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(54) **UPPER WHEEL DEVICE WITH SELF-CLOSING RETAINER**

(57) An upper wheel device with a self-closing retainer characterised in that it comprises a metal support (1) that has at least one upper wheel (2) on the upper portion thereof that is securely joined to said support (1); and where a self-closing retainer element (2) joined to the support (1) via fastening elements (3), which pass

through the retainer element (4) until they are fastened in holes (1 a) in the support (1), is placed on the support (1); and where, situated on said retainer (4), a casing (5) is placed with an inner shape that matches the retainer element (4), and the function of which is to fasten and ensure the fluid-tightness of the assembly.

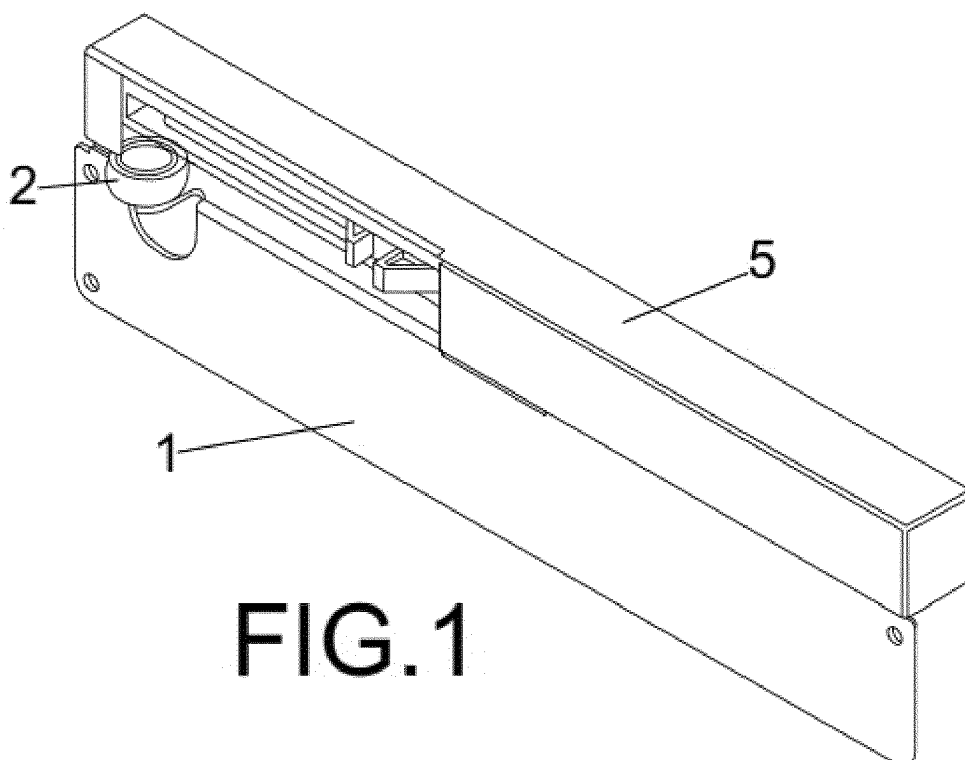


FIG.1

Description

Object of the invention

[0001] The object of the present invention is an upper wheel device with a self-closing retainer, preferably for sliding doors, and which has the particular feature that it encompasses several functions within the same element for a simple mounting of sliding doors or similar.

Background of the invention

[0002] Currently, self-closing retention systems for sliding doors are elements that are supplied optionally and separately with respect to the rest of the components needed to manufacture sliding doors.

[0003] The fact that these elements are supplied optionally means that the final product, that is to say the sliding door, varies in price depending on whether said utility is used.

[0004] Furthermore, the fact that these elements are supplied separately means that a certain amount of additional time must be used in order to mount and assemble these elements, such that a specialised operator must carry out the mounting function for the sliding door or similar, which as a result, causes the manufacturing and/or production time of the door, and therefore the financial cost thereof, to increase.

Description of the invention

[0005] The technical problem that the present invention resolves is that of achieving an element or device that jointly provides both the upper wheel and the self-closing element in the same element, such that it makes its assembly on a sliding door or similar easier, and therefore save on the price thereof. In order to do so, the upper wheel device with a self-closing retainer, object of the present invention, is characterised in that it comprises a metal support that has, on the upper portion thereof, at least one upper wheel securely joined thereto. Moreover, where a self-closing retainer element is joined to the support via fastening elements (3) is placed on the support, and where, situated on said retainer, a casing is placed with an inner shape that matches the retainer element, and the function of which is to fasten and ensure the fluid-tightness of the assembly.

