Jan. 21, 1958 H. H. RING 2,820,659

OPERATOR FOR SWINGING WINDOW SASHES

Filed Sept. 1, 1955

Fig. 1

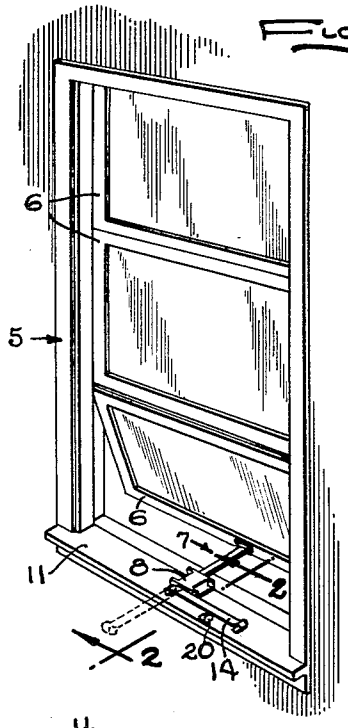


Fig. 2

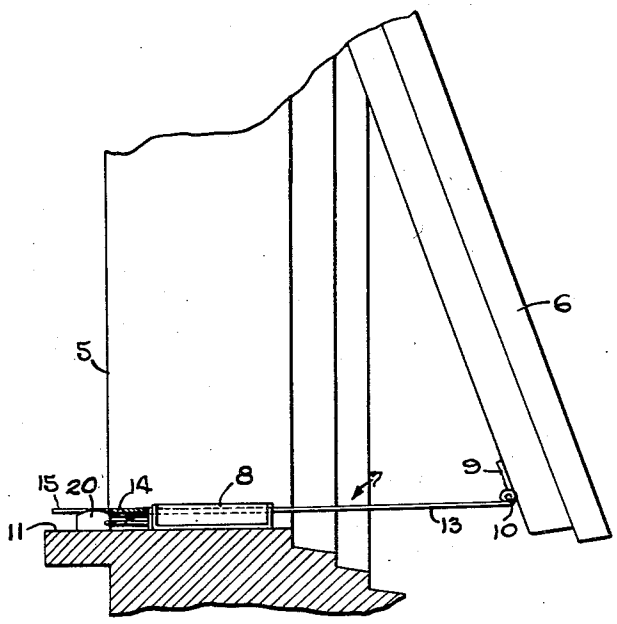


Fig. 3

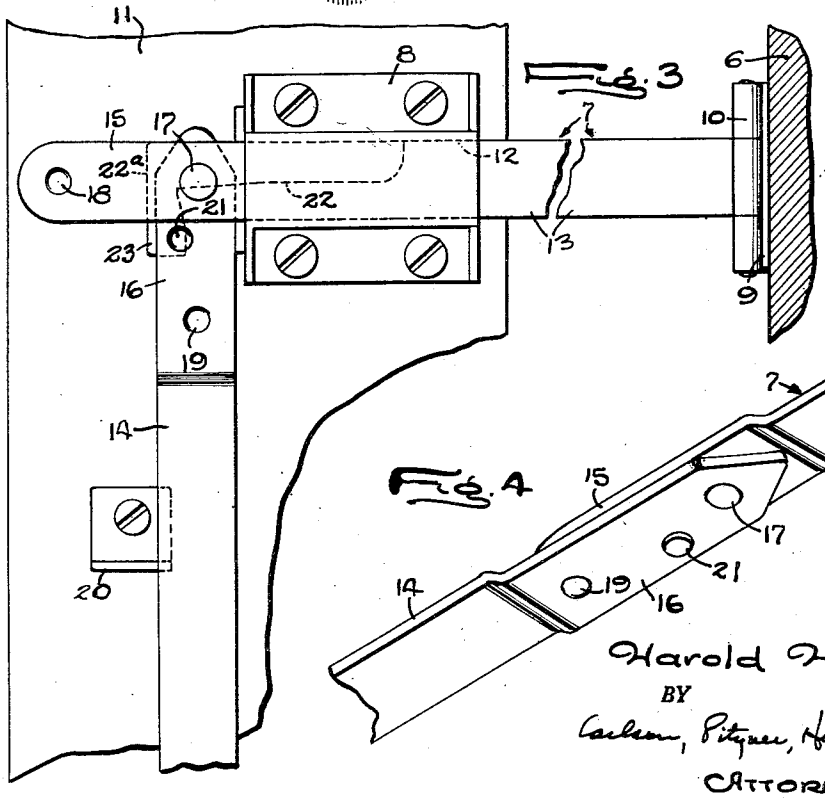


Fig. 5

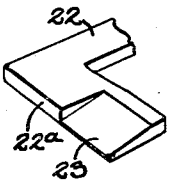


Fig. 4

INVENTOR.
Harold H. Ring
BY
Carlson, Pitzner, Hubbard & Wolfe
ATTORNEY

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OPERATOR FOR SWINGING WINDOW SASHES

Harold H. Ring, Rockford, Ill., assignor to Amerock Corporation, a corporation of Illinois

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2 Claims. (Cl. 292—262)

This invention relates to an operator for opening a window with a swinging sash such as in a so-called awning window in which the sash swings on the window frame about a horizontal axis. More particularly, the invention relates to an elongated operator which is secured to the sash and slides endwise in a guide on the frame to open and close the sash.

In some instances, operators of this type are jointed intermediate their ends so that the outer part of the operator may be swung laterally out of alinement with the inner part when the sash is partially open. With the outer part in this position, it not only is out of the way but it also engages the back of the guide and serves to hold the sash in the semi-opened position.

One object of the invention is to provide a new and improved operator of the above character with a means for signalling when the sash is in the proper position for swinging of the outer operator part, that is, when the outer part is out of the guide and is disposed immediately behind the latter.

Other objects and advantages of the invention will become apparent from the following detailed description taken in connection with the accompanying drawings, in which

Figure 1 is a perspective view of a window having an operator constructed in accordance with the present invention.

Fig. 2 is an enlarged fragmentary sectional view taken along the line 2—2 in Fig. 1.

Fig. 3 is a fragmentary plan view of the operator and associated parts.

Fig. 4 is a fragmentary perspective view of the operator.

