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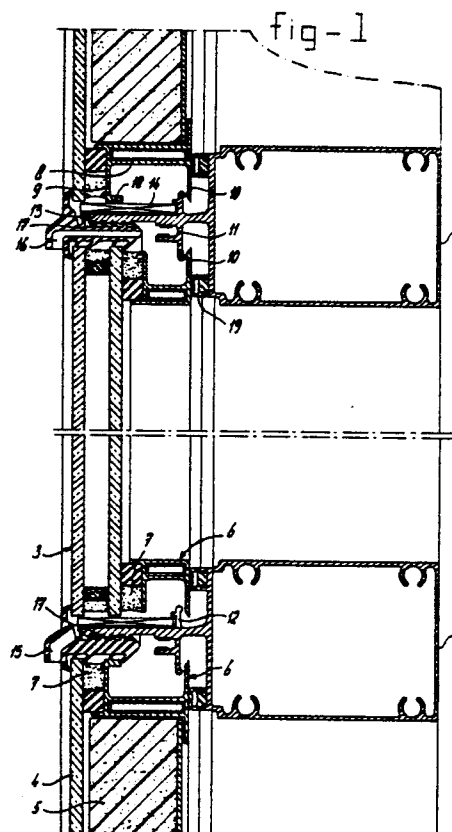
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(54) Curtain wall, in particular with structural glazing.

(57) Curtain wall, in particular with structural glazing, comprising panels (3,4,5) such as panes, to be fitted in a frame work structure with vertical and horizontal members (1), whereby the panels (3,4,5) are provided with a frame (6) near the periphery thereof on the side which faces the frame work, which frame (6) can be attached to the frame work structure.



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title: Curtain wall, in particular with structural glazing

The present invention relates to a curtain wall, in particular with structural glazing, comprising panels, such as panes, to be fitted in a framework structure to be fitted against the wall.

Such structural glazing is in general use, and the object of it is that on the outside of the building only panels such as panes which are separated from each other by a very narrow seam are visible. This contrasts with the use of frames. Hitherto such structural glazing was obtained by first fitting a framework structure against the wall, provided with openings to take the panels. These panels, in particular panes, were then fixed to the framework structure with putty on the building site. The division between the various panels was also filled up with putty. This method has the disadvantage that in particular in damp conditions there is a danger of the putty not adhering well, which means that the fixing of the panels to the framework construction is not secure. Besides, since the panels are supported only by putties on the framework structure, there is a risk that in the course of time, through creepage of the putty, the wall panels will move downwards. There is also the problem that if one wishes to replace a panel lying high up in the middle, all panels of the series in question lying above or below it have to be removed. This is very laborious and time-consuming, and incurs considerable cost.

The object of the present invention is to avoid the above disadvantages.

This object is achieved in a curtain wall of the type described above in that, on the side which faces the framework after fixing, the panels are provided with a frame near the periphery thereof which can be attached to the framework structure.

Through the use of a frame, the fixing between the panels and framework structure can be converted to a connection between frames and framework structure. This connection can be carried out in all manners known in the state of the art. As a result, puttying on site becomes unnecessary, so that optimum fixing of the panels is ensured. Subsequent slipping of the panels therefore no longer occurs. Fastening of the frames to the framework structure also makes it possible to remove any desired panels without the necessity for removal of the panels above or below them.

According to an advantageous embodiment, the panels are attached by puttying to the frames. This puttying can be carried out at the workshop, so that the advantages obtained with puttying can be retained, while the optimum conditions for puttying can be achieved, so that a reliable connection is obtained.

According to another advantageous embodiment, the frames comprise U-sections with moulded corner joints.

According to another advantageous construction, the frames and the framework structure are adapted to each other in such a way that when the panel is placed at an angle to the framework structure one side of the frame engages behind a vertical or horizontal member and after insertion of the panel, the latter also on sliding back grips behind a vertical or horizontal member lying opposite the above-mentioned vertical or horizontal member. This provides a particularly simple attachment method for the panels.

In a further embodiment of this structure, at least the part of the frame which has to engage behind the vertical or horizontal member is a U-section, with the legs parallel to the panel and projecting outwards, the leg furthest away from the panel gripping behind the vertical member or horizontal member. For securing of the panel in the other direction, it can be provided with at least one locking device on at least one peripheral side which does not engage in a vertical or horizontal member. This locking device can comprise an eccentric clamp.

In order to fix the position of the panels accurately and also to support the panels when fixed, the vertical members can be provided with outward-pointing projections. In the fitted state, supporting blocks can be disposed between these projections and the panel for accurate setting of the height of the panel.

Moreover, on the downward-facing side the projections can be provided with a section to permit engagement with a sealing section. Such a sealing section is provided to achieve sealing between the various panels.

