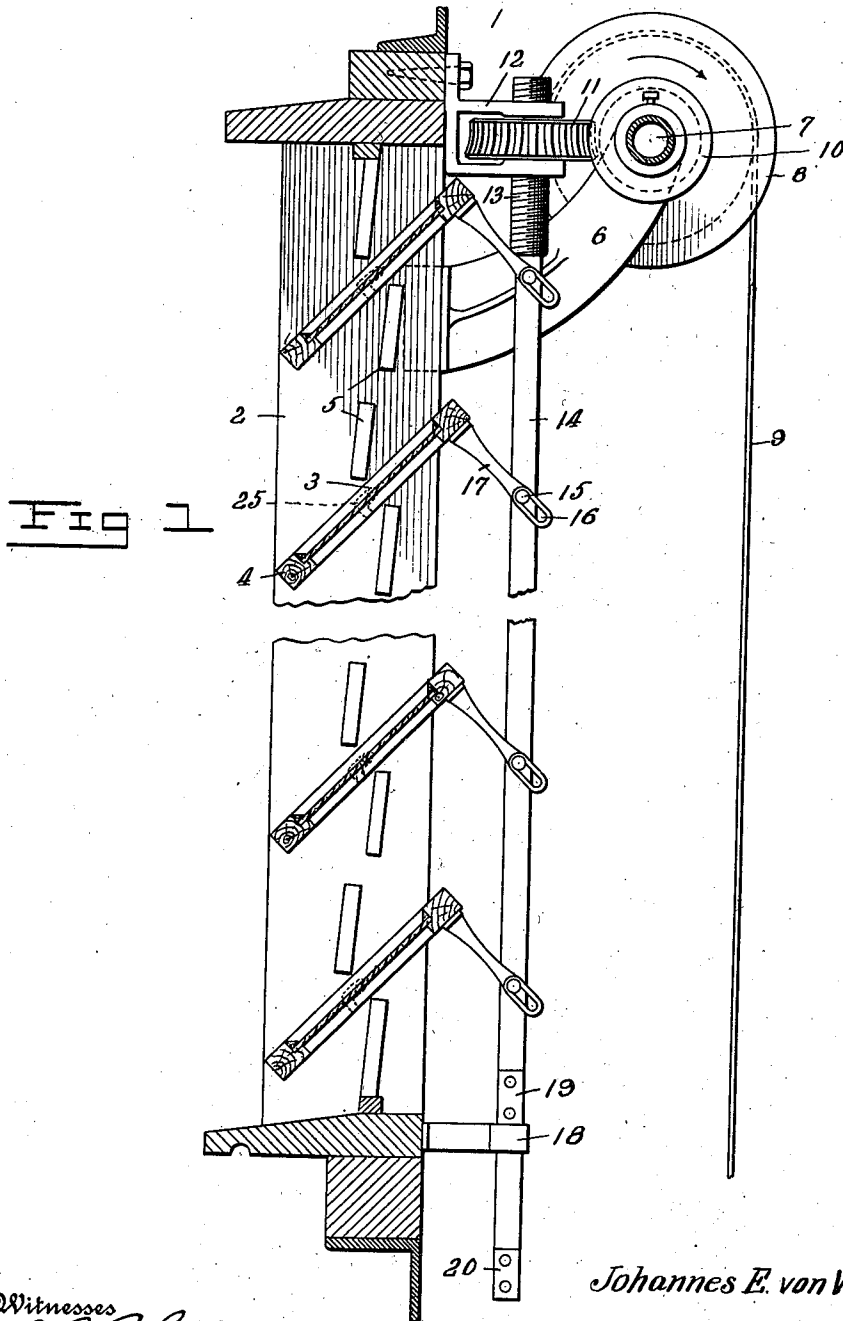


J. E. VON WAGNER.
 OPERATING DEVICE FOR WINDOW LOUVERS.
 APPLICATION FILED OCT. 22, 1910.

1,014,679.

Patented Jan. 16, 1912.

