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Remarks:
Amended claims in accordance with Rule 86 (2) EPC.

(54) Roller insect screen

(57) This self-adjusting capping cover system is an assembly made up of a cover (2) an intermediate spring (4), capping (1) and its corresponding symetrical parts which are situated on either side of the mosquito net head and which constitute means for fixing it.

The capping (1) is a piece of plastic made up of a flat rectangular basis with a curved side. In the centre of said basis there is a semi-axis (1.1) which, together with the symetrical part, makes up the rotation axis of the mosquito netting roll-holder. This semi-axis (1.1) has an axial slot so that the last spiral of the self-rollable window cover spring latches in and cannot come out.

The cover (3) is also a piece of plastic made up of a flat basis which has a partially curved edge perpendicular to said basis.

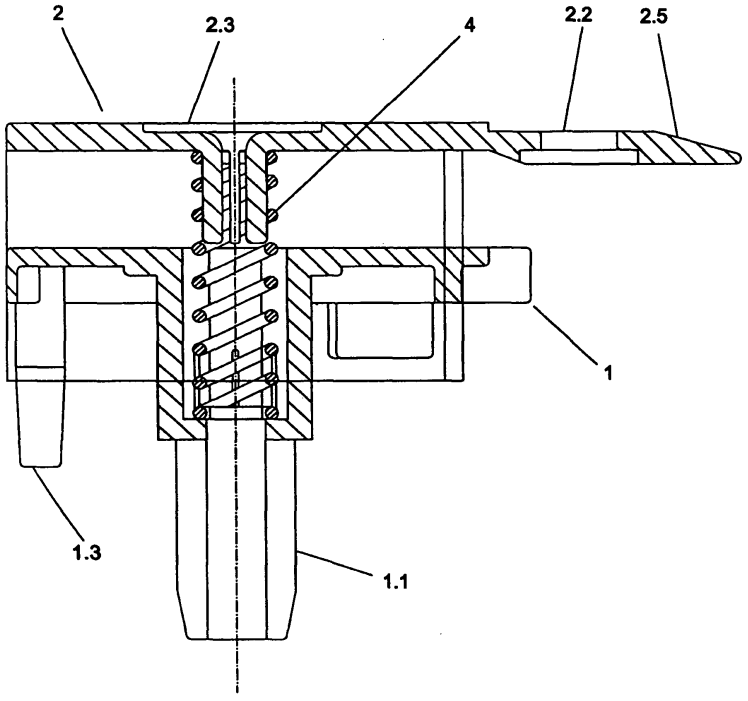

FIG. 3

EP 1 626 153 A1

Description

Object of the invention

[0001] This invention, as indicated by its title, is related to a new self-adjustable capping cover system made up of a cover, an intermediate spring and axially sliding capping with respect to the axis of the head of the mosquito netting and its corresponding symetrical parts.

Background of the invention

[0002] At present, in the metallic carpentry industry different kinds of capping are used for mounting mosquito net window covers, which are characterised by being made up of a single part and its symetrical, which are situated on either side of the head and carry out the double function of roll-holder for the mosquito netting and of fixing mechanism to the frame or directly to the wall.

[0003] Another problem which often occurs is that the walls do not have a perfect finish, and are often even unsquared, or that the measurement of the head of the rollable mosquito net is smaller than the available gap, which causes functioning problems.

[0004] An improved type of capping is disclosed in Utility Model U20010204, which is made up of two parts, a fixed cover and a mobile capping which slides along rigid male-female tracking. This capping presents the drawback of only functioning correctly if the window frame is perfectly orthogonal and the length of the roll-holder is correct, and does not allow for a necessary tolerance margin.

Description of the invention

[0005] This self-adjustable capping cover is an assembly made up of a cover, an intermediate spring, a capping and its corresponding symetrical parts which are situated on either side of the mosquito net head and which constitute its fixation means.

[0006] The capping is a plastic part made up of a flat rectangular basis with a curved side. Said basis has a semi-axis in its centre which, together with the symetrical piece, constitutes the rotation axis for the mosquito net roll-holder. This semi-axis has an axial slot so that the last spiral of the self-rolling window cover spring latches in and cannot come out.

[0007] The cover is also a plastic part which is made up of a flat basis which has a partially curved edge perpendicular to said basis.

[0008] A pin is located in the centre of the flat part as the axis on which a spring slides when it is compressed. It is also provided with a hole for screwing it to the wall when necessary, and with a male wing which fits into the female lodging on the tracking on the outer edge of the window cover.

