June 1, 1937. D. J. MURNANE 2,082,117

METAL SASH

Original Filed Nov. 16, 1934

Fig. 6

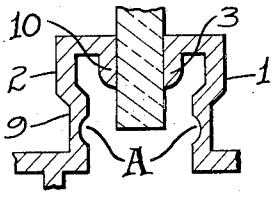


Fig. 1

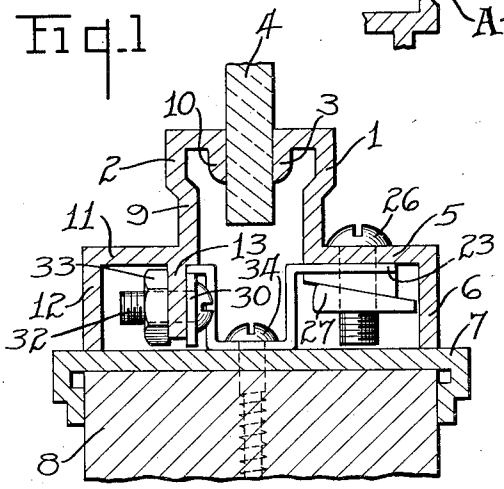


Fig. 2

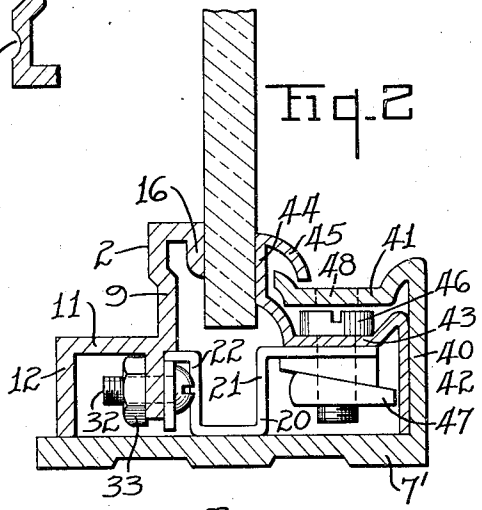


Fig. 7

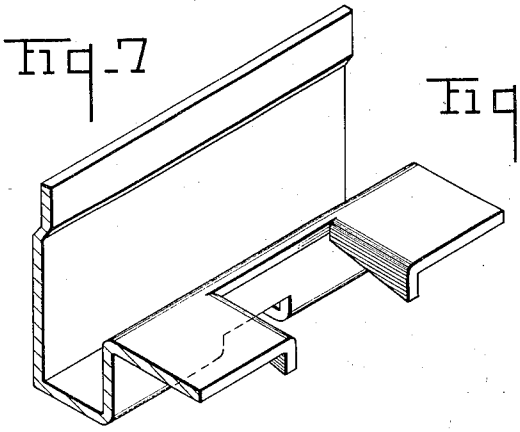


Fig. 3

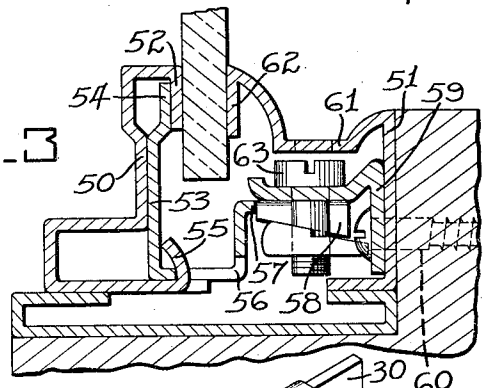


Fig. 5

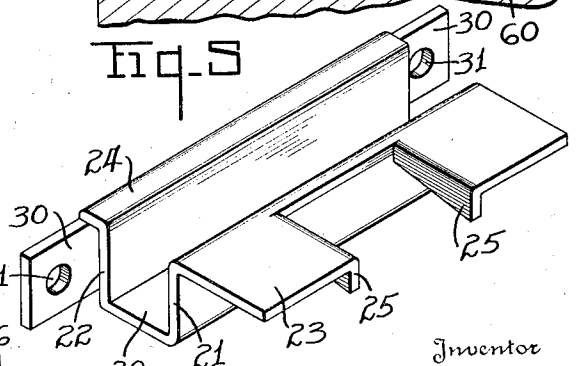
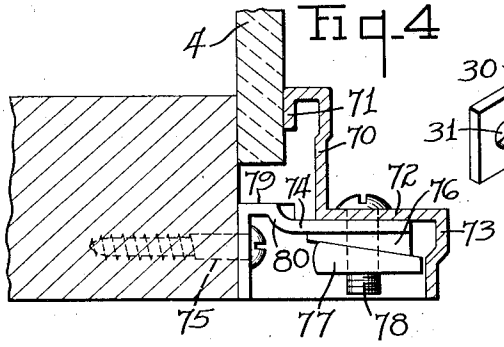


Fig. 4



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METAL SASH

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Application November 16, 1934, Serial No. 753,287
Renewed November 17, 1936

2 Claims. (Cl. 20—56.4)

This invention relates to glass holding members, and more particularly to a metallic sash for holding heavy plate glass of the type used in store front construction.

