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(54) **MAGNETIC FIXING SYSTEM FOR A CURTAIN OR ROLLER BLIND MECHANISM**

(57) Magnetic fixing system (1) for a curtain or roller blind mechanism (13) that comprises a magnet (7) configured to be secured to a surface on which the curtain or roller blind mechanism (13) is going to be secured, and a support (2) that can be coupled to the curtain or roller blind mechanism (13), that comprises a housing (3) with an upper cavity (4) and a lower cavity (5), where

the upper cavity (4) is configured to house the magnet (7) and the lower cavity (5) is configured to house a metal gusset plate (6) which is configured to be joined to the magnet (7), where said magnetic fixing system (1) allows for securing the curtain or roller blind mechanism (13) to said surface.

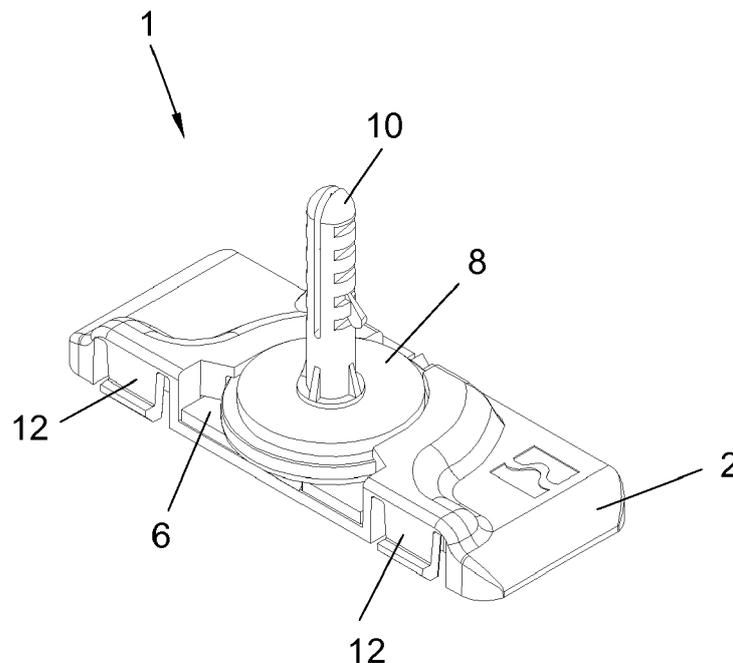


FIG. 1a

Description**OBJECT OF THE INVENTION**

[0001] The present invention refers to magnetic fixing system for a curtain or roller blind mechanism comprising a magnet, preferably encapsulated in a metal housing, that is secured to the ceiling by means of screws and a support that comprises a metal gusset plate that is secured to the magnet by means of magnetism, in order to then mount the magnet and said support mechanically.

[0002] This magnetic fixing system makes it possible to fit large curtain or roller blind mechanisms to a ceiling by means of a single fitting device in an easy, quick and automatic way, thanks to the attraction force between the magnet and the metal gusset plate integrated in the support. It is only necessary to put the curtain or roller blind mechanism (once it has been coupled to the supports) close to the magnets in an intuitive way.

[0003] It is of particular use in the industry that manufactures curtains and roller blinds.

TECHNICAL PROBLEM TO ADDRESS AND BACKGROUND OF THE INVENTION

[0004] Current fixing systems comprise supports that secure the curtain or roller blind mechanisms to the ceiling in a mechanical way by finding the exact anchoring between them, which therefore requires applying a force exactly on the point where the support is.

[0005] Bearing in mind that the recommended separation between supports is of 70 cm, one person alone is unable to leave a 3 meters long mechanism hanging from one support before the rest is secured, since the weight of the mechanism itself could act as a lever against the ceiling, tearing off by means of gravity the supports attached to the ceiling.

[0006] However, thanks to magnetism, the fixing system disclosed herein is able to automatically position the mechanisms, then requiring only to mount the system mechanically without having to hold said mechanism up in the air. Therefore, it allows for securing the mechanisms to the ceiling in a single procedure, without having to secure each part separately. This is a great improvement in relation to current fixing systems available in the market, since up to now large mechanisms could only be fitted with the aid of another person due to requiring manual work in order to fix each support. Thanks to this system, a single person can fit a large mechanism without any help and with great ease.

