March 16, 1954 J. E. HAYNES 2,672,362

SASH LOCKING DEVICE

Filed Nov. 22, 1950

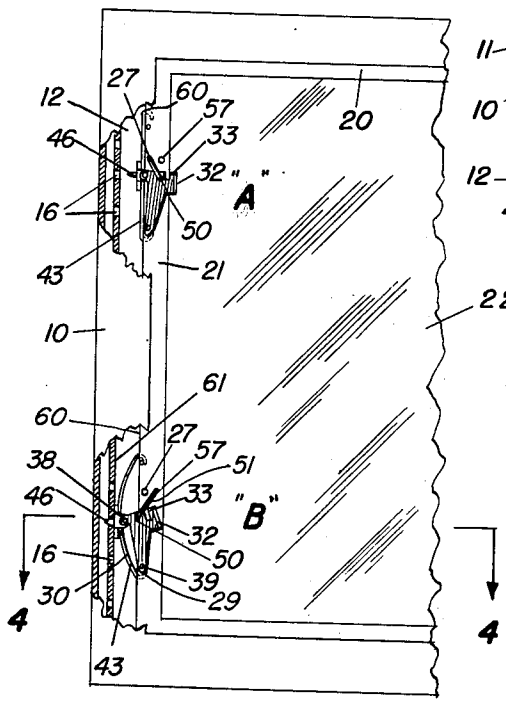


FIG. 1

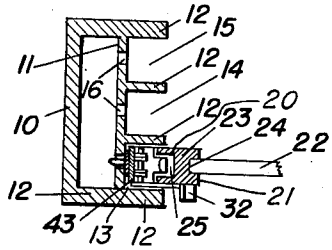


FIG. 4

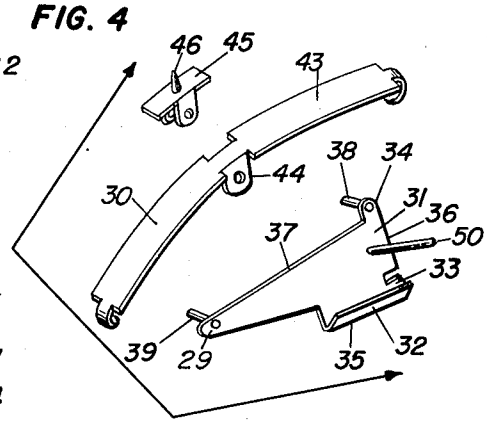


FIG. 3

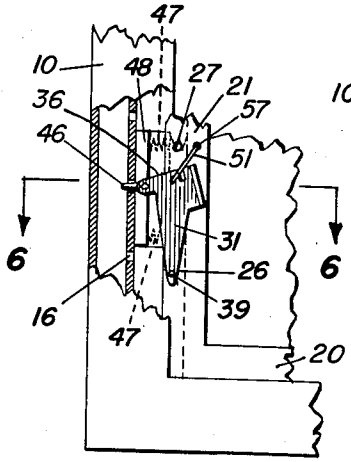


FIG. 5

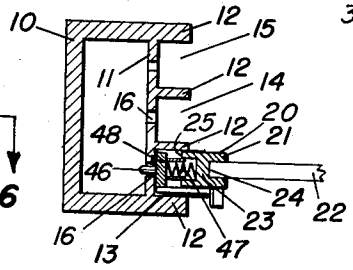


FIG. 6

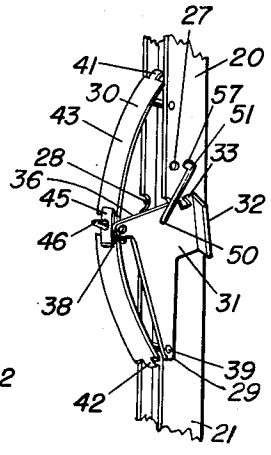


FIG. 2

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SASH LOCKING DEVICE

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1 Claim. (Cl. 292—66)

1

This invention relates to building construction and more particularly to window structures adapted for the removal of the auxiliary sashes of the storm window type.

It has among its objects the provision of a removable window sash of a new and improved construction that will include a number of particular advantages not heretofore anticipated in the prior art.

Another object of the invention is to provide a new and improved auxiliary window sash that will be removable and replaceable easily and effectively without the need of special tools.

