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# EUROPEAN PATENT APPLICATION

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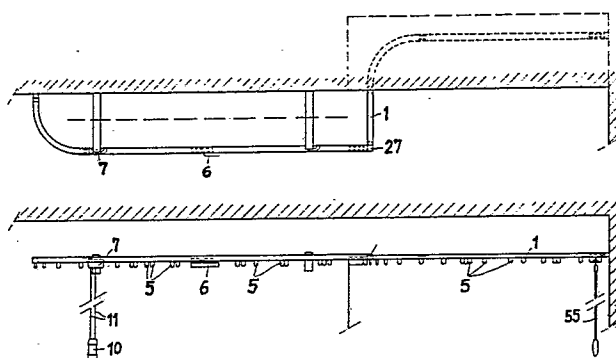
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54 **Guide for sliding curtains and similar.**

57 Guide for sliding curtains and similar, of the type comprising a support rail (1), comprising inner lips designed to contact at the bottom with the top of corresponding inner shoulders provided on terminals pieces, the rail also having longitudinal recesses designed to receive respective close-fitting connections, consisting of rods provided with a centre slot. Each terminal piece (7) consists of a framework which comprises a main body having two side skirts linked by three bridge portions, each one of these skirts having four inner side slots out in them, facing each other in pairs, in which respective pulley spindles can engage. The guide also comprises a cover piece, at least one stop and hanger piece (5) and at least one looking piece for the longitudinal opening in the rail.



This invention refers to a guide for sliding curtains and similar, of the type comprising a support rail, with straight and/or curved sections, provided as required with slotted holes for direct attachment to the ceiling, with its side arms bent inwards at the ends. The multiple hangers, from which the curtain or similar is suspended, and reversible devices for crossing over and/or overlapping the outside edges of the curtains slide along the inside of the rail. The guide also comprises curtain cord guide and/or return terminal pieces at its ends, other intermediate angle connectors between adjacent rail sections, support fixtures for fastening the guide to the wall or ceiling, and stretchers for the afore-mentioned curtain cord.

There are many curtain guides known nowadays, but in all of them, when the curtain has to follow the recesses and protrusions of the walls in a room, the guide installer is compelled to use an adequate tool to bend the guide on site, adapting it to each variation of shape of the wall (columns, window spaces, blind cases, etc.)

Moreover, if the guide shows several bends or non-aligned sections, it is necessary to install independent guides in order to ease the motion of the curtain, either if this motion is carried out manually or by a cord. This causes the inconvenience of the curtains remaining separate, losing unavoidably their decorative unity.

By means of the guide subject of the present invention, all these inconveniences are completely avoided, since with it the installer will assemble the guide very comfortably and in accordance with his needs, using the appropriate guide elements  
5 which, all together, constitute the subject of the present invention.

The guide in question is basically characterised by the fact that the above-mentioned rail is fitted with inner lips designed for contacting at the bottom with the top of  
10 corresponding inside shoulders provided on the above-mentioned terminal pieces. The rail is also fitted with longitudinal recesses designed to receive their respective close-fitting connectors, consisting of rods provided with a centre slot.

According to another feature of the invention, each  
15 terminal piece consists of a framework which comprises a main body with two side skirts linked by three bridge portions. These have four inner side slots cut in them, facing each other in pairs. Curtain cord guide and/or return pulley spindles can engage in these, with a choice of two positions each. Each of  
20 these spindles is firmly engaged at the bottom of a corresponding pair of slots by the tight fit of its outside edges against the bottom. Each spindle end is prevented from coming out of its portion of slot since this narrows near the bottom. The main body is provided in one end bridge portion

with a self-tapping screw to be applied against the inside face of the top centre arm of the rail. Each terminal piece may be fitted with an end cover piece or an intermediate cover piece, for coupling to the respective terminal and for housing at  
5 least one curtain hanger.

Other features and advantages of this curtain guide in question will be drawn from the description set out below with reference to the drawings attached, which illustrate, solely by way of example, one way in which it may be produced.

10 Figs. 1 and 2 are diagrammatic plan and elevational views, respectively, of a guide according to the invention;

Figs. 3 and 4 represent respective cross-sectional and plan views of a rail according to the invention, for attachment to the ceiling or to a wall by means of support fixtures;

15 Figs. 5 and 6 are views similar to those in Figs. 3 and 4, but referring to a rail for direct ceiling attachment;

Fig. 7 shows respective side and front elevational views of a connector between two rail sections;

Figs. 8 and 9 illustrate respective elevational and  
20 plan views of a curved section of the rail in Figs. 3 and 4;

Figs. 10 and 11 are views similar to those in Figs. 8 and 9, but referring to the rail in Figs. 5 and 6;

Fig. 12 is a sectional view according to XII-XII in Fig. 13;

5 Fig. 13 shows a plan view of a terminal;

Figs. 14 and 15 are sectional views according to XIV-XIV and XV-XV in Fig. 12, respectively;

Figs. 16, 17 and 18 show corresponding side, rear front and forward front elevational views, respectively, of a  
10 cover piece;

Fig. 19 shows two respective plan and sectional views of a height shim;

Figs. 20 and 21 are a cutaway elevational view, according to XX-XX in Fig. 1, and a plan view, also partly  
15 cutaway, of a cover piece applied to a right-angle union of two rail spans;

Figs. 22 and 23 show a semi-cutaway side elevational and a front elevational view of a hanger;

Figs. 24 and 25 are views similar to those in Figs. 22 and 23, but referring to another hanger;

Figs. 26, 27 and 28 illustrate corresponding side elevational, front elevational and plan views, respectively, of  
5 a stop and suspension piece;

Figs. 29 and 30 represent corresponding elevational and plan views, respectively, of a sealing piece for the longitudinal opening in the rail;

Fig. 31 is an elevational view of a cross-over device  
10 according to the invention;

Fig. 32 shows a sectional view according to  
XXXII-XXXII in Fig. 31;

Fig. 33 illustrates an elevational view of a cross-over device carriage; and

15 Fig. 34 is a sectional view according to XXXIV-XXXIV in Fig. 32.

In these figures we may see that the guide in question, represented diagrammatically in Figs. 1 and 2 in just one of the ways in which it may be produced, comprises a support rail  
20 1 with either straight sections (Figs. 4 and 6) or curved

sections (Fig. 8, 9, 19 and 11), provided as required with slotted holes, with its side sections 3 bent inwards at the ends 4. Multiple hangers 5, from which the curtain or similar, not shown, is suspended, and reversible devices 6 for crossing over and/or overlapping the end edges of the curtains slide along the inside of the rail 1.

The guide 1 also comprises guide and/or return terminals 7 for the curtain cord 11, other intermediate angle connections 27 between adjacent sections of rail 1, support fixtures 9 for attaching the guide to the wall or ceiling, and stretchers 10 for the curtain cord 11.

The rail 1 is equipped with inner lips 12 designed for contacting at the bottom with the top of corresponding inner shoulders 13 provided on the respective terminals 7.

15        The rail 1 is also provided with longitudinal recesses 14 designed to receive respective close-fitting couplings 15, consisting of rods with a centre slot 16.

Each terminal 7 is made up of a framework which consists of a main body with two side skirts 17 linked by three bridge portions 18, 19 and 20. Cut in each of these are four inner side slots 22, opposite each other in pairs, in which the respective spindles of the curtain cord guide and/or return pulleys can engage, with a choice of two positions each. Each

of these spindles is engaged firmly at the bottom of a corresponding pair of slots through the tight fit of its edges against the bottom. Each spindle end is prevented from coming out of its portion of slot through a constriction 24 in it near  
5 the bottom.

