(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 355 034 A2

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
22.10.2003 Bulletin 2003/43

(51) Int Cl.[7]: **E06B 9/52**, A47H 1/06, A47H 13/00

(21) Application number: **02028240.6**

(22) Date of filing: **16.12.2002**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SI SK TR
Designated Extension States:
AL LT LV MK RO

(30) Priority: **15.04.2002 IT MI20020801**

(71) Applicant: **Omnitex S.r.l.**
20144 Milano (IT)

(72) Inventor: **Colombi, Gianni**
20145 Milano (IT)

(74) Representative: **Cicogna, Franco**
Ufficio Internazionale Brevetti
Dott.Prof. Franco Cicogna
Via Visconti di Modrone, 14/A
20122 Milano (IT)

(54) Curtain construction for windows, for dividing spaces and for furnishings

(57) A curtain construction (1), comprises a length of cloth (2) supported by a supporting frame (3), which encompasses said length of cloth on the four sides thereof and includes latching and sliding means (4).

The rigid frame (3) comprises two or three section members snap coupled to one another, and the main feature thereof is that they can be easily used for making cut-two size elements arranged at 90°.

These elements are adapted to firmly hold therein, along a suitably designed seat, the fabric material of the curtain, and to receive, along the outer side of the frame (3) and in another suitable seat, parallel but opposite to that therein the fabric (2) material is engaged, commercially available means for making the frame (3) rigid with other outer support elements both horizontal and vertical, or freely suspended, either fixed or slidable along rails (5).

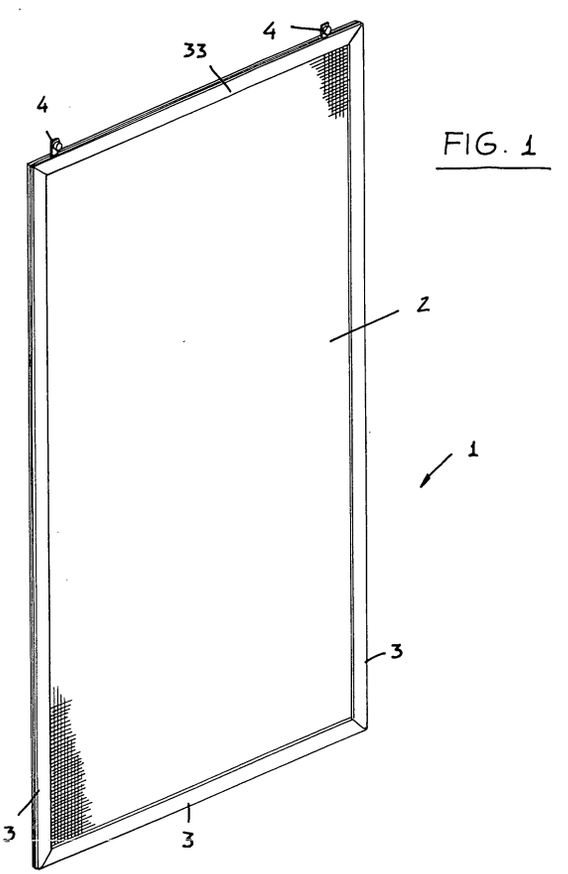

FIG. 1

EP 1 355 034 A2

Description

BACKGROUND OF THE INVENTION

[0001] The present invention relates to a curtain construction specifically designed for windows, for dividing spaces, and for furnishings in general.

[0002] As is known, are already available on the market the so-called panel curtain, i.e. curtains which generally comprise one or more fabric or cloth elements, which can be driven by sliding means engaged in a sliding rail to which the curtain panel is applied.

[0003] In particular, the cloth or fabric elements are usually provided, at their top end portions, with a Velcro type of strip for fixing said cloth elements to a rigid bar, including slider elements, and engaged in a sliding rail for driving the curtain. At their bottom end portions, the cloth elements are conventionally provided with a weighing bar.

[0004] The above mentioned bars have a size which usually corresponds to the width of the cloth element.

[0005] In the above mentioned prior panel curtains, the fabric material is restrained only at the top thereof by the sliding bar and, at the bottom thereof, by the weighing bar.

[0006] Accordingly, the pattern or arrangement of the fabric material will be exclusively determined by the tension provided by the weight of the bottom bar, exclusively in the vertical direction.