2 SHEETS—SHEET 1.



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Fig 2

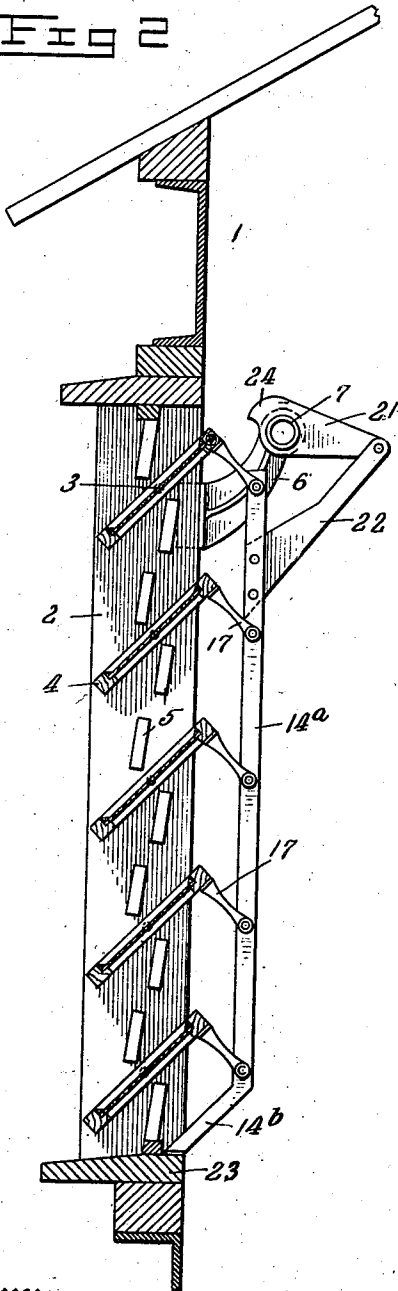
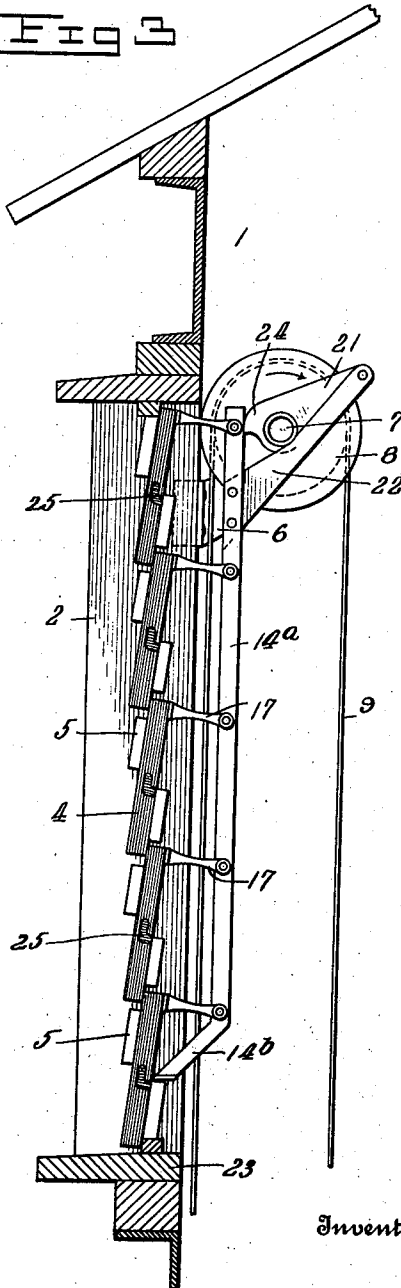


Fig 3



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UNITED STATES PATENT OFFICE.

JOHANNES E. VON WAGNER, OF OAKMONT, PENNSYLVANIA.

OPERATING DEVICE FOR WINDOW-LOUVERS.

1,014,679.

Specification of Letters Patent.

Patented Jan. 16, 1912.

Application filed October 22, 1910. Serial No. 588,569.

To all whom it may concern:

Be it known that I, JOHANNES E. VON WAGNER, a citizen of the United States, residing at Oakmont, in the county of Allegheny and State of Pennsylvania, have invented new and useful Improvements in Operating Devices for Window-Louvers, of which the following is a specification.

This invention relates to operating devices for louver windows, or windows composed of a number of louver sashes or blinds, the invention having for its object to provide a simple, strong and efficient structure of operating mechanism for use in conjunction with the louver sashes to lessen the strain upon the pivotal supports of the sashes when opening and closing the same, and to provide an operating mechanism of relatively few parts which are so peculiarly assembled with the sashes that the force exerted through the mechanism is applied at right angles to the sashes, whereby practically the full force of the mechanism is utilized in turning the sashes only, and not in overcoming friction of the movable parts, such friction occurring in present structures of this nature where the force is applied at oblique angles to the sashes.

With these and other objects in view the invention consists in the novel combination and arrangement of parts hereinafter described and pointed out in the appended claim, and illustrated in the accompanying drawings, in which,—

Figure 1 is a vertical sectional view of the preferred form of the invention, the louver boards or sashes being open; Fig. 2 is a similar view of a modified construction; and Fig. 3 is a like sectional view of the construction illustrated in Fig. 2, with the louver boards or sashes closed.

In the drawings, 1 indicates a portion of the ventilating structure on the roof of a building, in the sides of which structure are window frames 2, one only being shown. Pivotaly mounted on studs 3 projecting from the sides of the window frame 2 are a plurality of narrow window sashes, window louvers or louver boards 4, the bottom of each sash or louver board overlapping on the outside the top of the next sash or louver board below when in closed position to prevent the entrance of rain or snow, and also to close the opening in the window frame to the passage of air. The axes of the studs or pivot pins 3 lie in a vertical plane with the

result that the sashes or louver boards centrally pivoted thereon will, when closed, have a slight inclination inwardly. The sashes when opened swing inwardly at the top, and when closed they are prevented from forcibly striking each other by means of angularly disposed stop strips 5 projecting slightly from the sides of the window frame on opposite sides of the studs, and against which the upper outer and lower inner sides of the sashes bear.