In the end bridge portion 18 the main body is provided with a self-tapping screw 25 for tightening against the inside face of the top middle arm of the rail 1.

Each terminal 7 may be fitted with an end cover piece  
10 (Figs. 16, 17 and 18) or an intermediate cover piece 27 (Figs. 20 and 21) for coupling to the respective terminal 7 and for housing at least one curtain hanger 5.

Either of these cover pieces 26 and 27 comprises a first hollow outer portion 28 designed for its attachment 5 to  
15 the wall or to the ceiling by means of the holes 29 and 30 drilled in it. Each cover piece 26 or 27 comprises a second middle portion 31 with inner shoulder 32 designed for resting against the inner flanges of the rail 1 and with a bottom recess 33 for housing the head of a curtain hanger 5. It also  
20 has a third inner portion 34 consisting of a block designed so that a vertical screw 25 may be threaded in for tightening against the inside face of the top arm of rail 1 for attachment purposes.



The guide comprises at least one stop and hanger piece 35 (Figs. 26, 27 and 28), consisting of a lower portion with a hanger ring 36 and an upper portion which is made up of a vertical stem 37 and a rectangular-shaped plate 38 perpendicular to the stem 37. This plate is slightly domed underneath and it has a width somewhat less than that of the bottom longitudinal opening 40 in the rail and a length somewhat less than that of the inside width of the rail 1.

If the vertical stem 37 of the piece 35 is inserted vertically inside the rail 1 so that the plate 38 perpendicular to the stem 37 is situated lengthwise to the opening 40 and this stop and hanger piece 35 is then turned 90°, it becomes firmly engaged in the rail 1 with the stem 37 resting against the inside of the top horizontal arm of the rail 1 and with the plate 38 perpendicular to the stem 37 resting against the in-bent ends 4 of the side arms 3 (Fig. 26).

The guide also comprises at least one locking piece 39 for the opening 40 in the rail 1, which has a basically flattened rectangular configuration with an inverted U cross section. The side arms 42 of the piece 39 have lengthwise grooves 43 designed to receive the respective free edges of the arms 3 of the rail 1.

This locking piece 39 is composed of a resilient flexible material which allows it to be pressed up into the

opening 40 in the rail 1 through elastic deformation of the piece. It is also removed through elastic deformation by pressing the side arms 42 of this piece 39 towards each other until the ends 4 of the side arms 3 of the rail 1 are freed  
5 from the side grooves 43 in the piece 39.

The crossover and overlap device 6 comprises one or two supplementary curtain support slides 44. Each of these has a pair of slip elements 45 located on top of the ends of the slide 44 and provided with a flat, smooth, horizontal top  
10 surface 46 designed to support the curtain cords 11.

Each of these slip elements 45 has a transverse rear sharp edge 48 designed to help guide the cords 11 on their way down to the body of the slide 44.

This body consists of a horizontal U-section plate  
15 placed vertically and provided with a centre hole 50, two notches 51 in the bottom edge and a lower transverse flange 52 with an inverted T cross section. All this is to allow the cord 11 to be wound through the hole 50 and the notches 51 so that the slide 44 is attached firmly to the cord 11.

20 The body of each slide 44 has a hole 47 below each slip element 45 either to receive a hanger of the moving end or ends of the curtain or suitable fastenings for a reversible crossover or overlap plate 53. This also has holes 54 for

receiving curtain hangers 5 or else an operating rod 55 (Fig. 2).

The stretchers 10 comprises at least one gravity tensioning device for cords 11 which consists of (Figs. 35 and 5 36) a centre weight body 56 with heads 57 firmly attached at either end that also hang from the cord loop 11.

Each head 57 comprises a hollow outer cap 58 with an inlet 59 in its end base for the cord 11 in approximately semicircumferential arc. It also has an L-section inner middle 10 portion 60 with a half-doughnut-shaped notch 61 where cord 11 slides and an inward-facing lip 62 designed to prevent fortuitous movement of the cord 11. Inside each cap 58 there are reinforcement ribs 63 which also act as buffers for the centre load body 56.

15 Each fixture 9 for supporting or attaching the guide to the wall or ceiling comprises a lockplate 64 for fastening to the horizontal arm of an angle bracket (Figs. 37 and 38) or directly to the ceiling (Fig. 39). The lockplate 64 is fitted with a swivel plate 65 with bottom fins 66 for fitting into 20 side grooves 14 (Fig. 3) of a lengthwise inverted T-section channel in the rail 1. This swivel plate 65 has a curved operating rod 67.

In Fig. 19 we may a shim 41 designed to be applied over piece 26 or piece 27 (Figs. 16 and 20) in order to compensate for the difference in height of the rail 1, in the event of it not being attached directly to the ceiling.

5 Two ways of producing a hanger 5 are illustrated in Figs. 22 to 25. In both cases they comprise a bottom part with a hole 68 and, in the case of Figs. 22 and 23, rolling members 69, whilst in the case of Figs. 24 and 25 they include sliding members 70 and a flange 71 to stop them getting inside  
10 the rail 1.

It goes on record that whatever does not alter, change or modify the essential nature of the guide for sliding curtains or similar described may be subject to minor variations.

15

## NOTE

The Utility Model application requested devolves upon the following claims:

## CLAIMS

1.- Guide for sliding curtains and similar, of the type comprising a support rail, with straight and/or curved sections, provided as required with slotted holes for direct  
5 attachment to the ceiling, with its side arms bent inwards at their ends, the multiple hangers, from which the curtain or similar is hung, and reversible devices for crossing over and/or overlapping the outside edges of the curtains sliding along the inside of the rail, the guide also comprising curtain  
10 cord guide and/or return terminals at its ends, other intermediate angle connections between adjacent rail sections, support fixtures for fastening the guide to the wall or ceiling, and stretchers for the curtain cord, characterised in that the above-mentioned rail is fitted with inner lips  
15 designed to contact at the bottom with the top of corresponding inner shoulders provided on the terminals, the rail also having longitudinal recesses designed to receive respective close-fitting connections, consisting of rods provided with a centre slot.

20 2.- Guide, according to claim 1, characterised in that each terminal piece consists of a framework which comprises a main body having two side skirts linked by three bridge portions, eachone of these skirts having four inner side slots cut in them, facing each other in pairs, in which respective  
25 curtain cord guide and/or return pulley spindles can engage,

with a choice of two position each, each spindle being firmly engaged at the bottom of a corresponding pair of slots by the tight fit of its outside edges against the bottom, every spindle end being prevented from coming out of its portion of slot by a constriction near the bottom, being the main body, in one end bridge portion provided with a self-tapping screw to be applied against the inside of the top centre arm of the rail, each terminal may be fitted either with an end cover piece or an intermediate cover piece, for coupling to the respective terminal and for housing at least one curtain hanger.

3.- Guide according to claim 1, characterised in that said cover piece for coupling at least one end of a section of rail comprises a first hollow outer portion designed for its attachment to the wall or ceiling; a second middle portion with inner shoulders designed for resting against the inner flanges of the rail and with a lower recess for housing the head of a curtain hanger; and a third inner portion consisting of a block designed so that a vertical screw may be threaded in for tightening against the inside of the top arm of the rail for attachment purposes.

