

## SPECIFICATION

### Sliding window frame construction

5 This invention relates to a window construction and more particularly to a sliding window frame construction adapted to be mounted in a wall made of masonry, wood or other building material as the case may be. The frame of such a construction  
10 includes frame sections joined at the corners of the frame and is to house glass panes guided in grooves of the frame sections, so as to be horizontally displaceable.

A sashless window construction, constructed as a  
15 horizontal sliding window, is proposed in, for example, United States Patent Specification No. 3,396,491, wherein the material of the frame is wood. A disadvantage of this construction is that wood working technology does not enable completely, if at  
20 all, the following essential requirements to be met.

Firstly, drainage of rainwater which has penetrated into the lower sliding groove and/or to the inside of a glass pane at a lower horizontal frame section is inadequate since such drainage can only  
25 be effected by narrow tubes in bores drilled through the wooden frame. With heavy rain, the drainage by the tubes is insufficient. Moreover, the provision of an adequate seal between the wood and the tube also causes problems and, when drainage is poor,  
30 residual water leads to swelling, rotting or warping of the wooden frame.

Secondly, with a window frame construction such as proposed in the aforementioned United States Patent, the seal between the sliding glass pane and  
35 the window frame, either outwardly or inwardly, is inadequate. Such window constructions do not include an outwardly directed flexible seal between the glass pane and the wooden frame but rather attempt to attain a sealing action by the mechanical  
40 pressure of glass against wood. This of course leads only to an unsatisfactory result. Moreover, an inwardly directed flexible seal which is provided is arranged in such a manner that, because of the limitations imposed by wood working technology,  
45 this seal likewise only has a limited effectiveness.

While attempts have been made to improve the situation by double glazing constructions, such attempts have only met with partial success since the above noted problems arise in double glazing  
50 constructions.

According to the present invention, there is provided a sliding window frame for mounting in a building construction and which is to house therein glazing including at least one pane which is to be  
55 horizontally displaceable by sliding action in a guide channel in the frame, which frame is formed of a plurality of section members joined at corners of the frame, which section members are formed of an extrudable synthetic plastics material and are of  
60 substantially U-shaped transverse cross-sectional form comprising upright legs joined by a base portion and defining therebetween said guide channel, each of the legs being hollow in the lengthwise direction of the section and the base portion comprising two hollow chambers extending lengthwise  
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thereof and juxtaposed in side-by-side arrangement with means being provided in one said hollow chamber intended, in use, to face the exterior of the building construction, for draining thereinto of water  
70 which enters the guide channel, at least the guide channel of the lower-most section member being undercut and housing sliding rail means for said at least one pane.

A sashless sliding window embodying this invention can be constructed in a simple manner from a small number of accessory parts and is especially suitable for use in hot climates, is made of a material which is not subject to rotting and is easy to maintain. Such requirements of ruggedness and  
75 functional effectiveness result, *inter alia*, because the frame is made of a synthetic plastics material.

The use of a synthetic plastics material makes it readily possible to provide a frame section having the characteristic shape of a sliding window  
85 embodying this invention, by extrusion. The hollow chamber of the base portion of each section member which is intended, in use, to face the interior of a building construction in which the window frame is installed has preferably a hollow section member  
90 extending therethrough as reinforcing means. Moreover, the sliding window frame construction of the invention lends itself particularly well to the housing of a sliding rail in the guide channel of the lowermost frame section element of the frame.

A particular advantage of a window frame construction embodying this invention is that all four section members employed in constructing a rectangular frame can be extrudates of identical transverse cross-section formed of a synthetic plastics material which will not rot and require maintenance in the same manner as wooden frames.  
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By forming the frame sections as extrudates, it is readily possible to include therein longitudinally extending grooves and the like able to house  
105 elongate sealing sections which may themselves be extrudates or of brush formation. Fixedly mounted wedge elements may be employed to ensure that a sufficient contact pressure exists between window panes and seals so as to ensure that a tight seal is achieved and rattling is prevented. Moreover, by provision of two juxtaposed hollow chambers extending lengthwise through the base portion of each frame section, it is possible to achieve the required drainage facility and possibly, in the case of frame sections of relatively large dimensions, reinforcement. A simple slide rail formed of a material of low coefficient of friction may be housed in the guide channel of the lowermost frame section. Depending upon its configuration, the rail can either be clipped into the guide channel or can be slid thereinto prior to assembly of the frame sections to form the frame. A form of sliding rail which lends itself to either method of insertion is one which is of approximately U-shaped cross-sectional configuration with the legs of the U-shape being inclined slightly outwardly. A sliding rail made for example of a polyamide or polyethylene in such a shape may be clipped into the undercut mounting groove by compressing its legs together. Whether clipped into the guide channel or slid thereinto, the undercut shape of the guide  
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channel will result in the sliding rail being retained therein.

