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(54) Device for coupling cloth rolls, arranged in line, of sunshades which are place side by side.

(57) The invention relates to a device for coupling cloth rolls (7-9), arranged in line, of sunshades which are placed side by side.

Take-up means are thereby provided in the facing ends of the cloth rolls (7-9), said take-up means (18, 19) having recesses having an unround section for receiving a coupling piece (38) having a corresponding section.

The coupling piece (38) is adjustable in its longitudinal direction by means of an adjusting means (39) connected to one of the cloth rolls between a first position, in which the coupling piece is located at least substantially within the boundary of the one sunshade, and a second position, in which the coupling piece extends into both unround recesses of the adjacently arranged receiving means of the two sunshades.

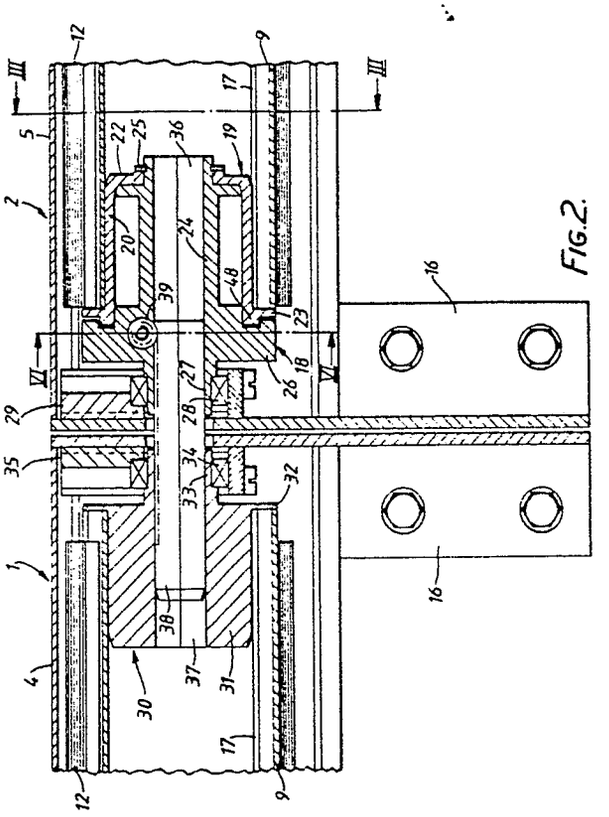

FIG.2.

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Device for coupling cloth rolls, arranged in line, of sunshades which are place side by side.

The invention relates to a device for coupling cloth rolls, arranged in line, of sunshades which are placed side by side, whereby take-up means are provided in the facing ends of the cloth rolls, said take-up means having recesses having an unround section for receiving a coupling piece having a corresponding section.

Usually each sunshade is provided with an operating mechanism for rolling up or rolling out the cloth.

In certain cases it may be preferable, however, to place several sunshades side by side instead of using one long sunshade, and in such cases it is not always necessary that each sunshade can be operated separately.

From FR-A- 2.407.328 there is known a device of the above kind whereby the take-up means are provided with slots extending transversely to the longitudinal direction of the cloth rolls, said slots opening into the unround recesses.

When the cloth rolls are being mounted and dismounted they must be moved transversely to their longitudinal direction in order to be able to place the cloth rolls on the coupling pieces. Usually this can only be done in one direction.

All this makes mounting and dismounting more difficult.

The purpose of the invention is to obtain a device by means of which it is possible to couple the cloth rolls together in a simple manner.

According to the invention this can be achieved in that the coupling piece is adjustable in its longitudinal direction by means of an adjusting means connected to one of the cloth rolls between a first position, in which the coupling piece is located at least substantially within the boundary of the one sunshade, and a second position, in which the coupling piece extends into both unround recesses of the adjacently arranged take-up means of the two sunshades.

By using the construction according to the invention a coupling of the cloth rolls of sunshades which are arranged side by side can be obtained simply and effectively, whereby the coupling piece will not impede the placing or removal of a neighbouring sunshade in the position entirely within the boundary of the one sunshade. Furthermore a construction has been obtained which takes up very little space in the longitudinal direction of the cloth roll, so that the sunshades can be arranged closely together.

