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3,196,498

LOUVER RETAINING CLIP FOR JALOUSIE WINDOW

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FIG. 1

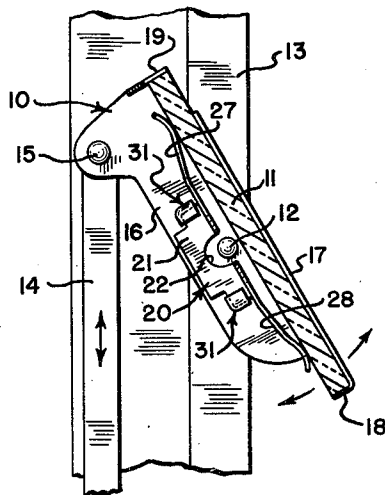


FIG. 3

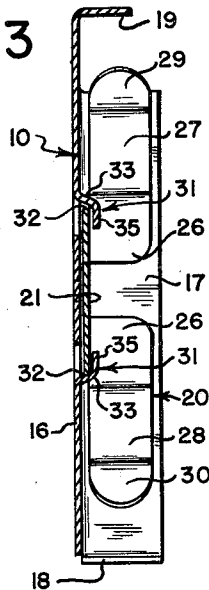


FIG. 5

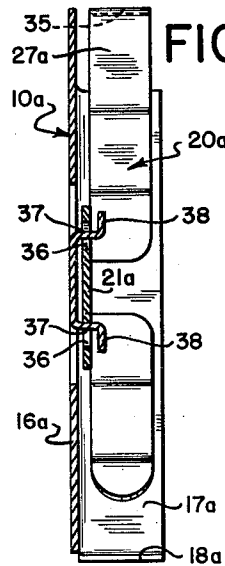


FIG. 2

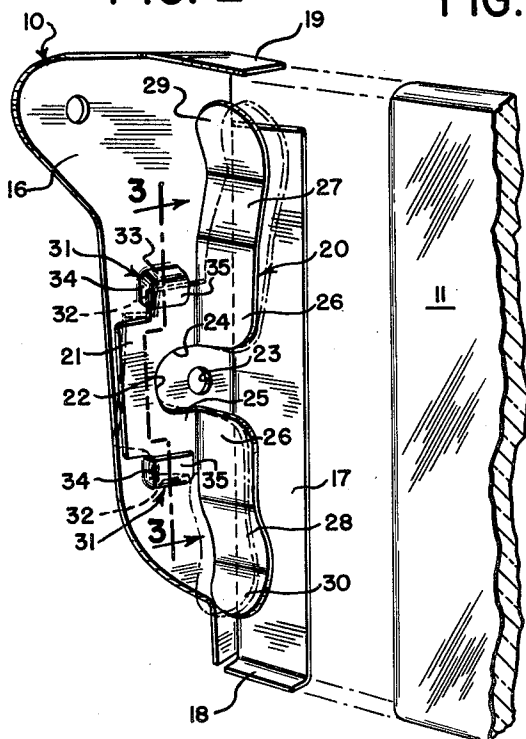
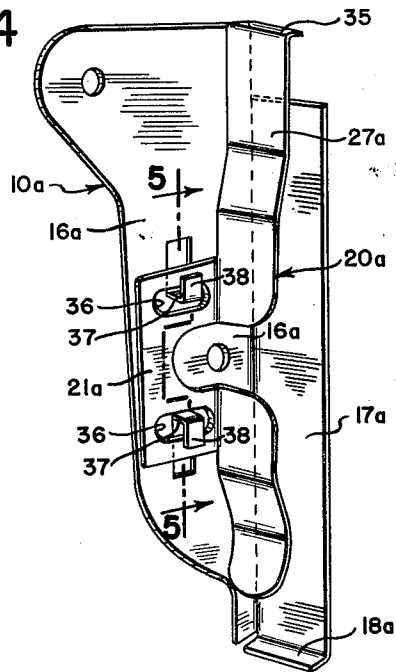


FIG. 4



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LOUVER RETAINING CLIP FOR JALOUSIE WINDOW

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This invention relates to jalousie windows and more particularly to the mounting of the opposite ends of the panes of jalousie plate glass in such a manner that they can be more readily installed and so that broken panes can be more easily removed and replacement panes mounted in position. Still more particularly this invention relates to an improved retaining clip and its mounting on the conventional pivoted bracket member of a jalousie window mechanism.

