

- The invention is concerned with an all-glass sliding leaf for a movable partition, having at least one upper carrier member from which the sliding leaf is suspended so as to be able to shift along a horizontal guide-rail, the pane of glass being provided with edge framing along its top and bottom horizontal edges and at least one vertical edge.

From the EP-A-000 3468 an all-glass sliding leaf of that kind is known, which on its vertical edge framing is provided with special vertical seals which enable employment of the sliding leaf both on the righthand side and on the lefthand side and also guarantee good sealing in the case of different distances of the movable door leaf from the stationary parts of the building. But since a sealing strip is lacking between the bottom horizontal edge framing and the floor, in many applications an adequately tight separation of different room zones is not guaranteed. For lack of this bottom sealing or other suitable floor anchoring a sliding door built up of these known all-glass sliding leaves also has only a comparatively low mechanical stability.

The problem of the invention is therefore to develop further an all-glass sliding leaf of the kind named initially, in such a way that a movable partition built up of these sliding leaves enables an improved tighter and mechanically stable separation of adjacent room zones.

In accordance with the invention this problem is solved in the case of the all-glass sliding leaves of the kind named initially, by the fact that the vertical portions of the edge framing have a profile which is complementary with and fits closely against the adjoining profile of the next sliding leaf, that in the horizontal portion of the bottom of the edge framing a sealing strip is arranged, which is lowered onto the floor upon meeting a preceding sliding leaf etc. and is raised upon pulling the sliding leaf away, and that the sealing strip which can be lowered from an individual sliding leaf has at least one downwards directed lug moulded on, which upon running out the sealing strip engages in a corresponding longitudinal slot fixed in the floor.

The advantages of the invention lie in particular in that through the vertical edge framing of the glass pane with a profile complementary with and a close fit against the adjoining sliding leaf as well as through the

sealing strip which may be lowered from the bottom horizontal edge framing a comparatively tight separation of the room zones separated from one another is achieved. Since furthermore onto the sealing strips which may be lowered from individual sliding leaves, downwards directed lugs are moulded, which upon the sealing strip being run out engage in corresponding longitudinal slots fixed in the floor, these sliding leaves experience in the case of a built up movable partition also an anchoring next the floor which imparts to the movable partition as a whole a high mechanical stability as well as increased security against burglary. In that case it is particularly advantageous that the anchoring in the floor is effected by the running out of the sealing strips; additional actuating equipments which may be activated by hand or motor are not necessary.

Preferably the pane of glass of each sliding leaf may be provided with an edge framing running right round. In the case of this embodiment the two vertical portions of the edge framing are then provided with closely-fitting complementary profiles in order to make it possible for adjacent vertical portions of adjacent sliding leaves to interengage simply and with a good closure. There are then between any two sliding leaves two vertical spars of complementary profile, which interrupt the visual association more strongly because of their greater total width. Furthermore in the bottom horizontal portion of the edge framing a floor seal is provided which may be run out in the final position of the all-glass sliding leaf, securing the sliding leaf in its final position and sealing it to the floor. It is particularly preferable that the upper horizontal portion of the edge framing have, directed against the running rail or the ceiling, a sealing element which is elastic or in the form of brushes. Good sealing of the whole movable partition against draughts is guaranteed with this embodiment as well as good separation of the zones against the penetration of room or ambient air from the adjacent zone. Moreover it represents a special advantage of the invention that the edge framing running round especially emphasizes visually the close-fitting interengagement of the individual sliding leaves and the sealing present at floor and ceiling, that is, the totally closed effect of the movable partition, so that the customer or user stopping in one room zone also gains the impression of a closed room separation without the lightness and elegance of the glass wall experiencing any loss.

- It is particularly preferable that the floor seal include a horizontal sealing strip which is supported by at least two spaced parallel pivoted levers so as to be able by means of a slide guide to shift and swivel in a gap in the edge framing. The construction of this floor seal is made such that upon running against an adjacent fixed sliding leaf, through the forces acting upon doing so it is swung downwards against the floor and upon running the sliding leaf back into its parking position the said floor seal is automatically released.

It is particularly preferable that this all-glass sliding leaf include at a predetermined height a horizontal breast rail which may be fastened to the two vertical portions of the edge framing. This breast rail makes the presence of the movable partition visually clear to the user or passer-by; it may furthermore be used as a handle for running the sliding leaf about.

Preferably magnetic strips are integrated into the vertical portions of the edge framing, the magnetic strips on vertical edges adjacent to one another exhibiting respectively different polarities in order through the magnetic forces of attraction of the magnetic strips also to assist the close-fitting interaction of these vertical portions upon putting the sliding leaves together.