It is noted that from NL-A- 7.600.748 and NL-A-7.605.728 there are also known devices for coupling sunshades together. These publications, however, do not disclose the use of a coupling piece which is adjustable in its longitudinal direction either.

The invention will be further explained hereinafter with reference to a few possible embodiments of the construction according to the invention illustrated in the accompanying figures.

Fig 1 is a diagrammatic view of three sunshades arranged side by side.

Fig 2 is a larger-scale section of the adjacently arranged ends of two sunshades near the part A encircled in fig 1 and seen according to the line II - II in fig 3.

Fig 3 is a section of fig 2, seen according to the line III -III in fig 2.

Fig 4 is a section of fig 3, seen according to line IV -IV in fig 3.

Fig 5 is a view of fig 3, leaving out the end profile located in front of the cloth roll in fig 3.

Fig 6 is a section of a receiving means, seen according to the line VI - VI in fig 2.

Fig 7 illustrates another embodiment of the construction according to the invention.

Fig 8 is a view of fig 7, whereby some parts are left out for the sake of clarity of the illustration.

Fig 9 is a section of the coupling piece according to the figs 7 and 8.

As is illustrated in fig 1 three sunshades 1 - 3, with the covers 4 - 6 forming part of said sunshades and cloth rolls 7 - 9 rotatably journalled about their axes of rotation inside said covers, are arranged side by side, such that the cloth rolls 7 - 9 are located in line.

The cloth rolls may be formed in the usual manner by extruded tubes 10, in whose longitudinal direction there is formed an open groove 11 for receiving the end of a cloth 12 wound around the tube in question. The free end of the cloth 12 is fixed in the usual manner to an end profile 13, which is fitted to arms 14, said arms 14 being pivotally coupled with their lower ends to a support 15 fixed to the wall of a building or the like. Also the covers 4 - 6 will be fixed to the wall of a building or the like with supports 16.

As furthermore appears from fig 3 pairs of inwardly projecting fingers 17 are formed in the usual manner in the inside of the tube 9.

In the illustrated embodiment a take-up means, consisting of two parts 18 and 19, is connected to the tube 9 belonging to the sunshade 2. The part 19 is built up of a casing 20 with recesses 21 for receiving the fingers 17 and the part of the tube 9 bounding the space 11. The casing 20 is closed at one end by a transveric plate 22. At the other end and casing is provided with an outwardly projecting flange 23, which butts against the end of the tube

9.

An insert part 24 of part 18 is pressed in the interior of the part 19, whilst one end of said insert part 24, having smaller diameter, is passed through a hole provided in the wall 22 of the part 19 and is provided with a retainer ring 25.

The part 18 furthermore comprises a thick flange 26, whose external diameter corresponds with the external diameter of the flange 23.

A cilindrical part 27 joins the flange 26 at the side of the flange remote from the insert part 24, said cilindrical part being accommodated freely rotatably in a bearing 28. The bearing 28 is accommodated in a support 29 fixed to the cover 5.

To the end of the tube 9 belonging to the sunshade 1, illustrated in fig 2, there is connected a take-up means 30, which is provided with a part 31 extending into the interior of the tube 9. The part 31 has recesses for receiving the fingers 17 and the part of the tube 9 bounding the space 10, in a similar manner as described above for the part 19 of the take-up means 18, 19 so that also this take-up means 30 is secured against rotation relatively to the tube 9. The take-up means 30 furthermore has an outwardly projecting flange 32 forming one unit with the part 31 inserted into the tube 9, which butts against the end of the tube 9. At the side of the flange remote from the part 31 the take-up means is provided with a cilindrical part 33, which is supported by a bearing 34. The bearing 34 is accommodated in a support 35, which is fixed to a side wall of the cover 1.

