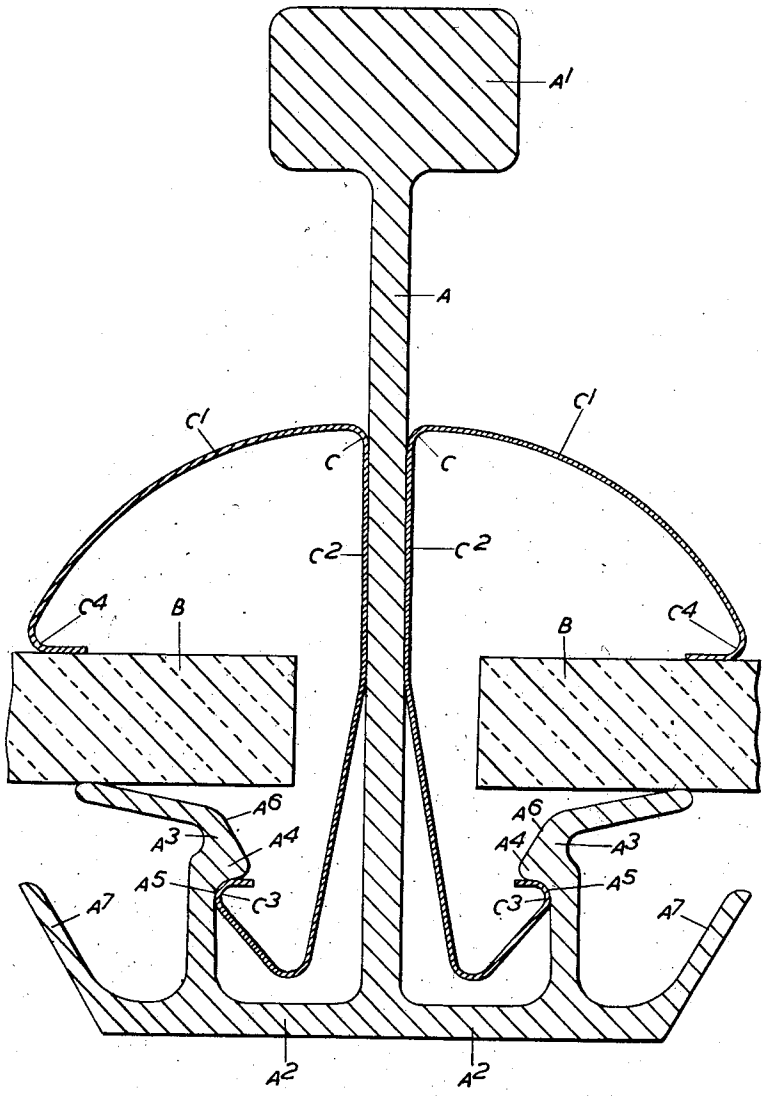
Aug. 20, 1957 J. FOX-WILLIAMS 2,803,321

GLAZING BARS

Filed Nov. 6, 1952



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United States Patent Office 2,803,321 Patented Aug. 20, 1957

2,803,321

GLAZING BARS

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Application November 6, 1952, Serial No. 318,974

10 Claims. (Cl. 189—78)

This invention relates to glazing bar assemblies of the kind comprising a girder member from which projects laterally on one or each side an abutment on which an edge portion of a piece of glass or other like sheet material rests when the bar is in use, and a cover strip one portion of which engages one or more retaining members or parts on the girder member in such a manner that another part of the cover strip is maintained in engagement with and bears on the upper surface of the glass.

Since such assemblies are usually used to support sheets of glass rather than sheets of other material glass will be referred to herein as the material to be supported although other suitable sheet materials may in some cases be used.

A large variety of constructions have been proposed for glazing bar assemblies of the above kind some using comparatively rigid cover strips held in position in various ways and some using resilient cover strips, the various forms meeting to a greater or less degree the main requirements of such glazing bars, namely simplicity of construction, ease and low cost of manufacture in quantity, ease of assembly by unskilled labour, sufficient flexibility to allow for differences or variations in the thickness of the glass used, and ability to hold the glass firmly in position against the abutment without risk of imposing excessive stresses on the glass and irrespective of normal dimensional variations in the glass and the parts of the glazing bar assembly and differences due to distortion of parts due to the loads imposed on them when assembled and/or variations and movement, due to temperature changes or other causes, which may occur in the assembly itself and/or the structure to which it is applied.

The object of the present invention is to provide a form of glazing bar assembly which meets to a large degree the above requirements taken as a whole.

