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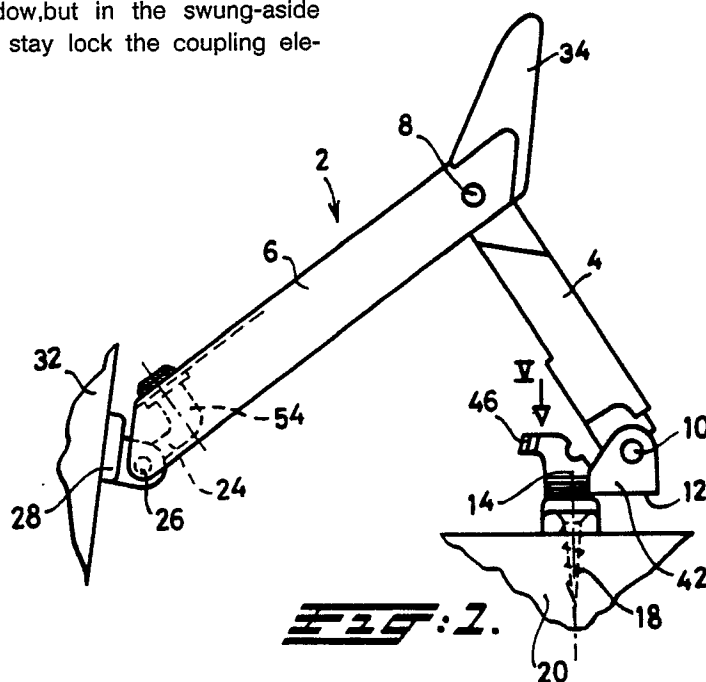
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# EUROPEAN PATENT APPLICATION

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**NL-2509 LP 's-Gravenhage(NL)**(54) **Window stay.**

(57) Window stay with a first arm (4) and a second arm (6), hingedly connected thereto the first arm in the collapsed position lying inside the second, the arms being both hingedly connected to a first and a second coupling element respectively, both the first (12) and the second (24) coupling element being provided with locking elements which are free of each other in the position of the window stay extending out from the window, but in the swung-aside position of the window stay lock the coupling element together.



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### Window stay.

The invention relates to a window stay as described in the preamble of Claim 1.

Although such a window stay - known per se from Dutch Patent 133703 and German Patent 1,708,425, both in the name of applicants - already constitutes a considerable improvement over the classic window stay, which in the collapsed state still projects horizontally inwards in an inconvenient manner from the frame, this window stay has the drawback that when great forces are exerted on the frame from the outside the stay can be forced, due to the fact that the two arms thereof move apart, so that the window can be opened.

The object of the invention is to eliminate this drawback and to provide an additional lock which in the collapsed and swung-aside position of the window stay gives an additional locking of the coupling pieces and thus of the two arms relative to each other.

This object is achieved with the measures described in the characterizing part of the main claim.

A preferred embodiment is described in Claim 2, while furthermore preferably a recess is formed in the second arm to take up the locking hook.

The enclosing of the locking hook in the swung-aside position of the window stay results in a very effective locking of the two arms, which means that even when great forces are exerted on the frame the ends of the arms cannot move away from each other.

It is observed that NL-A-7405631 describes a window stay with a quite complicated structure different from the one as known from the prior art mentioned above which can be locked in the closed position by means of cooperating locking members, one on the window cash and the other on one of the pivot axes.

The invention is explained with reference to the drawing.

Fig. 1 is a first side view of the window stay according to the invention in the half extended position.

Fig. 2 is a second side view, viewed from the other side, of the window stay in this position.

Fig. 3 is a top view of the window stay in the collapsed, but not yet swung-aside position.

Fig. 4 is a top view of the window stay in the swung-aside position, in which the two arms are locked together.

Fig. 5 is a top view of the end of the first arm with the first coupling element, viewed in the direction of the arrow V in Fig. 1.

Fig. 6 is a side view of the ends of the arms in the collapsed state of the window stay; and

Fig. 7 is an end view of the window stay in the collapsed and swung-aside position in the direction of the arrow VII in Fig. 4.