[0009] The cover and its symetrical slide axially along the axis of the roll-holder of the mosquito netting and can adopt different positions, each pressed by intermediate springs.

[0010] Due to this characteristic, the head can be cut off with a tolerance margin of about 20mm, facilitating fitting the cover and its functioning.

[0011] The described parts of this self-adjusting capping system do not require to be screwed to the wall, since the exterior side of the capping is milled, and embedded into the wall if it is rough. If the wall is flat, said exterior side also has a circular cavity in which an elastomer is lodged, which prevents the cover from sliding along the wall.

[0012] This type of window cover is easily installed and in addition a single operator can do it. Once the head is cut to the size of the frame, the covers and capping are situated at either edge and the assembly is later lodged in the upper part of the frame, held by the springs. Next the lateral tracking is installed, thus immobilising the window cover.

[0013] This capping cover system substantially facilitates mounting the rollable mosquito net window cover. With other systems the head of the whole mosquito netting must be held to mark the holes, drill, and hold the head again to screw it on. If the mosquito net is of a normal size, two workers are needed to install it.

Description of the drawings

[0014]

Figure 1A is an exterior surface view of the capping (1), in which the exterior side of the capping (1.5), its appendixes (1.2) for facilitating centering the spring (4) and its poygonal lodging (1.7) are shown.

Figure 1B is an interior surface view of the capping (1), in which the interior face of the capping (1.6), the semi-axis (1.1) and the male tracking (1.3) which fits into the outer edge of the head (7) of the mosquito net window cover are shown.

Figure 1C is a side view of the capping (1), in which the exterior side of the capping (1.5), the male tracking (1.3), the semi-axis (1.1) and the slot (1.4) can be observed.

Figure 1D is a view of a section along axis A of the capping (1), in which can be observed the exterior side of the capping (1.5), the interior side of the capping (1.6), the appendixes (1.2), the polygonal lodging (1.7), the male guides (1.3) and the semi-axis (1.1).

Figure 1E is a view of a section of the capping (1) along axes A and B of Figure 1B, in which the exterior side of the capping (1.5), the appendixes (1.2), the polygonal lodging (1.7), the male tracking (1.3), the semiaxis (1.1) and the slot (1.4).

Figure 2A is a superior plan view of the cover (2) in which can be observed the wing (2.1), the hole (2.2), the circular non-slip elastomer (14)-holding lodging (2.3), and the milling (2.4) of the exterior side of the cover (2.6)

Figure 2B is an anterior outer edge view of the cover (2), in which the exterior side of the cover (2.6) and the wing (2.1) are shown.

Figure 2C is an inferior plan view of the cover (2) in which the interior side cover (2.7), the wing (2.1), the hole (2.2) and the centering pin (2.5) can be observed.

Figure 2E is a section view of the cover (2) in which the exterior side cover (2.6), the interior side cover (2.7), the wing (2.1), the hole (2.2), the circular non-slip elastomer (14)-holding lodging (2.3), and the centering pin (2.5) can be observed.

Figure 2D is a side view of the cover (2) in which the pin (2.5) is shown.

Figure 3 is a outer edge view of the assembly made up of the capping (1), the cover (2) and the spring (4), the semi-axis (1.1), the hole (2.2) the circular non-slip elastomer (14)-holding lodging (2.3), the wing (2.5) and the male tracking (1.3) can also be observed.

Figure 4A is a raised view of the end spring-pivot (3), in which the anti-rotation appendix (3.1), the spring retaining slot (3.2) and the conical end (3.3) can be observed.

Figure 4B is an inferior view of the end spring-pivot (3), in which the anti-rotation appendix is highlighted.

Figure 4C is a view of a sectioning by a symetry plane of the end spring-pivot (3), in which the conical end (3.3) can be observed.

Figure 5 is a part-by-part view of all the components which make up the mosquito net window cover, which are the following: Capping (1) cover (2), end spring-pivot (3), spring (4), spring-holding tube (5), mosquito net tube (6), head (7), mat (8), tube spring (9), mosquito netting (10), terminal (11), pull-knob (12), lever (13), non-slip elastomer (14), end stopper (15), tracking (16), square (17), bush (18), slab (19), screw (20), and screw detector (21).

Preferred embodiment of the invention

[0015] Among the different types of self-adjusting capping systems for rollable window covers which can be built based on this invention, the preferred embodiment is the one described below.

[0016] The realisation of a new invention such as this one begins by investigating problems and developing a new product in order to facilitate installing mosquito net window covers and improving their functioning.

