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(54) **FURNITURE STABILISER**

(57) The invention relates to a furniture stabilizer that automatically adjusts according to the weight of the item of furniture and is formed by a hollow rectangular case that is open at the bottom and inside of which a connecting (2) is pivotally attached at one end, the connecting rod (2) being connected at the opposite end thereof to a

connecting rod (3) that is in turn connected to a glide or cylinder that moves horizontally along the inside of the case, the movement of the glide(4) being adjusted by damping means situated next to the glide inside the case. In the lowest position of the device, the connecting rods (2, 3) are fully inserted inside the case

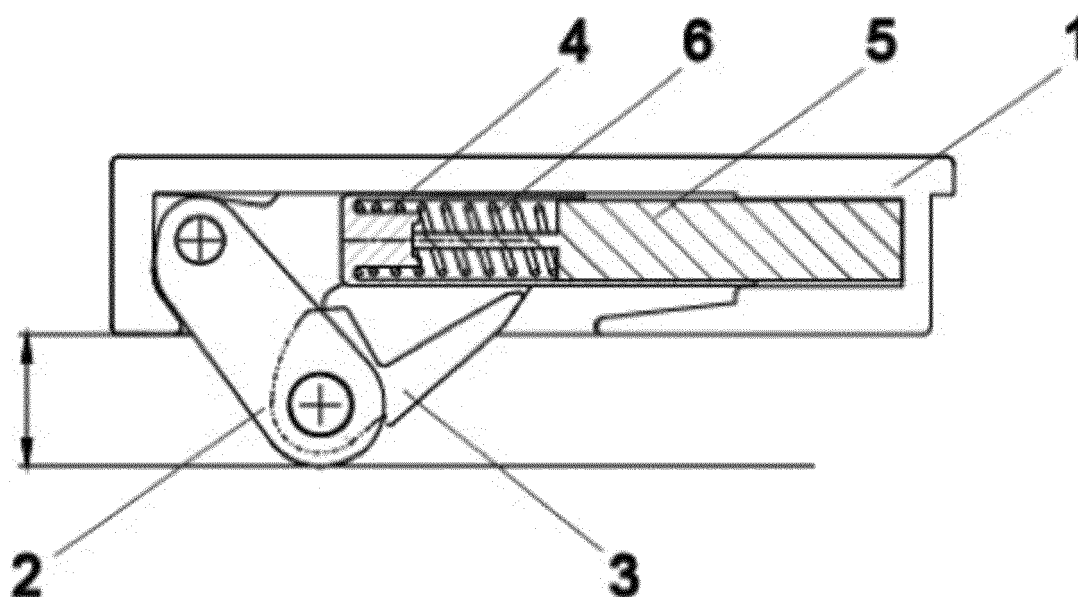


FIG 3

Description

Technical field of the invention

[0001] The present invention describes a furniture stabilizer suitable for uneven floors that prevents its wobbling. The stabilizer comprises connecting rods attached to a sliding glide and this glide is attached to damping means.

Background of the invention

[0002] There are different means on the market to adjust in height supporting surfaces of tables and other items of furniture in order to correct their stability in the presence of uneven floors or supporting surfaces and thereby stabilize them, avoiding the annoying "wobbling" effect. The existing systems are mainly manual because they require manual manipulation by means of screwing screws or similar to lengthen or shorten the height of the supporting leg and thereby achieving the levelling of the furniture base. One of the main problems of these systems is that by moving, even slightly, the furniture from the place where it has been stabilized, it is once again necessary to adapt the mechanisms to the new location of the furniture to achieve its stability, because if the floor or supporting surface is not levelled, the furniture will be adapted to its previous position but not to the current one and it will re-wobble, being necessary new manipulations of the stabilization system. To address this, complicated hydraulics systems of communicating vessels arose, that allow the self-regulation of the furniture legs. Its main problem is the complexity, cost and installation thereof.

[0003] In addition, the systems described in the state of the art are placed on the furniture legs, so for their installation it is necessary to remove the legs.

[0004] Finally, another problem with the stabilization systems for furniture described in the state of the art is that they deteriorate when the items of furniture are dragged horizontally.

Object of the invention

[0005] The problem solved by the present invention is a furniture stabilizer without manual manipulation, completely automatically and without using bearings, or screws, using the weight of the item of furniture to be stabilized.

[0006] The solution found by the inventors is a stabilizer comprising a set of connecting rods coupled to a sliding glide and damping means.

