May 15, 1956 E. S. PERSSON 2,745,692

LOCKING MECHANISM

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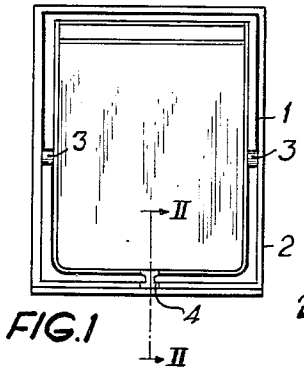



FIG.1

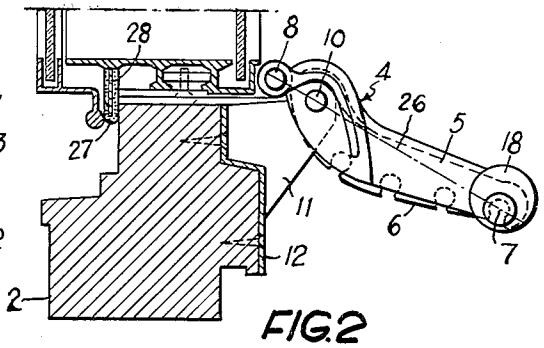



FIG.2

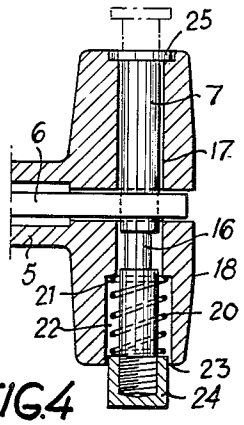



FIG.4

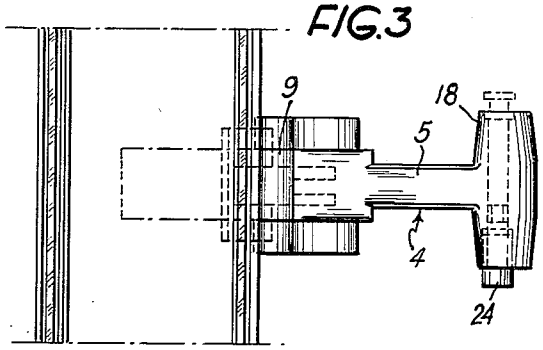



FIG.3

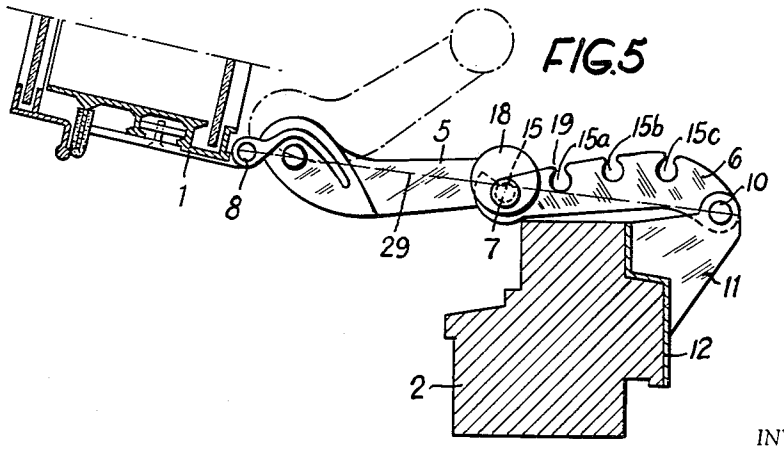



FIG.5

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# LOCKING MECHANISM

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Claims priority, application Sweden January 19, 1951

1 Claim. (Cl. 292—263)

The present invention relates to a locking mechanism to be mounted between a movable member and a stationary member to provide means for moving the movable member to and from the stationary member and for locking the movable member in engagement with the stationary member.

The primary object of the invention is to provide a locking mechanism connecting a movable member and a stationary member and permitting tightening engagement between said members, and to provide a releasable coupling appertaining to said locking mechanism and enabling disconnection between said member by a simple operation of the coupling.

A further object of the invention is to provide a locking mechanism for windows by which a movable window sash may be adjusted into various opening positions relatively to a stationary frame and be locked to said frame in the closed position of the sash.

A still further object of the invention is to form a locking mechanism for windows as a link connection between the sash and the frame of the window and to provide a releasable coupling for the disconnection of the links at will, whereby the sash may be moved independently of the frame to any desired opening position.

An object of the invention is also to provide a locking mechanism for windows enabling connection of the sash and the frame to one another and locking of the sash in various definite opening positions, an easily releasable coupling being mounted in said locking mechanism to allow disconnection between the sash and the frame in any of said definite opening positions.

Here, the expression "releasable coupling" implies a coupling adapted to be released without a tool.

