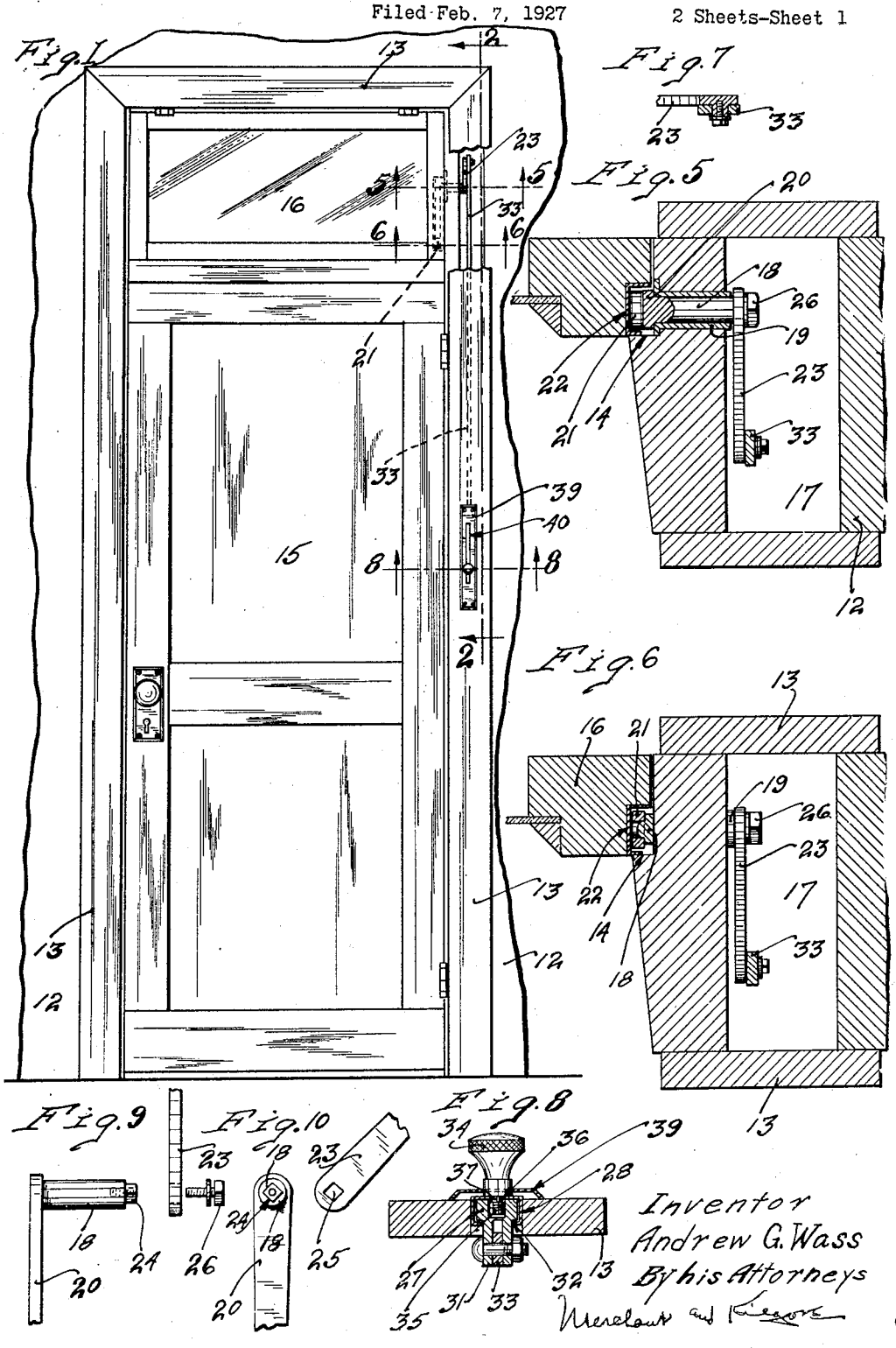
Dec. 6, 1927. 1,651,494

A. G. WASS

SASH OPERATOR

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Fig. 1