This sealing can comprise a T-section, in which the leg of the T is provided with means for engaging between the panels, and the body of the T in the fitted state grips another panel on either side of the leg.

This leg can, on the one hand, grip the vertical member provided with section and, on the other, an extension of the leg of the U-section, said leg lying closest to the panel, and said extension extending parallel to the body of the U-section. A cross member may be present for connection of the sections fitted to the longitudinal side and transverse side of the panel. Depending on the place where it is used, this cross member can be

provided, on the top or bottom side of the panel, with venting or drainage means. This cross member provides for a good connection of the various parts.

The invention will now be explained in greater detail with reference to a non-limiting embodiment in the attached drawings, in which:

Fig. 1 shows a side view of a curtain wall;

Fig. 2 shows a top view in section; and

Fig. 3 shows a front view of a cross member of the sealing section.

In Fig. 1 only the horizontal members 1 of the framework structure are shown, while Fig. 2 shows a vertical member 2. Panels 3 and 4 have to be disposed between these horizontal members 1 and vertical members 2. The panel 3 consists of double glazing, while panel 4 consists of single glazing with a filler sheet 5 behind it. On the outside this gives the impression that the wall is provided with glass over its entire surface, while on the inside windows are present only at particular points. Both panel 3 and panel 4 are provided with peripheral frames 6. The connection between the peripheral frames 6 and the glass panels can be made in the usual manner by putty edges 7. These connections can be made already in the workshop. In this way it is ensured that these connections are optimum and do not have to suffer disadvantageous weather conditions. The panel 3, 4 is delivered to the building site provided with the frame 6. For fitting of the glass, first the vertical members 2 and then the horizontal members 1 are fitted. The frames 6 consist of a U-section with a body 8 and legs 9 and 10. The leg 9 lies closest to the panel 3, 4. The panel 3, 4 is fitted as follows. The panel is moved with its top side obliquely to the right from the position shown in Fig. 1, and with the under side is moved obliquely to the left. This causes the leg 10 to be inserted behind lip 11. The panel 3, 4 is then moved up and hinged to the left with the leg 10 lying on the under side of the panel 3, 4 moving over lip 12. When panel 3, 4 is moved downwards the last leg 10 will also slide behind lip 12, as a result of which the panel is fixed. The panel can thereby rest directly on a projection 13 or can have interposed a supporting block 14, of which there are a number interspaced in the longitudinal direction of the panel. In order to provide sealing between the panels and the projections 13 of the vertical members 1, a rubber section can be provided. This rubber section engages, on the one hand, with teeth 17 provided on the projection 13 and, on the other, grips the panel. For this, leg 9 of the frame can be provided with an extension 18 extending parallel to the body 8 of the U-shaped section. This extension can also serve to support the panel 3, 4. In order to achieve sealing between the U-shaped section frame 6 and the vertical

members, sealing rubbers 19 may be provided. The parts of the section shown in Fig. 1 form part of a cross member 23 which is shown in front view in Fig. 3. This cross member can be provided with venting openings 16 or drainage openings 15. As shown in Fig. 3, these can also be disposed side by side in one and the same cross member 23, so that a universally usable cross member is obtained. Through the use of these sections in conjunction with the panels 3, 4, one obtains a removable structural glazing which has no cold bridges anywhere, so that insulation measures are not necessary. In order to secure the panel further and prevent rattling or stresses, it can also be provided with locking devices which engage with the vertical members 2. Fig. 2 shows how eccentric clamps 20 can be used for this, engaging at one side with the legs 10 of the U-shaped frame and being fastened by means of a screw 21 on the vertical members 2. These eccentric clamps can be removed or turned by loosening this screw, following which the panels 3, 4 can be removed by lifting. Although only one locking device is shown, it must be understood that a number of such devices can be fitted for each side of the panel, and use can be made of these locking devices on different sides of the panel. A sealing section 22 can be fitted between the panels shown in Fig. 2.

Although the embodiment described above is a preferred embodiment of the invention, various modifications and changes can be made by anyone who is skilled in the state of the art, without exceeding the scope of the present invention.

Claims

1. Curtain wall, in particular with structural glazing, comprising panels, such as panes, to be fitted in a framework structure to be fitted against the wall, characterized in that, on the side which faces the framework after fixing, the panels are provided with a frame near the periphery thereof which can be attached to the framework structure.

2. Curtain wall according to Claim 1, characterized in that the panels are attached by puttying to the frames.

3. Curtain wall according to one of the preceding claims, characterized in that the frames comprise U-sections with moulded corner joints.