[0006] Thanks to its design, the upper wheel device with a self-closing retainer, proposed herein, on the one hand combines the bearing and retaining functions, obtaining a more robust product, and on the other hand, makes its installation easier since it helps prevent mistakes in mounting by the operators due to the fact that the elements that make them up are supplied together and the position thereof is fixed. This implies a correct positioning in relation to the activator installed in the upper guide.

[0007] In turn, the device serves as a joining element

(of the bracket type) in the manufacture of aluminium or steel structure doors (which will vary slightly with regards to the design thereof), since the larger size thereof with respect to the individual simple wheels (which are currently used) increases the strength of the door structure.

[0008] Lastly, in the case of steel doors, the device proposed herein, is highly useful given that said profiles must currently be cut in factories or workshops that have the machines to produce said cut. With the device described herein, the joining and assembling is carried out quickly and simply, making the work of the operator easier and increasing the production thereof.

[0009] Throughout the description and the claims, the word "comprises" and variants thereof are not intended to exclude other technical characteristics, additions, components or steps. For those skilled in the art, other objects, advantages and characteristics of the invention may be deduced from both the description and the practical use of the invention. The following examples and drawings are provided by way of illustration, and are not meant to restrict the present invention. Furthermore, the present invention covers all of the possible combinations of particular and preferred embodiments indicated herein.

Brief description of the drawings

[0010] A series of drawings that aid in better understanding the invention and that are expressly related to an embodiment of said invention that is presented as a non-limiting example are briefly described below.

FIG. 1 shows a view of the upper wheel device with a self-closing retainer, in its right position.

FIG. 2 shows an exploded view of the device shown in the previous figure.

FIG. 3 shows a view of the upper wheel device with a self-closing retainer, in its left position.

FIG. 4 shows an exploded view of the device shown in the previous figure.

FIG. 5 show a view of the device mounted on a sliding door.

FIG. 6 shows a detailed view of the device mounted on the door of the previous figure.

FIG. 7 shows an explode view of the device in a particular embodiment, where it is mounted on the door of a wardrobe.

FIG. 8 shows a view of the device installed on the door of a wardrobe.

Preferred embodiment of the invention

[0011] The attached figures show a preferred embodiment of the invention. More specifically, the upper wheel device with a self-closing retainer, object of the present specification, is characterised in that it comprises a metal support (1) that has at least one upper wheel (2) on the upper portion thereof that is securely joined to said sup-

port; and where a self-closing retainer element (2) joined to the support via fastening elements (3), of the screw type of similar, which pass through the retainer (4) until they are fastened in holes (1a) in the support (1), is placed on the support (1); and where, situated on said retainer (4), a casing (5) is placed with an inner shape that matches the retainer element (4), and the function of which is to fasten and ensure the fluid-tightness of the assembly.

[0012] In a preferred embodiment, the casing (5) shall be preferably made of plastic or a material with equivalent mechanical characteristics.

[0013] As shown in figures 1 to 4, depending on the side the device is to be inserted, the shape of the support (1) and the casing (5) vary, both adapting such that an optimal join is formed with the profiles to which they are to be fastened.

[0014] The joining of the device to the profiles (6) that form the sliding door (10) or similar, is preferably carried out via screws (9) or equivalent.

[0015] Figure 5 shows the joining of two devices, one which is inserted on the right and another on the left, in the upper portion of the profile that forms a sliding door (10), and where in the lower portion thereof, said door (10) incorporates both assemblies that house the lower wheels (7) such that it causes the aforementioned door (10) to move.

[0016] In a practical embodiment, where the device is inserted in the door (10) of a wardrobe, as shown in figure 7, the device is installed in a fixed manner, in such a way that the correct position is guaranteed with respect to the activator (8) installed adjacently along with at least one upper guide (11), installed in the same way, in the lower portion of the door (10).

Claims

1. An upper wheel device with a self-closing retainer **characterised in that** it comprises a metal support (1) that has at least one upper wheel (2) on the upper portion thereof that is securely joined to said support (1); and where a self-closing retainer element (2) joined to the support (1) via fastening elements (3), which pass through the retainer element (4) until they are fastened in holes (1a) in the support (1), is placed on the support (1); and where, situated on said retainer (4), a casing (5) is placed with an inner shape that matches the retainer element (4), and the function of which is to fasten and ensure the fluid-tightness of the assembly.
2. The device according to claim 1, wherein the fastening elements (3) are of the screw type or similar.
3. The device according to claim 1, wherein the casing (5) is made of plastic or a material with equivalent mechanical characteristics.

