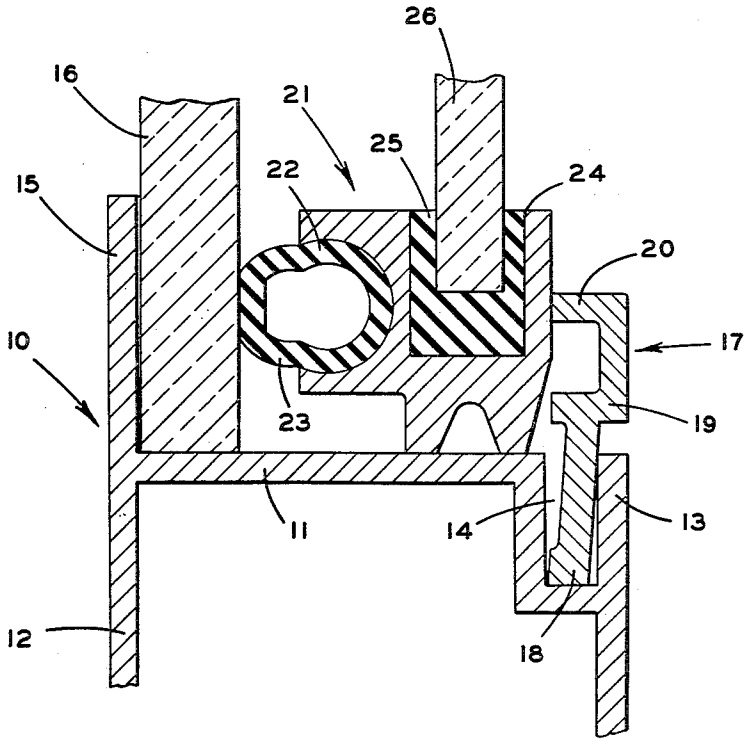
Aug. 26, 1958 G. D. PETERSON 2,848,762

PANEL MOUNTING STRUCTURE

Filed March 11, 1955



INVENTOR.
GERALD D. PETERSON
BY
Robert E. Woodhams
ATTORNEY

United States Patent Office 2,848,762 Patented Aug. 26, 1958

2,848,762

PANEL MOUNTING STRUCTURE

Gerald D. Peterson, Detroit, Mich.

Application March 11, 1955, Serial No. 493,691

3 Claims. (Cl. 20—56.4)

This invention relates to an improved panel mounting structure and more particularly to a mounting structure for double glazed windows.

It is known to place a panel retaining strip in a groove formed in a sash frame member to retain the panel in place in the sash. The retaining strip is commonly forced into the groove so that it is snugly engaged thereby and it is frequently made of a suitable shape, such as a U-shape, so that it is capable of resiliently supporting the panel. Both the metallic sash frame member and the retaining strip are often formed by extrusion of a suitable material such as aluminum. In such cases it is difficult to maintain tolerances on the extruded metal article because the contours of the extrusion die wear at a rather rapid rate. Thus, wearing of the extrusion dies will cause the retaining strip produced thereby to become thicker than desired and will cause the groove to become narrower than desired. It thus becomes extremely difficult, or impossible, to force such a panel retaining strip into the groove in the frame member. The die must then be renewed even though the parts are otherwise acceptable.

When it is desired to use a double-glazed window with the type of retaining strip and sash frame described above, the sash frame member is ordinarily provided with two grooves which cooperate with two retaining strips and some additional elements to hold the panels in position. Such a structure involves additional cost in manufacture and is difficult to assemble.

Accordingly, it is an object of this invention to provide an improved structure for the sash frame member and retaining strip.

It is a further object of this invention to provide a structure for a sash frame member and reatining strip in which close manufacturing tolerances are unnecessary.

It is a further object of this invention to provide an improved structure for mounting double-glazed windows.

It is a further object of this invention to provide a mounting for a double-glazed window using a single retaining strip.

Other objects and advantages of this invention will become apparent to those with experience in this field upon reading the following specification and inspecting the accompanying drawing which is a sectional view of a sash frame member having closure panels mounted thereon.