DESCRIPTION OF THE INVENTION

[0007] The present invention refers to a magnetic fixing system for a curtain or roller blind mechanism that comprises a magnet, preferably encapsulated in a metal housing, configured to be secured to a surface by means of a screw and, if necessary, a fixing block, on which the

curtain or roller blind mechanism is going to be secured, and a support that can be coupled to the curtain or roller blind mechanism, that comprises a housing with an upper cavity and a lower cavity, where the upper cavity is configured to house the magnet and the lower cavity is configured to house a metal gusset plate which is configured to be joined to the magnet, where said magnetic fixing system is capable of securing the curtain or roller blind mechanism to said surface.

[0008] In the magnetic fixing system for a curtain or roller blind mechanism that is object of the invention, the upper cavity of the housing has a complementary shape to the magnet or to the metal housing, and the lower cavity of the housing comprises a protrusion that acts as a stop for the metal gusset plate.

[0009] In addition, the support comprises tabs configured to fix and secure said support to the curtain or roller blind mechanism.

[0010] In the magnetic fixing system for a curtain or roller blind mechanism that is the object of the invention, the metal gusset plate comprises a wedge configured to prevent the support from making lateral movements over the curtain or roller blind mechanism.

[0011] The magnet used in the magnetic fixing system for a curtain or roller blind mechanism that is the object of the invention comprises a hole for inserting the fixing screw. Preferably, the magnet is made of neodymium, and the support is made of plastic.

BRIEF DESCRIPTION OF THE FIGURES

[0012] To complete the description and in order to give a better understanding of the characteristics of the invention, this descriptive report is accompanied by a series of drawings that are an integral part of the report, wherein, for illustration purposes and without limitation, the following has been represented:

Figure 1a shows a view of the magnetic fixing system displaying the magnet encapsulated in a metal housing and inserted in the upper cavity of the housing of the support, and the metal gusset plate inserted in the lower cavity of the housing of the support.

Figure 1b shows an exploded view of the previous figure.

Figure 2a shows a rear view of the magnetic fixing system.

Figure 2b shows an exploded view of the previous figure.

Figures 3, 4 and 5 show a sequence of sections explaining step by step the process of coupling the support and the mechanism.

Figures 6, 7 and 8 show a sequence of sections explaining step by step the process of coupling the magnet and the support, once the support is joined to the mechanism.

Figure 9 shows a cross-sectional view according to the longitudinal section GG of the previous figure.

[0013] A list of the different components that have been represented in the figures and which are comprised in the invention is detailed below:

1. Magnetic fixing system.
2. Support.
3. Housing.
4. Upper cavity.
5. Lower cavity.
6. Metal gusset plate.
7. Magnet.
8. Metal housing.
9. Fixing screw.
10. Fixing block.
11. Wedge.
12. Tab.
13. Curtain or roller blind mechanism.
14. Protrusion.

DESCRIPTION OF A SAMPLE EMBODIMENT OF THE INVENTION

[0014] The object of the present invention refers to a magnetic fixing system (1) for a curtain or roller blind mechanism that comprises:

- a magnet (7), preferably encapsulated in a metal housing (8), configured to be secured to the ceiling by means of a screw (9) and, if necessary, a fixing block (10), and
- a support (2) that can be coupled to the curtain or roller blind mechanism (13), that comprises a housing (3) with an upper cavity (4) and a lower cavity (5), where the upper cavity (4) is configured to house the magnet (7) and the lower cavity (5) is configured to house a metal gusset plate (6) which is configured to be joined to the magnet (7) due to the magnetic force. Afterwards, the magnet (7) and the support (2) need to be mounted mechanically.

[0015] Therefore, said magnetic fixing system (1) allows for securing the curtain or roller blind mechanism (13) to the ceiling.

[0016] The upper cavity (4) of the housing (3) of the support (2) has a complementary shape to the magnet (7), or in the case the magnet (7) is encapsulated, to the metal housing (8). Figure 1b shows how the metal housing (8) and said upper cavity (4) comprise a staggered design.

[0017] In addition, the lower cavity (5) of the housing (3) of the support (2) comprises a small protrusion (14) that acts as a stop so the metal gusset plate (6) does not leave said lower cavity (5).

[0018] Figure 2b shows how the magnet (7) and the metal housing (8) comprise a hole through which the fixing screw (9) is inserted.

[0019] Preferably, the magnet (7) is made of neodymium, and the support (2) is made of plastic.

