



Europäisches Patentamt
 European Patent Office
 Office européen des brevets



(11) **EP 0 959 221 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
 24.11.1999 Bulletin 1999/47

(51) Int. Cl.⁶: **E06B 9/54**, E06B 9/17

(21) Application number: **99200533.0**

(22) Date of filing: **23.02.1999**

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

(72) Inventor: **Bonini, Nardo**
42012 Campagnola Emilia (RE) (IT)

(74) Representative:
Corradini, Corrado et al
Studio Ing. C. CORRADINI & C. S.r.l.
4, Via Dante Alighieri
42100 Reggio Emilia (IT)

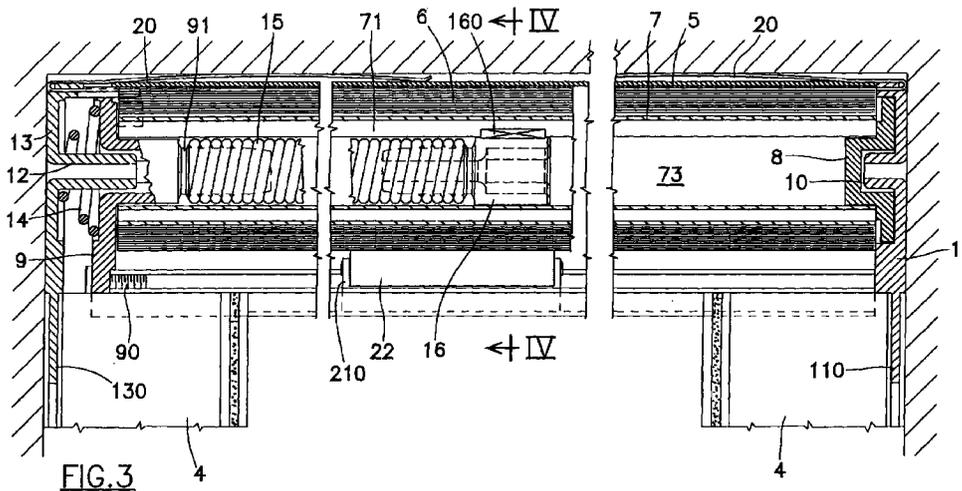
(30) Priority: **18.05.1998 IT RE980057**

(71) Applicant: **Bonini, Nardo**
42012 Campagnola Emilia (RE) (IT)

(54) **Quick-installation mosquito net**

(57) Quick-installation mosquito net (1) comprising two parallel and opposite identical guides (4) arranged to remain in contact with the window jambs, and to the top of which there is fixed a box (3) containing the net winding roll (7) and means for its automatic rewinding, and arranged to remain upperly in contact with the window lintel; said box (3) is provided with a full-length

lower aperture for passage of the screening net (5), and comprises upper first elastic means (20) by which it makes contact with the lintel of the window compartment (2), and lateral second elastic means (14) by which it makes contact with the jambs of the window compartment (2).



EP 0 959 221 A1

Description

[0001] This invention relates to those devices, known as mosquito nets, which prevent the insects from entering closed rooms via the doors or windows.

[0002] Mosquito nets of known type generally comprise an inverted U-shaped frame consisting of two parallel and opposite equal guides, which are securely fixed to the window jambs and to the top of which there is positioned a box securely fixed to the lintel of the window compartment. The box contains an idly mounted roll about which the net is wound.

[0003] The roll is provided with usual elastic return means which automatically rewind the net wound on the roll.

[0004] Although known mosquito nets suitably perform their function, they are complicated, laborious and costly to install. In this respect, not only must the uprights and the box be constructed with exactly the same measurements as the window compartment, but these must be fixed by screws screwed into holes made in the walls.

[0005] The object of this invention is to provide a quick-installation mosquito net, ie one which for its fixing into the window compartment does not require any holes to be made in the compartment walls, and which adapts to the window compartment without the need for specific fixed and precise measurements.