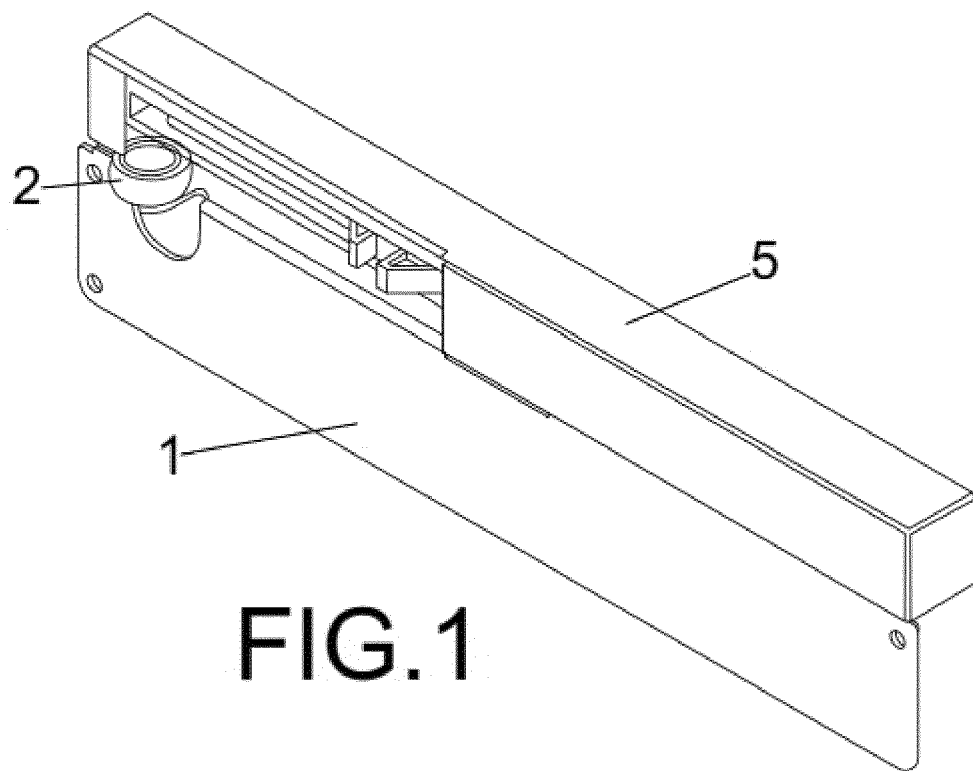


FIG.1