[0007] Thus, the flat arrangement of the fabric material constituting the curtain panel will be determined by the tension provided only in a direction, and will be inevitably unsatisfactory.

[0008] Moreover, in the above disclosed prior curtains, the driving of the curtain always causes a modification of the curtain arrangement, in a disordered manner.

[0009] Such a disordered modification of the curtain arrangement, compels the user to perform a lot of adjusting operations, in order to try to recover the curtain to the original attitude.

[0010] Finally, in the above mentioned prior curtains, the side driving of the curtain cloth can be manually performed exclusively by a pulling type of operation, but not by a pushing type of operation.

[0011] Actually, a pushing provided on the panel would cause a difficult sliding of the panel itself.

[0012] The possibility of properly locating the panel in its desired seat can be difficulty achieved and, anyhow, only by combining repeated pushing operations with a final pulling operation.

[0013] The latter would be the sole operation suitable to properly arrange the curtain panel at a preselected seat therefor.

SUMMARY OF THE INVENTION

[0014] Accordingly, the aim of the present invention is to provide a curtain construction, in particular of a panel type, adapted to provide a perfect flat arrangement of the fabric material of the curtain, with an adjustable tension therethrough.

[0015] Within the scope of the above mentioned aim, a main object of the invention is to provide such a curtain construction allowing the curtain panel to be quickly removed from the supporting frame therefor.

[0016] Another object of the present invention is to provide such a curtain construction which allows the curtain fabric material, or other suitable curtain material, to be easily removed.

[0017] Another main object of the present invention is to provide such a panel curtain which can be perfectly slidably driven, with a very accurate location of said panel curtain in a preselected seat therefor, both by pulling and pushing operations.

[0018] Yet another object of the present invention is to provide a panel curtain the fabric material of which can be always held in a perfectly flat condition both during the pushing driving thereof and during the pulling driving thereof, and in its static position, without any need of performing additional operations to recover the curtain to its starting pattern.

[0019] Yet another object of the present invention is to provide such a panel curtain construction which can be easily made starting from easily commercially available elements and materials, and which, moreover, is very competitive from a mere economic standpoint.

[0020] Yet another object of the present invention is to provide such a panel curtain construction which is very reliable and safe in operation.

[0021] According to one aspect of the present invention, the above mentioned aim and objects, as well as yet other objects, which will become more apparent hereinafter, are achieved by a curtain construction, specifically designed for windows, for dividing spaces and for furnishings in general, characterized in that said curtain construction comprises a cloth element supported by a supporting frame encompassing said cloth element along the four sides thereof and being provided with latching and sliding means.

BRIEF DESCRIPTION OF THE DRAWINGS

[0022] Further characteristics and advantages of the present invention will become more apparent hereinafter from the following detailed disclosure of a preferred, though not exclusive, embodiment of the invention, which is illustrated, by way of an indicative, but not limitative, example in the accompanying drawings, where:

Figure 1 is a perspective view of a curtain construction according to the invention;

Figure 2 is a front side elevation view, on an enlarged scale, of the top or upper portion of the curtain construction according to the present invention;

Figure 3 is a cross-sectional view illustrating the top

portion of the supporting frame of the curtain construction according to the invention;

Figures 4, 5 and 6 show, by cross-sectional perspective views, the operating steps for applying a three-piece supporting frame, according to a further aspect of the present invention;

Figure 7 is a cross-sectional view illustrating the three-piece supporting frame; and

Figure 8 is a further cross-sectional view illustrating a two-piece supporting frame.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0023] With reference to the number references of the above mentioned figures, the curtain construction according to the invention, which has been generally indicated by the reference number 1, comprises a cloth length or element 2, supported by a supporting frame 3 encompassing said cloth or fabric length or element along the four sides thereof.

[0024] The top side 33 of the supporting frame 3 comprises latching and sliding means 4, which can be engaged in a conventional sliding rail 5 designed for panel curtains.

[0025] To engage the panel to or remove said panel from said sliding rail, it is sufficient to thread or unthread said latching elements into/from said seat.

[0026] Figure 3 shows the top or upper side 33 of the supporting frame 3 suspended to a sliding rail 5, by supporting elements 4, which, in a preferred embodiment shown in the drawing, have a T-shaped cross-section.

[0027] Said insert elements are engaged, on a side, correspondingly to the horizontal leg of the T, in a slot 6 of the supporting frame and, on the other side, corresponding to the stem of the T shape, being provided with slidable elements comprising wheels 7 which can be slidably driven in the rail 5.

