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(54) **ANTI-DERAILING SAFETY DEVICE IN THE UPPER TROLLEY HANGER OF AN INTERIOR SLIDING DOOR**

(57) Anti-derailing safety device for interior sliding doors in which the upper trolley hanger (1) for an interior sliding door incorporates a supporting body (2) with an adjustment thread (3) in its lower middle part and a guided movable body (4) housed in the guide channels (8) of the supporting body (2), the guided movable body (4) being provided with pins (5) locking with automatic door closure (10) and attached to an adjustment screw (6) with a turning slot (7) capable of receiving the blade of a screwdriver, such that when rotated, the guided movable body (4) can move along the guide channels (8) of the supporting body (2), locating the locking pins (5) against the automatic door closure (10) and locating the top part of the guided movable body (4) below the lower surface (12) of the profile of the upper rails (11).

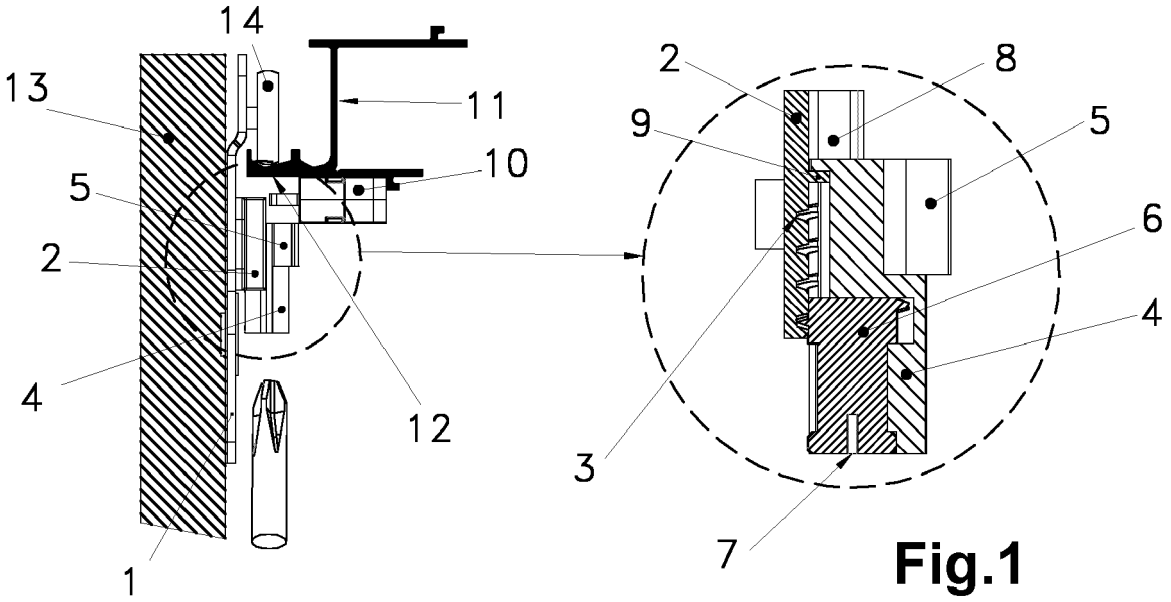

Fig.1

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Description

SCOPE OF THE INVENTION

[0001] This invention relates to an anti-derailing safety device for interior sliding doors, in particular an anti-derailing safety device installed in the upper trolley hanger supporting an interior sliding door.

STATE OF THE ART

[0002] At the present time and with reference to the state of the art, anti-derailing safety devices for interior sliding doors are commonly used and known in furniture components incorporating sliding doors.

[0003] The anti-derailing safety devices for interior sliding doors currently on the market have a number of disadvantages. Firstly many systems comprise a number of components, many of small size, which can cause the said components to be lost and gives rise to more complex systems. Furthermore access to these components in order to work on them can be very difficult as the components for adjusting them are at the top. This is not very accessible, given that these safety devices are in the upper trolley hanger of an interior sliding door.

EXPLANATION OF THE INVENTION AND ADVANTAGES

[0004] This being the case, this invention relates to an anti-derailing safety device for interior sliding doors installed in the upper trolley hanger supporting the interior sliding door, in which the upper trolley hanger of the interior sliding door incorporates a supporting body with an adjustment thread in its lower middle part and a guided movable body housed in the guide channels of the supporting body, the guided movable body being provided with pins locking with the automatic door closure and being attached to an adjustment screw having a turning slot which can receive the blade of a screwdriver, such that when it is rotated, the guided movable body can move along the guide channels of the supporting body locating the locking pins in an operating position with the automatic door closure and locating the upper part of the guided movable body below the lower surface of the profiles of the upper rails.