Fig. 8 is a perspective bottom view of the second coupling element.

Fig. 9 is a perspective top view of the first coupling element.

Fig. 10 is a side view of the end of the first arm.

The window stay according to the invention, indicated in its entirety in the figures by the reference number 2, comprises in the usual manner a first arm 4 and a second arm 6, which are hingedly connected to each other by means of a first pin 8 disposed at right angles to the lengthwise direction of the arms. The first arm 4 is hingedly connected, by means of a second pin 10, parallel to the first pin 8, to a first coupling element 12; said coupling element is supported around a first cross pin 14 which is at right angles to the first and second pins (and which will thus in practice be standing vertically) by a first fixing component 16, which is fixed with screws 18 on the frame 20.

The second arm 6 is connected, by means of a second hinge pin 22 which is at right angles to the pins 8 and 10, to a second coupling element 24, which is coupled by means of a hinge pin 26 which is parallel to the pins 8 and 10 (and which is thus in practice horizontal), to a second fixing component 28, which is fixed on the frame 32 with screws 30.

The second arm carries the operating handle 34 with which the window stay can be taken to the closed, half open and open position.

Up to this point the window stay according to the invention corresponds to the one which is known from, for example, Dutch Patent 133703 and German Patent 1,708,425, both in the name of applicants. The window stay can be brought into the collapsed position, in which the arm 4 lies without the arm 6 - see Fig. 3 - and then, by turning in the direction of the arrow 36 about the pins 14 and 22, both vertical and lying in line with one another, to the position shown in Fig. 4, in which the window stay is parallel to the window and thus does not constitute a cumbersome obstacle sticking into the room.

This known window stay is improved according to the invention in that the two arms in the folded-away position shown in Fig. 4 are also locked. This is achieved in the following way.

The essentially U-shaped first coupling element 12 comprises (see Figs. 5 and 9) the bottom 40 and the two upright walls 42 and 44 extending from it. The wall 42 is partially cut away, while the wall

44 has a locking lip 46 which is flanged inwards over an angle of about 60 degrees. The second coupling element 24 (see Figs. 6 and 8) is also essentially U-shaped with a bottom 50 and the end walls 52, 54 projecting therefrom. As Fig. 8 in particular shows, the wall 54 is L-shaped, so that an opening 56 is determined, which in the collapsed state of the window stay (Fig. 3) lies opposite the hook 46. The result of this design is that, when the window stay is moved from the position shown in Fig. 3 to the position shown in Fig. 4, the hook 46 falls behind the upright edge 58 of the leg 54a of the L-shaped wall 54, which causes the window stay to lock in the closed position, since the bottom edge 46a of the hook 46 rests against the top edge 54b' of the leg 54b.

