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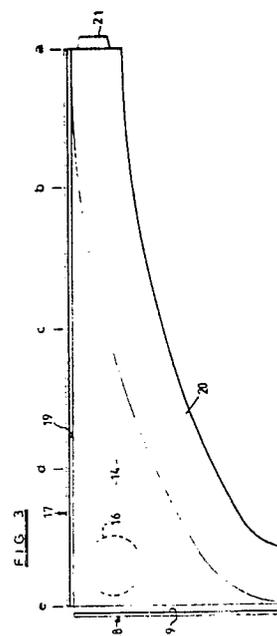
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**Glazing bead element for a window assembly and window assembly.**

In an extruded section window frame, of for example UPVC, an arched top is provided by corner glazing bead elements (14). The window section has a rear stop element (9) and a forward hook section retainer groove (15), the latter interengaging with a hook cross section (19) of each straight outer edge; (17, 18) of the corner glazing bead element (14). The element (14) has a chamfered arcuate edge portion (20) of part elliptical profile. Rear corner elements (23) having a similar profile may optionally be inserted in the rear of the frame (11).



**EP 0 306 129 A2**

## Glazing Bead Element for a Window Assembly and Window Assembly

This invention relates to a glazing bead element for a window assembly and to a window assembly.

The invention was devised particularly for use with windows having UPVC frames and sealed unit glazing but may be applicable to other types of window. Specifically, the invention relates to windows in which the main window frame is formed from extruded sections of constant profile.

Where extruded sections are used to make a window frame, the window is of a straight sided polygonal shape, usually rectangular. For aesthetic reasons it may be desirable to provide a non-linear decorative profile in one or more of the corners of the window, for example to provide an arched appearance to the window frame.

It is an object of the present invention to provide a glazing bead element for a window capable of providing a non-linear decorative profile to the window frame whilst ensuring no loss of security.

It is a further object of the invention to provide a window frame incorporating such a glazing bead element.

In the following description the terms "rearward" and "forward" are used to identify features at the back and at the front of the window respectively. The terms "inner" and "outer" are used to identify parts which are closer to or further away from the centre of the window in the general plane of the window.

According to the first aspect of the invention there is provided a glazing bead element for a window, the window comprising a frame formed from constant cross section members, each incorporating a rear stop element and a forward hook section retainer groove; and a glazing panel; characterised in that;

the glazing bead element comprises a corner glazing bead element having a pair of outer edges inclined at an angle to each other linked by a further inwardly facing non-linear decorative profile and each outer edge has a hook cross section adapted to interengage with said hook section retainer groove at the forward face of the window to retain the glazing panel in the frame in use.

Said outer edges may be disposed at right angles to each other.

The corner glazing bead element may include a tongue at one end adapted to engage behind, and be retained in place by a final bead element of the window.

The corner glazing bead element may include a corner cushion means adapted to abut the forward face of a glazing panel in use.

The non-linear profile may be arcuate and is

preferably part elliptical.

According to a further aspect of the invention, there is provided a window comprising; a frame formed from constant cross section members, each incorporating a rear stop element and a forward hook section retainer groove; a glazing panel; and a corner glazing bead element as set out in one or more of the preceding paragraphs.

The window may also include at least one rear corner element secured to the rear stop element of the frame prior to insertion of the glazing panel, said rear corner element having a pair of outer edges inclined at an angle to each other linked by an inwardly facing non-linear decorative profile.

Said pair of outer edges of the rear corner element may be disposed at right angles to each other.

The non-linear profile of the rear corner element may be arcuate and is preferably part elliptical.

In a preferred embodiment there is provided a window as set out above having two corner glazing bead elements at the top corners of the window frame and two rear corner elements at the top corners of the window frame to provide an arched top to the frame.

The window assembly may be a fixed light or a movable sash or casement.

