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PREFABRICATED LIGHT UNITS

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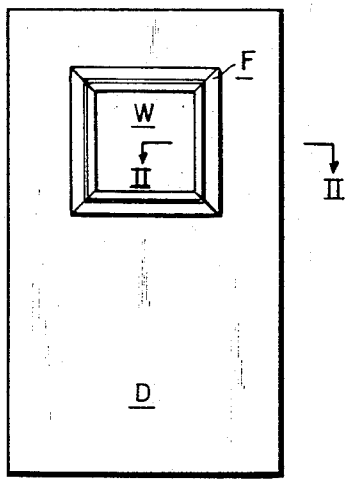


Fig. 1

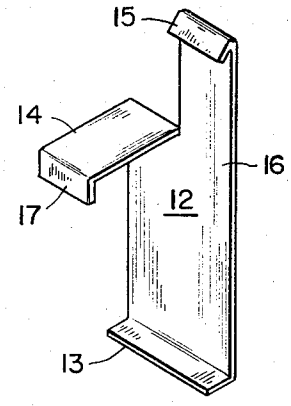


Fig. 4

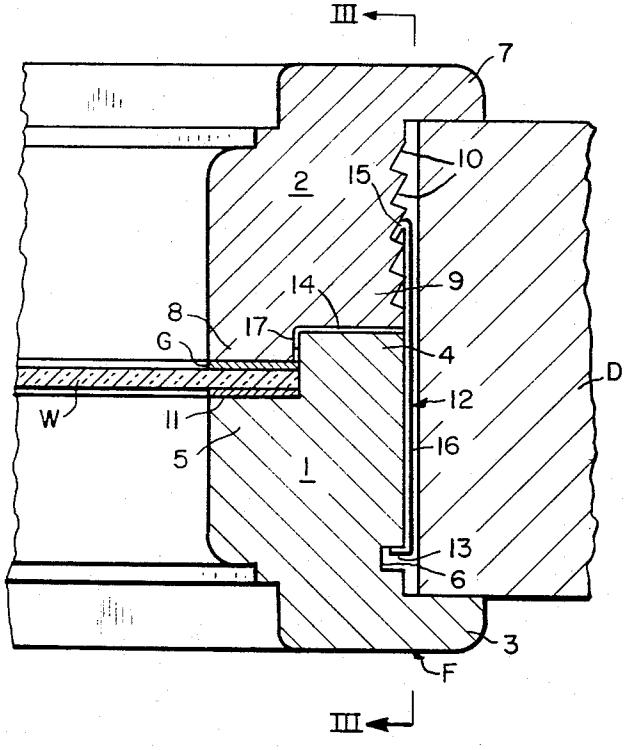


Fig. 2

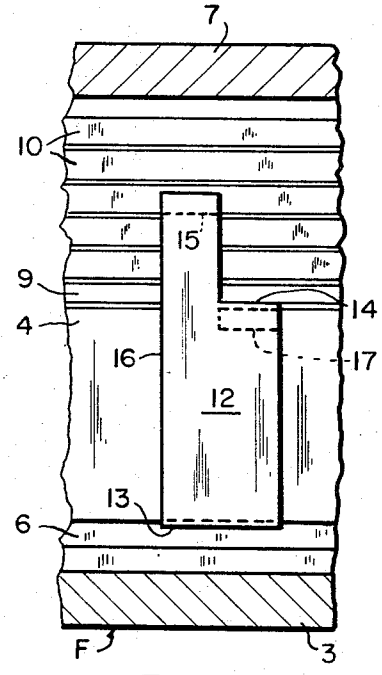


Fig. 3

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PREFABRICATED LIGHT UNITS

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ABSTRACT OF THE DISCLOSURE

A light unit comprising a pair of separate frame members in abutting relationship and a pane of glass held in a groove formed by the frame members. A plurality of resilient clips cooperating with slots and serrations formed in the outer periphery of the frame members to hold the frame members in said abutting relationship, and each frame member including an outwardly extending portion which contacts a surface of a door or other closure member to hold the unit in position.

This invention is directed to a prefabricated light unit, and more particularly to a mounting unit for holding a pane of glass in a door or other closure member. The light unit of the invention consists of a pair of frame members and a pane of glass which is held between the frame members. The frame members are held together by a plurality of resilient clips and in the assembled arrangement peripheral portions of the frame members form a channel which embraces the door or other closure member to firmly hold the unit in place without the use of nails or screws.