[0028] Thus, the sliding rail and supporting frame can be easily interconnected, so as to allow the curtain panel to be easily laterally driven.

[0029] The supporting frame 3 has two functions: on a side, that of restraining the cloth or fabric material 2 engaged in its inside, with the possibility of controlling the tension of said cloth material, while assuring a perfectly flat condition under all the use situations thereof and, on the other hand, that of allowing said cloth element to be easily applied to a sliding element which, as engaged in a rail, will allow to laterally slidably drive the curtain panel, either by a pulling operation or by a pushing operation, without modifying the perfectly tensioned and flat configuration of said curtain.

[0030] Figures 3-7 show a supporting frame 3 comprising three different section members: a body 8, a core 9 and a cover element 10.

[0031] By mutually coupling the three mentioned section members, which coupling can be manually performed without using any specifically designed tools, a single frame will be obtained, which, as suitably assembled with commercially available angle elements, will define the perimeter of the curtain panel, while allowing it to be easily and quickly assembled and removed.

[0032] The construction of the supporting frame 3 by three section members is advantageously mainly in a case in which it is desired to use section members consisting of very rigid or hard materials, such as aluminium alloys, steel materials and so on, while assuring the possibility of easily performing several operations for applying and removing the cloth material 2, for example for performing a corresponding high number of washing and maintenance operations.

[0033] Moreover, the supporting frame made of three section members is very advantageous in the case in which it is desired to make by the same material, for aesthetic reasons, the two faces exposed to the view of the supporting frame, and if said faces comprise rigid materials, or materials having elastic properties not sufficient to absorb the temporary deformations caused by the snap closure of a section member on another section member.

[0034] In this connection it should be pointed out that the supporting frame 3 can also be made of only two section members, as it is schematically shown in figure 8, in which the section members are indicated by the reference numbers 11 and 18.

[0035] In this case, the core function will be provided by using suitable inner inserts arranged in the two bodies 11 and 18 and, preferably, one of said bodies being made by composite materials.

[0036] According to a further embodiment, one of the section members can be made of aluminium, steel or other rigid material, with respect to its outer portion exposed to the view, and being made of a plastics material with respect to its inner portion contacting the other section member to which it must be coupled by a snap type of coupling.

[0037] The plastic portion, in particular, will be firmly coupled to the aluminium portion, so as to provide a single composite section member.

[0038] According to a further embodiment, one of the section members can be made of aluminium, or steel, or any other suitable rigid materials, with respect to its outer exposed to the view portion, and being provided, in its inner portion contacting the other section member to which it must be coupled by a snap type of coupling, with a lug made of another plastics material firmly coupled thereto, so as to provide a single section member.

[0039] This embodiment is actually equivalent to the approach already disclosed and shown in figure 3, which provides to use an additional section member, or core 9, made of a plastics material, equivalent to an insert or a coating of a plastics material inside the two section members to be coupled by a snap type of coupling.

[0040] The technical, aesthetic and functional results will vary depending on the used materials and the combinations thereof as hereinabove exemplified.

[0041] If the supporting frame is made of two resilient material section members, adapted to absorb deformations induced by the assembling thereof, without any plastic deformations, then that same frame will meet the functional jobs thereof, mainly if it is used for solutions with small size arrangement and with the imitations typical of the physic characteristics of the plastics materials, with respect to the deformability and arrangement stability.

[0042] The aesthetic aspect, even it is even on the faces, will exclusively depend on the quality and type of the finishing which can be obtained by the specific used plastic material.

[0043] A section member formed by a plastic material coated by a metal layer, an aluminium layer or other metal material layer, will be substantially equivalent to a solution of the type shown in figure 3, since it is actually coupled to a material of different nature.

[0044] This solution exploits the properties of different materials to achieve the aesthetic, technical and functional objects, which could not be obtained by using a single material.

[0045] A supporting frame formed by two rigid material section members coupled by a snap type of coupling, of which one is provided with an inner liner or coating or lug so as to provide a single assembly, of another plastic or flexible material, would actually correspond to the approach using three section members, one of which is flexible, as shown in figure 3.

[0046] The fabric or cloth material 2 is engaged in its engaging seat formed on the body 8 and is firmly fixed inside said seat by snap applying the core 9 on the body 8.