A further object of this invention is to provide a new and improved auxiliary window sash that can be removably attached to a window frame in a secure and effective manner, having facilities for permitting it to be moved up and down in so-called opening and closing operations, in an adjustable manner.

An additional object of this invention is to provide a new and improved auxiliary window sash that will have an operating element incorporated in it for controlling its holding and locking functions while the sash is in place in its frame.

Still another object of this invention is to provide a new and improved auxiliary window sash that can be made replaceable in a conventional manner with the additional provision of being made burglar proof.

Another object of the invention is to provide in the structure of an auxiliary window sash intended for storm and incidental purposes and conveniences, an arrangement that will permit means for locking it selectively in open and closed position, against removal and other items desirable in its practical use.

Another object is to provide fastening units on the sash that can be operated individually and with a minimum amount of force or strength involved to place it in the frame.

Other objects of the invention will be apparent as it is more fully described.

For a better understanding of the invention reference is made to the accompanying drawings wherein a particular form of the invention is indicated by way of example. Such drawings are explained in the following description while the claim emphasizes the scope of the invention.

In the drawings:

Figure 1 is an inside elevation of an auxiliary sash unit placed in a window frame of the conventional metal type, with a fastening element embodying this invention, attached parts of the structure being broken away to indicate the manner of their attachment and operation;

Figure 2 is a perspective view of the window sash and tightening and locking device mounted on the sash;

2

Figure 3 is an exploded view in perspective of the tightening and locking element;

Figure 4 is a sectional view taken on line 4—4 of Figure 1;

Figure 5 is an inside elevation of a modified form of fastening unit, and

Figure 6 is a sectional view taken on line 6—6 of Figure 5.

Similar parts throughout the figures are represented by the same reference numerals.

The conventional types of replaceable windows used for buildings at the present time, consist of a special frame in which the window sashes reciprocate up and down. The sashes are made removable by making their peripheral window framework removable at one side. This enables them to be slipped in and out of the frame. Another method used for holding the sash comprises the use of flat springs extending outwardly from the sash into the rectangular recesses of the channels forming this frame. The springs act as a frictional resistance to hold the sashes and to prevent them from falling out of the channels. The limitations of the present construction are particularly emphasized by the operations involved in the removal or replacement of the sashes in the frames. To do this replacement requires special tools, training and particular skill on the part of the operators. When the springs are used, it is necessary to press the sash sidewise in the frame to compress the springs, and pull the other side inward and out of the frame. This is a very difficult operation as all springs must be compressed at the same time. In this invention, the springs are used, but can be controlled individually so that each can be depressed or released separately with slight effort until all are operated, with the sash ready for its placement. When the springs are released to secure the sashes in place, they are taken care of individually also until all are properly operated. Little effort is required for each individual operation, so that practically anyone can do the work. This enables the work to be done without any particular tools. The invention includes a simple element easily attachable to or removable from the sash framework and it carries the resilient parts, catches and bolts desirable in its use in a single assembly, with the additional feature of being easily handled. It provides for the adjustable positioning of the sash in the frame and other valuable and practical items.

In the drawings, a storm window frame 10 of conventional channel form is commonly employed to hold removable sashes. It consists of a back 11 with four flanges 12 extending out at right angles from the back. These flanges provide three U-formed recesses 13, 14 and 15 longitudinally along the vertical sides of the frame, in the outer two 13 and 15 slide the sashes and a

screen slides in 14. The term, storm window is interpreted broadly in this description, as it is intended to include window sashes of glass, screening or otherwise within their frameworks, and not simply for storm purposes in the usual limited sense.