Because they are formed of plastics material, the frame sections may be connected together by welding or use of an adhesive. Moreover, because of their hollow formation, they are readily connected together mechanically at mitre-cut corners. Generally in the latter case sealing at the corners will be required.

10 An undercut groove preferably of approximately T-shape in transverse cross-section is preferably provided in wall means of one of the legs of each section member, being the leg which in use faces the exterior of the building construction, and which wall means defines the side of the guide channel of the respective section member, to enable there to be housed an elongate sealing member for providing a seal between glazing and the frame on the side of the frame exposed to the weather.

20 Insertion of a glass pane into the frame and removal of a glass pane from the frame is assisted if the leg of each frame section which, in use, faces the interior of the building comprises a rounded or bevelled region along edge means thereof which defines an edge region of the guide channel.

25 Good contact pressure between sealing elements and glass panes using fixedly mounted wedges is particularly effectively achieved if such wedges are positioned in corner zones of horizontal frame sections, with the wedges projecting into the guide channels of the frame sections to urge the glass panes against sealing elements. The wedge structures preferably extend in an ascending direction from the frame centre to the frame rim thereby to enable the glass panes to be gradually pressed into a tight fit. Sealing in a central part of the glass panes may be achieved by provision of additional pressing members at either the lowermost section member or at the uppermost and the lowermost section members for pressing the glass panes in the guide channels against the sealing elements. The pressing members may take the form of disc members eccentrically arranged in a middle area of the window. Such discs serve to urge the glass panes against the sealing members received between the sides of glass panes facing the exterior of the building construction and legs of the frame sections opposed thereto when the window is closed. Such simple sealing arrangements are of particular value in tropical countries where their reliable functioning may be maintained despite the fact that the glass panes are not operated over long periods. In tropical countries, a fly-resistant mesh may be applied to the front of the frame to prevent entry of insects therethrough during the long periods of time when the sliding window will be kept open.

The frame sections of window frames of the present invention are generally produced by extrusion techniques from synthetic plastics materials, for example rigid polyvinyl chloride (PVC) and modifications thereof. Rigid PVC may be rendered particularly resistant against attack by weathering by addition of stabilisers and ultra-violet absorbents to the melt to be extruded. Good weather resistance can also be provided on the side of the frame sections exposed

to the weather by application of a more weather resistant and ultra-violet radiation resistant synthetic plastics layer. Such layer is preferably formed of a homopolymer or copolymer of acrylic acid and/or methacrylic acid or of acrylic acid ester and/or methacrylic acid ester, for example polymethylmethacrylate. The synthetic plastics layer may be applied to the frame sections by, for example, coextrusion therewith during manufacture of the latter. Alternatively, it can be applied subsequent to manufacture by lamination or by spread-coating or spray-coating.

Depending upon climatic requirements, provision may only need to be made for one of two glass panes housed in a sliding window frame embodying this invention to be displaceable. The second window pane will constitute a fixed glazing in the frame but is arranged therein in such a manner that nevertheless it can be lifted out for cleaning and replacement once the displaceable glass pane has been removed from the frame.