[0005] Thanks to this configuration a simple anti-derailing safety device for interior sliding doors is obtained through a guided movable body, the upper part of which remains below the lower surface of the profile of the upper rails and which if the door should fall outwards causes the said lower surface to come into contact with the said upper face, preventing it from tipping outwards. In addition to this the position of the guided movable body can be simply adjusted using a flat or crosshead screwdriver so that the locking pins which emerge from its exterior coincide with an automatic door closure, activating it.

[0006] Another characteristic of the invention is that the supporting body incorporates an end stop which can engage the end of the adjustment screw.

[0007] Thanks to this configuration the position of the guided movable body can be adjusted by means of the adjusting screw and its vertical movement can be limited in such a way that it cannot detach from the supporting body.

DRAWINGS AND REFERENCES

[0008] For a better understanding of the nature of the invention the appended drawings illustrate an industrial embodiment by way of a purely illustrative and non-limiting example.

Figure 1 shows a profile view of the upper trolley hanger (1) for an interior sliding door above the interior sliding door (13), with a detail of the cross-section of the anti-derailing safety device (15).

Figure 2 shows an isometric view of the upper trolley hanger (1) for an interior sliding door installed on the interior sliding door (13) which incorporates the guided movable body (4) and supporting body (2), above the profile of the upper rails (11).

Figure 3 shows an isometric view of the upper trolley hanger (1) for an interior sliding door with a magnified detail of the guided movable body (4) and supporting body (2).

Figures 4a, 4b and 4c show isometric views of the components making up the anti-derailing safety device (15), which are respectively the supporting body (2), the adjustment screw (6) and the guided movable body (4).

Figures 5a and 5b show profile views of the upper trolley hanger (1) for an interior sliding door in which the movement performed by the guided movable body (4) can be seen.

Figures 6a and 6b show isometric views of the anti-derailing safety device (15) in its most extreme positions.

Figures 7a and 7b show cross-sections of the components forming the anti-derailing safety device (15) in its most extreme positions.

1.- Upper trolley hanger for an interior sliding door.
2.- Supporting body.
3.- Adjustment thread.
4.- Guided movable body.
5.- Locking pins.
6.- Adjustment screw.
7.- Turning slot.
8.- Guide channel.
9.- End stop.
10.- Automatic door closure.
11.- Profile of the upper rails.
12.- Lower surface.
13.- Interior sliding door.

14.- Wheel.

15.- Anti-derailing safety device.

DESCRIPTION OF A PREFERRED EMBODIMENT

[0009] With reference to the drawings and references mentioned above, a preferred embodiment of the object of the invention will be illustrated in the appended drawings with reference to an anti-derailing safety device for an interior sliding door installed in the upper trolley hanger supporting the interior sliding door, in which the upper trolley hanger (1) for an interior sliding door incorporates a supporting body (2) with an adjustment thread (3) in its lower middle part and a guided movable body (4) housed in the guide channels (8) of the supporting body (2), guided movable body (4) being provided with pins (5) locking with the automatic door closure (10) and being attached to an adjustment screw (6) having a turning slot (7) capable of receiving the blade of a screwdriver, such that when it is rotated, the guided movable body (4) can move along the guide channels (8) of the supporting body (2) locating the locking pins (5) in an operating position with the automatic door closure (10) and locating the upper part of the guided movable body (4) below the lower surface (12) of the profile of upper rails (11).

[0010] The position adopted by each of the components forming part of or associated with the anti-derailing safety device (15), in particular the upper trolley hanger (1) for an interior sliding door, the anti-derailing safety device itself (15), the upper trolley hanger rail (11) and the automatic door closure (10), can be seen in Figure 1.

[0011] As will be seen in Figure 3, the supporting body (2) is incorporated with the upper trolley hanger (1) for an interior sliding door into which the guided movable body (4) is inserted and is attached to the adjustment screw (6) that is inserted through the lower part of the anti-derailing safety device (15) and engages the adjustment thread (3) located in the supporting body (2).

