashes on opposite sides of the post.

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