A glazing bead element and a window incorporating the element will now be described in more detail by way of example only with reference to the accompanying drawings in which;

**FIGURE 1** is a rear elevational view of a rear corner element.

**FIGURE 2** is a series of sectional views taken on the lines a to d of Figure 1.

**FIGURE 3** is a front elevational view of a front corner glazing bead element.

**FIGURE 4** is a series of sectional views taken on the lines a to e of Figure 3.

**FIGURE 5** is a general arrangement on a smaller scale of a window assembly including the front corner glazing bead element of Figures 3 and 4.

**FIGURE 6** is a diagrammatic sectional view illustrating the way in which the front and rear corner glazing bead elements are included in a window assembly as shown in Figure 5.

Referring firstly to Figure 5 of the drawings, there is shown a window comprising an outer fixed frame 10, a casement frame 11, a sealed glazing unit 12, a conventional glazing bead 13 and a pair of corner glazing bead elements 14 of a type to be described in relation to Figures 1 and 2 of the

drawings.

The casement frame 11 is made up of a standard section which is illustrated in Figure 6 of the drawings and which includes a rear stop element 9, against which the glazing unit 12 is supported in use. It also includes a forward hook section 15 which normally receives a standard hook bead such as that shown at 13 in Figure 5 but, in the corners of the frame, receives forward corner glazing bead elements 14. Each such corner glazing bead element has a cushion means 16 integrally formed on its rear surface to abut the forward face of the glazing unit 12. This prevents the edge of the corner glazing bead element from being pushed rearwardly and hence dislodged from its position shown in figure 6, engaged with the hook formation 15 of the frame 11.

More details of the corner glazing bead element will be seen in relation to Figures 3 and 4 of the drawings. The element is made by injection moulding in a suitable plastics material such as UPVC of a colour which is the same as, or a suitable contrast with, the colour of the frame 11 in which it is to be fitted. Alternatively, a self-skinning foamed plastics material may be used.

The corner glazing bead element has a pair of edges which are a top edge 17 and a side edge 18 disposed at right angles to each other. It would be possible for these edges to be at a different angle to suit a non-rectangular frame. Each of these straight edges has a hook formation 19 which engages with the corresponding hook formation 15 of the frame section 11. The two are therefore firmly interlocked provided that the corner glazing bead 14 cannot be pushed back to a position where the hook formations can become detached from each other.

The remaining edge of the corner glazing bead element 14 is chamfered at 20 and has a non linear decorative profile. In the illustration shown this is arcuate and is part elliptical but it could be part circular, a composite curve or a polygonal decorative edge, depending on the desired finished appearance of the window.

The corner glazing bead element terminates in a tongue 21. A small portion 22 of conventional window bead 13 is used to finish the centre of the top edge of the window frame as shown in Figure 5. It is cut to length on site so that it exactly bridges the gap between the two corner glazing bead elements 14. The rear of the bead is however cut away slightly at its ends and it is then used to trap the tongues 21 within the cross section of the standard bead 13 so as to prevent them from being dislodged.

It will therefore be seen that, once the corner glazing beads are inserted and the final portion 22 of standard bead, duly adapted, is added to finish

the frame beading assembly, the whole exterior of the glazing is surrounded by a bead assembly which cannot be removed unless it can be pushed rearwardly towards the interior of the window. This is prevented by the conventional interior beading which may optionally be supplemented by rear corner elements illustrated in Figures 1 and 2 of the drawings.

These are optional since the rear face of the window can be provided with a normal rectangular finish but, for aesthetic reasons, it is desirable to use rear corner elements having a similar profile to the front corner glazing bead elements at the front face of the window.

Turning to Figures 1 and 2 of the drawings, it will be seen that the rear corner element 23 again has a pair of angled edges 24 and 25 shown at right angles. However these do not have a hook cross section but are provided instead with respective straight ribs 26 and 27 which engage, as shown in Figure 6 of the drawings, with a mouth 28 forming part of the rear stop element 9 of the frame cross section 11. The assembly is finished by an insertion of a conventional wedge-like elastomeric gasket (not shown) from the inside of the window which exerts a continuous resilient force on the glazing unit 12, tending to push it onto the hook formation 15 at the front face of the frame 11.

