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GLAZING BAR ASSEMBLIES

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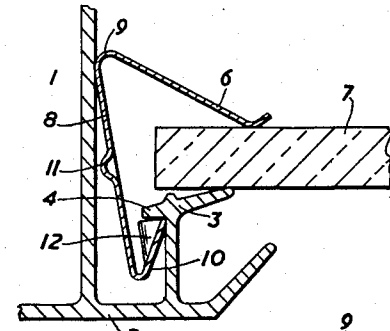


FIG. 1.

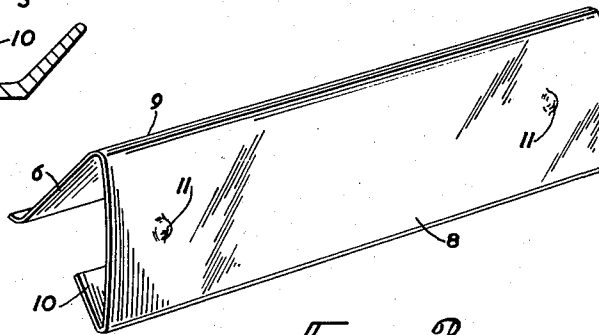


FIG. 2.

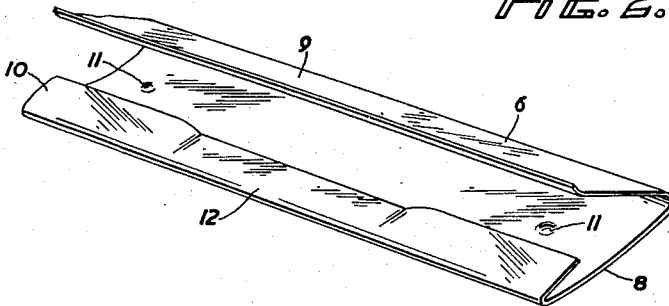


FIG. 3.

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GLAZING BAR ASSEMBLIES

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6 Claims. (Cl. 189—78)

This invention relates to glazing bar assemblies of the kind comprising 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 or other sheet material (hereinafter for convenience assumed to be glass) above which the web extends, the girder member having also formed thereon a rib or shoulder constituting the upper side of a groove or channel 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 portion formed so that its outer edge part engages the upper face of a piece of glass resting upon the abutment and a downwardly projecting portion which is formed to extend between the glass and the web with its upper part or a part intermediate in its width engaging the web while its lower edge portion is formed so that when such downwardly extending portion is pressed downwardly to force the laterally extending portion resiliently into close contact with the upper face of the glass, such lower edge part slides over the edge of the rib or shoulder and springs resiliently into the groove under the rib or shoulder and is retained therein by the reaction between the cover strip and the glass on the one hand and the cover strip and the web on the other.

For convenience it has been assumed above that the girder member is horizontal or inclined. It is to be understood, however, that the invention is also applicable to assemblies in which the girder member is vertical, that is to say the glass lies in a vertical plane.

While such a glazing bar assembly has considerable practical advantages in that it provides for the glass being held in firm engagement with the abutment, allows for such differences in the thickness of the glass as are normally encountered in practice, allows for a satisfactory degree of tolerance in the disposition of the glazing bars between which the glass extends and in the width of the glass, and enables assembly of the cover strips to be effected without special tools or the provision of loose parts, it has been found that, whereas the parts of the cover strip assembly can be assembled readily in many instances, occasions occur, as for example when the parts of the assembly have been stored or left in the open for some time and have acquired a relatively thick coating of oxide or like corrosion, when the force required to assemble the cover strips tends to be excessive and assembly therefore becomes difficult.

Usually the parts are of aluminium alloy which automatically acquires a hard coating of oxide when exposed to the atmosphere, which coating may increase in depth due to lengthy exposure and which if it is fractured, tends to break up into small hard crystalline particles. The difficulty of assembly in the case of aluminium alloy parts is therefore attributed to the fact that the pressure in between the cover strip and the web and/or the edge of the rib or shoulder when assembly is attempted causes such small hard crystalline particles to break away from the oxide coating and to dig into the surfaces of the

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girder member and cover strip, thus in effect tending to key them together and prevent their sliding over one another in the manner required during assembly.

