June 3, 1930. G. A. McCUEAN 1,761,892

WINDOW CONSTRUCTION

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Fig. 1.

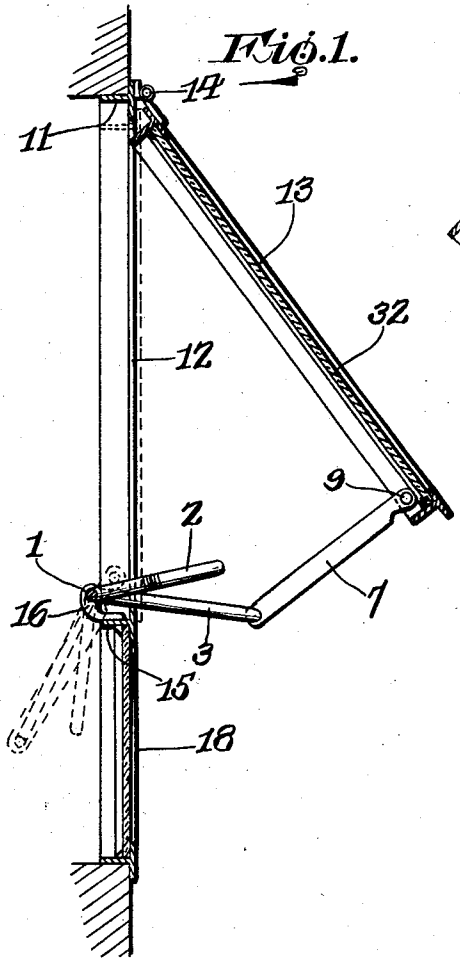

Fig. 2.

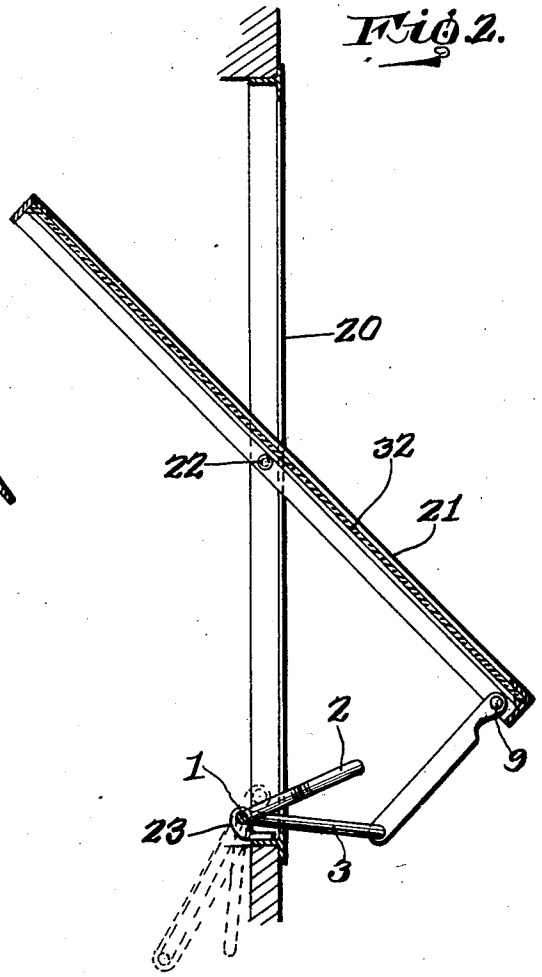

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Fig. 5.

