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(54) **GLAZING PANEL**

VERGLASUNGSTAFEL

PANNEAU DE VITRAGE

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(73) Proprietor: **QUISTEN LIMITED**
Dublin (IE)

(72) Inventors:
- **BERTEN, Etien**
  B-1020 Brussel (BE)
- **BERTEN, Lieven**
  B-8510 Rollegem (BE)

(74) Representative: **Donné, Eddy**
Bureau M.F.J. Bockstael nv
Arenbergstraat 13
2000 Antwerpen (BE)

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Description

The present invention concerns a glazing panel, in particular a glazing panel which can be used for windows, doors and such, whereby by glazing panel should be understood any panel in a transparent or translucent material.

In the first place, the invention is meant to be used in leaves, in other words in parts of a window, door or such, which can be opened, which does not mean that such a glazing panel cannot be used for a fixed glazing. Leaves are hereby concerned which can be opened in any way whatsoever, either by turning, toppling, falling open, sliding, folding or a combination thereof.

Traditionally, leaves are formed of on the one hand a window frame of wood, PVC, aluminium or such, and on the other hand of a double-sided glass panel, whereby this glass panel is mounted in the window frame. The thus obtained leaves have several disadvantages, such as the necessity to wedge the glass panel in the window; the heavy load of the glass panel, as it has to provide the strength of the leaf; the necessity to provide water discharge grooves in the window frame; and the considerable broadening of the window frame, with about 5 to 6 cm as seen in front view, in relation to a fixed window frame, so that the view through the window is significantly obstructed and there is less incidence of light.

In order to remedy this, it has already been suggested to use frameless glazing panels for leaves which can open.

An example thereof is described in WO 94/16187. According to the technique suggested in this document, use is made of frameless glazing panels which consist of two glass plates which are glued together by means of a thin strip, whereby this strip, in order to provide a sufficiently great strength, is formed of a material which is reinforced with filaments extending crosswise. Although a glazing is obtained in this manner which is sufficiently strong to be used frameless, it is not very practical, as the application of accessories, such as window fittings, is very problematic and, due to the fact that the above-mentioned strip can only have a limited thickness, this must be limited to seatings for hinges. Moreover, such accessories can only be applied by means of embedding in the above-mentioned strip, which is a very time-consuming technique, partly because this requires much precision. Applying fittings of this type which extend along at least a part of the edge of the glazing panel, for example fittings whereby several locking points are connected by means of rods extending along the contour, is consequently completely impossible with a glazing panel as described in WO 94/16187.

Glazing panels are known from EP 0.228.641 and CH 633.607 which consist of a frame formed of profiles with an insulating glazing with two glass plates, whereby these profiles show a first part which is situated between the glass plates and a second part which is situated outside the glass plates, in which local fittings, such as hinges, are provided. The profiles shown herein are not suitable for sliding fittings, however.

Furthermore in the glazing panel of EP-A-0.228.641, the forces excerted on the frame are transmitted to the spacers which provide in the vapour tight sealing of the two glass plates, resulting in the disadvantage that the deformations in the frame, when excerting forces on the latter, may result in the fact that the vapour tightness of the glazing panel is affected. Document DE-A-.801.947 shows a similar construction, having the same disadvantage.

The invention aims a glazing panel which does not have the above-mentioned disadvantages and which combines the advantages of a traditional window and of a frameless glazing.

To this end, the invention concerns a glazing panel, consisting of a frame with an insulating glazing with at least two glass plates, characterized in that this glazing panel is provided with, on the one hand, one or more spacers extending between the adjacent glass plates which ensure the sealing of the space between the glass plates, and which are countersunk over a certain distance between the edges of the glass plates and, on the other hand, separate profiles, forming said frame, which are situated at least partially between the glass plates and which are provided with a fitting groove in which are provided lamella-shaped sliding fittings which continue over one or more corners of the panel.

The use of such a separate spacer is advantageous in that the forces which are exerted on the fittings are absorbed by the above-mentioned profiles and not by the spacer, such that the vapour-tight sealing between the two glass plates, which is ensured by the spacers, is optimally guaranteed.

As both the connection between the glass plates and the mounting of the sliding fittings is done by means of one and the same, one-piece profile, a particularly solid construction is obtained.

Thanks to the use of profiles in which can be mounted sliding fittings, instead of a thin strip as is the case in WO 94/16187, the advantages of a traditional window are preserved. Moreover, as the profiles are situated at least partly between the glass plates, a construction is at the same time obtained which is comparable to and has the advantages of a frameless glazing.

One of the major advantages of this invention also consists in that a very solid leaf can be made with an unstable material, in particular synthetic material, because the profiles and possibly also the fittings are mainly integrated between the glass plates. However, the invention does not exclude the use of other materials than synthetic material for the profiles.

In order to restrict the visible width of the profiles and at the same time be able to obtain an optimal fastening between the glass plates and the profiles, one or more composing parts of the profiles and accessories working in conjunction with them are integrated partly or entirely between the glass plates. Hereby are con-

cerned fixing means of the sliding fittings; screw apertures provided in the profiles; and the fitting grooves. According to the most preferred embodiment, also sliding fittings are integrated at least partially between the glass plates.

According to its most preferred embodiment, the invention also aims the following advantages:

- an embodiment which does not require much maintenance, as the leaf mainly consists of glass, so that only the fixed outer frame must be maintained;
- an embodiment which has a more interesting price compared to a traditional window system, in particular which is 20% cheaper compared to today's windows;
- an embodiment which is ecologically sound, as it mainly consists of glass and as less material is used than has been customary up to the present;
- an embodiment which is very aesthetic, as no difference can be noticed anymore between a fixed window and a window which can be opened;
- an embodiment which provides a good thermal insulation as the air cavity is enlarged;
- a small risk of water infiltration, as the glazing is no longer held in a window frame;
- water discharge grooves are no longer required;
- a better sound insulation as a larger cavity can be provided and thanks to the application of a double acoustic sealing;
- more translucence as the traditional leaf profiles are omitted;
- a much stronger leaf, among others as far as torsion is concerned, thanks to the greater distance between both glass plates.
- any deformation of the leaf is excluded, as the profiles of which this wing consists are glued at least partially between the glass plates and as the leaf is mainly formed of glass;
- the leaf cannot come down, as the glazing so to say forms a whole with the profiles;
- a glazing panel which is in conformity with all legal tests regarding safety and reliability;
- an embodiment which is optimally burglarproof, as it is impossible to break it open by means of a crow bar, so that no unwanted visitors can come in without breaking the glass plates;
- a solid look;
- less shadows, as the outer flanges of a traditional leaf profile are no longer present;
- reinforcement by means of steel profiles is not required;
- more easily mountable, as the glass no longer needs to be provided in the workshop or on the building site, since the whole is tailor-made in the factory;
- depending on the embodiment, less rubbers must be provided;
- glazing beads must no longer be cut or sawn and water discharge grooves must no longer be milled out.

In order to better explain the characteristics of the invention, the following preferred embodiments are described as an example only without being limitative in any way, with reference to the accompanying drawings, in which:

figure 1 shows an inside view of a window which is equipped with a glazing panel;
figures 2 and 3 show sections to a larger scale according to lines II-II and III-III in figure 1;
figure 4 schematically shows a corner connecting piece of the glazing panel from figure 1;
figure 5 shows a corner connecting piece which can be used in a glazing panel;
figure 6 shows a part which is comparable to the part indicated with F6 in figure 3, but to a larger scale and in greater detail;
figure 7 shows a glazing panel according to the invention;
figure 8 shows a section according to line VIII-VIII in figure 7;
figure 9 shows a section according to line IX-IX in figure 8;
figure 10 shows a part of the fittings of the glazing panel from figure 7 as dismounted;
figure 11 shows a window which is equipped with two glazing panels according to the invention;
figure 12 shows a section according to line XII-XII in figure 11 to a larger scale;
figure 13 schematically shows a part of a glazing panel according to the invention;
figure 14 schematically shows another glazing panel according to the invention;
figure 15 shows a section of another variant of a glazing panel according to the invention;
figure 16 shows a section of another variant;
figure 17 shows a variant of the part which is indicated with F17 in figure 16;
figure 18 shows a section according to line XVIII-XVIII in figure 17;
figures 19, 20 and 21 are sections of yet three other embodiments;
figure 22 shows a section according to line XXII-XXII in figure 21;
figure 23 shows another variant of the part which is represented in figure 15.

First some glazing panels are described with reference to figures 1 to 6 in order to clarify the structure of a glazing panel. The glazing panels of figures 1 to 6 do not show the main inventive idea of the present invention, however show some particular features, which as will be clear of the further description, can be combined with the main inventive idea, the latter being described more specific with reference to figures 7 to 23.

Figure 1, shows a glazing panel 1 which forms a leaf 2 which can be mounted moveable in a fixed window frame 3.

As represented in the figures 2 and 3, the glazing panel 1 consists of a frame 8 formed of profiles 4-7, in which is provided an insulating glazing 9, consisting of at least two glass plates 10 and 11.

The profiles 4-7 are situated at least partially between the glass plates 10 and 11, and lamella-shaped sliding fittings 12 are also provided in the same profiles, which are mounted in a fitting groove 13 provided to this end in said profiles 4-7 and which, as will become clear from following examples, continue over the angles.

Preferably, the profiles 4-7 are glued directly onto the glass plates 10 and 11. To this end, they may be provided with seatings 14-15 turned towards the inner sides of the glass plates 10 and 11, which can be filled with a bonding agent 16.

In the embodiment of figures 2 and 3, the profiles 4-7 are hollow, so that they obtain a great strength. In the cavity 17 can be applied an absorbent material 18, for example in the shape of grains, to keep the free space 19 between the glass plates 10 and 11 free from moist. The absorption takes place via passages 20 in the profile walls 21.

According to a preferred embodiment, the size of the parts of the profiles 4-7 which protrude outside the contour of the glazing 9, is limited to a minimum. Preferably, this is obtained by integrating the profiles 4-7 concerned entirely between the glass plates 10 and 11, to the exception of the flanges 22 and 23 which cover the crosscut ends 24 and 25 of the glass plates 10 and 11, and to the exception of the accessories fixed to these flanges 22-23 or forming a part thereof as described hereafter.