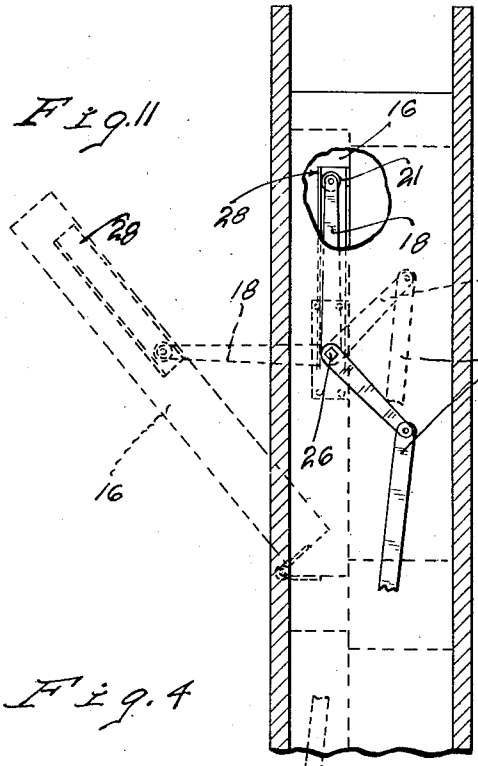


Fig. 2

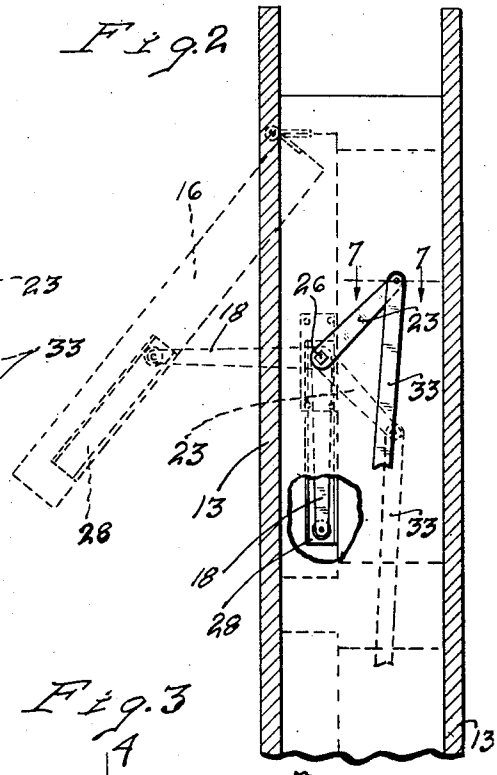


Fig. 4

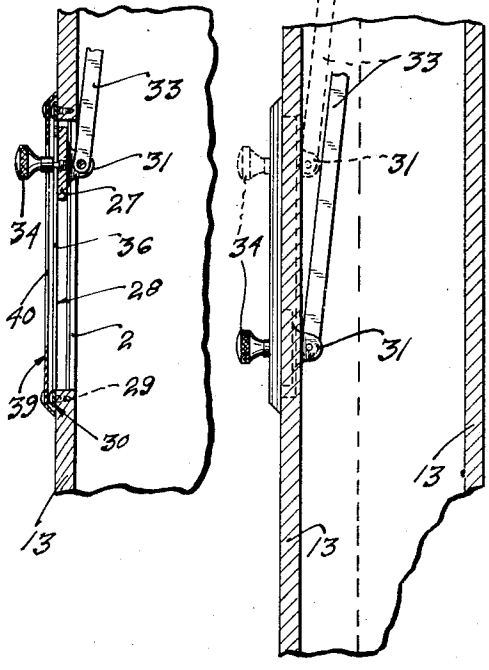
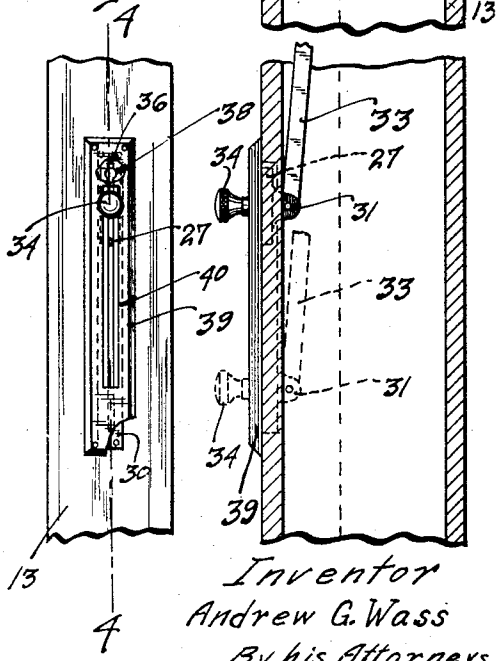