[0020] When the curtain or roller blind mechanism (13) (already coupled to the supports (2)) is brought to a distance of 10 mm from the magnets (7) secured to the ceiling, this magnetic fixing system (1) causes said mechanism (13) to automatically secure to the ceiling due to the magnetic force between them, having to only move the mechanism (13) lightly or to assemble it mechanically by exerting a small pressure in order to fit the magnet (7) in the upper cavity (4) of the housing (3) of the support (2), securing the system even more tightly.

[0021] Figures 3, 4 and 5 show how the support (2) is coupled to a curtain or roller blind mechanism (13). In general, the curtain or roller blind mechanism (13) is of the type displayed in the drawings. Naturally, the curtain or roller blind mechanism (13) must have adequate coupling means in order to be coupled correctly to the support (2). As shown in figure 1a, the support (2) comprises tabs (12) that allow for fixing and securing said support (2) to the mechanism (13). A larger or smaller number of supports (2) may be used depending on the size of the curtain or roller blind mechanism (13).

[0022] Due to the magnetic force existing between the magnet (7) and the metal gusset plate (6), the magnetic fixing system (1) allows for fitting errors of up to 3 cm, that is, it allows the supports (2) (once they have been coupled to the mechanism) to slide easily along the profile of the mechanism (13) with a deviation of up to 3 cm, until they are centred and aligned with the magnets (7) (that had been previously fixed to the ceiling).

[0023] Once the magnets (7) make contact with the supports (2) (once said supports have been coupled to the mechanism), the process of mechanical assembly takes place, wherein the supports (2) are pressed against said magnets (7), thus causing the metal gusset plate (6), comprising a wedge (11), to anchor the wedge (11) in the profile of the mechanism (13), preventing the support (2) from making any lateral movements over the profile of the mechanism (13). Therefore, said process of mechanical assembly not only ensures that the mechanism (13) is secured correctly on each side, but it also ensures that the support (2) is perfectly fixed to the mechanism (13) along the vertical line and the front.

[0024] In the case of mechanisms (13) with 3 meters long aluminium profiles, due to the controlled flexibility of this type of profiles and thanks to this magnetic fixing system (1), it will only be necessary to place the support (2) on the central part of the profile close to the corresponding magnet (7), since the magnetic force itself will secure the adjacent supports (2) to their corresponding magnets (7) until it is completely secured on both ends.

[0025] The present invention is not limited by the embodiment disclosed herein. Other embodiments can be made by persons skilled in the art in light of this description. In consequence, the scope of the invention is defined by the following claims.

Claims

1. A magnetic fixing system (1) for a curtain or roller blind mechanism (13) **characterized in that** it comprises:
- a magnet (7) configured to be secured to a surface on which the curtain or roller blind mechanism (13) is going to be secured, and
 - a support (2) that can be coupled to the curtain or roller blind mechanism (13), that comprises a housing (3) with an upper cavity (4) and a lower cavity (5), where the upper cavity (4) is configured to house the magnet (7) and the lower cavity (5) is configured to house a metal gusset plate (6) which is configured to be joined to the magnet (7),
- where said magnetic fixing system (1) is capable of securing the curtain or roller blind mechanism (13) to said surface.
2. A magnetic fixing system (1) for a curtain or roller blind mechanism (13) according to claim 1, **characterized in that** the magnet (7) is encapsulated in a metal housing (8).
3. A magnetic fixing system (1) for a curtain or roller blind mechanism (13) according to claims 1 or 2, **characterized in that** the upper cavity (4) of the housing (3) has a complementary shape to the magnet (7) or to the metal housing (8).
4. A magnetic fixing system (1) for a curtain or roller blind mechanism (13) according to claim 1, **characterized in that** the lower cavity (5) of the housing (3) comprises a protrusion (14) that acts as a stop for the metal gusset plate (6).
5. A magnetic fixing system (1) for a curtain or roller blind mechanism (13) according to claim 1, **characterized in that** the support (2) comprises tabs (12) configured to fix and secure said support (2) to the curtain or roller blind mechanism (13).
6. A magnetic fixing system (1) for a curtain or roller blind mechanism (13) according to claim 1, **characterized in that** the metal gusset plate (6) comprises a wedge (11) configured to prevent the support (2) from making lateral movements over the curtain or roller blind mechanism (13).
7. A magnetic fixing system (1) for a curtain or roller blind mechanism (13) according to claim 1, **characterized in that** the magnet (7) is configured to be secured by means of a fixing screw (9).
8. A magnetic fixing system (1) for a curtain or roller

blind mechanism (13) according to claim 7, **characterized in that** the magnet (7) comprises a hole for inserting the fixing screw (9).