The flanges 22 and 23 make it possible among other things to provide the glazing panel 1 with a glass edge protection and/or a window sealing. In the embodiments shown in the figures 2 and 3, the glass end protection consists of a strip 26, for example made of rubber, which is provided in a seating 27, as well as a strip 28 which is provided in a seating 29. In the embodiment shown, the strip 28 makes contact with the fixed window frame 3 and in this way forms an extra sealing, which particularly provides an acoustic insulation.

The flanges 22 also make it possible to provide an inside stop 30, which can be made in one piece with the profiles 4-7. Thus, the leaf 2 obtains a double stop, as in a traditional window.

The seating 27, together with the inside stop 30, also makes it possible to provide an ornamental frame 31, instead of the strip 26, on the inside of the glazing panel 1, of which is represented only a part in figure 1. As represented in figure 2, hook-shaped elements 32 can be provided to this end on the backside of the ornamental frame 31, with which the ornamental frame 31 can be pressed down in the seating 27, and behind the free edge of the inside stop 30.

According to a special aspect, the distance D between, on the one hand, the crosscut ends 24 and 25 of the glass plates 10-11, and on the other hand the crosscut outer side of the leaf, over the range B over which the leaf is countersunk in the window frame 3, is restricted to the thickness of one single wall of the profiles 4-7, possibly increased with a small space A between the ends 24-25 and the profile 4-7 concerned for possibly applying glue or such, and possibly increased with the thickness of a seating for a sealing or such, in this case the above-mentioned seating 29. It is clear that said distance D remains very limited in comparison to existing windows.

The profiles 4-7 are fixed to one another at the angles by means of corner connecting pieces 33 which, as is schematically represented in figure 4, can be fixed in the profiles 4-7, by means of clamping, gluing, screwing or in any other way whatsoever. In the case where screws 34 or such are used, openings 35 and 36 are preferably provided for these screws 34 in the profiles 4-7 and in the corner connecting pieces 33, whose axes have shifted slightly, so that the profiles which meet in an angle are automatically drawn together as the screws 34 are screwed in.

Between the mitres of the profiles 4-7 can be provided a glue joint which is vapour-tight.

As represented in the variant of figure 5, such a corner connecting piece 33 can be adjusted to the shape of the profiles 4-7.

Instead of using such a corner connecting piece 33, the profiles 4 and 7 can also be welded together. Moreover, the profiles 4-7 could be made solid, for example in synthetic material.

It is clear that the glazing panel 1, apart from the sliding fittings 12, can also be equipped with other fittings, such as for example truss frames 37.

The sliding fittings 12 themselves mainly consist of locks 38 which open into the outward directed wall 39 of the profiles 4-7.

As represented in the figures 2, 3 and 6, use can be made of profiles 4-7 with fitting grooves 13 which have profiled side walls 40 and 41, in which parts of the fittings can be fixed by means of clamping means 42. These clamping means 42 can have various shapes.

In the example of figure 6, use is made of an elastically expandable piece 43, which expands sideways as a screw 44 is screwed in it and which clutches behind ribs 45 and 46 in the side walls 40 and 41.

According to a variant, which is not represented in the figures, such an expandable piece 43 can also be replaced by a clip which can be clicked behind the ribs 45-46. The slanting planes 47-48 of the ribs 45-46 represented in the figures 2, 3 and 6 facilitate the application of such clips.

As represented in the figures 2, 3 and 6, the above-mentioned profiles 4-7, thanks to the above-mentioned fitting grooves 13, are particularly suitable for applying sliding fittings 12, in particular locks 38, which extend

lengthwise along the edges of the leaf 2.

Use can hereby be made of sliding fittings 12 with slidable, lamella-shaped connecting parts 49 which link several locking pins 50 and which are covered by means of masking moulds 51. The masking moulds 51 are countersunk between the fitting groove 13 and rest on stops 52-53 provided to this end in said groove 13. The masking moulds 51 are hereby held in place by means of the above-mentioned screws 44. Where the screws 44 are located, longitudinally directed grooves 54 are provided in the connecting parts 49, such that these connecting parts 49 can slide freely over a certain distance and are not hindered by the screws 44. Analogously, grooves 55 are provided in the masking moulds 51 which make it possible for the locking pins 50 to move to and fro. The locking pins 50 work in conjunction with locking parts 56 provided on the window frame 3, behind which they will either or not hook due to a shift.

As is shown in figure 2, the window handle 57 is mounted on the inside stop 30.

The lower fittings 12 are hereby controlled by a window handle 57 which is normally used for top fittings. The transmission of the movement of the window handle 57 onto the connecting parts 49 is carried out by means of slidable lip 58 which works in conjunction with a catch pin 59 mounted on the connecting part 49 concerned. The conversion of the rotation of the window handle 57 in a shift of the lip 58 is carried out by means of a transmission known as such which is provided in the handle support 60.

The traditional lock case for building in a handle case is hereby omitted. To the exception of a small groove in the inside stop 30 which forms a passage for the lip 58, no recesses must be provided in the profile 7.

The glazing panel 1 makes it possible for the window sealing 61 to fit directly against the glass. On the inside stop 30 can also be provided a sealing strip 62. Together with the strip 28 and the window sealing 61, said sealing strip 62 forms a multiple acoustic sealing.

The outer frame 3 which holds the window sealing 61 has a stop according to the invention of minimally 34 mm, which differs much from the existing profiles.

According to the main idea of the invention, of which an example is given in figures 7 and 8, the above-mentioned profiles 4-7 are combined with separate spacers 63 between the glass plates 10-11.

The spacers 63 preferably consist of profiles which are countersunk over a certain distance E between the glass plates 10-11. For these spacers 63, use can be made of hollow, rectangular profiles in which is provided an absorbing material 64 and whose inner side is connected via passages 65 to the free space 19 between the glass plates 10 and 11.

According to a special aspect of the invention, the spacers 63 and the profiles 4-7 are fixed between the glass plates 10-11 with different products. In particular, the spacers 63 will be connected to the glass plates 10-11 by means of a vapour-proof product 66, whereas the profiles 4-7 are connected to the glass plates 10-11 by means of a product 67 with a strong adhesive power. By making use of two different products, no compromises must be made between vapour-tightness and adhesive power, and a product 66 can be selected for the fastening of the spacers 63 which is optimally waterproof and vapour-proof, and which possibly adheres not so well, whereas a product 67 can be selected for the fastening of the profiles 4-7 which adheres optimally, but which does not necessarily need to be vapour-proof.

UV-resistant compositions are preferably used for the products 66-67 since, as opposed to a traditional window, these products are exposed to sunlight when the leaf 2 is opened.

With the fact that the spacers are "separate" is meant that the glazing panel 1 is substantially, and preferably completely, free of mechanical connections between the spacers 63 and the profiles 4-7, such that a possible deformation in the profiles 4-7 does not have a negative influence on the sealing which is ensured by the spacers 63.

As represented in figure 8, the distance F between the front of the fittings 12 on the one hand and the back of the back wall 68 on the other hand solely depends on the depth of the fitting groove 13, in other words this distance F is not larger than the distance which is strictly required to form the fitting groove 13. In this manner, the width of the profiles 4-7, measured in the plane of the panel, is restricted to a minimum.

Also, the basic structure of the profiles 4-7 is mainly single-walled in the embodiment of figures 7 and 8. The inside stop 30 can be hollow, however, and further can also be provided a duct-shaped cavity 69 for applying corner connecting pieces. In order to make sure that this cavity 69 does not have a negative effect on the above-mentioned distance F, in other words does not enlarge the above-mentioned width of the profiles 4-7, this cavity 69 is provided laterally next to the fitting groove 13.

Thus, the inside stop 30 is preferably hollow and is preferably connected at the angles by means of corner connecting pieces 70, as is schematically represented in figure 7.

Figures 7 and 8 are additional representations of how the sliding fittings 12 which were already described by means of figures 2 and 3 can be mounted in the fitting grooves 13. Figure 7 clearly shows how the above-mentioned lip 58 fits through a slot 71 which is provided in the inside stop 30.

As represented in figure 9, instead of the above-mentioned expandable piece 43 for fixing the fittings 12, use can also be made of fastening plates 72 which can clutch behind the ribs 45-46. These fastening plates 72 hereby have a shape which make it possible for said plates to be put in a first position X in the fitting groove 13, and which, by rotating them into a second position Y, can clutch behind the above-mentioned ribs 45-46.

Instead of making use of accessories, such as the expandable pieces 43 or the fastening plates 72, use

can also be made according to a variant of screws 44 or self-tappers which are screwed in the bottom of the fitting groove 13.

In relation to the foregoing, it should be noted that the use of built-in fittings 12 is up to 50% cheaper than top fittings. Moreover, such built-in fittings offer more possibilities, are more aesthetic and are better protected against dirt, since the masking moulds 51 which function as a front plate are fixed and moreover can be easily cleaned.

Preferably, use will be made of a standard fitting groove 13 which is fit for what are called Euro-fittings with a standardized width of 16 millimetre.

Since the above-mentioned fitting grooves 13 are provided along the entire contour of the leaf 2, the glazing panel 1 according to the invention can be easily equipped with sliding fittings 12 which, as is schematically represented in figure 10, continue along the angles. The connecting parts 49 hereby preferably consist of relatively rigid, lamella-shaped parts 49A for the straight parts and flexible, lamella-shaped parts 49B at the angles, which does not exclude the use of intermediate other elements, however.

As is indicated in figure 8, a free space G can be left between the crosscut side of the leaf 2 and the fixed window 3, which makes it possible to mount certain surface-mounted parts of the fittings in it, such as for example the link 73 which is represented in figure 10.

Figures 11 and 12 show another variant whereby the invention is applied in a window with two leaves 2. As is shown in figure 12, the stop 74 between the two leaves can hereby consist of a profile 75 which is fixed against the crosscut end of one of the two leaves 2, for example glued to it.

It should be noted that the invention is not limited to glazing panels 1 with two glass plates 10-11. Figure 13 shows an embodiment with a third glass plate 76, with respective spacers 77 and 78.

According to a special embodiment, which is schematically represented in figure 14, the glazing panel 1 has one or more spacers 63 which continue at one or more, and preferably at all angles of the panel, for example in a bent shape. Thus is excluded that mitres are formed in the angles which are difficult to seal.