[0006] The invention attains these objects by means of a mosquito net consisting of an inverted U-shaped frame comprising an upper box of horizontal axis provided with lower insertion means for the connection of two equal lateral, vertical, parallel and opposite guides.

[0007] Said box is provided with upper first elastic means via which it rests under the lintel of the window compartment, and with lateral second elastic means via which it rests against the window jambs, to maintain the mosquito net forcibly locked within the window compartment in which it is installed.

[0008] The functional and constructional characteristics of the invention will be more apparent from the ensuing description of a preferred embodiment thereof given by way of non-limiting example and illustrated on the accompanying drawings.

Figure 1 is a front view of the invention.

Figure 2 is a section on the line II-II of Figure 1.

Figure 3 is a section on the line III-III of Figure 2.

Figure 4 is a partial section on the line IV-IV of Figure 3.

Figure 5 is an exploded side view of some components of the invention.

Figure 6 is a section on the line VI-VI of Figure 1.

[0009] Figure 1 shows the mosquito net, which is indicated overall by 1 and is mounted in the window compartment 2.

[0010] The mosquito net 1 comprises an upper box 3 positioned at the top of two equal lateral, vertical and opposite guides 4.

[0011] The box 3 comprises an internally hollow profiled section piece 5 provided with a lower aperture 50 through which the net 6 for screening the window compartment passes.

[0012] Said section piece 5 contains the hollow slotted roll 7 on which said net 6 is wound.

[0013] With reference to Figure 3, the roll comprises at its ends two cup-shaped plugs 8 and 9 respectively.

[0014] The plug 8 is idly mounted on the centrally hollow pivot 10 of the flange 11, which lowerly comprises a shank 110 for securing the right lateral guide 4.

[0015] The plug 9 is fixed to the tubular element by a screw 90, and is mounted on a centrally hollow pivot 12 branching from the flange 13, which lowerly comprises a shank 130 for securing the left lateral guide 3.

[0016] Between the flange 13 and the plug 9 there is interposed a conical helical spring 14, the purpose of which is to maintain the flanges 13 and 11, which constitute the ends of the box 3, in forced contact with the jambs of the window compartment 2.

[0017] Specifically, the slotted roll 7 is provided with external lightening slots 70 and with an internal keying recess 71, which receives the return means for automatically winding the net 6.

[0018] Said means comprise a spring 15, the left end of which, with reference to Figure 3, is screwed onto the threaded part of the shaped head 91 which branches from the front edge of the plug 9. The other end of the spring is screwed onto the threaded front part of a hollow profiled bush 16, which torsionally engages the keying recess 71 by means of the tooth 160.

[0019] When the net 6 is lowered, the roll 7 rotates and drags the bush 16, which is torsionally engaged with it. Consequently the spring is subjected to a twisting moment and tends to lengthen, to become loaded.

[0020] Each of the flanges 11 and 13 comprises in proximity to its upper edge two identical symmetrically opposing profiled apertures 18 and 19, in each of which there is inserted a flat spring 20, the purpose of which is to maintain the mosquito net 1 elastically locked within the window compartment in a vertical direction.

[0021] To ensure that the mosquito net is sealed along the edge of the box upper surface, a strip of elastomeric material, not shown, is applied.

[0022] It should be noted that instead of the flat springs, elastic means of elastomeric material can be provided.

[0023] With reference to Figures 2 and 4, the section piece 5 has a lower edge 51 shaped to receive a frame 21 which supports a pair of idly mounted rollers 22.

[0024] Said frame 21 consists of two equal and opposite profiled members 210 joined together by a cross-

piece 211 and each comprising two fork-shaped apertures 212 for receiving the hubs 220 of the rollers 22.

[0025] The purpose of the rollers 22 is to limit the bending of the roll 7 about which the net 6 is wound and to prevent the net from sliding against the section piece 5 and undergoing damage.

[0026] The positioning of the frame 21 and the number of frames 21 depend on the width of the window compartment.

[0027] It should be noted that the movable front edge of the screening net 6 is provided with a usual gripping bar 60, shown in Figure 1, which when the net 6 screens the window compartment is secured in proximity to the lower ends of the guides 4, by known means, not shown.