- 5 9. A magnetic fixing system (1) for a curtain or roller blind mechanism (13) according to claim 1, **characterized in that** the magnet (7) is made of neodymium.

- 10 10. A magnetic fixing system (1) for a curtain or roller blind mechanism (13) according to claim 1, **characterized in that** the support (2) is made of plastic.

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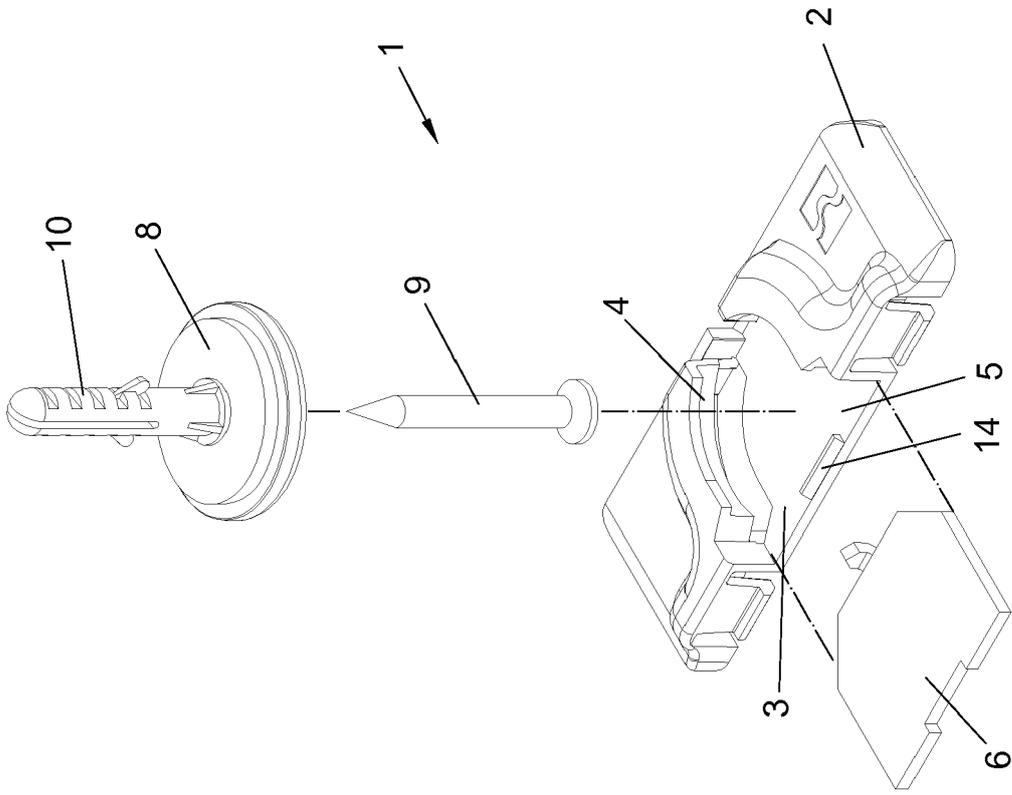


