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(54) Shower enclosures.

(57) A first channel-shaped elongate member is secured to a wall, which may not be vertical, and a second elongate member incorporating a part-circular door post 3 is secured within the first member by pinch bolts 29 after adjustment to vertical. The door 8 rotates on a pivot rod 4 inside the door post and includes part-circular walls which rotate inside the post. The walls contact abutment surfaces inside the post to define the limits of pivotal movement of the door 8. The lower edge of the door carries a sealing strip which flexibly extends into the door post and is secured thereto by a headed pin 16.

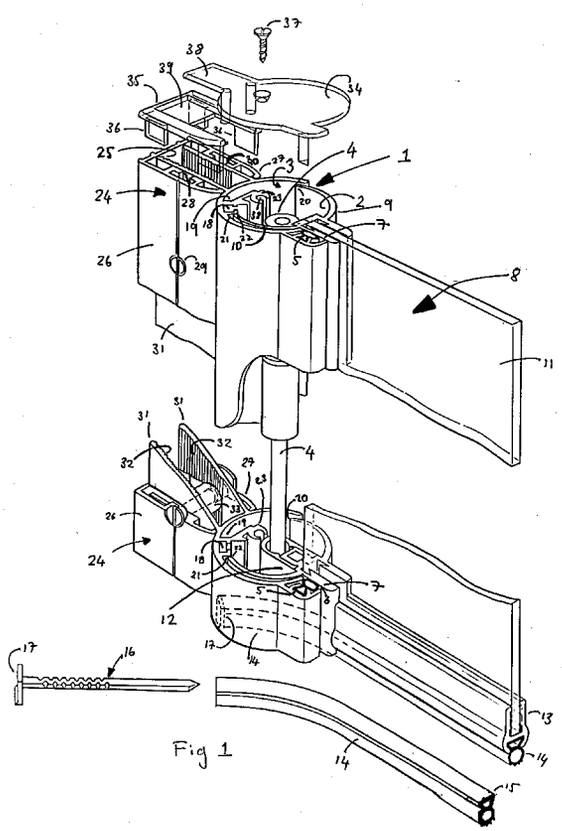

Fig 1

EP 0 682 905 A1

TECHNICAL FIELD OF THE INVENTION

This invention relates to shower enclosures.

BACKGROUND

A known shower cubicle comprises a fixed portion and a door hinged at one upright edge to the fixed portion, the fixed portion including a surface disposed beneath the door, in which a bottom edge of the door is provided with a flexible sealing strip secured to the door and which makes sealing contact with said surface along its length.

An aim of the present invention may be viewed as being to reduce water leakage from such a shower cubicle.

SUMMARY OF THE INVENTION

The present invention proposes that the sealing strip extends beyond said hinged edge of the door and is secured to said fixed portion of the cubicle.

The invention also provides a shower cubicle for installation against a fixed upright surface, comprising a first elongate member for attachment to said fixed surface, a second elongate member extending generally parallel alongside said first member, the second elongate member comprising a wall which overlies a wall of the first elongate member such that the two members can be adjusted relative to each other in a direction which is transverse to their longitudinal directions, and fastener means arranged for connecting together said overlying walls of said first and second members in an adjusted position.

Preferably a snap-on cover extends along the length of the first and second members to cover said fastener means. There are preferably two snap-on covers. Preferably the covers are transversely curved to lie substantially on a common circle.

Preferably the fastener means are slidable in transverse slots in at least one of said elongate members.

Preferably the first elongate member is channel-shaped.

Preferably the channel-shaped first member receives part of the second member.

Preferably the fastener means are arranged to pinch the channel-shaped first member to grip the second member.

Preferably the second member comprises a pair of substantially parallel walls, and the fastener means extend through respective compression tubes disposed between said walls of the second member.

Preferably the said walls of the second member have roughened facing surfaces.

Preferably the fastener means comprise bolts and nuts.

Preferably the second member comprises a door post.