4.- Guide according to claim 1, characterised in that it comprises at least one stop and hanger piece, consisting of a lower portion with a hanger ring and an upper portion which is made up of a vertical stem and a rectangular-shaped plated perpendicular to the stem, said plate being slightly domed

underneath and it has a width somewhat less than that of the bottom longitudinal opening in the rail and a length somewhat less than that of the inside width of the rail being all this so designed that if the vertical stem of the stop and hanger piece is  
5 inserted vertically into the rail in such a way that the plate perpendicular to the stem is situated lengthwise to the longitudinal opening in the rail this stop and hanger piece is then turned through 90°, it becomes firmly engaged in the rail with the stem resting against the inside of the top horizontal  
10 arm of the rail and with the plate perpendicular to the stem resting against the in-bent ends of the side arms.

5.- Guide according to claim 1, characterised in that it comprises at least one locking piece for the opening in the rail which has a basically flattened rectangular configuration  
15 with an inverted U cross section, having its side arms lengthwise grooves designed to accept the respective free edges of the rail arms, this locking piece being composed of a resilient flexible material which allows it to be pressed up into the opening in the rail through elastic deformation of the  
20 piece, and it is also removed through elastic deformation by pressing its side arms towards each other until the ends of the rail side arms are released from the side grooves in the piece.

6.- Guide according to claim 1 characterised in that the afore-mentioned crossover and overlap device comprises one  
25 or two supplementary curtain support slides, each of these

having a pair of slip elements located on top of the ends of the slide and provided with a flat, smooth, horizontal top surface designed to carry the curtain cords, each of these slip elements having a transverse sharp edge at the back designed to help guide the cords on their way down to the body of the slide, his body consisting of a horizontal U-section plate positioned vertically and provided with a centre hole, two notches in the bottom edge and a lower transverse flange with an inverted T cross section, being all this to allow the cord to be wound through the hole and the notches so that the slide is firmly attached to the cord. every slide body having a hole below each slip element either to receive a hanger of the moving end or ends of the curtain or suitable fastenings for a conventional reversible crossover or overlap plate, having also holes for receiving curtain hangers or an operating rod.

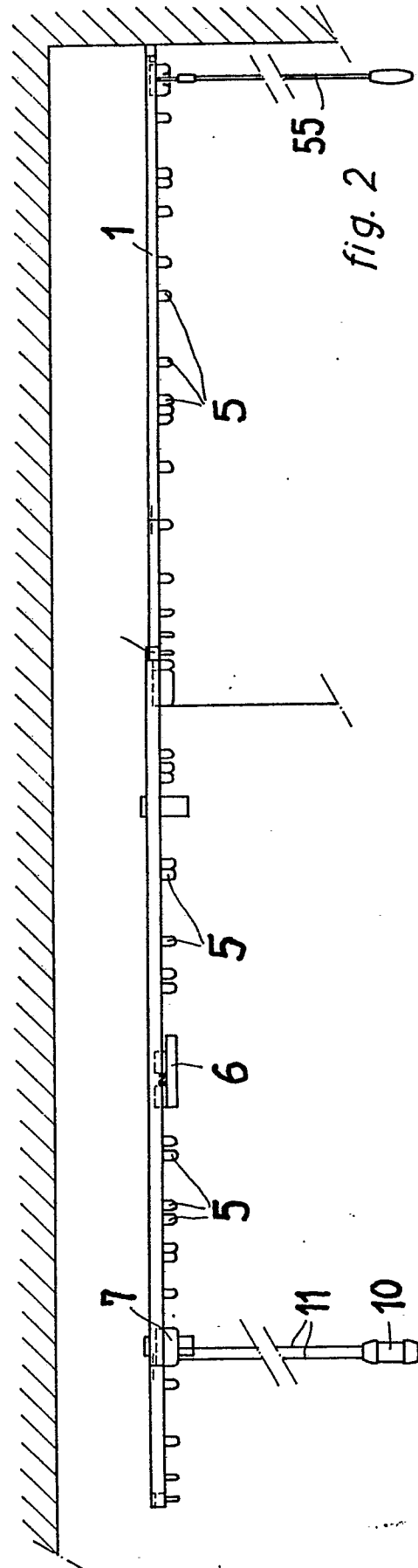
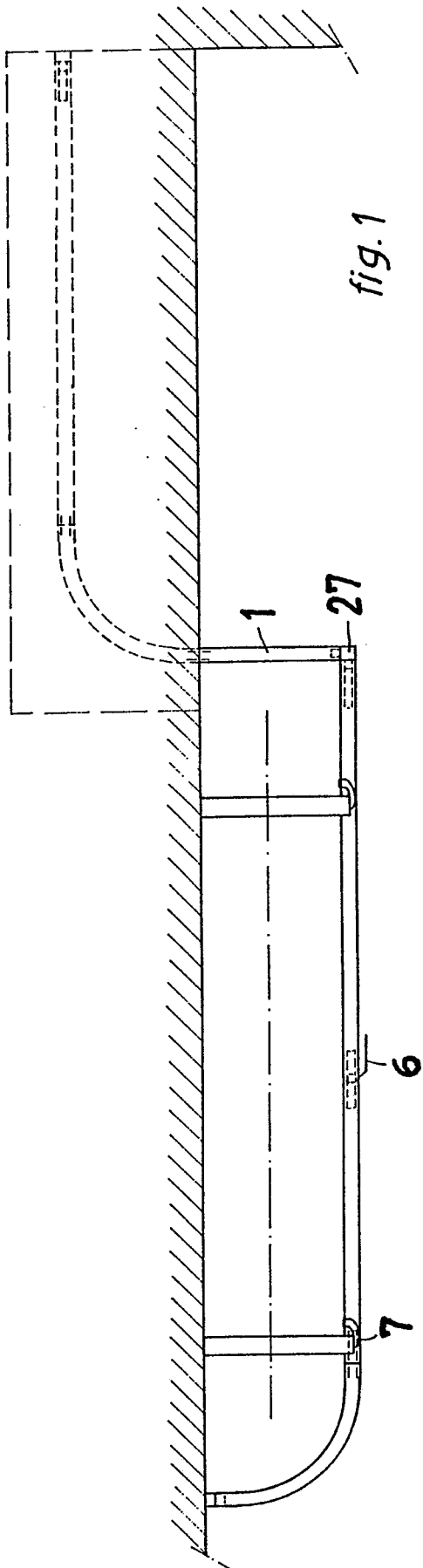
7.- Guide according to claim 1, characterised in that the stretchers comprise at least one cord gravity tensioning device which consists of a centre weight body with heads firmly attached at either end that also hang from the cord loop, each of these comprising a hollow outer cap with an inlet in its end base for the cord, in approximately semicircumferential arc, it also having an L-sention inner middle portion with a half-doughnut-shaped notch to prevent fortuitous movement of the cord, inside each cap there being reinforcement ribs which also act as stops for the central load body.