[0047] The size of the seat 12 for receiving the fabric material, or other suitable material, inside said body, will determine the adjustment range capability with respect to the location, or tensioning, of the panel curtain.

[0048] This feature allows to perform adjusting operations and optimum tensioning operations on the fabric material, depending on the physical characteristics of the used materials, while assuring a perfect tensioning and flat condition of the fabric inside the supporting frame.

[0049] In fact, the possibility of controlling the amount of fabric being engaged in the inner seat, depending on its receiving capability, will allow to properly arrange the fabric material, in a precise and accurate manner inside the supporting frame, while allowing to properly tension said material.

[0050] Such a tensioning operation can be performed at each side of the curtain panel, in an adjustable manner, and accordingly to be properly fitted to the different physical characteristics of the used materials, depending on the result to be achieved.

[0051] Moreover, it is possible to easily recover the curtain panel to its starting conditions, if the fabric material has been subjected to size modifications, because of washing operations and the like causing a natural yielding of the material.

[0052] It has been found that the invention fully achieves the intended aim and objects.

[0053] In fact, the invention provides a curtain construction, specifically designed for furnishing application, and for dividing spaces, which can be easily and quickly assembled by simply snap engaging the section members forming the curtain supporting frame.

[0054] Another advantage is that the invention provides the possibility of easily making cut-to-size elements, arranged at 90°, the assembly of which can be quickly performed and by using angle elements which can be easily constructed by using easily available elements.

[0055] Yet another advantage is that the fabric material can be easily engaged and safely fixed in the supporting frame, which result can be obtained by a plain or normal fabric, which must not be processed with specifically designed finishing operations.

[0056] In fact, it would be sufficient to cut the fabric material to the desired size.

[0057] However, it is also possible to perform any desired finishing and packaging operations, for example if required by the characteristics of the material engaged in the supporting frame.

[0058] A further advantage is that the invention affords the possibility of graduating or controlling the amount of fabric engaged in the inner seat of the supporting frame depending on the load supporting capability thereof.

[0059] This feature allows, on a side, to precisely arrange the fabric material inside the supporting frame while simultaneously obtaining, at each side of the frame, and where it would be required, a proper tensioning of the fabric material, with an adjustable intensity, and which accordingly can be adapted to the different physical features of the used materials, depending on the result to be achieved.

[0060] Moreover, it is possible to recover the curtain panel to its starting condition, as the fabric material would be deformed by washing and maintenance operations.

[0061] Yet another advantage of the invention is that the curtain panel can be easily installed in its frame and its frame can be easily installed on outer supporting elements, either in a horizontal or a vertical position, or in a freely suspended condition, by using either fixed suspending means or slidable means, owing to the provision of a suitable designed seat provided for housing easily available means adapted to make the curtain rigid with the supporting frame.

[0062] In practicing the invention, the used materials, as well as the contingent size and shapes can be any, depending to requirements and the status of the art.

Claims

1. A curtain construction, specifically designed for windows, for dividing spaces and for furnishings, **characterized in that** said curtain construction comprises a cloth element supported by a supporting frame, encompassing said cloth element along all its four sides and being provided with latching and sliding means.

2. A curtain construction, according to Claim 1, **characterized in that** said latching and sliding means can be engaged in a rail for panel curtains and that, for latching and removing the curtain panel to/from the sliding panel, it is sufficient to thread or unthread into/from said seat said latching elements.

3. A curtain construction, according to Claim 1 or 2, **characterized in that** said latching means comprise support elements having a T-shape cross section, engaged, on a side, corresponding to the horizontal leg of the T-shape, in a slot of said supporting frame and, on the other side, corresponding to the vertical leg of the T, provided with sliding elements, including sliding wheels which can be driven on said rail.

4. A curtain construction, according to one or more of the preceding claims, **characterized in that** said frame comprises three section members: a body section member, a core section member and a cover section member, said core section member operating for locking said cloth element, the edge of which is arranged inside in a seat or chamber defined in the body of said supporting frame.

5. A curtain construction, according to the preceding claim, **characterized in that** said three sections members can be manually assembled, without using specifically designed assembling tools, with angular elements, to provide the perimeter of said curtain panel.

6. A curtain construction, according to one or more of the preceding claims, **characterized in that** said supporting frame is made of only two section members.

7. A curtain construction, according to the preceding claim, **characterized in that** said core is made by insert elements arranged inside said two bodies.