[0028] It should also be noted that the guides 4 are provided with usual anti-intrusion and guide brushes 40 for the screening net 6, as shown in Figure 6, and that the section piece 5 comprises a shaped portion 500 arranged to make contact with the net 6 to prevent the intrusion of insects through the box 3.

[0029] Finally, the mosquito net of the invention can be provided with a device for regulating the unwinding of the net 6, such as that described in European patent application 0151827 in the name of the present applicant.

[0030] The aforescribed means allow simple and quick installation of the mosquito net 1 within the window compartment 2, it being sufficient to rest the box 3 against the window lintel and insert the guides 4 by mounting their upper ends over the appropriate securing shanks.

Claims

- 1. A quick-installation mosquito net comprising two parallel and opposite identical guides arranged to remain in contact with the window jambs, and to the top of which there is fixed a box containing the net winding roll and means for its automatic rewinding, and arranged to remain upperly in contact with the window lintel, said box being provided with a full-length lower aperture for passage of the screening net, characterised in that said box comprises upper first elastic means by which it makes contact with the lintel of the window compartment, and lateral second elastic means by which it makes contact with the jambs of the window compartment.
- 2. A mosquito net as claimed in claim 1, characterised in that the roll is closed at its opposite ends by plugs which comprise appendices able to support the roll while leaving it free to rotate.
- 3. A mosquito net as claimed in claim 1, characterised in that at least one of said plugs is mounted with freedom to rotate on an external flange provided

with a lower appendix which insertion-fits into the lateral mosquito net guide as it receives this latter.

- 4. A mosquito net as claimed in claim 1, characterised in that at least one of said plugs is connected by way of an interposed spring to an external flange provided with a lower appendix which insertion-fits into the lateral mosquito net guide as it receives this latter.
- 5. A mosquito net as claimed in claims 3 and 4, characterised in that said upper first elastic means consist of two pairs of opposing flat springs, which act in a vertical direction and are fixed to said external flanges.
- 6. A mosquito net as claimed in claims 3 and 4, characterised in that said upper first elastic means consist of a strip of elastomeric material fixed onto the upper surface of said box.
- 7. A mosquito net as claimed in claim 4, characterised in that said lateral second elastic means comprise a compression spring acting in a horizontal direction between at least one of said plugs and the respective external flange.
- 8. A mosquito net as claimed in claim 1, characterised in that said box comprises an extruded aluminium section piece provided in its lower part with an aperture for the passage of said net, and, close to said aperture, a channel for receiving at least one member which upperly supports at least one pair of idle rollers for supporting the roll with the net wound thereon.
- 9. A mosquito net as claimed in claim 7, characterised in that said member is slidingly inserted into said channel, and can be positioned at any point thereof.

