

June 17, 1924.

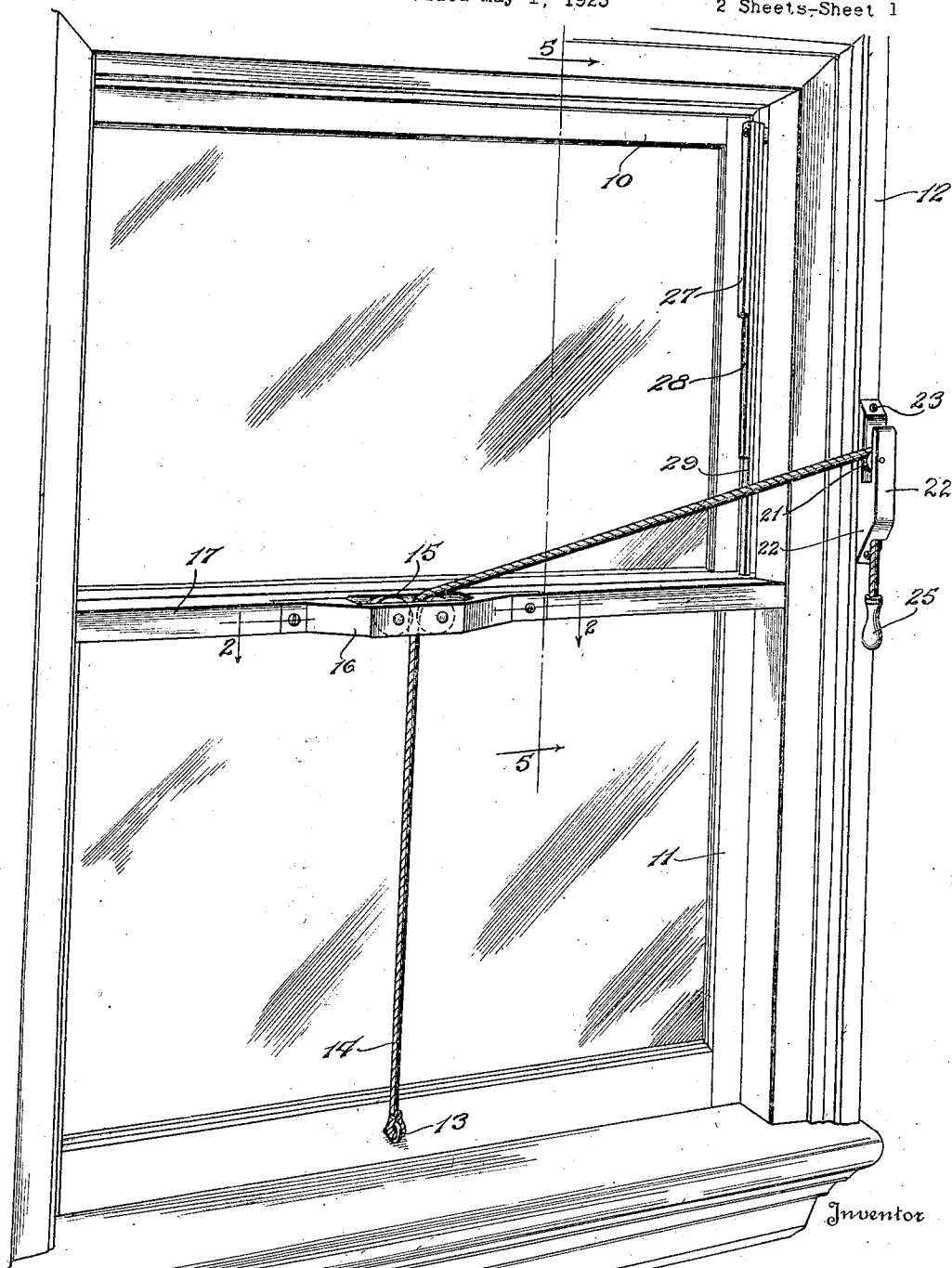
J. WILLIAMS

1,497,821

WINDOW OPERATING DEVICE

Filed May 1, 1923

2 Sheets-Sheet 1



Josephine Williams.

By  
Fig. 1. Lowy, Hovey, Attorneys

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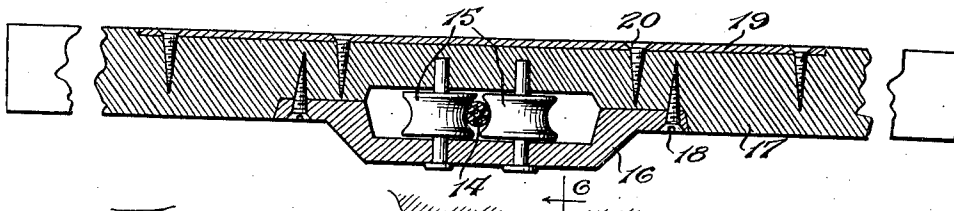
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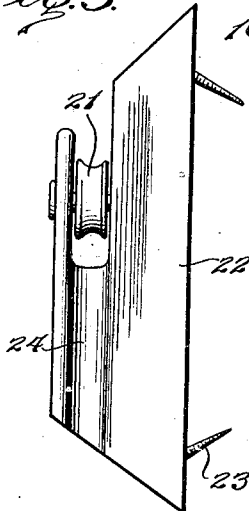
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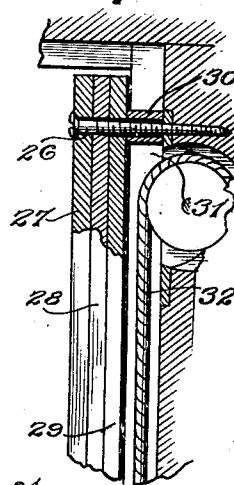
*Fig. 2.*