As furthermore appears from fig 2 co-axial passages 36, 37 respectively are provided in the part 18 of the take-up means 18,19 and in the take-up means 30, said passages having an unround section, square in the present case, as appears from fig 3. A coupling piece 38, also having an unround section, more in particular a square section (figs 2, 6), is accommodated, movable in its longitudinal direction, in said passages 36, 37 which are in line. The coupling piece 38 is thereby provided in one angular point with a rack gearing for co-operation with a pinion 39 which is rotatably accommodated, by means of bearing bushes 40, in a bore 41 provided in the flange 26 of the part 18 of the take-up means 18, 19. As appears in particular from fig 6 the centre line of said bore extends perpendicularly to a plane extending through the centre line of the cloth roll in question, such that the centre line of the cloth roll in question and the centre line of the bore 41 cross each other perpendicularly.

To the ends of the pinion 39 there are fixed bolts 42, which at their ends remote from the pinion 39 are provided with heads 43 in which hexagonal holes are recessed in a manner known by itself.

Threaded bores are furthermore provided in the flange 26, on both sides of the hole 36 receiving the coupling piece 38, for receiving tapped bolts 44, which are provided at their ends with heads 45, which are also provided with hexagonal recesses in a manner known by itself.

As appears in particular from fig 6 the centre lines of the bores receiving the bolts 44 are thereby located in line and that such that they intersect the centre line of the cloth roll in question and the centre line of the part 18 resp. Between the ends of the bolts 44 directed towards the coupling piece 38 and the coupling piece there are furthermore placed filling pieces 46 made of a resilient material.

After the bolts 44 have been loosened the coupling piece 38 can be moved in its longitudinal direction by rotating the pinion 39 by means of a spanner inserted into one of the bolt heads 43. As a consequence the coupling piece can be retracted from the position illustrated in fig 2, in which said coupling piece 38 couples the two take-up means 18, 19 and 30, and therewith the two co-axial cloth rolls 9, together into a position in which said coupling means is located at least entirely within the outer boundary of the cover 5 of the sunshade 2. In this position the coupling means does not form an impeding obstacle, so that in this position of the coupling means the various sunshades can be arranged side by side or removed. During normal use the fabric rolls of the sunshades which are arranged side by side will be coupled by means of the coupling means 38, so that they are rotatable about their longitudinal axes by means of an operating mechanism for rolling up or rolling out the clothes 12 provided on the fabric rolls.

When the bolts 45 are fixed, whereby the resilient means 46 are pressed against the coupling piece 38, the coupling piece will be effectively secured against displacement in its longitudinal direction.

Rings 47 are furthermore provided under the heads 45, which rings will be pressed against a wall part of the part 18, at the spot of a recess provided in the part 18 for receiving the bolt heads 43 and 45, as well as against the outer circumference of a projecting nose 48 of the part 19, as a result of which the parts 18 and 19 are secured against rotation relatively to each other.

It will be apparent that by using the construction according to the invention a connection between co-axial cloth rolls can be obtained in a simple and compact manner, so that there will only be a comparatively small chink present between the parallel boundary edges of clothes which are located side by side.

Of course additions and/or alterations to the embodiment described above will be conceivable. Thus fig 9 illustrates a coupling means 49 formed by a square bar, the angular points 50 of said

coupling means being provided with screw thread with a pitch circle 51.

As illustrated in figs 7 and 8 such a coupling piece can be accommodated, movable in its longitudinal direction in a take-up means consisting of two parts 52 and 53, whereby the parts 52 and 53 basically correspond with the parts 18 and 19 described above, and be accommodated again in the end of a tube 9. Furthermore the coupling piece is movable in a supporting piece 54 located in a bearing 28, said supporting piece having a circular external section and thus being accommodated freely rotatably in the bearing 28, whilst the means is provided with a hole whose section corresponds with the section of the coupling piece 49.

Between the bearing 28 and the take-up means 52, 53 there is screwed a flat nut 55 on the coupling piece, the external diameter of said nut at least substantially corresponding with the external diameter of the tube 9 in the illustrated embodiment. The nut 55 is knurled at its outer circumference.

It will be apparent that by rotating the nut 55 the coupling piece 49 can be moved in its longitudinal direction for coupling co-axially arranged cloth rolls together, in a similar manner as described above.

In this embodiment a slot, extending radially from the outside, is provided in the part 53 in order to obtain the necessary clamping between parts 52 and 53, whilst the parts located on both sides of said slot can be clamped by means of a bolt 56 passed through said parts.