FIG. 1b

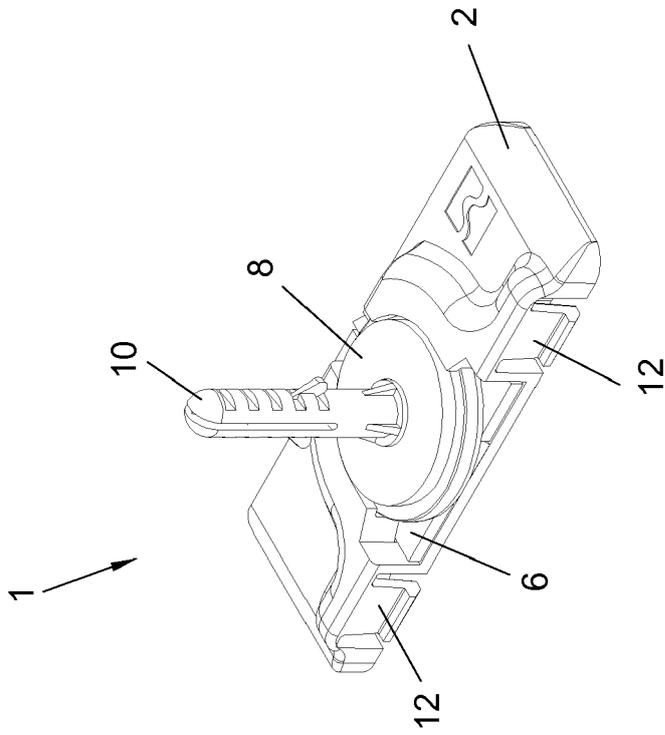


FIG. 1a

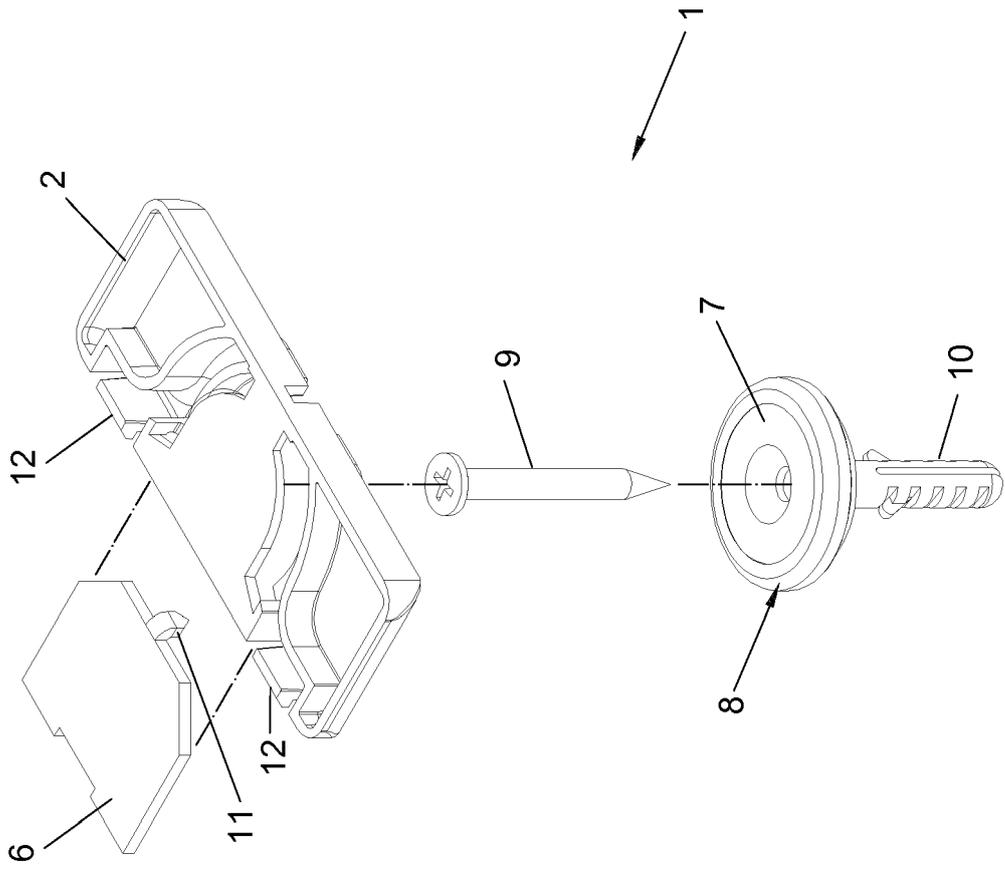


FIG. 2b

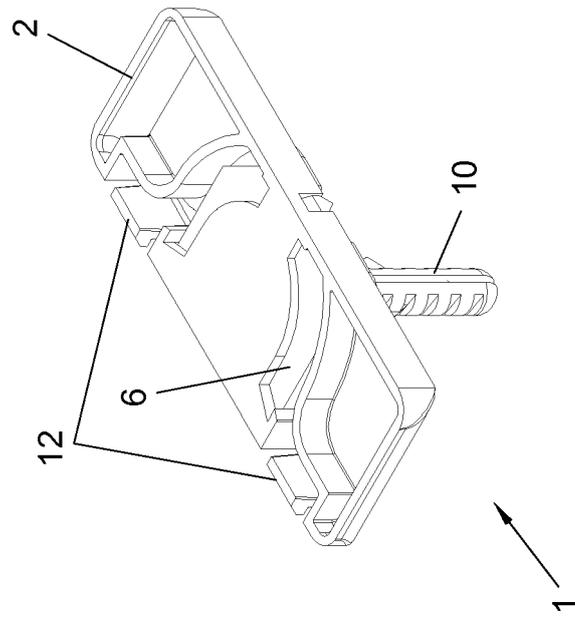


