Oct. 21, 1941. O. L. DAUTRICK 2,260,171

CASEMENT WINDOW

Filed July 13, 1940 2 Sheets-Sheet 1

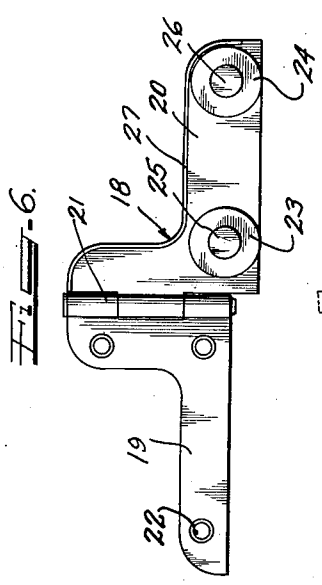


Fig. 6.

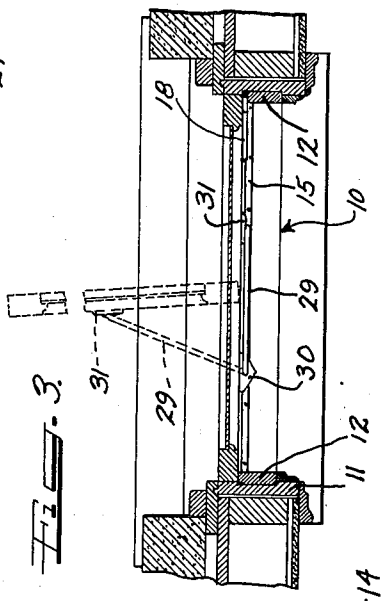


Fig. 3.

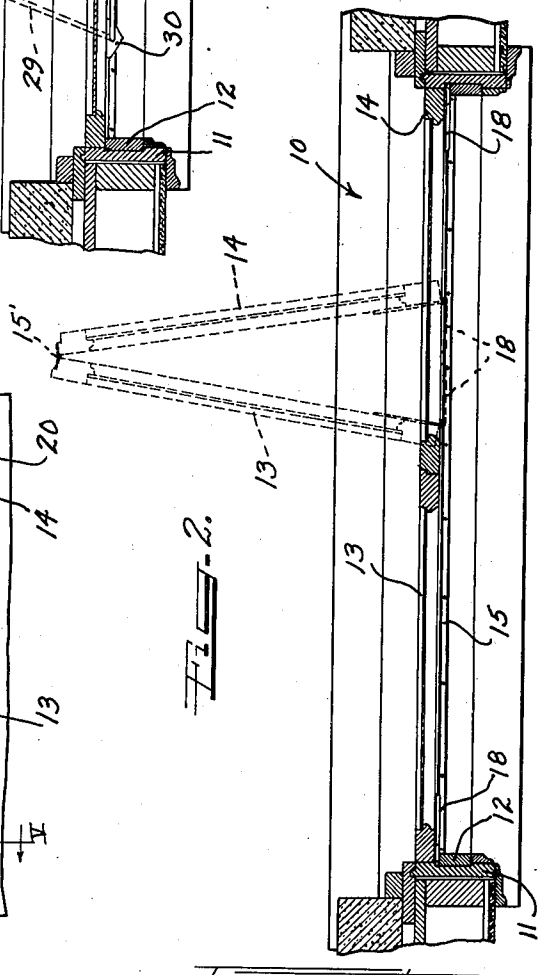


Fig. 2.

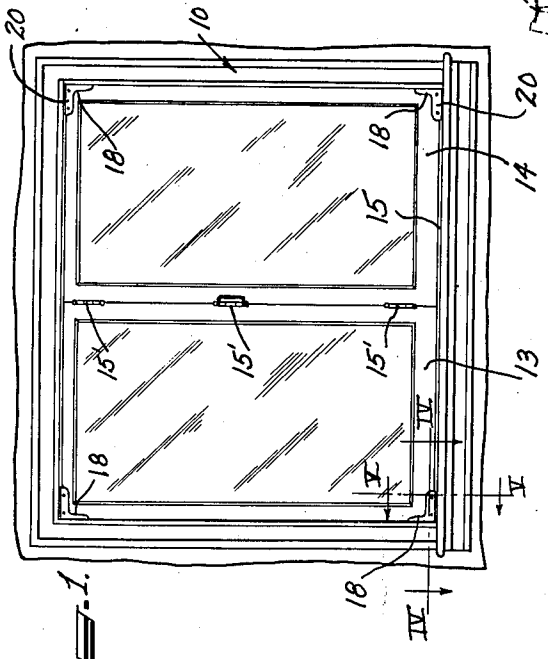


Fig. 1.

Owen L. Dautrick.