8. A curtain construction, according to one or more of the preceding claims, **characterized in that** one of said bodies comprises composite materials.

9. A curtain construction, according to one or more of the preceding claims, **characterized in that** one of said section members is made of aluminium or steel or other rigid material, with respect to its outer portion exposed to the view, and of a plastic material with respect to its inner portion contacting the other section member to which it is biconnected by a snap type of coupling, said latter portion being firmly coupled to the aluminium materials so as to provide a single section member.

10. A curtain construction, according to one or more of the preceding claims, **characterized in that** one of said section members is made of aluminium or steel, or any other rigid materials, with respect to its outer portion exposed to the view.

11. A curtain construction, according to the preceding claim, **characterized in that** said section member comprises, in its inner portion contacting the other section member to which it is coupled by a snap type of coupling, a lug made of another plastic material firmly coupled thereto, so as to provide a single section member.

12. A curtain construction, according to one or more of the preceding claims, **characterized in that** said cloth element is engaged in said seat formed in said body and is firmly fixed inside said seat by snap applying said core on said body.

13. A curtain construction, according to one or more of the preceding claims, **characterized in that** the size of the seat for housing therein said cloth element, or other material, inside said body, defines the adjusting range of the position of said curtain or the tension of said curtain.

14. A curtain construction, according to one or more of the preceding claims, **characterized in that** said curtain construction comprises one or more of the disclosed and/or illustrated features.-