Other objects and advantages of the invention will be apparent from the following description of an application of the invention to windows, reference being had to the accompanying drawing in which:

Fig. 1 is a vertical elevation showing a window provided with the locking mechanism according to the invention,

Fig. 2 is a vertical section on an enlarged scale taken on line II—II in Fig. 1, showing the mechanism in the locked position,

Fig. 3 is a horizontal elevation corresponding to Fig. 2,

Fig. 4 is an axial section taken through the common pivot means for the links of the locking mechanism, and

Fig. 5 is a vertical section similar to that shown in Fig. 2 but showing the mechanism in an open position of the window.

In the drawing, 1 designates a pair of coupled window-sashes suspended in a frame 2 on hinges 3 so as to permit of being swung about a horizontal axis approximately midway of the window. The locking mechanism 4 is arranged at the lower border of the inner sash between this border and the sill of the frame 2.

The locking mechanism consists of a pair of links 5, 6 which are interconnected by a pivot 7. Furthermore, one link 5 is pivotally connected to the window-sash 1 by



means of a pivot 8 in a hinge member 9 secured to the sash, while the other link 6 is mounted with the end thereof on a pin 10 in a bracket 11, which preferably may be secured to a sheet-metal covering 12 on the frame.

In the embodiment shown the common pivot region of the links is formed as a readily disengageable coupling, so that the connection between the links may be conveniently taken apart, should the window require to be opened more than permitted by the links. This might become necessary, for instance, in pivot-suspended window sashes adapted to be turned by half a revolution, so as to make the outside of the window-pane accessible for cleaning from within the room. In the construction shown, the coupling is formed simply by the pivot pin 7 and a corresponding recess 15 in the link 6. The pivot pin 7, which may also be designated as a latch-bolt, matches the round recess 15 but is provided with a portion 16 (Fig. 4) of a reduced diameter and may be displaced in a transversely extending bore 17 in the end of the link 5 formed as a handle 18, so as to cause the narrow portion 16 to register with the recess. This recess has an edge opening 19 permitting passage of the reduced or narrow portion 16 but not of the remainder of the pin. The pivot pin or the latch-bolt is actuated by a spring 20 fitted between an abutment 21 in an enlargement 22 of the bore 17 and an abutment 23 formed by the edge of a cap nut 24 on the end of the pin, said nut being intended to serve as a push button. A flange 25 at the opposite end of the pin prevents displacement of the pin out of the bore by the spring.

By depressing the end of the nut 24 projecting out of the handle 18 and by raising the handle from the position shown in Fig. 5 by full lines, in an upward direction, for instance into the position indicated by chain-dotted lines, the coupling will be released to disengage the links from one another. The link 6 may have a plurality of recesses provided therein, such as the recesses 15*a*, 15*b*, 15*c*, into which the latch-bolt 7 may be introduced to couple the links together according to the extent to which it is desired to open the window in every particular instance.

The link 5 is made as a channel turned upside down, into which the link 6 fits when the mechanism takes the locking position shown in Fig. 2. Hereby the links will be accommodated within a relatively restricted space, besides which the three axes of oscillation, that is to say the centres of the pivots 7, 8 and 10, may be aligned or brought somewhat past the common straight line in the last fraction of the closing movement so as to render effective locking possible. In Fig. 2, the connecting line between the centres 7 and 8 in the locking position is indicated by a chain-dotted line 26 and, as will appear from the drawing, the centre of the pivot 10 is very near this line. The distance between the pivots 8, 10 is small relatively to the distance between the pivots 7 and 8, and for this reason a powerful leverage can be exerted by means of the handle 18 at the locking moment. An abutting flange 28, on the sashes, preferably provided with a packing 27, is then caused to bear against said frame with an effectively tightening fit.

The window is opened by the aid of the locking mechanism by the handle 18 being swung upwardly and outwardly from the position shown in Fig. 2, until the links take the position shown in Fig. 5. The centre of the common pivot or latch-bolt 7 will then have passed over the connecting line 29 between the centres of the pivots 8, 10, which are here the extreme pivots, and the link 6 may bear on the sill of the frame 2. Thus the links cannot be folded together again into the position of closure on account of any inwardly directed pressure from the window-sash, but will act as a rigid supporting rod.

The invention is not limited to the construction shown, which only represents an example of the invention.

What I claim is:

A locking mechanism for windows to be mounted between a window sash suspended in a stationary window frame to be swung about a horizontal axis substantially at the middle of the window, comprising a link having one end adapted to be pivoted to the sash, a link having one end adapted to be pivoted to the frame, a releasable coupling forming a pivot means for interconnection of the other ends of said links, said pivot means comprising a pivot pin forming a latch-bolt in the releasable coupling and being displaceable in its longitudinal direction in a transverse bore in one of the links, the other link being formed with a plurality of transverse recesses spaced apart along the length of said link and adapted to selectively receive a portion of said bolt according to the desired opening position of the window.



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