Fig. 5 is a fragmentary perspective view of a part providing the signal.

As shown in the drawings for purposes of illustration, the invention is embodied in a window comprising a rectangular frame 5 and one or more sashes 6 closing an opening in the frame. In the present instance, there are three such sashes and each is mounted on the frame to swing about a horizontal axis which extends along the upper edge of the sash. The latter is opened by pushing outwardly on the lower edge thus swinging the sash about this axis.

To open the lower sash, an elongated operator 7 is secured at one end to the lower edge of the sash and is guided by a member 8 for endwise movement along a path perpendicular to the window opening. The operator is secured to the sash through the medium of a plate 9 which is pivotally connected to the end of the operator by a horizontal hinge 10. The guide 8 is secured to the sill 11 of the frame 5 and is formed with an elongated channel 12 (Fig. 3) which is perpendicular to the window opening and receives the operator. Thus, by sliding the operator endwise in the guide, the sash is swung between the open and closed positions.

In order to hold the sash 6 part way open such as is illustrated in Fig. 1, the operator 7 is jointed intermediate

its ends, that is, it is composed of two parts 13 and 14 pivoted together so that the outer part may be swung laterally in behind the guide and out of the way when the sash is in the partially opened position. In this way, the operator does not project beyond the window frame even though the sash is not fully opened.

Herein, the two parts 13 and 14 of the operator are in the form of elongated bars having overlapping end portions 15 and 16 (Fig. 4). These end portions are joined by a pivot 17 adjacent the extreme end of the outer bar 14 so that the latter may swing relative to the inner bar about the axis of the pivot. A lug 18 projecting downwardly from the end portion 15 of the inner bar 13 is received in a depression 19 in the end portion 16 of the outer bar 14 and serves as a yieldable detent for normally holding the two bars in alinement.