The frame 10 is adapted to take the sides 21 of a sash framework 20 having a glass panel 22 mounted in it. The peripheral construction of the sash forming the framework is of channel form with a central web 23 throughout longitudinally. This web 23 separates the channels 24 and 25 on both sides thereof, one for the glass panel 22 and the other usable for the frame engaging parts used with the framework 20. The vertical sides 21 of the framework 20 are used for the fastening elements 30 removably attachable to them. The elements 30 are placed spacedly on one of the sides 21 of the framework 20 at suitable locations to enable them to hold the sash to the window frame 10. When the elements 30 are compressed they leave the width of the framework 20 short enough to permit the insertion of the vertical sides thereof into the channels 13 and 15. After these sides are in the channels the elements 30 are relaxed so their parts extend into and are held in the channels. The elements 30 are of the general construction shown in Figures 2 and 3. They comprise a manipulator 31, preferably of the type shown. It is preferably made from flat metal or other suitable material bent with a right angle lip 32 on one side 35 and a depressed pointed clip 33 on another side 36, while a lug 34 extends from another side 37. A pin 38 extends out from the lug 34 at right angles to the rear face of the manipulator and serves as stop for limiting the movement of the manipulator. It registers into a semicircular slot 28 in the edge of the side 21 of framework 20 when the element is working in closed or depressed position. A pivot pin 39 extends likewise from another portion or leg 29 of the rear face of the manipulator and serves as a pivot on which to rotate the manipulator across the face of the framework 20. This pivot pin 39 fits in a hole 26 in the framework 20. A leaf spring 43 provided with medial lateral wings 44 is pivoted to the pin 38 through the intermediary of a saddle 45 resting on the middle of the spring. This saddle straddles the spring and has laterally depending ears fitting over the wings 44. The pin 38 extends through aligned openings in the ears and wings. The saddle 45 also has an upstanding projection 46 for a purpose to be described later. The manipulator 31 is provided with a movable catch 50 having a hooked pin terminal 51 adapted to move in and out of spaced holes 27 and 57 provided in the framework 20.

Two sets of elements 30, which numeral is applied to the group of elements shown in Figure 3, are used in Figure 1. For the sake of illustration, the upper set or position "A" is indicated at the top of this figure and the lower set is shown in another or position "B."

In opposition "A" the sash is free for movement and the spring 43 is flat against the side edge 59 of frame 20 because the lip 32 of the manipulator 31 has been pulled to the right, pivoting the manipulator about pin 39, thus pulling the pin 38 and saddle 45 in the same direction to flatten the spring. The manipulator 31 is locked in this position due to the pin 51 of catch 50 being entered in the hole 27 in the framework 20. Now the sash can be slid.

For locking the sash, the manipulator is moved to position "B" with the pin 51 moved out of the hole 27 and the spring 43 bowing out as shown. In this position, the spring presses against the back 61 of either channel 13 or 15, as the case may be, and this frictional contact holds the sash tight in the frame 10. Depressions 16 are provided in the web 11 of the frame 10 so that the projection 46 of the saddle 45 may hold the sash in different positions of adjustment. The movable catch 50 is then inserted in the hole 57 in framework 20 and the sash is secured in place. The lip 32 serves as a finger hold to facilitate the movement of the manipulator 31.

In the modified form shown in Figures 5 and 6, the resilient member consists of coil springs 47 supporting a flat bar 48 serving as the frictional contact for the fastening element. The springs 47 resiliently adjust the position of the bar and enable it to adapt itself to the conditions that it encounters. The bar is held by the manipulator in a pivoting manner by its pin 39 and the recesses are arranged in the sash frame 20 so they will hold the lower ends of the springs 47 and keep them in place. The fastening element works in a similar manner to the first described form and the other items of its construction are substantially like it and do not seem to need further detailing.

The salient features of the fastening element include a simple construction, an effective operation, a less burdensome arrangement for replacement of the sash, protection against unauthorized opening, slipping of the windows when open, and positive adjustment to designated positions.

While two forms of the invention have been disclosed herein, it is not intended to limit the construction of devices to these particular forms, as it is appreciated that other structures could be made that employ the same principles and come within the scope of the appended claim.

Having thus described the invention, what is claimed is:

A sash locking device adapted to be used between a sash and a frame therefor, comprising a leaf spring having its free ends normally pressing against the edge of the sash, said spring being bowed toward the frame, a manipulator for said spring pivoted to the sash and positioned between the sash and the frame, a saddle straddling the spring and secured thereto medially and outwardly thereof, a projection carried by said saddle and extending outwardly therefrom towards the frame, pivot means between said manipulator and saddle, whereby pivotal movement of said manipulator about its pivot on the sash in either of two opposite directions causes flattening of the spring against the edge of the sash or bowing of the spring towards the frame to permit the aforesaid projection to contact the frame, and means for positively locking the said manipulator with the spring in flattened or bowed position.

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