After mounting of the adjacently arranged sunshades on a building or the like and after the bolts 44 have been welded on it will be possible, if necessary, to rotate the parts 19 of the take-up means connected to the cloth rolls 9 with the relevant cloth roll relatively to the parts 18 of said take-up means and secure them again in a desired position relatively to each other. This is e.g. desirable in order to be able to effect that in the rolled-out position of the sunshade all end profiles 13 will be aligned, even when there are e.g. small variations in cloth-length.

Claims

1. Device for coupling cloth rolls, arranged in line, of sunshades which are placed side by side, whereby take-up means are provided in the facing ends of the cloth rolls, said take-up means having recesses having an unround section for receiving a coupling piece having a corresponding section, characterized in that the coupling piece is adjustable in its longitudinal direction by means of an adjusting means connected to one of the cloth rolls between a first position, in which the coupling piece is located at least substantially within the boundary of the one sunshade, and a second position, in which the coupling piece extends into both unround recesses of the adjacently arranged take-up means of the two sunshades.

2. Device according to claim 1, characterized in that the coupling piece is provided with a rack gearing with which a pinion rotatably journalled in one of the receiving means co-operates.

3. Device according to claim 2, characterized in that the pinion is provided at both its ends with extension pieces having heads provided with hexagonal recesses.

4. Devide according to any one of the preceding claims, characterized in that at least one take-up means is provided with a securing bolt with which a coupling piece can be secured relatively to the take-up means.

5. Device according to any one of the claims 2 - 4, characterized in that the pinion is accommodated in a passage provided in the take-up means, said passage crossing the longitudinal axis of of the cloth roll perpendicularly.

6. Device according to any one of the claims 2 - 4, characterized in that a take-up means is built up of two parts, whereby the one part is provided with a casing having recesses for receiving projections in the interior of a tube of the cloth roll, whilst the other part supports the pinion.

7. Device according to claim 1 characterized in that the coupling means is provided with external screw thread on which a nut secured against displacement in the longitudinal direction of the cloth roll can rotate in order that the coupling means can be adjusted in its longitudinal direction.

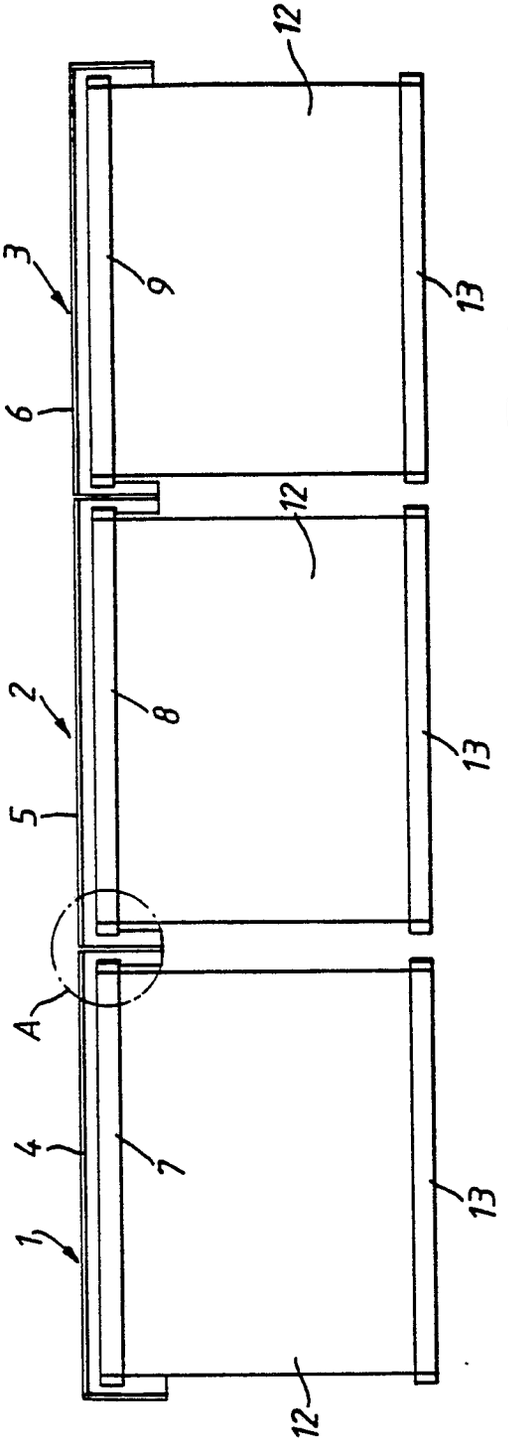
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FIG.1.