[0017] In this case, being aware of the difficutly installers have when fixing the head (7) of the window cover due to the fact that the walls which are its frame are never perfectly perpendicular to their bases nor parallel nor flat, a mobile capping (1) was developed and its symetrical in the direction of the axis of the roll-holder of the window cover and which, in addition, due to the action of two springs (4), once the head is cut (7) with a tolerance of around 20 mm, the roll-holder is fit into the upper part of the frame and held by the action of said springs (4). This mobile capping (1) slides within the fixed cover (2) due to the shape that serves as its guide. In Figure 3, the three parts described and assembled, which together with their symetricals make up the axis on whith the roll-holder of the window cover, can be observed.

[0018] The cover (2) has a wing (2.1), which is inserted as a male element within the outer edge tracking (16), and a hole (2.2) that facilitates fixing it to the wall with a slab (19) and a screw (20) when necessary. It is also provided with a circular cavity on its exterior side (2.3) which allows a non-slip elastomer to be lodged (14) in order to prevent the head (7) from slipping when it is manually installed in the upper part of the frame. This piece is especially useful for tiled walls which are very smooth. The surface of said exterior side (2.6) is also milled, to prevent the head (7) from slipping in case of rough surfaces.

[0019] The capping (1) is provided with a semi-axis (1.1) perpendicular to its basis, on which the roll-holder rotates, two male trackings (1.3), circular-sectioned, which are inserted within the aluminium outer edge which makes up the head (7) and appendixes (1.2) which centre the spring (4) and its polygonal lodging (1.7).

[0020] All of the parts that make up the mosquito net window cover and the materials with which they are preferably made are described below.

N°	DESCRIPTION OF PARTS	MATERIALS
1	Capping	PA
2	Cover	PA
3	end spring-pivot	PA
4	Spring	Steel
5	Spring tube	PVC
6	Mosquito netting tube	Aluminium
7	Mosquito net head	Aluminium
8	Mat	PP
9	Tubular spring	Steel
10	Mosquito netting	PVC - GF
11	Terminal	PA
12	Pull-knob	PA
13	Lever	PA
14	Non-slip elastomer	EPDM
15	Terminal stopper	PA
16	Tracking	Aluminium
17	Square	PA
18	Antifriction bush	POM
19	Slab	PA
20	Screw	Steel
21	Screw detector	PA
N.B.: The initials used to describe the materials for the parts correspond to their technical nomenclature, particulariy those of the plastics.		

Claims

1. Self-adjustable capping system for rollable mosquito net window covers, **characterised in that** it is made up of a fixed cover (2) fija, mobile capping (1), spring (4), anti-friction bush (18) and its corresponding symetrical parts; a tubular spring (9) and a end spring-pivot (3).

2. Self-adjustable capping system for rollable mosquito net window covers according to claim one, **characterised in that** between the fixed cover (2) and the mobile capping (1) there is a steel spring (4) which links both parts.

3. Self-adjustable capping system for rollable mosquito net window covers according to the claims above, **characterised in that** the cover interior side (2.7) is provided, perpendicular to said cover, with at centering pin (2.5) on which the spring slides axially (4).

4. Self-adjustable capping system for rollable mosquito net window covers according to the previous claims, **characterised in that** perpendicular to the exterior side of the capping (1.5), it is provided with a polygonal or cylindrical lodging (1.7) for the spring (4), with centering appendixes (1.2) on the bottom of said lodging.

5. Self-adjustable capping system for rollable mosquito net window covers according to the first claim, **characterised in that** the cover exterior side (2.6) is milled.

6. Self-adjustable capping system for rollable mosquito net window covers according to the first claim, **characterised in that** the cover exterior side (2.6) is provided with a circular lodging (2.3) which houses non-slip elastomer (14).

7. Self-adjustable capping system for rollable mosquito net window covers according to the first claim, **characterised in that** the anti-friction bush (18) is made of self-lubricating technical material (POM).

8. Self-adjustable capping system for rollable mosquito net window covers according to the first claim, **characterised in that** the tubular spring (9) is folded over at each end so that it can be latched at one end in the slot (1.4) of the capping (1) and at the other end, in the spring retention slot (3.2) of the end spring-pivot (3).

9. Self-adjustable capping system for rollable mosquito net window covers according to the first claim, **characterised in that** the end spring-pivot (3) is provided with a conical ending (3.3), a spring retention slot (3.2) and anti-rotation appendixes (3.1).

Amended claims in accordance with Rule 86(2) EPC.