[0007] Another problem solved by the invention is to be able to attach the stabilizer to any item of furniture without having to remove the legs, since the stabilizer is attached to the base of the furniture itself or is embedded in the furniture.

[0008] Another problem solved by the invention is to

be able to slide the furniture horizontally without deteriorating the levelling system, this aspect being of special interest for heavy furniture.

Description of the invention

[0009] The invention consists of a rectangular-shape case (1) with a lower base with open section and inside of which two connecting rods (2 and 3), a glide (4) and damping means are coupled. The damping means adjust the travel speed of the glide.

[0010] In a preferred mode, the damping means comprise a damper (5) and a flexor spring (6).

[0011] When the case is attached to the bottom of the item of furniture or leg, the weight of the item of furniture or element that is placed on top, the pressure exerted by it, causes the connecting rod to move upwards adjusting to the floor in case of unevenness and thus preventing the rolling and stabilizing the item of furniture. The system consists of two connecting rods (2 and 3) located in reverse positions to each other, each of which touches the floor independently of the other occupying the space corresponding to its own support plane with which the protuberances, unevenness or hollows of the supporting surface do not affect the stability that is achieved when those connecting rods pressed by the weight of the item of furniture, in turn press one or more dampers (5) provided or not with flexor-tension spring (6) which horizontally move a glide (4) for each damper. The glide (4) is the element that slides by the pressure of the furniture's weight, cushioned by the damper (5) inside the case (1) itself occupying the space free inside it by the supporting positions adopted by the connecting rods according to the distance to the floor. Figure 3 shows the connecting rod closed or pressed by the weight of the item of furniture and with the supporting surface at the same level causing its upward movement occupying the entire available internal surface of the case, in this case, the glide (4) it remains fully pressed and without any displacement. In figure 2 the invention is showed before coming into contact with the floor or supporting surface, the connecting rods (2 and 3) are fully extended and without pressure, which involves the distension of the damper (5) and extension of the spring (6), the glide (4) occupies the position totally to the left. Between the positions of figures 2 and 3 all the positions of the connecting rods (2 and 3) are possible, the higher the pressure, the greater the displacement of the glide (4) to the right and left, the greater bending of the spring (6) and the greater damping work to soften the stabilization by the damper (5).

[0012] The stabilizer is attached to any item of furniture, without having to disassemble the furniture or legs.

[0013] The stabilizing element will achieve the total stability of the item of furniture to which it is attached by a standard anchoring system of screws or harpoons (9) as detailed in figure 6.

[0014] The stabilizing element can also be embedded (7) as detailed in figure (5). The case (1) is embedded in

the notches (8).

Brief description of the figures

[0015]

Figure 1 shows an exploded view of the invention.

Figure 2 shows the invention closed inside the case (1) as seen normally leaving only outward the connecting rods (2 and 3) coming into contact with the floor or supporting surface.

Figure 3 shows the stabilizer object of the invention extended, the connecting rods (2 and 3) have not yet been supported on the floor nor has pressure been exerted on the damper (5) due to the weight of the item of furniture, so damper (5) and spring (6) appear fully extended and the glide occupies the position as far to the left as possible inside the case (1).

Figure 4 shows the connecting rod totally closed or pressed by the weight of the item of furniture and with the supporting surface at the same level causing its upward movement occupying all the available internal surface of the case, in this case, the glide (4) it remains fully pressed against the damper (5) and without any displacement.

Figure 5 shows a possible use of the invention in a standard circular base for supporting an item of furniture in which notches (8) are made, wherein the cases (1) are placed embedded (7) in the base itself.

Figure 6 shows a possible use of the invention by screwing into the base (9) of the case (1) containing the invention.

Preferred embodiment of the invention

[0016] The invention that is being sought as we have anticipated consists of a part that is coupled by a standard anchoring system of screws or harpoons, or extruded inside a metal piece or other material, flat coupling, to any item of furniture or table, placing it at the base of the same in different support points or in each of its legs. Said part consists of a case (1) of rectangular plate open at its base, which is provided with two connecting rods (2 and 3) that come into contact with the supporting surface of the item furniture and move by the pressure of its weight, up and down. This displacement drives the movement of a glide (4) that is cushioned by a damper (5) and a flexor-tension spring (6) located inside the case, which smoothly stabilizes the item of furniture to which it is attached.