4. Curtain wall according to one of the preceding claims, characterized in that the frames and the framework structure are adapted to each other in such a way that when the panel is placed at an angle to the framework structure one side of the frame engages behind a vertical or horizontal

member and after insertion of the panel, the latter also on sliding back grips behind a vertical or horizontal member.

5. Curtain wall according to Claim 3 and 4, characterized in that at least the part of the frame which has to engage behind the vertical or horizontal member is a U-section, with the legs parallel to the panel and projecting outwards, the leg furthest away from the panel gripping behind the vertical member or horizontal member.

6. Curtain wall according to Claim 4 or 5, characterized in that at least one peripheral side of the frame which in the fitted state does not engage in a vertical or horizontal member is provided with at least one locking device to be engaged with the framework structure.

7. Curtain wall according to one of Claims 4 -6, characterized in that the locking device comprises an eccentric clamp.

8. Curtain wall according to one of the preceding claims, characterized in that the vertical members are provided with outward-pointing projections.

9. Curtain wall according to Claim 8, characterized in that in the fitted state, supporting blocks are disposed between the projections and the panels.

10. Curtain wall according to Claim 8 or 9, characterized in that on the downward-facing side the projections are provided with a section to permit engagement with a sealing section.

11. Curtain wall according to one of the preceding claims, characterized in that it comprises a T-section part to be fitted between the various panels, in which the leg of the T is provided with means for engaging between the panels, and the body of the T in the fitted state grips another panel on either side of the leg.

12. Curtain wall working in conjunction with a T-section according to Claim 11, characterized in that in the fitted state the leg grips the section according to Claim 10.

13. Curtain wall according to Claim 11 or 12, characterized in that the leg grips an extension of the leg of the U-section lying closest to the panel, said extension extending parallel to the body of the U-section.

14. Curtain wall according to one of Claims 11 to 13, characterized in that a cross member is provided on the longitudinal and transverse sides of the panels at the cross points of the T-sections.

15. Curtain wall according to Claim 14, characterized in that the cross member is provided with drainage means.

16. Curtain wall according to Claim 14 or 15, characterized in that the cross member is provided with venting means.

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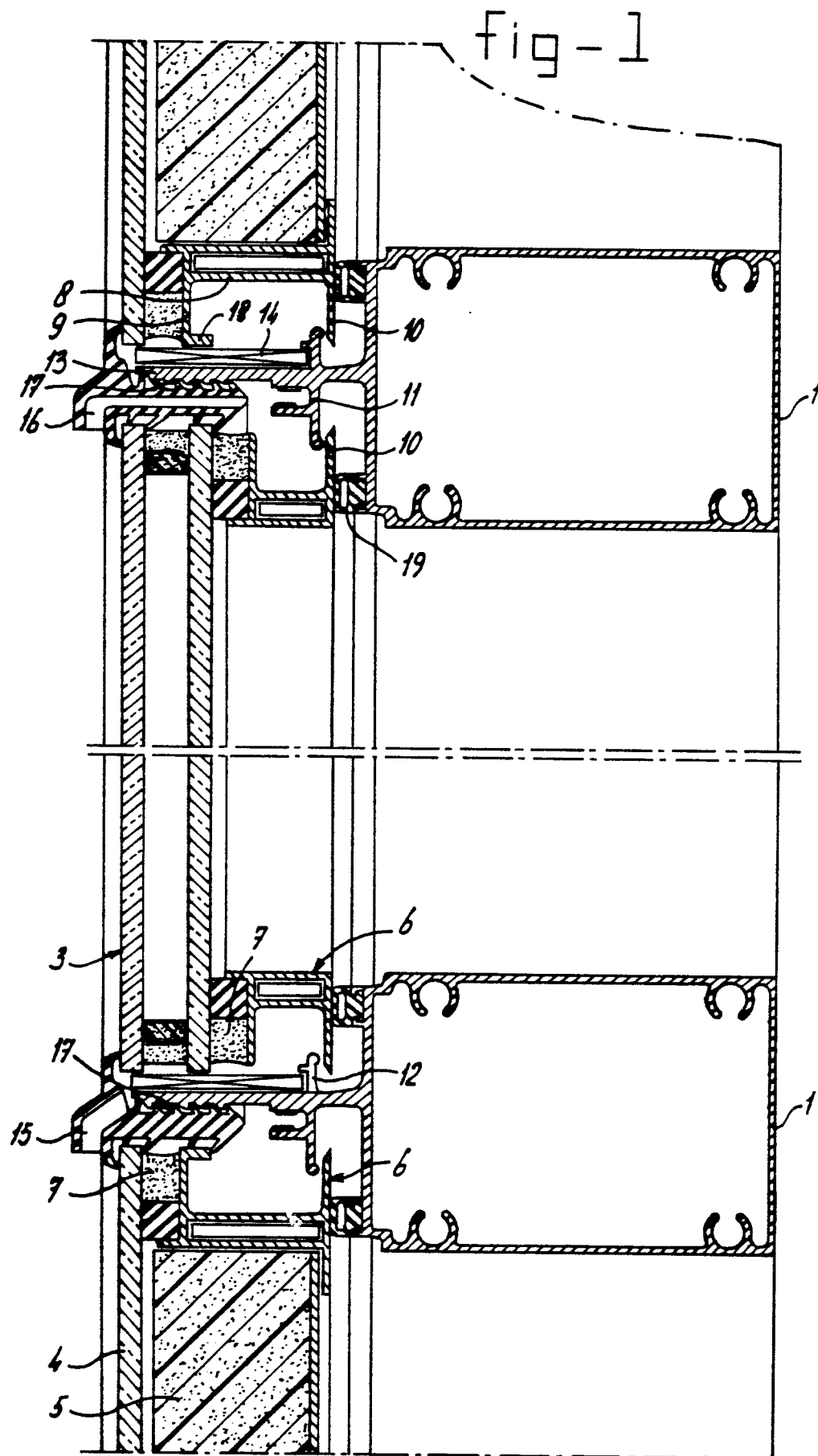