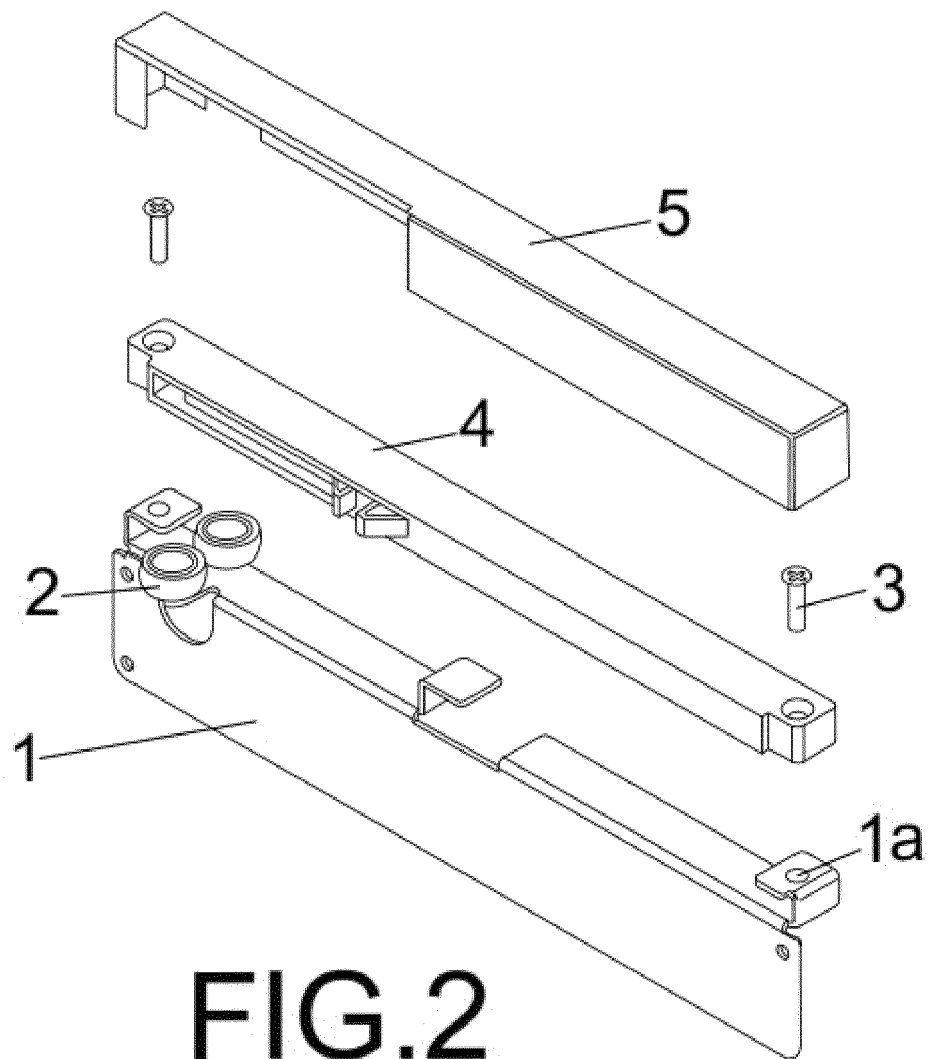
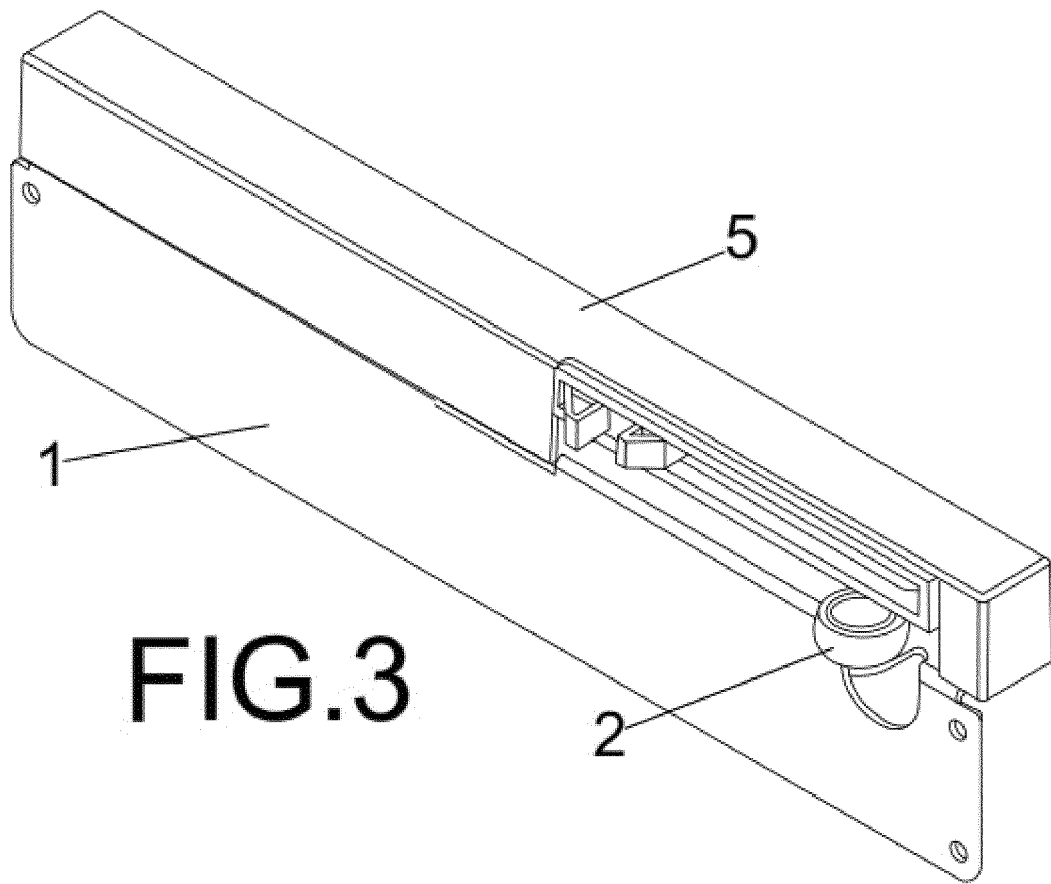