[0012] In Figures 5a and 5b it can be seen how by acting on the turning slot (7) of the adjustment screw (6) the latter moves forward vertically displacing the guided movable body (4) with respect to the supporting body (2). Through this movement, the anti-derailing safety device (15) can be placed in the desired position, that is to say with the locking pins (5) in a position to lock with the automatic door closure (10), with the upper part of the guided movable body (4) immediately below the lower surface (12) of the profile of the upper rails (11). In this way, in the event of rough impacts which might cause the interior sliding door (13) to tip outwards, the upper part of the guided movable body (4) comes into contact with the lower surface (12) of the profile of upper rails (11) and prevents the interior sliding door (13) from falling.

[0013] In order to prevent the anti-derailing safety device (15) from adopting an undesired position, the supporting body (2) incorporates an end stop (9) which prevents the guided movable body (4) from moving forward once it has reached the end of the adjustment screw (6) when the turning slot (7) is turned with the blade of a screwdriver.

[0014] Variations in materials, shape, size and arrangement of the components, which are described in a non-limiting way, will not affect the essence of this patent.

Claims

1. Anti-derailing safety device for interior sliding doors, installed in the upper trolley hanger supporting the interior sliding door, **characterised in that** the upper trolley hanger (1) for an interior sliding door incorporates a supporting body (2) with an adjustment thread (3) in its lower middle part and a guided movable body (4) housed in the guide channels (8) of the supporting body (2), the guided movable body (4) being provided with pins (5) locking with the automatic door closure (10) and attached to an adjustment screw (6) having a turning slot (7) which can receive the blade of a screwdriver, such that when rotated the guided movable body (4) can move along the guide channels (8) of the supporting body (2) locating the locking pins (5) in the operating position with the automatic door closure (10) and locating the upper part of the guided movable body (4) below the lower surface (12) of the profile of the upper rails (11).

2. Anti-derailing safety device for interior sliding doors according to claim 1, **characterised in that** the supporting body (2) incorporates an end stop (9) which can engage the end of the adjustment screw (6) .