Fig. 3



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Patented Dec. 6, 1927. 1,651,494

UNITED STATES PATENT OFFICE.

ANDREW G. WASS, OF MINNEAPOLIS, MINNESOTA.

SASH OPERATOR.

Application filed February 7, 1927. Serial No. 166,333.

My present invention relates to a sash operator and more particularly a transom operator and has for its object to provide such an operator in which substantially all of its working parts are concealed and that is extremely simple and at the same time very positive and quick in its action. Said invention also affords means by which the sash to which it is applied may be locked closed or in various different open positions. Furthermore, said invention may be readily adjusted for operating a sash that is hinged either at its top or bottom.

Generally stated, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 is a fragmentary view showing the invention arranged to operate a transom over a door;

Fig. 2 is a fragmentary view principally in vertical section taken on the line 2—2 of Fig. 1, on an enlarged scale, with some parts shown in different positions by means of broken lines;

Fig. 3 is a view showing the operating knob of the device and casing plate through which it works;

Fig. 4 is a view principally in section taken on the line 4—4 of Fig. 3;

Fig. 5 is a view principally in section taken on the line 5—5 of Fig. 1, on an enlarged scale;

Fig. 6 is a detail view principally in section taken on the line 6—6 of Fig. 1, on an enlarged scale;

Fig. 7 is a detail view principally in section taken on the line 7—7 of Fig. 2, on an enlarged scale;

Fig. 8 is a detail view principally in section taken on the line 8—8 of Fig. 1, on an enlarged scale;

Fig. 9 is a view showing the two arms separated at their pivotal connection;

Fig. 10 is a side view of the arms as shown in Fig. 9; and

Fig. 11 is a view corresponding to Fig. 2 with the exception that the transom is hinged at its bottom and the operator is adjusted therefor.

Referring first to the invention as illustrated in Figs. 1 to 10, inclusive, the numeral 12 indicates a wall having a door opening around which is built a door frame 13, the jambs of which have the customary door and transom stops 14. A door 15 is hinged to the frame 13 and a transom 16 is hinged to said frame over the door. The space in the casing 13 at the hinged edge of the door 15 affords a closed box 17 for the operator, as will presently appear. The parts thus far described have been illustrated simply for the purpose of showing the invention applied in working position.

It will be noted that the transom 16 is hinged at its top for swinging movement and that the device includes a short shaft 18 journaled in a sleeve bearing 19 mounted in a bore which extends transversely through the jamb of the frame 13 at the hinged edge of the door 15 at substantially the vertical center of the transom 16. Formed with the end of the shaft 18 at the transom 16 is an arm 20 having on the outer face of its free end a roller-equipped stud 21 which works in a channel member 22 mounted in a longitudinally extended rabbet in the outer edge of the adjacent stile of the transom 16. This roller-equipped stud 21 connects the arm 20 to the transom 16 for pivotal and travelling movement in respect thereto. It will be noted that the side flange of the channel member 22, next to the shoulder of the rabbet in the transom 16, has the same depth while the other side flange of said channel member is relatively shallow and leaves a space between its outer edge and the jamb of the frame 13 through which the arm 20 is free to swing during the opening and closing movements of the transom 16. When the transom 16 is closed, the arm 20 lies between the side flanges of the channel member 22 and the space between the outer side flange of the channel member 22 and the jamb of the door frame 13 is closed by the adjacent transom stop 14, as best shown in Figs. 5 and 6.