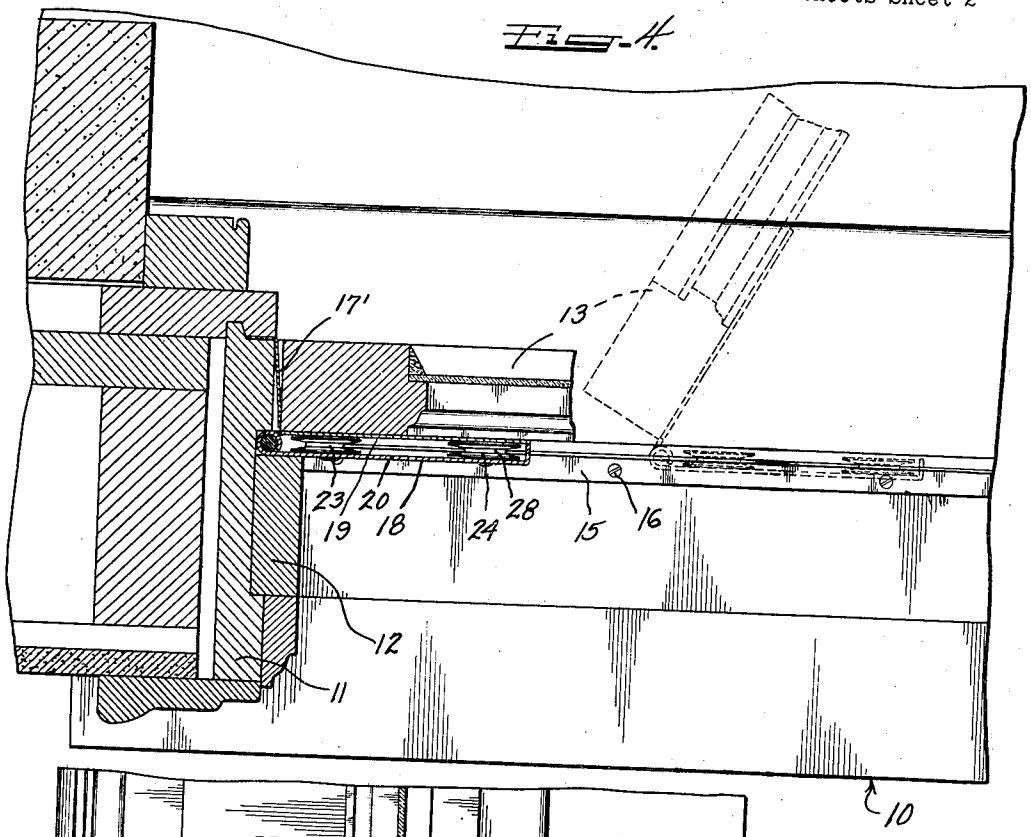
by Charles Orshell Atty.

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Fig. 4.



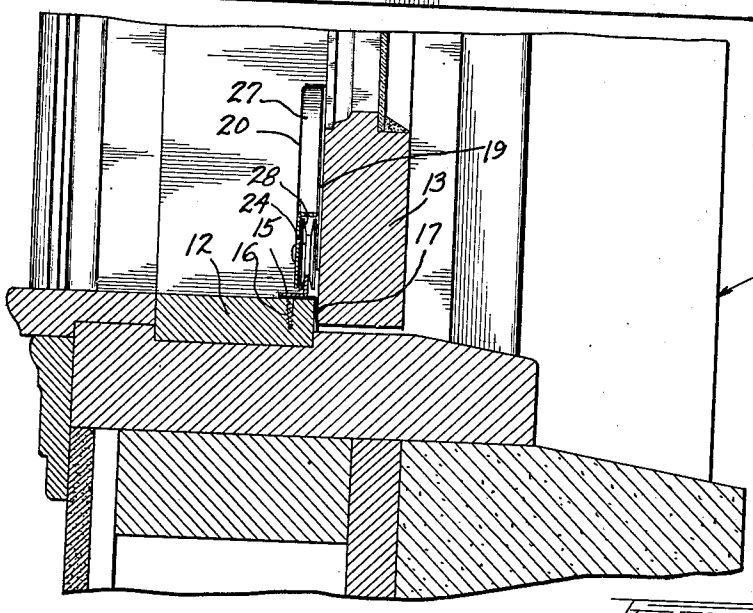


Fig. 5.

Inventor

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Patented Oct. 21, 1941 2,260,171

UNITED STATES PATENT OFFICE

2,260,171

CASEMENT WINDOW

Owen L. Dautrick, Ferndale, Mich., assignor to Lewis G. Erb and Arthur E. Blow, both of Royal Oak, Mich.

Application July 13, 1940, Serial No. 345,279

7 Claims. (Cl. 20—42)

The present invention relates in general to windows and is particularly concerned with improved mounting means for windows of the casement type.