FIG. 2a

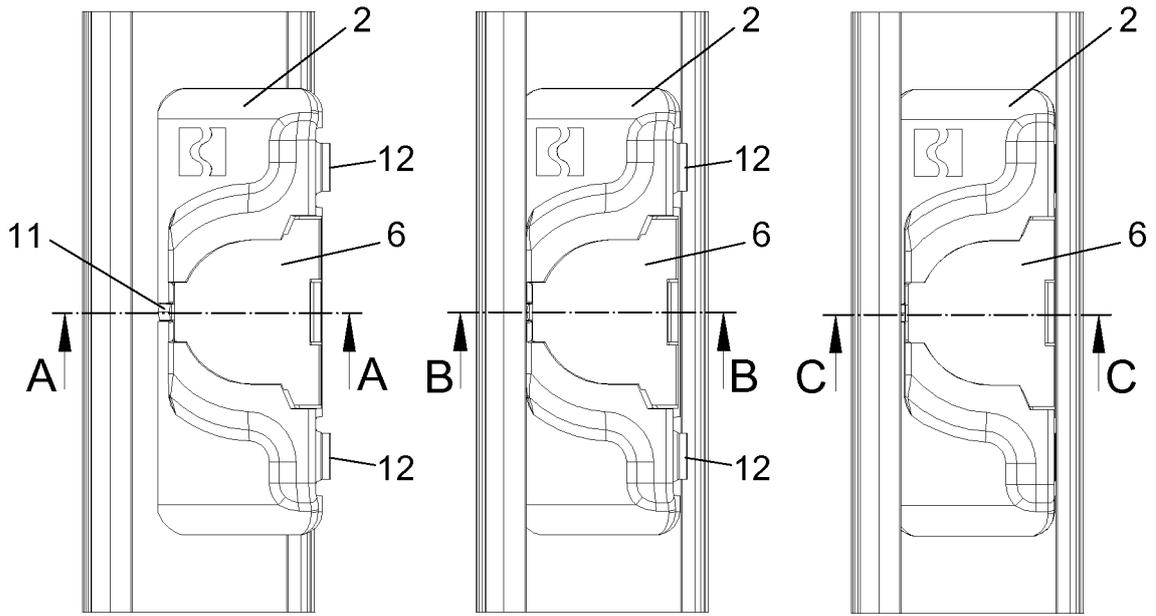
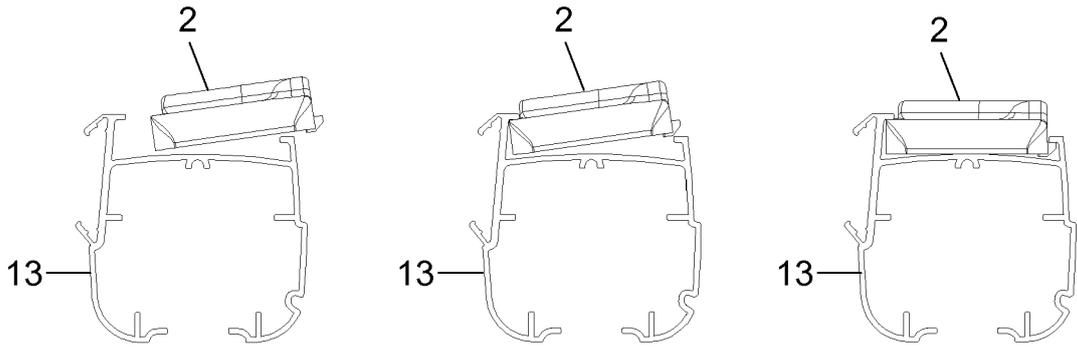
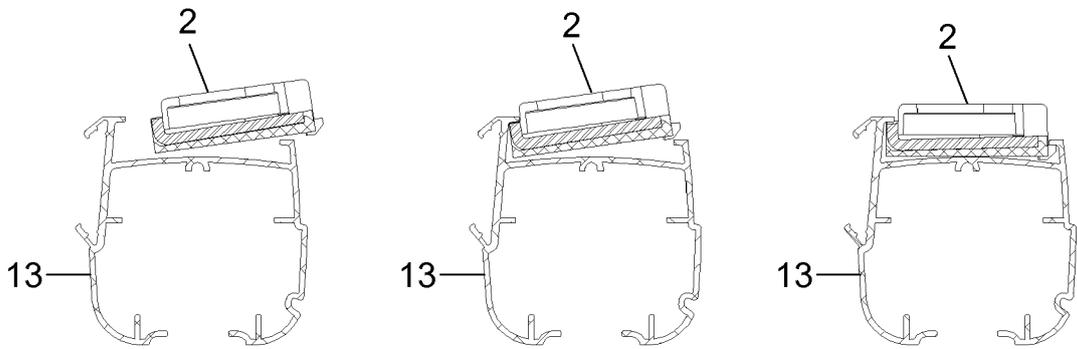