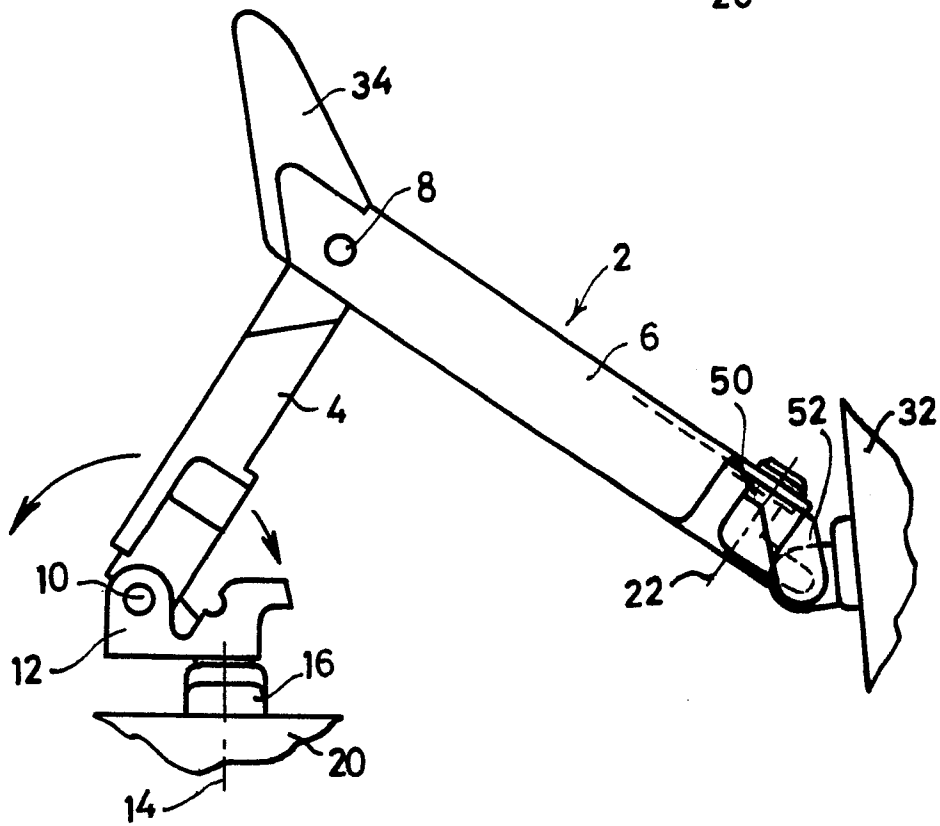
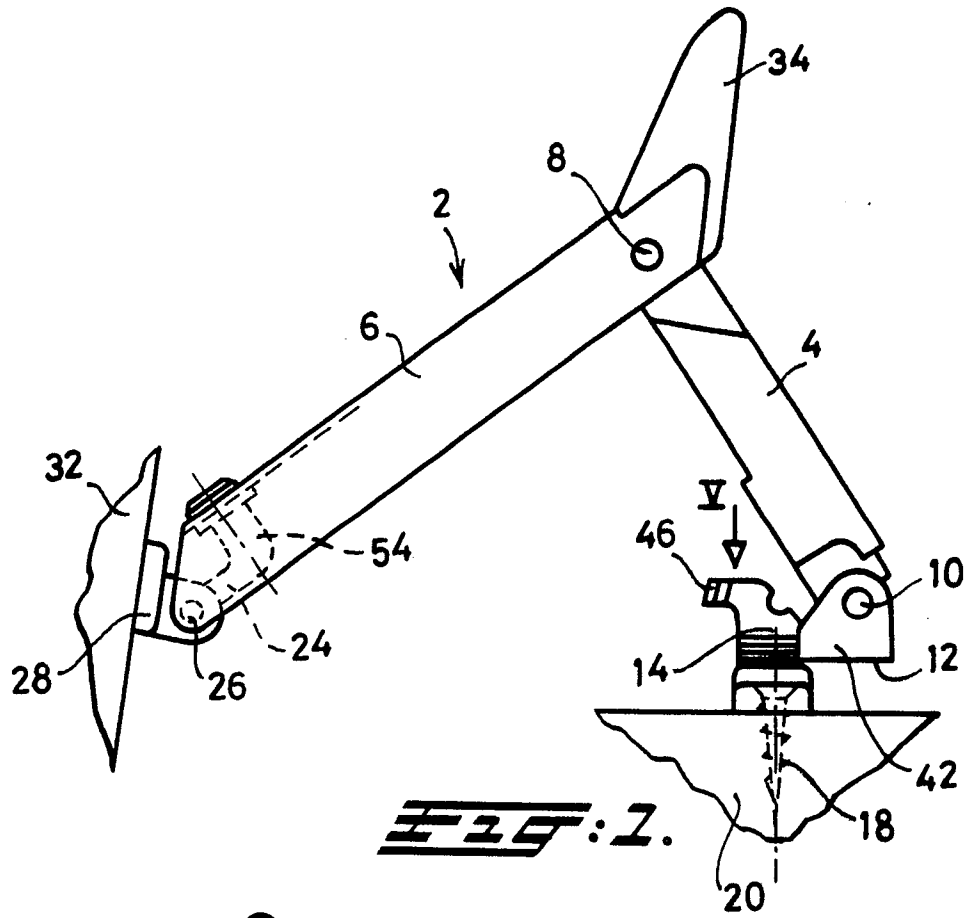
In order to avoid the inwardly projecting hook 46 from being in the way when the window stay is fully extended - shown partially in Fig. 10 - provision is made at the end of the arm 4 for a recess 60 to take said hook 46. This recess can be seen in Fig. 10.