It is an object of the present invention to provide an improved glazing bar assembly of the kind referred to in which the assembly of the cover strips in position will be facilitated and the ease of this assembly will tend to be unaffected by the coating of oxide or corrosion of the parts as may be met with in practice due to their being stored or exposed for a substantial period before assembly.

In a glazing bar assembly of the kind referred to according to the present invention the face of the web and/or the part of the cover strip which bears against such face during assembly is formed in such a manner as to provide a limited area of contact between the cover strip and the web during the insertion of the cover strip, thus maintaining adjacent parts of the cover strip and of the web at least mainly out of contact during such assembly.

In an arrangement according to the present invention the face of the downwardly extending part of the cover strip which bears against the web and/or such face of the web is formed with a series of longitudinally displaced projections of limited area providing small contact areas between the cover strip and the web during the insertion of the cover strip and maintaining the parts of the cover strip between them, during such insertion at least, mainly out of contact with the web.

In one convenient arrangement the longitudinally displaced projections are in the form of "pips" formed, for example, by pressing out small areas of the cover strip, with the formation of corresponding depressions in the face of the cover strip remote from the web. In a typical example a single row only of such "pip" might be provided, these being spaced from one another by about 4 inches, but it is to be understood that the spacing is in no way critical and that two or more rows of projections or "pips" might be provided while the spacing of the "pip" in any case can vary widely.

The disposition of the "pips" or other projections in relation to the width of the part of the cover strip or of the web on which they are formed may either be such that when the cover strip is fully inserted into position the "pips" lie out of contact with the opposed surface which they engaged during assembly or such that the "pips" or projections maintain contact with such opposed surface, the former disposition being, however, in most cases preferable since the cover strip when fully inserted can then make a continuous line of contact with the web, thus tending to exclude air and/or moisture and to provide an arrangement which, apart from the increased ease of assembly, is comparable in every way when assembled, with known glazing bar assemblies of the kind referred to.

According to a further feature of the invention the part of the lower edge portion of the cover strip which engages the edge of the rib or shoulder during assembly of the cover strip or such edge portion of the rib or shoulder may be formed so that such engagement takes place only over separate longitudinally displaced areas of such lower edge portion, since this also may facilitate assembly while not detracting from the effectiveness of the arrangement when assembly is complete. For example, in such an arrangement the areas of the lower edge portion of the cover strip which do not engage the edge of the rib or shoulder during assembly of the cover strip may be prevented from such engagement merely by being bent inwards towards the part of the cover strip which engages the web, in relation to the edge portions which engage the edge of the rib. Thus the edge portion of the cover strip which engages the edge of the rib during assembly may be of a generally sinuous form or have definite sec-

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tions bent inwards so as to lie approximately parallel to and nearer the web than the sections which alternate therewith.

The invention may be performed in various different ways but a specific embodiment will now be described by way of example with reference to the accompanying drawings in which,

Figure 1 is a cross section through one complete glazing bar assembly with glazing material and cover strip in position,

Figures 2 and 3 are perspective views of the cover strip shown in Figure 1.

In the example illustrated in Figures 1, 2 and 3 the girder member comprises a web 1 having a side flange 2 from which projects an abutment element 3 to support the edge of the sheet of glazing material 7. The abutment 3 is provided with a shoulder 4 which constitutes the upper side of a groove facing the web 1. The resilient cover strip comprises a laterally extending upper portion 6 the outer part of which engages the upper face of the sheet of glass 7, and a downwardly projecting portion 8 which lies between the edge of the sheet of glass 7 and the web 1, and has an up-turned flange 10 at its lower edge which is arranged to spring into the groove formed by the shoulder 4 when the cover strip is fully inserted. When in position the bent portion 9 between the parts 6 and 8 of the cover strip engages the web 1 and the cover strip is held in position by the reaction between the lower flange 10 and the shoulder 4 and the upper portion 6 and the glass 7 respectively.