As an alternative to employing a sliding rail of the U-shape already mentioned herein, if mutually opposed identical grooves are provided in wall means defining the guide channel, it may then be possible to provide a simple rectangular sliding rail of solid construction of rectangular cross-section. Like the U-shaped sliding rails already mentioned herein, such rails of rectangular cross-section may be made of material having a low coefficient of friction such as polyamide or polyethylene. Such shapes of rail may even be available commercially and therefore do not require any special manufacturing steps to give them a characteristic profile. Moreover, when using frame sections provided with mutually opposed grooves for housing a sliding rail in the lowermost frame section, it is possible to house in all of the frame sections an auxiliary section member able to provide support for part of the sliding rail when in the lowermost frame section and generally to house an elongate sealing element which may abut a window pane on either the exterior-facing or interior-facing side of the pane depending upon the manner of use of such auxiliary section member. Such a section member is preferably of h-shape in transverse cross-section.

A sliding window frame constructed in accordance with this invention can also be employed when there is a requirement for double glazing to provide heat-proofing, cold-proofing or sound-proofing. In such a case, it is merely necessary to provide a pair of frames embodying this invention one behind the other and optionally fixedly connected to one another. A facility is thereby provided for housing the requisite arrangement of panes of glass to enable double glazing to be achieved.

For a better understanding of the invention, and to show how the same can be carried into effect, reference will now be made, by way of example only to the accompanying drawings, wherein:

Figure 1 is a partially schematic plan view of a sashless sliding window constructed in accordance with the present invention;

Figure 2 is a partially schematic horizontal cross-sectional view taken along the line C-C in Figure 1;

Figure 3 is a partially schematic vertical cross-sectional view taken along the line A-A in Figure 1;

Figure 4 is a partially schematic vertical cross-sectional view taken along the line B-B in Figure 1;

- 5 Figure 5 is a partially schematic cross-sectional view of a modified frame profile arrangement taken along the line C-C of Figure 1;

Figure 6 is a partially schematic cross-sectional view of the modified frame profile arrangement of

- 10 Figure 5 taken along the line A-A of Figure 1; and

Figure 7 is a partially schematic vertical cross-sectional view of the frame profile arrangement of Figure 5 taken along the line B-B of Figure 7.

- Referring to the drawings wherein like reference numerals denote like parts throughout the various views and, more particularly, to the schematic plan view of the sashless sliding window shown in Figure 1, a window frame 1, adapted to be installed in a wall (not shown) of masonry, wood, or other building material, includes frame sections 2 mitre-cut to size in correspondence with the size of the window to provide the required lengths of the individual window sides. The individual sections are firmly jointed together at the corners by, for example, welding, a screw connection, or adhesive bonding, possibly with the use of additional connecting members insertable in the frame sections 2 in the corner zones. Glass panes 4, 5 are inserted in the frame 1 with the glass panes being horizontally displaceable. Wedges 6 are arranged in the corner zones at the lower and upper horizontal frame sections, being attached in such manner as to ensure the existence of a tight shut and firm clamping of the glass panes 4, 5 when the window is closed. As can readily be appreciated, it is possible to construct the sashless sliding window so that only one of the two glass panes 4, 5 is displaceable. More particularly, it is possible for the glass pane 4 to be displaceable while the glass pane 5 is fixed but yet is capable of being lifted out of the frame 1 either for cleaning purposes or for dismounting.

- As shown in the horizontal cross section of Figure 2, the frame sections 2 are of approximately U-shaped section comprising a number of chambers extending lengthwise therethrough. Hollow projections 21 and 22 constitute the limbs of the U-section. Their inner walls are so shaped as to define therebetween a slightly undercut guide channel 20 for assisting in the guidance of the glass panes 4, 5. In order to improve both the inserting and lifting out of the glass panes 4, 5 that projection 21 which faces inwardly into the room, is provided with a bevelled or rounded portion on an inner edge 29 facing the channel 20.

- The base of the U-section of the frame profile member 2 is formed with two juxtaposed hollow chambers 24, 25. The hollow chambers 24, 25 need not be of equal size and, while the chambers are illustrated as having a rectangular cross section, other configurations of the chambers 24, 25 are also possible. The hollow chamber 24, facing the weather side of the window, is preferably constructed as a drainage chamber for the guide channel 20. As shown more clearly in Figures 3 and 4, openings 11, 12 connect or communicate the chamber 24 with the

guide channel 20 so as to enable the drainage thereof to occur. The hollow chamber facing inwardly may be used for accommodating reinforcing sections 7, as shown. The reinforcing sections 7 shown occupying chambers 25 may, for example, be aluminium or galvanized steel section members. In this connection, in addition to using closed rectangular section members such as shown in the drawings, it is also possible to use, for example, open C-shaped section members. On the side of the frame sections at which connection to the adjacent wall is to be made, the frame section members 2 are provided with projections 26, 27, 28. The projections 26, 27, 28 have a hook-like formation on their ends so as to assist in anchoring of the frame sections at the wall. In general, the frame 1 would be attached by means of anchors and screws (not shown).

