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(54) **Bar locking means for a window stay.**

(57) The invention relates to a bar locking means (22) for a window stay. At least one (32) of two opposite legs of the bar locking means has a finger grip (48) by means of which the lugs (36,38) on the legs can be separated to decouple a locking bar coupled to the bar locking means (22).

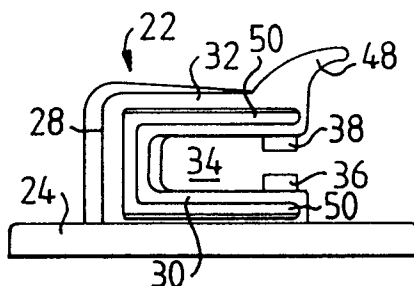


FIG. 3

The present invention relates to a bar locking means for a stay for fixing a window or the like, of the type comprising, firstly, a pivotally mounted bar intended to be fixed on a window casement or a window frame, and which has, at least on one side, preferably on both opposite sides, a longitudinal guide groove and a plurality of locking grooves adjacent thereto, secondly, a bar locking means, which is intended to be fixed to a window frame or a window casement and which defines, between two opposite legs, a receiving space for the bar, into which space there extends at least one, but preferably two opposite locking lugs, designed to engage the grooves in the bar, a release notch being disposed between each guide groove and a longitudinal edge of the bar, forming a threshold edge between the guide groove and the notch.

A window stay of this type is known by SE-C-355 043. When such a window stay is mounted on a window which opens inwards for example, the bar locking means is mounted on the window casement while the locking bar is fixed to the stationary window frame. From a closed position, the window can be opened to, and locked in, a number of different limited opening angles, by the opposing lugs on the bar locking means being made to slide along respective longitudinal grooves on the bar and then snap into the desired lock groove on the bar by pivoting the bar. The bar and the bar locking means are constructed so that the bar can be entirely freed from the bar locking means in order to swing the window to its completely open position, e.g. for window cleaning. In order to release the bar, the lugs must be aligned with the release notches along one edge of the guide groove, the bar then being released by forcing the bar away from the bar receiving space of the bar locking means, the threshold edges of the notches forcing the lugs apart so that the bar can be released from the bar locking means.

Under certain conditions, the flexibility of in any case one of the lugged legs of the bar locking means which is necessary for release, can in the known window stay give rise to unintentional release of the bar from the bar locking means. This can occur if the bar locking means is forced with extreme pressure against the outer end stop on the bar, e.g. if the window is opened violently, in which case the legs with the lugs can be pressed apart so much that the end stop can pass between the lugs, thereby releasing the bar.

In order to solve this problem of unintentional release of the bar from the bar locking means, SE-B-436 510 suggests that the outer end stop on the bar and the bar locking means be provided with interengageable means, which when interengaged prevent the legs of the bar locking means from being moved apart. This prevents the bar from being released from the bar locking means. This provides substantially improved security against the window being unintentionally opened wide, and the window cannot be unintentionally forced open by a child, for example by manipulating the window stay.

In both of these previously known window stays there is, however, the risk that it will be too easy for a child to release the bar from the bar locking means, due to the fact that the lugs on the legs can be too easily separated and slide over the thresholds of the pair of notches on one longitudinal edge of the bar, by the bar being forced or struck away from the bar receiving space in the bar locking means, when the lugs are right in front of the notches.

A purpose of the present invention is to remove the last mentioned child security risk in the previously known window stays, so that any unintentional release of the bar will be prevented, thus fulfilling necessary child security requirements. In principle, this is achieved according to the invention by virtue of the fact that the threshold of each release notch is made high enough so that a two-hand grip is required for the lugs to be able to pass the threshold of the release notches in the bar. According to the invention, it is thus suggested that at least one leg have a finger grip portion, by means of which the legs and, thus the lugs, can be separated for releasing the bar from the bar locking means, by lifting the lugs of the bar locking means over the edge of the threshold of the respective release notches in the bar. By virtue of the fact that a two-hand grip is required to release the bar from its bar locking means, i.e. first lifting or pressing one leg away from the other, depending on whether the bar locking means is mounted on a frame or on a window casement, and thereafter pivoting the bar away from the bar locking means, the window stay will fulfill necessary child security requirements against unintentional release of the window stay.

According to a preferred embodiment of the invention, the finger grip portion is made as a projection from a free end portion of one of the legs.

The invention will be described in more detail below with reference to the accompanying drawings, where:

- Fig. 1 is a plan view of one portion of a window stay, viz. a pivoting locking bar;
- Fig. 2 is a side view of the bar in Fig. 1;
- Fig. 3 is a side view of a bar locking means according to the invention for mounting on a window casement, when the window stay is used on an outwardly opening window;
- Fig. 4 is a plan view of the bar locking means according to Fig. 3; and
- Fig. 5 is a side view of a bar locking means according to the invention for mounting on a window casement, when the window stay is used on an inwardly opening window.

Figs. 1 and 2 show one portion of a window or shutter stay or the like, viz. an elongated locking bar 10,

which is pivoted via a joint 12 at one end 14 to a foot 16, which is intended, in a known manner, to be screwed securely to the window frame of an inwardly opening window, or to the window casement of an outwardly opening window. The locking bar 10 has, in a known manner, a longitudinal guide groove 18 on either side of the bar 10 and a plurality of transverse locking grooves or pockets 20 connected thereto.