Past practice when mounting a glass pane in a door has been to use a mounting arrangement consisting of a two-piece frame in which one frame member is rabbited to form a shoulder for receiving the pane of glass and the other frame member is rabbeted to form an interlocking extension which fits into the first frame member against the periphery of the pane of glass. In the known mounting arrangements, the frame members of the two-piece frame are held together by long wood screws which extend through pre-drilled holes in one of the frame members into pre-drilled holes in the second frame member. The screws hold the frame members tightly together and thereby firmly hold the periphery of a pane of glass between the frame members and mount the frame and the glass pane in an opening in the door.

My invention provides an inexpensive mounting assembly which may be quickly and easily assembled to hold a glass pane in a door and which overcomes a number of disadvantages inherent in the known mounting arrangements. My mounting assembly does not require screws; and, thereby, the cost of the assembly is reduced. More importantly, the elimination of the screws eliminates the expense and effort inherent in drilling holes for receiving the screws and in aligning the holes when the frame is placed on a door. Additionally, a mounting assembly including my novel retaining clips and the cooperating portions of the frame members of the two-piece mounting frame provides an assembly which may be installed much more quickly than the known mounting arrangements. Furthermore, my novel mounting assembly provides a stronger frame for supporting the glass pane and for holding the assembled unit on a door since there is no possibility that the retaining clips will work loose as is the case with wood screws. An additional advantage of my mounting assembly is that it eliminates the visual screwheads in the frame and thereby presents a more attractive frame. My novel mounting assembly may be used with frames of any geometric configuration such as square, rectangular or circular. The number of retaining clips will vary depending upon the size and shape of the frame which is, of course, determined by the size and shape of the opening in which the unit is to be mounted.

In the accompanying drawings I have shown a preferred embodiment of my invention in which:

FIGURE 1 shows a closure member in which a prefabricated light unit is mounted;

FIGURE 2 is a section on line II—II of FIGURE 1 showing the mounting assembly and the details of a retaining clip and the cooperating portions of the two frame members of the mounting frame;

FIGURE 3 is a section on line III—III of FIGURE 2 showing a retaining clip holding the two members of the mounting frame together; and

FIGURE 4 is a perspective view of a retaining clip.

Referring to FIGURE 1 of the drawings, it may be seen that the window and mounting assembly or prefabricated light opening, as the unit is commonly known in the building trade, are mounted in an opening in a door or other closure member D to provide an aesthetically appealing assembly consisting of the glass pane W and the mounting frame F. As shown in FIGURE 2 of the drawings, the mounting frame comprises two frame members **1** and **2** which form a pair of U-shaped channels when assembled. Frame member **1** is formed with a right angle extension **3** which contacts one surface of the door when the unit is assembled and with a shoulder **4** and an offset portion **5** which cooperate with frame member **2** when the unit is assembled. The surface of frame member **1** which faces the edges of the opening in the door has a slot **6** cut therein for a purpose to be described hereinafter. Frame member **2** is formed with a right angle extension **7** which contacts the other surface of the door and with a shoulder **8** and an offset portion **9** which cooperate with the shoulder **4** and the offset portion **5** of the frame member **2** in the manner shown in FIGURE 2. The surface of frame member **2** which faces the edges of the opening in the door is formed with a plurality of serrations **10** which extend completely around the frame for a purpose to be described hereinafter. The U-shaped channel **11** which is formed by offset portion **5** and the shoulder **8** embraces the periphery of the pane of glass and is slightly wider than the pane so that glazing compound G may be placed between the walls of the groove and the surface of the pane of glass. The outwardly facing U-shaped channel which is formed by the surfaces of members **1** and **2** which face the edges of the opening in the door and by extensions **3** and **7** receives the portion of the door surrounding the opening and, as shown in FIGURE 2, the extensions **3** and **7** tightly embrace the door.

The two frame members **1** and **2** of the mounting frame are held together by retaining clips in the manner shown in FIGURES 2 and 3. Since FIGURES 2 and 3 represent a section through the assembled unit, only one retaining clip is shown but it should be understood that a plurality of clips are used around the periphery of the frame and that the number of clips will depend upon the size and shape of the frame.

