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(54) **Brackets for curtain rails**

(57) A mounting bracket, for a curtain rail of the type having a lipped groove (8) along its upper surface, comprises a one piece component having an abutment (11) to bear on a side face (3) of the rail; and a clip arrangement 9 to engage the rail groove (8), the clip (9) comprising a central lug (13) to engage one lip (5*b*) and a pair of flanking lugs (14) to engage the other lip (5*a*), sufficient resilience to allow engagement and disengagement being assured by slits (15) between the lugs (13) (14).

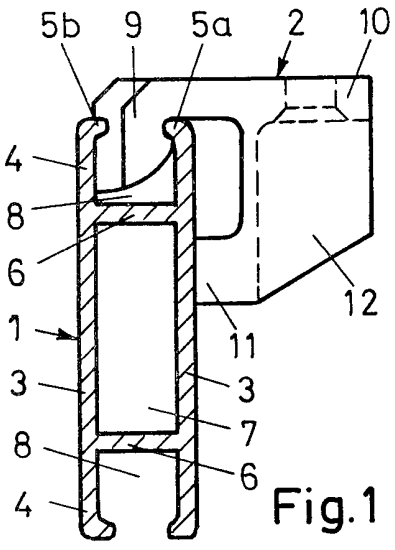

Fig.1

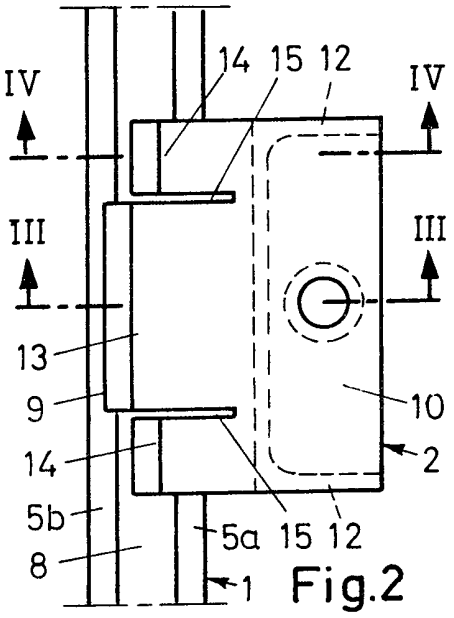

Fig.2

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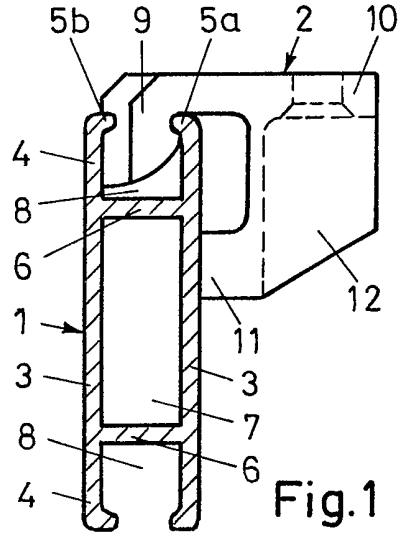