Moreover, a profile is preferably used for the spacers 63 which extends in one piece over the entire contour, such that only one connection 79 must be sealed.

As is represented in figure 15, one or more thermal bridges 80 can be provided in the spacers 63.

In the figures 13, 14 and 15, the profiles 4-7 are not represented for clarity's sake.

It is clear that also other forms of profiles can be used for the glazing panel 1 of the invention.

Although the sliding fittings 12 are preferably countersunk such that they are situated at least partially between the glass plates 10-11, it is clear that this is not strictly necessary according to the invention.

Also, figure 16 shows a variant whereby the sliding fittings 12, the fitting groove 13 as well as the fastening means for the sliding fittings 12, in this case the fastening plates 72 and the screws 44, are situated outside the contour of the glass plates 10-11.

Figure 16 also shows that elastic spacers 81 can be provided between the glass plates 10-11 and the profiles 4-7, for example made of plastic, in particular EPDM. These spacers 81 avoid direct contact between the glass and the profiles 4-7, so as to prevent the glass from breaking during the installation.

In the profiles 4-7 are preferably provided vent openings 82, so that any vapour or air which is released from the adhesives due to temperature variations can escape. It is clear that such openings can be provided in all the above-mentioned profiles 4-7.

Figure 17 shows a variant whereby the sliding fittings 12 and the fitting groove 13 are situated outside the contour of the glass plates 10-11, but whereby the fastening means of the sliding fittings 12, in this case the screws 44, extend at least partially between the glass plates 10-11. The screws 44 are hereby screwed directly in the profiles 4-7. As is represented in figure 18, the profiles 4-7 can be provided with vent openings 83. The screws 44 do not necessarily need to clutch in the openings 83, for it is possible to use self-tappers which can be screwed anywhere in the profiles.

In this embodiment, the profiles 4-7 have a screw aperture 84 which makes it possible to easily screw the screws 44 in the profiles 4-7 and to fix corner pieces in them.

Figure 19 shows a variant in which the sliding fittings 12 and the fitting groove 13 are situated outside the contour of the glass plates 10-11, but in which the screw seatings and partially also the screws 44 are situated between the glass plates 10-11. The fitting groove 13 is situated outside the glass plates 10-11, but between the flanges 22 and 23.

Figure 20 shows a variant in which the sliding fittings 12 are situated outside the contour of the glass plates 10-11, but in which the screw seatings, in particular the perforation openings 83, the screws 44 and the fitting groove 13 are situated at least partially between the glass plates 10-11.

The screw aperture 84 and the fitting groove 13 do not necessarily need to be symmetrically opposed and can be shifted slightly sideways in relation to one another.

Figures 21 and 22 show a variant in which parallel standing ribs 85-86 are placed on the bottom of the fitting groove 13 in between which self-tapping screws 44 can be fixed.

Finally, it should be noted that by mutually fixing the glass plates 10 and 11 to one another by means of a window profile provided in between, a larger air cavity is obtained, which ensures a better thermal insulation.

It is clear that the invention can be used both for normal glazing and special glazing, such as a glazing of laminated or toughened glass, glass with a metal coat-

ing, glass in between which is provided a filling with a special gas, etc.

The spacer 63 does not necessarily need to be made of a hollow profile or such. Figure 23 schematically shows a variant in which the spacer 63 consists of a strip, made of a synthetic mass 87 in which is embedded an element 88. The synthetic mass 87 contains absorbent granules 89 or such. Such a spacer 63 is applied between two glass plates 10 and 11 by heating the strip and, as represented in figure 23, by pressing the glass plates 10-11 against it at a distance from one another which depends on the above-mentioned element 88.

In case the profiles 4-7 are made of metal, in particular aluminium, a protective foil will be applied at least on the inside of the fitting groove 13, for example made of synthetic material, in order to avoid disadvantageous electrolysis effects.

The present invention is by no means limited to the embodiments which are described as an example and which are represented in the accompanying drawings; on the contrary, such a glazing panel can be made in all sorts of forms and dimensions while still remaining within the scope of the invention.

Claims

1. Glazing panel, consisting of a frame (8) with an insulating glazing (9) with at least two glass plates (10-11), characterized in that this glazing panel (1) is provided with, on the one hand, one or more spacers (63, 77-78) extending between the adjacent glass plates (10-11) which ensure the sealing of the space (19) between the glass plates (10-11), and which are countersunk over a certain distance (E) between the edges of the glass plates (10-11), and, on the other hand, separate profiles (4-7), forming said frame (8), which are situated at least partially between the glass plates (10-11) and which are provided with a fitting groove (13) in which are provided lamella-shaped sliding fittings (12) which continue over one or more corners of the panel.

2. Glazing panel according to claim 1, characterized in that the fastening means of the sliding fittings (12) are integrated at least partially between the glass plates (10-11).

3. Glazing panel according to claim 1 or 2, characterized in that the profiles (4-7) have screw apertures (84) and in that these screw apertures (84) are situated at least partially between the glass plates (10-11).

4. Glazing panel according to any of the preceding claims, characterized in that the fitting grooves (13) are situated at least partially between the glass plates (10-11).

5. Glazing panel according to any of the preceding claims, characterized in that the sliding fittings (12) are countersunk at least partially between the glass plates (10-11).

6. Glazing panel according to any of the preceding claims, characterized in that the spacers (63) and the profiles (4-7) are attached to the glass plates (10-11) with different products (66-67), in particular are glued to them, whereby for the fastening of the spacers (63) a product (66) is selected with optimal qualities as far as water-tightness and vapour-tightness are concerned, and whereby for the fastening of the profiles (4-7), a product (67) is selected with optimal qualities as far as adhesive power is concerned.

7. Glazing panel according to any of the preceding claims, characterized in that it has one or more spacers (63) which continue at one or more angles.

8. Glazing panel according to claim 7, characterized in that use is made of a spacer (63) which consists of a profile which extends continuously along the contour, such that only one connection (79) to be sealed is formed.

9. Glazing panel according to any of the preceding claims, characterized in that the distance (F) between the front side of the sliding fittings (12) on the one hand and the back side of the back wall (68) of the above-mentioned profiles (4-7) on the other hand solely depends on the depth of the fitting groove (13).

10. Glazing panel according to any of the preceding claims, characterized in that between the edges (24-25) of the glass plates (10-11) and the profiles (4-7) are provided elastic spacers (81).

11. Glazing panel according to any of the preceding claims, characterized in that the above-mentioned profiles (4-7) have a single-walled basic structure.

12. Glazing panel according to any of the preceding claims, characterized in that the profiles (4-7) are provided with vent openings (82-83).

13. Glazing panel according to any of the preceding claims, characterized in that the fitting grooves (13) are provided with ribs (45-46) provided on the side walls (40-41) behind which the sliding fittings (12) are fixed and/or with parallel ribs (85-86) in between which fitting grooves (44) can clutch.

14. Glazing panel according to any of claims 1 to 5, characterized in that the above-mentioned profiles (4-7) have a cavity (17) which is connected to the

free space (19) between the glass plates (10-11), whereby an absorbent product (18) is provided in this cavity (17).

15. Glazing panel according to any of the preceding claims, characterized in that a cavity (69) is formed in the profiles (4-7) concerned, laterally along the fitting groove (13), and in that corner connecting pieces are provided in these cavities (69) in the angles of the glazing panel (1).

16. Glazing panel according to any of the preceding claims, characterized in that the above-mentioned profiles (4-7) also form an inside stop (30); in that this inside stop (30) is hollow; and in that the profiles (4-7) at the angles of the glazing panel (1) are at least connected by means of corner connecting pieces (7) which are provided in the hollow inside stop (30).

17. Glazing panel according to any of the preceding claims, characterized in that the profiles (4-7) are provided with a glass edge protection and/or a window sealing.

18. Glazing panel according to any of the preceding claims, characterized in that the glazing (9) has three or more glass plates (10-76-11), whereby the outer glass plates are attached to one another by means of the above-mentioned profiles (4-7), whereas the intermediate glass plate is fixed, the glass plates (76) are fixed respectively between the outer glass plates (10-11) by means of spacers (77-78).

19. Glazing panel according to any of the preceding claims, characterized in that the profiles (4-7) have an inside stop (30); in that the glazing panel (1) has at least one window handle (57) to control the sliding fittings (12); in that the transmission of the movement of the window handle (57) on the sliding fittings (12) is carried out by means of a slidable lip (58) which cooperates with a catch pin (59) provided on the sliding fittings (12); in that the window handle (57) and possibly the accompanying handle support (60) is mounted on top of the inside stop (30); and in that at the height of the window handle (57) is mainly provided only a passage in the shape of a groove (71) for the above-mentioned lip (58).

Patentansprüche

1. Verglasungstafel, bestehend aus einem Rahmen (8) mit einer Isolierverglasung (9) mit zumindest zwei Glasplatten (10-11), dadurch gekennzeichnet, daß diese Verglasungstafel (1), einerseits, mit einem oder mehreren Abstandshaltern (63, 77-78) versehen ist, die sich zwischen den benachbarten Glasplatten (10-11) erstrecken, die die Abdichtung des Raums (19) zwischen den Glasplatten sicherstellen und die über einen bestimmten Abstand (E) zwischen den Kanten der Glasplatten (10-11) eingelassen sind, und, andererseits, mit separaten Profilen (4-7), die besagten Rahmen (8) bilden, die sich zumindest teilweise zwischen den Glasplatten (10-11) befinden und die mit einer Beschlagnut (13) versehen sind, in der lamellenförmige Schiebebeschläge (12) vorgesehen sind, die über eine oder mehrere Ecke der Tafel durchlaufen.

2. Verglasungstafel gemäß Anspruch 1, dadurch gekennzeichnet, daß die Befestigungsmittel der Schiebebeschläge (12) zumindest teilweise zwischen den Glasplatten (10-11) integriert sind.

3. Verglasungstafel gemäß Anspruch 1 oder 2, dadurch gekennzeichnet, daß die Profile (4-7) Schraubenöffnungen (84) aufweisen und dadurch, daß diese Schraubenöffnungen (84) sich zumindest teilweise zwischen den Glasplatten (10-11) befinden.

4. Verglasungstafel gemäß einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß die Beschlagnuten (13) sich zumindest teilweise zwischen den Glasplatten (10-11) befinden.