In accordance with the invention, instead of mounting the louver retaining clip in immovably fixed position on the bracket member, and also instead of making the retaining clip in two parts, mounting one of them so as to be laterally shiftable lengthwise of the louver pane, when it is desired to install, remove or replace a pane, as has been done heretofore, we have provided a one-piece retaining clip which is loosely mounted on the bracket member, that is, mounted for limited three-directional motion so as to permit the oppositely projecting resilient fingers of the clip to be tilted to a limited extent, and thus supplement the resilient of the spring fingers in the installation, removal and reinsertion of a louver pane.

The improved retaining clip has conventional flexible and resilient fingers extending in opposite directions to engage the surface of the pane opposite the surface engaged by the back panel of the bracket member. These fingers, however, project from lateral extensions disposed at right angles to a central body section with which the clip is provided. This central body section is disposed adjacent and parallel to the surface of the end panel. Means for loosely securing the body section in position projects from the surface of the end panel and, advantageously, into engagement with corner elements formed by shoulders at the opposite sides of the body section, and into engagement with the outer surface of this section.

The invention will be described in greater detail in connection with the accompanying drawings which illustrate one form of my novel construction of retaining clip, and its mounting, but it will be understood that the invention is not restricted to the construction shown.

In these drawings:

FIGURE 1 is a fragmentary view in elevation showing a jalousie window construction including my improved retaining clip, the pane of jalousie plate glass being shown in cross section;

FIG. 2 is an exploded perspective view showing the improved clip and its mounting and a short section of the jalousie pane;

FIG. 3 is a sectional view taken on line 3—3 of FIG. 2;

FIG. 4 is a view somewhat similar to FIG. 2 illustrating a modified form of the spring clip; and

FIG. 5 is a sectional view similar to FIG. 3 but taken on line 5—5 of FIG. 4.

Referring to these drawings, reference numeral 10 indicates generally a bracket member for supporting one end of a pane 11 of jalousie plate glass which forms one of the louvers of a jalousie window. Bracket 10 is pivoted by means of a rivet 12 to the vertical wall 13 of the window structure, and a conventional actuating link or travel bar 14 is pivoted at 15 to the end panel 16 of bracket member 10. The lower end of travel bar 14 is connected to a conventional operating mechanism (not shown) for adjusting the angular position of bracket 10 and pane 11.

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The greatest dimensions of bracket 10 corresponds approximately with the width of pane 11 and, in addition to the end panel 16, has a back panel 17 which projects at right angles to the end panel and extends along the rear edge thereof. When the pane 11 of jalousie plate glass is in position with respect to the bracket 10, the end portion of the pane rests against the surface of back panel 17 and is supported at the bottom by a lip portion 18 which is struck up at right angles to the bottom of back panel 17. The pane is positioned at its top edge by means of a stop flange 19 which projects at right angles to the surface of end panel 16 at the top edge thereof.

In order to hold the opposite or inner surface of the pane 11 in position as just described, the improved retaining clip and its mounting on the end panel 16 come into action. Such retaining clip is indicated in its entirety by reference numeral 20. This retaining clip comprises a central body section 21 which is positioned adjacent and parallel to the surface of end panel 16. Central section 21 is generally of rectangular shape but has a cut-out or recess 22 extending inwardly from its inner edge to accommodate the opening 23 for pivot pin 12 and the head of this pin, thus providing central section with two parallel leg portions 24 and 25.