A glazing bar assembly according to the present invention comprises a girder member having a web, projecting laterally from which is a part constituting an abutment arranged to support the edge portion of a sheet of glass above or beyond which the web extends and having formed thereon a rib or shoulder constituting the upper or outer side of a groove lying between the abutment and the web with the mouth of the groove facing the web, and a resilient cover strip having a laterally extending upper or outer portion formed so that its outer edge part engages the upper or outer face of a piece of glass supported by the abutment and a downwardly or inwardly projecting portion which is formed to extend between the edge of the glass and the web, with its upper or outer edge or a part intermediate in its width engaging the web while its lower or inner edge part is formed so that when such downwardly or inwardly extending portion is pressed downwardly or inwardly to force the laterally extending portion resiliently into close contact with the upper or outer face of the glass, such lower or inner edge part will spring resiliently into the groove under or within the rib or shoulder and be retained in such position thereby and by the reaction between the cover strip and the upper or outer face of the glass on the one hand and that between the cover strip and the web on the other, leaving the glass free for limited movement as by contraction or expansion without affecting the security of the fastening or the weather tightness of the cover strip.

In one convenient arrangement, the laterally projecting part of the girder member will be formed with a surface extending upwardly and outwardly in an inclined direction from the edge of the shoulder or rib away from the web and towards the glass to form a ramp which will lead the lower edge portion of the resilient cover strip inwardly over the rib or shoulder and into the groove below it during assembly if necessary. This inclined surface or ramp thus tends to prevent the lower edge of the resilient cover strip inadvertently passing under the glass instead of into the groove during assembly, and also to make assembly easier and more fool proof.

In any case the downwardly projecting part of the cover strip preferably has a cross section such that it makes contact with the part of the web substantially immediately opposite the edge of the glass in order to prevent the lower edge portion of the cover strip being forced from beneath the rib or shoulder by pressure which may be applied to the downwardly projecting part of the cover strip by the edge of the glass if the latter lies or moves into a position close to the web.

One construction of glazing bar assembly according to the invention is shown in the accompanying drawing by way of example, this drawing being a cross section in a plane at right angles to the length of the assembly.

In the construction shown in the drawing the assembly comprises a girder member having a web A with a stiffening rib A^1 along its upper edge and two similar projections A^2 extending laterally in opposite directions from its lower edge and each including a glass supporting abutment A^3 and a rib or shoulder A^4 forming a groove A^5 the open side of which faces the web A.

Each of the abutments A^3 is formed to support the edge portion of a piece of glass B as shown and has associated with it a cover strip C formed of resilient sheet material and comprising a laterally projecting upper portion C^1 the outer edge part of which bears on the upper face of the adjacent piece of glass B and a downwardly projecting portion C^2 which extends downwards between the web A and the edge of the piece of glass B and is provided at its lower edge with a bead C^3 which engages the groove A^5 and is formed by bending the lower edge part of the cover strip first outwardly then upwardly and then inwardly as shown. The outer edge part of each cover strip C is bent inwards as shown at C^4 to provide an improved appearance and/or a stiffer edge to the cover strip and/or an increased area of contact between the cover strip and the glass.

As will be seen, the downwardly extending portion C^2 of the cover strip includes an upper part which lies in close proximity to the web A and extends to a point opposite the edge of the glass B, and a lower part which extends from such point downwardly and outwardly away from the web A. With this arrangement should the edge of the glass B be caused to bear on the downwardly extending portion of the cover strip it will not be able readily to force the bead C^3 out of the groove A^5.

During assembly the downwardly extending portion C^2 of the cover strip is inserted between the web A and the edge of the glass B and is forced downwards so that the cover strip as a whole is flexed before the bead C^3 enters the groove A^5, the form of the cover strip being such that the reaction between it and the glass B on the one hand and between it and the web A of the girder member on the other hand causes the bead C^3 to spring into the groove A^5 and to be retained therein by such reaction. In this connection it will be seen that the fact that, as

shown, the outer edge portion C^4 of the cover strip lies further from the web A than does the groove A^5 means that the reaction between this edge portion C^4 and the glass on the one hand and the reaction at right angles thereto between the upper edge of the cover strip and the web A on the other hand produce on the bead C^3 a resultant reaction in an inclined direction away from the web A apart from the resilient force due to the reaction between the web A and the downwardly projecting portion of the cover strip C^2.

Each of the ribs A^4 is formed with a surface A^6 which is inclined to the web A and is intended to facilitate the passage of the bead C^3 downwards into the groove A^5 during assembly of the cover strip by acting as a ramp over which the bead C^3 travels during assembly.

Each laterally extending projection A^2 of the girder member also includes a part A^7 forming a channel for the collection of moisture.

The dimension of the various parts are preferably such that the lateral projection A^2 including the parts A^7 do not extend appreciably beyond the outer edges C^4 of the cover strips C so that the parts A^2, A^7 do not form a screen preventing the entry of light through the glass B of larger area than that provided by the cover strips C.