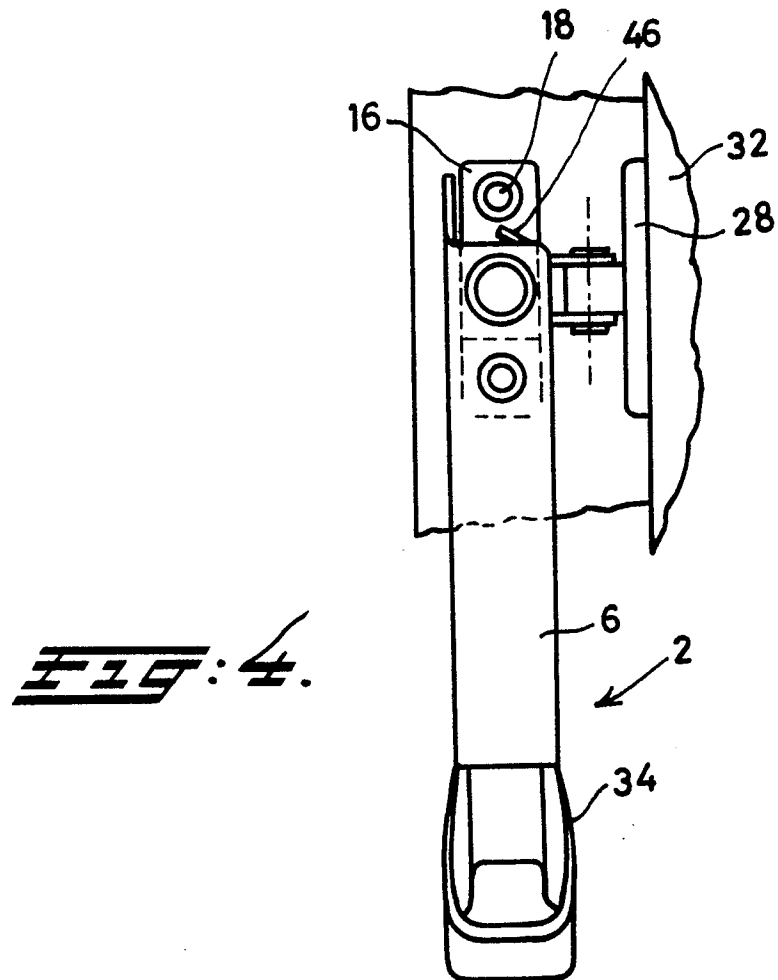
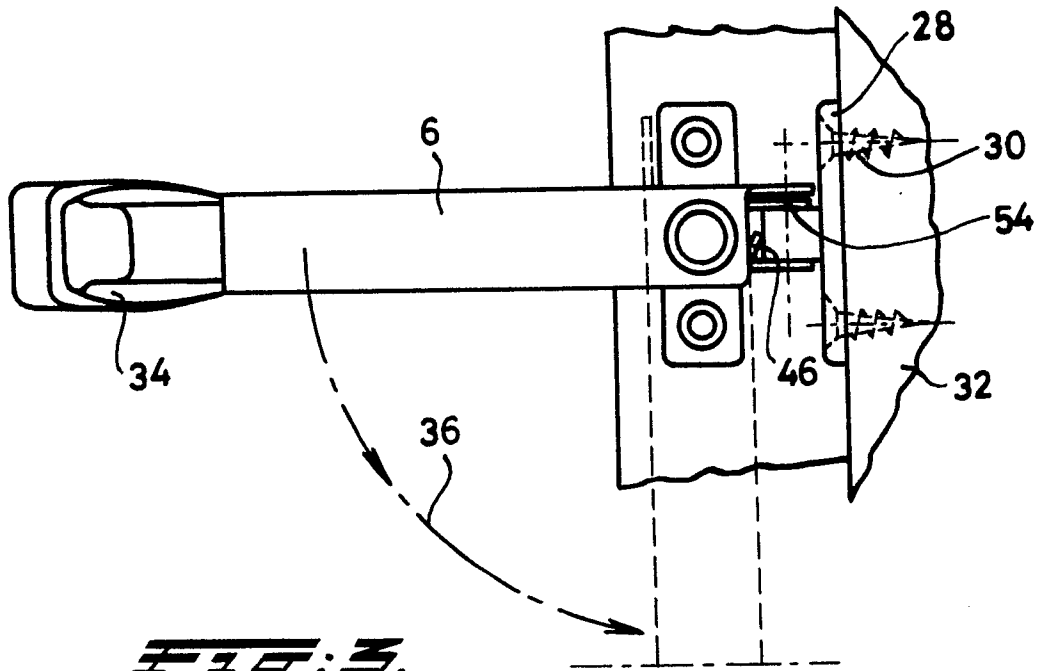
## Claims