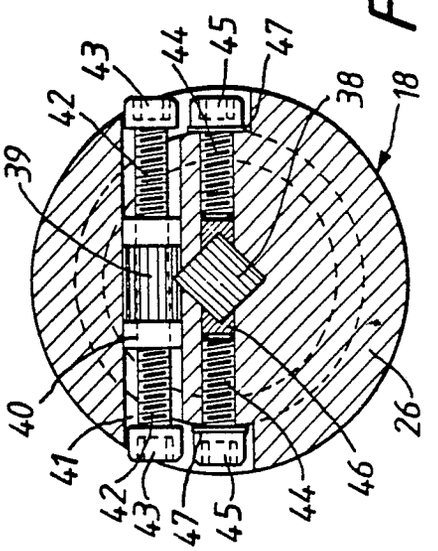
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FIG.6.

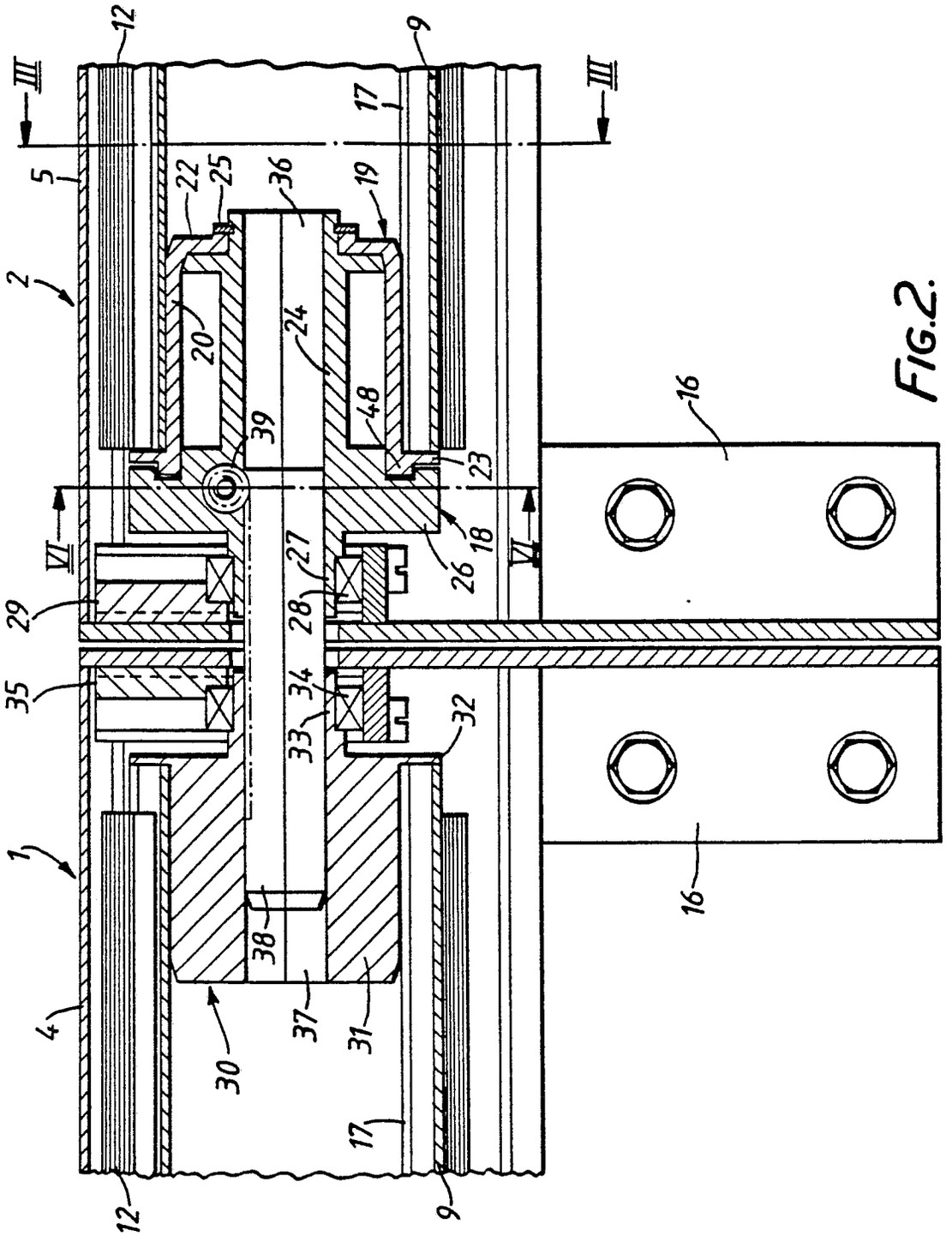
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FIG.2.