Fig.1

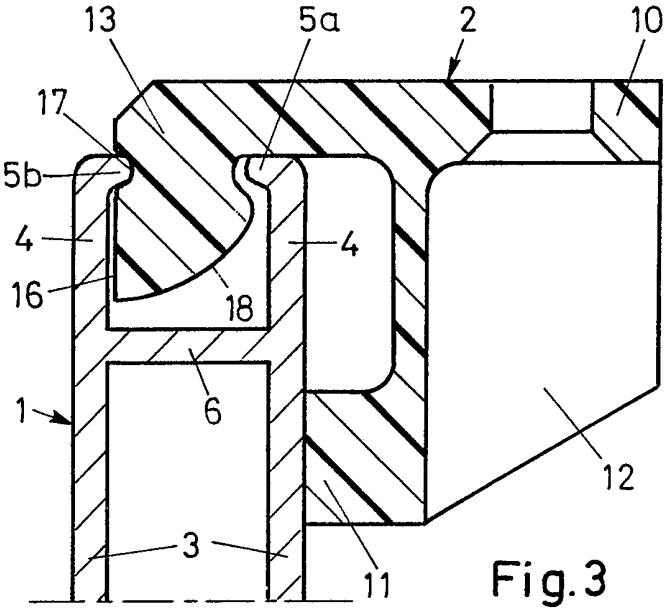


Fig.3

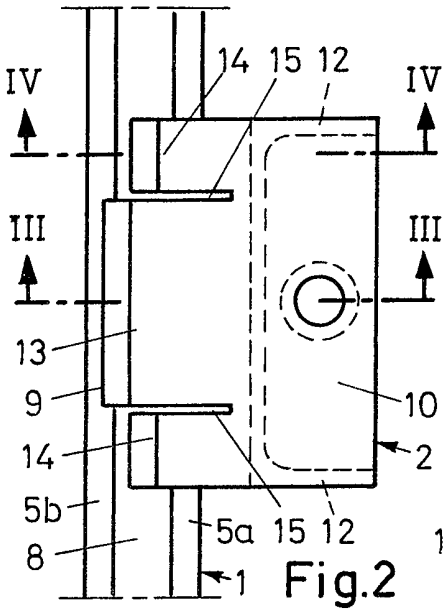


Fig.2

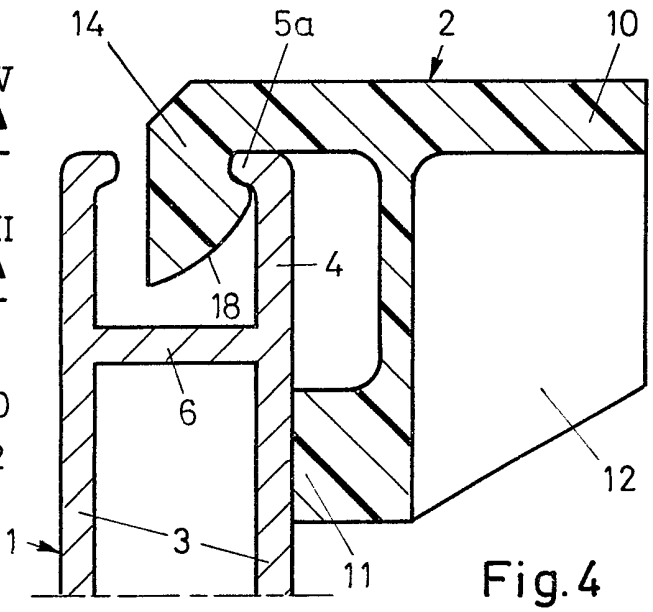


Fig.4

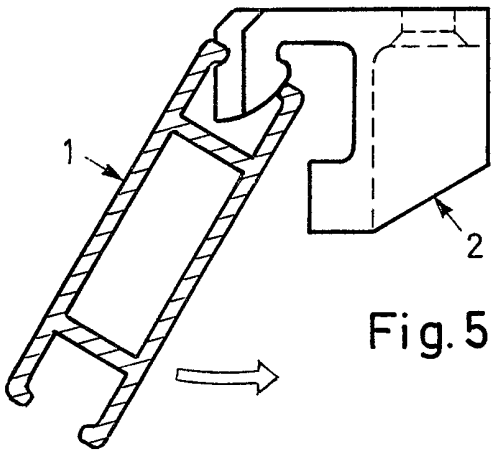


Fig.5

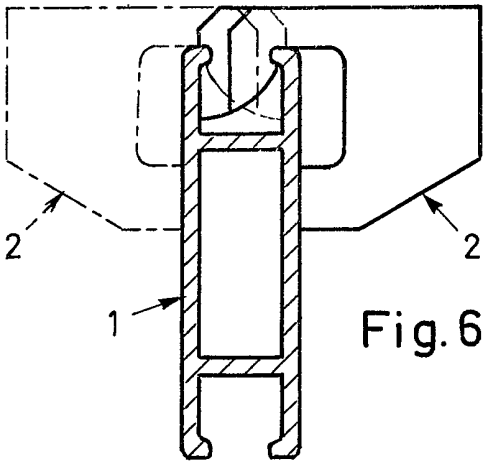
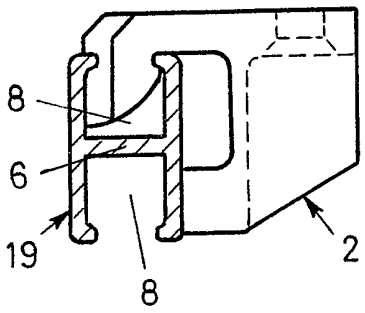