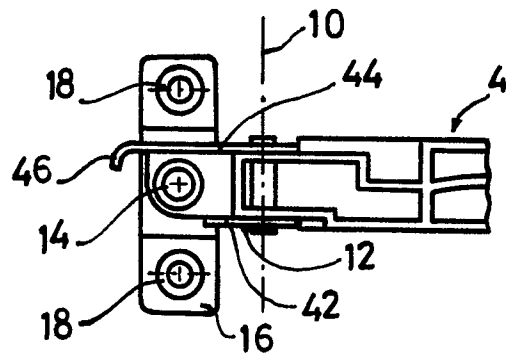
1. Window stay, comprising a first arm (41) and a second arm (6), being hingedly connected thereto by means of a first axis (8) disposed at right angles to the lengthwise direction thereof, the first arm in the collapsed position lying inside the second, and the first arm (4) being connected, by means of a second axis (10) parallel to the first pin (8), to a first coupling element (12), which by means of a first cross axis (14) situated at right angles to the first and second axis, is supported by a first fixing component (16), while the second arm (16) is connected by means of a second cross axis (22) to a second coupling element (24), which by means of a third hinge axis (26), parallel to the first and second axis, is connected to the second fixing component (28), characterized in that both the first (12) and the second (24) coupling elements are provided with locking elements which are free of each other in the position of the window stay extending out from the window, but in the swung-aside position of the window stay lock the coupling elements together.

2. Window stay according to Claim 1, characterized in that the first coupling element (12) is provided with a locking hook (46) which projects inwards from a side face (44) thereof, and which mates with a take-up wall (54) of the second coupling element (24) which lies in the collapsed state of the window stay opposite it in such a way that in the collapsed position of the window stay in which it is turned against the window the hook (46) is enclosed by the edge (58) of the take-up opening.

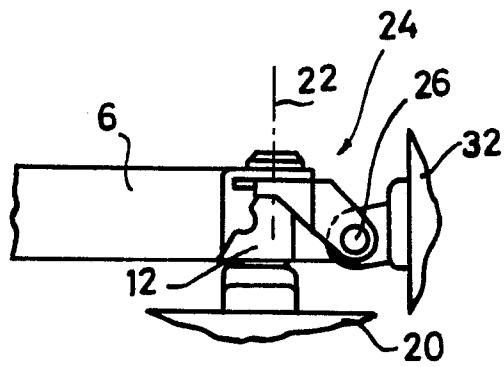
3. Window stay according to Claim 2, characterized in that formed in the second arm is a recess (60) to take-up the locking hook (46) in the fully open position of the window stay.



