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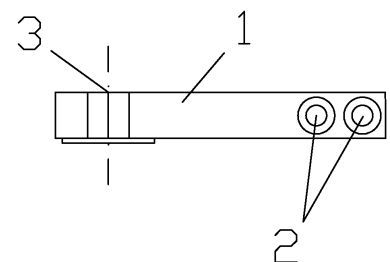
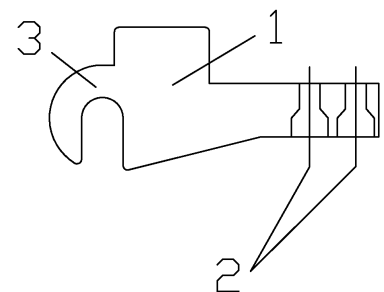
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(54) **REINFORCEMENT FOR HINGE FOR EXTERNAL FIXTURES, SUCH AS WINDOW SHUTTERS OR BLINDS**

(57) A reinforcing device for hinges (4) of panels (8) of window shutters, blinds or the like, adapted to be mounted at the pivots (6) to which a panel-stop device (5) is applied.

Said device comprises a fixing part (2) on the panel and a part (3) adapted to be inserted between the hinge and the panel-stop device so as to oppose the force of gusts of wind and/or other external factors which, by pushing on the panel blocked in open configuration by the panel-stop, would tend to close it thus deforming the hinge.

FIG.1



## Description

### SUMMARY OF THE INVENTION

**[0001]** The present invention substantially relates to a reinforcing device for hinges for panels of window shutters, blinds or the like, adapted to be mounted at the pivots to which a panel-stop device is applied.

**[0002]** Said device comprises means for the fixing to the panel and means adapted to be inserted between the hinge and the panel-stop device so as to oppose the force of gusts of wind and/or other external factors which, by pushing on the panel blocked in open configuration by the panel-stop, would tend to close it thus deforming the hinge.

### DESCRIPTION

**[0003]** The present invention relates to the field of fixtures, and in particular the panels of window shutters, blinds or the like which are installed outside at doors or windows.

**[0004]** In order to block such panels when they are in open configuration, panel-stop devices directly applicable on the hinge of one of the hinges for each panel are currently used.

**[0005]** The hinge, to the pivot of which the aforesaid panel-stop device is applied, is subjected to strains caused by external forces applied on the panel when this is blocked in open configuration by the device itself. These forces, e.g. consisting of particularly violent gusts of wind, sometimes overcome the resistance of the hinge, thus deforming it.

**[0006]** It is the object of the hinge reinforcement of the present invention to avoid the aforementioned deformations of the hinge.

**[0007]** This is achieved, according to the invention, by providing a device to be mounted at the hinges, to the pivot of which a panel-stop device is applied, and consisting of a fixing part on the panel and a part which is adapted to be inserted between the hinge and the panel-stop device, so that the latter is in contact with the reinforcement. By virtue of this solution, when the gusts of wind and/or other external factors push on the panel tending to close it, the restraining reaction force applied by the panel-stop device is transmitted to the reinforcement, which thus prevents the door from moving, thus deforming the hinge.

**[0008]** The accompanying drawings show a possible embodiment of the system according to the present invention, and for comparison, a hinge system with panel-stop device applied to the pivot but free from reinforcement, in which the deformation of the hinge appears.

**[0009]** In the drawings:

Figure 1 diagrammatically shows the reinforcing device (1), comprising the holes (2) for the fixing to the panel and the insertion part (3) of the reinforcement

between the hinge and the panel-stop device.

Figure 2 shows an exploded view of the components related to the application of the invention: reinforcing device (1), hinge (4), panel-stop device (5) mounted on the pivot (6) and pin extractable from the pivot (7). Figure 3 diagrammatically shows a front elevation view of the installation system of a panel of window shutter or blind (8), with the pivot fixed to the wall (9). The panel is in closed configuration. It shows the hinge reinforcing device (1), the hinge (4), the panel-stop device (5) mounted on the pivot (6) and the pin extractable from the pivot (7).