fig-2

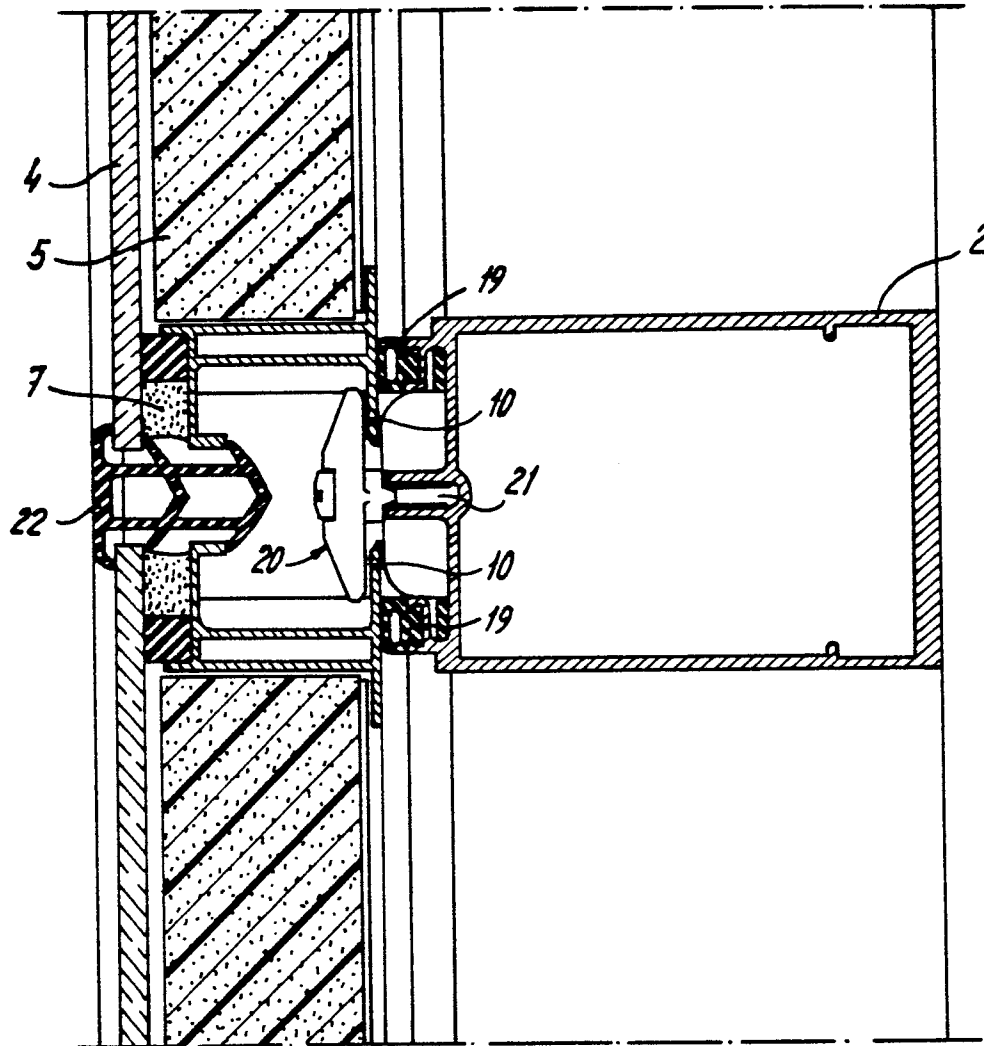


fig-3

