

Description

This invention relates to a fitting for a window, door or like closure and more particularly to a latching device for latching a window, door or like closure in a closed position in a surround or frame.

Latching devices for windows are well known and the most common type now in usage is one which is referred to as a "wedge lock". These so-called wedge locks are primarily designed for use with windows but they can also be used for the latching of doors or the like closures. The wedge lock conventionally comprises a mounting base, which is usually fitted adjacent a peripheral edge of the closure, and to this mounting base is pivotally coupled a handle. A latching tongue projects from the handle and this co-operates with a wedging action with a striker or wedge plate which is mounted to the surround or frame in which the closure is hung. Whilst it is usual for the mounting base to be fitted to the closure and the striker or wedge plate to the surround or frame these can be reversed if required.

Such latching devices are usually a low cost item of hardware and thus in an effort to keep manufactured costs to a minimum devices have resulted which are of inferior quality and thus prone to breakages or ineffective operation. For example the handles are either prone to becoming loose and drop under their own weight or they become seized and eventually break.

In addition to these problems associated with the construction of such devices, the fundamental wedging action can have an adverse effect on the closure, especially in the case of an aluminium framed window, by applying unwanted stresses to the closure. For example with windows the wedging action tends to push the window over to one side which is undesirable. There is also a need to apply a reasonably strong pulling force on the handle, thereby transmitting stresses to the window closure, to engage the latching tongue with the striker or wedge plate. In this latter instance the need to pull hard on the handle results from the need with modern windows to compress the window seals when the window is being closed.

The object of the present invention is to provide a latching device which does not require a separate striker or wedge plate.

Broadly the present invention consists of a latching device comprising a mounting base, a handle pivotally coupled to the base, said handle being movable between first and second positions, a latching plate pivotally mounted to the base and means for moving said latching plate as said handle is moved between its first and second positions such that the latching plate moves between a latching position and a non-latching position.

In the latching position the latching plate preferably projects substantially parallel outwardly

from said base and in the non-latching position projects substantially perpendicular from said base.

In the following more detailed description of the invention reference will be made to the accompanying drawings in which:—

Figure 1 is a perspective view of the latching device,

Figure 2 is a plan view of the mounting base,

Figure 3 is a plan view of the latching device,

Figure 4 is a side elevation view of the latching device,

Figure 5 is an end elevation in the direction of arrow A in Figure 4,

Figure 6 is an end elevation in the direction of arrow B in Figure 4 but with the handle having been turned through a 90° angle,

Figure 7 is a side elevation of a modified form of the device,

Figure 8 is a plan view of the device shown in Figure 7, and

Figure 9 is a plan view similar to Figure 8 but with the device in the unlatched position.

The latching device according to its preferred form consists of a mounting base 10 and a handle 12. The base 10 can be constructed of any desirable material, however, in one preferred form of the invention the base is formed by injection moulding glass reinforced nylon. The base 10 is provided with mounting apertures 11 through which mechanical fastenings can be located for attachment of the mounting base to the closure or the surround or frame in which the closure is hung. Once again the handle 12 can be formed of any desirable material but in one preferred form of the invention the handle is of unit construction and formed from an extruded alloy.

Handle 12 is provided with a hand gripping portion of suitable dimensions and configuration to enable it to be comfortably grasped by the hand of an end user. The handle 12 is pivotally mounted at 14 to the base 10 and any form of suitable pivot mounting can be employed. For example in its simplest form a mechanical fastening such as a screw can pass through an aperture in the mounting base 10 to be engaged in a screw threaded opening in the handle 12. This is an acceptable form of pivot mounting especially when the base is formed of a plastics material such as glass reinforced nylon. An alternative arrangement is the use of a rivet.

Pivotally coupled to the mounting base 10 is a latching or striker plate 15. This latching plate 15 can once again be formed of any desirable material, however, in the preferred form it is constructed from a plastics material. The latching plate 15 has a projecting portion 16 which is engaged within a recess 17 in a long side of the mounting plate 10. This projecting portion 16 is pivotally mounted within the recess 17 by pivot pins 15a which are formed integrally with projecting portion 16 and which engage one each in a pair of coaxially opposed openings 10a in the opposed side walls of recess 17. To install the

latching plate 15 it is bowed transversely so that the pivot pins 15a can be located relative to the openings 10a and then released back to its normal shape thereby allowing the pins 15a to move into the openings 10a.