5. Verglasungstafel gemäß einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß die Schiebebeschläge (12) zumindest teilweise zwischen den Glasplatten (10-11) eingelassen sind.

6. Verglasungstafel gemäß einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß die Abstandshalter (63) und die Profile (4-7) mit verschiedenen Mitteln (66-67) an den Glasplatten (10-11) befestigt sind, insbesondere darangeklebt sind, wobei zur Befestigung der Abstandshalter (63) ein Mittel (66) mit optimalen Qualitäten, was Wasserdichtheit und Dampfdichtheit betrifft, gewählt wird, und wobei zur Befestigung der Profile (4-7) ein Mittel (67) mit optimalen Qualitäten, was die Adhäsionskraft betrifft, gewählt wird.

7. Verglasungstafel gemäß einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß sie einen oder mehrere Abstandshalter (63) aufweist, die an einer oder mehr Ecken durchlaufen.

8. Verglasungstafel gemäß Anspruch 7, dadurch gekennzeichnet, daß ein Abstandshalter (63) verwendet wird, der aus einem Profil besteht, das sich durchlaufend entlang des Umfangs erstreckt, so daß nur eine abzudichtende Verbindung (79) geformt wird.

9. Verglasungstafel gemäß einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß der Abstand (F) zwischen der Vorderseite der Schiebebeschläge (12) einerseits und der Rückseite der Rückwand (68) der obenerwähnten Profile (4-7) andererseits nur durch die Tiefe der Beschlagnut (13) bestimmt wird.

10. Verglasungstafel gemäß einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß zwischen den Kanten (24-25) der Glasplatten (10-11) und den Profilen (4-7) elastische Abstandshalter (81) vorgesehen sind.

11. Verglasungstafel gemäß einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß die obenerwähnten Profile (4-7) eine einwandige Basisstruktur aufweisen.

12. Verglasungstafel gemäß einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß die Profile (4-7) mit Lüftungsöffnungen (82-83) versehen sind.

13. Verglasungstafel gemäß einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß die Beschlagnuten (13) mit an den Seitenwänden (40-41) angebrachten Rippen (45-46) versehen sind, hinter denen die Schiebebeschläge (12) befestigt werden, und/oder mit parallelen Rippen (85-86), zwischen denen Beschlagnuten (44) eingreifen können.

14. Verglasungstafel gemäß einem der Ansprüche 1 bis 5, dadurch gekennzeichnet, daß die obenerwähnten Profile (4-7) einen Hohlraum (17) aufweisen, der mit dem freien Raum (19) zwischen den Glasplatten (10-11) in Verbindung steht, wobei ein absorbierendes Mittel (18) in diesem Hohlraum (17) vorgesehen ist.

15. Verglasungstafel gemäß einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß ein Hohlraum (69) in den betreffenden Profilen (4-7) gebildet ist, seitlich entlang der Beschlagnut (13), und dadurch, daß Eckverbindungsstücke in diesen Hohlräumen (69) in den Ecken der Verglasungstafel (1) angebracht sind.

16. Verglasungstafel gemäß einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß die obenerwähnten Profile (4-7) auch einen Innenanschlag (30) bilden; dadurch, daß dieser Innenanschlag (30) hohl ist; und dadurch, daß die Profile (4-7) an den Ecken der Verglasungstafel (1) zumindest mittels Eckverbindungsstücken (70), die in dem hohlen Innenanschlag (30) vorgesehen sind, verbunden sind.

17. Verglasungstafel gemäß einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß die Profile (4-7) mit einem Glaskantenschutz und/oder einer Fensterdichtung versehen sind.

18. Verglasungstafel gemäß einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß die Verglasung (9) drei oder mehr Glasplatten (10-76-11) aufweist, wobei die äußeren Glasplatten mittels der obenerwähnten Profile (4-7) aneinander befestigt sind, während die dazwischen befindliche Glasplatte, beziehungsweise die Glasplatten (76), mittels Abstandshaltern (77-78) zwischen den äußeren Glasplatten (10-11) montiert ist, bzw. montiert sind.

19. Verglasungstafel gemäß einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß die Profile (4-7) einen Innenanschlag (30) aufweisen; dadurch, daß die Verglasungstafel (19) zumindest einen Fenstergriff (57) zur Bedienung der Schiebebeschläge (12) umfaßt; dadurch, daß die Übertragung der Bewegung des Fenstergriffs (57) auf die Schiebebeschläge (12) mittels einer verschiebbaren Lippe (58) ausgeführt wird, die mit einem auf den Schiebebeschlägen (12) vorgesehenen Mitnehmerzapfen (59) zusammenwirkt; dadurch, daß der Fenstergriff (57) und eventuell die zugehörige Griffstütze (60) auf dem Innenanschlag (30) montiert sind; und dadurch, daß, in Höhe des Fenstergriffs (57), hauptsächlich nur ein Durchgang in Form einer Nut (71) für die obenerwähnte Lippe (58) vorgesehen ist.

Revendications

1. Panneau de vitrage constitué d'un encadrement (8) comportant un vitrage isolant (9) comprenant au moins deux pans de verre (10-11), caractérisé en ce que ce panneau de vitrage (1) est muni, d'une part, d'un ou de plusieurs écarteurs (63, 77-78) s'étendant entre les pans de verre adjacents (10-11), qui garantissent l'étanchéité de l'espace (19) entre les pans de verre (10-11) et qui sont noyés sur une certaine distance (E) entre les bords des pans de verre (10-11) et, d'autre part, de profilés séparés (4-7) formant ledit encadrement (8), qui sont situés au moins en partie entre les pans de verre (10-11) et qui sont munis d'une rainure de raccordement (13) dans laquelle viennent s'insérer des raccords coulissants lamelliformes (12) qui se prolongent au-delà d'un ou de plusieurs coins du panneau.

2. Panneau de vitrage selon la revendication 1, caractérisé en ce que les moyens de fixation des raccords coulissants (12) sont intégrés au moins en partie entre les pans de verre (10-11).

3. Panneau de vitrage selon la revendication 1 ou 2, caractérisé en ce que les profilés (4-7) possèdent des orifices taraudés (84) et en ce que ces orifices taraudés (84) sont situés au moins en partie entre les pans de verre (10-11).

4. Panneau de vitrage selon l'une quelconque des revendications précédentes, caractérisé en ce que les rainures de raccordement (13) sont situées au moins en partie entre les pans de verre (10-11).

5. Panneau de vitrage selon l'une quelconque des revendications précédentes, caractérisé en ce que les raccords coulissants (12) sont noyés au moins en partie entre les pans de verre (10-11).

6. Panneau de vitrage selon l'une quelconque des revendications précédentes, caractérisé en ce que les écarteurs (63) et les profilés (4-7) sont fixés aux pans de verre (10-11) à l'aide de différents produits (66-67), en particulier sont collés à ces derniers, par lequel, pour la fixation des écarteurs (63), on choisit un produit (66) possédant des qualités optimales en ce qui concerne l'étanchéité à l'eau et l'étanchéité à la vapeur, et par lequel, pour la fixation des profilés (4-7), on choisit un produit (67) possédant des qualités optimales en ce qui concerne son pouvoir adhésif.

7. Panneau de vitrage selon l'une quelconque des revendications précédentes, caractérisé en ce qu'il comporte un ou plusieurs écarteurs (63) qui se prolongent à un ou plusieurs angles.

8. Panneau de vitrage selon la revendication 7, caractérisé en ce qu'on fait usage d'un écarteur (63) qui est constitué d'un profilé qui s'étend en continu le long du contour, si bien que l'on obtient une seule connexion (79) qui doit être étanchée.

9. Panneau de vitrage selon l'une quelconque des revendications précédentes, caractérisé en ce que la distance (F) entre le côté frontal des raccords coulissants (12) d'une part, et le côté dorsal de la paroi dorsale (68) des profilés (4-7) susmentionnés d'autre part, dépend seulement de la profondeur de la rainure de raccordement (13).

10. Panneau de vitrage selon l'une quelconque des revendications précédentes, caractérisé en ce qu'entre les bords (24-25) des pans de verre (10-11) et des profilés (4-7), on prévoit des écarteurs élastiques (81).

11. Panneau de vitrage selon l'une quelconque des revendications précédentes, caractérisé en ce que les profilés (4-7) susmentionnés possèdent une structure de base à paroi unique.

12. Panneau de vitrage selon l'une quelconque des revendications précédentes, caractérisé en ce que les profilés (4-7) sont munis d'ouvertures de ventilation (82-83).

13. Panneau de vitrage selon l'une quelconque des revendications précédentes, caractérisé en ce que les rainures de raccordement (13) sont munies de nervures (45-46) prévues sur les parois latérales (40-41) derrière lesquelles sont fixés les raccords coulissants (12) et/ou de nervures parallèles (85-86) entre lesquelles peuvent venir s'accoupler des rainures de raccordement (44).

14. Panneau de vitrage selon l'une quelconque des revendications 1 à 5, caractérisé en ce que les profilés (4-7) susmentionnés possèdent une cavité (17) qui est reliée à l'espace libre (19) ménagé entre les pans de verre (10-11), un produit absorbant (18) étant prévu dans cette cavité (17).

15. Panneau de vitrage selon l'une quelconque des revendications précédentes, caractérisé en ce qu'on forme une cavité (69) dans les profilés (4-7) concernés, latéralement le long de la rainure de raccordement (13), et en ce qu'on prévoit des pièces de raccordement de coins dans ces cavités (69) dans les angles du panneau de vitrage (1).

16. Panneau de vitrage selon l'une quelconque des revendications précédentes, caractérisé en ce que les profilés (4-7) susmentionnés forment également un arrêt interne (30); en ce que cet arrêt interne (30) est creux; et en ce que les profilés (4-7) aux angles du panneau de vitrage (1) sont au moins reliés à l'aide de pièces de raccordement de coins (7) qui sont prévues dans l'arrêt interne creux (30).

17. Panneau de vitrage selon l'une quelconque des revendications précédentes, caractérisé en ce que les profilés (4-7) sont munis d'une protection aux bords du verre et/ou d'une étanchéité pour des fenêtres.