1. Self-adjustable capping system for rollable mosquito net window covers, comprising:

a mobile capping (1) having means for a slidable coupling with a head (7), a mosquito net tube (6) and a tube spring (9), said means allowing to slide said capping along a common rotation axis of said tubes as well as for a rotation movement of said tubes about said rotation axis;
a cover (2) having means to embrace said mobile capping (1) allowing said capping to slide along said rotation axis but preventing the rotation of said capping about it whenever said cover remains fixed;
a spring (4) linking said mobile capping (1) and said cover (2) forcing them to mutually separate; and
a non-slip elastomer part (14) inserted inside a circular lodging (2.3) in an external side (2.6) of saif cover (2);
being an asembly comprising said capping (1), cover (2), spring (4) and elastomer part (14), their corresponding symetrical parts and said head (7), mosquito net tube (6) and tube spring (9), capable of supporting the rollable mosquito net window cover, self-adjusting and staying attached to the smoothest lateral walls of a window and allowing a tolerance margin in the longitudinal dimension of said head (7) and the corresponding tubes (6, 9) of about 20 mm.

2. Self-adjustable capping system for rollable mosquito net window covers according to claim 1, **characterised in that** the surface of the exterior side (2.6) of said cover (2) is knurled which contributes to the attachment of said assembly to said lateral walls of a window when they are rough.

3. Self-adjustable capping system for rollable mosquito net window covers according to the claim 1, **characterised in that** a cover interior side (2.7) is provided, perpendicular to said cover, with a centering pin (2.5) on which said spring (4) slides axially and a exterior side of said capping (1.5) it is provided perpendicularly with a polygonal or cylindrical lodging (1.7) for said spring (4), with centering appendixes (1.2) on the bottom of said lodging, thereby said spring exerts forces substantially in the direction of said axis.

