June 20, 1944. A. H. SOULE 2,352,029

AWNING TYPE WINDOW OPERATOR

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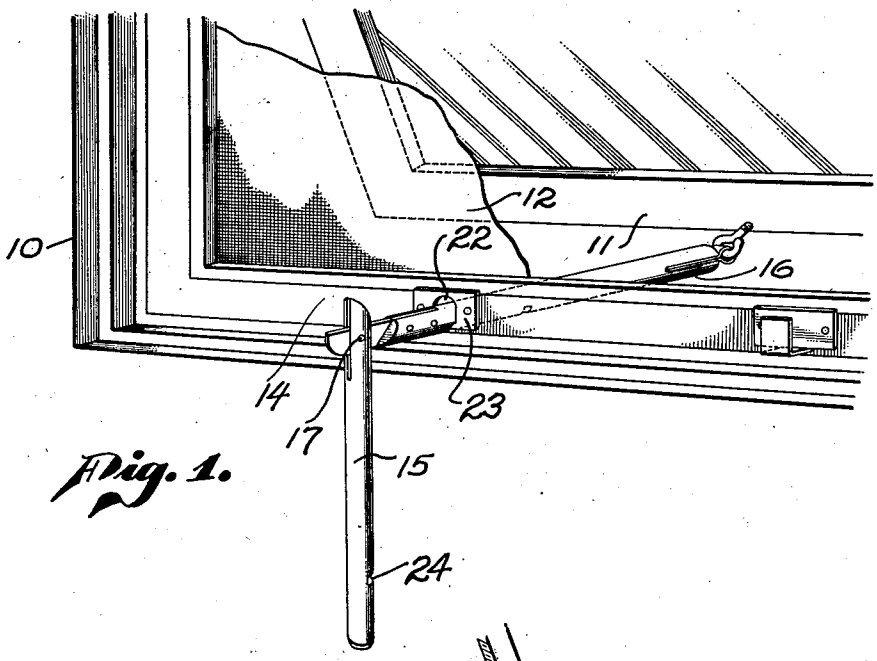



Fig. 1.

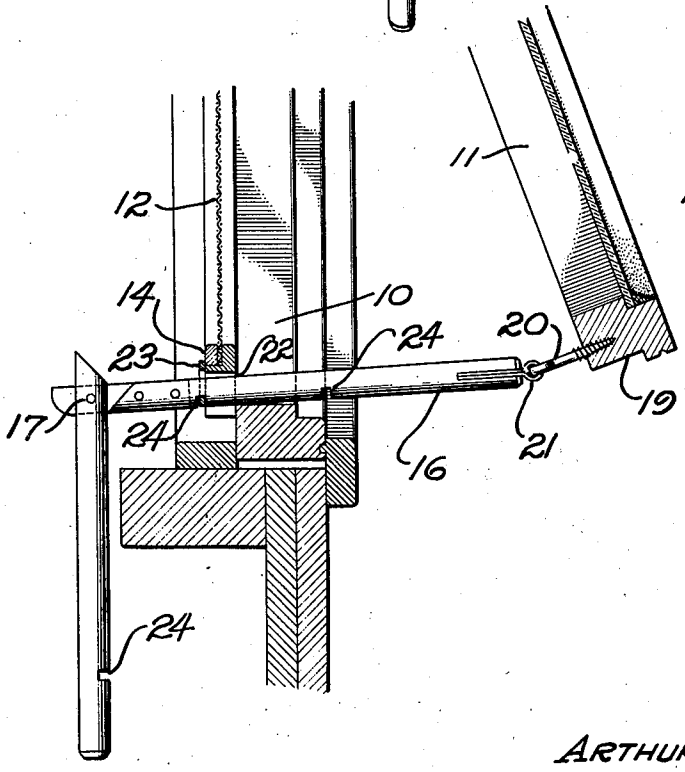



Fig. 2.

INVENTOR.
ARTHUR H. SOULE,
BY
Oscar A. Mellin
ATTORNEY.

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Fig. 3.