Fig.6

Fig. 7



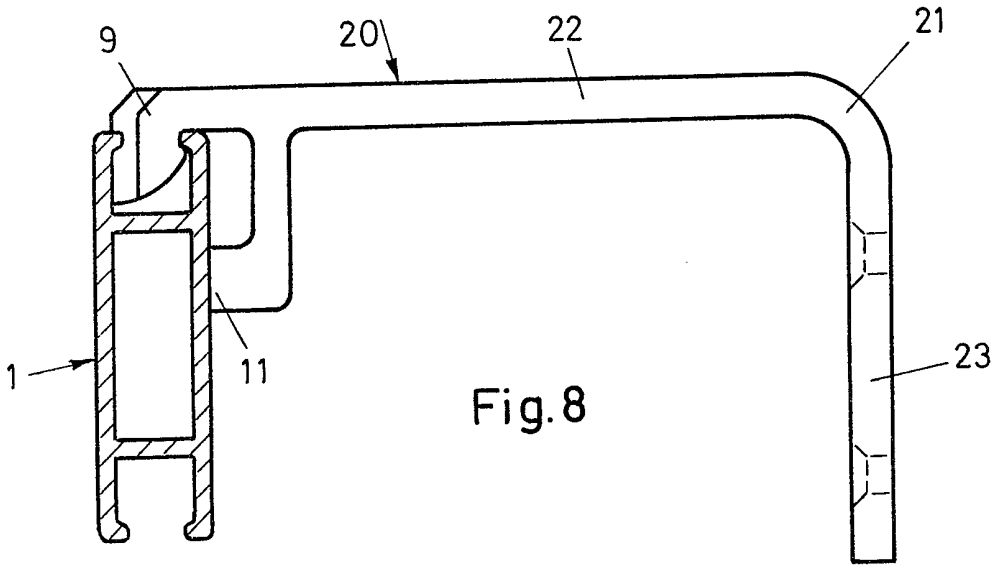


Fig. 8

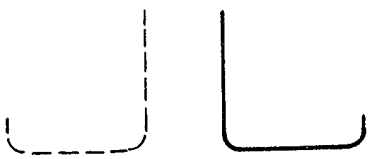


Fig. 9

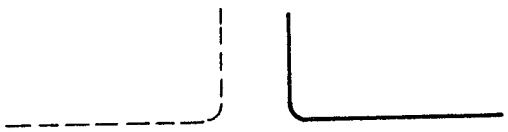


Fig. 10

SPECIFICATION

Curtain hanging apparatus

This invention relates to curtain hanging apparatus having at least one carrier on which a self-supporting curtain profile is mounted upright, the profile comprising an undercut groove which is open at the top and the opening of which is bounded by two ribs facing one another and extending longitudinally, wherein furthermore a holding member is introduced from above into the groove and is snapped into this, and wherein the dogs comprise a central supporting dog and two lateral dogs adjacent to this.

A curtain carrying guide rail is known from the Swiss Patent 412.233 which comprises a lateral elongated slot to receive resiliently flexible supporting heads disposed on plastics carriers. The plastics carriers are secured to the ceiling or wall, the carriers being spaced apart, and then the curtain rail is clipped laterally to the supporting heads, the flanges of the curtain rail bounding the elongated slot engaging behind the supporting heads.

This device has disadvantages from various points of view. As a result of the elongated slot, the bending resistance and vertical loading capacity of the curtain rail is reduced so that a large number of attachment points have to be provided in order to ensure the stability of the mounted rail.

The curtain rail is insufficiently supported by the carriers so that it is not held firmly and rigidly and can vibrate or rock under loading. Finally it must be mentioned that the lack of symmetry in the curtain rail restricts the mounting possibilities and that the visible longitudinal cut has a disturbing effect from the decorative point of view.

