Oct. 28, 1941. J. D. GUNZELMAN 2,260,451

FRAME

Filed April 8, 1940

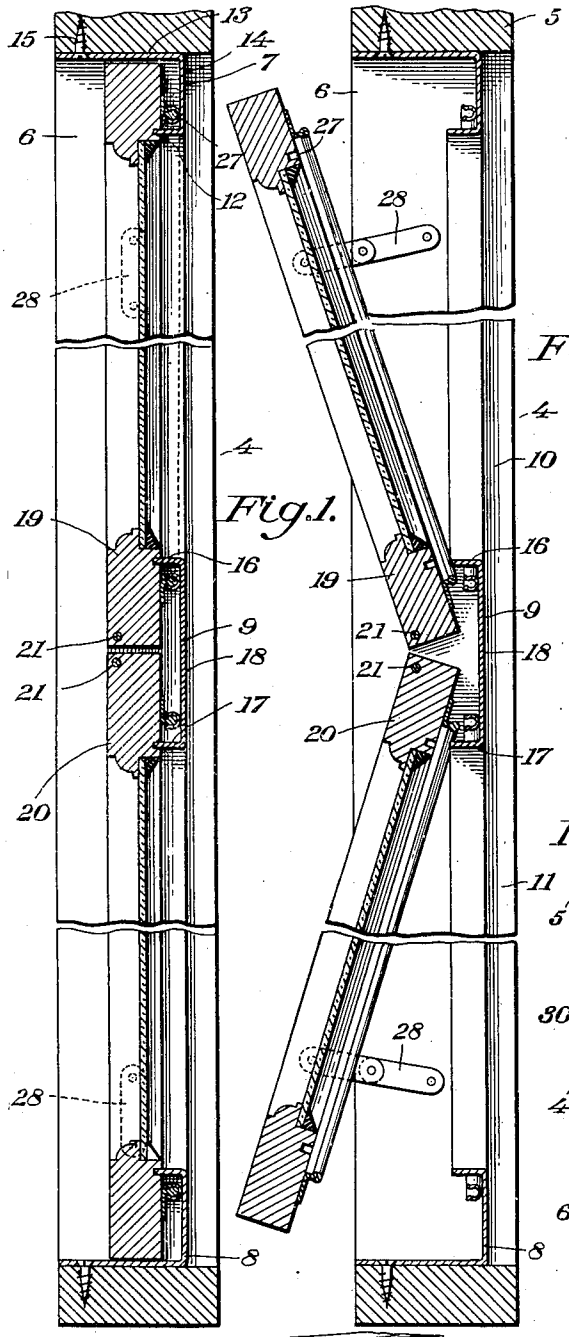


Fig. 1.

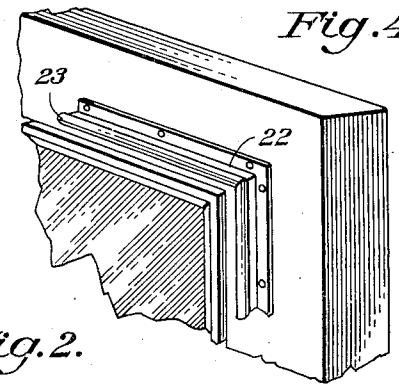


Fig. 4.

Fig. 2.

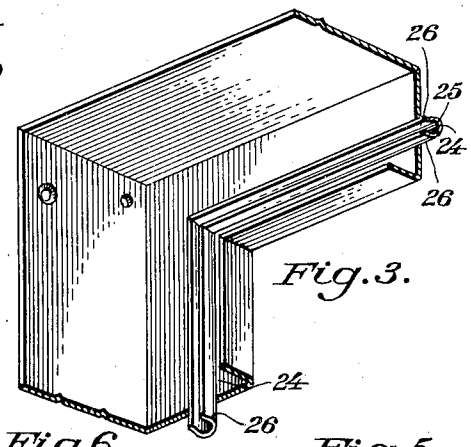


Fig. 3.