FIG. 3

FIG. 4

FIG. 5



SEC. A-A

SEC. B-B

SEC. C-C

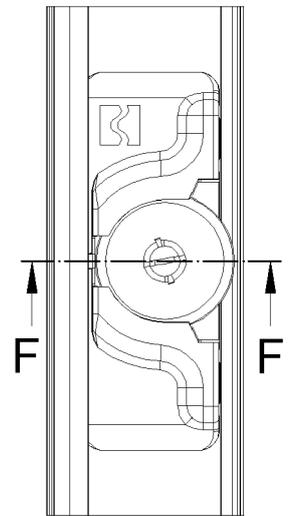
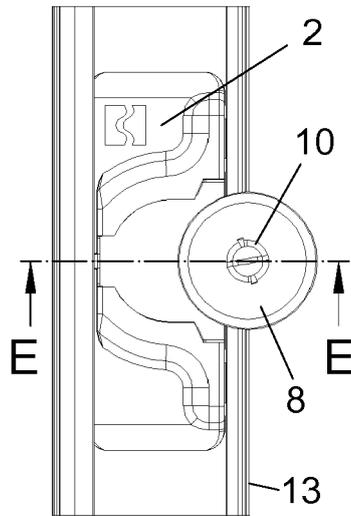
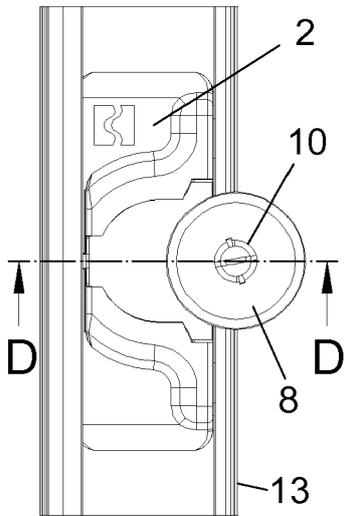
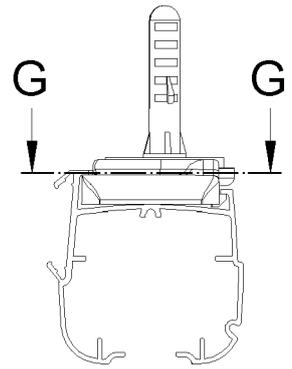
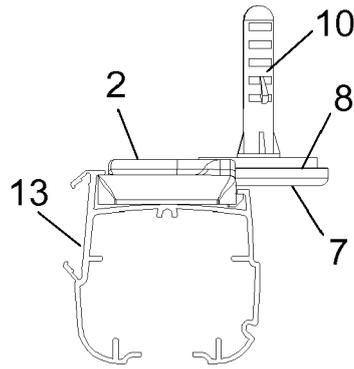
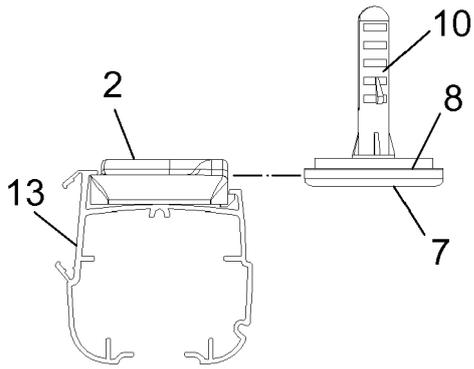
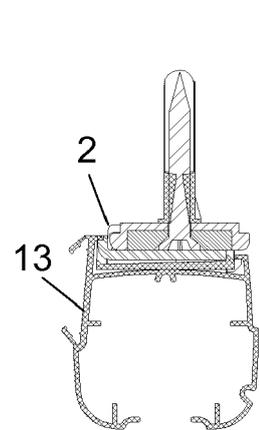
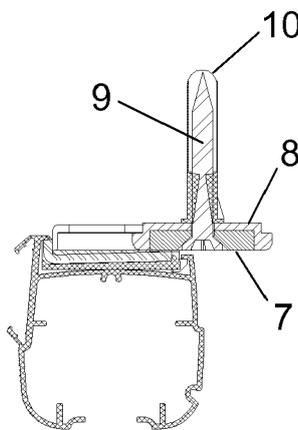
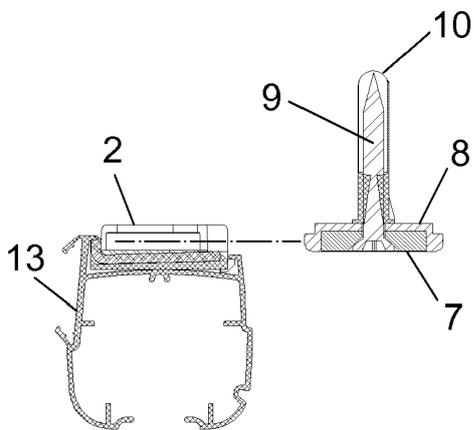