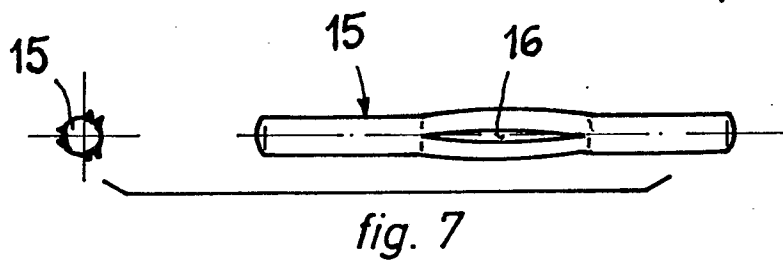
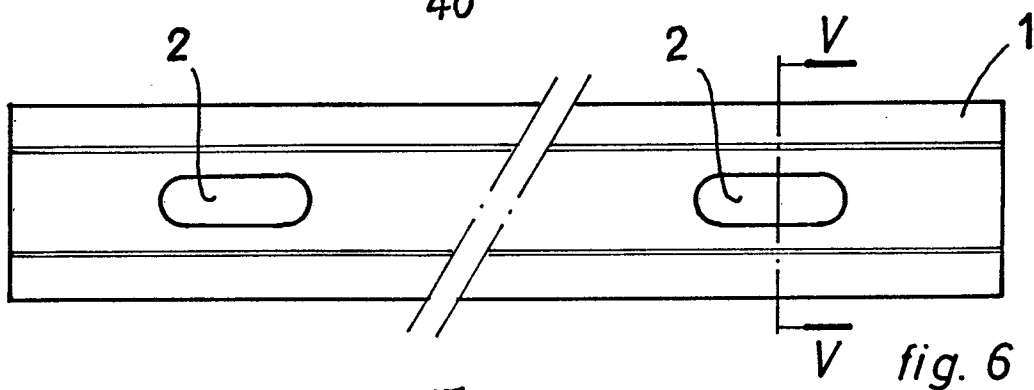
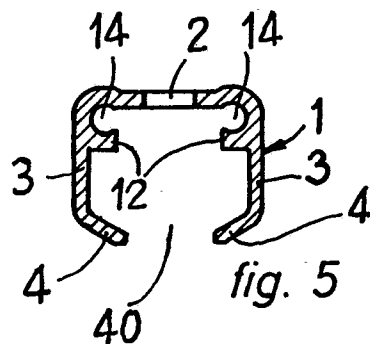
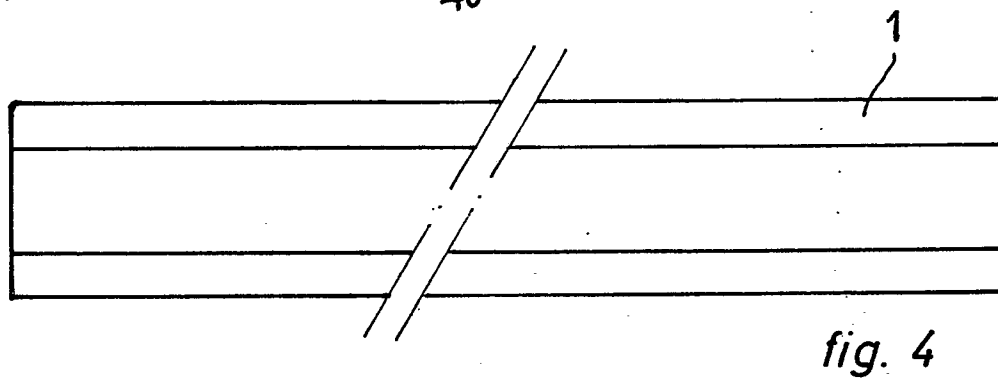
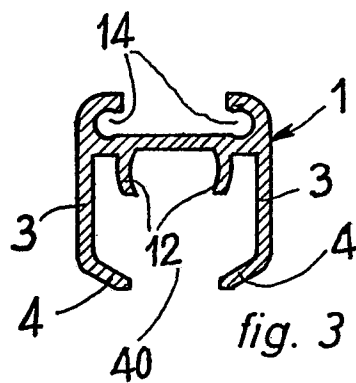


8.- Guide according to claim 1, characterised in that each support fixture comprises a lockplate for fastening to the horizontal arm of an angle bracket or directly to the ceiling, the lockplate being fitted with a swivel plate with bottom fins  
5 for fitting into side grooves of a lengthwise inverted T-section channel in the rail, having this swivel plate a curved operating rod.

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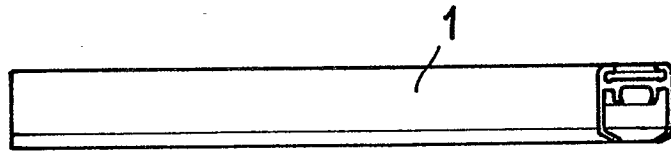