Retaining clip **12** is constructed from thin, resilient metal such as spring steel and, as shown in FIGURE 4, has a leg **13** which extends the full width of the clip and a pair of holding lips **14** and **15**. The leg **13** is located at one end of the clip and extends at a right angle to the elongated base **16** of the clip. The lip **15** is a locking lip and located at the end of the clip opposite leg **13** and is formed at an acute angle with respect to the elongated base **16** of the clip as is best shown in FIGURE 4. The lip **14** is located intermediate lip **15** and leg **13** and is formed at a right angle with respect to the base **16** of the clip. A right angle extension **17** is formed at the outer

end of the lip **14**. As can be seen in FIGURE 4, the lips **14** and **15** extend only part way across the clip. The clip is easily made from a single piece of spring steel by slitting the piece longitudinally and then bending the piece to form leg **13**, lips **14** and **15** and extension **17**.

The mounting frame and glass pane are mounted in the opening in door D in the manner described hereinafter. Clips **12** are first fitted onto the frame member **1** of the frame F with the extension **17** hooked over the shoulder **4** of the member **1**. The clip is then rotated until leg **13** fits onto slot **6** at which point the clip is firmly attached to member **1**. After all the clips have been attached to frame member **1**, the frame member is placed in the door opening. The pane of glass W is already held in frame member **1** by means of the glazing compound located between the edge of the pane and the offset portion **5**. This step in the assembly having been completed at the point of manufacture. The next step is to place a narrow strip or bead of glazing material around the edge of the glass pane on the side of the pane opposite to the side received in frame member **1**. The last step is to force frame member **2** into position against frame member **1** and the surface of the door to complete the frame F. When the member **2** is forced into position, the angular lip **15** is seated in one of the serrations **10** which extend along the length of the frame member **2**; and, due to the angle of the lip **15** and the resilience of the metal clip, the tension between the lip **15** and the serration firmly holds the member **2** in place against frame member **1** and the door D. It is pointed out that the serrations are cut in such a manner that the portion of the frame below each serration is sufficiently strong to prevent the lips **15** from chipping off the frame. Although five serrations are shown on frame member **2**, it should be understood that the number of serrations may be varied depending upon the thickness of member **2** which must be determined by the thickness of the door in which the unit is mounted.

My novel mounting assembly may be used with either a hollow door or a solid door as is readily apparent from a consideration of FIGURE 2 of the drawings. When the mounting assembly is used with a hollow door, the clip **12** will fit between the two surface members of the door and when the mounting assembly is used with a solid door, the clip will readily fit between the frame and the edge of the opening since the opening is inherently slightly larger than the frame.

The important features of my invention are that it provides a mounting assembly which is both inexpensive and easy to install. The mounting assembly eliminates the use of screws and thereby insures a mounting assembly that will maintain its strength so long as it is used. Additionally, the use of retaining clips to hold the frame members together eliminates visual screwheads in the frame and thereby a more attractive unit is obtained.

While I have shown and described a preferred embodiment of my invention, it is readily apparent that it may be otherwise embodied within the scope of the appended claims.

I claim:

1. A prefabricated light unit for use in an opening formed in a door, said unit comprising a pair of frame members adapted to support a pane of glass in the door, each of said frame members having a right angle extension extending outwardly thereof so that a U-shaped channel is formed in cross section by said frame members around the outer periphery thereof when said frame members are assembled, said U-shaped channel being adapted to receive a portion of the door when said unit is positioned in the opening formed in the door, means formed in the portion of the frame members constituting the base of the U-shaped channel for receiving portions of retaining clips to hold the frame members in assembled position, said means comprising a slot formed in one of said frame members and extending throughout the periphery of the frame member and a plurality of serrations formed in the other of said frame members and extending throughout the periphery of said frame member, and a plurality of resilient retaining clips, each retaining clip including an elongated base portion, a leg extending from one end of said base portion into said slot and contacting said one frame member, a locking lip extending from the other end of said base portion into one of said serrations and contacting said other frame member to maintain the frame members firmly assembled.

2. A prefabricated light insert as set forth in claim **1** wherein said leg extends at a right angle to said base portion and said locking lip extends toward said leg at an acute angle to said base portion.