The last two disadvantages mentioned are avoided by the hanging system according to the DE-PS 1.099.704, where symmetrical curtain rails are described which can likewise be secured to the ceiling or wall by means of carriers. These rails comprise a longitudinal groove which is open at the top and which is bounded by two flange portions directed inwards and extending in the longitudinal direction. The flanges engage in the undercuts on the projecting head of each carrier. The carriers must be pushed in successively with their heads at the end of the curtain rail and only then can they be secured to the ceiling or the wall, which is a great disadvantage because this work cannot be carried out in practice by one person alone.

A further development of the above-mentioned devices can be seen from a prospectus "Europe 2000, triangles aluminium" of the Société Midi-Stores, 31150 Fenouillet in France. The curtain hanging apparatus shown in this prospectus comprises a number of plastics carriers mounted on the ceiling of the wall, to which a self-supporting curtain profile is clipped. This curtain profile comprises an undercut groove which is open at the top and in which profile holding portions of the carriers are engaged with a resilient clamping action. Each profile holding portion is provided with three dogs which are snapped into the groove from above. The dogs consist of a central supporting dog to which two further dogs are adjacent laterally. The curtain profile can be mounted quickly and without problems. It is not held rigid by the carriers, however, so that it can vibrate and waver under loading. It is true that in one form of embodiment for wall mounting, a U-shaped wall holding means of metal is provided to the upper arm of which the carrier is rivetted and the lower arm of which bears loosely against the side of the curtain profile. As a result, a certain lateral supporting function is achieved in one direction. As a result of the loose contact, however, the profile is not secured against vibrations and unwanted movements. In addition, the fixing of the carrier to the holding means involves a great deal of mounting.

The known apparatus according to the prospectus has further disadvantages, however:

- The central dog is not resilient in construction and the spring excursion of the lateral dogs is too small so that tolerances in the curtain profile cannot be adequately compensated. With narrow profile grooves, it is difficult to snap the dogs into the profile, while with wide grooves with wide tolerances, the result is too loose a connection. During the bracing, only the spring action of the side walls of the curtain profile is largely used because the inherent spring action of the apparatus is too slight. The requirements regarding the manufacturing accuracy of the curtain profile must therefore be high, which leads to an increase in the cost thereof.
- The carrier is so constructed that the lower curved portions of the lateral dogs rest in the bottom of the groove, as a result of which the dogs are additionally braced. In order that this effect may be achieved, curtain profiles must be used with a small, precisely defined groove depth. The range of application is therefore limited and it is not possible to reverse the curtain profile, for example, if the curtain hanging groove is damaged.
- The supporting dog disposed between the lateral dogs does not have any lower curvature and does not participate actively in the bracing.

According to the present invention there is provided a curtain hanging apparatus having at least one carrier on which a self-supporting curtain profile is mounted upright, the profile comprising an undercut groove which is open at the top and the opening of which is bounded by two ribs facing one another and extending longitudinally, wherein furthermore a holding member is introduced from above into the groove and is snapped into this, and wherein the dogs comprise a central supporting dog and two lateral dogs adjacent to this, characterised in that the carrier comprises a supporting shoulder which is pressed with initial tension laterally against the curtain profile, that the dogs and the supporting shoulder are made in one piece from plastics material and that the hook-shaped lateral dogs are separated from the supporting dog by two slits in such a manner that they and the supporting dog are movable resiliently independently of one another.

The present invention enables the provision of curtain hanging apparatus in which the disadvantages of the known solutions are avoided. In particular the invention enables the apparatus shown in the

prospectus "Europe 2000" to be improved.

