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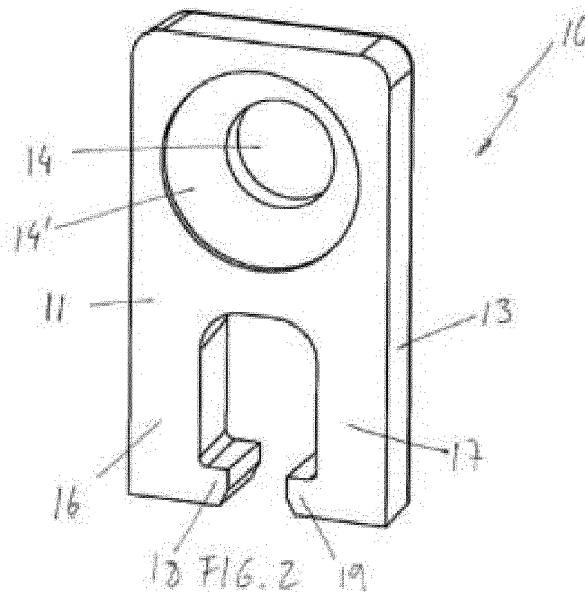
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(54) **SAFETY ELEMENT FOR SLIDING PANELS**

(57) A safety element for sliding panels, related to an element that couples to a sliding panel, of the type made up of a cover-piece fixed to the bottom of a panel, and which slides over a rail in order to prevent the sliding

panel from either voluntarily or involuntarily coming out of the rail, thereby avoiding accidents and even theft of the panels.



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Description

OBJECT OF THE INVENTION

[0001] The invention is a safety element for sliding panels relating to an element that couples to a sliding panel, of the type made up of a cover-piece fixed to the bottom of a panel, and which slides over a rail in order to prevent the sliding panel from either voluntarily or involuntarily coming off the rail, thereby avoiding accidents and even theft of the panels.

[0002] The field of application of the present invention is the industry related to the manufacturing of sliding and collapsible enclosures, particularly concerning the field of retention devices, systems and mechanisms for panels.

BACKGROUND OF THE INVENTION

[0003] In reference to the current state of the art, it is worth mentioning that different solutions for preventing a sliding panel from coming off the rail on which it runs are known, but none of which comprises an element that adapts to the sliding panel and allows for the mounting thereof in an easy and quick way, without having to modify or adapt other components of the sliding panel or of the sliding system of the same.

[0004] The object of the present invention is, therefore, to develop a safety element for sliding panels which is easy to manufacture and mount on the sliding panel without excessive modifications to the components of the sliding panel.

DESCRIPTION OF THE INVENTION

[0005] The safety element for sliding panels of the present invention, unlike known systems, relates to an independent element which is not related to any other component or mechanism of the sliding panel, since it is installed on the cover-piece which supports the panel, typically made of glass, and both components, the cover-piece and the panel, make up the sliding panel. The element of the present invention is not linked to any other element of the sliding panel, which makes the mounting and dismounting thereof easy and quick, either for taking the panel off the rails or even for substituting the safety element, object of the invention.

[0006] The object of the invention is therefore a safety element for a sliding panel in accordance with claim 1. Specifically, it is an element that comprises a flat body with a constant thickness and having a hole to house the screw head and two grippers on the lower end thereof, said grippers being separated and facing each other determining a gap between them and in which a rail is situated, on which the sliding panel slides.

[0007] The fact that the safety element has a flat body on the two surfaces thereof and a constant thickness, preferably reduced, makes manufacturing the compo-

nent cost-effective and also does not require excessive changes of the tools used on the components of the sliding panel and, specifically, of the cover-piece of said panel, on which the panel is installed, normally made of glass. It must be of a sufficient thickness to resist the wear from the contact made with the rail, on which the panel slides, as well as to resist the possible blows to the sliding panel which affect this element when it hits against the rail, with particular reference to the grippers situated on the lower part of the same.

[0008] The element preferably has rectangular geometry with the two flat surfaces thereof separated from one another by a constant distance which represents the thickness of the body of the safety element. Likewise, the hole for the screw to cross the body and fasten the cover-piece of the sliding panel is arranged in the upper half of the body and the grippers for the fastening thereof to the rail are on the lower part of said body. Other possible forms of the body could be square or triangular, for example.

[0009] The material of the safety element body must allow for certain elasticity in order for the rail to be inserted the gap situated between the two grippers of the body by pressure, said grippers slightly deforming and returning to their initial position once the rail is inserted therein.