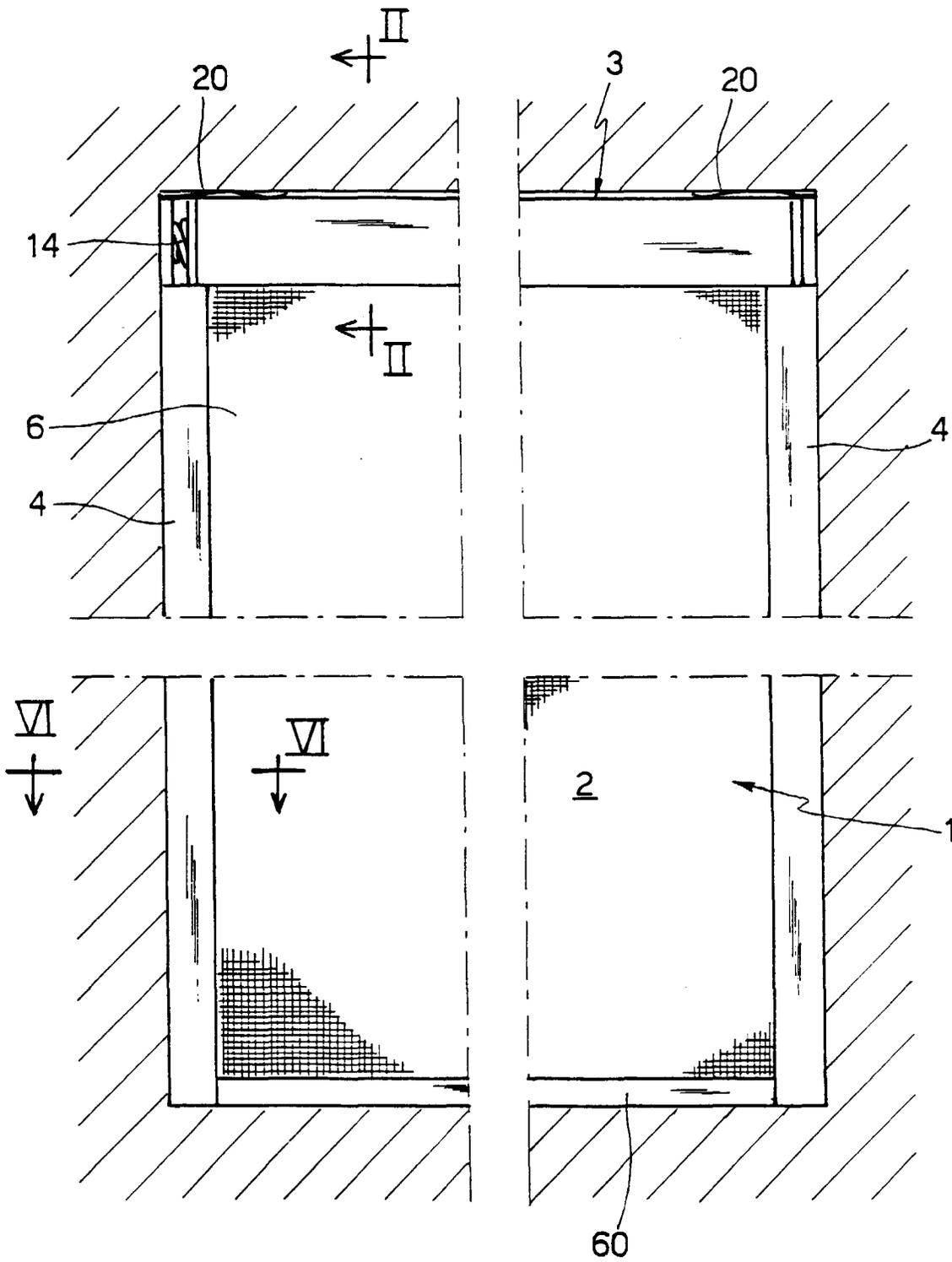