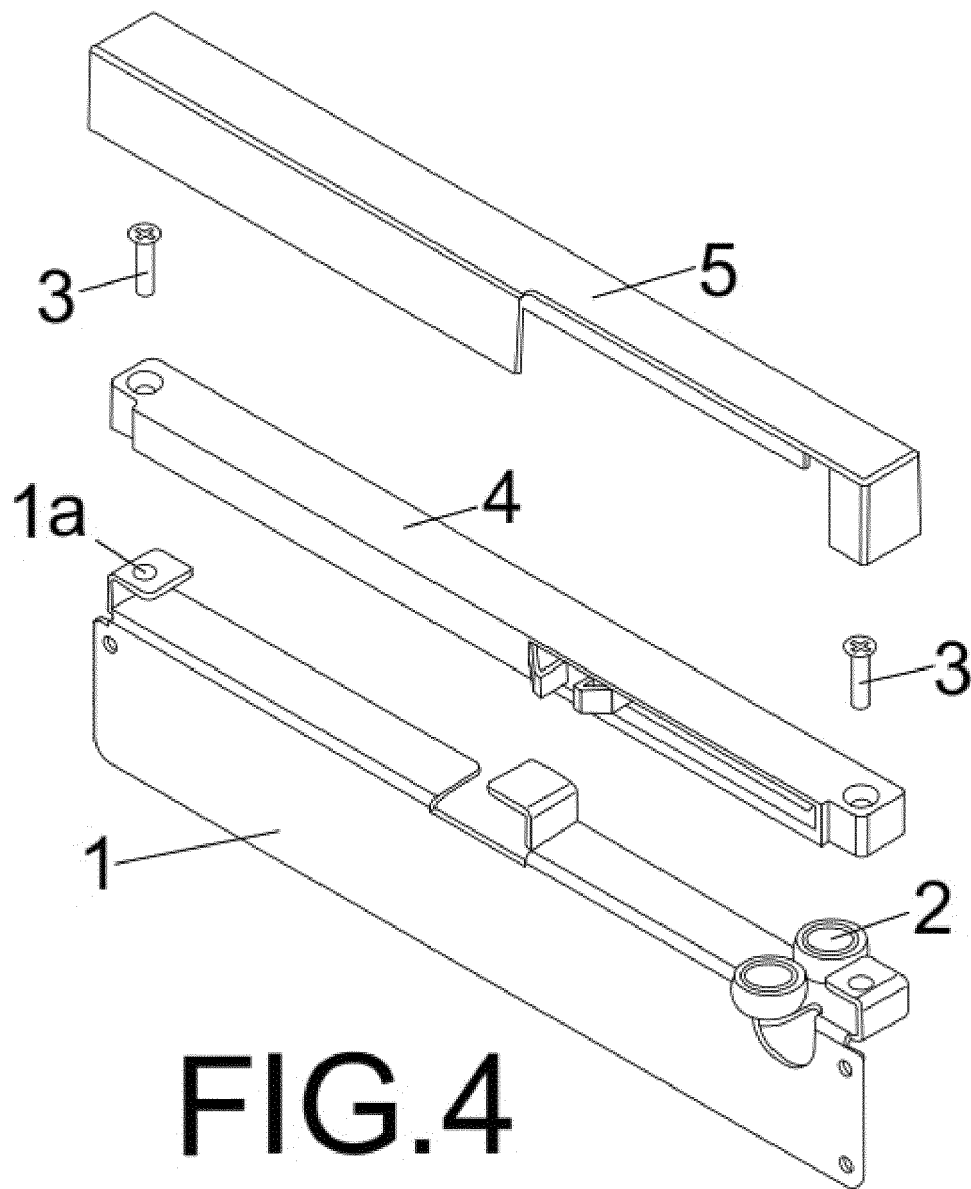