Preferably the second elongate member is shaped to receive a door seal for making sealing contact with the free edge of a door.

The shower cubicle preferably includes a door having a pivot limb which extends into a door post and is pivotally mounted on a pivot rod extending axially within the door post.

Preferably the door post is of part-circular transverse section.

Preferably the door includes a part-circular closure wall which is located inside the door post disposed adjacent to the part-circular wall of the post.

Preferably the circumferentially opposed ends of the closure wall contact respective abutments to define the range of hingeable movement of the door.

Preferably the closure wall is formed in two parts which are secured together and which form two parts of said pivot limb.

Preferably said two parts include flanges between which a glass door panel is held.

Preferably the door post includes an external channel containing a sealing strip which presses against the door when the door is closed.

Preferably the upper ends of the first and second members are covered by a cap.

Preferably the cap also covers the upper end of the door post.

Preferably the cap is secured by a screw inserted into a channel provided in the door post.

BRIEF DESCRIPTION OF THE DRAWINGS

The following description and the accompanying drawings referred to therein are included by way of non-limiting example in order to illustrate how the invention may be put into practice. In the drawings:

Figure 1 is a general part-exploded view of part of a shower cubicle of the invention, at the hinged side of the door;

Figure 2 is a partly cut-away non-exploded view of the arrangement of Fig. 1, shown affixed to a wall;

Figure 3 is a general view of another part of such a shower enclosure, at the opening side of the door;

Figure 4 is a horizontal section through the components of Fig. 3, in the process of assembly; and

Figure 5 is a similar view to Fig. 4, but showing the components fully assembled.

DETAILED DESCRIPTION OF THE DRAWINGS

This invention relates to rigid shower screen enclosures and in particular those having doors which hinge from one or more fixed points in such a way as to allow entry and exit from the shower area.

Rigid shower units are necessarily manufactured

with as many ninety degree corners as possible. However, in most installations the floors and walls of the buildings to which the shower units will be attached are not horizontal or vertical and indeed in some instances the variations out of square can be so great that an installer will find it necessary to manufacture and place appropriate sealer and packing pieces in the gaps.

Another problem with rigid showers is achieving a satisfactory water seal between static elements and moving door panels when in the closed position. In particular many shower users now demand high pressure shower heads and indeed in some instance water distribution into the shower units from side positions as well as overhead. These conditions coupled with movable door panels that may not lie parallel to adjacent fixed elements may lead to leakage when the showers are in use.

The present invention provides an improvement over current shower unit designs in that installation may be made easier by virtue of inbuilt adjustments into the shower assembly to enable perfect squareness on installation. A further improvement over current shower sealing designs is that under most conditions leakage in use will not occur.

In the present shower door hinging arrangement there is a door assembly and a removably attachable fixing element which may locate the said door hinging arrangement and door assembly to a static and possibly permanent structure such as (but not exclusively) a wall or the like.

Supported within the said door assembly is a flexible elastomer seal which may extend towards the said hinging arrangement beyond the structure of the said door assembly. Said elastomer seal may be located in or adjacent to the said hinging arrangement and or the said removably attachable fixing.

The said hinging arrangement may comprise two or more sections which may locate together in such a way as to substantially conceal the internal mechanism of the said hinging arrangement. The said hinging arrangement may include internal stops to control the closed and open positions of the door assembly.

The said hinging arrangement and the said removably fixing sections may adjustably clamp together in such a way as to allow equal or unequal distance setting from one end to the other.

The shower enclosure may comprise a main section so shaped to support an elastomer seal onto which a shower door may close. Said main section may be adjustably located to a removably attachable section which may in turn be affixed to a substantially static structure such as (but not limited to) a wall of a building or the like.

The said main section may be so formed as to enable the location of one or more cover plates which may be removably affixed to the said main section so as to largely conceal the internal fixtures of the said main section and if appropriate elements of the said removably attachable section.