18. Panneau de vitrage selon l'une quelconque des revendications précédentes, caractérisé en ce que le vitrage (9) comporte trois pans de verre ou plus (10-76-11), les pans de verre externes étant fixés l'un à l'autre au moyen des profilés (4-7) susmentionnés, tandis que le pan de verre intermédiaire est fixe, les pans de verre (76) étant fixés respectivement entre les pans de verre externes (10-11) au moyen d'écarteurs (77-78).

19. Panneau de vitrage selon l'une quelconque des revendications précédentes, caractérisé en ce que les profilés (4-7) comportent un arrêt interne (30); en ce que le panneau de vitrage (1) comporte au

moins une poignée de fenêtre (57) pour commander les raccords coulissants (12); en ce que la transmission du mouvement de la poignée de fenêtre (57) aux raccords coulissants (12) est réalisée au moyen d'une lèvre coulissante (58) qui coopère avec une broche de verrouillage (59) prévue sur les raccords coulissants (12); en ce que la poignée de fenêtre (57) et éventuellement le support de poignée (60) qui l'accompagne sont montés par-dessus l'arrêt interne (30); et en ce que, à hauteur de la poignée de fenêtre (57), on prévoit principalement un seul passage sous la forme d'une rainure (71) pour la lèvre (58) susmentionnée.

Fig.1

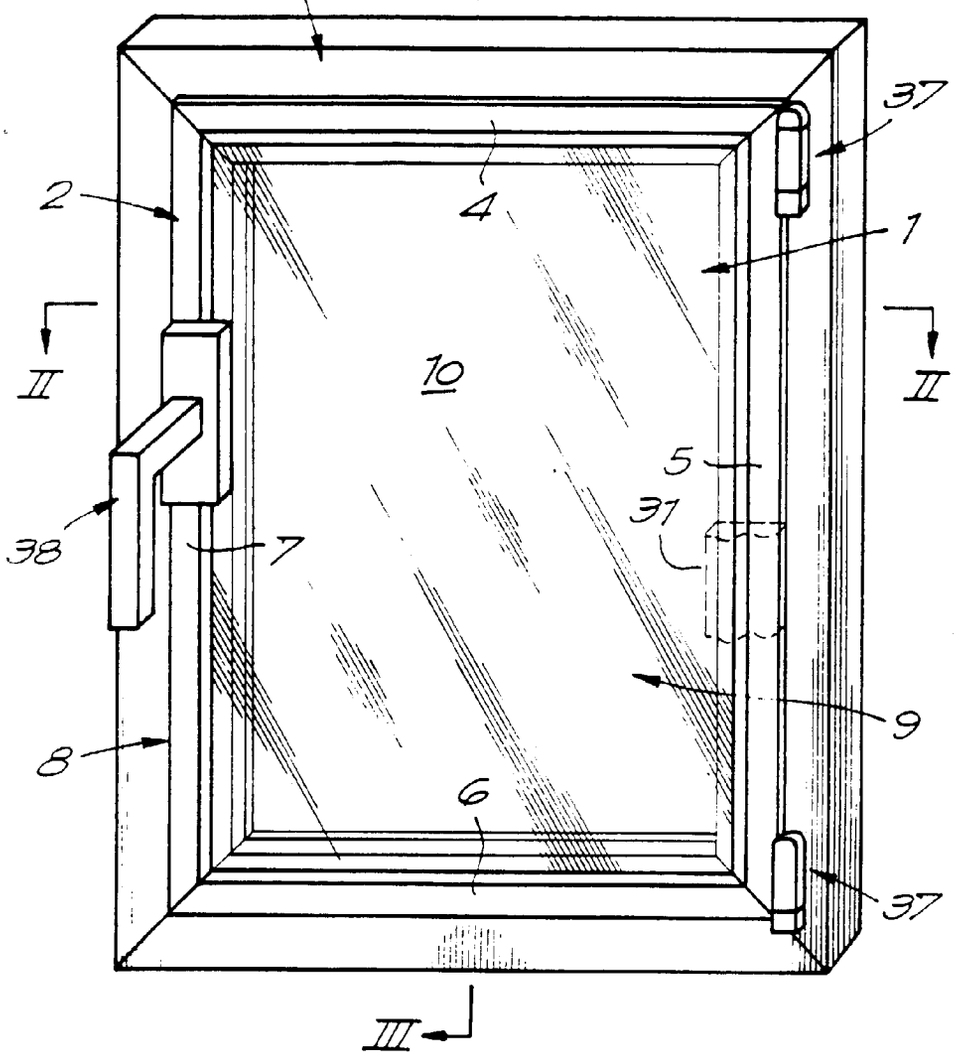


Fig.4

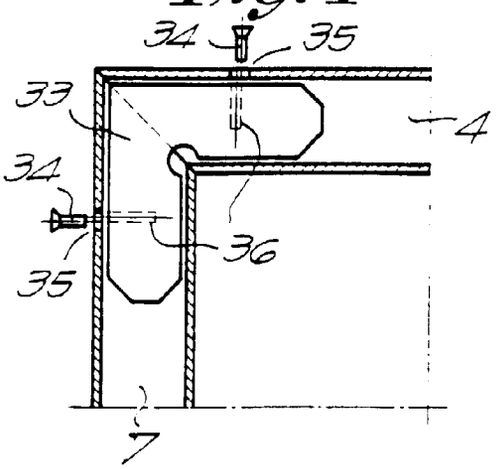
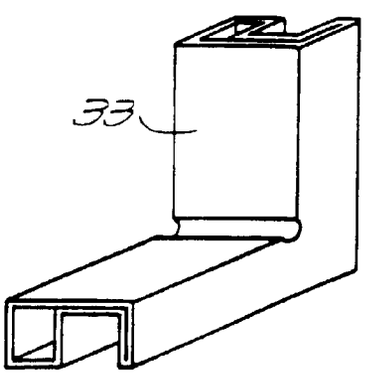