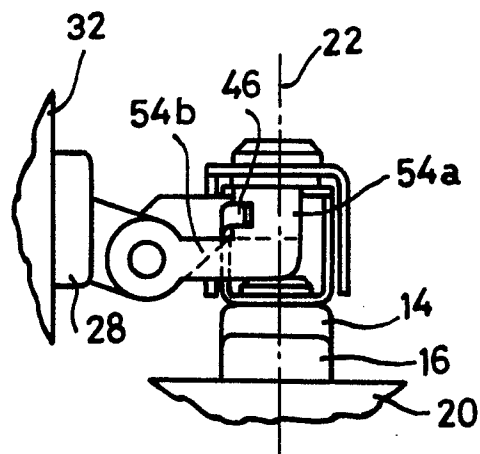




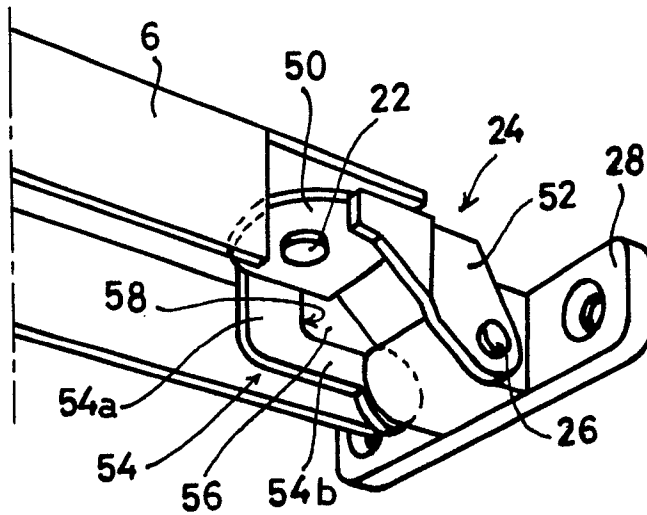
**FIG. 5.**



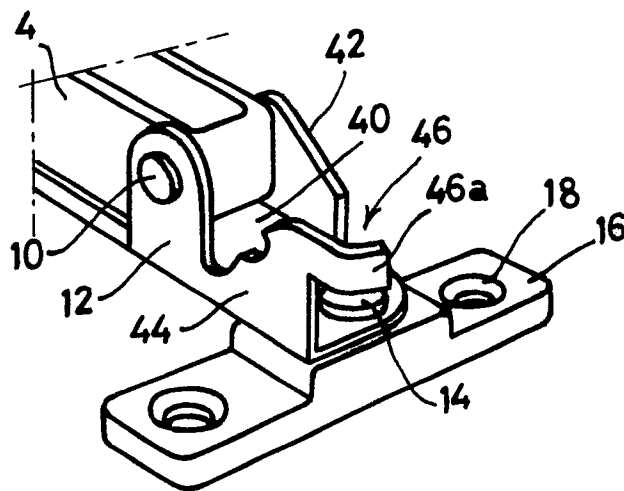
**FIG. 6.**



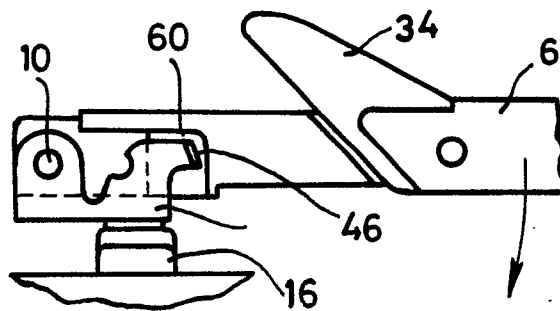
**FIG. 7.**



**FIG. 8.**



**FIG. 9.**



**FIG. 10.**



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# EUROPEAN SEARCH REPORT

Application Number

EP 87 20 2284

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
X	NL-A-7 405 631 (V. HERPEN) * Whole document * -----	1	E 05 C 17/32
			TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
			E 05 C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 20-04-1988	Examiner VAN BOGAERT J.A.M.M.
<b>CATEGORY OF CITED DOCUMENTS</b>			
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	