These leg portions are of equal length and each has an extension 26 which projects at right angles to the central section, these extensions being disposed in the same plane at right angles to the end panel 16 and parallel with the back panel 17. Projecting from the respective extensions 26 are upper and lower resilient fingers 27 and 28. The upper end of finger 27 is bent upwardly to form a finger grasp portion 29, while a similar finger grasp 30 is formed at the end of the lower finger 28. It will be understood that the fingers 27 and 28 bear against the inner surface of the pane 11 on the opposite side from the back panel 17.

In the ordinary arrangement of the retaining clip as heretofore constructed the clip is rigidly mounted on the bracket 10 so that only the flexibility of the retaining fingers is available to permit the insertion of the pane 11. It will be understood that during installation, or replacement of a broken pane, at least one end of the pane must be moved laterally, usually from below, into position between the back panel 17 and the fingers 27 and 28 of the retaining clip.

The feature of our improved retaining clip 20 is the fact that it is loosely mounted upon but permanently attached to the end wall 16 of the bracket member 10. As shown in FIGS. 1-3 the loose or limited motion mounting of the retaining clip 20 is accomplished by means of hollow formations 31 which are pressed outwardly from the metal of the end panel 16. There are two of these formations which are spaced apart by the vertical dimension of central body section 21 and which are arranged to engage opposite corner elements 32 formed on the upper and lower edges of central section 21. Such corner elements are formed by cutting notches at the outer corners of this section so as to position the formations 31 a suitable distance inward from the inner edge of end panel 16.

Each of these formations 31 has a wall portion 33 which is generally parallel with the upper and lower edges of central section 21 and a wall section 34 which is generally parallel with one of the shoulders formed by the notched corners of section 21. These wall sections 33 and 34 extend outwardly from the surface of end panel 16 a distance which is substantially greater than the thickness of the central section 21 (FIG. 3). The two wall sections 33 and 34 of each formation 31 terminate in a cap portion 35 which is spaced from the surface of end wall 16. The engagement of the two wall sections 33

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and 34 with the edges of central section 21, and of the cap portion 35 with the underlying portion of the outer surface of central section 21, serve to hold the retaining finger 20 in position, although this member has limited lengthwise movement, limited lateral movement and limited outward movement.

Thus when it is desired to insert the end portion of a pane of louver glass such as pane 11 into position between the back panel 17 and the resilient fingers 27 and 28 of retaining clip 20 by lateral movement of the pane over the lip 18 at the bottom of the device, the loose mounting of the retaining clip above described permits the clip to swivel to a tilted position with respect to the back panel 17 as shown by the dot and dash line position in FIG. 2. In this position the upper resilient finger 27 is in contact with back panel 17 and the lower finger 28 is moved outwardly a sufficient distance therefrom so as to allow the pane 11 to be moved upwardly over lip 18 and into position beneath the two fingers 27 and 28 and against the stop flange 19 without bending the lower retaining finger 28 sufficiently to give it a permanent set. As the pane is shifted into final position, the lower finger 28 as well as the upper finger 27 resiliently press the surface of the pane against the surface of back panel 17. The distance of the walls 34 of formations 31 from the back panel 17 are arranged to bring about such clamping or retaining action.

It will be understood that formations 31 are made by a pressing operation after the retaining finger 20 has been placed in position with respect to the end panel 16 and the back panel 17.

Referring now to the modified form of bracket shown at 10a in FIG. 4, there are two differences from the previous construction. One of these is the provision of a stop flange 35 at the top of the upper finger 27a. This flange takes the place of flange 19 of FIG. 2 for locating the upper edge of the pane 11 of jalousie glass.