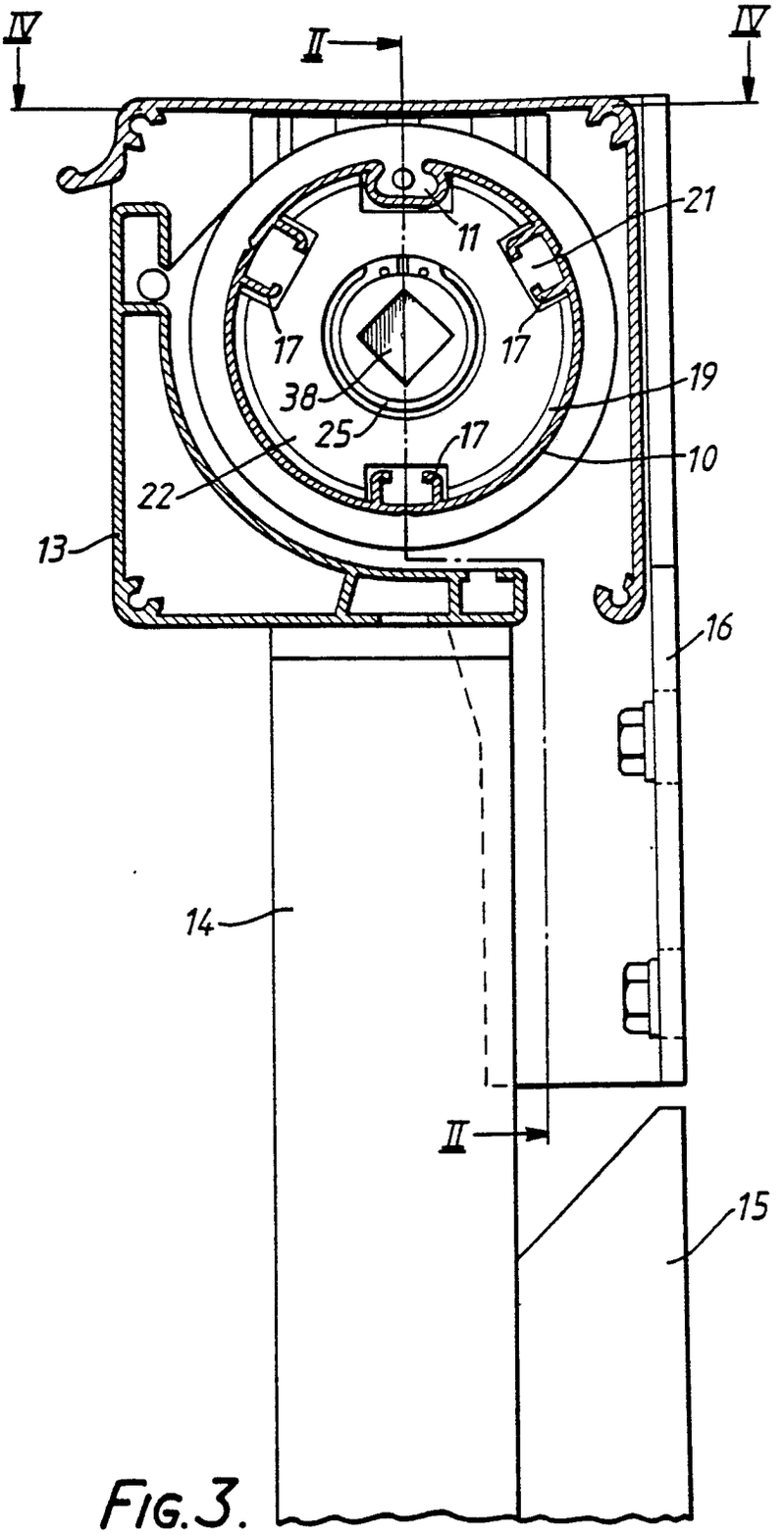

FIG. 3.

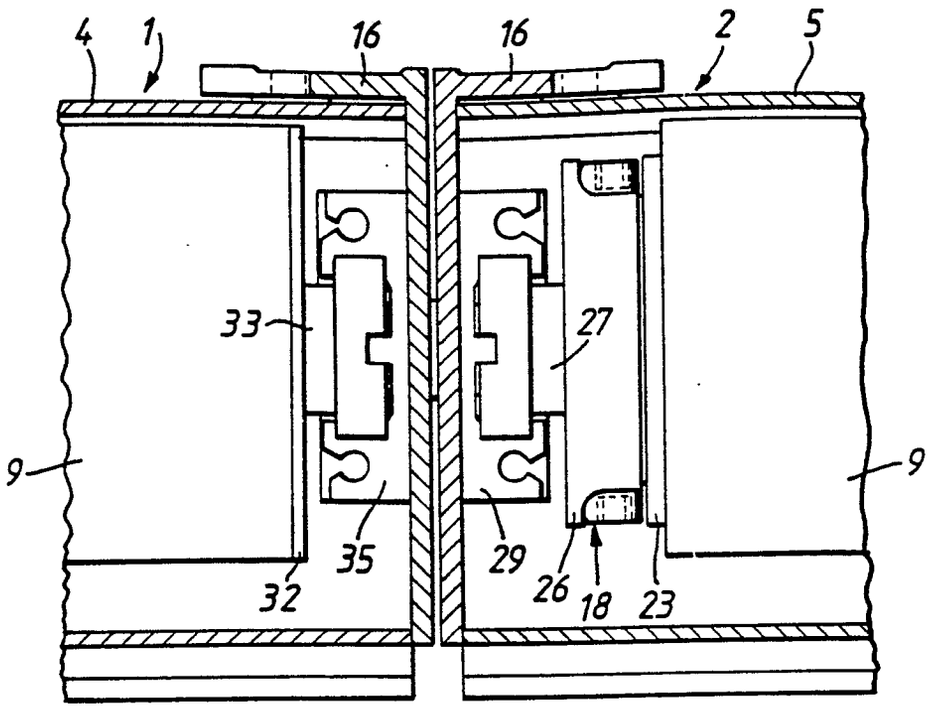
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