- As shown in Figures 3 and 4, the glass panes 4, 5 slide on inverted U-shaped sliding rails 13 which are inserted in the guide channel 20 of the lower horizontal frame section member 2. The sliding rail 13 may, for example, be formed from polyethylene or a polyamide by extrusion and, preferably, has a slightly flared shape, seen in cross-section. The rail 13 may, during assembly, be inserted in the lower horizontal frame section member 2 from the side thereof by sliding before the frame section members 2 are assembled into the window frame. However, it is also possible to clip the sliding rail 13 directly in the guide channel 20 by compressing the legs thereof. Due to the slightly diverging configuration of the sliding rail 13 and the undercut configuration of the guide channel 20, the clipping of the sliding rail into the guide channel makes it impossible for the sliding rail 13 to drop out of the guide channel during use. To facilitate the travel of the glass panes 4, 5 thereover, the sliding surface of the sliding rail 13 may, for example, be provided with projecting beads (not shown). As already noted, any water entering the window frame 1, and collected in the guide channel 20 is drained to the outside of the window frame 1 through openings 11, 12 and hollow chamber 24.

- Preferably, the edges of the glass panes 4, 5 are slightly rounded and, depending upon the size of the glass panes, it is sufficient to provide the glass panes 4, 5 with relatively simple handles and closures (not shown).

- As shown in Figures 2 to 4, sealing sections 8, 9 are inserted in grooves 23 provided in the outwardly directed projections 22. Preferably, the grooves 23 have a T-shaped configuration as shown. The sealing sections 8, 9 serve to seal the glass panes 4, 5 with respect to the exterior of the window. The difference between the configurations of sealing sections 8, 9 is necessitated by the difference in distances between the respective pane surfaces and the inner wall surface of projection 22. The sealing section 9 provided in the section member 2 in a region of the glass pane 5 which is in close contact with the outer projection 22 is preferably a brush-type sealing element as shown, whereas the sealing section 8 to the inner glass pane 4 is preferably a sealing lip as shown. Wedges 6 (Figure 1) are disposed on the lower and upper frame sections so

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as to furnish the necessary contact pressure of the glass panes 4, 5 against the outer sealing sections 8, 9 when the window is closed. During closing of the glass panes 4, 5, the wedges 6 urge the glass panes 4, 5 against the outer sealing sections 8, 9 in the region of the guide channel 20.

A sealing action may be attained in a central region of the glass panes 4, 5 by, for example, mounting a simple disc member 30 eccentrically with respect to the upper and lower horizontal frame section members 2 whereby the glass panes 4, 5 are likewise urged against the outer sealing sections 8, 9. As shown in Figure 2, the disc 30 may be equipped with a lever 31.

The synthetic plastics material employed for forming the optionally reinforced frame section members 2, extrusion being the preferred forming method, may be provided on the outer side of the frame section members 2 exposed to weathering with an additional, weather resistant skin or layer. Whether such a skin is employed will usually depend on the nature of the plastics material. In this connection, suitable materials for the weather resistant skin or layer are such weather resistant synthetic plastics as polymers of (meth)acrylic acid esters thereof, e.g., polymethyl methacrylate.

For example, a water resistant polymethyl methacrylate skin may either be applied by co-extrusion simultaneously with the extrusion of the frame section 2 or the skin may be applied subsequently by, for example, varnishing or laminating. Preferably, a weather resistant synthetic layer is provided, on an entire side 10 of the frame section on the outside of the window which is exposed to weathering, that is, over the hollow chambers 24 and the projections 22 up to the beginning of the sealing sections 8, 9.