Referring particularly to Figure 1, there is shown a partly exploded view of a shower door attached to a hinging arrangement which in turn is located to an adjustable section which will in turn be attached to a wall. A shower door hinging arrangement 1 comprises a pivoting extrusion 2 and fixed extrusion 3. Extrusions 2 and 3 are located together by means of centre pivot 4. An elastomer seal 5 is conveniently located into extrusion 3 such that a given portion 6 is exposed for the purpose of sealing onto flat area 7 of extrusion 2 when shower door 8 is in the closed position.

Extrusion 2 comprises two parts 9 and 10. Sandwiched and clamped in between parts 9 and 10 is the glass 11 of a door 8. Parts 9 and 10 are clamped together by means of nuts and bolts (not shown) at intervals along the length of door 8 in area 12.

A door bottom extrusion 13 is held to the bottom of glass 11 by adhesive (not shown). Door extrusion 13 is conveniently shaped to retain elastomer seal 14 by means of a trapezoidal head 15. When door 8 is closed seal 14 seals to the horizontal ridge of a bath or shower base or the like. Seal 14 spans the length of door 8 and extends beyond the length of extrusion 13 between parts 9 and 10 of extrusion 2 and locates onto extrusion 3 by means of a pin 16. The head 17 of pin 16 is so shaped to locate into a slot 18 of the extrusion 3.

Inside extrusion 3 a slot 18 is defined by a wall 19 which acts as a stop for door 8 when it is open by means of edge 20 of part 9 resting against wall 19.

When door 8 is closed such that flat area 7 of part 10 is abutted to seal 5, edge 22 of part 10 rests against a wall 21 which defines a slot 18 being part of extrusion 3.

An extension 23 of wall 19 centrally locates the pivot 4, the exact location means not being shown.

A removably attachable fixing 24 is attached to a wall (not shown) by means of screws positioned along the length of fixing 24 in area 25. A seal (not shown) is attached to the back of fixing 24 and is sandwiched between fixing 24 and the wall (not shown).

Fixing 24 is substantially channel shaped, having two sidewalls 26 and 27. Sidewall 26 has an internal protrusion 28 through which fixing screw 29 passes. Screw 29 then threads into a fastener (not shown) in an opposed small channel protrusion 30.

The face area of protrusion channel 30 and protrusion 28 of fixing 24 fit snugly against the face of extensions 31 of extrusion 3. On the inner face of extension 31 there are serrations 32. Screw 29 carries a spacer 33 between extensions 31 such that when screws 29 are tightened channel 24 is clamped firmly to extensions without any inward collapse.

An end cap component 35 is frictionally located in channel 24 by means of ears 36 and fixed to extrusion 3 by means of a screw 37 threaded into slot 38

in extension 23. Tab 38 of cap 34 fits into lowered area 39 and rests there such that should channel 24 be further away from extrusion 3 due to adjustment necessity the appearance will remain good.

Figure 2 shows the shower door 8 attached to hinging arrangement 1 which is in turn attached to channel 24. Channel 24 is affixed to wall 40 and the appropriate quantity of water sealer material 41 is distributed accordingly.

In use channel 24 is affixed to a wall. Extrusion 3 is positioned into channel 24 with screws 29 and spacers 33 and fastener 29 in place. Once extrusion 3 is correctly positioned to vertical screws 29 are tightened. When door 8 is opened seal 14 bends in arrangement 1. Due to seal 14 functioning in this fashion there is no need for static sealing which is difficult to maintain with shower doors in the closed position.

Figure 3 shows an arrangement at the opposite non-hinged edge of a shower door 42, which may be the same door as shown in Fig.s 1 and 2 or a different door. The door 42 comprises glass 43 secured to a bottom frame 44 in a slot 45 by means of adhesive (not shown). Bottom frame 44 has an end cap 46 to create a neat finish.