Fig.5



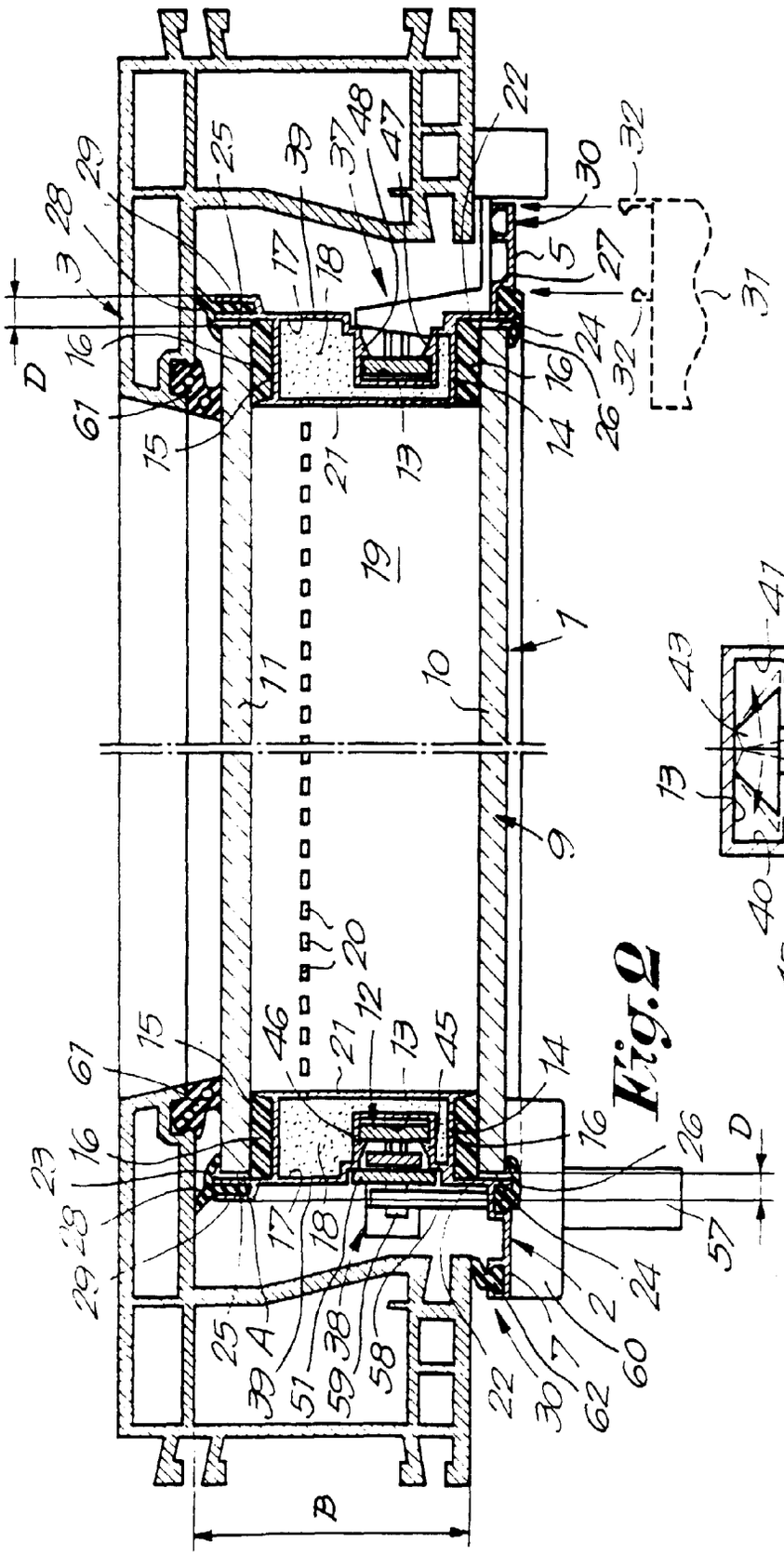


Fig.2

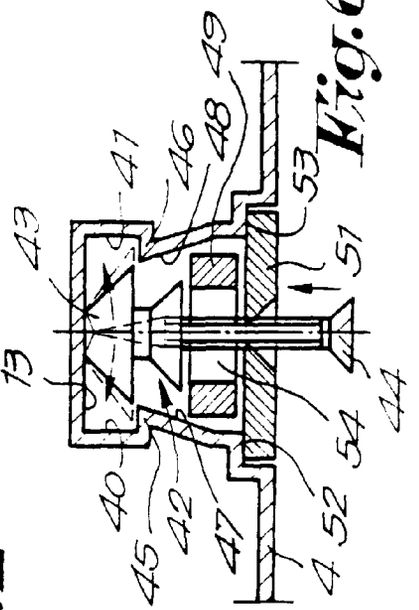


Fig.6

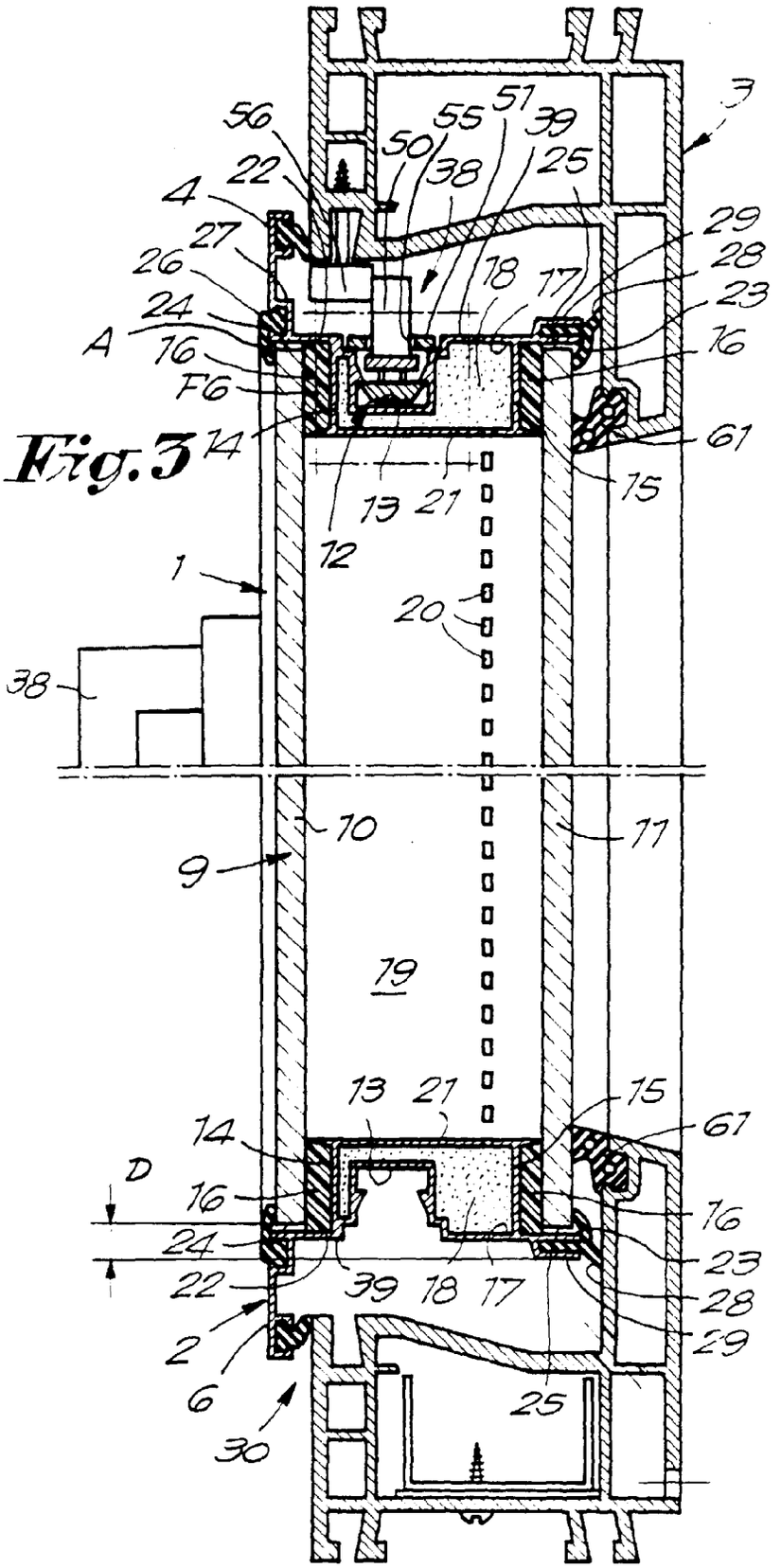

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Fig. 3

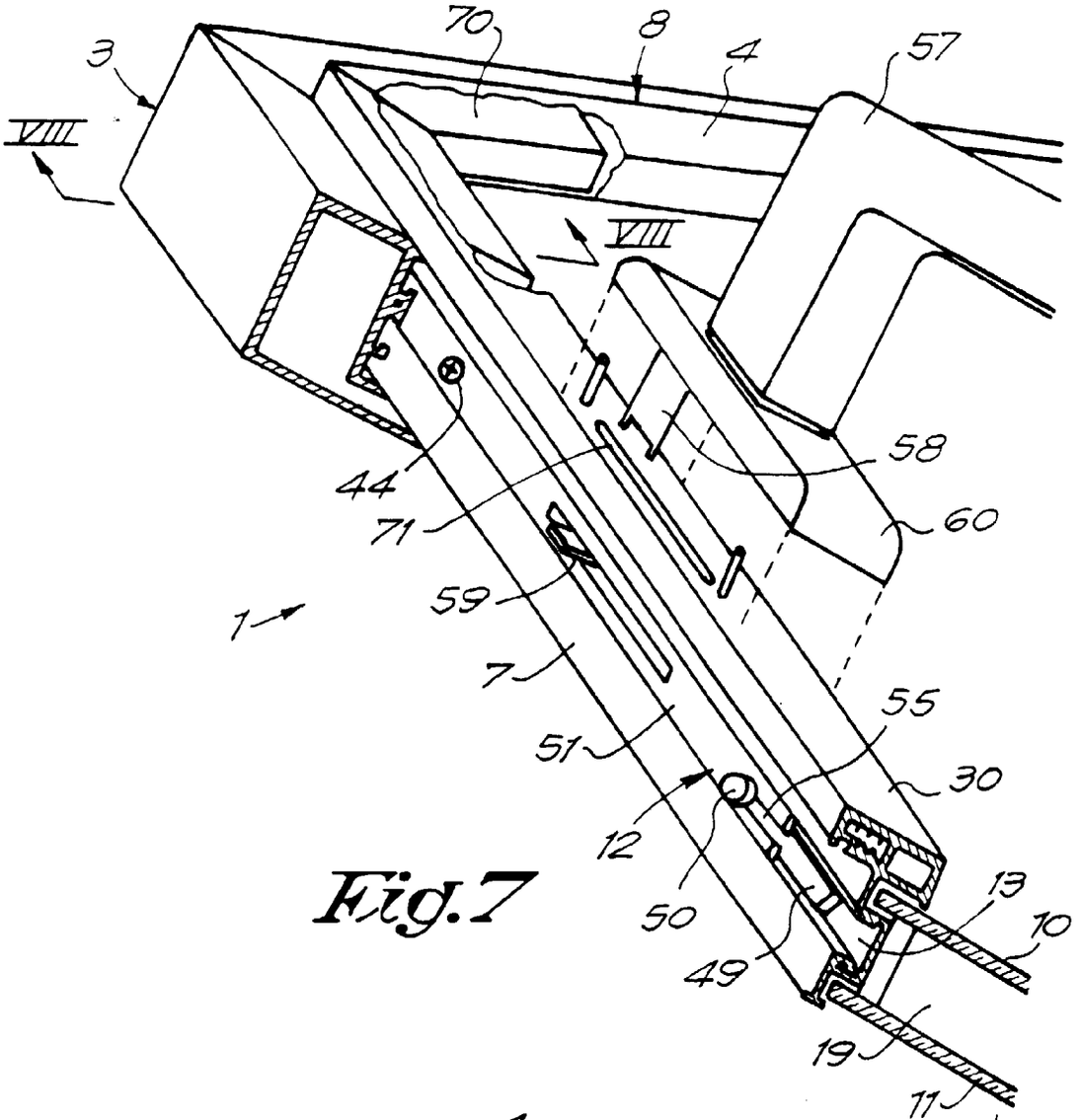


Fig.7

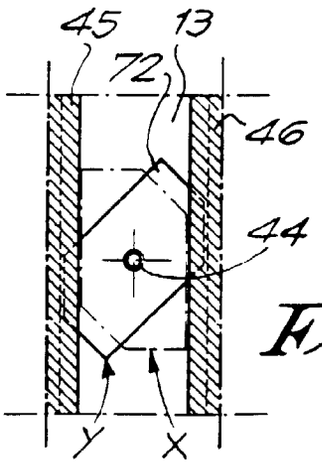


Fig.9