fig. 8

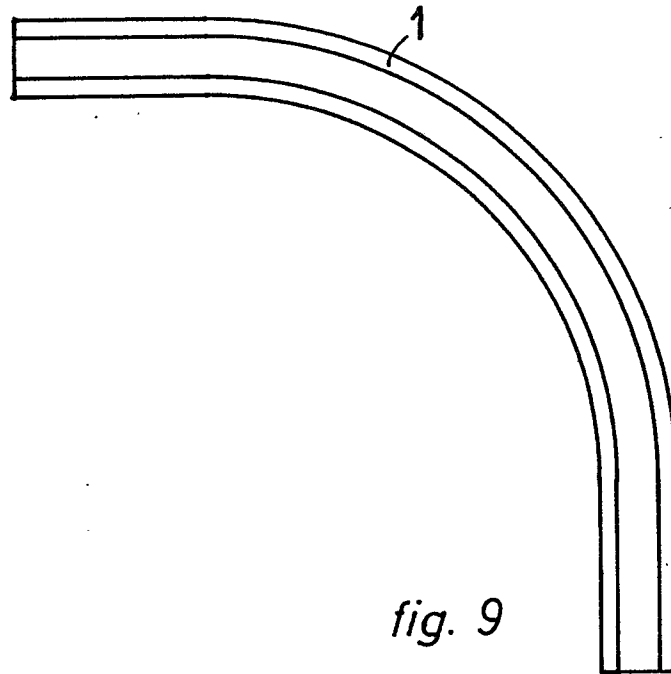


fig. 9

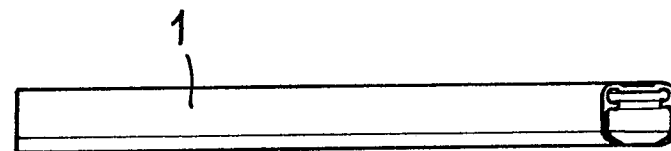


fig. 10

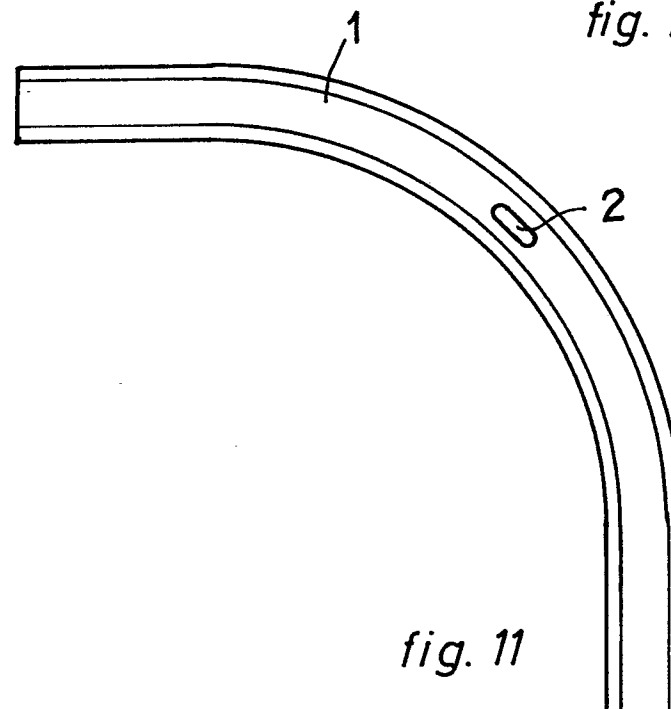


fig. 11

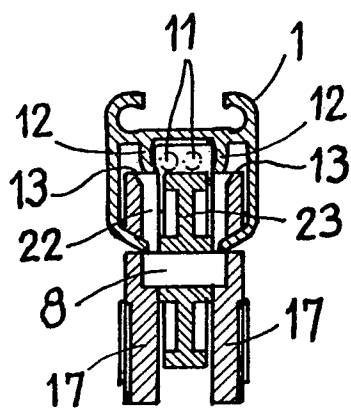
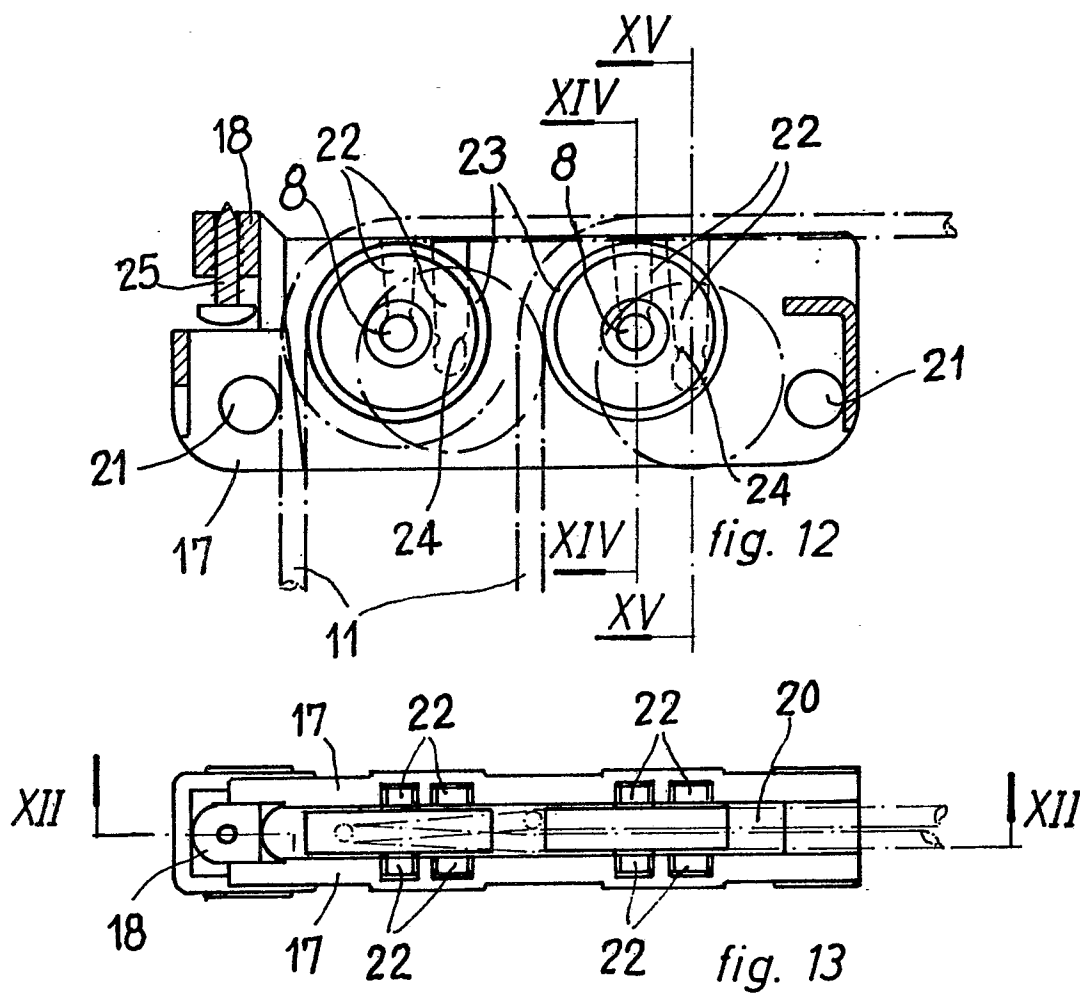


fig. 14

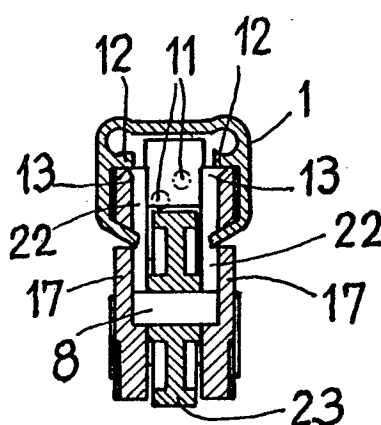
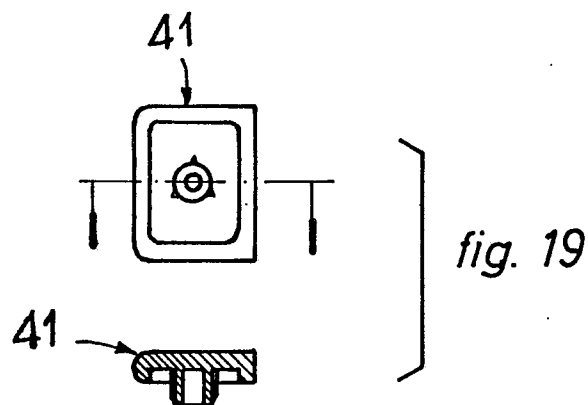
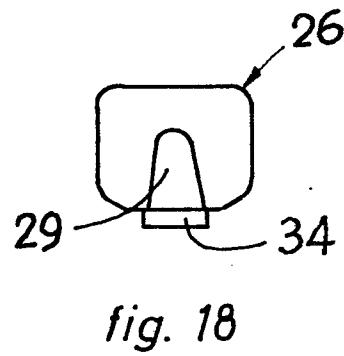
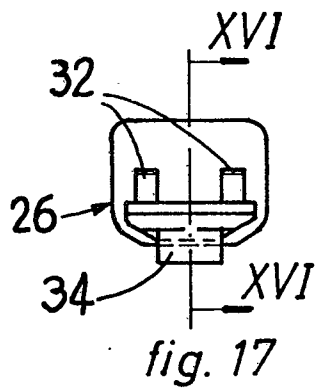
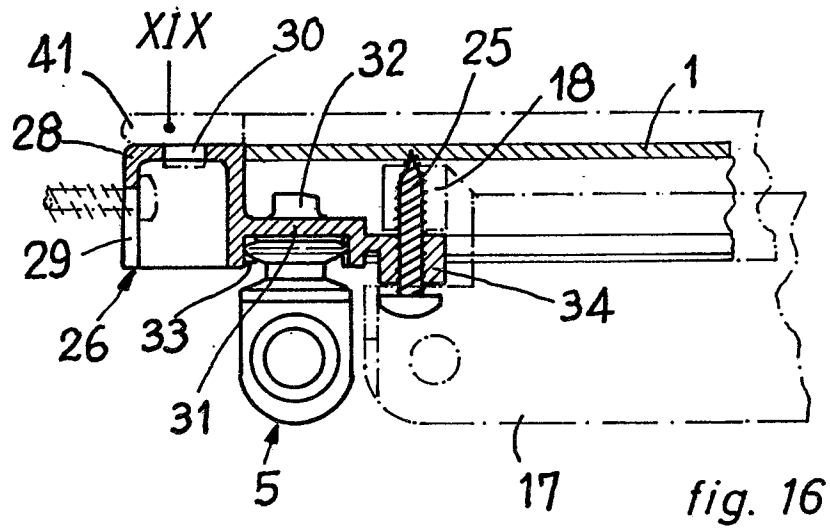