In addition to the edges 24 and 25, the rear corner element has an arcuate edge 29 of a curvature similar to that of the corresponding corner glazing bead used in the front face of the frame.

The rear corner element can be inserted on site but is preferably factory fitted in the corners of the prefabricated window frame prior to delivery on site. The frame is installed in the window opening in generally conventional manner, the glazing unit 12 is then inserted in conventional manner. The glazing bead is inserted up to the level 30 shown in Figure 5. The corner glazing beads 14 are inserted in the respective top corners and the assembly is finished at the front by the finish beading 22 which is cut to length and trimmed at the rear so as to trap the tongues 21 as previously described. Finally, the elastomeric gasket is inserted at the rear of the window, again in generally known manner and holds the whole assembly resiliently together. Because of the hook engagement at the front face, the assembly is relatively tamper proof and is as secure against intruders as a conventional window using a similar section 11 for the frame.

Although the invention has been described in relation to providing an arcuate top to a window, to simulate an arched window frame, it will be appreciated that other shapes could be used for the corner elements, imparting a different aesthetic effect. Furthermore, the lower corners of the frame

could be shaped using similar corner elements having the appropriate non linear profiles to give oval or oriental effects to the standard window frame.

## Claims

1. A glazing bead element for a window, the window comprising a frame formed from constant cross section members, each incorporating a rear stop element and a forward hook section retainer groove; and a glazing panel; characterised in that;

the glazing bead element (14) comprises a corner glazing bead element having a pair of outer edges (17, 18) inclined at an angle to each other, linked by a further inwardly facing non linear decorative profile (20), and in that each outer edge (17, 18) has a hook cross section (19) adapted to interengage with said hook section retainer groove (15) at the forward face of the window to retain the glazing panel (12) in the frame (11) in use.

2. A glazing bead element according to Claim 1 further characterised in that said outer edges (17, 18) are disposed at right angles to each other.

3. A glazing bead element according to Claim 1 or Claim 2 further characterised in that it includes a tongue (21) at one end adapted to engage behind, and be retained in place by a final bead element (22) of the window (11).

4. A glazing bead element according to any preceding claim further characterised in that it includes a corner cushion means (16) adapted to abut the forward face of the glazing panel (12) in use.

5. A glazing bead element according to any preceding Claim further characterised in that the non-linear profile (20) is arcuate, for example part elliptical.

6. A window comprising;  
a frame formed from constant cross section members, each incorporating a rear stop element and a forward hook section retainer groove;  
a glazing panel;  
and a glazing bead element;  
characterised in that;  
the glazing bead element comprises a corner glazing bead element according to any one of Claims 1 to 5.

7. A window according to Claim 6 further characterised in that it includes at least one rear corner element (23) secured to the rear stop element (9) of the frame (11) prior to insertion of the glazing panel (12), said rear corner element (23) having a pair of outer edges (24, 25) inclined at an angle to each other, linked by an inwardly facing non-linear decorative profile (29).

8. A window according to Claim 7 further characterised in that said outer edges (24, 25) are inclined at right angles to each other.

9. A window according to Claim 7 or Claim 8 further characterised in that the non-linear decorative profile (29) of the rear corner element (23) is arcuate, for example part elliptical.

10. A window assembly according to any one of Claims 6 to 9 further characterised in that it includes two corner glazing bead elements (14) at the top corners of the window frame (11) and two rear corner elements (23) at the top corners of the window frame (11) to provide an arched top to the frame.