Claims

1. Furniture stabilizer comprising a case (1) inside on which contains two connecting rods (2,3) wherein the connecting rod (2) is fixed to the case (1) and the connecting rod (3) is attached to a glide (4) that moves horizontally inside the case (1) and the displacement of the glide is regulated by damping means.
2. Furniture stabilizer according to claim 1, **characterised in that** the damping means is a damper (5) and a flexor spring (6).
3. Furniture stabilizer according to the preceding claims **characterised in that** it is coupled to the base of an item of furniture by means of screws (9).
4. Furniture stabilizer according to claims 1, 2 **characterised in that** the case (1) is embedded (7) in the notches (8).

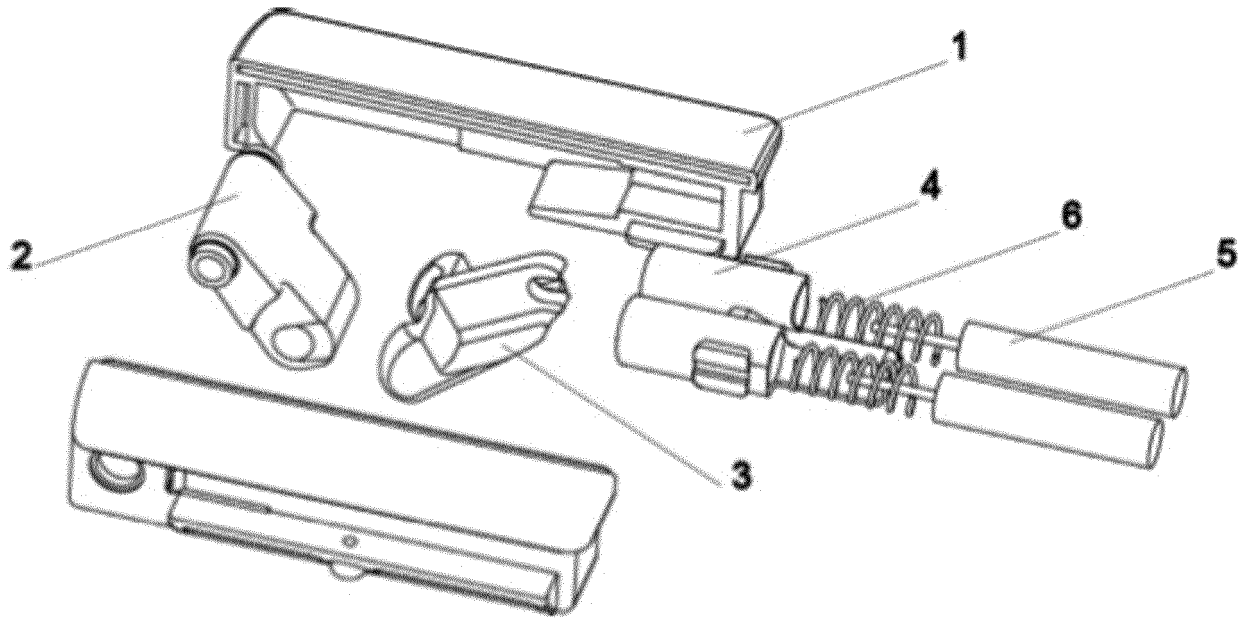


FIG 1

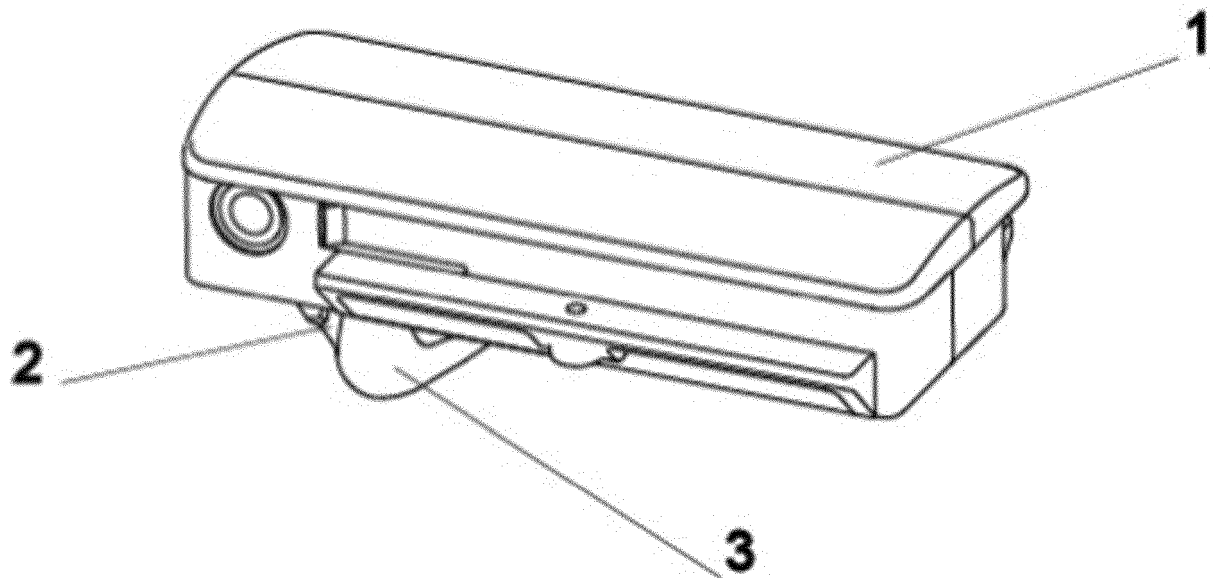


FIG 2

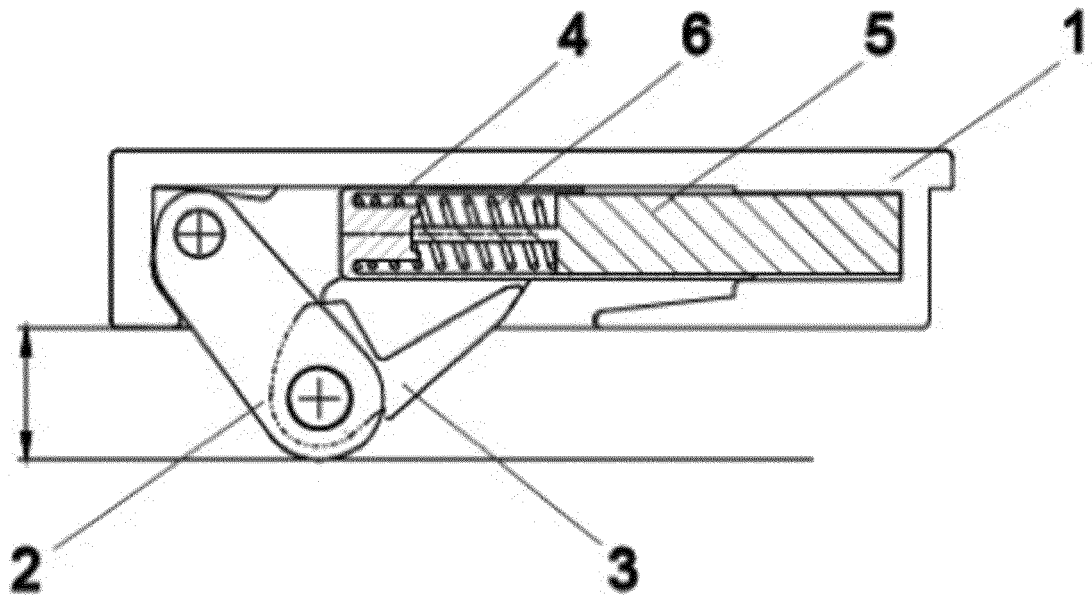


FIG 3

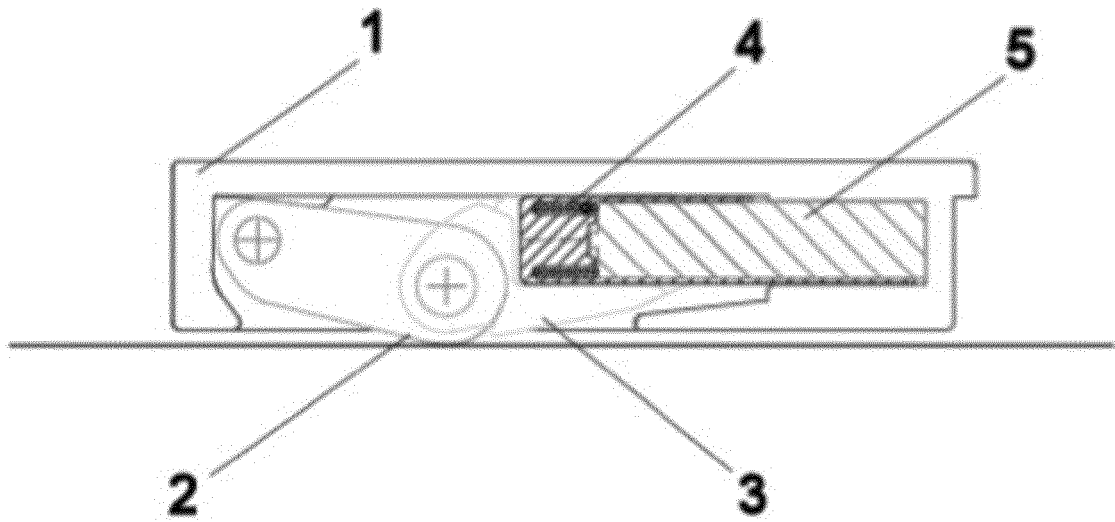


FIG 4

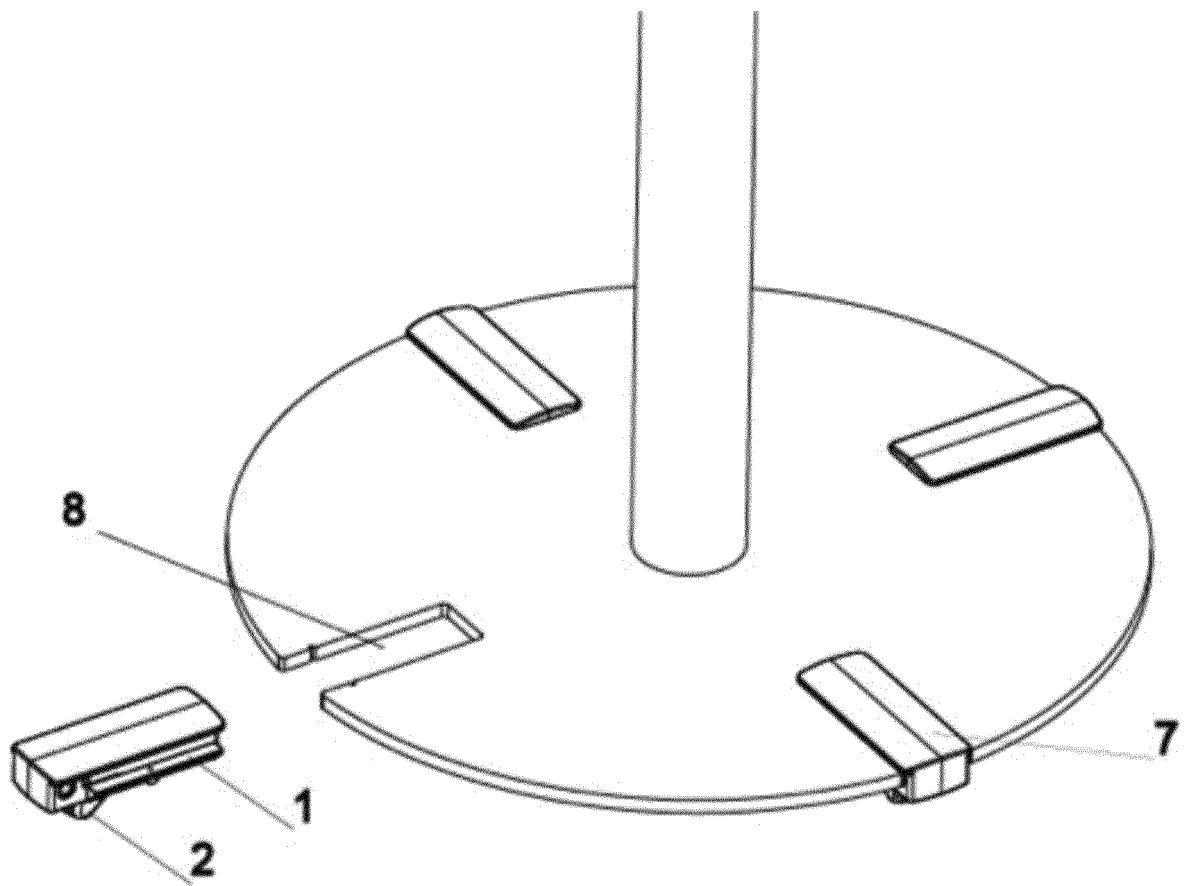


FIG 5

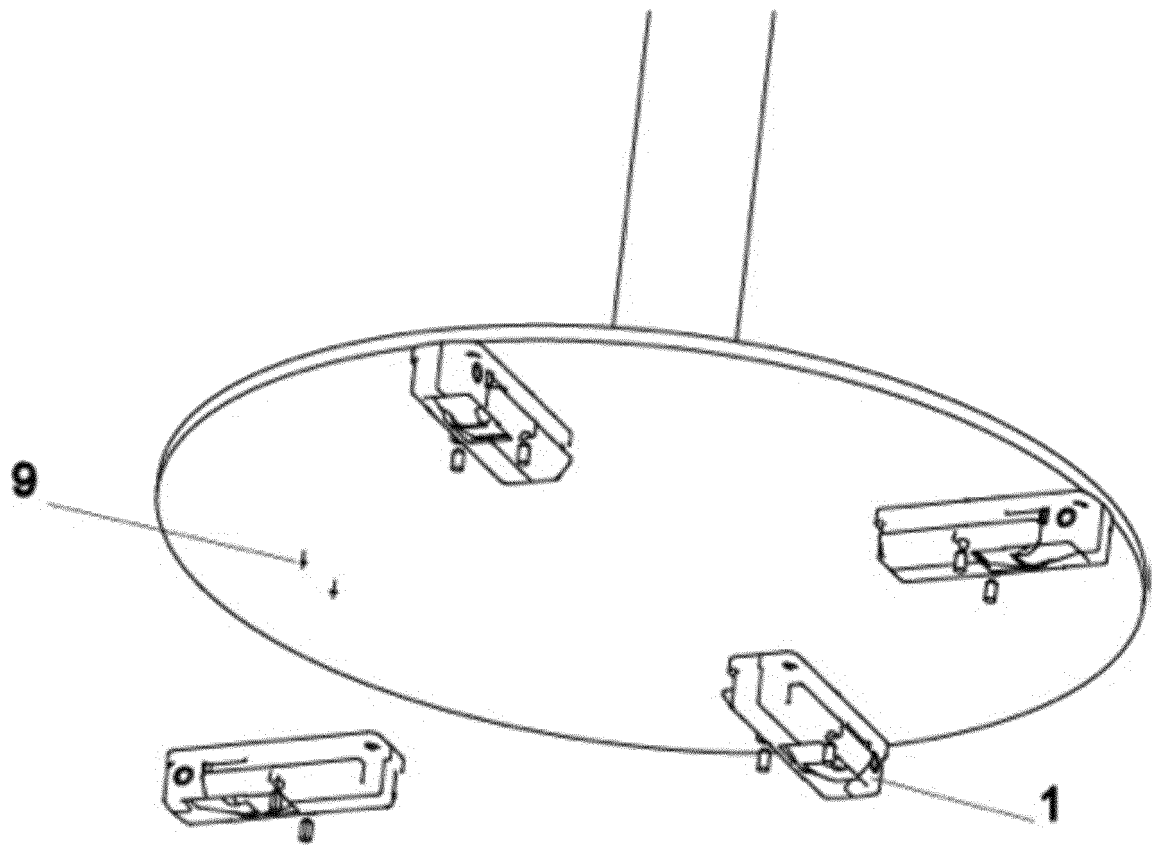


FIG 6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2017/070836

5	A. CLASSIFICATION OF SUBJECT MATTER		
	A47B91/16 (2006.01)		
	According to International Patent Classification (IPC) or to both national classification and IPC		
10	B. FIELDS SEARCHED		
	Minimum documentation searched (classification system followed by classification symbols) A47B		
	Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
15	Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EPODOC, INVENES		
	C. DOCUMENTS CONSIDERED TO BE RELEVANT		
20	Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	A	WO 0059344 A1 (GWYNNETH MARK) 12/10/2000, page 6, line 34 - page 7, line 13; figures 7A - 7D.	1-4
25	A	NL 1036141C C (BIN INNOVATIONS BV) 04/05/2010, figures 1 - 7. claims 1-8;	1-4
30	A	WO 2007037688 A1 (ERNST HOLDING B V ET AL.) 05/04/2007, figures 6 - 7. Paragraphs [33 - 36];	1-4
35	A	US 2793467 A (MATTER ALBERT J) 28/05/1957, column 2, lines 12 - 44; figures 1 - 5.	1-4
40	☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
45	* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance. "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure use, exhibition, or other means. "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family	
50	Date of the actual completion of the international search 23/03/2018		Date of mailing of the international search report (02/04/2018)
55	Name and mailing address of the ISA/ OFICINA ESPAÑOLA DE PATENTES Y MARCAS Paseo de la Castellana, 75 - 28071 Madrid (España) Facsimile No.: 91 349 53 04		Authorized officer S. De Miguel De Santos Telephone No. 91 3493270

Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES2017/070836

Information on patent family members

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