fig. 15

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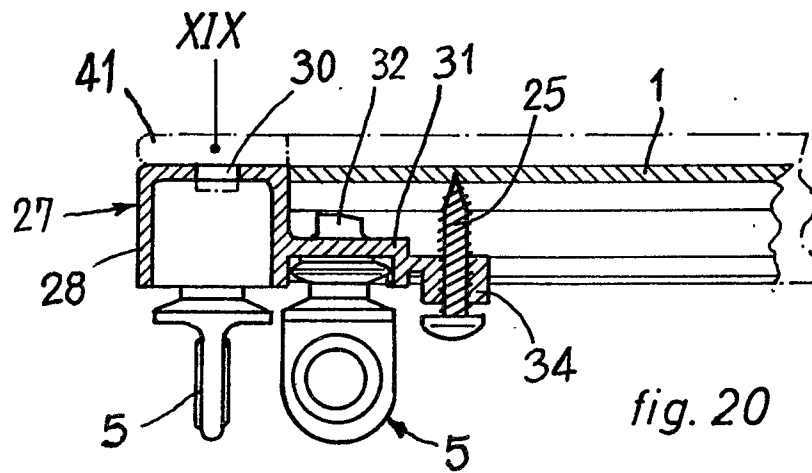


fig. 20

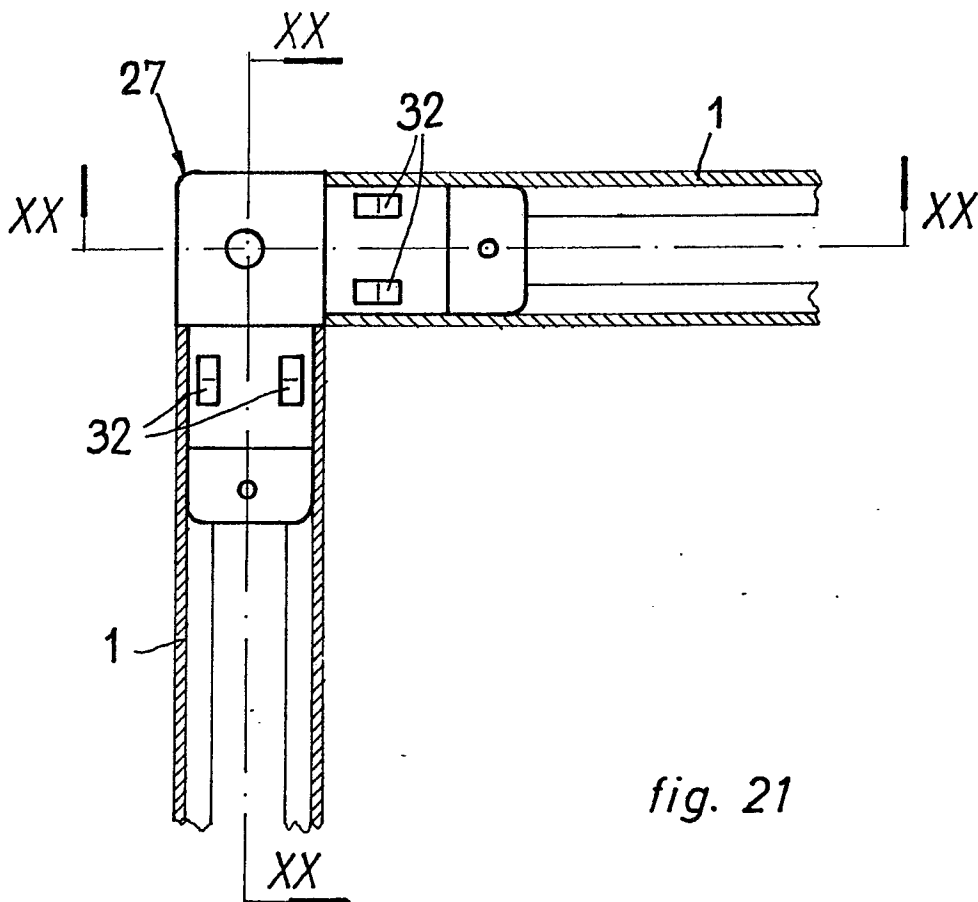
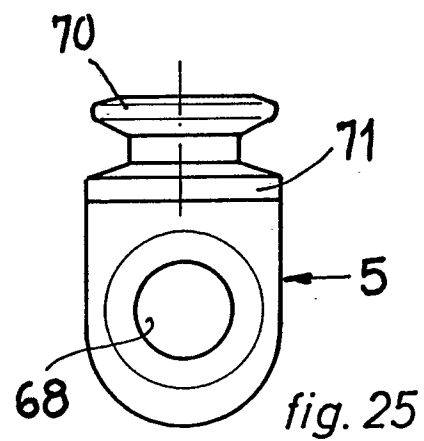
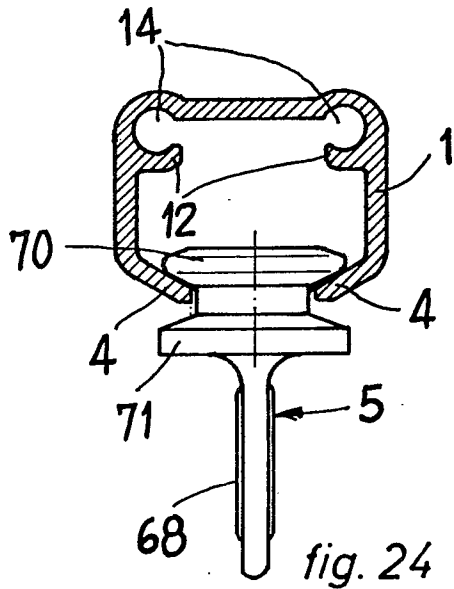
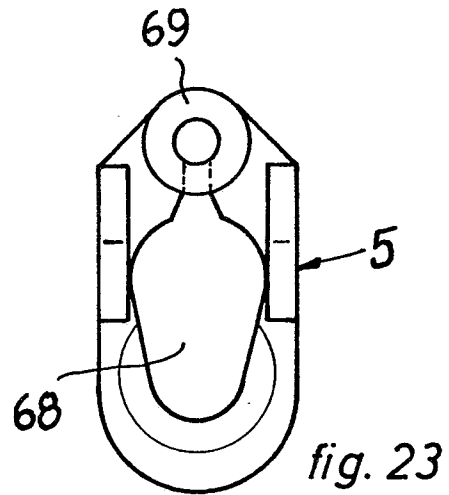
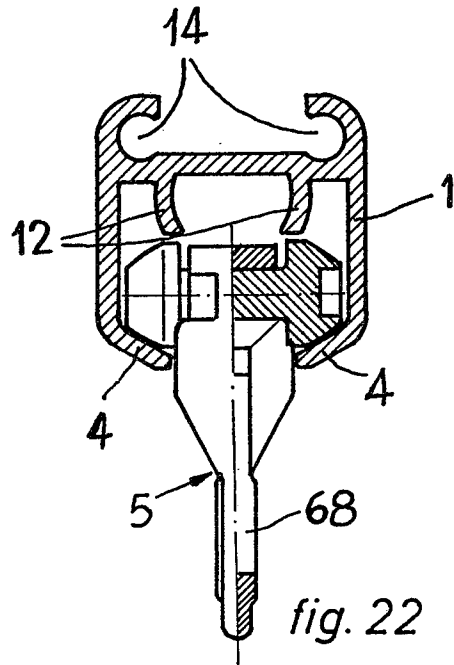