Figure 4 is a vertical elevation view of the installation system of a panel of window shutter or blind (8) with the pivot (6) fixed to the wall (9), complete with reinforcing device (1). The panel is in open configuration, blocked by means of the panel-stop device (5). In particular, it shows that the adjustment grub screw (10) of the panel-stop device interacts with the reinforcement itself, and so opposes to the external forces which would tend to close the panel; the panel thus remains in the correct open position and the hinge (4) is not deformed.

Figure 5, corresponding to figure 4, shows the panel (8) in closed configuration.

Figure 6, corresponding to figure 4, shows the front elevation view of the installation system of a panel of window shutter or blind (8) with the pivot (6) fixed to the wall (9). The panel is in open configuration, blocked by means of the panel-stop device (5) but free from the reinforcing device according to the present invention. Therefore, the adjustment grub screw (10) of the panel-stop device interacts with the hinge itself (4). Under the action of gusts of wind and/or other external forces tending to close the panel, the panel-stop device applied a restraining reaction force which was transmitted to the hinge, which was thus deformed.

**[0010]** A possible embodiment of the present invention was described and disclosed in the preceding figures, characterized by holes for screws (2) provided for fixing the reinforcing device (1) to the panel (8) and by a housing (3) for inserting the reinforcement on the pin (7) extractable from the pivot (6) of the hinge (4), so that said device is interposed between the hinge and the panel-stop device (5).

**[0011]** In practice, there are many variants of the present invention to be adopted on the basis of the specific characteristics of the fixture and hinge used, and all cases falling within the scope of protection of the following claims. For example, a possible variant could relate to the type and shape of the part of the reinforcement adapted to be inserted between the hinge and the panel-stop device. The fixing of the reinforcement to the panel can also be achieved by means of different solutions; for example, the device may be fixed onto the hinge instead of directly onto the panel.

**Claims**

1. A reinforcing device (1) for hinges (4) for fixtures, to the pivot (6) of which a panel-stop device (5) is applied, **characterized in that**, in order to avoid a deformation of the hinge (4) of the panel (8) when the latter is in open configuration and subjected to external forces which would tend to close it, such as gusts of wind, said reinforcing device (1) is mountable between the panel-stop device (5) and the hinge (4) by means of an extractable pin (7) on the pivot (6); for this purpose, the reinforcing device (1) being provided with fixing holes (2) on the panel (8) and with a slot (3) configured to be interposed between the hinge (4) and the panel-stop device (5) and inserted on the extractable pin (7) 5  
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2. A reinforcing device (1) according to the preceding claim, **characterized in that** it is firmly fixed on one side to the panel (8) by means of screws passing through said holes (2) and is installed on the other side in direct contact with the panel-stop device (5), so that the restraining reaction force applied by the latter in opposing forces tending to close the panel (8) is transmitted to the reinforcing device (1) and not to the hinge (4). 20  
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3. A reinforcing device (1) according to the preceding claim, **characterized in that** it is configured to interact directly with an adjustment grub screw (10) of the panel-stop device (5) instead of the hinge (4), pushing thereon to keep the panel (8) in correct open position, without any deformation of the hinge (4) caused by strains due to external forces which would tend to close the panel. 30  
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FIG.1