Whilst for receiving structural parts. in particular the operating mechanism and the sealing strip, the horizontal portions must be relatively wide, the vertical portions may for the fulfilment of their sealing function consist of a relatively thin profile. In order to realize a structurally simple but visually pleasing transition from the horizontal portions to the vertical portions, it is provided in accordance with the invention that the horizontal portions be made to end their framing a predetermined distance before the vertical edge of the pane of glass, and that to the ends of the horizontal portions endpieces be added, which particularly preferably taper down in the shape of a wedge to a predetermined edge dimension at the outer edge. The endpieces have in an advantageous way a horizontal length which is equal to the corresponding horizontal width of the vertical portions, in order to be able to realize a flowing transition to the vertical portions.

- It is particularly preferable that the profile of the vertical portions taper in from the outer edge of the edge framing in the shape of a wedge towards the pane of glass and that the edge dimension of the vertical outer edge of the edge framing with the endpieces added on be preferably equal to the adjoining vertical portions. Alternatively it is also possible to make the vertical portions run the whole vertical height of the sliding leaf and to shorten the horizontal portions to correspond.

As a close-fitting complementary profile between two vertical portions of two sliding leaves adjacent to one another the one vertical portion preferably includes a vertical groove on the outer edge and the opposite vertical portion includes a corresponding recess.

Advantageous further developments of the invention are characterized by the features of the Sub-Claims.

Two embodiments of the invention are explained in greater detail below with the aid of the drawing. There is shown in:

Figure 1 - a side elevation of a number of adjacent all-glass sliding leaves with edge framing running round;

Figure 2 - a vertical cross-section along the line II-II in Figure 1;

Figure 3 - a horizontal cross-section along the line III-III in Figure 1;

Figure 4 - an illustration corresponding with Figure 1, of a second embodiment of the invention;

Figure 5 - an illustration corresponding with Figure 3, of the second embodiment;

Figure 6 - a side elevation of the floor sealing with the side covering of the edge framing at that point removed;

Figure 7 - the detail Y from Figure 6, enlarged;

- Figure 8 - a horizontal cross-section through the horizontal portions of two adjacent sliding leaves;

Figure 9 - a horizontal cross-section through the vertical portions of two adjacent sliding leaves;

Figure 10 - the bottom horizontal portions of two adjacent sliding leaves, seen from above; and

Figure 11 - a detail from a sliding leaf forming a door.

Figures 1 to 3 show a side elevation and cross-sections through a number of all-glass sliding leaves 1 joined side by side, which form part of a movable partition. Against a wall 3 fixed to the building is fastened a terminal member 6, 8, the horizontal length of which - in the plane of the movable partition - may be set so that the foreseen number of glass leaves can divide off the available clear width of the room. Against the ceiling to establish the plane of the movable partition is fastened a horizontal guiderail 30 which has a guide gap 32 pointing downwards through which at least two carrier members 26 fastened to the top horizontal edge of a glass pane 12 project and by means of their rollers 28 running on the faces 33 of the guiderail 30 may be run along horizontally together with the sliding leaf.

The glass pane 12 is provided with an edge framing 14 running round. The two vertical portions 20, 22 of the edge framing 14 have close-fitting complementary profiles so that in each case an edge bead on the one vertical portion 20 engages with a close fit in a complementary edge groove of the adjacent vertical portion 22 of the adjacent sliding leaf. In the embodiment shown, cf. Figure 3, the edge bead and the edge groove point into one another in a wedge shape so that even under low horizontally acting closing forces a good close-fitting connection is realized which impedes the passage of air.

As may be learned in particular from Figure 2, the top and bottom horizontal portions 16, 18 of the edge framing 14 are glued and/or fastened by fastening elements 17 to the glass pane 12. On the upper face of the top horizontal portion 16 are fastened the carrier members 26. Further-

more the top horizontal portion 16 carries elastic sealing elements 26 in the form of brushes directed against the running rail 30, which adequately impede the circulation of air also in the region of the top horizontal portion 16 of the sliding leaf 1.

The sliding leaves, cf. Figure 1, have at a predetermined height horizontal breast rails 24 which are fastened to the two vertical portions 20, 22 of the edge framing 14 and make the glass panes 2 stand out clearly to the eye of the user and furthermore serve as a handle for moving the sliding panes 1.

Figures 4 and 5 show a side elevation and a horizontal section of a second embodiment of the invention, in which the edge framing 14 - per sliding leaf 1 - is fitted only at the top and bottom horizontal edges and merely on one vertical edge of each glass pane 12, whilst the other vertical edge of the glass pane 12 is unframed. On the top horizontal edge of the glass pane there is the top horizontal portion 16 and at the bottom horizontal edge the corresponding bottom horizontal portion 18 of the edge framing 14. The horizontal portions 16, 18 are connected by one vertical portion 22 on the righthand (alternatively on the lefthand) vertical edge of each glass pane 12. As may be learned in particular from Figure 4, the vertical portion 22 has remote from the glass pane 12 but in line with the glass pane 12 a vertical groove into which the unframed edge of the glass pane of the adjacent sliding leaf may be pushed in order to assemble the sliding leaves side by side in the closed position.