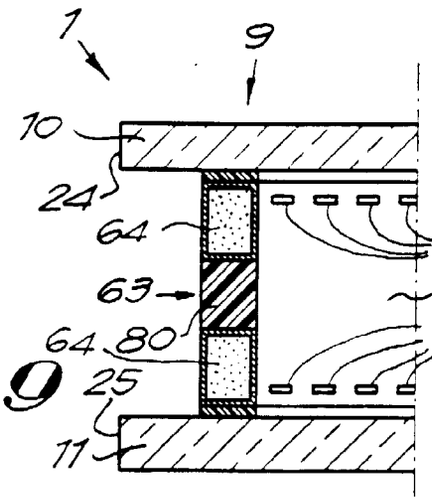


Fig.15

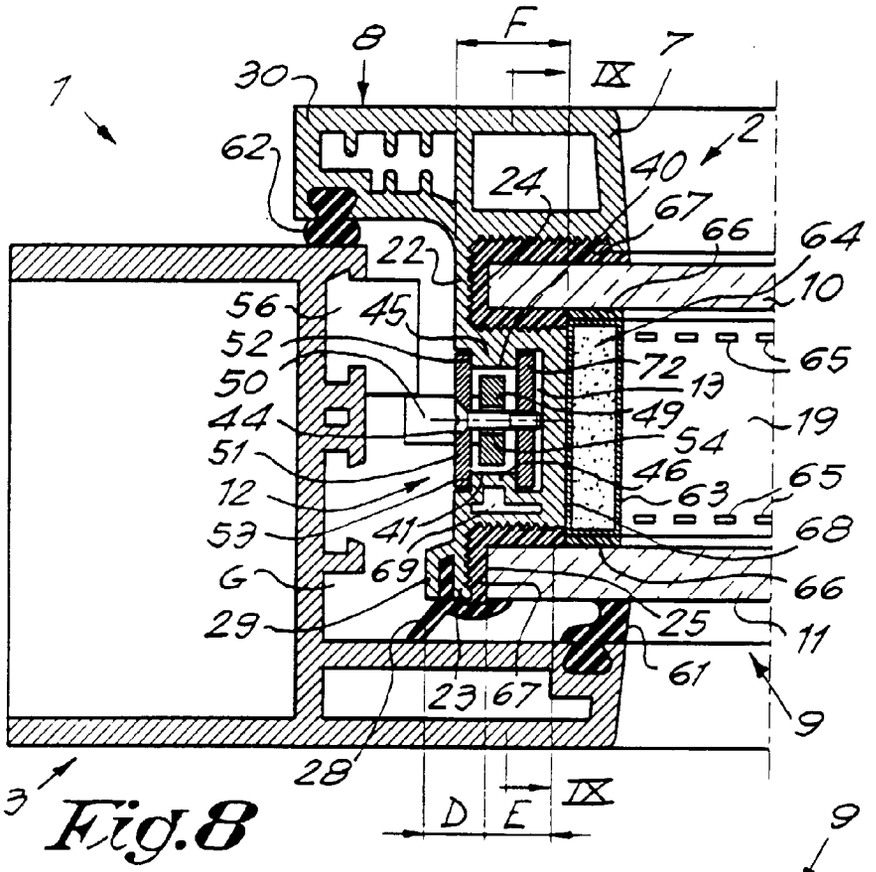


Fig.8

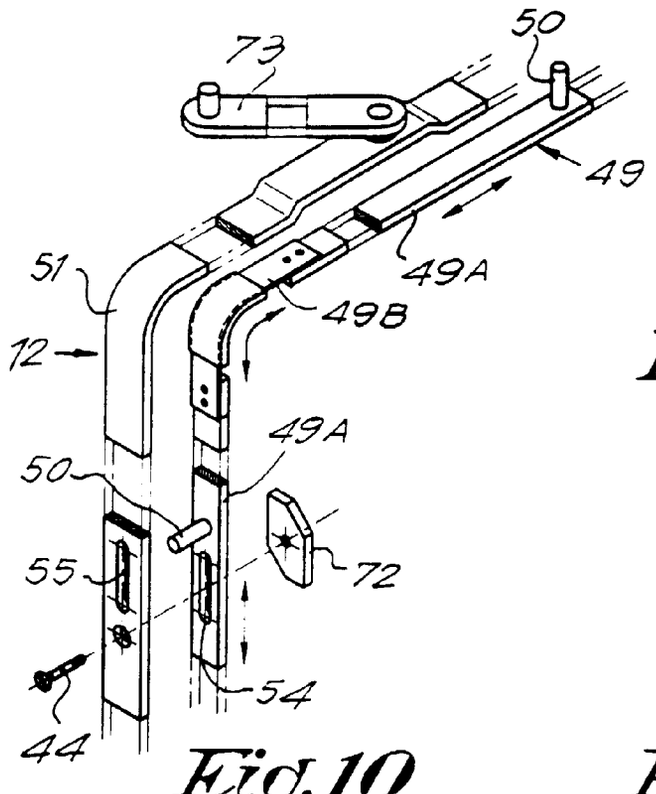


Fig.10

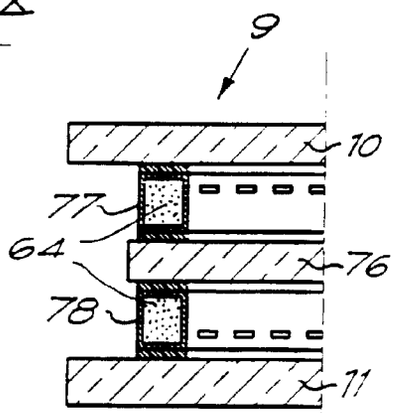
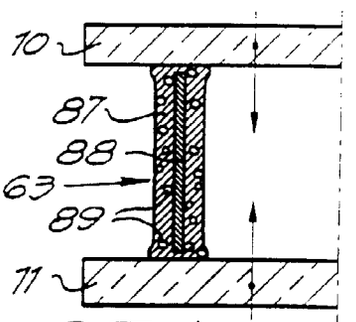


Fig.13



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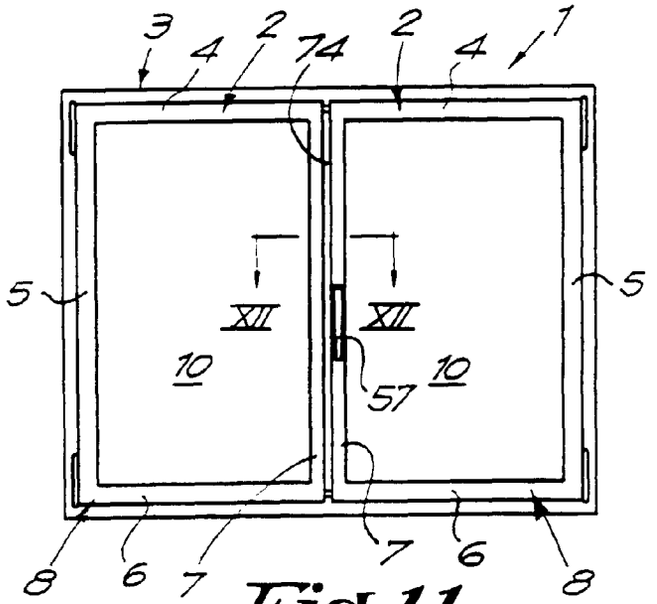