Handle 12 is formed with a projection or nib 18 which in the illustrated form of the invention in Figure 1 engages over an engagement surface 20a on the latching plate 15. The device as illustrated in Figure 1 is in the position where the device would latch closed a closure whilst Figure 5 illustrates the open or unlatched position. This latching is achieved by the latching plate 15 projecting beyond the peripheral edge of the closure or the surround or frame as the case may be and thereby extending over a portion of the peripheral edge of the closure or surround or frame respectively. It will thus be appreciated that the latching plate prevents the closure from opening even though the latching plate 15 is not fixedly attached to anything but the mounting plate 10. To allow the closure to be opened the handle 12 is pivoted in the direction of the arrow shown in Figure 2, so as to take up the position shown in Figure 5, and this causes the projection or nib 18 of the handle 12 to come in contact with a bearing member 20 which projects upwardly from the top surface 19 of the latching plate 15. As the handle continues to be moved toward a position where it projects approximately at right angles (Figure 5) the latching plate 15 is lifted about its pivot axis so as to project perpendicularly from the mounting base 10. The latching plate is thus moved away from its overlapping position with the peripheral edge of the closure or surround such that the closure can then be opened.

As shown in Figure 6 mounting plate 10 preferably includes a stop 28 in the form of a projection 29 which has a first face 30 which engages nib 18 when the handle 12 is moved to the unlatched position so as to limit movement of the handle. The second face 31 engages with the base 12a of the handle 12 when it is in the latching position to therefore limit the extent of movement of handle 12 in latching.

Referring to Figures 7-9 there is shown a modified form of the device which is lockable in the latched position by the locking device 21 located in the "throat" 22 of the handle 12. The locking device 21 consists of a housing 23 which is profiled to fit in the throat 22 and is fixed in place by a mechanical fastening 24. Locking device 21 has a conventionally constructed and operable barrel 25 with key opening 26. This barrel 25 controls a locking lever (not shown) which when the handle 12 is in the latching position shown in Figure 8 projects from the housing 23 to engage in a slot 27 in the mounting base 10. Accordingly the handle 12 can be locked in the latched position as and when required for security of closure of the window or the like on which the device is mounted. Because of the greater security of latching required by this form of the device the mounting base 10 preferably has four mounting apertures 11.

The latching device according to the present invention overcomes the problems normally associated with the wedge lock devices. It will be evident to those skilled in the art that because the latching plate 15 is pivotally attached to the mounting base 10 there is no need to pull hard on the handle 12 to engage the latching plate which is the case with known wedge locks as the handle merely moves the latching plate 15 between its projecting outwardly and projecting upwardly positions. It therefore follows that there is no wedging action which pushes the closure over to one side.

The latching device has other advantages especially of a labour saving nature as the fact that the latching plate 15 is part of the mounting plate 10 means that there is no need for the lining up of a striker or wedge plate with the handle, no fixing of the striker or wedge plate to the closure or its surround and therefore there is no need for drilling or punching of holes for the striker or wedge plate. In addition the latching plate does not damage either the edge of the frame or the peripheral edge of the closure. As there is no wedging action other than the nib 18 moving across the upper surface 19 of the latching plate 15 it is not possible to easily damage the latching plate.

Claims

1. A latching device comprising a mounting base (10), a handle (12) pivotally coupled to the base (10), said handle (12) being movable between first and second positions, a latching plate (15) pivotally mounted to the base (10) and means (18) for moving said latching plate (15) as said handle (12) is moved between its first and second positions such that the latching plate (15) moves between a latching position and a non-latching position.

2. The latching device according to claim 1 wherein in the latching position the latching plate (15) projects substantially parallel outwardly from said base (10) and in the non-latching position projects substantially perpendicularly upwardly from said base (10).

3. The latching device according to claim 1 or 2 wherein the means for moving is a nib portion (18) of said handle (12) which is engageable with said latching plate (15).

4. The latching device according to claim 3 wherein the nib portion (18) is formed integrally with said handle (12).

5. The latching device according to claim 3 or 4 wherein an engagement surface (20a) is formed on said latching plate (15) and is engaged by said nib portion (18) when said handle is moved between said first and second positions.