Embodiments of the invention will now be described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 shows a cross-section through a curtain profile with plastics carriers,

Figure 2 shows a plan view of the plastics carrier and the profile shown in Figure 1,

Figure 3 shows a section on the line III-III through the carrier and the upper portion of the profile as shown in Figure 2, on a larger scale,

Figure 4 shows a section on the line IV-IV through the carrier and the upper portion of the profile shown in Figure 2, likewise on a larger scale,

Figure 5 shows diagrammatically, the clipping of the curtain profile into the carrier,

Figure 6 shows the carrier and the curtain profile of Figure 1, the securing of the carrier at both sides being indicated in broken lines,

Figures 7 and *8* show cross-sections through two further forms of embodiment of curtain profiles with plastics carriers, and

Figures 9 and *10* show diagrammatically, in plan view, two curved curtain profiles, for example for showers or baths, the "mirror reversed" ceiling mounting being shown in broken lines.

The apparatus for carrying curtains illustrated in Figures 1 and 2 consists of a self-supporting curtain profile 1 which is held by means of a number of plastics carriers 2 mounted on the ceiling. The upright curtain profile 1, extruded from light metal, comprises two parallel walls 3 which end at the top and bottom in rails 4, the edges 5a, 5b of which are bent inwards. Two transverse ribs 6 together with the walls 3 enclose a cavity 7 which ensures a high strength of the curtain profile with little expenditure on material. This is very resistant to bending and can be heavily loaded vertically. Two undercut grooves 8 are formed by the rails 4, the two transverse ribs 6 and the bent edges 5, the upper groove 8 being intended to mount the curtain profile 1 and the lower grooves 8 to receive curtain slides known *per se*.

The plastics carrier 2 comprises a profile holding portion 9, an attachment portion 10 and a supporting shoulder 11. The profile holding portion 9 is engaged with a resilient clamping action in the upper groove 8 of the curtain profile 1. The attachment portion 10 is constructed in the form of a flange and is mounted on the ceiling by means of a screw. The shoulder 11 extending perpendicular to the attachment portion 10 is pressed with initial tension against the side wall 3 of the curtain profile 1. Between the supporting shoulder 11 and the flange-shaped attachment portion 10 there are two substantially triangular stiffening ribs 12 which contribute to the stiffening of the carrier 2.

The profile holding portion 9 comprises a supporting dog 13 disposed centrally and at each side thereof a hook-shaped dog 14, which latter are each separated from the supporting dog 13 by a slit 15. As a result of this construction, it is possible for both kinds of dog 13, 14 to be able to be moved resiliently independently of one another.

The hook dog 14 penetrates from above into the undercut groove 8 and engages round one of the inwardly directed projections 5a which extend longitudinally and which are formed by the bent edge of the rail 4. The supporting dog 13, which likewise engages in the groove 8 is pressed resiliently with its end face 16 against the second projection 5b on the opposite side of the groove. This projection 5b projects into a correspondingly shaped groove 17 in the supporting dog 13 so that the latter is held in the groove 8.

In order to mount the curtain profile 1, this is applied in an oblique position transversely to its longitudinal direction to the carrier 2 secured with the correct spacing to the ceiling, in such a manner that the projection 5b penetrates into the groove 17 in the supporting dog 13. The second projection 5a is applied against a lower curvature 18 on the supporting dog 13 and to the hook dog 14 (Figure 5). Then the curtain profile 1 is swung into the vertical position about the projection 5b as a pivot point, during which the projection 5a slides on the curvature until it snaps in behind the hook dog 14. During the swinging in, the two rails 4 are parted resiliently and the three dogs 13, 14 are also moved resiliently in relation to one another.

After the snapping in, the three dogs are braced and secured resiliently in the groove 8. The carrier 2 is so dimensioned that after the snapping in of the curtain profile 1, the supporting shoulder 11 is pressed with initial tension against the side wall of the profile so that this is braced rigidly and firmly. Since the curtain profile 1 is symmetrical in construction, the carrier 2 can be clipped to the profile at both sides (Figure 6).

In Figure 7, a further curtain profile 19 is shown, the two grooves 8 of which are separated from one another by a single central transverse rib 6. As a result of the absence of the cavity, this profile 19 is considerably less high than that shown in Figure 1. This profile is suitable for applications with spatially restricted conditions or if the curtain has to be mounted as close as possible to the ceiling.

The carrier 20 shown in Figure 8 again comprises a profile holding portion 9, a supporting shoulder 11 and an attachment portion 21. The latter is provided with a horizontal and vertical section 22 and 23 so that it can be mounted either on the ceiling or on a wall.