Glass 43 closes onto elastomer seal 47 which is located into upright 48 at conveniently shaped grooves 49. Attached to upright 48 at its base is a cross member 49a which is affixed to upright 48 by means of screws (not shown) threading into holes 50 in member 49a.

Located toward the top of member 49a in a conveniently shaped slot 51 is a seal 52 which abuts the door bottom frame 44 to create a seal when door 42 is closed. Alternatively, the seal of Fig.s 1 and 2 may be used. Member 49a is sealed to a shower base (not shown) by means of seal 53.

Figure 4 shows upright 48 with seal 47 in position in grooves 49 with glass 43 in the closed position. Removably attachable section 54 affixes to upright 48 by means of screws 55 passing through a transverse slot 56 (Figure 3) and threading into appropriately spaced holes (not shown) in section 54.

Section 54 is affixed to a wall (not shown) by screws (not shown) passing through holes (not shown) in section 54 in area 55. On the back of section 54 is an elastomer seal 56a.

Figure 5 shows a full closure assembly with a part-circular cover plate 58 attached to upright 48. A similar cover plate 57 is shown during snap-attachment to upright 48. Both cover plates 57 and 58 have a spring leaf 59a attached at points 59. On installation cover plates 57 and 58 are offered up to upright 48 in such a way that leafs 59a locate onto protrusions 60 of upright 48. Cover plates 57 and 58 have suitably shaped noses 61 to snap-engage round edges 62 to hold covers neatly in place on upright 48 by co-operating with leafs 59a.

In use section 54 is affixed to a wall in the desired position. Upright 48 is then attached to section 54 by means of fixing screws 55 which are tightened firmly once section 48 is positioned into the vertical position by means of the adjustment provided for by slots 56. Once this assembly procedure is complete cover plates 57 and 58 are clipped into place.

Claims

1. A shower cubicle comprising a fixed portion (1) and a door (8) hinged at one upright edge to the fixed portion, the fixed portion including a surface disposed beneath the door, in which a bottom edge of the door is provided with a flexible sealing strip (14) secured to the door and which makes sealing contact with said surface along its length,

   characterised in that the sealing strip (14) extends beyond said hinged edge of the door and is secured to said fixed portion (1) of the cubicle.

2. A shower cubicle according to Claim 1, in which the sealing strip (14) comprises an extruded hollow elastomeric section.

3. A shower cubicle according to Claim 1 or 2, in which the sealing strip is retained in a downwardly-directed channel extending along the bottom of the door.

4. A shower cubicle according to any preceding claim, in which the portion of the sealing strip that extends beyond the hinged edge of the door is secured inside a hollow door post (3).

5. A shower cubicle according to Claim 4, in which a headed pin (16) is inserted into a hollow end of the sealing strip, and the head (17) of the pin is retained in an internal channel (18) of the door post.

6. A shower cubicle according to any of Claims 4 to 6, in which the door includes a limb (2) which extends into the door post and is pivotally mounted on a pivot rod (4) extending axially within the door post.

7. A shower cubicle according to any of Claims 4 to 6, in which the door post (3) is of part-circular transverse section.

8. A shower cubicle according to Claim 7, in which the door includes a part-circular closure wall (2) which is located inside the door post (3) disposed adjacent to the part-circular wall of the post.

9. A shower cubicle according to Claim 8, in which

the circumferentially opposed ends of the closure wall (20, 22) contact respective abutments (19, 21) to define the range of rotation of the door.

10. A shower cubicle according to Claim 8 or 9 as appended to Claim 6, in which the closure wall is formed in two parts (9, 10) which are secured together and which form two parts of said pivot limb.