Fig. 6.

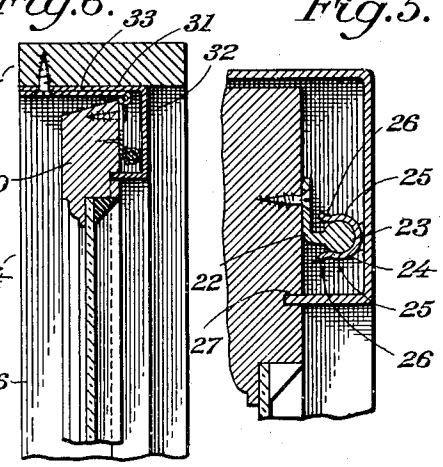


Fig. 5.

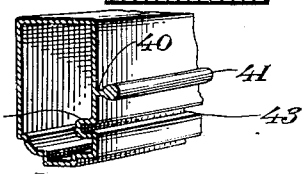


Fig. 7.

Joseph D. Gunzelman:
INVENTOR

BY Victor J. Evans & Co.
ATTORNEYS

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2,260,451

FRAME

Joseph D. Gunzelman, Emporia, Kans.

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2 Claims. (Cl. 20—53)

My invention relates to window and door frame structures and has as one of the principal objects thereof the provision of means adapted to be permanently attached to a window or door frame and the window or door thereof to provide a weather seal and which is so constructed and arranged whereby said window or door may be readily opened or closed.

Another object of my invention is to provide means of the above described character which is simple in construction, durable in use, efficient in operation and economical in manufacture.

Other objects and advantages will be apparent from the following description, appended claims and annexed drawing.

Referring to the drawing wherein like reference characters designate like parts throughout the several views:

Figure 1 is a transversovertical sectional view of a window construction having my invention applied thereto and illustrating the window sashes in closed position.

Figure 2 is a view similar to Figure 1 but illustrating the window sashes in open position.

Figure 3 is a fragmentary perspective view of a corner of my novel form of framework.

Figure 4 is a fragmentary perspective view of an upper corner of a window sash and illustrating the manner in which one of the elements of my invention is attached thereto.

Figure 5 is a vertical fragmentary sectional view of the upper section of the framework and illustrating the upper portion of a window sash in closed and sealed relation therewith.

Figure 6 is a transversovertical sectional view of the upper portion of a window frame and illustrating a modified form of my invention.

Figure 7 is a sectional perspective view of a portion of a sash rail and illustrating an element of my invention as being formed therewith.

In practicing my invention, as illustrated in Figures 1 to 5 inclusive of the drawing, I provide a metallic framework 4 of a substantial rectangular configuration disposed within the window opening of a window frame 5. The framework 4 is fabricated with side, top, bottom and transverse sections 6, 7, 8 and 9 respectively with said sections defining upper and lower sash openings 10 and 11 respectively. The sections are of a U-shaped configuration with said side, top and bottom sections having inner, outer and web branches 12, 13 and 14 respectively.

The outer branches 13 are disposed in appressed relation with the faces of the window frame defining the window opening by means of screws 15 and with said outer branches 13 being of a greater length than the inner branches 12 and terminating in flush relation with the inside face of the window frame. The transverse section 9 is provided with upper, lower and web branches 16, 17 and 18 respectively.

Arranged within the framework 4 are a pair of upper and lower sashes 19 and 20 respectively with the lower rail of the upper sash and the upper rail of the lower sash provided with laterally extending trunnions 21 journaled through the side sections 6 interjacent the branches 16 and 17 of the transverse section 9. The trunnions terminate within the side walls of the window frame 5 and serve to permit relative pivoting of the sashes. Adjacent their inner marginal edges the outside face of each of the sashes has secured thereto, by means of screws, an endless L-shaped member 22 fashioned with an outwardly disposed bulbiform end 23 normally seated within an endless channel member 24 when the sashes are in closed position as illustrated in Figure 1 of the drawings. The channel members 24 are secured to the inner faces of the web branches of the respective sections 6, 7, 8 and 9 with one of said members 24 arranged about each sash opening as illustrated in Figures 1 and 2 of the drawing.