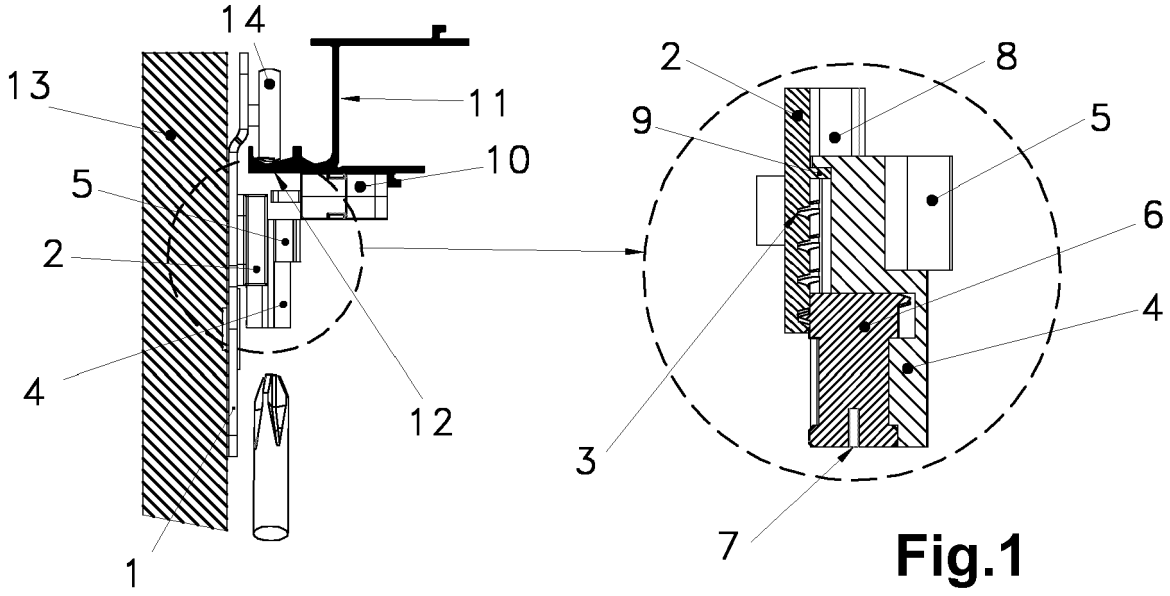


Fig.1

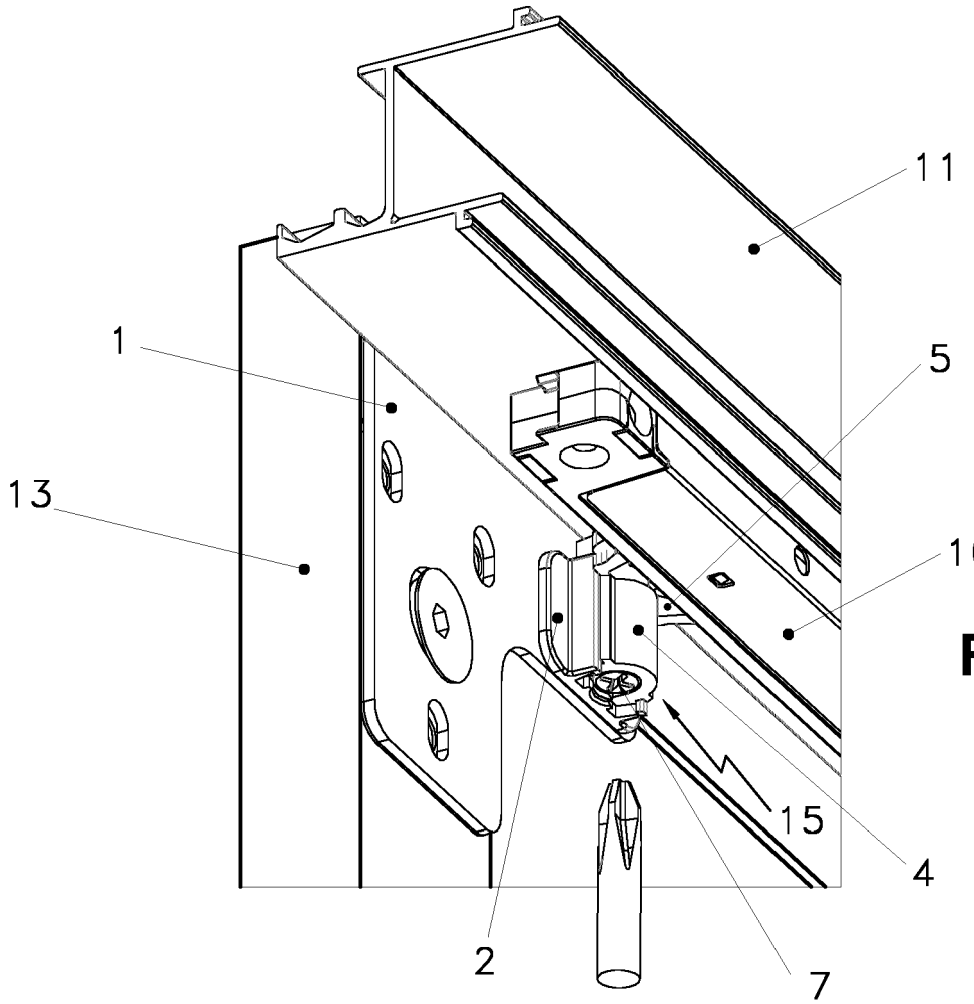