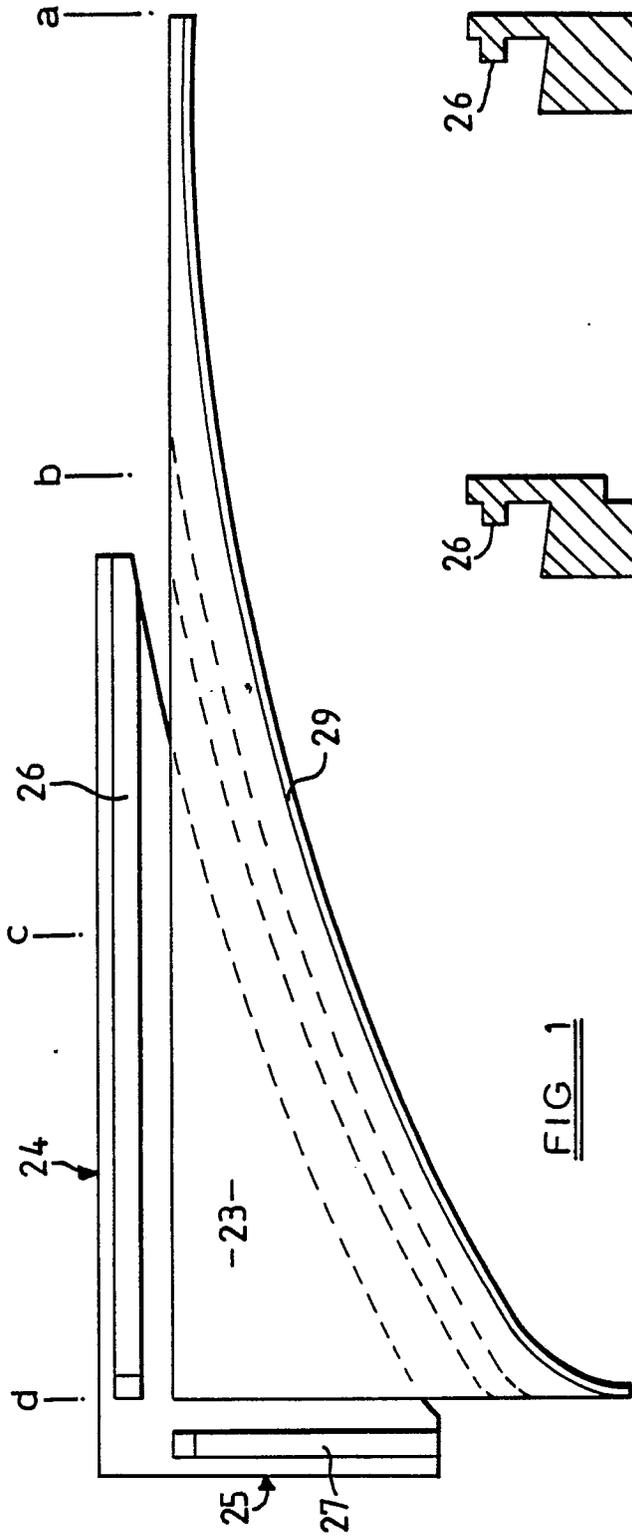


FIG 2a



FIG 2b

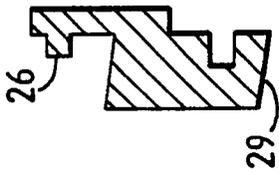


