

A WINDOW RESTRICTING DEVICE

This invention relates to a window restricting device, and in particular to a device for limiting the opening of a window hinge.

Window hinge systems having a number of sliding struts are known which enable a window to be opened very widely. Such opening of the window facilitates cleaning and access therethrough in the case of a fire. However, during normal use of the window, it is safer to have the opening of the window limited to a lesser extent. This is particularly important in places, such as schools, where young children may have access to the window.

In the light of the foregoing, it would be most useful to be able to restrict the opening of a window, such as by restricting the opening of the window hinge, during normal use, but to allow full opening of the window in occasional and extreme circumstances. The present invention aims to satisfy this requirement.

According to the present invention there is provided a window restricting device adapted to be received in a channel, comprising a body portion and means for releasably locking the body portion in a desired position in the channel, the locking means being held in either a locking position or a release position, wherein when the locking means is in its release position the restricting device is free to slide along the channel.

Preferably the locking means includes a stud which, in use, engages a hole in the channel. Alternatively, the stud may be replaced by a series of teeth which engage corresponding teeth in the channel. Other possibilities for releasably holding the restricting device in a particular position in the channel can of course be envisaged.

Preferably the locking means pivots between its locking position and its release position. This pivoting may occur about a pair of side studs which engage recesses in the body portion. The side studs could, alternatively, extend from the body portion and engage recesses in the locking means

itself.

The locking means may include a tapered end region which facilitates pivoting of the locking means. Further, the locking means may pivot about an edge defined by the meeting
5 of the tapered end region with the remainder of the locking means.

The locking means preferably includes a tongue which interacts with the body portion in a resilient manner when the position of the locking means is changed. Hence, a
10 force must be applied to the locking means to urge the tongue from one position to the other.

In a preferred embodiment of the invention, the body portion is a frame member and the locking means is accommodated therewithin.

15 Preferably the body portion or the locking means or both are made substantially from plastics material. However, one or other of the parts of the restricting device could be made of metal.

One application of a restricting device according to the
20 present invention is in a window hinge system which includes struts having nubs (such as mushroom pins) which slide in a channel. In such a system, the struts would be prevented from moving further than desired by virtue of the restricting device being locked in a particular position.
25 When the window is to be opened more fully, however, the restricting device would be released and allowed to slide along the channel as the struts move. In such a system, more than one position at which the restricting device can be locked may be provided, simply by adding holes (or other
30 suitable catch means) at different positions along the channel.

Rather than being free to slide alone along the channel

when released, the restricting device may be attached, via a spacer, to a sliding part of the window hinge system such that, as the window is closed from its unrestricted open position, the restricting device is pulled towards an active position in the channel. Then, as the restricting device reaches its active position in the channel, the locking means preferably automatically engages the channel to retain the restricting device in position.

A specific embodiment of the present invention is now described, by way of example only, with reference to the accompanying drawings, in which:-

Figure 1 is a plan view of a window restricting device according to the present invention;

Figure 2 is a cross-sectional side elevation of the device shown in Figure 1 in its locking position;

Figure 3 is a cross-sectional side elevation of the device of Figures 1 and 2 in its release position; and

Figure 4 is a view of a portion of a window hinge system showing the position at which a restricting device according to the present invention is included.

With reference to the drawings, a window restricting device 1 comprises a frame member 3 and a locking means 5. The frame member 3 is made of plastics material and includes an enlarged portion 7 against which a mushroom pin or a mounting block of a sliding strut may abut.

The locking means includes a pair of side studs 9 which engage recesses 11 in the body portion 3. The recesses 11 are open at one side to enable the side studs 9 to enter the recesses 11 during installation of the restricting device. The locking means 5, which is longitudinal in configuration, is able to pivot about the side studs 9, such that a locking stud 13 mounted at one end of the locking means 5 may engage or release from a hole 15 in a channel 17 of a window hinge system 19 or the like. The other end of the locking means 5, on the other side of the axis of the side studs 9, is tapered to facilitate pivoting of the locking means 5 within the channel 17.