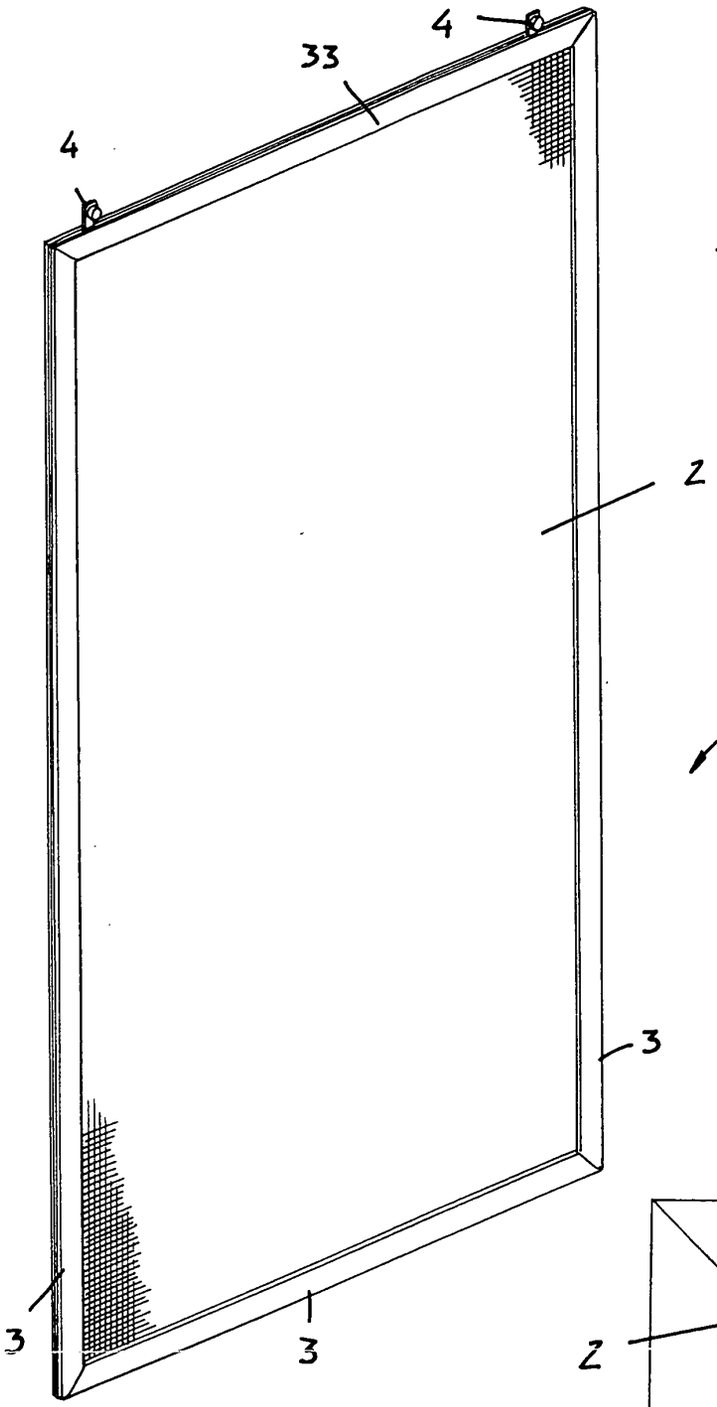

FIG. 1

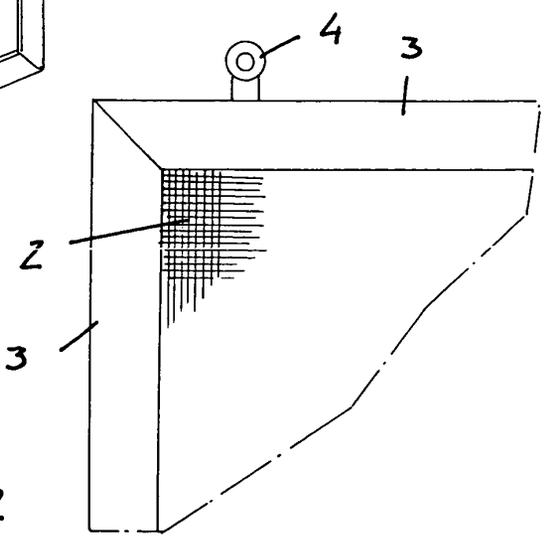

FIG. 2

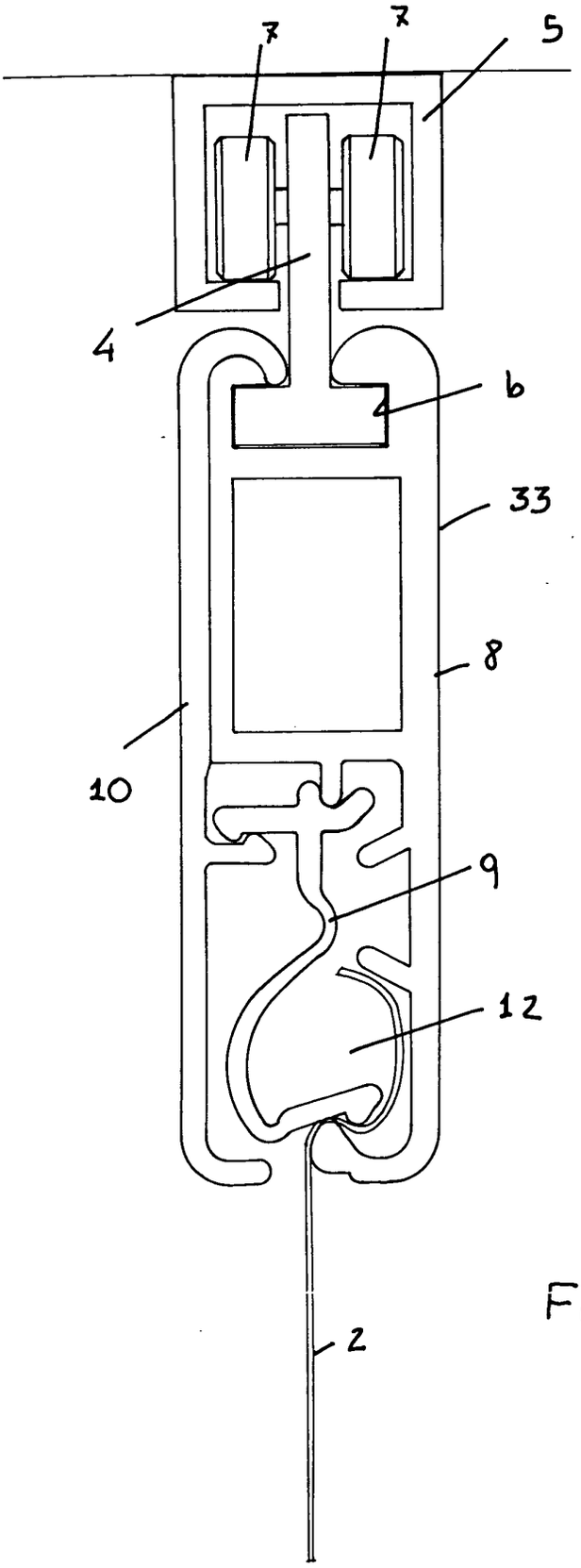