[0010] The rail has a protrusion on the free end thereof which constitutes a thickening of the rail itself. Said thickening is housed on the inside of the gap existing between both grippers. The grippers have an L-shape, such that they determine a separation between the ends of the same which stop at the aforementioned gap between both grippers. Said separation is of a smaller width than the width of the protrusion, and the gap between the grippers is of a larger width than said protrusion. The ends of the grippers will be placed below the protrusion. This way, the protrusion may run through the gap of the safety element but said safety element may not come off the rail, unless one of the grippers of the element breaks in an element or a separation between the same is caused in order to remove the element and the sliding panel. Obviously, it is also possible to remove the fastening screw and remove the safety element.

[0011] The safety element is inserted in a mortise made for such purpose on the cover-piece of the panel on which the panel is mounted and which separates said panel of the sliding panel from the guides which incorporate the rails on which said guides slide. To fasten the safety element to the cover-piece, it is necessary to first insert the element on the rail with pressure by pressing it on the protrusion of the same, such that this pressure separates the ends of the grippers until the same is situated below the protrusion and the protrusion is housed in the gap between the grippers. The safety element is then inserted in the mortise made for such purpose on the cover-piece of the sliding panel and the screw is inserted in the hole in the safety element, such that the screw head is supported on the outside of said hole. The screw is then screwed in the cover-piece, thereby fas-

tening the safety element to the cover-piece and therefore also to the sliding panel.

[0012] On the surface where the head of the screw will be situated, meaning on the outer surface opposite the surface which is in contact with the cover-piece, the hole for the insertion of the screw comprises a mortise adapted to the form of the head of said screw (conical or cylindrical, for example) so that after fastening the screw in its position, the screw head is flush with the surface of the body, specifically with the outer surface. This mortise facilitates the mounting of the safety element, preventing it from being incorrectly installed on the surfaces.

[0013] Therefore, the main difference of the present invention and known solutions is that the safety element is simple and versatile, providing the following technical improvements and advantages:

- Robustness,
- It facilitates the installation, and
- Has a low manufacturing cost.

DESCRIPTION OF THE DRAWINGS

[0014] In order to complete the present description, with the aim of making the characteristics of the invention more readily understandable, included is a set of figures which, by way of illustration and not limitation, represent the following:

Figure 1 shows two front views and a side view of the element, object of the invention.

Figure 2 shows a perspective view of the claimed element.

Figure 3 shows a perspective view of the object of the present invention being inserted in the sliding panel.

Figure 4 shows a side view of the element, object of the invention, already installed on the sliding panel.

PREFERRED EMBODIMENT OF THE INVENTION

[0015] In light of the aforementioned figures and in accordance with the adopted numbering, a preferred, non-limiting embodiment of the safety element for sliding panels, object of the present invention, is described below.

[0016] Thus, as observed in figures 1 and 2, the safety element 10 for sliding panels which slide on rails comprises a flat body 10, preferably rectangular with two flat surfaces, one which will be the outer surface 11 and one which will be the inner surface once the element is installed, separated from each other by a constant distance represented by a wall 13 of a constant thickness along the perimeter of both surfaces 11, 12. Said body 10 comprises a through hole 14 on the upper half thereof to receive a screw 43, the head of which will remain housed in a mortise 14' made around the hole 14 on the outer surface 11. The object of said mortise 14' is to make it possible for the screw head to remain flush with the outer

surface 11 of the body 10. On the lower half thereof, the body has two grippers 16, 17 facing each other and which preferably have an L-shape such that the ends of said grippers 18, 19 determine a separation of a smaller width than a gap 15 existing as a continuation of said separation and which is determined by the grippers 16, 17.

[0017] The width 13 of the body 10 of the safety element is reduced. The preferred material for the body is a plastic material which allows for the deformation of the grippers without breaking when they are installed on the rail.

[0018] Figure 3 shows a safety element 10, object of the invention, in the process of being installed on a sliding panel made up of a panel 20 and a lower cover-piece 40, among other components. The sliding panel is installed on a track 30 with different rails 31, such that the cover-piece 40 is supported by the same and the panel 20 is fixed to the cover-piece. Said cover-piece 40 comprises a mortise 41 made on the front lower part thereof, in which the safety element 10 is inserted. For installing said safety element 10, the protrusion 32 of the rail 31 is inserted by pressure in the gap 15 existing between the two grippers 16, 17, said pressure causing the separation of the same and mainly at the ends 18, 19 of the grippers 16, 17 until the protrusion 32 is housed in the gap 15 and the ends 18, 19 of the grippers 16, 17 return to their position, situated below said protrusion 32. This way the safety element is perfectly coupled to the rail 31.