In meeting the objects and purposes set forth above as well as those related thereto, there is provided in general, a loose fit between the retaining strip and the groove in the sash frame unit so that the retaining strip can be easily inserted into the groove, to provide the necessary firmness for holding the closure panel in position. An intermediate member is positioned between the panel and the retaining strip. The intermediate member has a relatively highly resilient element contacting the panel, which element supplies the necessary resilient mounting for the panel. The intermediate member is also provided with a groove which is adapted to support a second closure panel to form a double-glazed window.

For convenience in reference, although with no intention to limit or to indicate any particular, necessary operating position of the window parts herein described, the following terminology will sometimes hereinafter be utilized, either in the description and/or the hereinafter appended claims: the term "outward," or derivatives thereof, will be utilized to denote directions appearing as leftwardly in the drawing; the term "inward," or derivatives thereof, will be utilized to denote directions appearing as rightwardly in said drawing; the term "upper," or derivatives thereof, will be utilized to denote directions appearing as upwardly in said drawing; and the term "downward," or derivaties thereof, will be utilized to denote directions appearing as downwardly in said drawing. It will be understood, however, that these references are for convenience only and that the structure herein disclosed may actually be utilized with the reversal of the inward and outward directions with respect to the building in which the window is mounted.

Referring to the drawing in detail, a sash frame member **10** includes a central web portion **11** and side members **12** and **13** at opposite edges of the web. A longitudinally extending groove **14** is formed in the web **11** adjacent side member **13**. The frame member has an upwardly extending flange **15** which contacts and supports one surface of closure panel **16**. Other means for supporting said one surface of the closure panel may be employed in place of flange **15** if desired.

A retaining strip **17** is provided with a leg portion **18** which is received within the groove **14**. The thickness of the leg portion **18** is sufficiently less than the width of the groove **14** so that the leg portion is normally rather loosely received within the groove. Thus, substantial die wear can be tolerated before the strip **17** will fail to enter the groove **14**. The retaining strip **17** has a raised, transversely extending portion **19** formed at the upper end of leg **18**. This portion overlies and is spaced above the top edge of side member **13**. The spacing between the top edge of member **13** and the portion **19** is sufficient to allow a prying element, such as a screw driver to be inserted therebetween. It is preferable, for appearance purposes, that the outer surface of the raised portion **19** be co-planar with the outer surface of side member **13**. Thus, the outer surface of the leg portion **18** is not exactly parallel to the outer surface of the portion **19**, as set forth in more detail below. The raised portion **19** is provided with a flange **20** which contacts the intermediate member **21**.

The intermediate member **21** is positioned between the retaining strip **17** and closure panel **16** and rests on the upper surface of the web **11**. Member **21** has a groove **22** formed therein which receives a flexible and relatively highly resilient element **23**. Element **23** supplies the resilient support for panel **16**. As shown, this element may be in the form of an elastomeric, as rubber, tube. However, the invention includes elements made in other shapes and of different materials so long as the necessary resiliency of the element is maintained. Member **21** has a groove **24** formed in its upper surface which receives a channel-shaped resilient element **25**. A second closure panel **26** is mounted within the groove **24** and the element **25** to form, in combination with closure panel **16**, a double-glazed unit.

In assembly, panel **16** is placed in engagement with flange **15** and intermediate member **21** is placed on the upper surface of web **11** with element **23** contacting the other surface of panel **16**. Retaining strip **17** is inserted into the groove **14** and its flange **20** contacts the intermediate member **21**. As shown, the leg **18** of the retaining strip **17** will lie at an angle to the axis of the groove **14** because of the rather loose fit between leg **18** and groove **14**. For this reason portion **19** lies at the

same angle to the axis of leg **18** as the groove **14** so that it will be parallel to the axis of the groove and so that the outer surface of portion **19** will be co-planar with the outside surface of side member **13**.

When it is desired to dis-assemble the mounting panels, a prying member, such as a screw driver, is inserted in the space between portion **19** and the top edge of side member **13** and the mounting strip **17** is forced out of the groove thereby. The resilient element **23** will absorb any pressure exerted on the panel **16** or intermediate member **21** during assembly or disassembly or normal use of the unit.

Although a particular, preferred embodiment of the invention has been disclosed hereinabove for illustrative purposes, it will be understood that variations or modifications thereof which lie within the scope of said invention are fully contemplated herein unless specifically stated to the contrary in the appended claims.