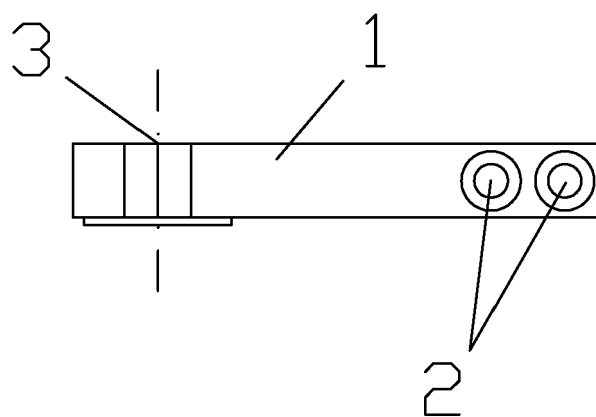
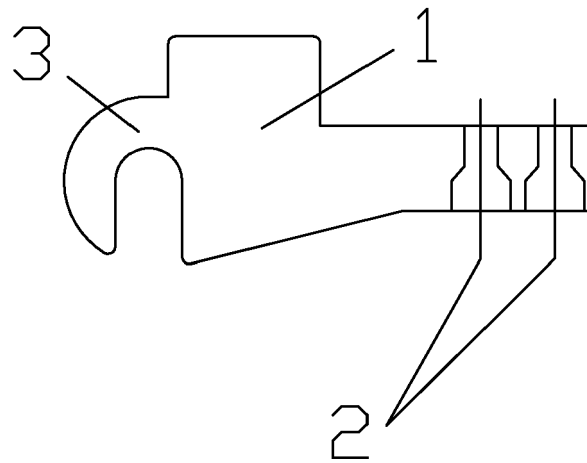