Each of the channel members 24 are of a C-shaped configuration in cross section to provide spaced resilient arcuate-shaped side portions 25 for embracing the bulbiform ends 23 of the members 22. The outer ends 26 of the portions 25 are curved outwardly with respect to each other to effect spreading of the portions upon engagement with the members 22 when the sashes are operated from opened to closed position.

The outside faces of the sashes, adjacent their inner marginal edges, are formed with channels 27 for receiving the ends of the branches 12, 16 and 17 therein for cooperation with the members 22 and 24, when in interfitted relation, to establish a weather seal between the sashes and framework 4. Pivoted linkage 28 is provided and connects the upper end of the upper sash and the lower end of the lower sash to the side sections 6 of the framework 4 whereby to limit the outward movement of the sashes when the same are operated to open position as illustrated in Figure 2 of the drawing.

In the modified form illustrated in Figure 6 of the drawing, the upper rail of the upper sash 30 is hinged to the upper section 31 of the framework 32 by means of a hinge construction 33, it being understood that the lower rail of the

lower sash may be similarly hinged to the bottom section of the framework 31.

In the modified form illustrated in Figure 7 of the drawing, the upper rail of a metal sash is depicted and which is integrally formed with an adjustment 40 having a bulbiform end 41 for co-operative engagement within a channel member similar to that depicted in the preferred embodiment of the invention. Subjacent the adjutment 40, the rail is fashioned with an inwardly disposed U-shaped portion 42 defining a channel 43 for receiving the branch end of a section in the same manner as illustrated and described in connection with the preferred embodiment.

From the foregoing it will be apparent that I have provided simple and efficient means for effecting a weather seal between sashes and a sash frame and which is so constructed and arranged as to permit ready opening and closing of the sashes. While I have shown and described my invention in connection with a window frame and the sashes thereof, it is to be understood that the same is also applicable to door frames and doors.

Without further elaboration, the foregoing will so fully explain the invention that others may, by applying current knowledge, readily adapt the same for use under various conditions of service. Moreover, it is not indispensable that all the features of the invention be used conjointly since they may be employed advantageously in various combinations and sub-combinations.

It is obvious that the invention is not confined to the herein described use therefor as it may be utilized for any purpose to which it is adaptable. It is therefore to be understood that the invention is not limited to the specific construction as illustrated and described, as the same is only illustrative of the principles of operation, which are capable of extended application in various forms, and that the invention comprehends all construction within the scope of the appended claims.

What I claim is:

1. A frame adapted to be secured within a window aperture and formed with side, top, bottom and interjacent sections defining spaced sash openings, a pair of endless C-shaped members secured to said frame and arranged one about each opening, a pair of endless L-shaped members secured to sashes pivotally connected to said frame for opening and closing said openings, said L-shaped members formed with bulbiform ends clampingly disposed within said C-shaped members when said sashes are in closed position to effect a weather seal between said sashes and frame, said sections being of a U-shaped configuration defining spaced branches with one of said branches adapted for seating engagement within channels formed in said sashes for co-operation with said members to maintain said seal when said sashes are in said closed position.

2. In weather stripping for a closure frame having a pivoted closure element, a weather frame of channel-shaped cross section secured within the aperture of the closure frame to define an opening therein, the said channel frame being mounted so that its flanges are parallel with the inner faces of the closure frame and its web perpendicular thereto, a continuous channel member of arcuate cross section secured to one side of the web and opening laterally outward thereof, and a continuous angular member attached to the frame engaging side of the closure element having a laterally projecting rounded edge portion fitting into the arcuate channel member when the closure is in closed position, the said closure element having a groove therein disposed to receive therein the inner flange of the channel frame when the closure is in closed arrangement.

JOSEPH D. GUNZELMAN.