The downwardly extending portion 8 of the cover strip is formed with a row of spaced projections 11, in the form of "pips," pressed out of the material. These "pips" engage the surface of the web 1 as the cover strip is being inserted into position and limit the area of contact, so facilitating insertion. On the other hand when in position the part 9 of the cover strip forms a continuous unbroken contact line with the web, and acts therefore as an efficient weather seal. The flange 10 at the lower edge of the cover strip is also formed with a number of corrugations or depressions 12 which limit the area of contact between the flange 10 and the shoulder 4 as the cover strip is being inserted.

What we claim as our invention and desire to secure by Letters Patent is:

1. A glazing bar assembly comprising a readily corroded metal girder member having a web, a part projecting laterally from said web and having a longitudinal abutment formed thereon to support the edge portion of a sheet of glass, above which the web extends, a shoulder on said girder constituting the upper side of a groove lying between the abutment and web with the mouth of the groove facing the web, and a resilient cover strip having a laterally extending upper portion whose outer edge part engages the upper face of the sheet of glass resting on the abutment, and a downwardly projecting portion toward which said outer edge is biased which extends between the edge of the glass and the web, a part of the cover strip bearing against the web while its lower edge portion is formed to ride over the shoulder during insertion of the cover strip and then to spring into the groove

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formed by the shoulder, said glass being retained in position by the reaction between the lateral portion of the cover strip and the upper face of the glass on the one hand and between the downwardly projecting portion of the cover strip and the girder on the other hand, at least one of the cooperating faces of the downwardly extending part of the cover strip and the adjacent part of the web being formed with a series of longitudinally spaced projections to provide only a limited and relatively restricted area of contact between the cover strip and the web during insertion of the cover strip.

2. A glazing bar assembly as claimed in claim 1 in which the face of the downwardly extending part of the cover strip which bears against the web is formed with a series of longitudinally spaced projections of limited area providing small contact points between the cover strip and the web during insertion.

3. A glazing bar assembly as claimed in claim 2 in which the projections are in the form of "pips" formed by pressing out small areas of the cover strip.

4. A glazing bar assembly as claimed in claim 3 in which the part of the lower edge portion of the cover strip which engages the shoulder on the abutment during insertion of the cover strip is so formed that such engagement takes place only over a limited area of contact.

5. A glazing bar assembly as claimed in claim 4 in which the lower edge portion of the cover strip which engages the shoulder on the abutment during insertion of the cover strip is corrugated or formed with a series of longitudinally spaced depressions.

6. A glazing bar assembly comprising a readily corroded metal girder member having a web, a part projecting laterally from said web and having a longitudinal abutment formed thereon to support the edge portion of a sheet of glass, above which the web extends, a shoulder on said girder constituting the upper side of a groove lying between the abutment and web with the mouth of the groove facing the web, and a resilient cover strip having a laterally extending upper portion whose outer edge part engages the upper face of the sheet of glass resting on the abutment, and a downwardly projecting portion which extends between the edge of the glass and the web, a part of the cover strip bearing against the web while its lower edge portion is formed to ride over the shoulder during insertion of the cover strip and then to spring into the groove formed by the shoulder, where it is retained in position by the reaction between the cover strip and the glass on the one hand and between the cover strip and the web on the other, at least one of the cooperating faces of the lower edge portion of the cooperating faces of the lower edge portion of the cover strip and adjacent part of the shoulder on the abutment being formed with a series of longitudinally spaced projections to limit the area of contact between the cover strip and the shoulder during the insertion of the cover strip.

References Cited in the file of this patent

FOREIGN PATENTS

861,866	France	Nov. 12, 1940
511,463	Canada	Mar. 29, 1955