FIG. 4.

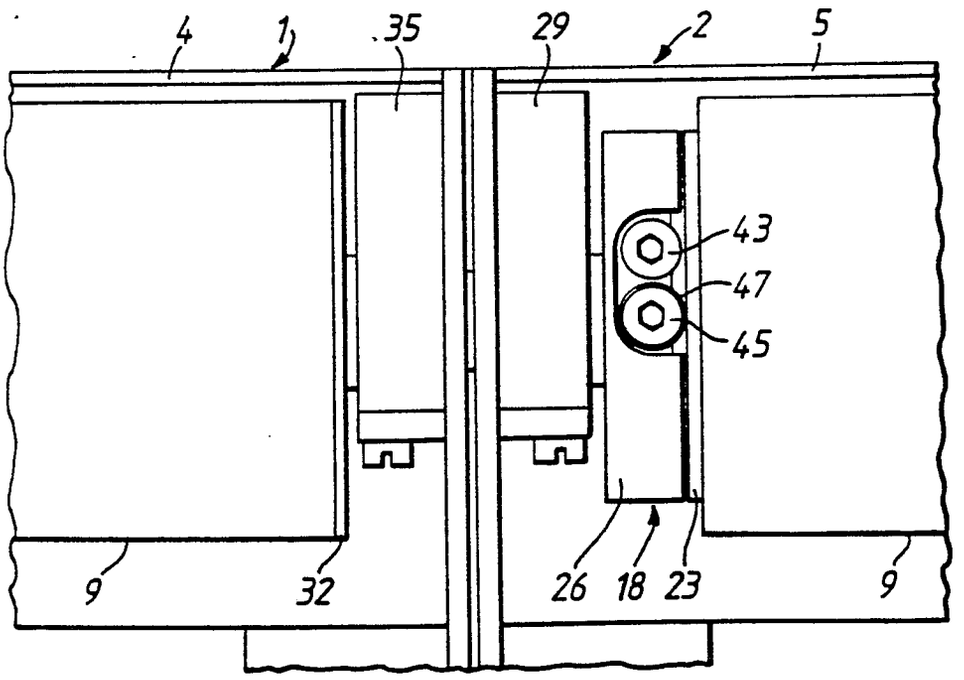
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FIG. 5.