At the end of the tapered section 21 of the locking

means 5 is a tongue 23 which interacts with the frame member 3 during use. In this regard, a force must be applied to the locking means 5, whenever the locking stud 13 is inserted into or removed from the hole 15, so that the tongue 23 may pass over a protruding portion 25 of the frame member 3. The tongue 23 only passes over the protruding portion 25 due to the resilience of one or other or both of these integers. This arrangement, however, ensures that the locking means 5 is biased into either its locking configuration (c.f. Figure 2) or its release configuration (c.f. Figure 3).

In practice, the restricting device is entered into a channel of a window hinge system during construction of the system. Then, during use, if the locking means 3 is biased into its locking position, so that the locking stud 13 engages a hole in the channel 17, the struts of the window system are prevented from moving further than a predetermined amount. Hence, the window cannot open more than a certain distance. If, however, the window must be opened fully, either for cleaning purposes or to provide a fire escape or for some other reason, the tapered end 21 of the locking means 5 can be depressed so that the locking stud 13 disengages from the hole 15 in the channel 17; the complete restricting device 1 is then free to move along the channel. This freedom enables the struts of the window system to move also, thus allowing the window to open fully.

To replace the restricting device in its active position, the locking means 5 needs only to be pivoted about the side studs 9 so that the locking stud 13 re-engages the hole 15 in the channel 17. In this regard, if more than one hole 15 is provided in the channel, the degree to which the window is allowed to be opened can be varied depending on the circumstances.

In a more user friendly embodiment of the present invention, not shown in the drawings, the restricting device 1 is attached via a spacer to a mounting block 27 (c.f. figure 4). Thus, when the window is to be closed from an unrestricted wide-open position, the restricting device is

pulled towards the hole in the channel 17 by means of the spacer. Further, the hole in the channel 17 may be elongated, thus enabling the mounting block 27 to travel the short distance required to close the hinge fully, without the stud 13 having to disengage from the hole. A degree of "free-play" may also be provided between the restricting device and the spacer, so that the stud 13 can be disengaged from the hole and held disengaged whilst a second restricting device, associated with a second hinge mechanism on the opposite side of the window, is released from its respective hole. Such an arrangement facilitates use of the restricting devices.

It will of course be understood that the present invention has been described above purely by way of example, and that modifications in detail can be made within the scope of the invention.

CLAIMS

1. A window restricting device adapted to be received in a channel, comprising a body portion and means for
5 releasably locking the body portion in a desired position in the channel, the locking means being held in either a locking position or a release position, wherein when the locking means is in its release position the restricting device is free to slide along the channel.
- 10 2. A device as claimed in claim 1, wherein the locking means includes a stud which, in use, engages a hole in the channel.
3. A device as claimed in claim 1 or claim 2, wherein the locking means pivots between its locking position and
15 its release position.
4. A device as claimed in claim 3, wherein the locking means includes a pair of side studs, which engage recesses in the body portion, to facilitate pivoting of the locking means.
- 20 5. A device as claimed in any preceding claim, wherein the locking means includes a tapered end region which facilitates pivoting of the locking means.
6. A device as claimed in any preceding claim, wherein the locking means includes a tongue which interacts with the
25 body portion in a resilient manner to hold the locking means in either the locking position or the release position.
7. A device as claimed in any preceding claim, wherein the body portion is a frame member and the locking means is accommodated therewithin.
- 30 8. A device as claimed in any preceding claim, wherein the body portion is attached to a spacer which, in use, is attached to a sliding part of a window hinge mechanism.
9. A device as claimed in any preceding claim, wherein the body portion is made substantially from plastics
35 material.
10. A device as claimed in any preceding claim, wherein the locking means is made of metal.
11. A window restricting device substantially as



hereinbefore described with reference to and as shown in the accompanying drawings.

12. A window hinge mechanism including a window restricting device as claimed in any preceding claim.