On the opposite end of the shaft 18 from the arm 20 and within the box 17 is an arm 23. Said arm 23 is detachably secured to the shaft 18 by the squared end 24 thereof for common movement with the arm 20 and which end extends through a correspondingly formed aperture 25 in the arm 23. A screw and washer 26 detachably hold the arm 23 on the squared end 24 of the shaft 18. The arms 20 and 23 are in bell-crank arrangement and by applying the arm 23 to

the shaft 18 in different positions on the squared end 24 thereof, the angle between the arms 20 and 23 may be varied, at will.

The following connections are provided for oscillating the arms 20 and 23 to open and close the transom 16 and for holding the same closed or in different open positions, towit: A block 27 is slidably mounted in a tubular guide member 28 that is substantially rectangular in cross section. This guide member 28 is mounted in an aperture in the casing 13 at the hinged edge of the door 15 and detachably secured thereto by screws 29 passed through apertured ears 30 on the upper and lower ends of said member which overlap and bear on the outer face of the respective member of the casing 13, as best shown in Fig. 4.

On the back of the sliding block 27 is a pair of laterally spaced apertured ears 31 which project through and work in a longitudinally extended slot 32 in the back of the guide member 28. A long link 33, within the box 17, pivotally connects the free end of the arm 23 to the ears 31, as best shown in Figs. 2 and 8.

Attached to the sliding block 27 and projecting laterally outward therefrom is a knob 34 by which said block may be operated for opening and closing the transom 16. It will be noted by reference to Fig. 1 that this knob 34 is in a convenient position so that it may be easily reached by the operator. The inner end of the knob 34 slidably engages the outer face of the guide member 28 and has a reduced stud 35 which projects through a longitudinally extended slot 36 in the outer face of the guide member 28 and has screw-threaded engagement with the sliding block 27. By turning the knob 34, the screw-threaded stud 35 may be turned into the sliding block 27 to frictionally clamp said block against the inner face of the guide member 28 and the knob 34 against the outer face thereof and thereby frictionally hold said block where set. It will thus be seen that by frictionally clamping the sliding block 27 to the guide member 28, the transom 16 will be locked closed or in various different open positions.

To prevent the knob 34 from becoming detached from the sliding block 27 the stud 35 is provided with a neck 37, the diameter of which is less than that of the screw-threaded portion of said stud. This neck 37 works in the slot 36 and which slot is of a width less than the diameter of said threaded portion of the stud 27. The slot 36, at its upper end, is enlarged at 38 to a diameter slightly greater than that of the screw-threaded portion of the stud 35 in order to permit said stud to be inserted into the slot 36 when assembling the device.

A face plate 39 is applied to the casing 13 to cover the guide member 28 and give the device a finished appearance. This face plate 39 is provided with a longitudinal slot 40 in which the inner end portion of the knob 34 works and is detachably secured to the casing 13 by screws.

Referring now to Fig. 11, the invention is identical with that shown in Figs. 1 to 10, inclusive, but it is adjusted for operating a transom hinged at its bottom, and the corresponding parts are given the same numbers as those in the other figures.

By reference to the drawings, it will be noted that substantially the entire operator is concealed. It is also evident that the device can be very quickly adjusted for use in connection with sashes that are hinged either at their tops or bottoms.

What I claim is:

1. The combination with a frame and a sash hinged thereto and having a channel member set in a rabbet in the outer edge of one of the stiles of the sash, said channel being covered by the frame when the sash is closed, of an operator for the sash including an arm pivoted to the frame, arranged to work between the frame and channel member and having at its free end a laterally offset roller arranged to run in the channel member, and connections for oscillating the arm, said arm when the sash is closed lies within the side flanges of the channel.

2. The combination with a box-like frame and a sash hinged thereto, of an operator for the sash including a pair of arms in bell-crank arrangement pivoted to the frame, one of said arms having pivotal and travelling engagement with the other edge of one of the stiles of the sash, the other of said arms being within the frame, a guide member on the frame, an anchor block slidable in the guide member, a link within the frame and connecting said block to the arm within the frame, and a finger piece having screw-threaded engagement with the block and adapted to clamp the same in the guide member in different adjustments and affording means for actuating the operator.

In testimony whereof I affix my signature.

ANDREW G. WASS.