Mounted to turn in bearings 6 which are preferably fastened near the top of the window frame 2 on its inner side, is a horizontal shaft 7 on which one or more sheaves or sprocket wheels 8 will be fastened to carry each, a looped rope or chain 9 extending downward to the floor or some other convenient place where the rope or chain may be grasped and the shaft rotated in either direction. The shaft 7 also carries a worm 10 engaging a worm wheel 11 mounted to turn in a bearing 12 bolted to the top of the window frame 2 or the wall of the ventilating structure 1. Through the axis of the worm wheel 11 is a threaded opening to receive the screw 13 formed on or attached to one end of an operating rod 14, from one side of which project a number of spaced pins 15 slidably fitted in slots 16 formed in the free ends of arms 17, each arm being rigidly fastened on the inner side of a sash or louver board near its top. The end of the operating rod 14 opposite the screw 13 is slidably mounted in a guide 18 which latter also limits the extent of movement of the operating rod by means of stop plates 19 and 20 fastened thereon on opposite sides of the guide 18 and suitably spaced. When the rope or chain 9 is pulled to revolve the shaft 7 in the direction indicated by the arrow, the worm 10 on said shaft will turn the worm wheel 11 in such a direction as will cause the screw 13 and operating rod 14 to rise until the stop 20 abuts against the under side of the guide 18. The upward travel of the operating rod will, through the medium of the pins 15, raise the arms 17 and swing the sashes to closed position as in Fig. 3. Rotating the shaft 7 in the opposite direction opens the sashes, their full open position being determined by the stop 19 engaging the guide 18. Because the operating mechanism comprises a worm, a worm wheel and a screw, the louver sashes may be opened to any position within the limit of

the stops 19 and 20 and be securely held in such position.

A simpler mechanism for opening and closing the sashes is illustrated in Figs. 2 and 3. In this construction a crank arm 21 is affixed on the shaft 7 and pivotally connected to a bracket arm 22 projecting at an angle from the vertical operating rod 14^a on which are pivoted the ends of the arms 17 extending from the louvers 4. The lower end 14^b of the operating rod 14^a is bent toward the window frame a suitable distance to strike the sill or bottom 23' of said window frame when the sashes are opened and thus limit the extent of their opening. Fixed on the shaft 7 and preferably formed integral with the crank arm 21 is a cam lug 24 for locking the sashes in closed position. In this form of the mechanism when the rope or chain is pulled to rock the shaft 7 and raise the crank arm 21 into the position represented in Fig. 3, the bracket arm 22 and its attached operating rod 14^a will be carried to the position shown in said figure, thus closing the pivoted sashes. This movement of the crank arm, it will be observed, both elevates the top of the rod 14^a above the plane of the shaft, and brings it near the window frame into position to be engaged by the cam 24 which, by preventing the rod moving laterally holds the sashes in closed position. As soon as the shaft 7 is rocked by the rope or chain in the opposite direction, the cam lug will be withdrawn and the operating rod lowered until its end 14^b strikes on the window sill. The downward movement of the operating rod will, of course, open the sashes.

It is sometimes desirable or necessary to remove the louver sashes from the window frame for repairing and other purposes, and to do this the pivotal connection between the sash and its frame is made a separable one. The pivot pins 3, as hereinbefore described, project a short distance from the window frame into the opening filled by the sashes. In the outer edge of each stile of each sash is made an L-shaped recess 25 extending from the inner face of each stile toward the centers thereof, and then up-

wardly for a short distance, terminating in the present instance midway between the top and bottom of the sash to form seats for the pivot pins. To remove the sash the arm 17 is detached either from said sash or the operating rod and the sash then turned, after which said sash is moved upwardly until the horizontal portion of the recess 25 is opposite the pin. Then by lifting the sash bodily it will be released from the pins and be free.

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

In combination with a frame having a plurality of centrally pivoted louver sashes adapted to overlap at their opposite edges when closed, straight arms rigidly carried upon the upper rails of the sashes, the arms having longitudinal slots in their free ends, registering brackets extending inwardly from the opposite ends of the frame, one of the brackets having an angular opening, and the opposite bracket having a circular opening therethrough, a rod mounted in the brackets in parallelism with the frame and being formed angular in cross section at one end for slidable engagement in the angular opening of the first bracket whereby the rod is held from turning, the rod further having a threaded rounded opposite end engaging through the circular opening of the opposite bracket, fixed pins projecting laterally from the rod and engaging directly in the slots of the arms, an operating gear threaded on the rounded end of the rod and being supported from longitudinal movement in the bracket having the circular opening, and operating means for reciprocating the gear whereby the rod is moved longitudinally of the frame to swing the arms and operate the sashes.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHANNES E. VON WAGNER.

Witnesses:

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JOSEPH W. FISHER.