Referring next to Figures 5 to 7, there is shown an example of a window frame 1 having an improved joint tightness and which is superior with regard to its ability to prevent entry of rain through a window formed from it in comparison with the already described embodiment of Figures 2 to 4. For this purpose, an auxiliary section 14 formed, for example, of rigid PVC is provided. This auxiliary section 14 has an approximately h-shaped cross-sectional configuration. The frame members 2 in which the auxiliary sections 14 are mounted have the same basic cross-section as those of the construction of Figures 2 to 4. The two legs (or U-shaped portion) of the h-shaped auxiliary section 14 are inserted in the guide channel 20 of the frame section 2 with the upright leg portion of the section 14 being provided with a T-shaped groove 19 for receiving a sealing section 15 or 18. The auxiliary section 14 is so inserted in the guide channel 20 that the upright leg portion faces either the inside or the outside of the frame 1 depending upon the seating of the glass panes 4, 5 in the frame 1. Thus, as shown in Figure 5, the sealing section 18 provides an inner seal for the glass pane 5 and the sealing section 15 provides an outer seal for the glass pane 4.

The auxiliary section 14 may be made, for example, of a plastics material having good sliding properties so that it is possible to seat the glass

panes 4, 5 directly on the auxiliary section 14 when at the bottom horizontal side of the frame and to slide the panes 4, 5 therealong. However, as shown in Figures 6 and 7, it is also possible to arrange an additional rectangularly sectioned sliding rail 17 on the auxiliary section 14 in an area occupied by the glass pane 4 and/or to hold such a rail, in the region of the glass pane 5, in grooves 16 additionally formed in the projections 21, 22 of the frame section member 2.

In order to provide a window having an increased degree of sound proofing and/or insulating properties with respect to heat and cold, it is possible in a simple manner to arrange two frames 1 one behind the other, and possibly coupled to each other so as to produce a double glazed window.

As has already been mentioned herein, the glass panes 4, 5 may be equipped, in a conventional manner, with handles or the like so as to facilitate displacement of the respective panes.

#### CLAIMS

1. A sliding window frame for mounting in a building construction and which is to house therein glazing including at least one pane which is to be horizontally displaceable by sliding action in a guide channel in the frame, which frame is formed of a plurality of section members joined at corners of the frame, which section members are formed of an extrudable synthetic plastics material and are of substantially U-shaped transverse cross-sectional form comprising upright legs joined by a base portion and defining therebetween said guide channel, each of the legs being hollow in the lengthwise direction of the section and the base portion comprising two hollow chambers extending lengthwise thereof and juxtaposed in side-by-side arrangement with means being provided in one said hollow chamber intended, in use, to face the exterior of the building construction, for draining thereinto of water which enters the guide channel, at least the guide channel of the lower-most section member being undercut and housing sliding rail means for said at least one pane.

2. A frame according to claim 1, which is constructed from four section members of identical transverse cross-section.

3. A frame according to claim 1 or 2, in which reinforcing means is arranged in the other said hollow chamber of each section member.

4. A frame according to claim 3, in which the reinforcing means is a hollow section member extending through the other said hollow chamber.

5. A frame according to any one of the preceding claims, wherein an undercut groove is formed in wall means of one of said legs of each section member, being the leg which in use faces the exterior of the building construction, which wall means defines a side of the said guide channel of the respective section member.

6. A frame according to claim 5, wherein the undercut grooves are an approximately T-shaped in transverse cross-section.

7. A frame according to claim 5 or 6, wherein the

as to furnish the necessary contact pressure of the glass panes 4, 5 against the outer sealing sections 8, 9 when the window is closed. During closing of the glass panes 4, 5, the wedges 6 urge the glass panes 5 4, 5 against the outer sealing sections 8, 9 in the region of the guide channel 20.

A sealing action may be attained in a central region of the glass panes 4, 5 by, for example, mounting a simple disc member 30 eccentrically 10 with respect to the upper and lower horizontal frame section members 2 whereby the glass panes 4, 5 are likewise urged against the outer sealing sections 8, 9. As shown in Figure 2, the disc 30 may be equipped with a lever 31.