FIG.2





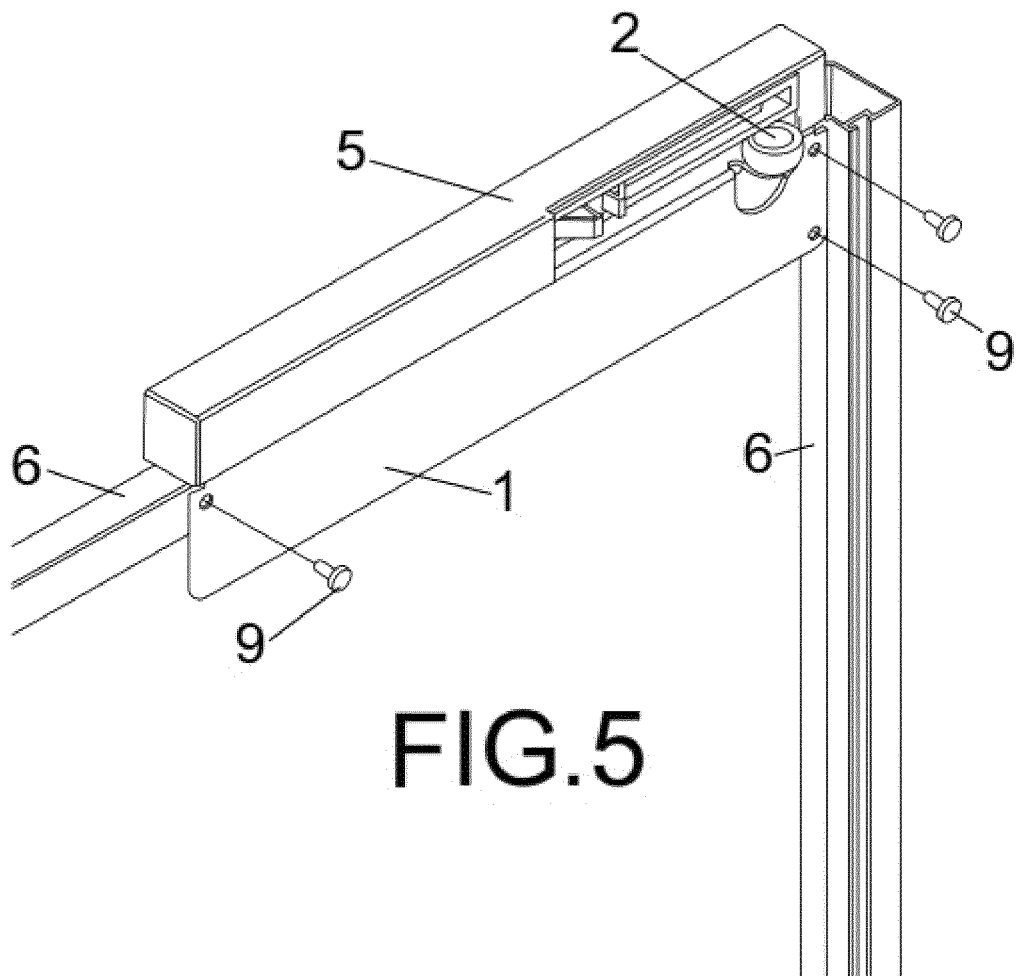