[0019] The screw 43 is then inserted in the hole 14 of the safety element 10 such that the head of said screw 43 is housed in the mortise 14' made around the hole 14 of the outer surface 11 of the element 10, and the screw is fastened by means of threading into a housing 42 made on the mortise 41 of the cover-piece 40 of the sliding panel.

[0020] Figure 4 shows a side view of the assembly made up of the sliding panel and the safety element 10, when the latter is installed in said sliding panel.

Claims

1. A safety element (10) for a sliding panel (20), **characterized in that** it comprises a flat body with a constant thickness and having a hole (14) to house the screw head (43) and two grippers (16, 17) on the lower end thereof, said grippers being separated and facing each other, determining a gap (15) between them and in which a rail (31, 32) is situated, on which the sliding panel (20) slides.
2. The element according to claim 1, **characterized in that** the body (10) is rectangular with two flat surfaces (11, 12) separated from one another by a constant distance (13), the hole (14) arranged in the upper half of the body (10) and the grippers (16, 17) in the lower half of the same.

3. The element according to claim 1, **characterized in that** it is made of a plastic material which allows for the deformation of the grippers (16, 17) when inserting the rail (31, 32) in the gap (15) between said grippers (16, 17). 5
4. The element according to claim 1, **characterized in that** the grippers (16, 17) have an L-shape (18, 19) to be able to house themselves below an existing protrusion (32) on the rail (31). 10
5. The element according to claim 1, **characterized in that** one of the surfaces (11) of the body (10) comprises a mortise (14') around the hole (14) which adapts to the form of the screw head (43) so that it remains flush with the surface (11) of the body (10). 15