15 The synthetic plastics material employed for forming the optionally reinforced frame section members 2, extrusion being the preferred forming method, may be provided on the outer side of the frame section members 2 exposed to weathering with an 20 additional, weather resistant skin or layer. Whether such a skin is employed will usually depend on the nature of the plastics material. In this connection, suitable materials for the weather resistant skin or layer are such weather resistant synthetic plastics as 25 polymers of (meth)acrylic acid esters thereof, e.g., polymethyl methacrylate.

For example, a water resistant polymethyl methacrylate skin may either be applied by co-extrusion simultaneously with the extrusion of the frame 30 section 2 or the skin may be applied subsequently by, for example, varnishing or laminating. Preferably, a weather resistant synthetic layer is provided, on an entire side 10 of the frame section on the outside of the window which is exposed to weather- 35 ing, that is, over the hollow chambers 24 and the projections 22 up to the beginning of the sealing sections 8, 9.

Referring next to Figures 5 to 7, there is shown an example of a window frame 1 having an improved 40 joint tightness and which is superior with regard to its ability to prevent entry of rain through a window formed from it in comparison with the already described embodiment of Figures 2 to 4. For this purpose, an auxiliary section 14 formed, for exam- 45 ple, of rigid PVC is provided. This auxiliary section 14 has an approximately h-shaped cross-sectional configuration. The frame members 2 in which the auxiliary sections 14 are mounted have the same basic cross-section as those of the construction of 50 Figures 2 to 4. The two legs (or U-shaped portion) of the h-shaped auxiliary section 14 are inserted in the guide channel 20 of the frame section 2 with the upright leg portion of the section 14 being provided with a T-shaped groove 19 for receiving a sealing 55 section 15 or 18. The auxiliary section 14 is so inserted in the guide channel 20 that the upright leg portion faces either the inside or the outside of the frame 1 depending upon the seating of the glass panes 4, 5 in the frame 1. Thus, as shown in Figure 5, 60 the sealing section 18 provides an inner seal for the glass pane 5 and the sealing section 15 provides an outer seal for the glass pane 4.

The auxiliary section 14 may be made, for example, of a plastics material having good sliding 65 properties so that it is possible to seat the glass

panes 4, 5 directly on the auxiliary section 14 when at the bottom horizontal side of the frame and to slide the panes 4, 5 therealong. However, as shown in Figures 6 and 7, it is also possible to arrange an 70 additional rectangularly sectioned sliding rail 17 on the auxiliary section 14 in an area occupied by the glass pane 4 and/or to hold such a rail, in the region of the glass pane 5, in grooves 16 additionally formed in the projections 21, 22 of the frame section 75 member 2.

In order to provide a window having an increased degree of sound proofing and/or insulating properties with respect to heat and cold, it is possible in a simple manner to arrange two frames 1 one behind 80 the other, and possibly coupled to each other so as to produce a double glazed window.

As has already been mentioned herein, the glass panes 4, 5 may be equipped, in a conventional manner, with handles or the like so as to facilitate 85 displacement of the respective panes.

#### CLAIMS

1. A sliding window frame for mounting in a 90 building construction and which is to house therein glazing including at least one pane which is to be horizontally displaceable by sliding action in a guide channel in the frame, which frame is formed of a plurality of section members joined at corners of the 95 frame, which section members are formed of an extrudable synthetic plastics material and are of substantially U-shaped transverse cross-sectional form comprising upright legs joined by a base portion and defining therebetween said guide chan- 100 nel, each of the legs being hollow in the lengthwise direction of the section and the base portion comprising two hollow chambers extending lengthwise thereof and juxtaposed in side-by-side arrangement with means being provided in one said hollow 105 chamber intended, in use, to face the exterior of the building construction, for draining thereinto of water which enters the guide channel, at least the guide channel of the lower-most section member being undercut and housing sliding rail means for said at 110 least one pane.

2. A frame according to claim 1, which is constructed from four section members of identical transverse cross-section.

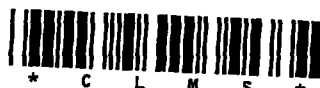
3. A frame according to claim 1 or 2, in which 115 reinforcing means is arranged in the other said hollow chamber of each section member.

4. A frame according to claim 3, in which the reinforcing means is a hollow section member extending through the other said hollow chamber.