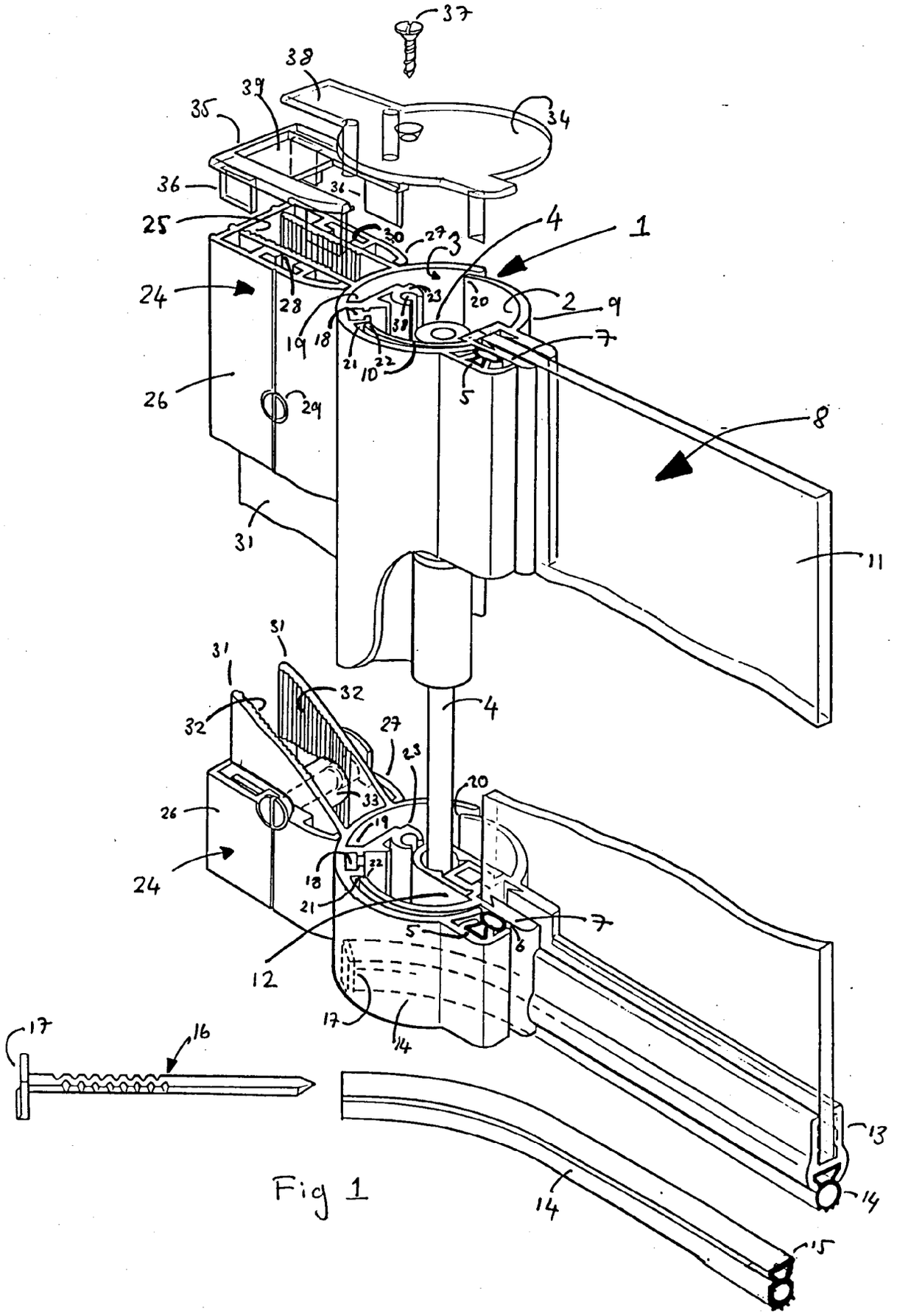
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Fig 1