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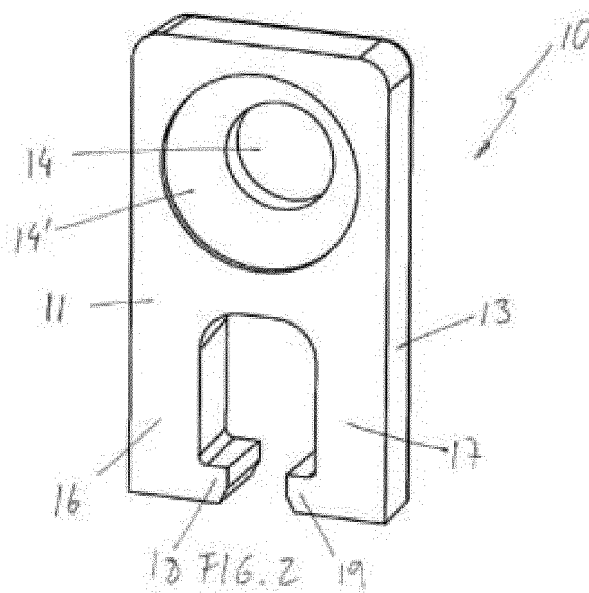
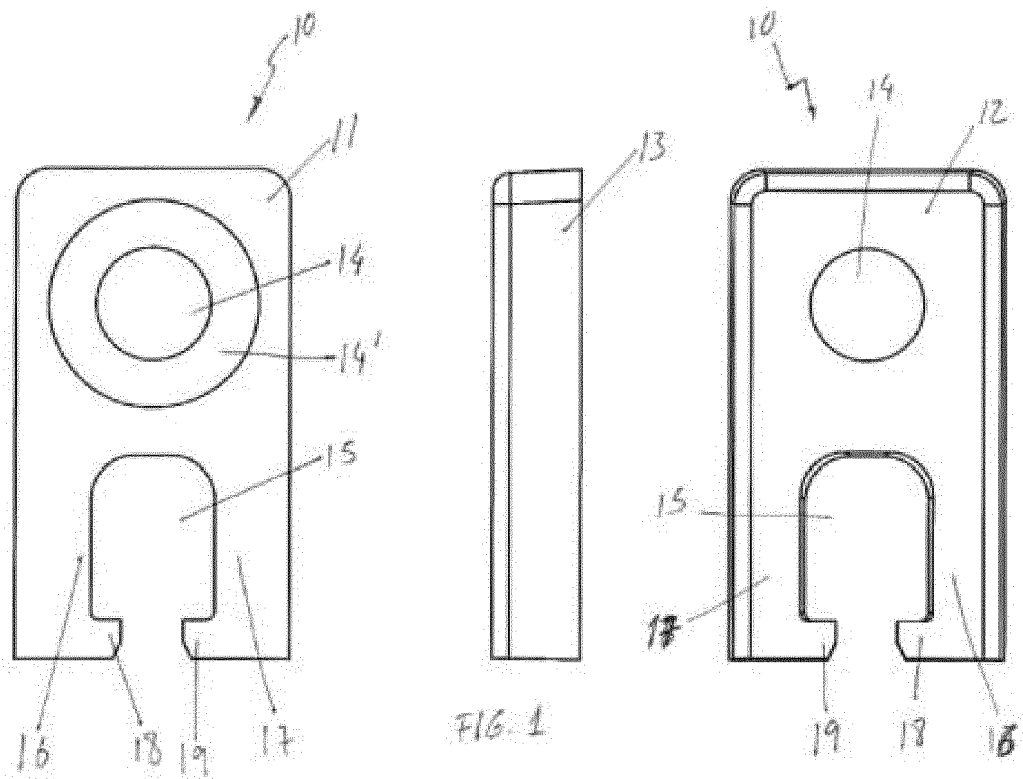
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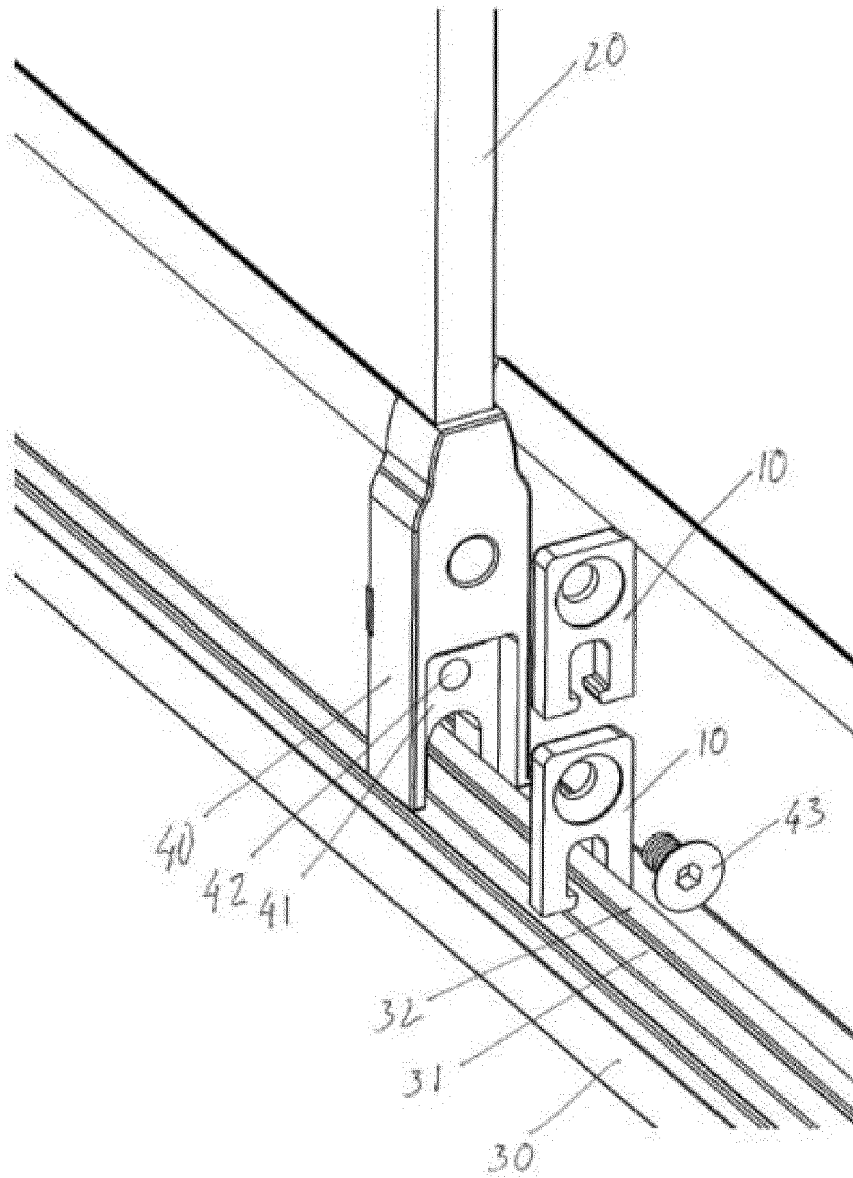
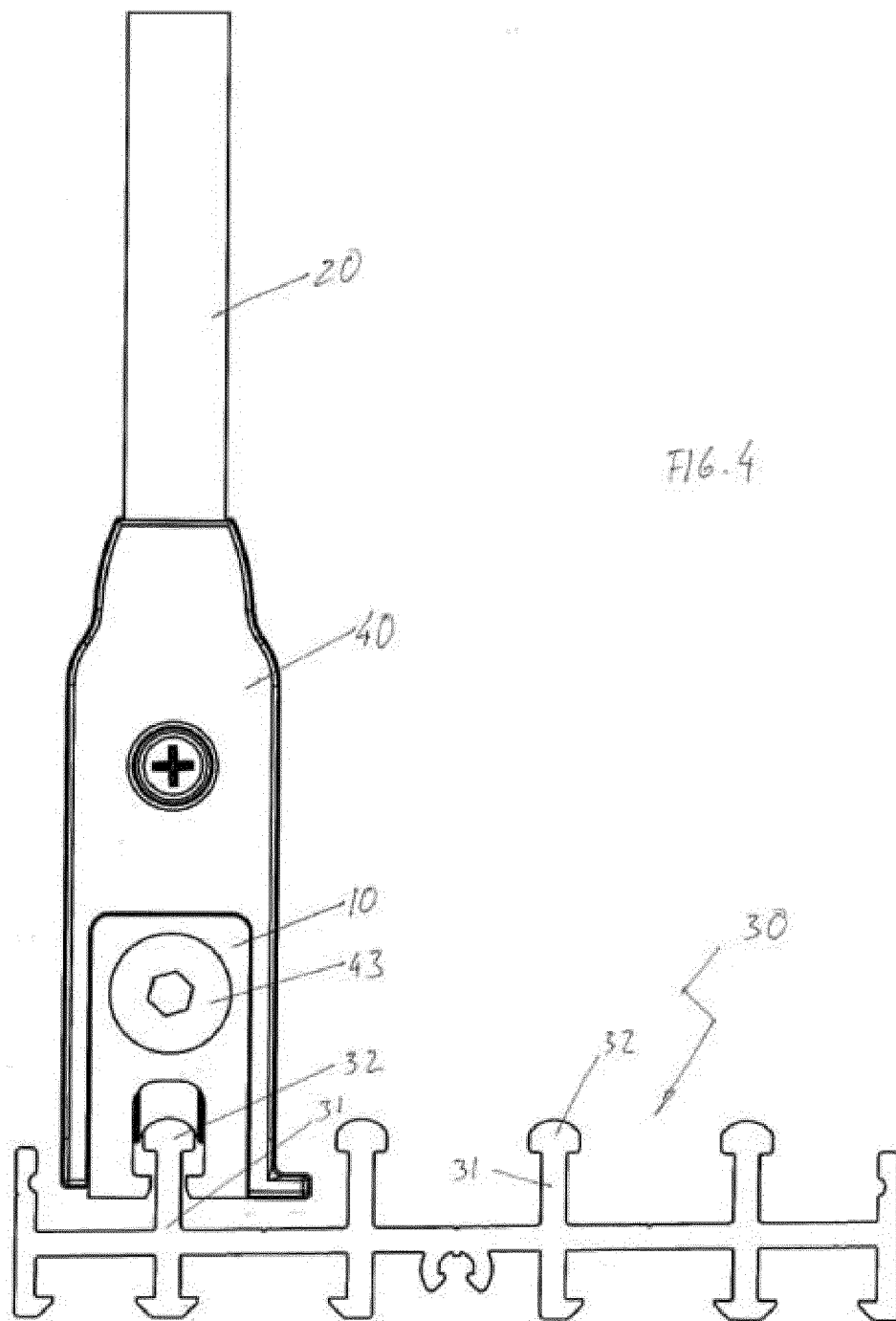


FIG. 3





EUROPEAN SEARCH REPORT

Application Number
EP 17 17 3765

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A	GB 1 186 193 A (CLIVE INVEST PTY LTD [AU]) 2 April 1970 (1970-04-02) * page 2, line 119 - page 3, line 2; figure 6 * -----	5	
			TECHNICAL FIELDS SEARCHED (IPC)
			E05D
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 4 August 2017	Examiner Guillaume, Geert
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
ON EUROPEAN PATENT APPLICATION NO.**

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