120 5. A frame according to any one of the preceding claims, wherein an undercut groove is formed in wall means of one of said legs of each section member, being the leg which in use faces the exterior of the building construction, which wall 125 means defines a side of the said guide channel of the respective section member.

6. A frame according to claim 5, wherein the undercut grooves are an approximately T-shaped in transverse cross-section.

130 7. A frame according to claim 5 or 6, wherein the



undercut grooves house elongate sealing members.

8. A frame according to any one of the preceding claims, wherein the sliding rail means has an approximately U-shaped cross-sectional configuration with legs of the U-shape being inclined slightly outwardly, and is formed of a material of a sufficiently low coefficient of friction as to assist in the sliding of a glass pane thereover.

9. A frame according to claim 8, wherein the sliding rail means is formed of a polyamide or polyethylene.

10. A frame according to any one of claims 4 to 7, wherein further grooves are provided in the mutually opposed wall means of said legs of the frame sections, the groove means in the said wall means of the lowermost section member housing the sliding rail means.

11. A frame according to claim 10, wherein the sliding rail is of rectangular transverse cross-section.

12. A frame according to claim 10 or 11, which additionally comprises auxiliary section means shaped to support the sliding rail means when positioned in the lowermost section member and able to accommodate elongate sealing means for achieving sealing between a glass pane and the frame section on the side of a glass pane facing the exterior or the interior of the building construction.

13. A frame according to claim 12, wherein the auxiliary section means has a substantially h-shaped transverse cross-sectional configuration.

14. A frame according to claim 12 or 13 including elongate sealing members within grooves formed in the auxiliary section means.

15. A frame according to any one of the preceding claims, additionally comprising at least in corner zones of the uppermost and lowermost section members means for urging glass panes contacted thereby against sealing means comprised by the frame.

16. A frame according to claim 15, wherein the urging means are wedge members which project into the guide channels of the uppermost and lowermost section members.

17. A frame according to any one of the preceding claims, additionally comprising means arranged at either the lowermost section member or the uppermost and lowermost section members for pressing glass panes in said guide channels against sealing means comprised by the frame.

18. A frame according to claim 17, wherein the pressing means are formed as disc members eccentrically arranged in a middle area of the window.

19. A frame according to any one of the preceding claims, wherein a protective layer is provided on a side of the frame members which in use faces the exterior of the building construction.

20. A frame according to claim 19, wherein the protective layer is formed of a synthetic plastics material different to that from which the remainder of the frame sections are made.

21. A frame according to claim 20, wherein the different synthetic plastics material is ultra-violet radiation resistant.

22. A frame according to claim 19, 20 or 21, wherein the different synthetic plastics material is a

homopolymer or copolymer of acrylic acid or methacrylic acid or of an acrylic acid or methacrylic acid ester.

23. A frame according to claim 22, wherein the different synthetic plastics material is polymethylmethacrylate.

24. A frame according to any one of claims 19 to 23, wherein the different synthetic plastics material has been coextruded with the frame section members.

25. A frame according to any one of claims 19 to 23, wherein the different synthetic plastics material is laminated onto the frame section members after formation of the latter.

26. A frame according to any one of claims 19 to 23, wherein the different synthetic plastics material has been applied to the frame section members by spread coating.

27. A frame according to any one of the preceding claims, which is constructed so that only one of a pair of glass panes to be housed therein will be capable of horizontal displacement.

28. A frame according to any one of the preceding claims, wherein the leg of each frame section which, in use, faces the interior of the building construction comprises a rounded or bevelled region along the edge means thereof which defines an edge region of the guide channel, thereby to facilitate insertion of the glass panes into the frame.

29. A sliding window frame for mounting in a building construction and which is to house therein glazing, substantially as hereinbefore described with reference to and as shown in Figures 1 to 4 or Figures 1 and 5 to 7 of the accompanying drawings.

30. A sliding window which comprises a sliding window frame as claimed in any one of the preceding claims and glazing therein including at least one pane which is to be horizontally displaceable by sliding action in guide channel means of the frame.

31. A sliding window which comprises two frames as claimed in any one of claims 1 to 28 arranged one behind the other and optionally fixedly connected to each other, the frames comprising glazing therein so that there is formed a double-glazed sliding window.