6. The latching device according to claim 5 wherein a projection (20) is provided with said latching plate (15) and is engageable by said nib portion (18) as the handle (12) is moved from said first position to said second position.

7. The latching device according to any one of the preceding claims wherein said latching plate (15) is formed from a plastics material and has

latching plate 15 it is bowed transversely so that the pivot pins 15a can be located relative to the openings 10a and then released back to its normal shape thereby allowing the pins 15a to move into the openings 10a.

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2. The latching device according to claim 1 wherein in the latching position the latching plate (15) projects substantially parallel outwardly from said base (10) and in the non-latching position projects substantially perpendicularly upwardly from said base (10).

3. The latching device according to claim 1 or 2 wherein the means for moving is a nib portion (18) of said handle (12) which is engageable with said latching plate (15).

4. The latching device according to claim 3 wherein the nib portion (18) is formed integrally with said handle (12).

5. The latching device according to claim 3 or 4 wherein an engagement surface (20a) is formed on said latching plate (15) and is engaged by said nib portion (18) when said handle is moved between said first and second positions.

6. The latching device according to claim 5 wherein a projection (20) is provided with said latching plate (15) and is engageable by said nib portion (18) as the handle (12) is moved from said first position to said second position.

7. The latching device according to any one of the preceding claims wherein said latching plate (15) is formed from a plastics material and has



integral hinge pins (15a) located in a pair of opposed hinge openings (10a) in said mounting base (10), said latching plate (15) being transversely flexible to permit the distance between the ends of the hinge pins (15a) to be reduced when said latching plate (15) is being mounted to or removed from said mounting base (10).

8. The latching device according to any one of preceding claims 3 to 7 wherein said mounting base (10) includes a stop member (29) which engages with said nib portion (18) when said handle (12) is moved to said second position and engages with a portion of said handle (12) to limit movement of said handle at said first position.

9. The latching device according to any one of the preceding claims wherein a locking device (21, 23) is mounted with said handle (12) for locking said handle in said first position.

Patentansprüche

1. Verriegelungsvorrichtung mit einem Sockel (10), einem Griff (12), welcher drehbar an dem Sockel (10) angekuppelt ist, wobei der Griff (10) zwischen einer ersten und einer zweiten Stellung bewegbar ist, einer Verriegelungsplatte (15), welche drehbar an dem Sockel (10) montiert ist, und Mittel (18) zum Bewegen der Verriegelungsplatte (15); wenn der Griff (12) zwischen seiner ersten und zweiten Stellung bewegt wird, derart, dass die Verriegelungsplatte (15) sich zwischen einer Verriegelungsstellung und einer nicht verriegelten Stellung bewegt.

2. Verriegelungsvorrichtung nach Anspruch 1, bei welcher in der Verriegelungsstellung die Verriegelungsplatte (15) im wesentlichen parallel nach aussen von dem Sockel (10) vorsteht und bei der in der nicht verriegelten Stellung die Verriegelungsplatte sich im wesentlichen senkrecht von dem Sockel (10) erstreckt.

3. Verriegelungsvorrichtung nach Anspruch 1 oder 2, bei welcher die Mittel zum Bewegen der Verriegelungsplatte einen schnabelförmigen Teil (18) des Griffes (12) bilden, welcher Teil mit der Verriegelungsplatte (15) zum Eingriff gebracht werden kann.

4. Verriegelungsvorrichtung nach Anspruch 3, bei welcher der schnabelförmige Teil (18) einen integralen Teil des Griffes (12) bildet.

5. Verriegelungsvorrichtung nach Anspruch 3 oder 4, bei welcher eine Eingriffsfläche (20a) auf der Verriegelungsplatte (15) geformt ist, und von dem schnabelförmigen Teil (18) berührt wird, wenn der Griff zwischen der ersten und zweiten Stellung bewegt wird.

6. Verriegelungsvorrichtung nach Anspruch 5, bei welcher ein Vorsprung (20) auf der Verriegelungsplatte (15) vorgesehen ist und dieser von dem schnabelförmigen Teil (18) berührt wird, wenn der Griff (12) von seiner ersten Stellung zu seiner zweiten Stellung bewegt wird.