fig. 21

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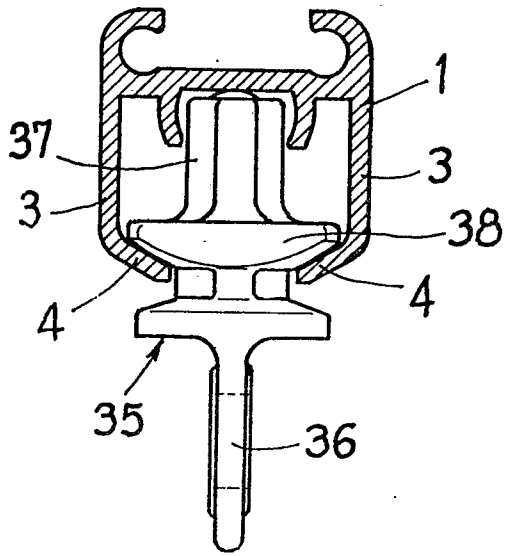


fig. 26

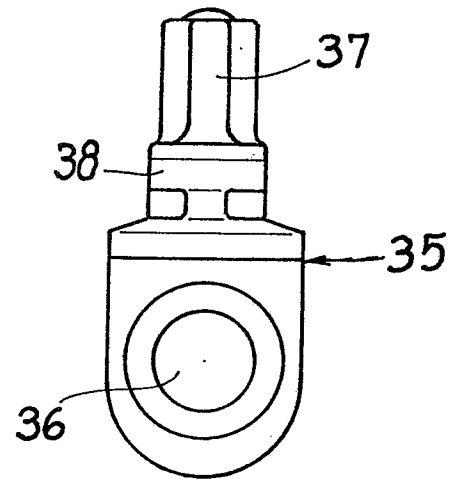


fig. 27

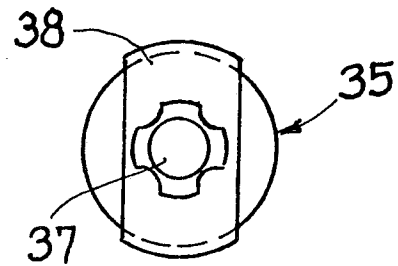


fig. 28

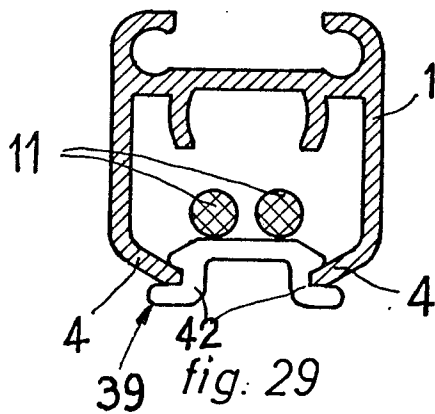


fig. 29

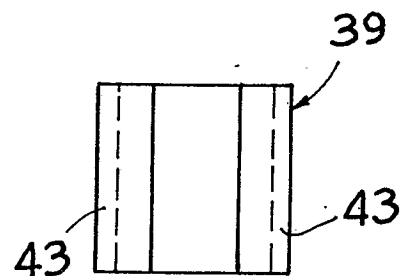
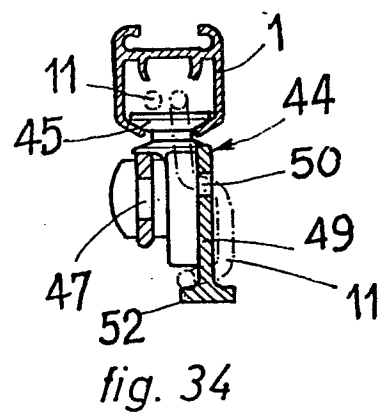
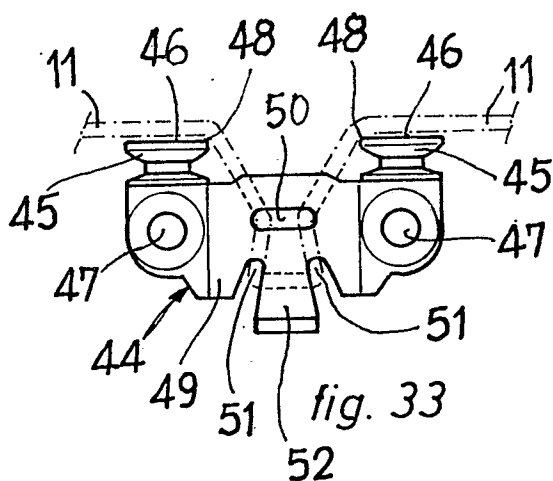
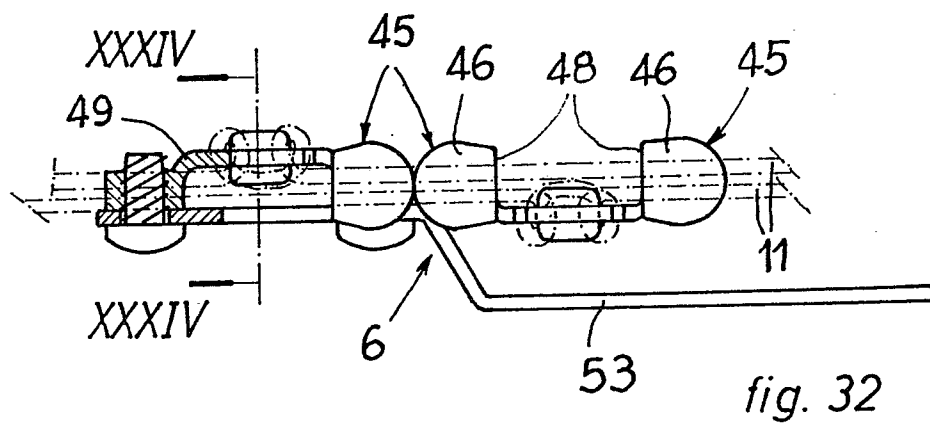
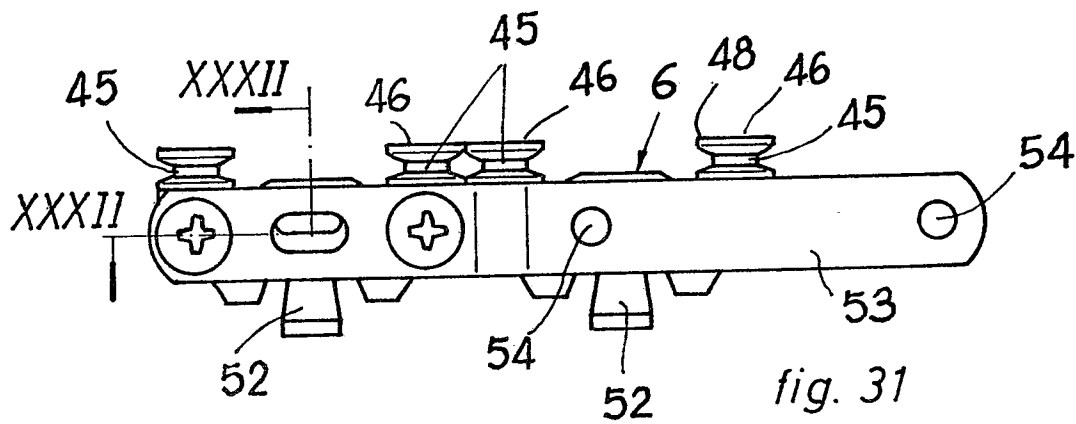