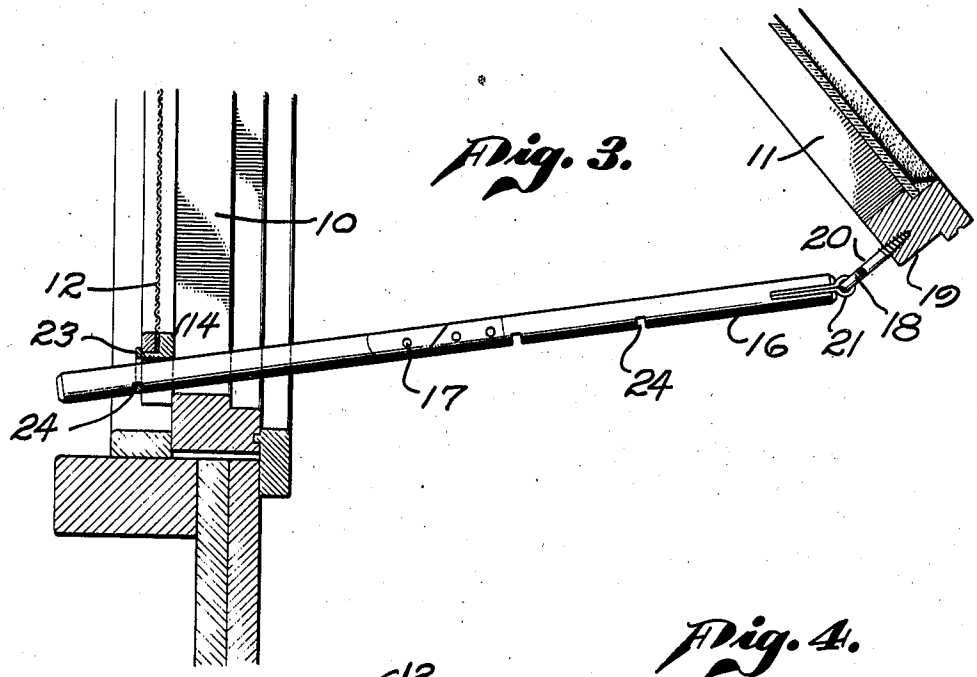
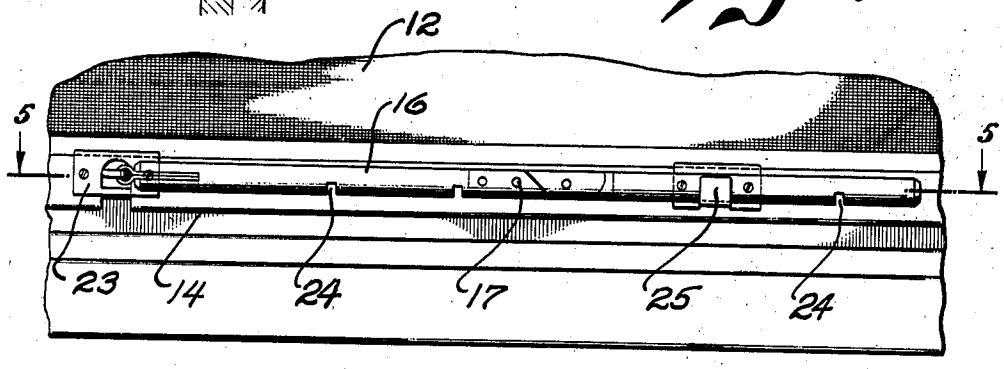



Fig. 4.



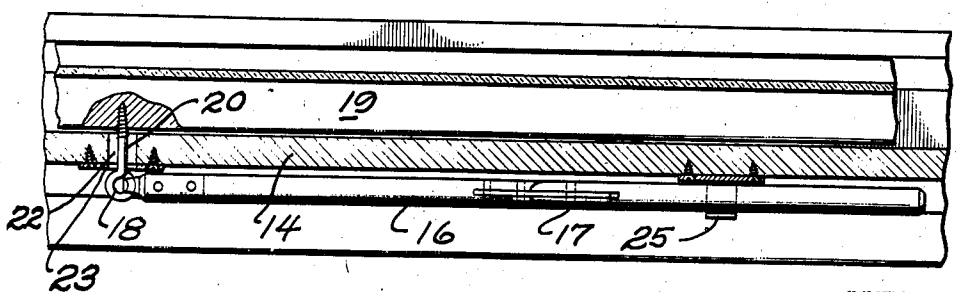




Fig. 5.

INVENTOR.
ARTHUR H. SOULE,
BY
Oscar A. Mellin
ATTORNEY.

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2,352,029

# UNITED STATES PATENT OFFICE

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## AWNING TYPE WINDOW OPERATOR

Arthur H. Soule, San Francisco, Calif., assignor to Dalmo Victor Co., San Francisco, Calif., a copartnership

Application February 10, 1943, Serial No. 475,411

2 Claims. (Cl. 160—95)

This invention relates to windows for buildings and particularly pertains to a sash operating means for awning type windows.

It is the principal object of the present invention to provide a simple and inexpensive sash operator for awning type windows which may be manipulated from the interior of the room to operate the sash without the necessity of opening the window screen, and to maintain the sash in a selected open position; which sash operator at all times may be placed in a non-obstructing position at the interior side of the window frame.

One form which the invention may assume is exemplified in the following description and illustrated by way of example in the accompanying drawings, in which:

Fig. 1 is a fragmentary view in perspective of an awning type window with the sash thereof in open position and disclosing my improved sash operator associated therewith.

Fig. 2 is a fragmentary view in central vertical section through the sash and window frame showing the manner in which my improved operator maintains the sash in open position.

Fig. 3 is a view similar to Fig. 2 except that it discloses the sash in fully opened position.

Fig. 4 is a fragmentary view in elevation taken at the interior side of the window frame and showing the sash operator in the position it assumes when the sash is in closed position.