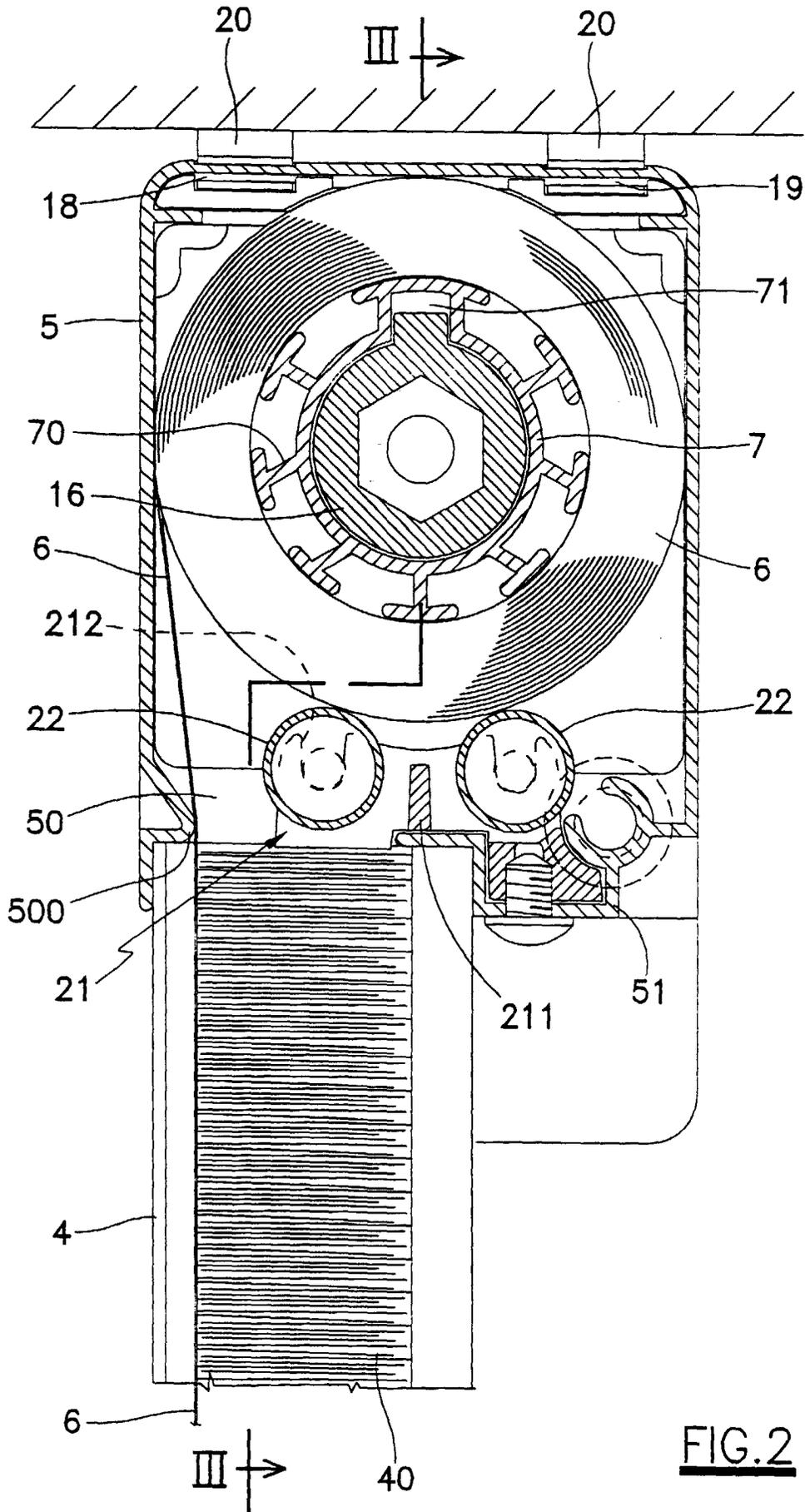