In accordance with Figures 6 and 7, in a gap in the bottom horizontal portion 18 of the edge framing 14 a floor seal 40 with a horizontal sealing strip 41 is framed and - in the embodiment shown - fastened by means of two fastener elements 36 fastened to the horizontal portion 18, and parallel pivoted levers 38 are arranged on the fastener elements 36, which at their bottom ends carry the sealing strip 41 and by means of a slideguide 37, 39 are hinged to be able to slide and swivel. In its unloaded position the sealing strip 41 projects beyond one vertical edge of the sliding leaf 1 and upon meeting a fixed sliding leaf, etc., becomes pushed horizontally against the action of springs 42 below the sliding leaf 1 and thereupon swung downwards and pressed against the floor 2. The springs 42 are made as leg springs which prestress the sealing strip

into its unloaded position. The first leg 44 of the leg spring 42 is fastened to the sealing strip 41, the second leg 46 is offset horizontally and vertically upwards and fastened to the fastener element 36 of the edge framing 18. The motion of the leg springs 42 upon moving the sealing strip 41 is so controlled by a stationary stop 48 that in its movement from the unloaded position into the loaded run-out floor position the sealing strip 41 passes through a dead centre.

Figures 8, 9 and 10 show horizontal cross-sections through the top horizontal portions, the vertical portions and a plan of the bottom horizontal portions of two adjacent sliding leaves. The top and bottom horizontal portions 16, 18 of the edge framing 14 terminate at a predetermined distance before the vertical edge 14a of the glass pane 14. At the ends of the horizontal portions 16, 18 are attached endpieces 50 of which the horizontal length corresponds with the width of the vertical portions 20, 22, and which end towards the outer edge 54 in a wedge shape at a predetermined edge dimension D and exhibit at the outer edge 54 a wedge-shaped extension 56 running vertically or a corresponding wedge groove 58. The profile of the vertical portions 20, 22 is altogether slimmer than that of the horizontal portion 16, 18; it likewise has at the outer edge 54 the edge dimension D and tapers in towards the glass pane 14 in the shape of a wedge. The vertical portions 20, 22 are joined to the endpieces 50 with the smallest possible gap. The vertical portions 20, 22 likewise have at the outer edge 54 a wedge-shaped groove 56 or a corresponding wedge-shaped recess 58 in order to make two sliding leaves adjoining one another interengage adequately tightly at their vertical edges, so that the room zones divided off by the sliding leaves become adequately separated. The profile of the horizontal portions 16, 18 and if necessary the endpieces 50 may be chamfered towards the glass panes.

In Figure 11 is shown a special floor anchoring of a sliding leaf forming a door. In vertical alignment with a first top pivot (not shown) there is in the bottom edge framing 18 a second pivot 68 which is supported to be able to shift vertically in a sleeve 71 and may be run vertically out of the bottom edge framing 18 into a groove 78 in the floor. A spring-loaded toggle lever 72 is provided, of which one end is hinged to the leaf 1a forming the door or respectively to the sleeve 71 fixed to the leaf, and the other leg is hinged to the second pivot 68, and on its knee

- joint an actuator member 76 is directed vertically outwards from the frame of the leaf towards the floor seal of the adjacent sliding leaf 1.

Adjacent to the actuator member 74 of the leaf 1a which forms the door - about in prolongation of the bottom edge of the floor seal 41 - there is arranged a floor tongue 80 which is directed horizontally towards the leaf 1a forming the door and has an oblong hole 82. On the underside of the floor tongue 80 - round the oblong hole 82 - is arranged a bead 84 which fits into the floor groove 78.

At the approach of the leaf 1a which forms the door to the adjacent sliding leaf 1 the actuator member 74 comes into contact with the swing-down floor seal 41 which is thereby swung down below the sliding leaf 1. During this swivelling motion the leaf 1a which forms the door and the sliding leaf 1 approach more strongly so that simultaneously with the swivelling motion the floor tongue 80 runs under the leaf 1a forming the door until the hole 82 is in line with the second pivot 68 and the floor groove 78. Then upon further approach of the leaf 1a forming the door and the sliding leaf 1 the pivot 68 finally becomes pushed through the oblong hole 82 into the floor groove 78. The oblong hole 82 in the floor tongue 80 is shorter than the floor groove 78 in order to produce exact relative positions of the sliding leaf 1 and the leaf 1a which forms the door. Through the lowering of the bead 84 into the floor groove 78 the sliding leaf 1 is also secured in position with a close fit. In this way during the fixing of the leaf 1a which forms the door and the adjoining sliding leaf 1 the anchoring to the floor of the leaf 1a which forms the door is performed automatically.