I claim:

1. In a device for mounting a pair of closure panels for a double-glazed window, the combination comprising: an elongated sash frame member having a central web, flange means at one end of said web for engaging the outer surface of one of said panels and means defining a groove adjacent the other end of said central web, said groove being substantially parallel with said flange means; a retaining strip receivable within said groove and comprising a pressure member and a leg member, said leg member being appreciably narrower than said groove, and said pressure member having an inner surface arranged substantially parallel with said flange means, said leg member extending from said pressure member at such an angle with respect to said inner surface that, when the lower part of said leg member bears against the side of said groove nearest said flange means and an upper part of said leg member bears against the upper edge of that side of the groove furthest from said flange means, said inner surface will be aligned substantially parallel with the general extent of said flange means; an intermediate member having a sash retaining groove therein and having also an inner surface arranged substantially parallel with said flange means and arranged for contact with said pressure member, and said intermediate member also having a compressible, resilient pressure member extending outwardly of the outer face thereof for engaging the inner surface of a closure panel and urging it against said flange means, the relative sizes and arrangement of said parts being such that, in operating position with said resilient member partially compressed and said intermediate member bearing against said pressure member, the lower end of said leg member will bear against the lower edge of the outer wall of said groove and an upper portion of said leg member will bear against the upper edge of the inner wall of said groove.

2. In a device for mounting a closure panel, the combination comprising: an elongated sash frame member having a central web; flange means at one end of said web for engaging the outer surface of said panel and means defining a groove adjacent the other end of said central web, said groove being substantially parallel with said flange means; a retaining strip receivable within said groove and comprising a pressure member and a leg member, said leg member being appreciably narrower than said groove, said pressure member having an inner surface arranged substantially parallel with said flange means, said leg member extending from said pressure member at such an angle with respect to said inner surface that, when the lower part of said leg member bears against the side of said groove nearest said flange means and an upper part of said leg member bears against the upper edge of that side of the groove furthest from said flange means, said inner surface will be aligned substantially parallel with the general extent of said flange means; means engaging said pressure member and the other side of said panel, said last-named means including a compressible, resilient member extending outwardly of the outer face thereof for engaging the inner surface of said panel and urging it against said flange means, the relative sizes and arrangement of said parts being such that, in operating position with said resilient member partially compressed the lower end of said leg member will bear against the outer wall of said groove and an upper portion of said leg member will bear against the upper edge of the inner wall of said groove.

3. In a device for mounting a closure panel, the combination comprising: an elongated sash frame member having a central web with a flat upper surface; a flange extending upwardly from one end of said flat upper surface of said web for engaging the outer surface of said panel; means defining a downwardly extending groove at the other end of said central web, said groove being substantially parallel with said flange and being spaced therefrom a distance materially greater than the thickness of the closure panel; a retaining strip receivable within said groove and comprising a pressure member and a leg member, said leg member being appreciably narrower than said groove, said pressure member having an inner surface arranged substantially parallel with said flange means, said inner surface being positioned above said central web at said other end thereof and being spaced thereabove a distance sufficient to permit a tool to be inserted therebetween for removing said retaining strip from said groove; said leg member extending from said pressure member at such an angle with respect to said inner surface that, when the lower part of said leg member bears against the side of said groove nearest said flange and an upper part of said leg member bears against the upper edge of that side of the groove furthest from said flange said inner surface will be aligned substantially parallel with the general extent of said flange; means extending from said pressure member toward said flange and engaging the inner surface of said panel, said last-named means including a compressible, resilient member extending outwardly of the outer face thereof for engaging the inner surface of said panel and urging it against said flange, the relative sizes and arrangements of said parts being such that, in operating position with said resilient member partially compressed, the lower end of said leg member will bear against the outer wall of said groove and an upper portion of said leg member will bear against the upper edge of the inner wall of said groove.

References Cited in the file of this patent

UNITED STATES PATENTS

919,887	Kohler	Apr. 27, 1909
985,800	Hartbauer	Mar. 7, 1911
2,264,187	Owen	Nov. 25, 1941
2,266,973	Horton	Dec. 23, 1941

FOREIGN PATENTS

927,205	France	Apr. 28, 1947