fig. 30



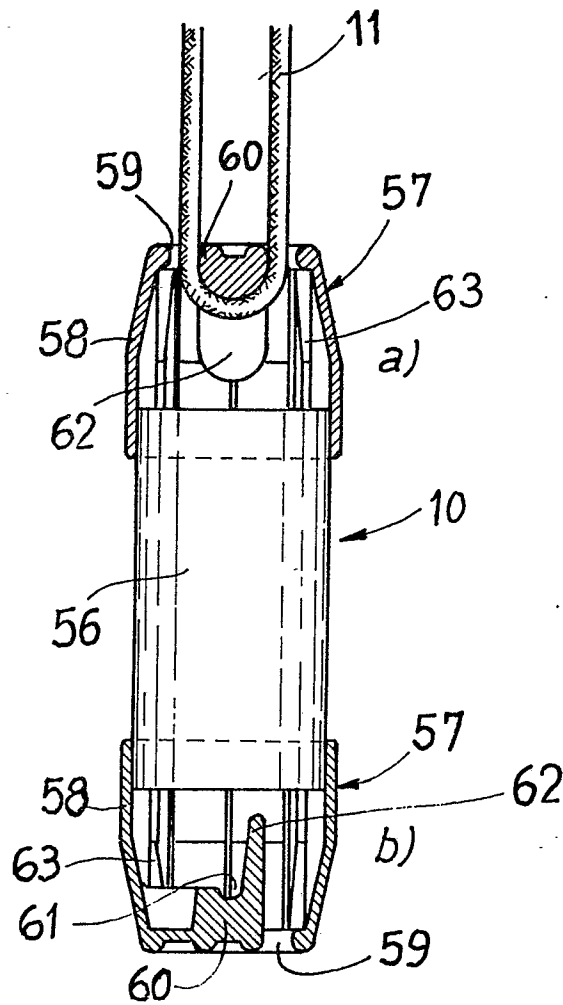


fig. 35

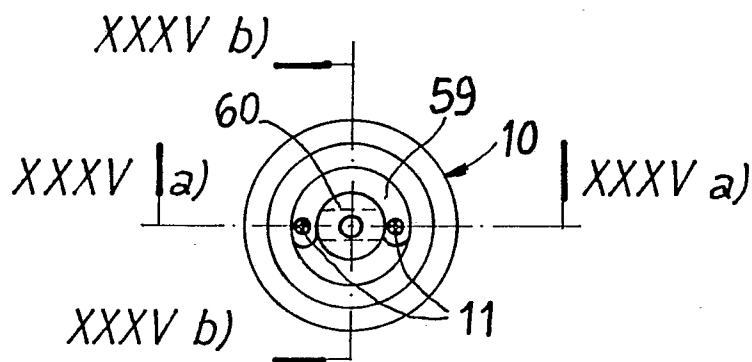
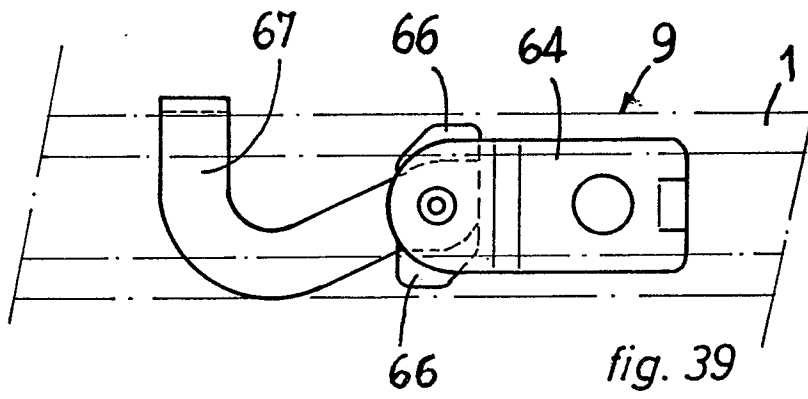
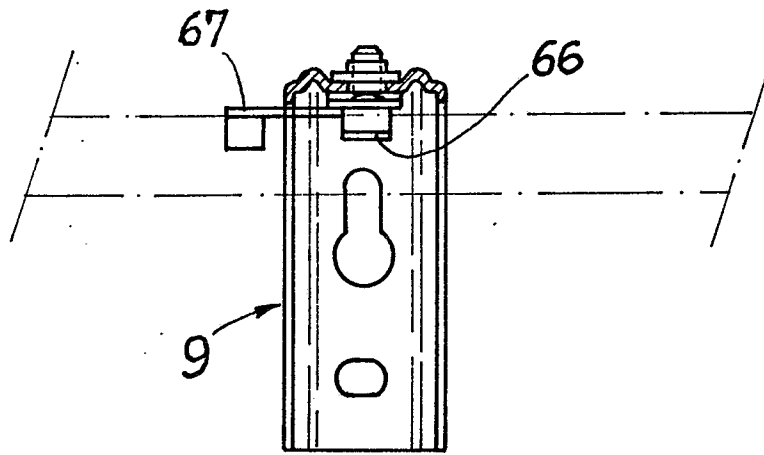
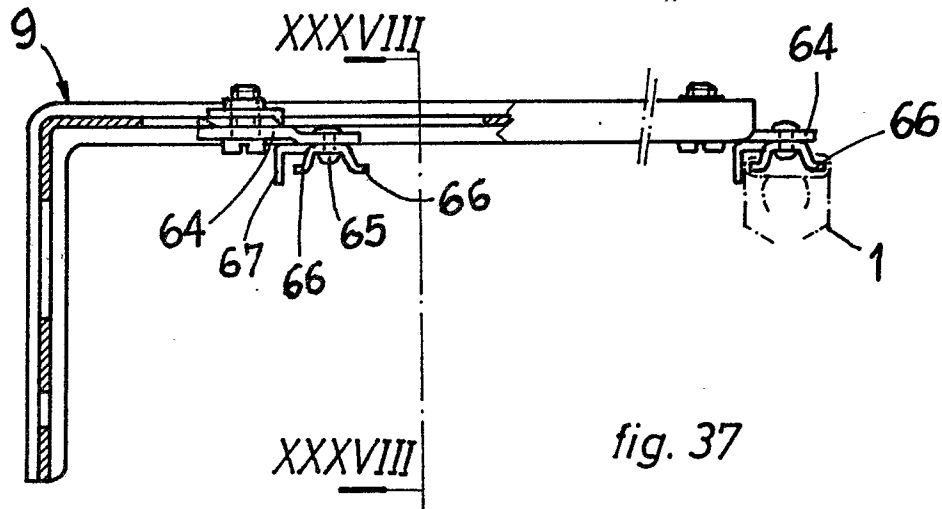


fig. 36





European Patent  
Office

# EUROPEAN SEARCH REPORT

0247960

Application number

EP 87 50 0030

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.4)
A	EP-A-0 122 358 (ARQUATI) * Page 5, line 26 - page 6, line 12; page 7, line 3 - page 8, line 15; figures *	1,7	A 47 H 5/032 A 47 H 15/04
A	FR-A-1 601 619 (KLEIN) * Page 3, line 29 - page 5, line 14; page 6, line 39 - page 7, line 3; figures *	1,6	
A	DE-A-2 445 621 (RILOGA) * Page 5, line 18 - page 8, line 27; figures *	1,2,7	
A	GB-A-2 115 687 (KONRAD) * Page 2, lines 116-126; figure 10 *	1	
A	US-A-3 248 749 (WILLIAMS) * Whole document *	3	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int. Cl.4) A 47 H
Place of search THE HAGUE		Date of completion of the search 31-07-1987	Examiner LAUE F.M.
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			