FIG.1



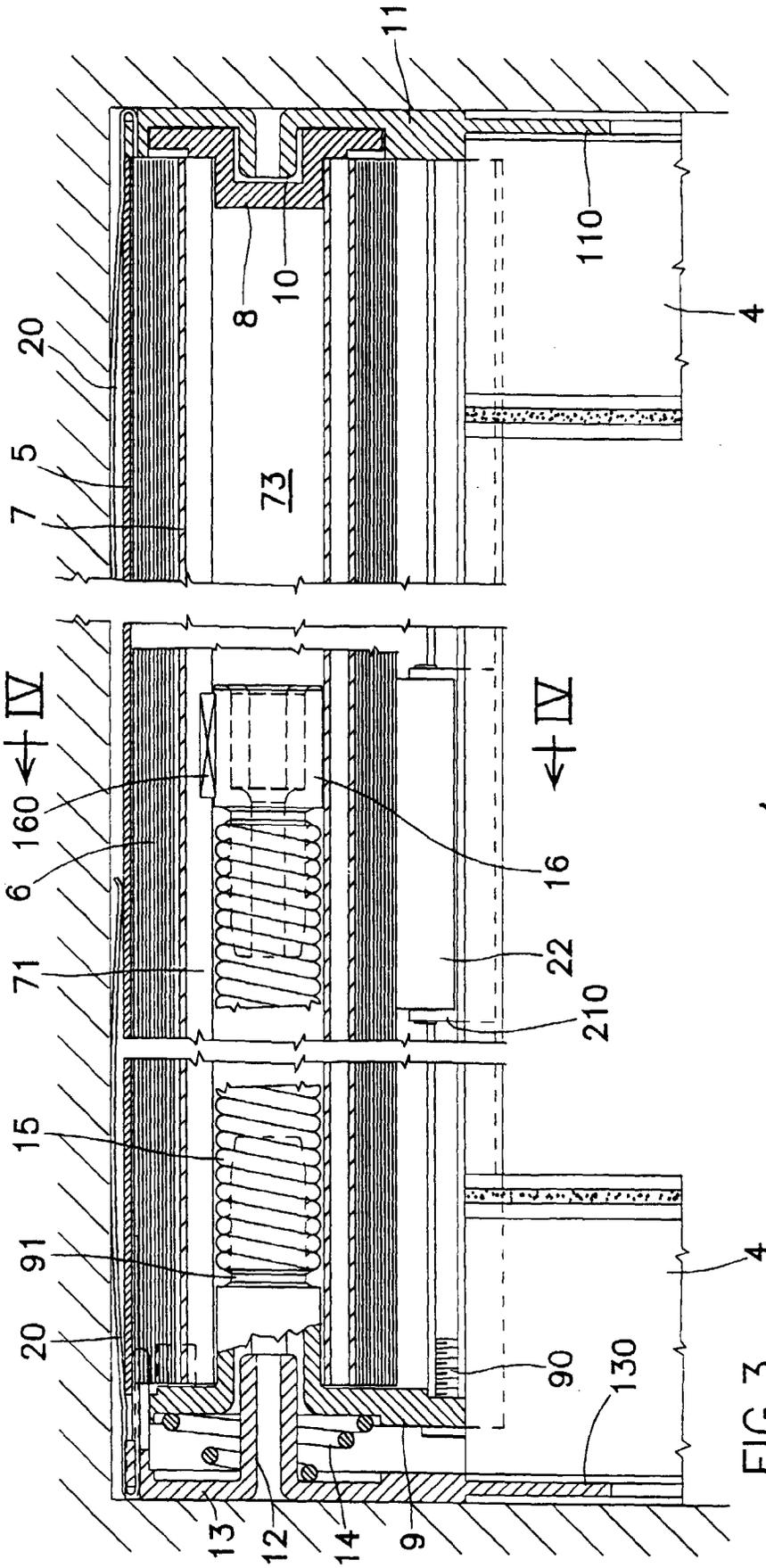


FIG. 3

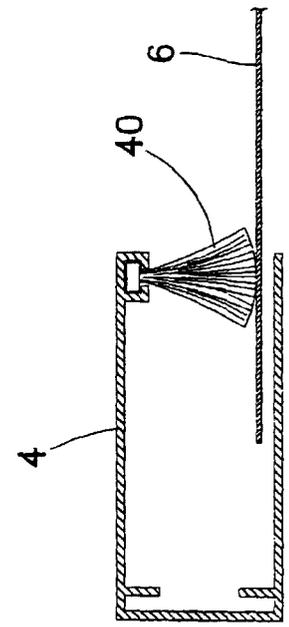
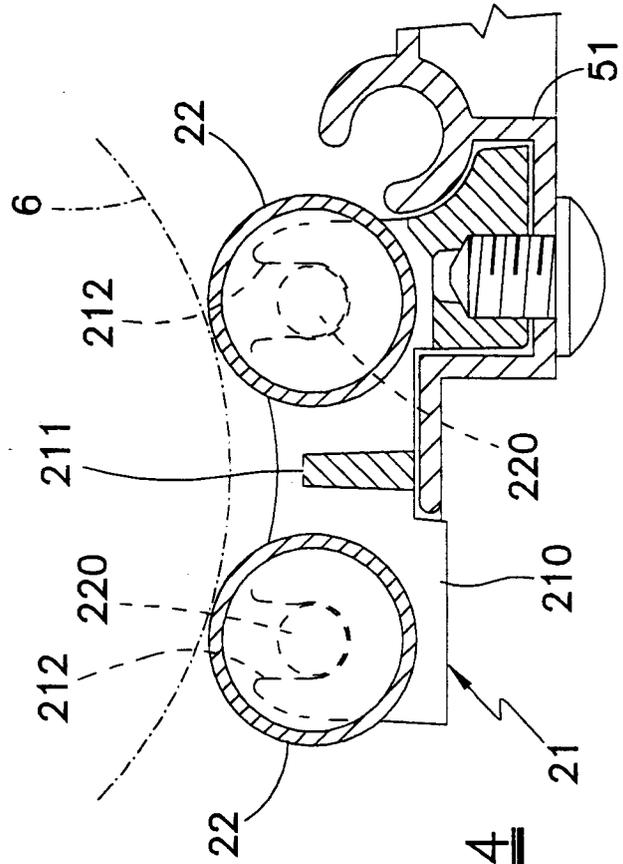
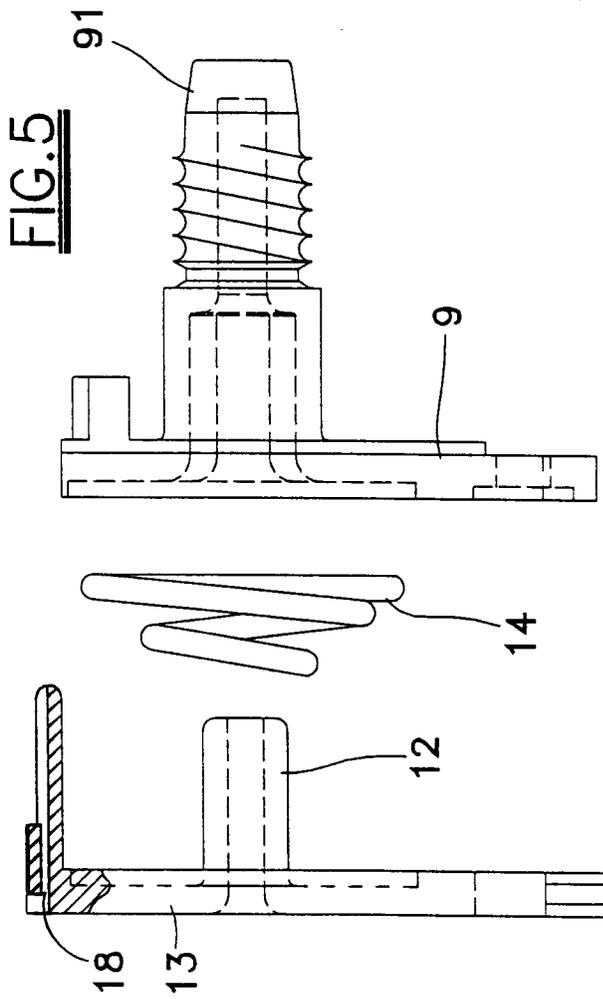


FIG. 6





European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 20 0533

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.6)
A	FR 2 449 193 A (MARITON YVES) 12 September 1980 (1980-09-12) * the whole document * -----		E06B9/54 E06B9/17
A	US 2 072 726 A (YARTYAN) 2 March 1937 (1937-03-02) * the whole document * -----		
A	US 2 406 272 A (VAN VORHEES) 20 August 1946 (1946-08-20) * the whole document * -----		
A	US 4 757 852 A (JENTOF LEON ET AL) 19 July 1988 (1988-07-19) * the whole document * -----		
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			E06B
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 29 July 1999	Examiner Knerr, G
<p>CATEGORY OF CITED DOCUMENTS</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 & : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 20 0533

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

29-07-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR 2449193 A	12-09-1980	NONE	
US 2072726 A	02-03-1937	NONE	
US 2406272 A	20-08-1946	NONE	
US 4757852 A	19-07-1988	AU 6427486 A EP 0221816 A JP 62170692 A	30-04-1987 13-05-1987 27-07-1987

EPO FORM P0459

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