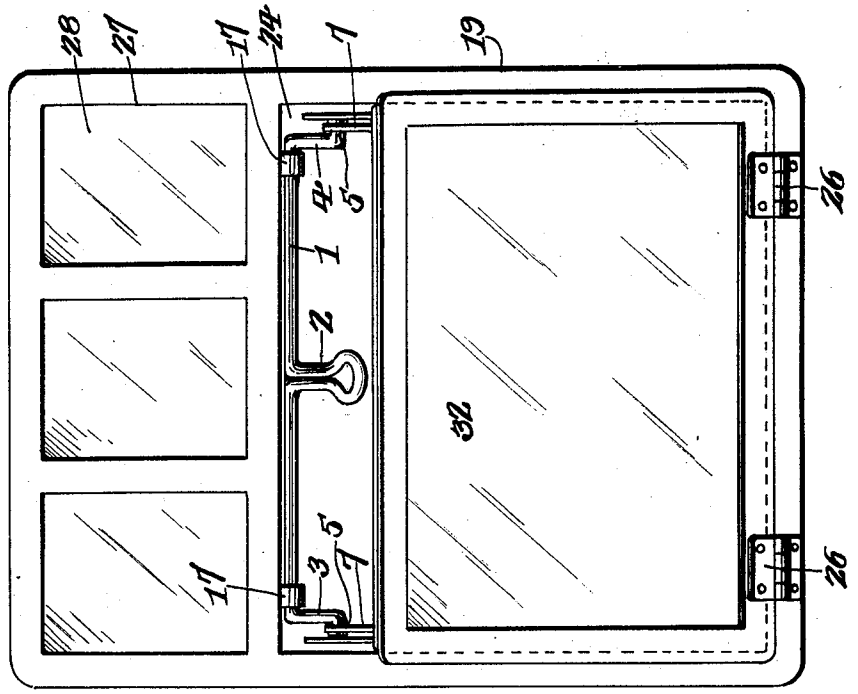


Fig. 4.

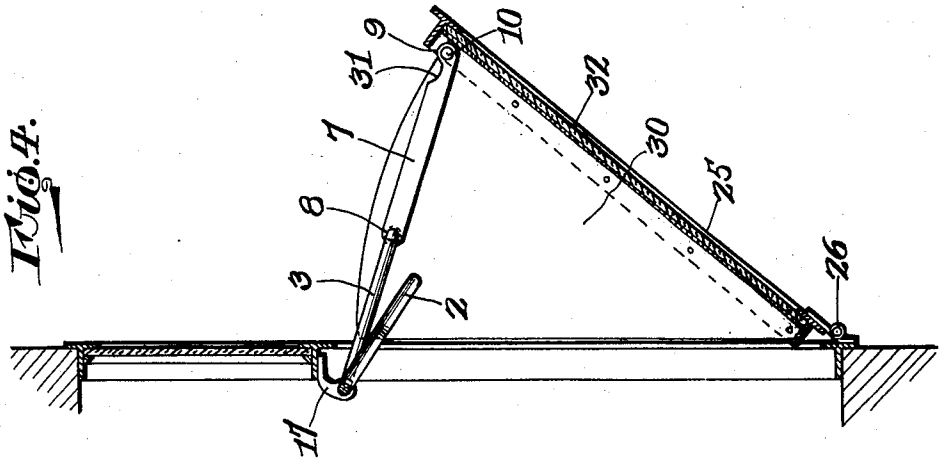
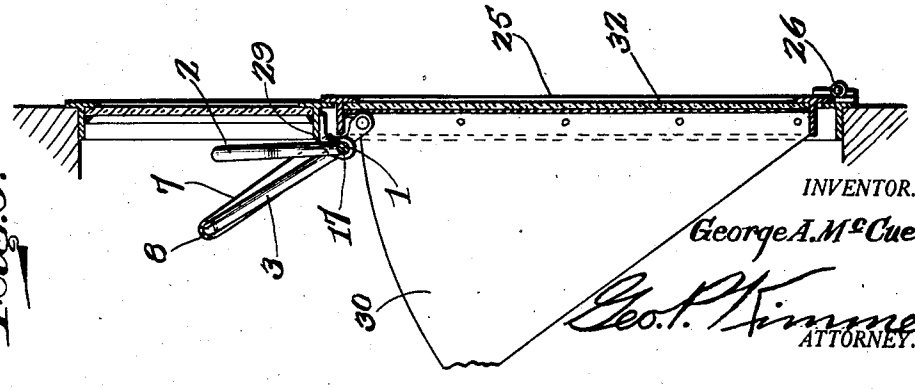


Fig. 3.



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UNITED STATES PATENT OFFICE

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WINDOW CONSTRUCTION

Application filed August 30, 1929. Serial No. 389,500.

This invention relates to window construction, more particularly to a means for shifting a window sash to open and closed positions, and has for its object to provide, in a manner as hereinafter set forth, a shifting mechanism for expeditiously shifting a sash to and for maintaining it in open position, as well as for maintaining the sash in closed position when occasion requires.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a window sash shifting mechanism which is simple in its construction and arrangement, strong, durable, compact, thoroughly efficient in its use, conveniently operated, readily installed with respect to the sash and comparatively inexpensive to manufacture.