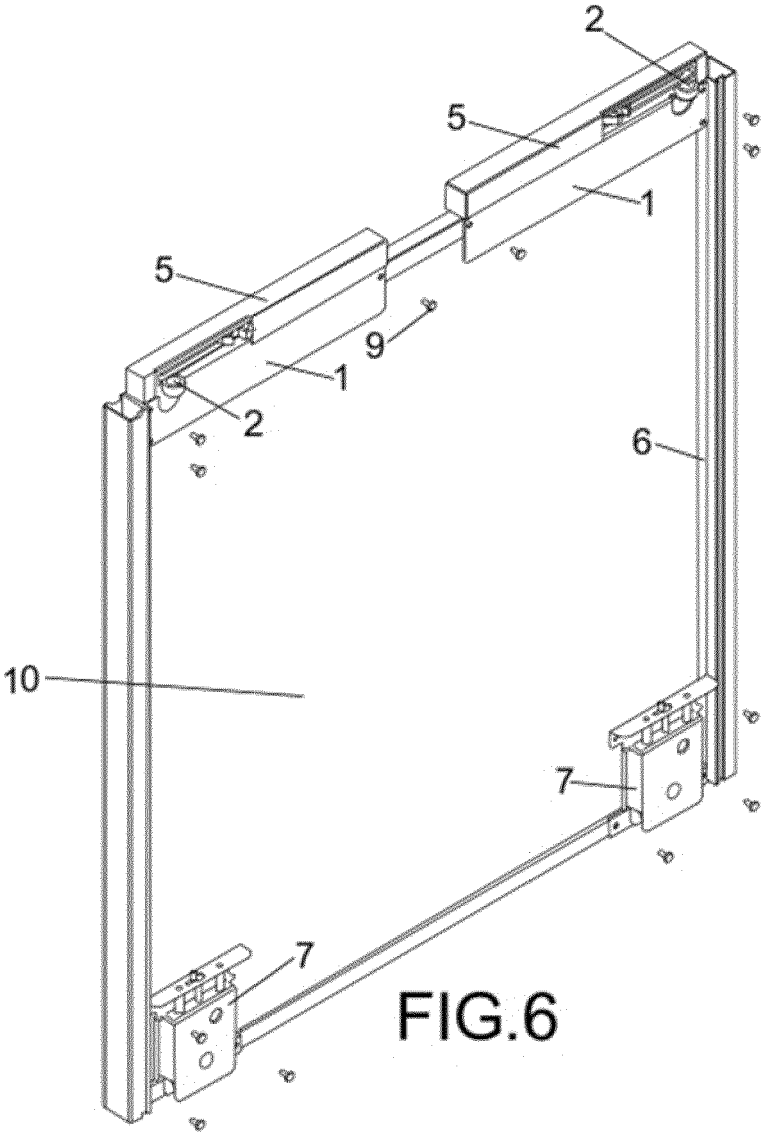
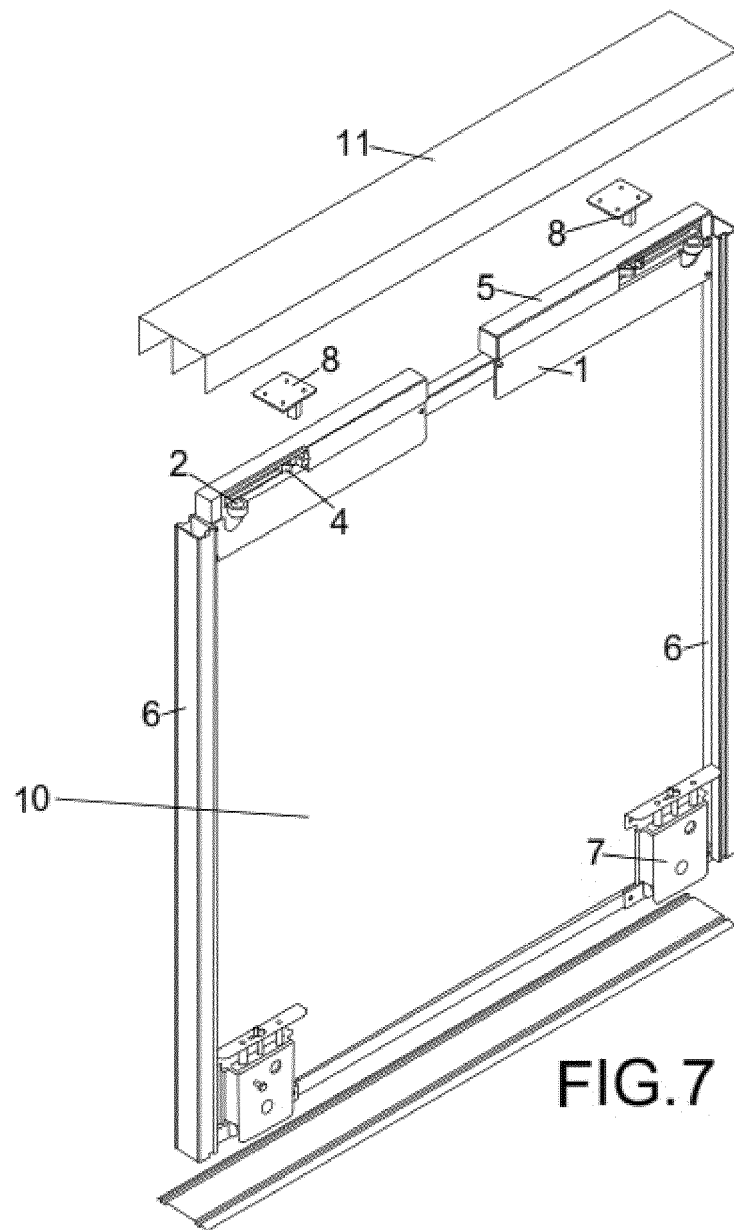