The advantages of the curtain hanging apparatus described above are summarized below:

- The carrier can be mounted on the curtain profile at both sides, no specific groove depth being specified.
- As a result of the resilient construction of the profile holding portion of the carrier, relatively great differences in tolerance in the curtain profile can be compensated, so that the requirements regarding the manufacturing accuracy of the profiles are less strict. The hook dogs have a relatively great spring excursion.
- With curtain profiles with closed cavities, a great rigidity and torsional strength are achieved, that is to say fewer carriers are needed for the mounting.
- Since the curtain profile does not comprise any lateral elongated slot, it is better looking aesthetically, particularly when it is mounted so that both sides

are visible.

- The mounting and curtain hanging channel (that is to say the lower and the upper groove) can be identical in construction. If one channel is damaged by external influences for example, during covering with paint or in the event of mechanical failure of the channel for example and no longer functions as a curtain guide, the profile can simply be turned over.

- In the case of prefabricated, curved curtain profiles for special applications, for example for showers and baths, the profile can always be used reversed because it comprises a curtain and mounting channel respectively at both sides. This is clear from Figures 9 and 10 where the arrangement of a curtain profile in mirror image is illustrated in broken lines.

- The hanging apparatus can be developed for various curtain systems, for example for cord drawing, tableau curtains etc.

- With the carriers, the mounting of curtain profiles of different height is possible both on the wall and on the ceiling, even with spatial restrictions with difficult mounting conditions.

- The curtain profile can be clipped to the previously mounted plastics carriers by one person alone without any problems.

- The dogs of the carrier are preferably so constructed that the curtain profile can be disengaged again in a similar manner to that in which it was engaged.

- As a result of the prestressed supporting should, a rigid, secure holding is possible, avoiding vibrations and fluctuations.

- Since the dogs, the supporting shoulder and any attachment member which is present consist of plastics material in one piece, the manufacturing costs are very low.

CLAIMS

1. A curtain hanging apparatus having at least one carrier on which a self-supporting curtain profile is mounted upright, the profile comprising an undercut groove which is open at the top and the opening of which is bounded by two ribs facing one another and extending longitudinally, wherein furthermore a holding member is introduced from above into the groove and is snapped into this, and wherein the dogs comprise a central supporting dog and two lateral dogs adjacent to this, characterised in that the carrier (2, 20) comprises a supporting shoulder (11) which is pressed with initial tension laterally against the curtain profile (1), that the dogs (13, 14) and the supporting shoulder (11) are made in one piece from plastics material and that the hook-shaped lateral dogs (14) are separated from the supporting dog (13) by two slits (15) in such a manner that they and the supporting dog (13) are movable resiliently independently of one another.

2. An apparatus as claimed in Claim 1, characterised in that the hook dogs (14) engage resiliently behind one of the groove ribs (5a) and that the supporting dog (13) bears resiliently against the opposite rib (5b).

3. An apparatus as claimed in Claim 2, characterised in that the end face of the supporting dog (13) has a groove (17) hollowed out of it in which the associated rib (5b) penetrates.

4. An apparatus as claimed in Claim 3, characterised in that the hook dogs (14) and the supporting dog (13) are provided at the bottom with a curved sliding surface (18) on which the rib (5a) cooperating with the hook dog (14) is adapted to slide during the engagement of the curtain profile (1) in the carrier (2, 20).

5. An apparatus as claimed in Claim 1, characterised in that the curtain profile is symmetrical in construction, and comprises a curtain hanging channel which is like the mounting groove (8) in construction.

6. An apparatus as claimed in Claim 1, characterised in that the carrier (2, 20) additionally comprises an attachment portion (21) which is likewise made integral with the dogs (13, 14) and the supporting shoulder (11).

7. An apparatus as claimed in Claim 6, characterised in that the attachment portion (21) comprises a horizontal and a vertical section (22 and 23) and can be mounted either on a ceiling or on a wall.

8. Curtain hanging apparatus substantially as hereinbefore described with reference to Figures 1-6 or Figure 7 or Figure 8 of the accompanying drawings.

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