The primary object of the invention is to provide a sash which exerts no screw clamping pressure on the glass and which comprises inner and outer glass contacting members connected and held against the glass with sufficient resiliency to absorb sudden stresses exerted on the glass by wind pressure or otherwise.

Other objects and advantages of the invention will become apparent as the description proceeds, reference being had to the accompanying drawing, in which:

Figure 1 is an enlarged cross sectional view of one form of sash embodying the present invention;

Figures 2, 3 and 4 are similar views of other forms of the invention;

Figure 5 is a perspective view of the resilient bracket used in connection with the forms shown in Figures 1 and 2;

Figure 6 is a fragmentary sectional view of a slightly modified form of Figure 1; and

Figure 7 is a perspective view of the resilient bracket used in connection with the forms shown in Figure 3.

Referring to the drawing and particularly to Figure 1, the sash includes an inner member 1 and an outer member 2 which are connected to each other to hold a pane of glass in a manner hereinafter described. In the better grade of store fronts these members are made of extruded metal which has a more attractive appearance than rolled or drawn metal. The inner member 1 has an offset downwardly turned flange 3 which is adapted to be moved into position against a pane of glass 4. A horizontal portion 5 of the inner member extends outwardly and terminates in an upright foot member 6 which is adapted to rest on a base member 7, which latter extends entirely across the frame or sill member 8 of the window opening.

The outer member 2 preferably comprises an upright portion 9 from which is offset a glass engaging flange 10 similar to the inner glass engaging flange 3. A horizontal part 11 extends outwardly and terminates in an upright foot member 12 which rests on the base member 7 similarly to the inner foot member 6. Beneath the horizontal member 11, a fastening flange 13 extends downwardly into the space outlined by the horizontal member and the foot member 12. It will be understood that the inner and outer sash members and the fastening flange are continuous throughout the length of the window opening.

Spaced at intervals along the sash, as for instance at 12 inch centers, are connecting brackets which in this instance comprise, as best shown in Figure 5, members having a U-shaped central portion 20 having its free ends 21 and 22 turned outwardly to form an inner shoulder 23 and an outer shoulder 24. The inner shoulder 23 has downwardly struck wedge-shaped surfaces 25 formed therefrom. In the assembly, as shown in Figure 1, the inner shoulder 23 is adapted to be held in abutting relation to the horizontal portion 5 of the inner glass holding member by coaction of a screw 26 and an elongated wedge shaped nut 27, the upper surface of which is cut at an angle supplementary to the slope of the wedge shaped surfaces 25.

The outer shoulder 24 of the resilient bracket is bent downwardly to form an upright portion 30 which extends outwardly from either side of the bracket. The upright portion has holes 31 formed therein in the aforesaid outwardly extending portions for the reception of screws 32. These screws are adapted to be engaged in nuts 33 so that the bracket member is fixed to the fastening flange 13 of the outer sash.

The entire sash assembly is held in position on the window frame 8 by means of screws 34 which extend through the bight portion of the resilient bracket, the base member 7, and into the window frame. It will be seen from the above that when it is desired to fit a pane of glass, the entire sash is assembled by drawing up screws 32 and 34, and loosely positioning screw 26 in its wedge shaped nut 27. The desired degree of pressure is then exerted on the glass by moving the inner sash member 1 into engagement with the pane. This member is then retained in its desired position by finally tightening the screws 26 so as to draw the wedge shaped nuts 27 against the corresponding wedge surfaces 25.

It will be obvious that sudden shocks and strains on the glass will be taken up in the resilient connecting bracket 20 which permits a slight flexibility, or relative movement between the inner and outer sash members. It has been found that the sash members themselves can be made substantially rigid and that the bracket will afford the necessary resiliency to properly set the glass.

In the event that further flexibility of the sash is desired, the upright portions of the inner and outer sash members, or one of them, may be

weakened as at A, along a line parallel to its upper surface, as shown in Figure 6, so as to provide definite axes of flexure about which the sash members may give to a force exerted on the glass.