When the pivot 17 is just behind the guide 8, the sash 6 is in the position in which the outer bar 14 may be swung from its normal position shown in broken lines in Fig. 1 through a right angle to its out-of-the-way position illustrated in full lines. The outer bar is somewhat yieldable and is raised over a latch member 20 as it is moved to the out-of-the-way position. The latch member holds the outer bar in place and is in the form of a small angle bar fastened to the window sill.

The present invention contemplates the provision of a novel means which signals when the sash is in the partially opened position and which, at the same time, permits the operator to slide the sash to either the fully opened or fully closed positions. This means comprises an abutment 21 which is on one of the bars 13 and 14 and which engages a part 22 rigid with the guide when the pivot 17 is immediately behind the guide. The abutment striking the part provides a signal to indicate that the outer bar may be swung out of alinement with the inner bar. The abutment may, however, ride over the part to permit continued sliding of the operator 7.

In the present instance, the abutment 21 is in the form of a small ear struck down from the end portion 16 of the outer bar and disposed behind the pivot 17. As the bar is pushed out to open the sash, the ear engages the part 22 which may, as illustrated, be an L-shaped piece attached to the guide under the operator and projecting rearwardly from the guide. The ear 21 strikes the heel 22a of the piece 22. The heel is squared to provide a solid stop but, beyond the heel, the outer edge of the leg 23 of the piece is beveled. Thus, as the outer bar 14 is swung out of alinement with the inner bar 13 to the position shown in Fig. 3, the ear 21 rides up on the inclined surface 23 and, in this way, there is little or no tendency of the inner bar 13 to be drawn back through the channel 12 during such swinging of the outer bar.

With the foregoing arrangement, the sash is opened by sliding the operator outwardly through the channel 12 of the guide. When the sash is about halfway open, the ear 21 strikes the leg 23. This is a signal that the outer bar 14 is just out of the channel and in position to be swung laterally in behind the guide and over the latch 20. The person opening the window may, therefore, turn the outer bar in this manner to hold the sash in the semi-opened position. On the other hand, if it is desired to open the window completely, he may continue pushing the operator in which case the outer bar yields slightly to permit the ear 21 to ride over the leg 23. This permits the continued sliding of the operator so that the window may be swung closed.

I claim as my invention:

1. In a window having a sash hinged to swing about a horizontal axis on the frame of the window, the combination of, a first bar connected at one end to the window sash and projecting outwardly from the sash, a second

elongated bar having one end portion overlapping the other end of said first bar, a pivot connecting the overlapped end portions of said bars and permitting said second bar to be swung laterally out of alinement with said first bar, a guide secured to said frame and having a channel receiving said bars and guiding the bars when in alinement for sliding back and forth to swing the sash open and closed, a member rigid with said guide and providing a stop disposed behind and facing away from said channel, and a projection rigid with said second bar and operable when said bars slide in a direction to open said sash to engage said stop when said pivot is behind said channel and said sash is partially open, the engagement between said projection and said stop providing a signal that said second bar may be swung out of alinement with said first bar and in behind said guide and said two bars being yieldable to permit said projection to pass over said stop and allow continued endwise sliding of the bars.

2. In a window having a sash hinged to swing about a horizontal axis on the frame of the window, the combination of, a first bar connected at one end to the window sash and projecting outwardly from the sash, a second elongated bar having one end portion overlapping the other end of said first bar, a pivot connecting the overlapped end portions of said bars and permitting said second bar

to be swung laterally out of alinement with said first bar, a guide secured to said frame and having a channel receiving said bars and guiding the bars when in alinement for sliding back and forth to swing the sash open and closed, a member rigid with said guide and providing a stop disposed behind and facing away from said channel, a projection rigid with said second bar and operable when said bars slide in a direction to open said sash to engage said stop when said pivot is behind said channel and said sash is partially open, the engagement between said projection and said stop providing a signal that said second bar may be swung out of alinement with said first bar and in behind said guide and said two bars being yieldable to permit said projection to pass over said stop and allow continued endwise sliding of the bars, and an inclined surface on said member adjacent said stop, said projection riding on said surface when said second bar is swung out of alinement with said first bar.

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