Fig. 3 shows the other part of the window or shutter stay, viz. a bar locking means 22 for cooperating with the locking bar 10 in according with a first embodiment of the invention. The bar locking means is intended to be mounted on or at a window frame to make possible locking an outwardly opening window at a plurality of fixed opening angles, the locking bar 10 being fixed to the window casement. The bar locking means 22 comprises, firstly, a mounting plate 24, with screw holes 26, and, secondly, a yoke portion 28 with two parallel, opposing legs 30 and 32, which define between them a space 34 for receiving the locking bar 10. Two oppositely directed, pin-shaped lugs 36 and 38 extend into the space 34 at its mouth at the distal ends of the yoke legs 30,32.

When the two parts 10,22 of the stay are mounted on the respective window parts, the bar 10 can be coupled to the bar locking means 22 when the window is closed. The lugs 36,38 are forced apart by insertion ramps 40 at the proximal end 14 of the bar, the free yoke leg 32 being pushed resiliently upwards, so that the lugs 36,38 can be inserted into their respective guide grooves 18 and thereafter into a desired locking pocket 20, providing a suitable, limited opening angle for the window. When the lugs 36,38 are inserted into a locking pocket 20, they easily snap over a ridge 42 at the beginning of the locking pocket.

The locking bar 10 is also provided, in a known manner, with two release notches 44 at either longitudinal edge of the bar, and adjacent respective guide grooves 18. The notches 44 are shallower than the guide grooves 18, so as to form a threshold 46 between the groove 18 and the notch 44. The height of this threshold 46 has been increased, however, relative to previously known locking bars, to make it impossible to release the bar 10, as was previously the case, by forcibly pulling or hitting the bar 10, when the lugs are placed directly in front of the notches 44. This substantially improves the security against undesired release of the bar 10 from the bar locking means 22, so that it is very difficult or impossible for a child to decouple the bar from the bar locking means. In order to permit release of the locking bar 10 from the bar locking means 22, for window washing for example, the free yoke leg 32 has been provided, in accordance with the present invention, at its distal end with a projection 48 in the form of a finger grip, by means of which the free leg 32 in a first phase can be lifted for separating the legs 30,32 sufficiently to allow the lugs 36,38 to pass over the thresholds 46 when the bar 22 is thereafter, in a second phase, swung away from the space 34 between the legs 30,32 to free the bar 10 from the bar locking means 22. Freeing the bar 10 thus requires a two-hand grip, making it practically impossible for a small child to manipulate the window stay and open it.

Fig. 5 shows an embodiment of the bar locking means 22' according to the invention, which is intended to be mounted on the side of a window casement of an inwardly opening window. The locking bar 10 is mounted on the fixed window frame. The bar locking means 22' in this embodiment is essentially identical to the embodiment in Figs. 3 and 4, with the exception that the mounting plate 24' itself has the shape of a vertically upwardly projecting plate with horizontal screw holes 26' and that the yoke legs 30',32', as well as the finger grip 48' normally face downwards when mounted. In order to release a locking bar 10 from the bar locking means 22', the finger grip 48' must first be depressed to separate the lugs 36',38' sufficiently, whereafter the bar is swung with a jerk from the bar locking means 22', the lugs 36',38' passing over the thresholds 46 of the notches 44 in the bar 10.

The window stay 10,22;22' also has, as does the window stay according to SE-B-436 510, interengaging means in the form of notches or grooves 50,50' along the sides of the yoke legs 30,32;30',32' and projections 52 at a distal end stop 50 of the locking bar 10, said engaging means 50;50',52' locking together the locking bar 10 and the bar locking means 22;22' and preventing separation of the legs 30,32;30',32', and a release of the bar when the bar locking means 22;22' is forced against the distal end stop 54 of the bar.

Claims

1. Bar locking means for a stay for fixing a window or the like, of the type comprising, firstly, a pivotally mounted bar (10) intended to be fixed on a window casement or a window frame, and which has, at least on one side, preferably on both opposite sides, a longitudinal guide groove (18) and a plurality of locking grooves (20) adjacent thereto, secondly, a bar locking means (22;22'), which is intended to be fixed to a window frame or a window casement and which defines, between two opposite legs (30,32;30',32'), a receiving space (34) for the bar (10), into which space there extends at least one, but preferably two opposite locking lugs (36,38; 36',38'), designed to engage the grooves (18,20) in the bar (10), a release notch (44) being disposed between each guide groove (18) and a longitudinal edge of the bar (10), forming a

threshold edge (46) between the guide groove (18) and the notch (44), **characterized** in that at least one leg (32; 32') has a finger grip portion (48;48'), by means of which the legs (30,32;30',32') and thus the lugs (36,38;36',38') can be separated to decouple the bar (10) from the bar locking means (22,22') by lifting the lugs (36,38;36',38') of the bar locking means over the threshold edge (46) of each release notch (44) in the bar (10).

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2. Bar locking means according to Claim 1, **characterized** in that the finger grip portion (48;48') is in the form of at least one projection extending from a free end portion of one leg (32;32').

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