In the form of sash shown in Figure 2 the outer sash member is substantially the same as that shown in Figure 1, and the reference numerals, therefore, are the same. In this instance, however, the base member 7' has an upwardly extending inner surface 40 which in turn is bent to form a gutter 41 substantially parallel to the bottom surface. The inner glass contacting part comprises an upright foot member 42, a horizontal portion 43, the end of which is bent upwardly into a glass engaging surface 44, which latter terminates in an inwardly and downwardly extending part 45, the end of which overlies the extremity of the gutter member 41 so as to give the inner sash a continuous and finished appearance. The final setting screw 46 in this instance is concealed beneath the gutter portion 41, and, similarly to the previously described form, has threaded engagement with a wedge shaped nut 47. The resilient bracket in this form is identical with that used in connection with Figure 1, so that the description thereof need not be repeated. Access to the setting screws 46 is had through holes 48 in the inner sash member.

When it is desired to set a pane of glass in a sash of this form the entire sash is assembled, leaving the screws 46 loosely engaged with their wedge shaped nuts. The desired pressure is then exerted on the outer glass contacting surface 16, and the screws 46 are then tightened to hold the members in the desired relation. The resiliency of this sash is had through the medium of the resilient bracket 20, and also through the inner glass contacting member which may be formed of rolled metal of a thinner gage than is used in the outer sash. It will thus be seen that a compound resilient sash is afforded by this form, a certain portion of the flexibility being had in the resilient bracket 20, and the remainder being derived from the inner rolled glass contacting section.

In the form shown in Figure 3, the inner and outer sash members include upright portions 50 and 51. The outer sash member has a glass engaging portion 52 which is in a plane offset from the main upright portion 50. The resilient connecting bracket in this instance is made separate from but is operatively integral with the outer member, and includes an upright part 53 having an offset end portion 54 which bears against the outer glass contacting part 52. The upright portion 53 is held against the upright portion of the outer sash 50 by any suitable means, such as ears 55, struck up from the base of the outer sash and received in suitable holes in the bight portion 56 of the resilient bracket. Similar to the other form of bracket shown, there is provided an inwardly extending shoulder 57 from which are struck the wedge portions 58.

An intermediate bracket 59 is provided, and, together with the inner sash member 51, is adapted to be fixed to the frame of the window as by screws 60. It will be seen that this form of sash seats in a groove on the window opening, the top of which is substantially flush with the top of the inner sash member. The inner sash member has a gutter portion 61 and a glass contacting surface 62. It will be seen that in this instance, as in the form of Figure 2, when it is desired to set the glass, the desired pressure is exerted from the outside, and the setting screws 61 tightened down to retain the glass in its adjusted position.

In this form, as well as in Figure 2, the gutters 41 and 61 serve the added function of conduits for condensation occurring on the inner surface of the glass, thus keeping this moisture from running into the show window with the possible injury of goods disposed therein.

In some instances it is necessary to set the glass directly against a frame member. This is particularly true of members adapted to be used with the side and head jambs of a window opening. A form of the invention adapted for this work is shown in Figure 4 and comprises an outer sash member 70 having an offset glass contacting flange 71, a horizontal part 72 and a downwardly extending foot portion 73. The resilient member 74 in this instance is continuous throughout the length of the sash and is fastened directly to the window jamb by suitable means, such as a screw 75. The shoulder part 74 of the resilient member has the same wedge shaped members 76 struck therefrom which are adapted to be engaged by a wedge shaped nut 77 coacting with a screw 78 to hold the sash in adjusted position. It will be seen that the shoulder part of the resilient member is offset from the uppermost part 79 of the bracket and is connected therewith by a curved portion 80 so as to afford a definite line of flexure about which the member may give to pressure exerted on the glass.

It will be appreciated that while the bracket members have been described as discontinuous, they may readily be made continuous, as that shown in the device disclosed at Fig. 4.

Obviously numerous other modifications may be made in the disposition and form of the various coacting parts without departing from the spirit of the invention as defined in the appended claims.

What I claim is:—

1. A sash for holding glass, comprising an inner sash member, an outer sash member, a U-shaped resilient connecting bracket for said sash members, the free ends of said bracket being disposed outwardly in a plane offset from the bight portion of said bracket, and means to fasten the free ends of said bracket to said sash members in adjusted position.

2. A sash for holding glass comprising an inner sash member, an outer sash member, a resilient connecting bracket for said members, said bracket comprising a center area and free ends extending from said center area in planes different than the plane of said center area whereby lines of flexure between the center area and free ends are established, and means to adjustably fasten said free ends to said sash members.

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