Fig. 2

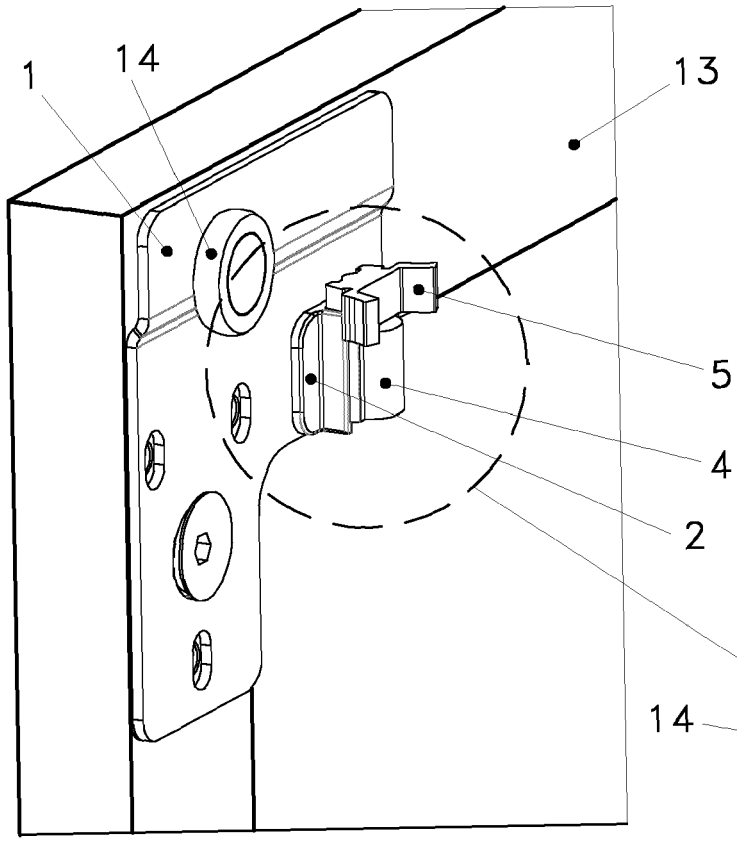
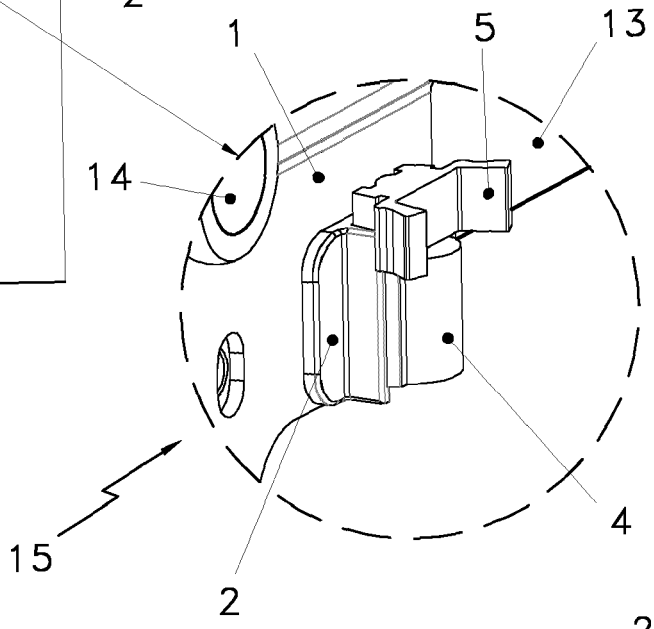