Fig.11

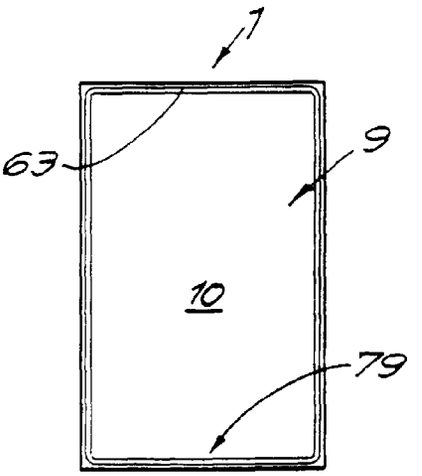

Fig.14

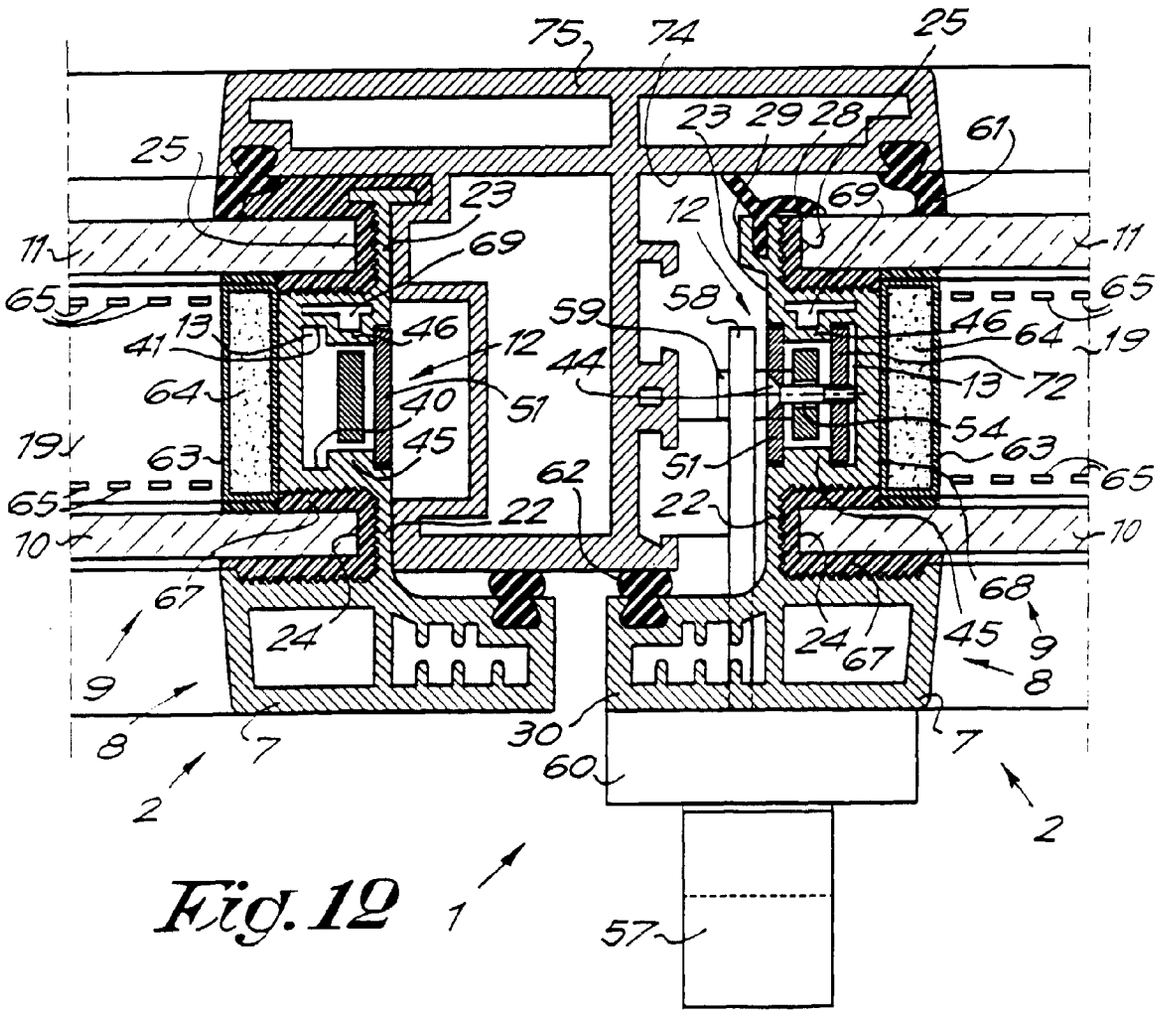

Fig.12

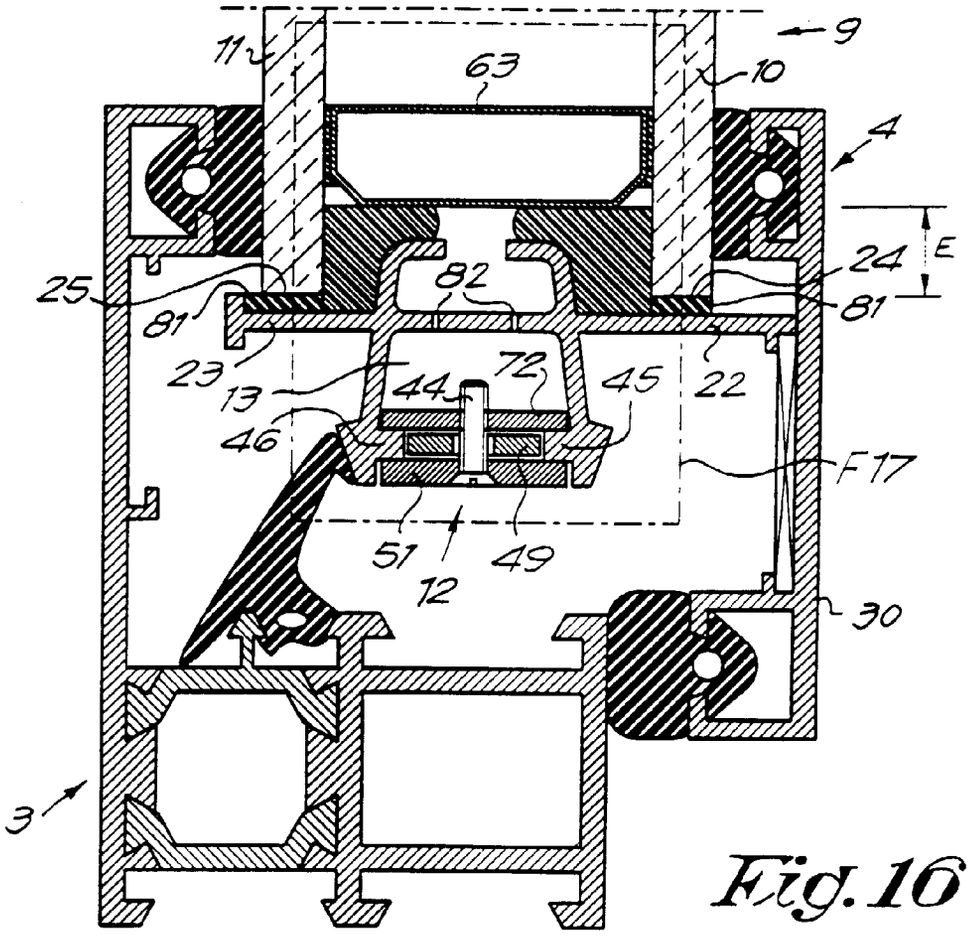

Fig.16

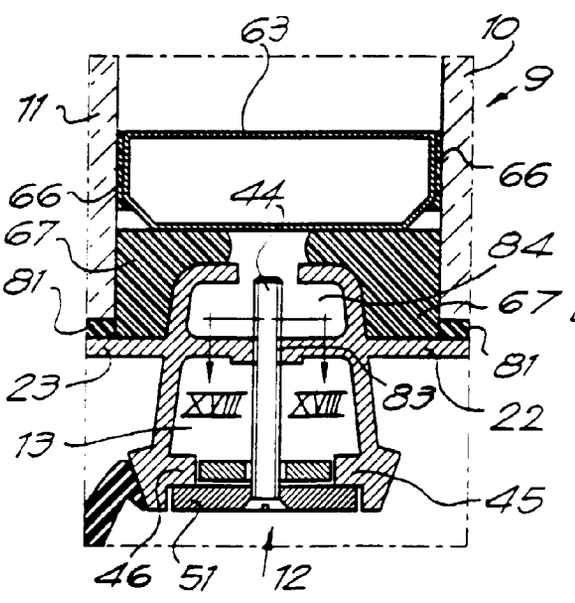

Fig.17

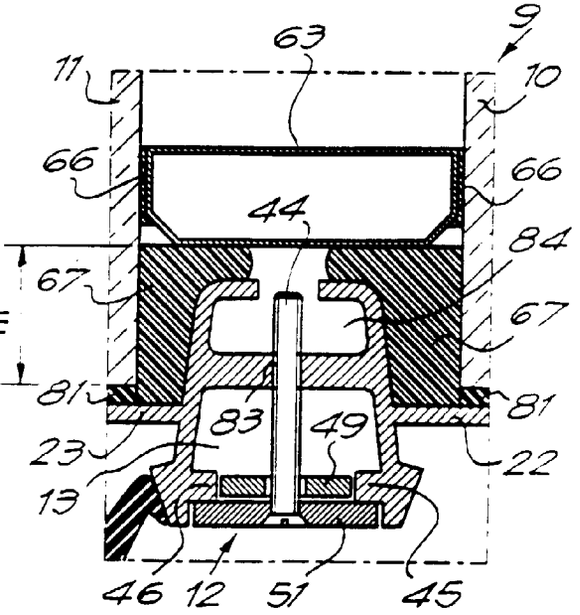

Fig.19

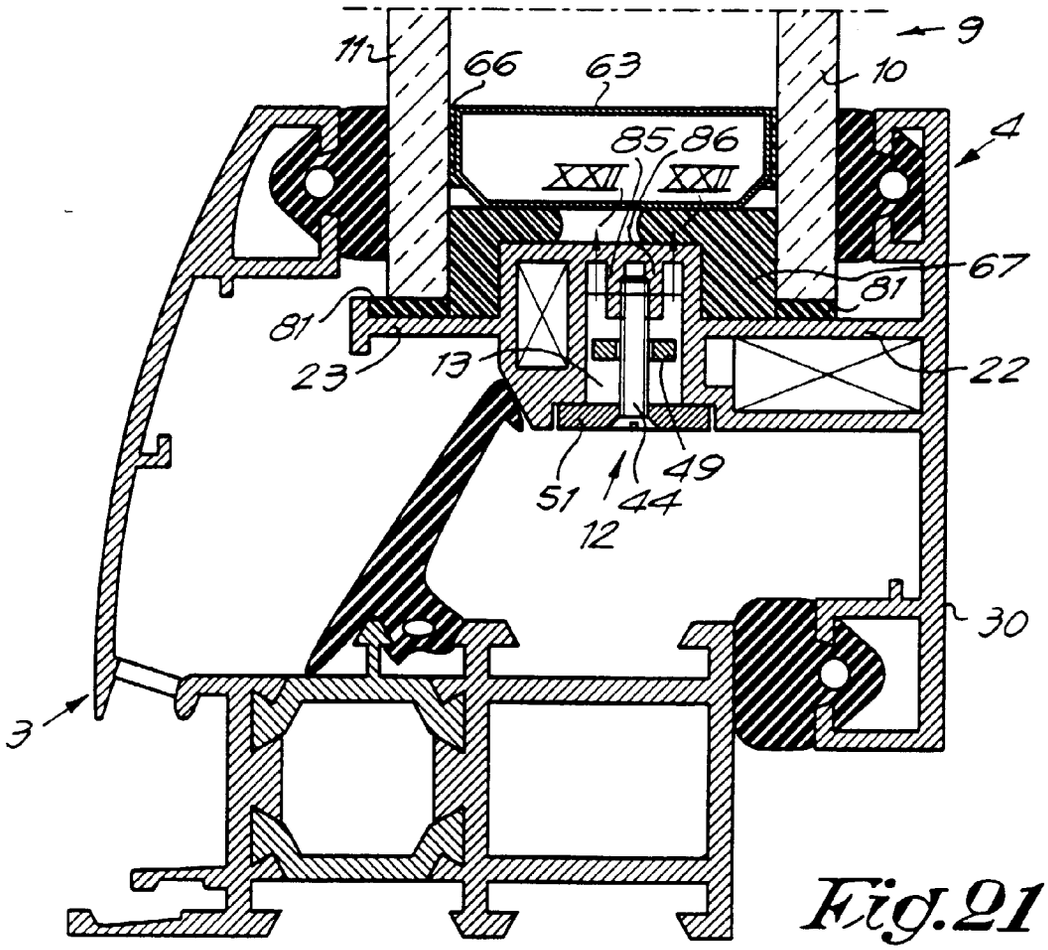

Fig.21

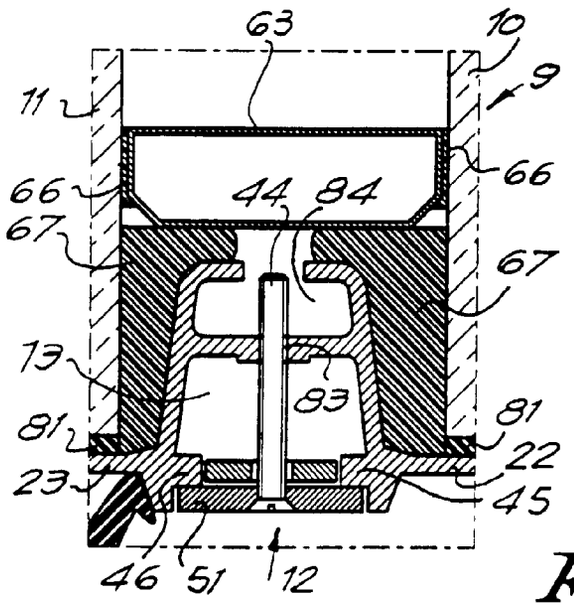

Fig.20

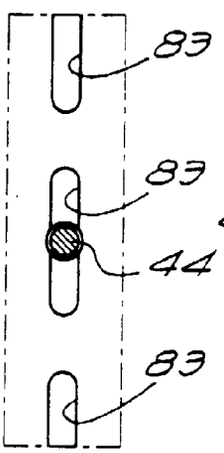

Fig.18

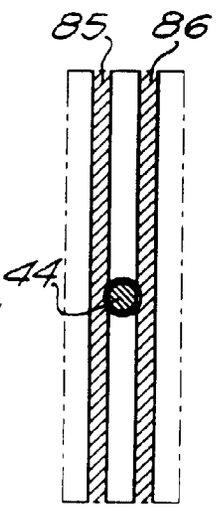

Fig.22