FIG.2

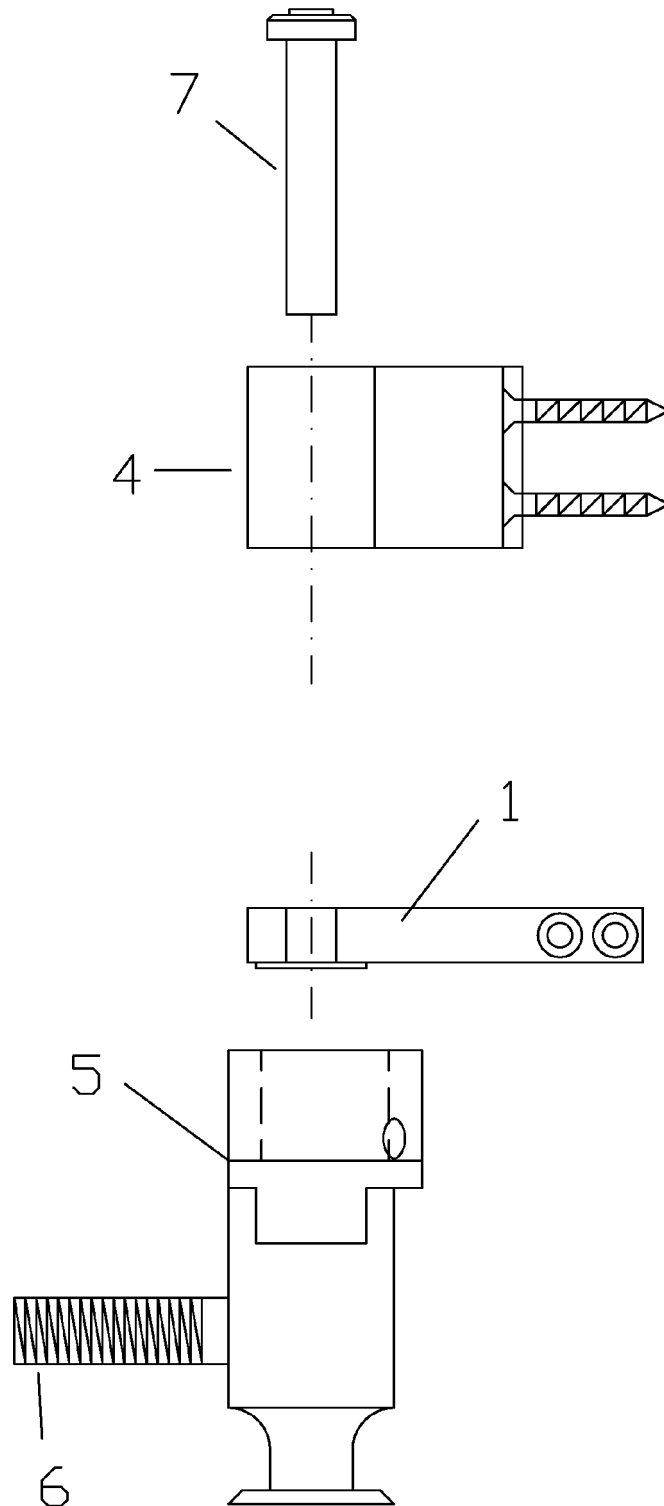


FIG.3

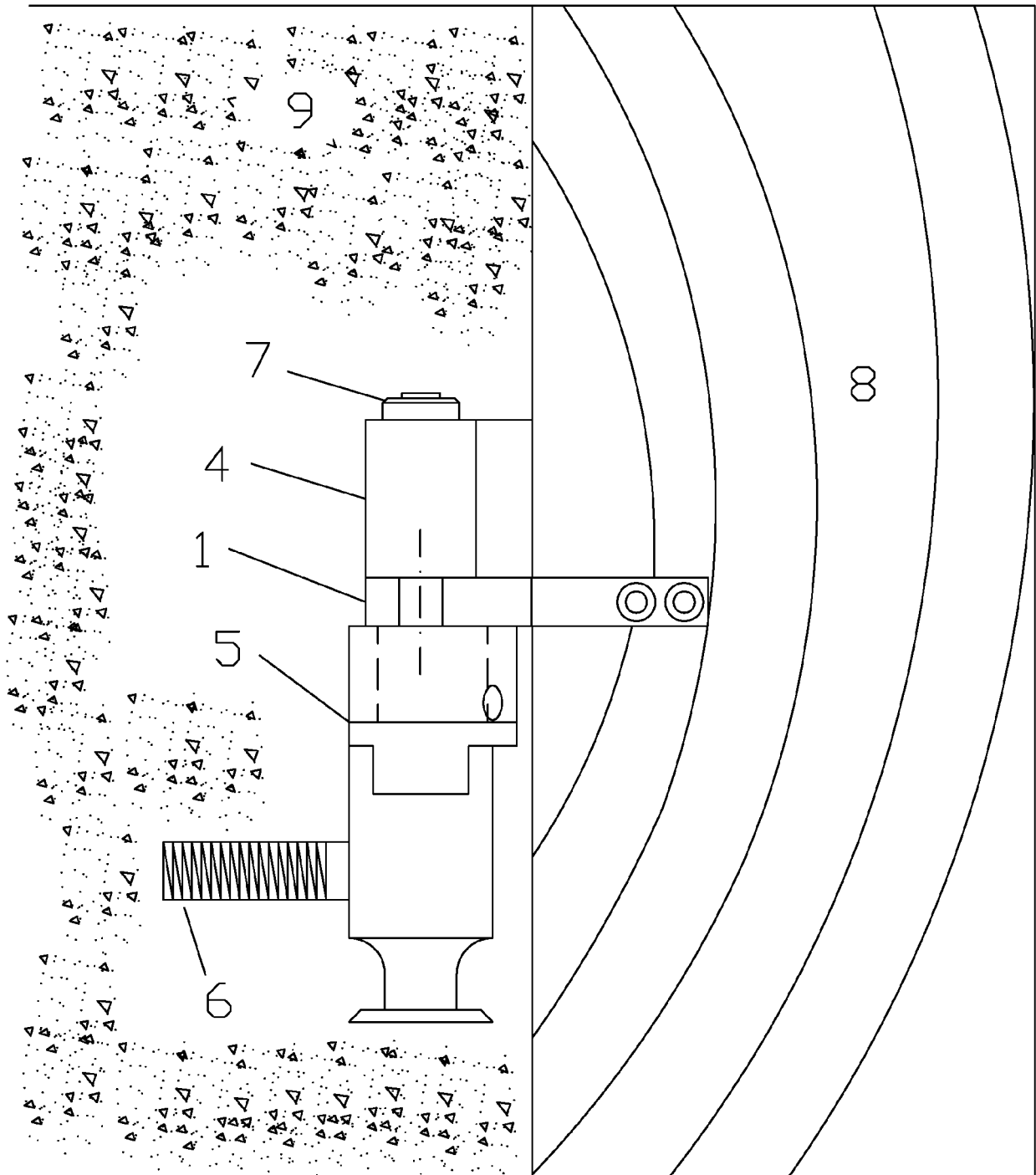


FIG. 4

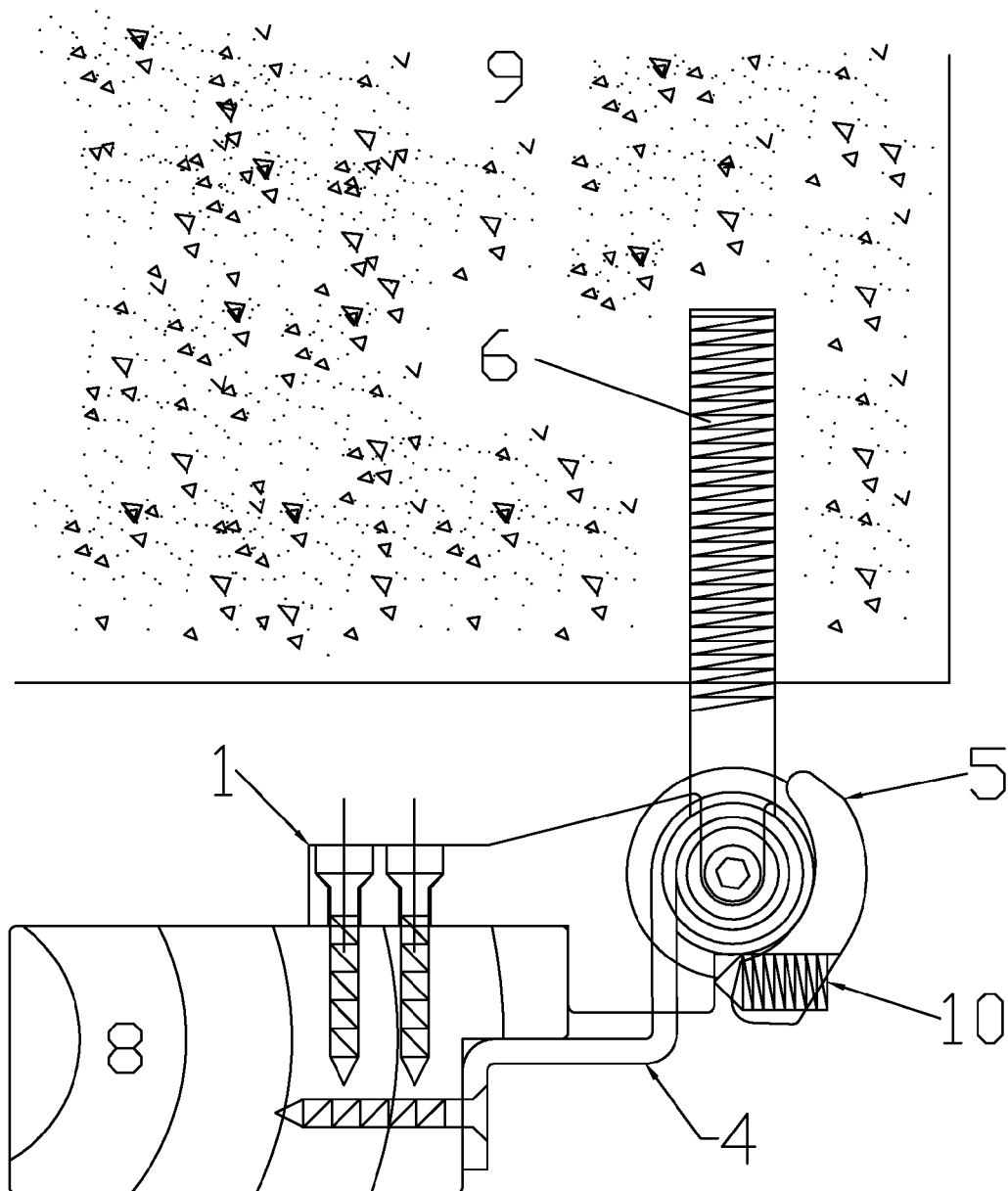


FIG.5

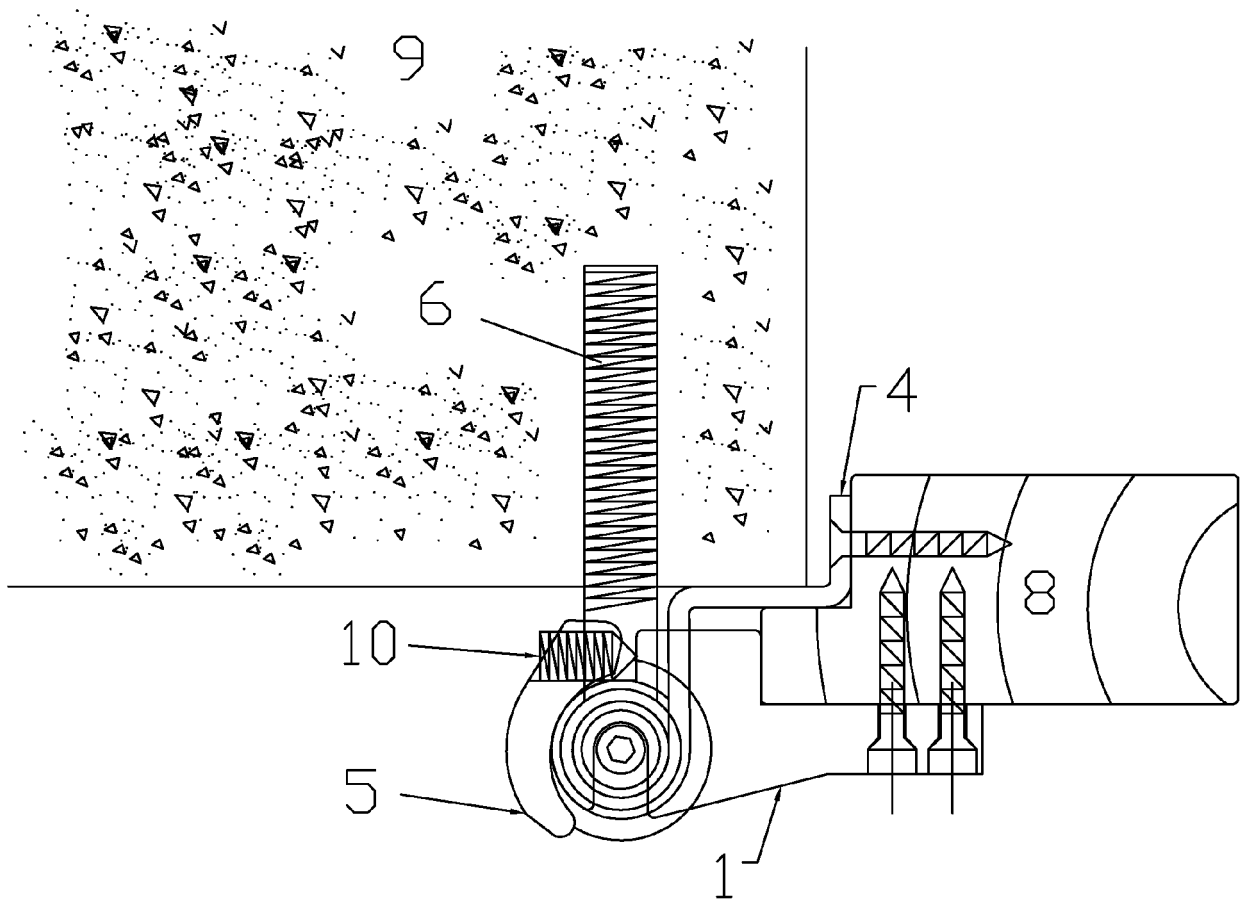
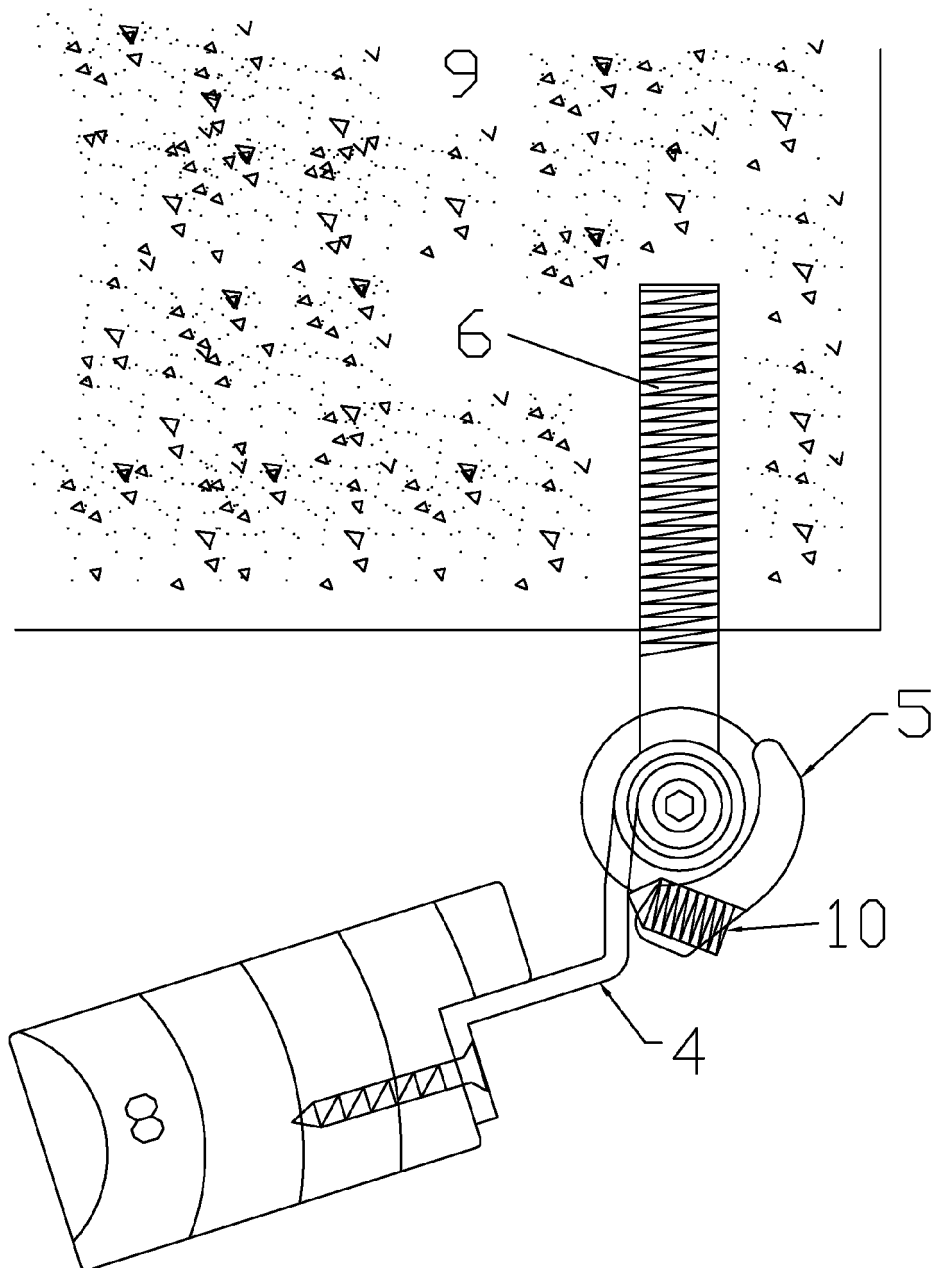




FIG.6

PRIOR ART





## EUROPEAN SEARCH REPORT

Application Number  
EP 18 20 7063

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			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 31 January 2019	Examiner Rémondot, Xavier
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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 &amp; : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03/82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
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EP 18 20 7063

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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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EPO FORM P0459

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