FIG. 3

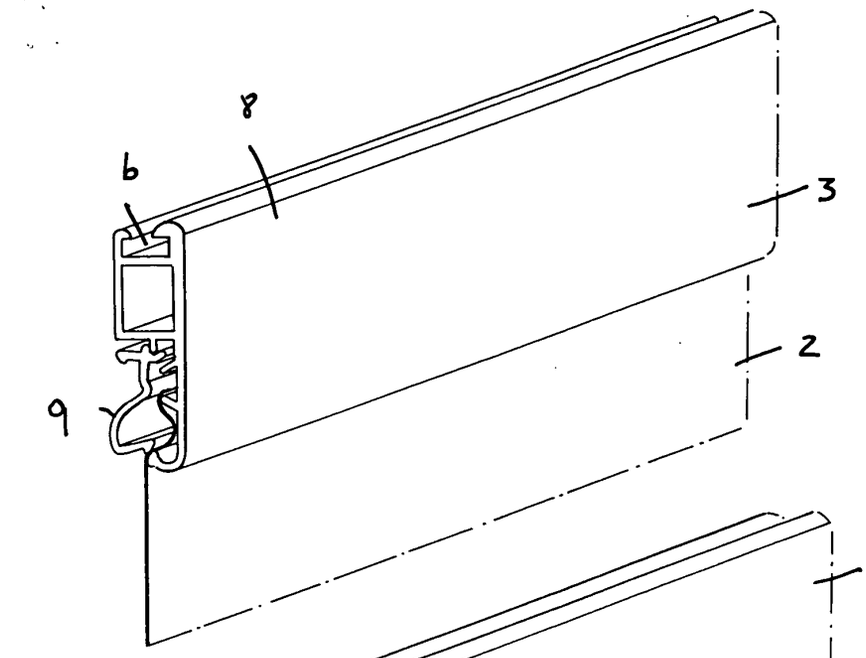

FIG. 4

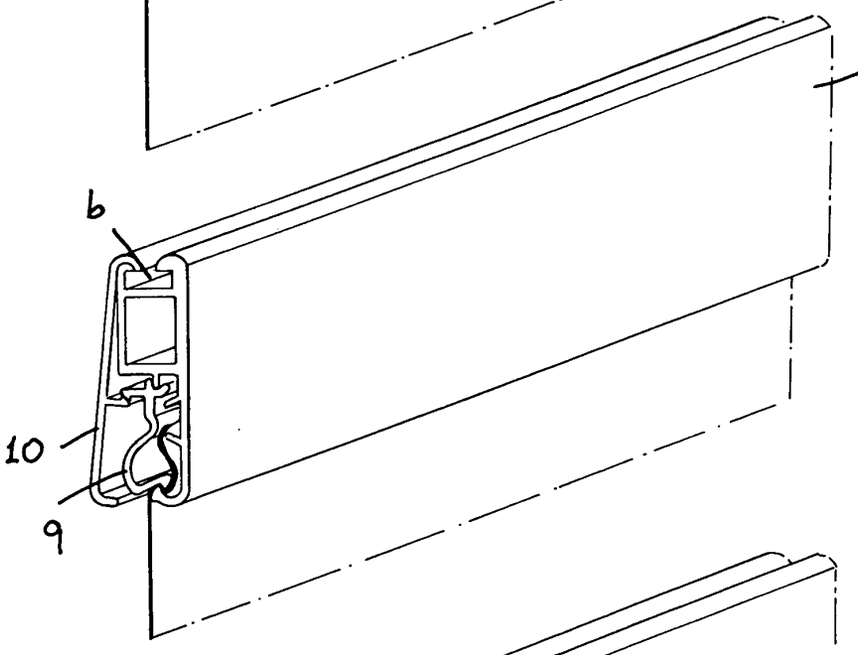

FIG. 5