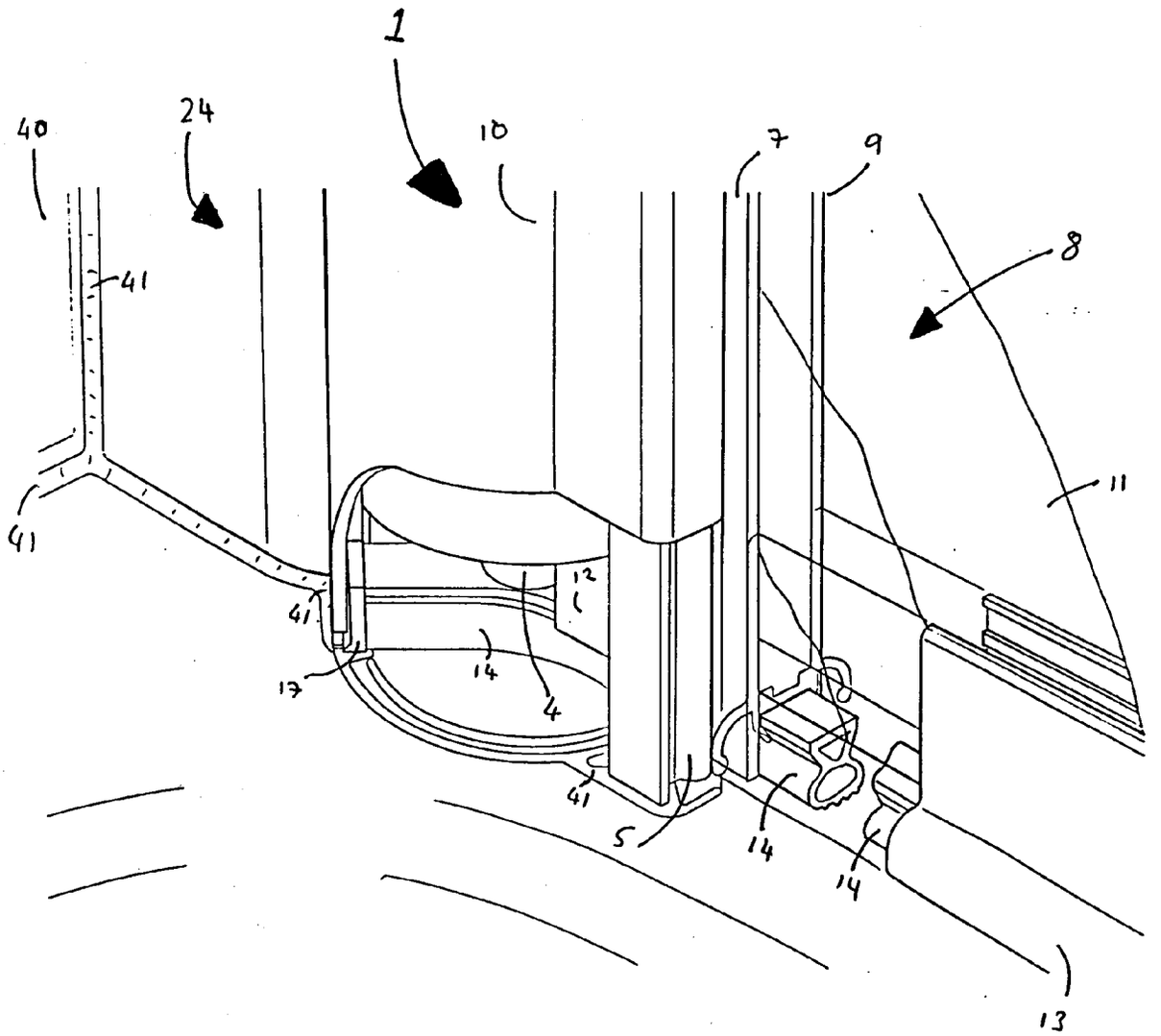

Fig 2

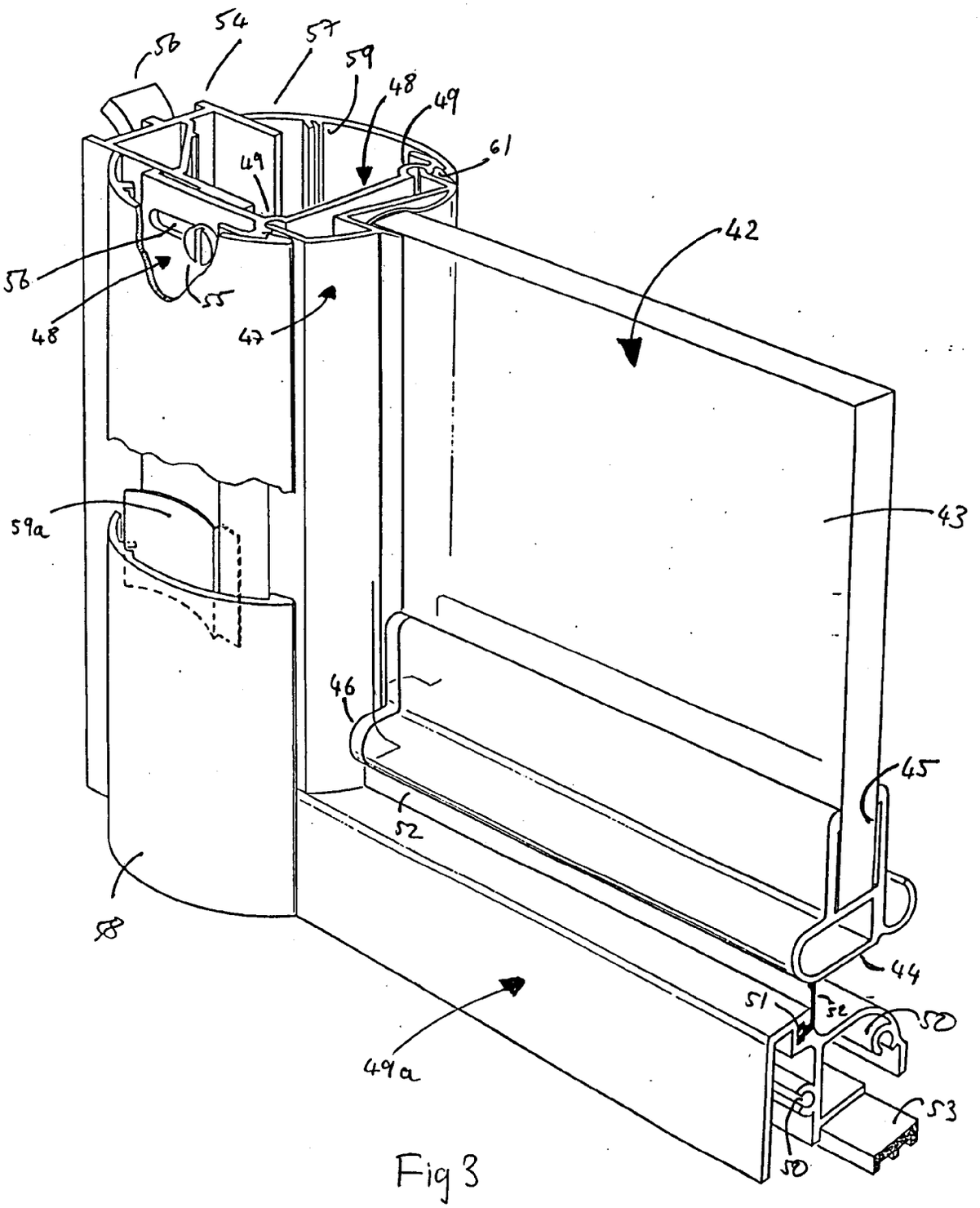
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Fig 3