If desired a groove may be provided in each of the glass supporting abutments A^3 in a manner known per se to receive a soft bedding material, for example fibrous material, rubber or like material, mastic or similar plastic material or the like.

The invention is not restricted to supporting glass panels on sloping girder members.

What I claim as my invention and desire to secure by Letters Patent is:

1. A glazing bar and cover strip assembly comprising in combination a girder member having a web and a part projecting laterally from it and constituting an abutment to engage the inner surface of the edge portion of a piece of sheet material with the web extending to the outer opposite side of said sheet material whenever engaging said abutment, a shoulder also formed on the girder member adjacent to said abutment forming the outer side of a groove lying between the said abutment and the web with the mouth of the groove facing the web, and a resilient cover strip including a laterally extending outer portion formed for engagement by its free edge with the outer face remote from said abutment of a piece of sheet material resting against the said abutment, said cover including an inner rebent retaining portion and an intermediate portion formed to extend between the edge of such piece of sheet material and the web with a part thereof displaced from its inner edge in engagement with the web and with its inner edge part formed so that when such inner portion is pressed inwards between the web and the edge of the piece of sheet material to force the laterally extending portion resiliently into close contact with the outer face of the piece of sheet material, said intermediate portion will engage the web and said inner edge part of the cover strip will spring resiliently into said groove within the shoulder and be retained therein by the reaction between the cover strip and the sheet material on the one hand and the cover strip and the web on the other hand.

2. A glazing bar assembly as claimed in claim 1, in which the girder member is formed with a surface extending outwardly in an inclined direction from the edge of the said shoulder away from the web and towards the abutment and constituting a ramp to lead the inner edge part of the resilient cover strip over the shoulder into the groove and thereby prevent said inner edge part inadvertently engaging the inner surface of the sheet material.

3. A glazing bar assembly as claimed in claim 2, in which the part of the resilient cover strip which lies opposite the edge of the sheet material and the area of contact between the intermediate portion of the resilient cover strip and the web are so related that, should the edge

of the sheet material apply pressure upon the said intermediate portion such pressure cannot dislodge the inner edge part of the resilient cover strip from the groove.

4. A glazing bar assembly as claimed in claim 3, in which the intermediate portion of the resilient cover strip has a cross-section which causes the part of the said resilient cover strip which lies substantially immediately opposite to the edge of the piece of sheet material to lie substantially in contact with the web.

5. A glazing bar assembly as claimed in claim 1, in which the part of the resilient strip which lies opposite the edge of the sheet materail and the area of contact between the intermediate portion of the resilient cover strip and the web are so related that the inner edge part of the strip cannot be pressed completely out of the groove should the edge of the sheet material bear against and exert pressure upon such intermediate portion.

6. A glazing bar assembly as claimed in claim 1, in which the inner edge part of the resilient cover strip is turned over to form a rib engaging the outer side of the said groove.

7. A glazing bar assembly as claimed in claim 1, in which the abutment is provided with a groove in its outer surface to receive bedding material on which the sheet material will therefore rest.

8. A glazing bar assembly as claimed in claim 1, in which the part of each intermediate portion of the resilient cover strip extending between its outer edge and a point approximately opposite the edge of the piece of sheet material lies substantially in contact with the web, while the inner part of the said intermediate portion is inclined to the web and has its inner edge part bent away from the web, outwardly, and back towards the web, to form a rib for engagement with the said groove.

9. A glazing bar and cover strips assembly comprising in combination a girder member having a web and parts projecting laterally from opposite sides thereof and constituting abutments to engage the inner side surfaces of edge portions of pieces of sheet material, shoulders formed on the girder member and lying one between each side of the web and the adjacent abutment part and on the inner side of the said sheet material supports each shoulder providing a groove facing the web, and a resilient cover strip associated with each abutment member and comprising a laterally extending portion the free edge of which bears on the outer face of a piece of sheet material when supported on said abutment and an intermediate portion extending inwards between the web and the adjacent edge of the piece of sheet material and having its inner edge part bent away from the web to form a lip which engages the said groove, and by reaction between the resilient cover strip with the web and the sheet material, said lip is maintained in the groove and maintains the free edge portion of the said laterally extending portion resiliently in engagement with the outer face of the sheet material.

10. A glazing bar assembly as claimed in claim 1 in which the web includes a part projecting laterally therefrom on the inner side and beyond the abutment with an outward projection from said laterally projecting part, which outward projection is spaced from the web on the inner side of said abutment and forms an outwardly open channel cooperating with the abutment to catch leakage between the resilient cover strip and the sheet material.

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