With the foregoing and other objects in view the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described, and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which fall within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:—

Figure 1 is a vertical sectional view of a window of a type including a hinged sash showing the adaptation therewith of a shifting mechanism in accordance with this invention and with the sash extended to open position.

Figure 2 is a view similar to Figure 1 with the sash pivoted at its center and showing the adaptation therewith of a shifting mechanism in accordance with this invention.

Figure 3 is a vertical sectional view of a modified form of widow including a hinged sash provided with side pieces to constitute a coal chute and showing the adaptation with the window of a shifting mechanism in accordance with this invention and further illustrating the sash in closed position.

Figure 4 is a view similar to Figure 3 and illustrating the sash extended to open position to provide a coal chute.

Figure 5 is a front elevation of the construction shown in Figure 3.

A shifting mechanism in accordance with this invention and as shown in each of the views of the drawings includes a rock shaft 1 of cylindrical cross section.

The shaft 1, centrally thereof, is formed with a laterally disposed handle member 2. See Figure 5. The shaft is journaled in a pair of spaced, combined hangers and supports to be presently referred to. Each combined hanger and support is of substantially L-shaped contour. The combined hangers and supports will be suitably designated with respect to the several figures of the drawings to be presently referred to.

The shaft 1 at each end thereof is provided with a right angularly disposed crank arm of the desired length and of cylindrical cross section. Both crank arms are illustrated in Figure 5 and are indicated at 3, 4. But one of the crank arms is shown in Figures 1, 2, 3 and 4 and in such figures, the crank arm is designated 3. Each crank arm at its outer end is formed with an outwardly directed, right angularly disposed extension 5 providing a combined pivot and coupler for a flat link 7. The links 7 have their rear ends provided with openings 8 through which pass the extensions 5. The links 7 are of the desired length and each has its outer end provided with an opening 9 for the passage of a pivot 10. The pivots 10 are to be carried by the sashes to be presently referred to.

Referring to Figure 1 of the drawings 11 denotes a window frame formed with an opening 12 adapted to be closed by a sash 13, the latter being hinged at its top as at 14 to the top of the frame 11. The frame 11 is formed with a sill portion 15, and connected thereto are spaced combined hangers and supports, only one of which is shown, for the shaft 1. The hanger and support shown in Figure 1 is indicated at 16 and is so arranged that the rear portion of the same is extended upwardly and spaced rearwardly of the frame 12. As shown in Figure 1 the link 7 is mounted on a pivot 10 connected to sash 13 near the bottom thereof. It is to be understood that a pair of links 7 and crank arms 3 will be em-

ployed in the shifting mechanism shown in Figure 1 and that such mechanism will be as shown in Figure 5, other than that the combined hangers and supports 16 will be reversely arranged with respect to the combined hangers and supports 17 shown in Figure 5. Below the sill portion 15, that part of the frame 12 which is indicated at 18 will be constructed in the same manner as the upper portion of the frame 19 shown in Figure 5.

With reference to Figure 2 the frame 20 provides an opening which is closed by a sash 21 mounted at its transverse median upon a pivot rod 22, the latter being secured to the frame 20.

The bottom of the frame 20 is provided with a plurality of spaced, combined supports and hangers for the shaft 1, only one of which is shown and is indicated at 23, the arrangement being the same as the combined supports and hangers shown in Figure 1.

When the shaft 1 is rocked in a direction whereby the handle member 2 thereof will project forwardly, as shown in Figures 1 and 2, the crank arms 3 will be carried in a like direction to extend the links 7 so that the sash 13 will be projected to open position. This statement also applies to the sash 21. The weight of the sash bearing on the links 7 will depress the crank arms 3 and as these latter engage the frame the sash 13 cannot be closed. To close the sash 13 or 20 the handle member 2 is swung to the dotted line position shown in Figures 1 and 2 and when in such position the parts will be so arranged as to prevent the opening of the sash 13 or 20 until the handle member 2 is swung in an outward direction. The position of the crank arms 3 and links 7 when the frame 13 or 21 is closed will be as indicated in dotted lines in Figures 1 and 2.