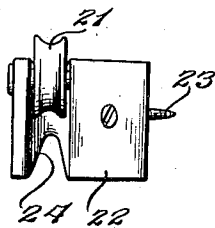
*Fig. 3.*



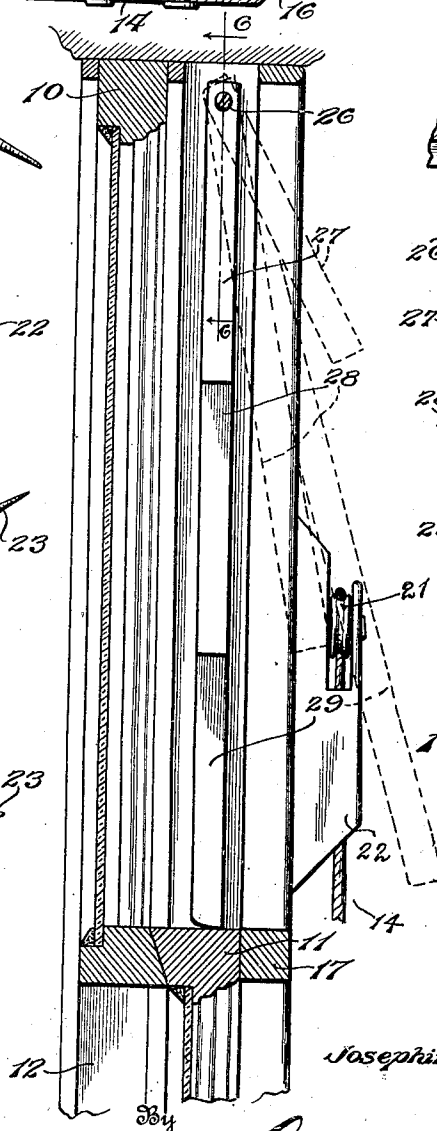
*Fig. 6.*



*Fig. 4.*



*Fig. 5.*



Inventor

Josephine Williams

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## UNITED STATES PATENT OFFICE.

JOSEPHINE WILLIAMS, OF MOBILE, ALABAMA.

## WINDOW-OPERATING DEVICE.

Application filed May 1, 1923. Serial No. 635,989.

To all whom it may concern:

Be it known that I, JOSEPHINE WILLIAMS, a citizen of the United States, residing at Mobile, in the county of Mobile and State of Alabama, have invented certain new and useful Improvements in Window-Operating Devices, of which the following is a specification.

My invention relates to a device for opening windows and securing the same whether in closed or open position.

One object of the invention is to provide a device of this class, by means of which the lower window sash may be raised or lowered with great ease and without exposing the operator in front of the window. The advantage of this arrangement is that the operator will not be exposed to the cold wind or rain when closing the window, or that he will not be seen from the outside when raising or lowering the sash.

Another object is to provide stops to limit the upward movement of the lower sash, so that if the window is partly open, an unauthorized person could not raise the sash further to enter from the outside.

A still further object is to provide means for securing the sash against closing when in open position.

In the accompanying drawings one embodiment of the invention is illustrated, and:

Figure 1 shows a front elevation of a window seen from the inside, with the device in position;

Figure 2 is a horizontal section along line 2—2 of Figure 1 with the sash omitted;

Figure 3 is a side elevation of one of the details;

Figure 4 is a plan view of Figure 3;

Figure 5 is a fragmentary vertical section along line 5—5 of Figure 1; and

Figure 6 is a fragmentary vertical section along line 6—6 of Figure 5.

The window is represented with an upper sash 10 and a lower sash 11, which are mounted in the ordinary way to slide up and down in the window frame 12. At the bottom of the lower sash 11 is secured by means of a screw eye 13, the lower end of a rope 14, as best seen in Figure 1. This rope is drawn upwards between a pair of guide rollers 15 carried in a suitable bracket 16, attached to a cross bar 17. The bracket 16 is preferably detachable, as indicated in Figure 2, and held in position on the cross

bar 17 by means of screws 18 or the like, and the bracket is shown in this figure to be partly laid into the cross bar 17 in order to provide a very firm connection. The opposite side of the cross bar 17 has a reinforcing plate 19 of greater length than the bracket 16 and also secured by screws 20 or the like.