It is a primary object of the present invention to provide in a window of the casement or similar type improved means for supporting the sash or sashes, which may be conveniently and easily installed, which enables the sash to be easily opened and closed, and which is simple in construction and attractive in design so as not to detract from the appearance of the window and its surroundings.

It is a further object to provide improved mounting means for the sash of a casement window which may be utilized irrespective of whether the window has one or more sashes.

Still another object of the herein described invention is to provide an improved article of manufacture in the form of a novel hinge construction for pivotally and slidably mounting a sash or sashes of a casement window.

Other objects and features of the invention will more fully appear from the following detailed description, taken in connection with the accompanying drawings, which illustrate several window arrangements utilizing the principles of the present invention, and in which:

Figure 1 is a view in elevation taken from the inside of a window embodying the features of the present invention;

Figure 2 is an enlarged horizontal sectional view taken through the same and showing the sash positions, when the window is opened;

Figure 3 is a similar view of a window utilizing a single sash instead of a pair of sashes as in Figure 1;

Figure 4 is an enlarged fragmentary sectional view to show certain features of the mounting means, taken substantially on line IV—IV of Figure 1;

Figure 5 is an enlarged fragmentary sectional view, taken substantially on line V—V of Figure 1; and

Figure 6 is an enlarged elevational view of the novel hinge construction utilized for supporting the sashes in the present invention.

As shown on the drawings:

Illustrative of the present invention, I have chosen to show in the drawings a window casing as generally indicated at 10, this casing being of the usual construction which can be fitted in any window opening, or the like, in a frame, masonry or other wall or structure, and can be made of wood, metal, or any other desired suitable material.

In the construction shown the window casing includes a frame 11 which defines the window opening and contains on its inner surface the usual rabbet strip 12. This rabbet strip is on the inside of the frame, and with my construction it is not necessary to have an outer rabbet strip.

In the arrangement shown in Figures 1 and 2, a pair of window sashes 13 and 14 are disclosed, these sashes being of combined size sufficient to fill the opening within the frame 11. These sashes are connected together by means of suitable hinges 15' at their adjacently disposed inner edges so as to permit folding movement of the sashes as shown in dotted lines in Figure 2.

At the top and bottom of the window frame, I provide a track in the form of an elongate angle strip 15 which is secured along the inner surface of the bottom and top of the rabbet strip 12 as by suitable screws 16. This track is disposed with one of its flanges projecting inwardly, and if desired, the same screws which are utilized for the track may also be utilized for securing a weather strip 17 of angular transverse section having one of its legs adapted to form an abut ting surface for the adjacent edge margin of the window sashes. Additional weather strips 17' may also be mounted along the sides of the frame 11 for engagement by the outer edges of the sashes, when the sashes are closed.

At each outer corner of the window sashes at the top and bottom of their outer edges, there is provided a novel hinge member, generally indicated at 18, and having the construction shown in detail in Figure 6. The specific construction shown in Figure 6 is adapted for mounting of the upper left hand corner and the lower right hand corner of the window sashes as shown in Figure 1. It will be understood that the construction will have to be reversed as regards the hinges for the lower left hand corner and the upper right hand corner of the sashes. It is thought that it will be unnecessary to describe both the right and left-hand constructions, and only one of these will be described herein.

Referring to Figure 6, the hinge comprises a pair of generally L-shaped wing members 19 and 20 which are pivoted as shown at 21 with one set of their legs connected together and their other set of legs extending outwardly from the pivotal connection. It will be noted that this latter set of legs extends from the same end of the pivotal connection.

The wing 19 is provided with a plurality of

apertures 22 for receiving mounting screws by means of which this wing member may be connected with the sash.

The other wing member 20 has its outer edge margin projecting past the adjacent end of the pivotal connection and has supported thereon a pair of rollers 23 and 24, these rollers being spaced apart and respectively disposed at the inner and outer ends of the outwardly extending leg of the wing member 20. The rollers are rotatably mounted upon pivot pins 25 and 26 supported from the wing 20. The innermost edge of the wing 20 is deflected to form an edge flange 27 which extends over and conceals the rollers, when looking toward the inner edge of the wing. Moreover, the flange 27 is of sufficient width to extend substantially across the space between the wings 19 and 20, when these wings are swung to substantial parallel relation.

The peripheral edge of each roller is provided with a circumferentially extending groove 28 as shown in Figures 4 and 5 for receiving the projecting flange of the track 15, and prevent lateral removal of the rollers therefrom.

With the arrangement shown in Figure 1, the sashes may be folded as shown in dotted lines in Figure 2, the outer edges of the sashes being movable along the tracks at the top and bottom of the window frame, and since the sashes are supported on the rollers of the hinge construction, the window may be easily opened, and, if desired, the sashes may be bodily moved in folded position to one side or the other of the window opening so as to give a clear and unobstructed view through the open window.