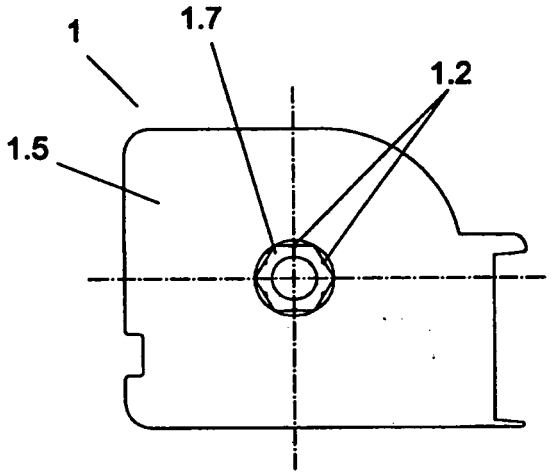

FIG.1A

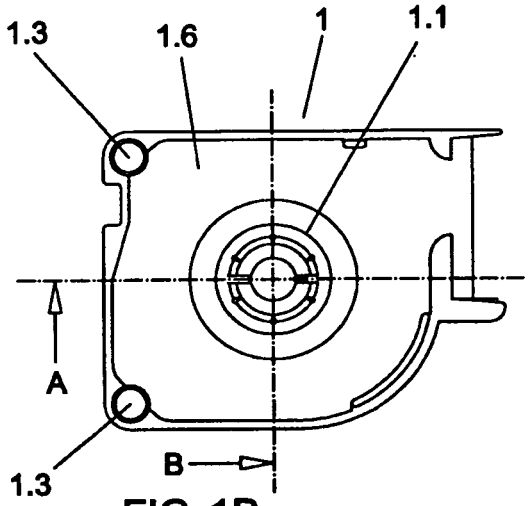

FIG.1B

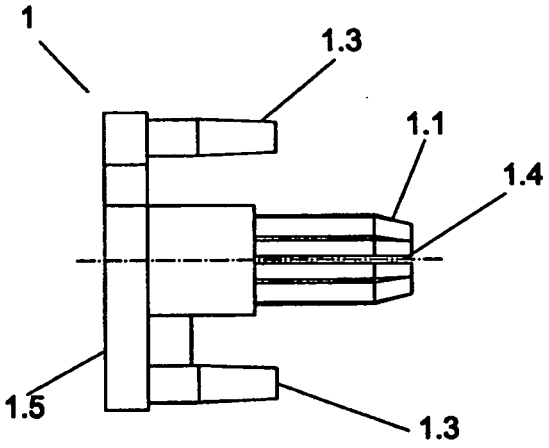

FIG.1C

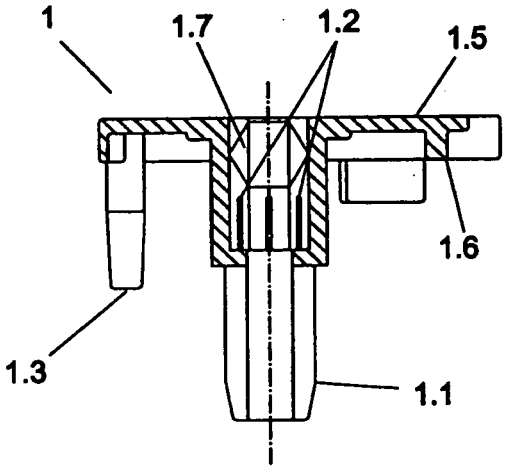

FIG.1D

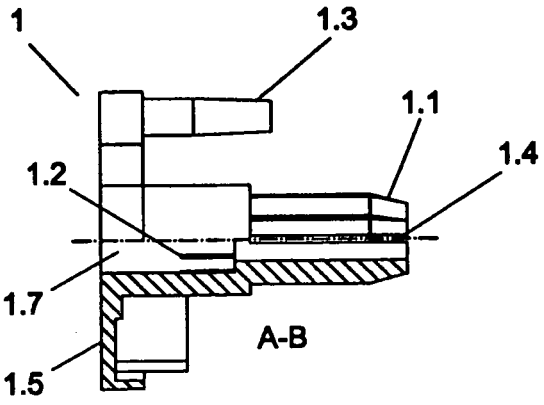

FIG.1E

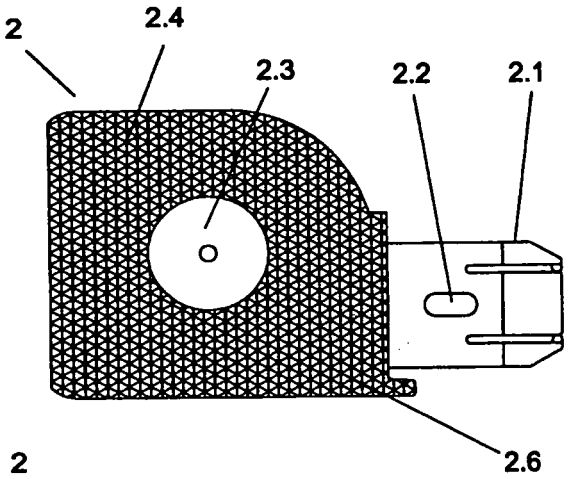

FIG. 2A

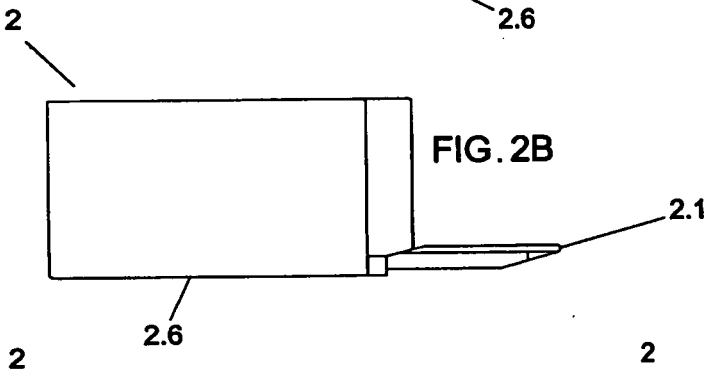

FIG. 2B

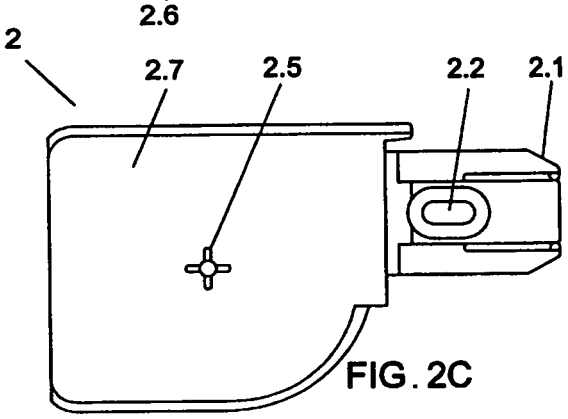

FIG. 2C