The second difference is in the manner of loosely mounting the retaining clip on the inner surface of the end wall of the bracket member. Instead of the formations 31 which engage loosely the corner elements 32 of the central section 21, this section as shown at 21a in FIG. 4 is arranged with two spaced apertures 36, and tangs 37 are cut from end wall 16a and inserted in apertures 36. Thereafter the outer end portions 38 of these tangs are bent parallel with the end wall so as to overlie the central section 21a. The dimensions of tangs 37 and of apertures 36 are such as to provide the desired three-dimensional limited movement of the retaining clip 20a with respect to the back panel 17a of the bracket member.

We claim:

1. In a jalousie window construction, a bracket and retaining clip assembly for a pane of jalousie plate glass having an end panel, a back panel integral with the end panel and at right angles thereto, means for supporting the weight of the pane on the back panel and a retaining clip comprising an elongated central body section disposed adjacent and parallel to the end panel, the body section carrying two resilient fingers projecting in opposite directions for engaging the pane on the opposite surface thereof from the back panel, and connections between the central section of the clip and the end panel at upper and lower locations spaced apart lengthwise of the clip and on opposite sides of the lengthwise center of the clip, each connection having co-acting parts respectively on the end panel and on the clip, which parts in co-acting with one another are sufficiently separated from one another to allow limited movement of the retaining clip in all directions.

2. In a jalousie window construction, and bracket and retaining clip assembly for a pane of jalousie plate glass having an end panel, a back panel integral with the end panel and at right angles thereto, means for supporting the weight of the pane on the back panel, and a retaining clip comprising a central body section disposed adjacent

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and parallel to the end panel, the body section having two spaced extensions at right angles thereto, two resilient fingers projecting in opposite directions for engaging the pane on the opposite surface thereof from the back panel, said fingers projecting from the respective extensions, and connections between the central section of the clip and the end panel which include oppositely positioned corner elements on the elongated central section of the clip, and corner shaped formations pressed outwardly from the metal of the end panel so as freely to overlie the surface of the central section at each of the corner elements, said formations also engaging the edges of the central section on both sides of each corner element, each connection providing three-dimensional movement and affording rocking movement of the clip about each connection.

3. A jalousie window construction as set forth in claim 2 wherein the connections between the central section of the retaining clip and the end panel of the bracket member comprise two openings in the elongated central section, said openings being spaced from each other lengthwise of the central section and on opposite sides of the lengthwise center of the clip, and a tang struck up from the surface of the end panel opposite each of the openings, the tangs being substantially smaller than the openings, the outer portions of such tangs being bent to overlie the outer surface of the central section in spaced relation thereto.

4. In a jalousie window construction, a bracket and retaining clip assembly for a pane of jalousie plate glass having an end panel, a back panel integral with the end panel and at right angles thereto, means for supporting the weight of the pane on the back panel, and a retaining clip comprising an elongated central body section disposed adjacent and parallel to the end panel, the body section carrying two resilient fingers projecting in opposite directions for engaging the pane on the opposite surface thereof from the back panel, and releasable connections between the central section of the clip and the end panel comprising two spaced formations pressed outwardly from the end panel, and cooperating corner elements at the opposite ends of the central section of the clip, the corner elements extending beneath the respective formations when the resilient fingers are in position to receive a jalousie pane, at least one corner element being disengageable from its holding formation when the central section is slid inwardly on the end panel towards the back panel thereby flexing at least one resilient finger and moving inwardly the outer edge of at least one corner element thereby releasing it from the inner edge of the formation, each connection providing three-dimensional movement and affording rocking movement of the clip about each connection.

5. A jalousie window construction as set forth in claim 4 wherein the releasable connections comprise two apertures provided in the central section, one near each end thereof, and two tangs cut from the end wall one adjacent each aperture, the apertures being larger than the tangs so that the tangs pass loosely therethrough, the tangs being bent outwardly to extend through the apertures and the outer portion of each tang being bent to overlie the surface of the central section, the clip being releasable by sliding the central section inwardly on the end panel towards the back panel and then bending outwardly the outer portion of at least one of the tangs.

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