

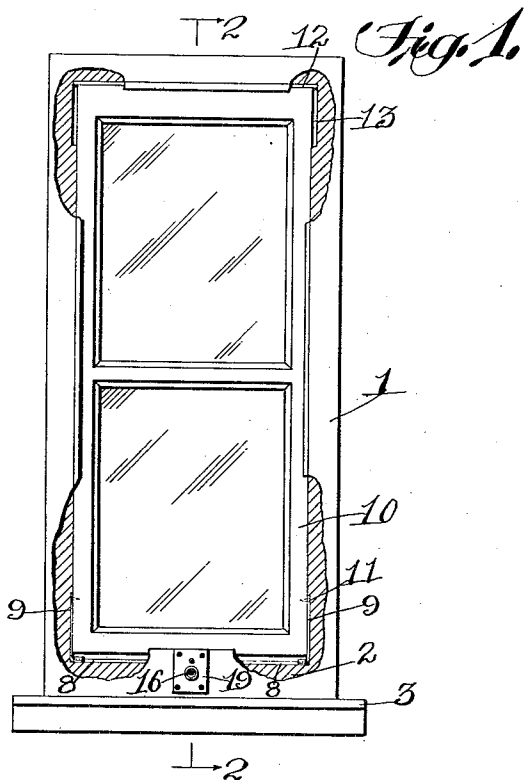
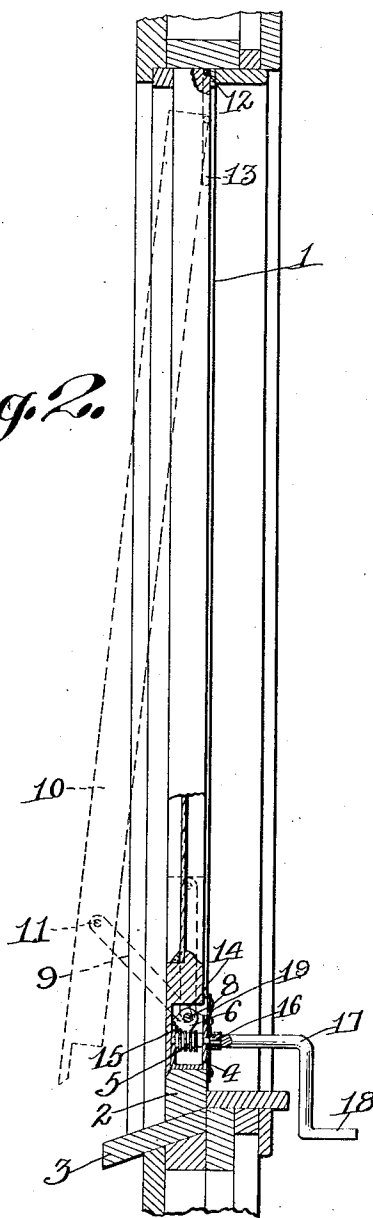
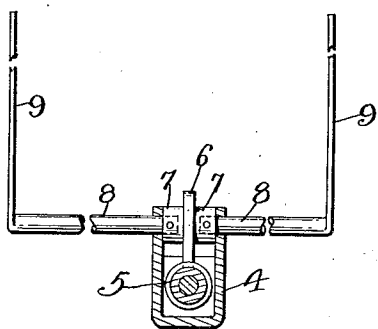
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J. R. HOWARD

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SASH OPERATING MEANS

Filed Sept. 16, 1929



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UNITED STATES PATENT OFFICE

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SASH OPERATING MEANS

Application filed September 16, 1929. Serial No. 392,975.

This invention relates to new and useful improvements in window sash mountings.

One of the objects of my invention is the provision of an improved type of window sash mounting wherein the sash may be quickly and easily opened with respect to the frame in which it is mounted and the opening movement so positions the sash that it is opened both at the top and the bottom, thereby providing a thorough circulation of air into and out of the room in which the window is located.

Another object of my invention is the provision of a window sash construction wherein the sash is so mounted that it may be readily moved to an open position and the open sash is limited so as to prevent access to the building through the window and also maintain the sash in a locked open position.

A further object of the invention is the provision of a window construction wherein the sash can be moved to an open position and left in an open position should the occupants of the building desire to leave the same in this position, but will prevent access through the window when the sash is so mounted that it will move outwardly and downwardly, thus opening the window both at the top and at the bottom.

A still further object of the invention is the provision of a window construction wherein the window sash is formed of a single movable frame and so mounted that it can be readily moved to an open position from the inside of the building and maintained in various adjusted positions according to the amount of circulation desired, and the operating mechanism therefore is of such nature that it can be cheaply manufactured and easily installed in the construction of window frames.