FIG 2c

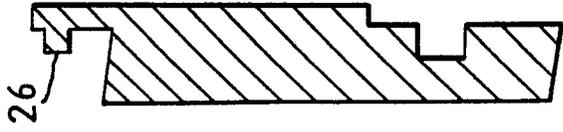
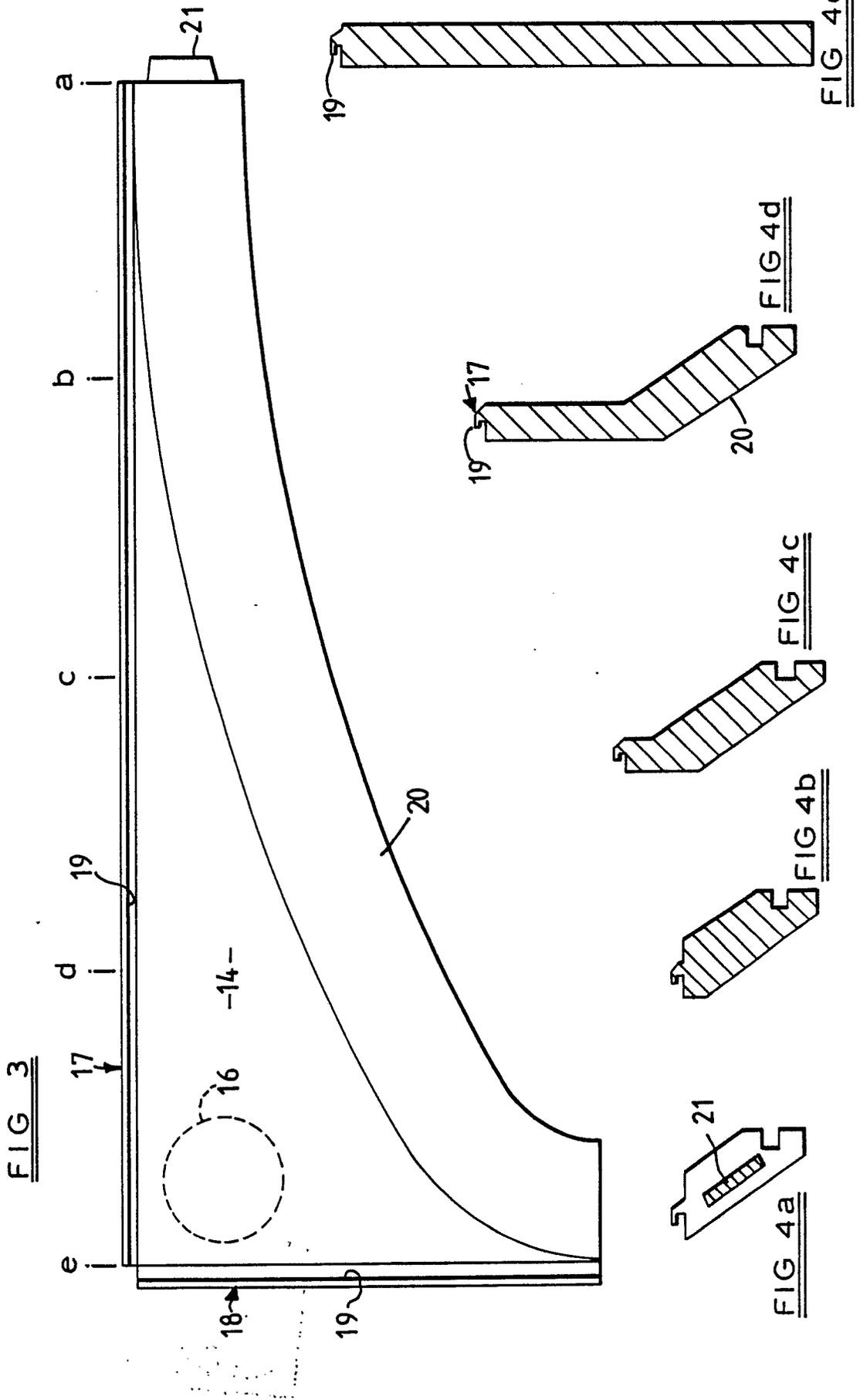