FIG. 5





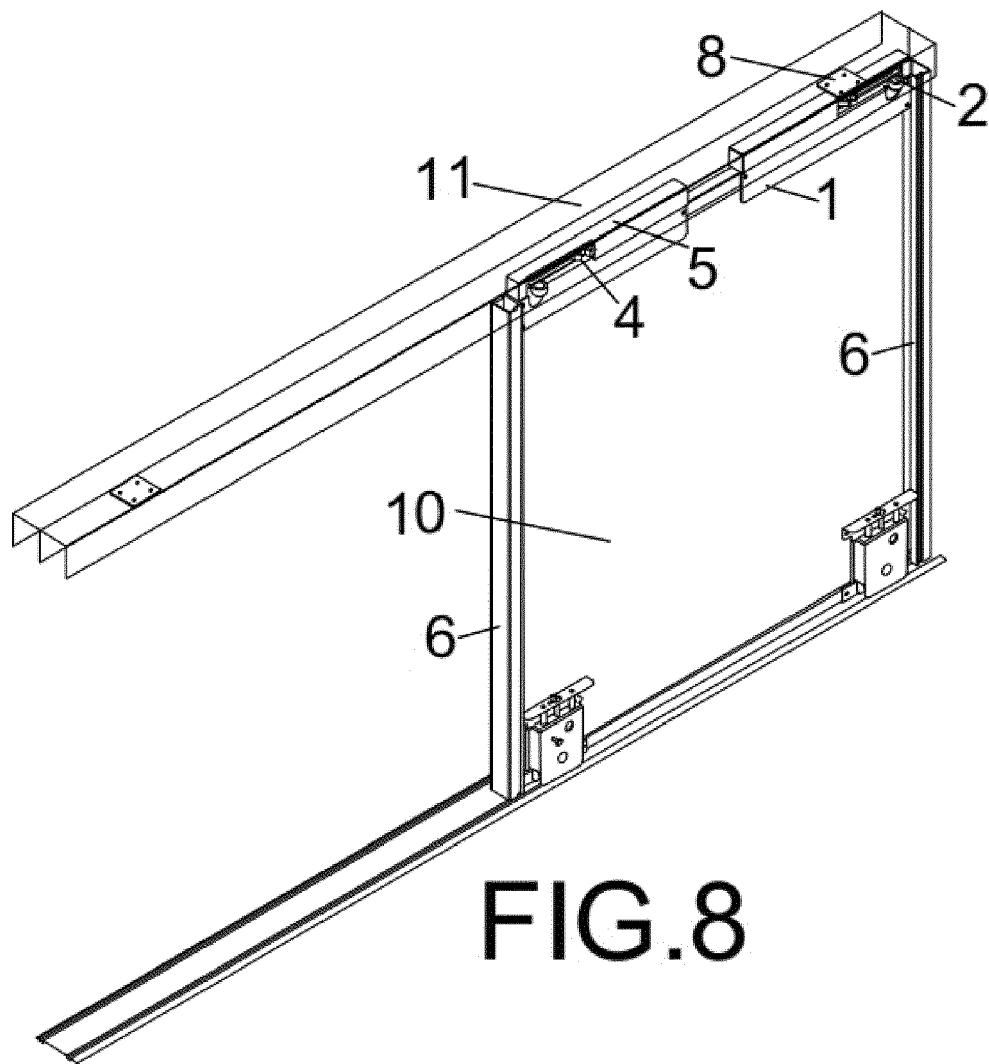


FIG.8



EUROPEAN SEARCH REPORT

Application Number
EP 16 15 5635

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	CN 102 536 025 A (GUANGDONG DINGGU JICHUANG HOUSEHOLD CO LTD) 4 July 2012 (2012-07-04) * abstract; figures 1-5 *	1-3	INV. E05F5/00 E05F1/16
X	EP 2 700 778 A1 (FEIGL BERNHARD [AT]) 26 February 2014 (2014-02-26) * paragraphs [0017], [0025], [0026]; figures 1-4 *	1,2	ADD. E05D15/06
A	WO 2014/169771 A1 (XU JIANGDE [CN]) 23 October 2014 (2014-10-23) * abstract; figures 1-7,20-22 *	1-3	
			TECHNICAL FIELDS SEARCHED (IPC)
			E05F E05D
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 14 June 2016	Examiner Rémondot, Xavier
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 16 15 5635

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CN 102536025 A	04-07-2012	NONE	
EP 2700778 A1	26-02-2014	NONE	
WO 2014169771 A1	23-10-2014	EP 2980344 A1	03-02-2016
		KR 20160002772 A	08-01-2016
		US 2016032967 A1	04-02-2016
		WO 2014169771 A1	23-10-2014

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