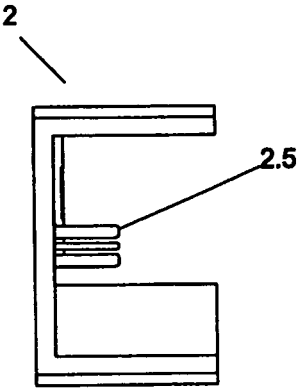

FIG. 2D

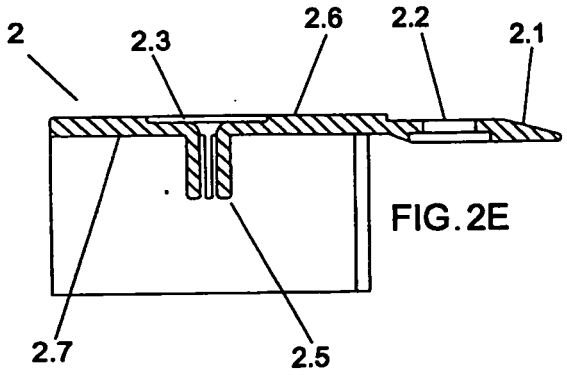

FIG. 2E

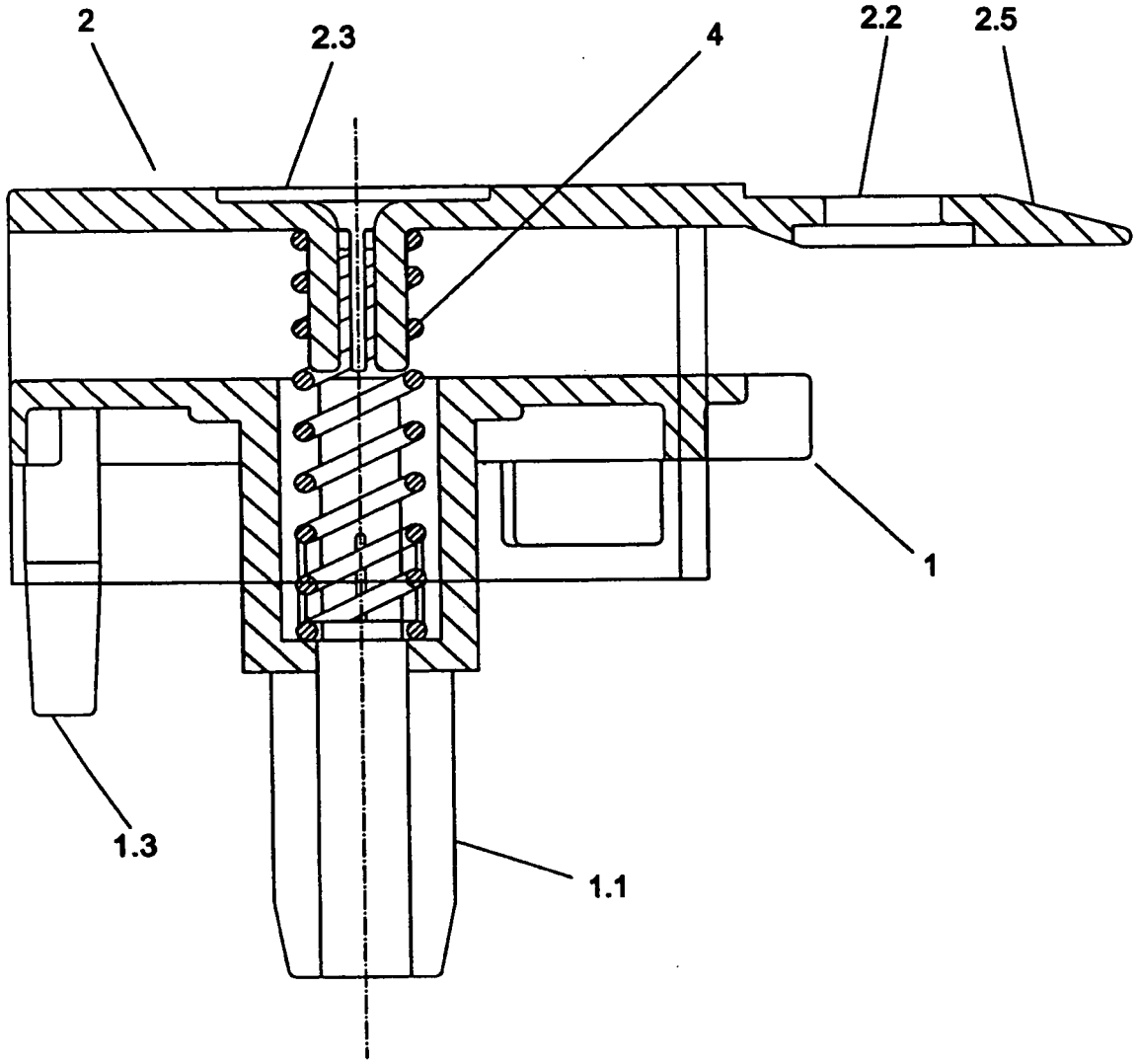

FIG. 3

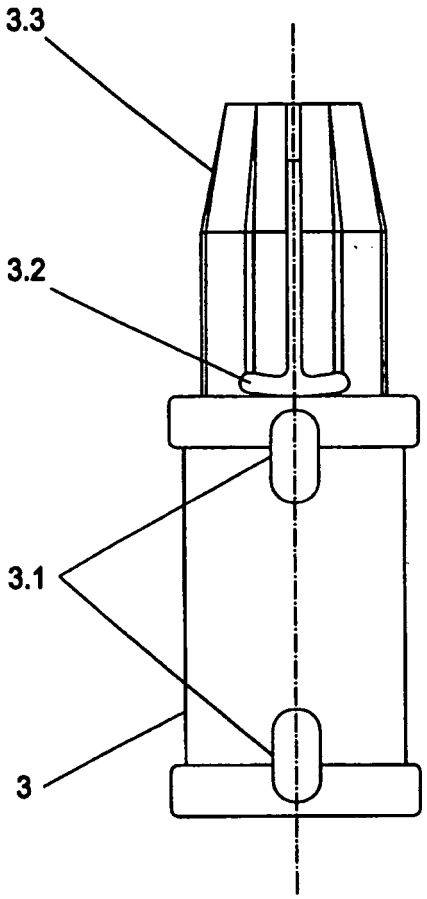

FIG. 4A

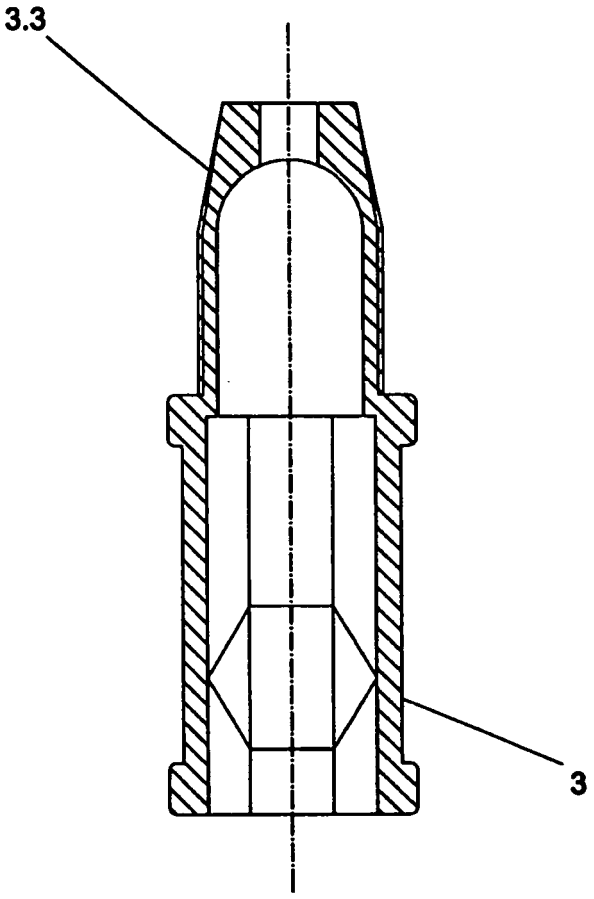

FIG. 4C

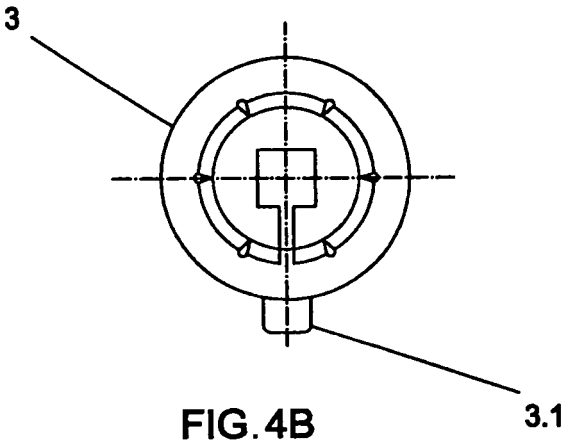

FIG. 4B

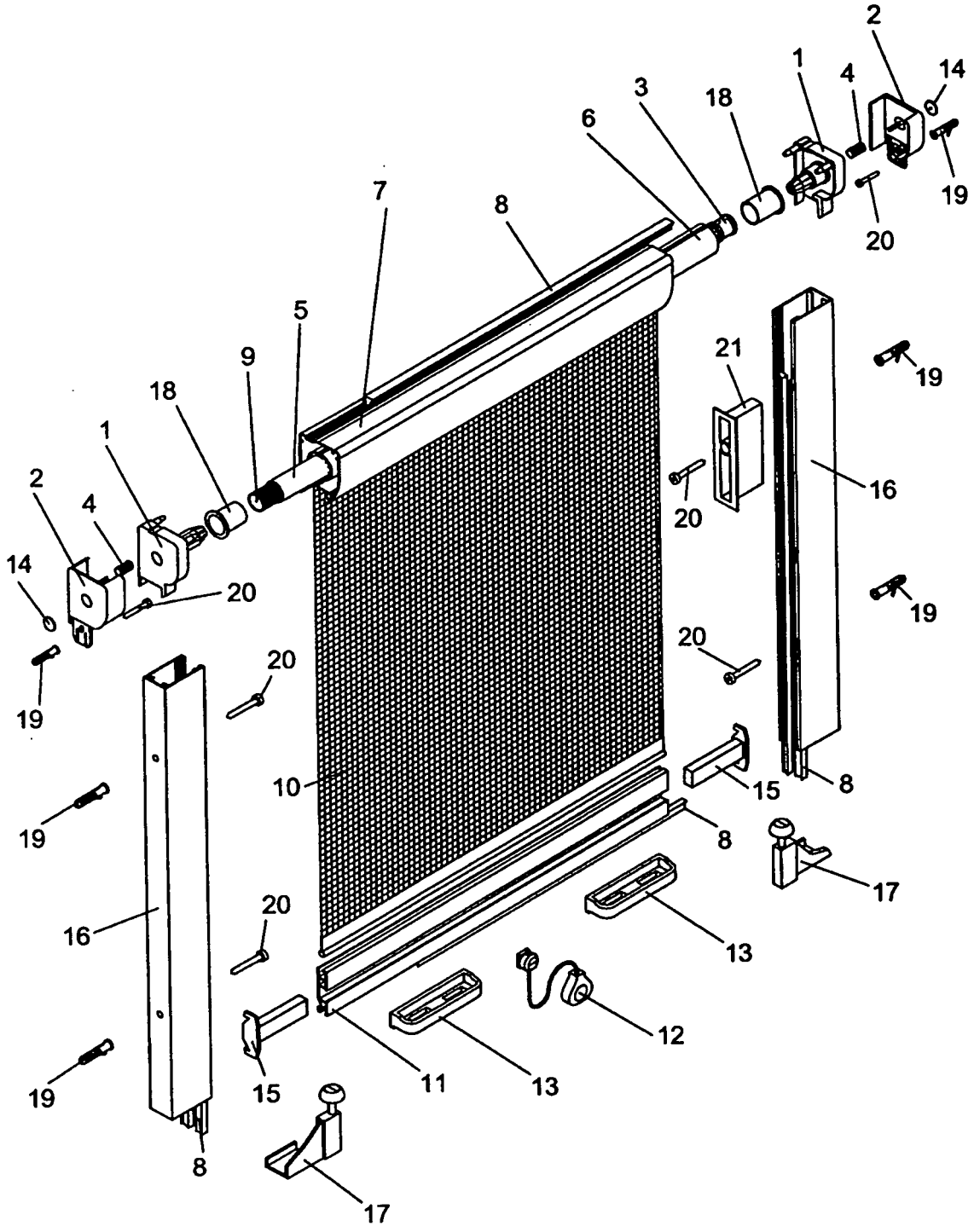
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FIG. 5

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 04 01 9128

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.7)
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Y	GB 2 391 895 A (AGLIOLO ANTONINO ; BENEDETTO CARUSO (IT)) 18 February 2004 (2004-02-18) * page 3, line 7 - line 9 * * page 3, line 16 - line 18 * * figure 2 *	1-9	
A	EP 0 959 221 A (BONINI NARDO) 24 November 1999 (1999-11-24) * paragraph [0015] - paragraph [0019] * * figure 3 *	1-9	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7) E06B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	18 January 2005	Geivaerts, D

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 04 01 9128

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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18-01-2005

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82