The mounting means as previously described is not limited for use with a pair of sashes, but may also with equal facility be utilized with windows having a single sash therein, as shown in Figure 3. In this arrangement, the sash is mounted in the same manner as the sashes of the arrangement shown in Figure 1. When one sash is utilized, however, it may be found desirable to use a stabilizing bar such as shown at 29, one end of this bar being pivotally mounted for swinging movement in a bracket 30 connected to the window frame, and at its other end pivoted on a bracket 31 connected with the sash.

It will be apparent from the foregoing description that the herein described invention provides improved means for supporting the sash or sashes of a window of the casement or similar type; which may be conveniently and easily installed; which enables the sash to be easily opened and closed; which is simple in construction and attractive in design, so as not to detract from the appearance of the window and its surroundings; which embodies improved mounting means which may be utilized with casement windows irrespective of whether the window has one or more sashes; and which provides an improved article of manufacture in the form of a novel hinge construction for pivotally and slidably mounting a sash or sashes of a casement window.

It is, of course, to be understood that although I have described in detail several window constructions utilizing the improved mounting means of the present invention, the invention is not to be thus limited, but only in so far as defined by the scope and spirit of the appended claims.

I claim as my invention:

1. In a window frame having a top and a bottom and a closure member for the frame, means to support said closure member for swinging movement and for sliding movement and being provided in duplicate for the top and bottom of the closure member, said means comprising an angle bar disposed adjacent an edge of said frame, an angle plate pivoted for swinging movement on said closure member and adjacent a corner thereof, a roller carried by said plate and mounted rotatable thereon, said roller being rotatable along said angle bar and having opposed flanges overlapping an edge of said bar for guiding movement of said roller thereon, said plate being disposed extending parallel to and in spaced opposed relation to a side of said closure member when said member is in closing position, and flange means on said plate cooperable with said closure member to conceal said roller when said closure member is in closing position.

2. In a window frame having a top and a bottom and a closure member for the frame, means to support said closure member for swinging movement and for sliding movement and being provided in duplicate for the top and the bottom of the closure member, respectively, said means comprising a rail disposed adjacent an edge of said frame, an angle plate hinged on said closure member and adjacent a corner thereof, a roller carried by said plate and mounted rotatable thereon, said roller being rotatable along said rail, said plate being swung into opposed parallel relation to a side of said closure member when said closure member is in closing position, and flange means on said plate cooperable with said closure member and said plate to conceal said roller when the closure member is in closing position.

3. Means for supporting a window sash for swinging and sliding movement in a window frame, said means comprising an angle bar to be placed adjacent an edge of the frame, a hinge for the sash comprising a first plate to be secured to the sash and a second plate hinged to said first plate, a roller carried by said second plate and mounted rotatable thereon to roll along an edge of said angle bar, said first and said second plates being in spaced opposed relation to each other when the sash is in closed position in the frame and with the roller then disposed between said plates.

4. Means for supporting a window sash for swinging and sliding movement in a window frame, said means comprising a rail to be placed adjacent an edge of the frame, a hinge for the sash comprising a first plate to be secured to the sash and a second plate hinged to said first plate, a roller carried by said second plate and rotatable thereon to roll along an edge of said rail, said first and said second plates being in spaced opposed relation to each other when the sash is in closed position in the frame and with the roller then disposed between said plates, and flange means on one of said plates disposed above said roller and cooperable with the other of said plates to conceal the roller when the plates are in use on a closed sash.

5. Means for mounting a window sash in a frame for cooperation with a rail on the frame, said means comprising a first plate member to be secured to the sash and a second plate hinged to said first member, a roller carried by said second plate and mounted rotatable thereon to ride along an edge of the rail, said first and said second plates being disposed in spaced opposed relation to each other and with the roller disposed between them when the plates are in use on a sash in closing position in the frame.

6. Means for mounting a window sash in a

frame for cooperation with a rail on the frame, said means comprising a first plate to be secured to the sash and a second plate hinged to said first plate, a roller carried by said second plate and mounted rotatable thereon to ride on the rail, said first and said second plates being in spaced opposed relation to each other and with the roller disposed between them when they are in use on a sash in closed position, said second plate being provided with a flange disposed extending over said roller for the concealment of said roller.

7. Means for mounting a window sash on a frame for cooperation with a rail on the frame, said means comprising a first L-shaped plate to be secured to the sash, a second L-shaped plate having its vertical arm hinged to the vertical arm of said first plate, a pair of rollers carried rotatable on the horizontal arm of said second plate, said first and said second plates being disposed in spaced opposed relation and with the rollers between them when the plates are in use on a sash in closed position, said second plate having an edge portion bent to define a flange extending towards said first plate for cooperation therewith to substantially house said rollers when the sash is in closed position.

OWEN L. DAUTRICK.