7. Verriegelungsvorrichtung nach einem der vorangehenden Ansprüche, bei welcher die Verriegelungsplatte (15) aus einem Kunststoffmaterial hergestellt ist und integrale Scharnierstifte

(15a) hat, welche sich in einem Paar von gegenüberliegenden Scharnieröffnungen (10a) in dem Sockel (10) befinden, wobei die Verriegelungsplatte (15) in Querrichtung biegsam ist, um den Abstand zwischen den Enden der Scharnierstifte (15a) zu verringern, wenn die Verriegelungsplatte (15) auf dem Sockel (10) montiert oder von diesem entfernt wird.

8. Verriegelungsvorrichtung nach einem der vorangehenden Ansprüche 3 bis 7, bei dem der Sockel (10) ein Haltelement (29) hat, welches mit dem schnabelförmigen Teil (18) in Eingriff kommt, wenn der Griff (12) in seine zweite Stellung bewegt wird und welches mit einem Teil des Griffes (12) zum Eingriff kommt, um die Bewegung des Griffes in der ersten Stellung zu begrenzen.

9. Verriegelungsvorrichtung nach einem der vorangehenden Ansprüche, bei welcher eine Verriegelungseinrichtung (21, 23) mit dem Griff (12) montiert ist, um den Griff in der ersten Stellung zu verriegeln.

Revendications

1. Dispositif de verrouillage comprenant un socle (10), un poignée (12) accouplé de façon pivotante au socle (10), ladite poignée (12) pouvant se déplacer entre une première et une seconde position, une plaque de verrouillage (15) montée de façon pivotante au socle (10) et une partie (18) pour déplacer ladite plaque de verrouillage (15) quand ladite poignée (12) est déplacé entre ses première et seconde positions de sorte que la plaque de verrouillage (15) se déplace entre une position verrouillée et une position non verrouillée.

2. Dispositif de verrouillage selon la revendication 1, dans lequel la plaque de verrouillage (15) s'étend dans la position verrouillée substantiellement parallèlement vers l'extérieur à partir du socle (10) et s'étend dans la position non verrouillée substantiellement perpendiculairement vers le haut à partir du socle (10).

3. Dispositif de verrouillage selon la revendication 1 ou 2, dans lequel ledit moyen pour déplacer la plaque de verrouillage est une partie (18) en forme de bec de ladite poignée (12) qui peut être mise en prise avec ladite plaque de verrouillage (15).

4. Dispositif de verrouillage selon la revendication 3, dans lequel la partie (18) en forme de bec est une partie intégrante de ladite poignée (12).

5. Dispositif de verrouillage selon la revendication 3 ou 4, dans lequel une surface de prise (20a) est formée sur la plaque de verrouillage (15) et est engrenée par ladite partie (18) en forme de bec, quand ladite poignée est déplacée entre ses première et seconde positions.

6. Dispositif de verrouillage selon la revendication 5, dans lequel une projection (20) est prévue à la plaque de verrouillage (15) et peut être engrenée par ladite partie (18) en forme de bec, quand la poignée (12) est déplacée de sa première position vers sa seconde position.



7. Dispositif de verrouillage selon l'une quelconque des revendications précédentes, dans lequel ladite plaque de verrouillage (15) est formée à partir d'une matière plastique et a des pivots de charnières intégrées (15a) qui se trouvent dans une paire d'ouvertures opposées de charnière (10a) dans ledit socle (10), ladite plaque de verrouillage (15) étant flexible en direction transversale pour permettre à réduire la distance entre les extrémités des pivots (15a) de charnière, quand ladite plaque de verrouillage (15) est montée sur ou enlevée dudit socle (10).

8. Dispositif de verrouillage selon l'une quel-

conque des revendications précédentes 3 à 7, dans lequel ledit socle (10) comprend un élément d'arrêt (29) qui est mis en prise avec ladite partie (18) en forme de bec, quand ladite poignée est déplacée vers ladite seconde position et est mise en prise avec une partie de ladite poignée (12) pour limiter le mouvement de ladite poignée dans ladite première position.

9. Dispositif de verrouillage selon l'une quelconque des revendications précédentes, dans lequel un moyen de verrouillage (21, 23) est monté avec ladite poignée (12) pour verrouiller ladite poignée dans ladite première position.

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