FIG. 6

FIG. 7

FIG. 8



SEC. A-A

SEC. B-B

SEC. C-C

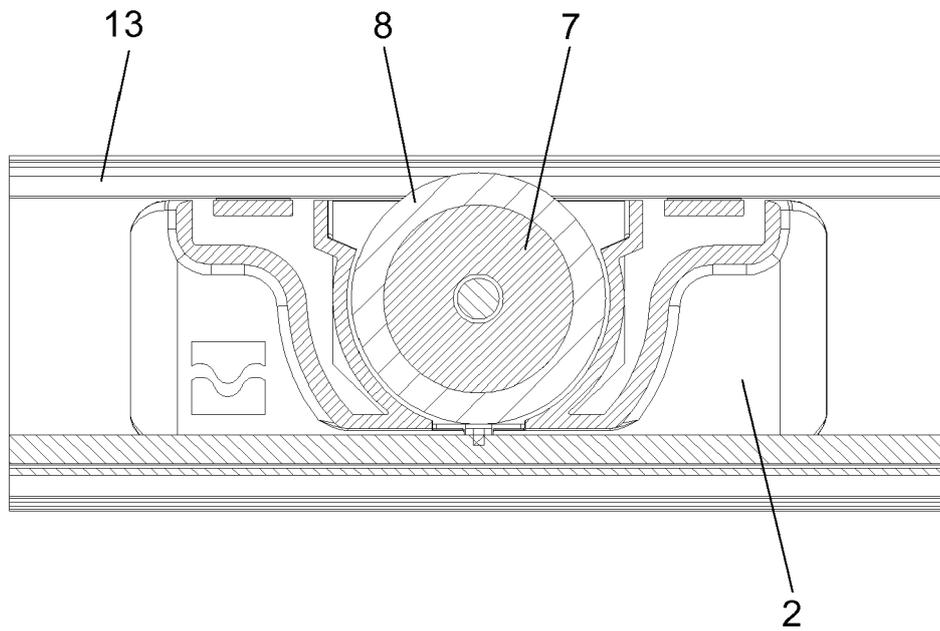


FIG. 9
SEC. G-G



EUROPEAN SEARCH REPORT

Application Number
EP 17 17 5953

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X A	DE 20 2008 008831 U1 (NODEKO GMBH [DE]) 11 February 2010 (2010-02-11) * figures 4-7 * * paragraphs [0001], [0007], [0026], [0027], [0028], [0029], [0030], [0031] *	1-5,7-10 6	INV. E06B9/266 E06B9/323 A47H1/144
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			TECHNICAL FIELDS SEARCHED (IPC)
			E06B A47H
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 10 November 2017	Examiner Tänzler, Ansgar
CATEGORY OF CITED DOCUMENTS 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		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	

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82