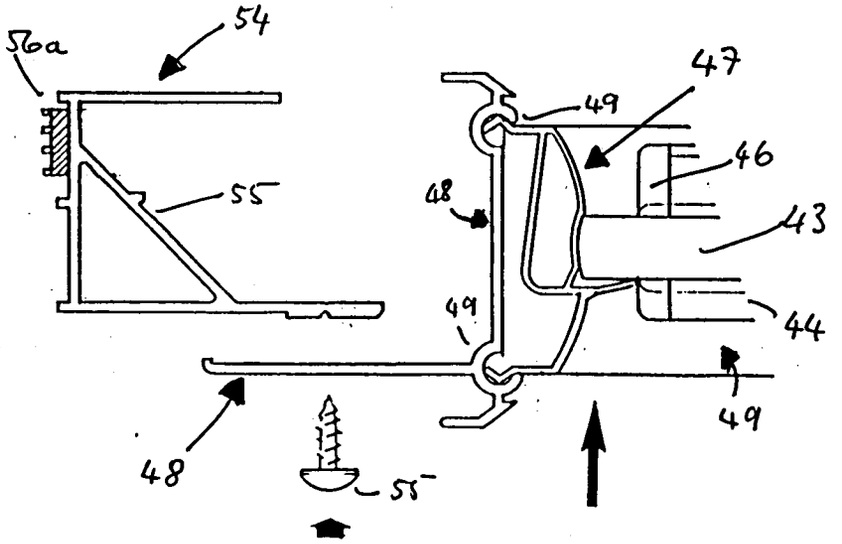
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Fig 4

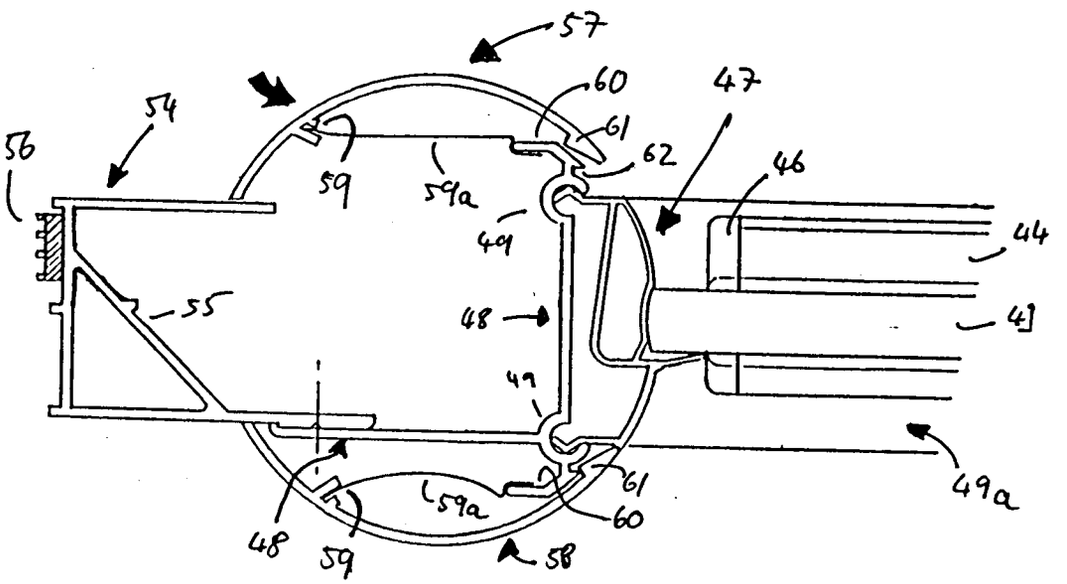
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Fig 5

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 95 30 3196

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	EP-A-0 541 877 (REVUELTA DEL CASTILLO) * column 4, line 7 - column 5, line 31 * * column 6, line 24 - line 46; figures 1-4,7 *	1,3-8	A47K3/22
A	DE-A-34 47 960 (BAUS) * page 11, last paragraph - page 12, paragraph 1; figure 2 *	1-3	
A	DE-A-37 05 800 (HÜPPE)		

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

A47K

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	24 August 1995	Vrugt, S

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
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