With the above and other objects in view, the invention consists in the novel features of construction, the combination and arrangement of parts hereinafter more fully set forth, pointed out in the claim and shown in the accompanying drawings wherein:

Figure 1 is an elevation of a window construction illustrating the application of my invention;

Figure 2 is a vertical sectional view on the line 2—2 of Figure 1;

Figure 3 is a detail transverse sectional view, illustrating the operative structure which is connected to the window sash for imparting movement thereto.

Referring more particularly to the drawings, 1 indicates a window frame having an upstanding transverse portion 2 at its lower end, mounted upon the usual sill 3. Mounted within a recessed portion in the transverse member 2 is a channel member 4 which supports therein a worm 5, cooperating with a gear segment 6, having laterally projecting hub portions 7 which receive therein the circular shaft portions 8 of the arms 9.

The arms 9 and shaft portions 8 are disposed at right angles to each other, as shown in Figure 3, and the inner ends of the shaft portions are secured within the hub sleeves 7. The shaft portions 8 are rotatably mounted in the side walls of the channel member 4 and moved simultaneously with the gear segment 6. The arms 9 are arranged upon opposite sides of the sash 10 and pivotally connected thereto as shown at 11.

The sash 10 carries a rod 12 at its upper end, the ends of which project beyond the longitudinal sides of the sash and extend within longitudinal slots 13 formed in a frame 1 for guiding the upper end of the sash and prevents the same from moving outwardly from the frame when the sash is moved to an open position.

The lower end of the sash 10 is provided with a cutout portion 14 leaving a downwardly depending flange part 15 which is adapted to engage over the outer side wall of the channel member 4 in order to fully hide the channel member when the sash is in a closed position. The lower end of the flange portion 15 is preferably bevelled and is adapted to cooperate with a similar part on the transverse member 2, whereby to form a comparatively water-tight connection between the sash and the frame at this point.

The worm 5 is rotatably mounted in the side walls of the channel member 4 and one trunnion thereof extends beyond the wall of the channel member and is rectangular in

shape, as shown at 16, to receive the socket portion of a crank arm 17, the crank arm having a handle part 18 adapted to be grasped by the operator for imparting a rotative movement to the worm 5.

In using my improved sash, it will be apparent that the crank handle 17 can be quickly and easily engaged with one trunnion of the worm 5 and by rotating the worm 5 it will impart movement to the gear segment 6, rotating the shaft portions 8 of arms 9, moving the arms outwardly to the dotted line position, as shown in Figure 2.

The above operation, due to the position of the arms 9 will move the sash 10, at its lower end outwardly and moving the entire sash downwardly, thus opening the sash at the top and at the bottom. It will be apparent that the projecting ends of the rod 12 which ride in the grooves 13 will prevent the upper end on the sash from swinging outwardly, but will permit the same to slide downwardly within the frame. From this, it will be apparent that the sash 10 can be quickly and easily opened and maintained in an open position without permitting access to the building through the open portion of the window, as the opening movement of the sash is restricted and the sash can be moved to any desired position with respect to the frame.

If found desirable, the crank handle 17 may be removed from the trunnion of the worm 5, so that the sash cannot be operated by an unauthorized person, and it will be maintained in either an opened or closed position, as desired.

It will be apparent that the construction and mounting of the sash is very simple and inexpensive, and the operative parts which are used for manipulating the sash are of such nature that they can be manufactured and placed on the market at a very low cost and can be quickly and easily installed.

In order to present a neat, finished appearance, to the exterior of the frame, the cut away part in the transverse portion 2 which receives the channel member 4 can be closed by means of a plate 19 which also hides from view the channel member 4.

While I have shown and described the preferred embodiment of my invention, it will be apparent that slight changes may be made in the construction when putting the invention into practice without departing from the spirit of the same or the scope of the appended claim.

I claim:

A window frame including a transverse portion provided with a recess, a channel member in said recess, a worm in said channel member transversely thereof, spaced arms positioned above said channel-member and having their inner ends laterally extended and circular in form to provide shafts, said shafts

having their inner ends projecting through and rotatably mounted in the side walls of the channel member, a gear segment having hub portions adapted to receive and be connected with the inner ends of the shafts, a rectangular portion on one end of the worm and a handle removably connected with the rectangular portion whereby to manually impart movement to said worm for rotating said shafts and impart lateral movement to said arms.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee in the county of Milwaukee and State of Wisconsin.

JESSE R. HOWARD.