With reference to Figures 3, 4 and 5 the frame 19 provides an opening 24 adapted to be closed by the sash 25, the latter being hinged as at 26, to the bottom of the frame 19. The upper portion of the frame 19 provides a plurality of openings 27, which are closed by transparent panels 28. The frame 19 and sash 25, as well as the panels 28 are employed as a cellar window. The frame 19 is formed with a transverse part 29 which corresponds to the sill portion 15 shown in Figure 1. Secured to the lower face of the portion 29 are the combined supports and hangers 17 for the shaft 1 and they are so disposed that the rear portions thereof depend downwardly. The shaft 1 is mounted in the depending portions of the elements 17. The links 7 are pivotally connected to the sash 25 by the pivots 10.

When the sash 25 is in closed position the handle member 2 will be disposed vertically and rearwardly of the frame 19 and the links 7 and crank arms 3 will also be arranged rearwardly of the frame 19 and be disposed at an upward inclination. If the handle 2 is swung to the position shown in Figure 4 the crank arms 3 and links 7 will shift the sash 25 to the open position shown in Figure 4. Attached to the sides of the sash 25 are rearwardly extending side members 30 which in connection with the sash 25, when the latter is extended to open position, provides a coal chute or a chute for conducting what is desired into the cellar. When the handle member 2 and the crank arms 3 and links 7 are in the position shown in Figure 4 the sash 25 is latched in position and cannot be shifted until handle 2 is swung toward the position shown in Figure 3.

Each link 7 has one side edge thereof in proximity to its outer end provided with a concavity 31 to provide a clearance for an end of the sash to which the link is pivotally connected.

The sashes 13, 21 and 25 are provided with transparent panels 32.

It is thought the many advantages of a shifting mechanism, in accordance with this invention and for the purpose set forth can be readily understood, and although the preferred embodiment of the invention is as illustrated and described, yet it is to be understood that changes in the details of construction can be had which fall within the scope of the invention as claimed.

What I claim is:

1. In combination, a window frame including a sill portion and a sash hinged to said frame remote from said portion, a rock shaft supported from said sill portion and arranged rearwardly of said frame, crank arms projecting from the ends of the shaft, links pivotally connected to the non-hinged end of said sash and pivotally connected to said crank arms, and a handle carried by the sash and providing for the rocking of the same to project the crank arms forwardly with respect to the frame to shift the sash to open position and whereby the crank arms will extend over said sill portion so that when lowering the crank arms the sill portion will arrest the closing movement of the sash, said links provided with clearances for the sash when the latter is in closed position.

2. In combination, a window frame including a sill portion and a sash hinged to said frame remote from said portion, a rock shaft supported from said sill portion and arranged rearwardly of said frame, crank arms projecting from the ends of the shaft, links pivotally connected to the non-hinged end of said sash and pivotally connected to said crank arms, and a handle carried by the sash and providing for the rocking of the same to project the crank arms forwardly with respect to the frame to shift the sash to open position and whereby the crank arms will extend over said sill portion so that when lowering the crank arms the sill por-

tion will arrest the closing movement of the sash, said handle, links and crank arms disposed rearwardly of the frame when the sash is closed and acting to maintain the sash in closed position.

3. In combination, a shiftable sash adapted to be permanently connected to a window frame, the sill portion of a window frame, a rock shaft supported from said sill portion and arranged rearwardly thereof, means connected to the rock shaft and pivotally connected with the sash for shifting the latter to open and closed positions, said means coacting with said sill portion to maintain the sash in open position, and said means when the sash is in closed position arranged rearwardly of said sill portion and providing for maintaining the sash in closed position.

4. In combination, a shiftable sash adapted to be connected to a window frame capable of being shifted towards and from the frame, the sill portion of the frame, a rock shaft supported from said sill portion rearwardly thereof, crank arms projecting from the shaft, links pivotally connected to the sash and to the crank arms, said crank arms and links normally positioned rearwardly of the sill portion for maintaining the sash closed, and a handle carried by the shaft and providing for the rocking thereof to project the crank arms and links forwardly with respect to said sill portion to shift the sash to open position and said crank arms, when the sash is in open position coacting with said sill to prevent the closure of the sash.

In testimony whereof, I affix my signature hereto.

GEORGE A. McCUEAN.