FIG 2d



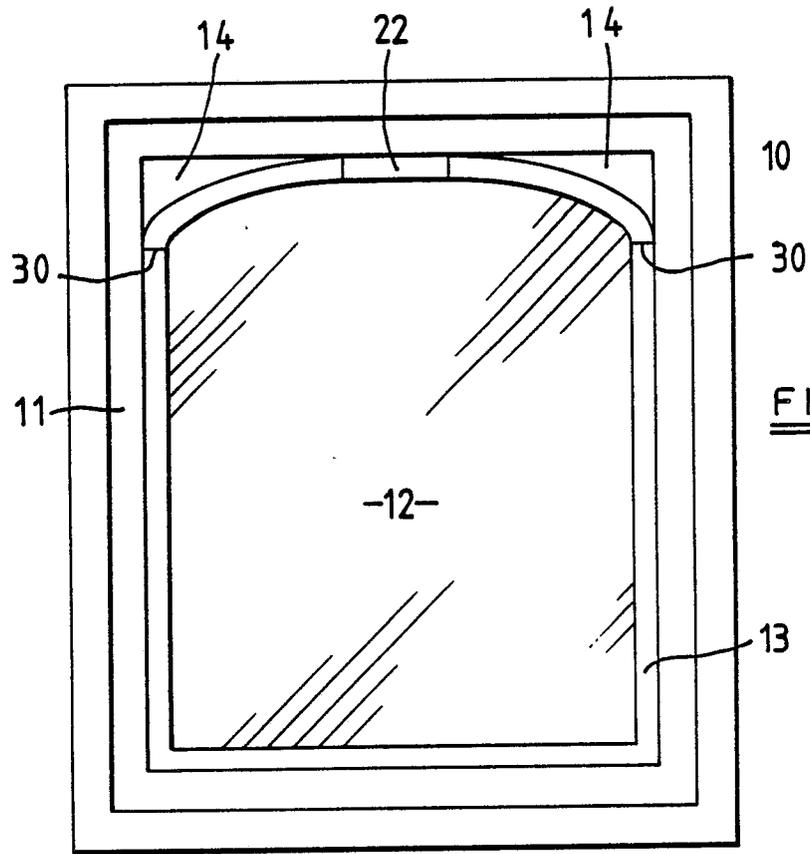


FIG 5

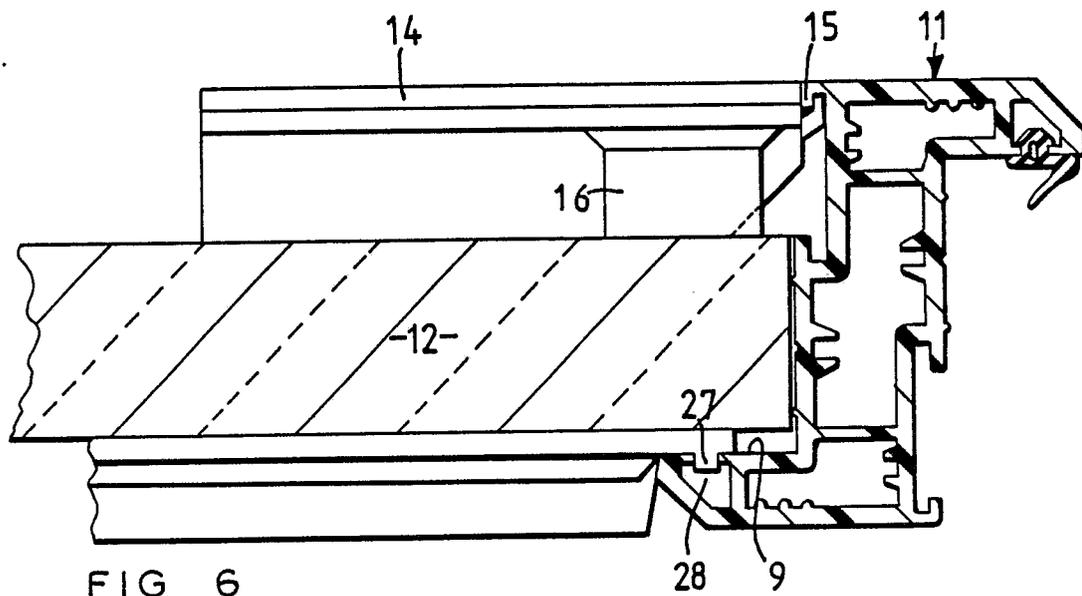


FIG 6