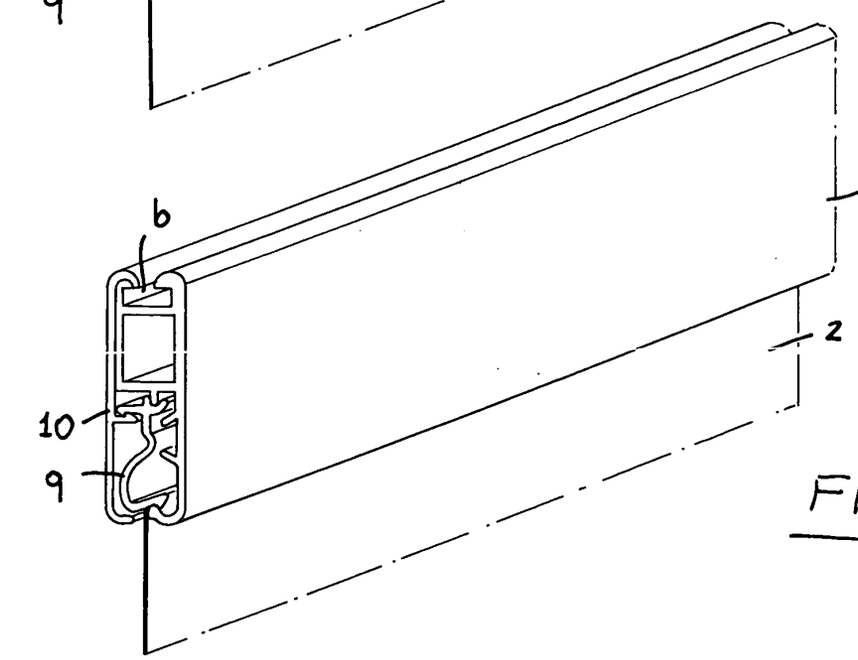

FIG. 6

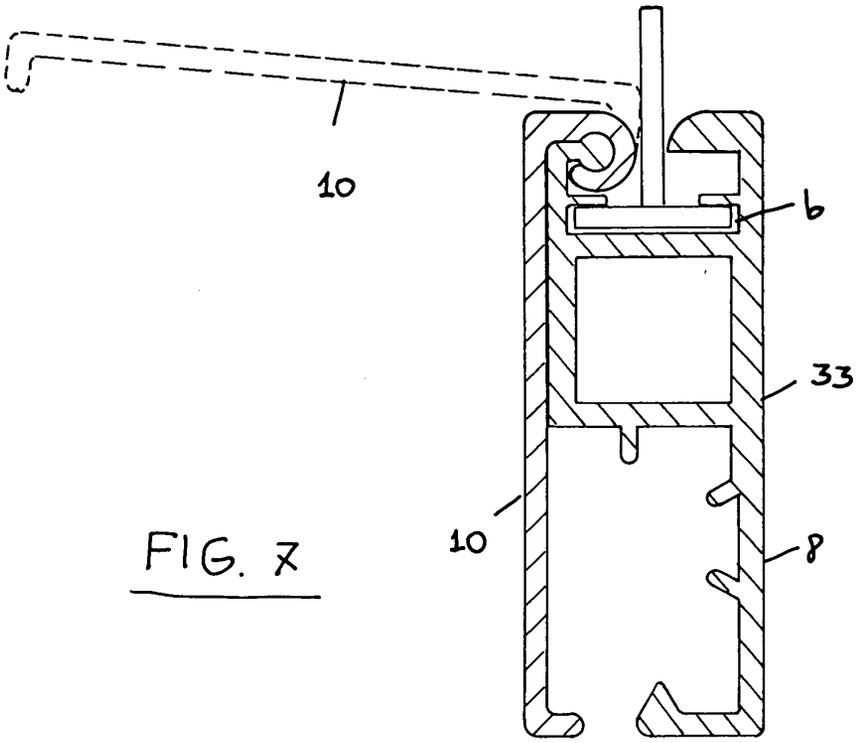

FIG. 7

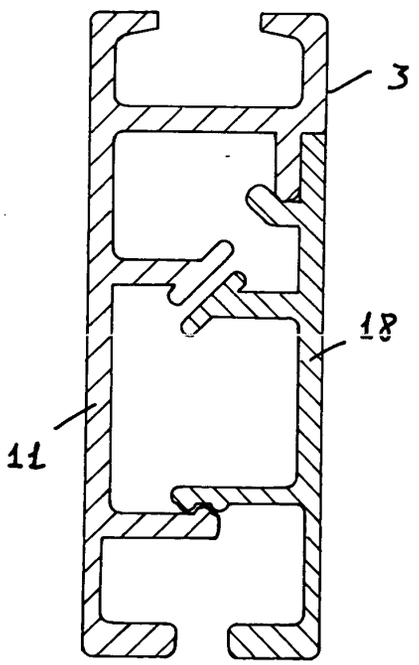

FIG. 8