The cross bar 17 may be placed at any height in the window frame, but is preferably positioned, as seen in Figure 1, with the lower sash 11. This cross bar 17 is of such a length that it will fit tightly between the upright sides of the window frame without other securing means, but it is to be understood that, if preferred, a small shelf or bracket could be attached to the sides of the window frame, upon which the cross bar 17 could rest. It is evident, however, that if the cross bar 17 is inserted in the frame with the right hand end, as seen in Figure 1, held higher than the left hand end, the pull on the rope 14 would tend to tighten the grip between the bar and the frame.

From the guide rollers 15, the rope 14 is taken towards the right of the window, as indicated in Figure 1, and led over another guide roller or pulley 21, which is revolvably mounted in a cleat or block 22 attached to this side of the window frame by means of screws 23 or the like. As best seen in Figures 3 and 4, this guide block has a longitudinal groove 24 running in vertical direction along the outer side thereof as shown on the frame, and this groove is made of such a width that it will tightly hold the rope 14 when the latter is pressed into the groove. In this manner, after the lower sash 11 has been raised it will be held in this position. At the end of the rope is furnished a suitable handle 25, and it is evident that with a sideways jerk on the handle, the rope 14 will be released from the groove 24, and the sash thereupon raised or lowered as the case may be.

When in position, this device will be almost entirely concealed by the window curtains and nothing would be seen but the perpendicular portion of the rope between the guide rollers 15 and the lower end of the sash 11, and it will also be evident that the person intending to raise the window can stand to one side thereof and pull the handle 25 to raise the sash 11.

On a pivot 26 secured at the upper end

of the window frame along the inner side of the upper sash, are suspended several arms 27, 28 and 29 of different lengths, as seen in Figures 1, 5 and 6.

5 In order not to interfere with the free action of the sash ropes upon which the sashes are hung, the pivot 26 for the arms will be provided with a spacing sleeve 30 and preferably threaded into the window frame.  
10 This spacing sleeve should be of a length that is slightly greater than the depth of the groove 31 provided for the sash rope 32. In this manner, the innermost arm 29 will always swing free of the frame.

15 The arms are preferably arranged with the long arm 29 innermost and the short arm 27 outermost, so that when the lower sash is in closed position, its upper edge will abut against the end of the long arm 29, so that in this position, the lower sash is completely locked without the use of an ordinary latch. In order now to raise the sash 11, the first thing to do is to push the long arm 29 inwardly, as indicated in Figure 2, whereupon the rope 14 may be jerked  
25 out of the groove 24 by a sideways pull on the handle 25 and the sash 11 raised. If now the middle arm 28 remains in its housed position, the lower end thereof will form a stop, against which the sash 11 will abut, thereby limiting its upward movement when  
30 the rope 14 may be pressed into the groove 24. In this manner the sash 11 will be held rigidly in its partly open position and can not be either raised or lowered from the outside.

If it is intended to raise the sash 11 still further, the middle arm 28 may be swung inwardly into the room when it will be possible to raise the sash until it strikes the short arm 27, and lastly, to open the sash 11 completely, the arm 27 will also have to be swung inwardly.

45 It will be evident that instead of pivoting the arms 27, 28 and 29, of which there may be any number on the frame, they may be journaled on the upper sash 10 and then preferably swung across the window instead of into the room. In this case, the upper and lower sashes will be interlocked, so that neither the lower sash 11 can be raised, nor the upper sash 10 lowered without swinging one or more of the arms out of engagement with the lower sash.

55 If it is preferred to have the block 22 on the left instead of on the right side of the window, the groove 24 would naturally be placed on the outer side thereof.

One great advantage of this device is that  
60 a window sash can be raised without interfering with or disturbing the shades or cur-

tains, and the sash may be raised without the slightest noise and without the operator being seen from the outside.

It has been found by practice that the raising of the window requires so little effort that a small child of five years can do the work provided the rope is of sufficient length to be reached by the child.

In case the window is open and a rain shower starts, the sash can easily be lowered without the person doing the work getting wet.

Having thus described the invention what is claimed as new is:

1. A window operating device comprising a flexible member having one end secured to a window sash, guiding elements for said member carried in the window frame, means for securing the other end of said member in selective positions on a fixed support, and a series of abutment members pivotally mounted above said sash, said abutment members being of different lengths and normally positioned in the path of the sliding sash.

2. A window operating device comprising a flexible member having one end secured to a window sash, guiding elements for said member carried in the window frame, means for securing the other end of said member in selective positions on a fixed support, a series of abutment members pivotally mounted above said sash, said abutment members being of different lengths and normally positioned in the path of the sliding sash, said guiding elements including rollers, and a bracket on which said rollers are revolubly mounted, said bracket being held tightly between the upright sides of the window frame.

3. A window operating device comprising a flexible member having one end secured to a window sash, guiding elements for said member carried in the window frame, means for securing the other end of said member in selective positions on a fixed support, a series of abutment members pivotally mounted above said sash, said abutment members being of different lengths and normally positioned in the path of the sliding sash, said guiding elements including rollers, a bracket on which said rollers are revolubly mounted, said bracket being held tightly between the upright sides of the window frame, said securing means including a block, a pulley revolubly mounted in said block, and a narrow groove into which said flexible member may be pressed being provided in said block.

In testimony whereof I affix my signature.  
Mrs. JOSEPHINE WILLIAMS. [L. S.]