Fig. 5 is a plan sectional view taken on line 5—5 of Fig. 4.

Referring more particularly to the accompanying drawings, 10 indicates a window frame having a sash 11 hung therein for awning type operation. The sash 11 is, of course, mounted at the exterior side of the frame as illustrated. In this type of window construction a screen 12 having a frame 14 is mounted in the interior side of the window frame.

It is desirable that the sash 11 be capable of operation from the interior side of the window frame 10 without the necessity of opening or removing the screen 12. For this purpose I have provided an improved sash operator which comprises an operator rod 16 formed in two sections which are connected by a knee-joint as at 17. One end of the operator rod 16 is connected by means of a universal joint 18 to the lower rail 19 of the sash 11. The universal joint 18 comprises an eye bolt 20 connected to the rail 19 of the sash and a similar eye 21 connected to the adjacent end of the operator rod 16.

The rod 16 projects through an opening 22 formed through the lower rail of the screen frame 14 just above the sill of the window frame. At the inner side of the opening 22 is a latch plate 23 adapted to cooperate with notches 24 in the under side of the operator rod 16. In the present instance I have shown but three notches 24 which correspond to different open positions of the sash. However, a fewer or greater number of such notches may be provided as desired.

It is obvious from the drawings that when the operator rod is projected outwardly through the opening 22, that the lower end of the sash 11 will be moved outwardly to open position. When the notch 24 corresponding to the selected open position registers with the latch plate 23 the rod is merely lowered so that the latch plate will engage the selected notch 24 and thus latch the sash in the selected open position.

In projecting the rod outwardly the sections thereof are, of course, held in aligned condition. This condition is continued if the last notch 24 is placed in registry with and engaged by the latch plate 23 to hold the sash in fully opened position. However, if either of the other notches are selected, the inner section of the operator rod will fold downwardly as illustrated in Fig. 2 so as to assume a non-obstructive position in the room.

When the sash is fully closed, the operator rod 16 may be arranged along the bottom rail of the screen frame 14 as illustrated in Fig. 4 and maintained in this position by means of a clip 25 also fixed on the bottom rail of the screen frame.

In operation of the device, assuming that the window is in closed position, the operator rod 16 is disengaged from the clip 25 and moved to a position at right angles to the bottom rail of the sash 11. The operator rod 16 is then projected outwardly through the opening 22 causing the sash 11 to swing outwardly to open position. When the sash 11 is swung to the desired open position, the operator rod 16 is lowered to cause engagement of the registering notch 24 with the latch plate 23 latching the sash 11 in position. If the selected notch is in the section of the operator rod 16 adjacent the sash 11, the other section of the operator rod 16 will drop down and assume a vertical position as illustrated in Fig. 2. If the notch 24, which engages the latch plate 23 is in the section of the operator rod 16 farthest from the sash 11, the rod 16 will assume the position shown in Fig. 3 with both sections thereof in alignment.

To close the sash 11 it is merely necessary to slightly elevate the operator rod 16 to disengage the notch 24 from the latch plate 23 and draw the rod 16 inwardly until the sash 11 is in closed

position. Then the operator rod **16** is swung at right angles so that it will lie adjacent and parallel to the lower rail of the screen frame **14** as shown in Fig. 4 at which time its free end may be engaged with the clip **25** to maintain its unobstructing position as is illustrated. This likewise latches the sash in closed position.

From the foregoing it is obvious that I have provided a very simple and inexpensive sash operator for awning type windows by means of which the sash may be operated without the necessity of opening the screen at the interior side of the window frame.

It is also pointed out that this sash operator is so constructed that at no time will it project in an obstructing position within the room.

While I have shown the preferred form of my invention, it is to be understood that various changes may be made in its construction by those skilled in the art without departing from the spirit of the invention, as defined in the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In combination with a window frame having a vertically swingable sash hung therein for awning type of operation, a screen having a screen frame mounted in the window frame at the side thereof opposite the sash, an elongated operating rod knee-jointed intermediate its ends, a hinged connection between one end of the rod and the lower rail of the sash, the lower rail of the screen frame having an opening formed therethrough in alignment with the connection between the rod and sash and through which the rod projects, latch means at the perimeter of said opening adjacent the bottom thereof, the bottom of said rod being formed with spaced notches to engage said latch means by gravity.

2. In combination with a window frame having a sash hung therein for awning type of operation, a screen having a screen frame mounted in the window frame at the side thereof opposite the sash, an elongated operating rod knee-jointed intermediate its ends, a universal connection between one end of the rod and the lower rail of the sash, the lower rail of the screen frame having an opening formed therethrough in alignment with the connection between the rod and sash and through which the rod projects, latch means at the perimeter of said opening adjacent the bottom thereof, said rod being formed with spaced notches to engage said latch means and means on the bottom rail of the screen frame spaced from said opening to removably grip said rod when same is positioned parallel and adjacent to said rail.

ARTHUR H. SOULÉ.