3. A prefabricated light unit for use in an opening formed in a door comprising a pane of glass a frame formed from a first frame member having a right angle extension adapted to contact one surface of said door and a second frame member having a right angle extension adapted to contact the opposite surface of said door, said first frame member having a shoulder portion and an offset portion, said second frame member having a shoulder portion and an offset portion, the shoulder portion of said first frame member being positioned adjacent the offset portion of said second frame member and the offset portion of said first frame member being spaced from the shoulder portion of said second frame member to form a channel between said frame members around the inner periphery of said frame in which said pane of glass is supported, means formed in said first and second frame members adapted to cooperate with retaining clips to hold said frame members together, and a plurality of resilient retaining clips extending between said first and second frame members, each of said plurality of retaining clips including portions cooperating with said means formed in said first and second frame members whereby said first and second frame members are held firmly together with said pane of glass positioned in said channel and said right angle extensions are held firmly against the opposite surfaces of said door to maintain said frame in the opening formed in the door.

4. A prefabricated light unit as set forth in claim **3** wherein said means formed in said first and second frame members comprise an elongated slot cut in the first frame members and extending around the outer periphery thereof and a plurality of parallel serrations cut in the second frame member and extending around the outer periphery thereof, and said portions of each of said plurality of retaining clips comprise a locking lip extending into one of said serrations in said second frame member and a leg extending into said slot in said first frame member whereby contact between locking lips and said second frame member and between said legs and said first frame member holds said frame members together.

5. In a prefabricated light unit comprising a first frame member, a second frame member and a pane of glass supported between said frame members, the improvement comprising means for holding said unit in an assembled condition, said means including a slot formed in said first frame member, a plurality of parallel serrations formed in said second frame member and a plurality of resilient retaining clips for maintaining said frame members and said pane of glass in the assembled condition, each of said retaining clips having a base portion and a leg extending from one end of said base portion into said slot formed in said first frame member and a lip extending from the other end of said base portion into one of said serrations formed in said second frame member whereby the contact between said leg and said first frame member and between said lip and said second frame member holds the frame members and the pane of glass together.

6. The improvement set forth in claim **5** wherein said leg extends at a right angle to said base portion and said

locking lip extends toward said leg at an acute angle to said base portion.

7. A prefabricated light unit for use in an opening formed in a door, said unit comprising a pair of frame members adapted to support a pane of glass, each of said frame members having a right angle extension extending outwardly thereof so that a U-shaped channel is formed in cross section by said frame members around the outer periphery thereof when said frame members are assembled, said U-shaped channel being adapted to receive the door when said unit is positioned in the opening formed in the door, means formed in the portion of the frame members constituting the base of the U-shaped channel for receiving portions of resilient retaining clips to hold the frame members in assembled position, said means comprising a slot formed in one of said frame members and extending throughout the periphery of said frame member and a plurality of serrations formed in the other of said frame members and extending throughout the periphery of said frame member, a shoulder formed on said one frame member, and a plurality of resilient retaining clips, each retaining clip including an elongated base portion, a lip extending at a right angle from said base portion and in contact with said shoulder and a right angle extension on said lip overhanging the edge of said shoulder to hold said clip on said one frame member, a leg extending from one end of said base portion into said slot and contacting said one frame member, and a locking lip extending from the other end of said base portion into one of said serrations and contacting said other frame member, whereby said frame members are maintained firmly assembled by said clips.

8. A prefabricated light unit for use in an opening formed in a door comprising a frame formed by a first frame member having a right angle extension adapted to contact one surface of said door and a second frame member having a right angle extension adapted to contact the opposite surface of said door and a pane of glass, said first frame member having a shoulder portion and an offset portion, said second frame member having a shoulder portion and an offset portion, the shoulder portion of said first frame member being positioned adjacent the offset portion of said second frame member and the

offset portion of said first frame member being spaced from the shoulder portion of said second frame member to form a channel between said frame members around the inner periphery of said frame in which said pane of glass is supported, an elongated slot formed in said first frame member and extending around the outer periphery thereof and a plurality of parallel serrations formed in said second frame member and extending around the outer periphery thereof, and a plurality of resilient retaining clips extending between said first and second frame members, each of said plurality of retaining clips including a locking lip extending into one of said serrations in said second frame member, a leg extending into said slot in said first frame member, and a second lip having a portion parallel to said leg located between the shoulder portion of said first frame member and the offset portion of said second frame member and a right angle extension overhanging the shoulder portion of said first frame member to hold the clip on said first frame member, whereby said clips hold said first and second frame members firmly together with said pane of glass positioned in said channel and said right angle extensions positioned against the opposite surfaces of said door to maintain said unit in the opening formed in the door.

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