Fig. 3



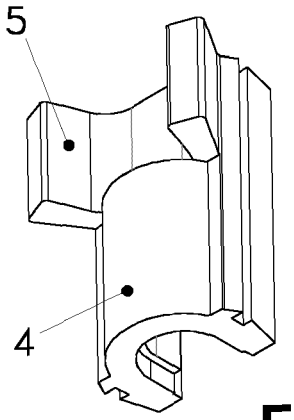


Fig. 4a

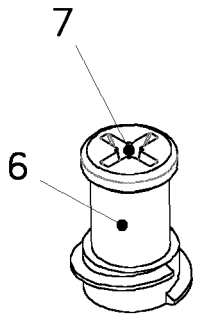


Fig. 4b

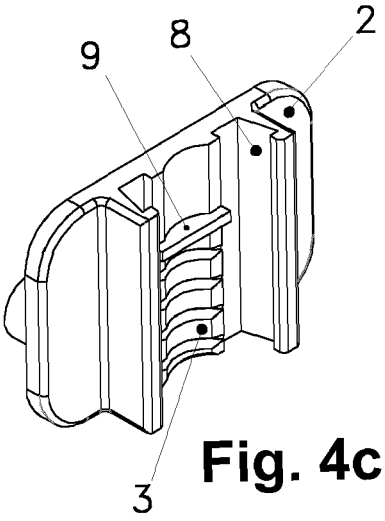


Fig. 4c

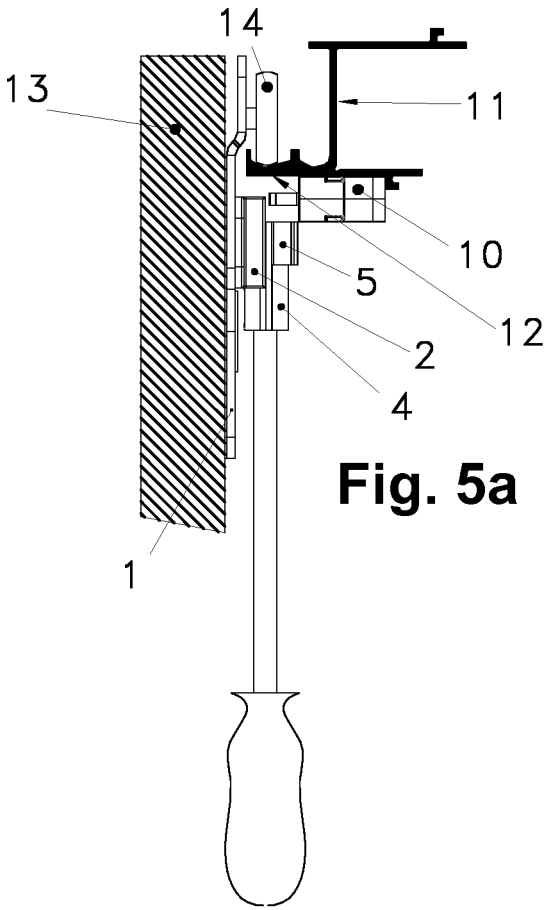


Fig. 5a

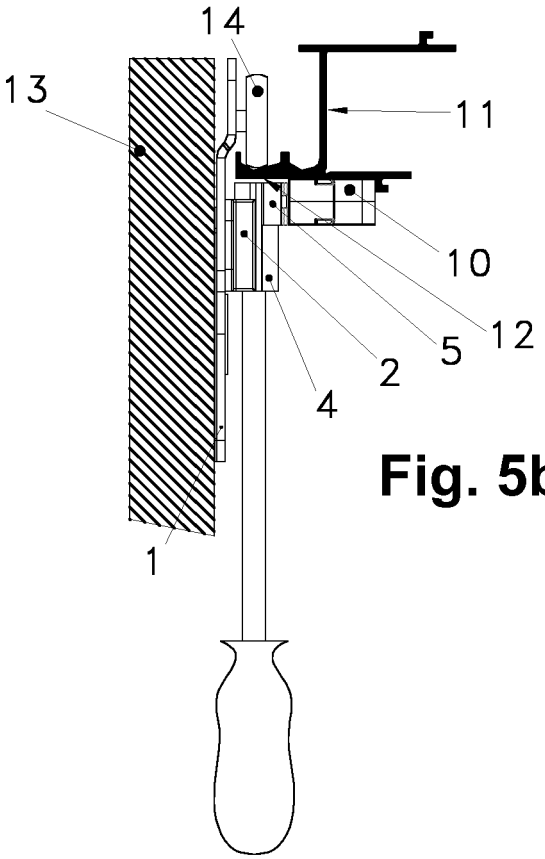


Fig. 5b

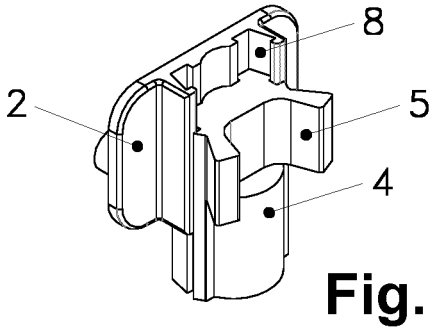


Fig. 6a

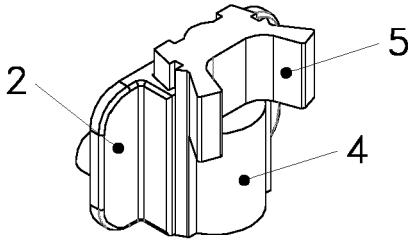


Fig. 6b

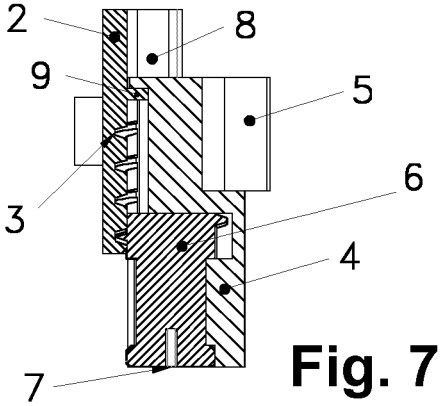


Fig. 7a

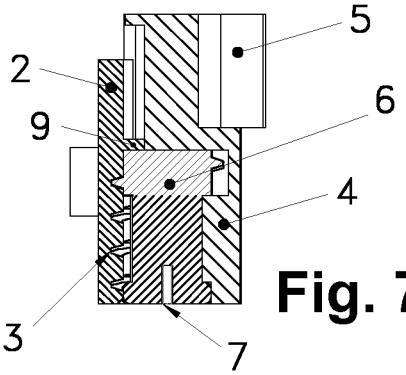


Fig. 7b

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EUROPEAN SEARCH REPORT

Application Number
EP 16 17 2857

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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TECHNICAL FIELDS SEARCHED (IPC)
E05D
E05F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	20 October 2016	Klemke, Beate

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 16 17 2857

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20-10-2016

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