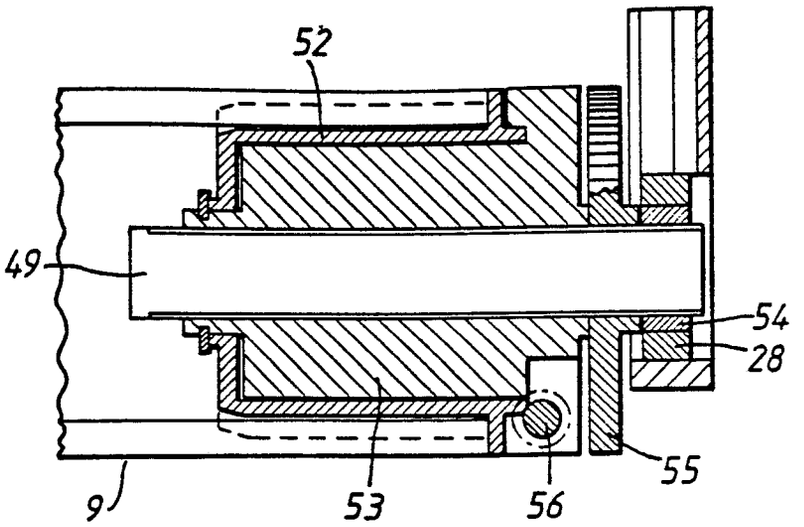

FIG.7.

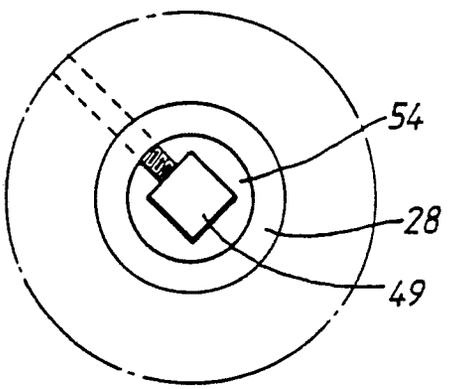

FIG.8.

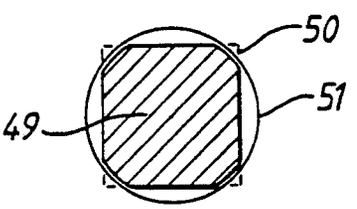

FIG.9.

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 88 20 1621

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,D	FR-A-2 407 328 (ETABLISSEMENTS CARPANO ET PONS) * Page 3, lines 31-40; pages 4-5; figures 1-11 *	1,3,4	E 06 B 9/174 E 04 F 10/06
A	NL-A-7 600 748 (HAMEL) * Page 4, lines 7-40; page 8; figures 1-4 *	1,3	
A	NL-A-7 605 728 (MADOPRON) * Page 2, lines 4-35; pages 3,4; figures 1-4 *	1,3,6	
A	US-A-1 665 272 (MYERS)		
A	US-A-1 739 203 (AXE)		
A	DE-A-2 509 071 (MADOPRON)		

TECHNICAL FIELDS SEARCHED (Int. Cl.4)

E 06 B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	25-10-1988	VIJVERMAN W.C.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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