In order by means of the floor seal 40 which may be lowered and pressed against the floor, also to anchor the individual sliding leaves 1 or 1a to the floor with a close fit, there may advantageously be moulded onto the sealing strip 41 of the floor seal 40 downwards directed lugs, e.g., 68, 84, which upon running out the sealing strip 41 engage in corresponding grooves 78 or recesses fixed to the floor.

C L A I M S



1. An all-glass sliding leaf for a movable partition, having at least one upper carrier member from which the sliding leaf is suspended so as to be able to shift along a horizontal guiderail, the pane of glass being provided with edge framing along its top and bottom horizontal edges and at least one vertical edge, characterized in that the vertical portions (20, 22) of the edge framing (14) have a profile which is complementary with and fits closely against the adjoining profile of the next sliding leaf, that in the horizontal portion (18) at the bottom of the edge framing (14) a sealing strip (41) is arranged, which is lowered onto the floor upon meeting a preceding sliding leaf etc. and is raised upon pulling away the sliding leaf (1), and that the sealing strip (41) which can be lowered from an individual sliding leaf (1, 1a) has at least one downwards directed lug moulded on, which upon running out the sealing strip (41) engages in a corresponding longitudinal slot fixed in the floor.
2. An all-glass sliding leaf as in Claim 1, characterized in that the pane of glass (12) is provided with an edging frame (14) which runs right round.
3. An all-glass sliding leaf as in Claim 1 or 2, characterized in that the floor seal (40) includes a horizontal sealing strip (41) which is linked by at least two spaced parallel pivoted levers (38) so as to be able by means of a slide guide (37, 39) to shift and swivel in a gap in the edge framing (14, 18), and in its unloaded position projects beyond one vertical edge of the sliding leaf and upon meeting a fixed sliding leaf etc. is able against the action of springs (42) to slide horizontally under the sliding leaf (1) and be swung downwards towards the floor.
4. An all-glass sliding leaf as in one of the preceding Claims, characterized in that the sealing strip (41) is prestressed into the unloaded position by means of leg springs (42) and that each leg spring (42) is fastened by its first leg (44) to the sealing strip and by the second leg (46) which is offset horizontally and vertically upwards, to a fixed bearing block (36) on the edge framing (14, 18) and that the movement of the leg springs (42) upon moving the sealing strip (41) is controlled by a stop (48) above the second leg (46).
5. An all-glass sliding leaf as in one of the preceding Claims,



- characterized in that a breast rail (24) is arranged horizontally at a predetermined height and fastened to the two vertical portions (20, 22) of the edge framing (14).
6. An all-glass sliding leaf as in one of the preceding Claims,
5 characterized in that magnetic strips are integrated into the vertical portions (20, 22) of the edge framing (14).
7. An all-glass sliding leaf as in one of the preceding Claims,
characterized in that the upper horizontal portion (16) of the edge framing (14) carries sealing elements (29) directed against the running
10 rail (30), which are elastic or in the form of brushes.
8. An all-glass sliding leaf as in one of the preceding Claims,
characterized in that the horizontal portions (16, 18) of the edge framing (14) extend horizontally beyond the vertical edge of the pane of glass (12) as far as the outer edge of the edge framing (14) and taper in
15 the shape of a wedge down to a predetermined edge dimension at the outer edge (54).
9. An all-glass sliding leaf as in one of the Claims 1 to 7,
characterized in that the horizontal portions (16, 18) of the edge framing (14) end a predetermined distance before the vertical edge of the
20 pane of glass (12), and that endpieces (50) are added on to the ends of the horizontal portions (16, 18) and run out in the shape of a wedge to a predetermined edge dimension (D) at the outer edge (54).
10. An all-glass sliding leaf as in one of the preceding Claims,
characterized in that the profile of the vertical portions (20, 22)
25 of the edge framing (14) tapers in from the outer edge (54) in the shape of a wedge towards the pane of glass (14).
11. An all-glass sliding leaf as in one of the preceding Claims,
characterized in that the edge dimension (D) of the vertical outer edge (54) of the edge framing (14) is constant over the whole length of
30 the outer edge.
12. An all-glass sliding leaf as in one of the Claims 8 to 11,
characterized in that the profile of the horizontal portions (16, 18) and of the endpieces (50) as the case may be, is chamfered towards the pane of glass (14).