

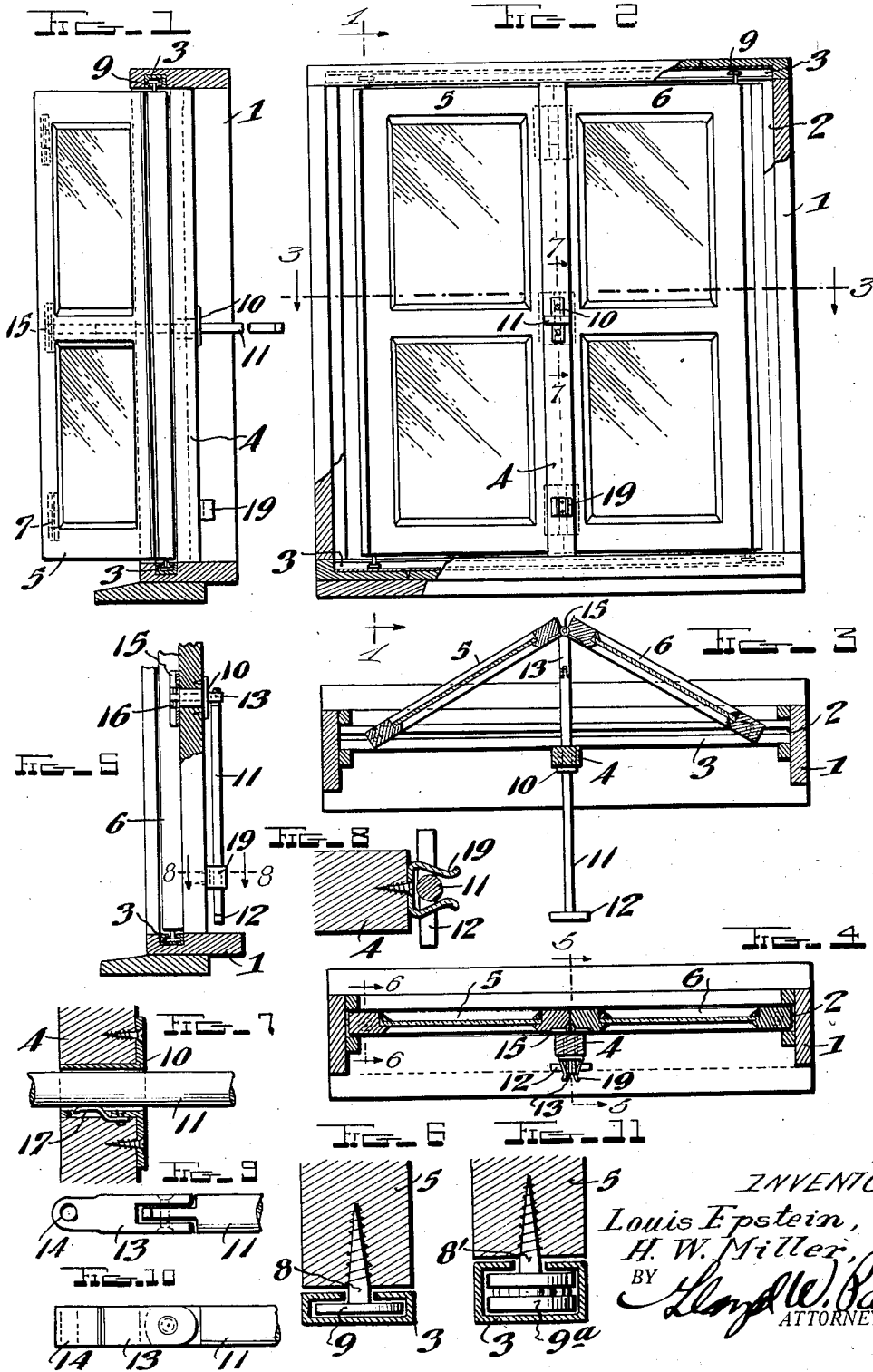
April 6, 1937.

L. EPSTEIN ET AL

2,076,194

WINDOW

Filed April 6, 1935



INVENTORS  
Louis Epstein,  
H. W. Miller,  
BY Lloyd W. Patch  
ATTORNEY

# UNITED STATES PATENT OFFICE

2,076,194

WINDOW

Louis Epstein and Henry W. Miller, Miami, Fla.

Application April 6, 1935, Serial No. 15,086

3 Claims. (Cl. 20—42)

Our invention relates to improvements in windows, and particularly to a hinged window and to operating and locking structure therefor.

An object of our invention is to provide a window which can be installed or built into any building or structure, either during erection or remodelling of the building, and which is adaptable for use in substantially any and all places where a casement window or sliding sashes, or in fact any type of window might be used.

A further object is to provide a window structure in which the window sashes will shut tightly to make a waterproof closure, and with which the sashes are opened toward the outside and conveniently moved and adjusted to any desired degree of opening by manipulation of control parts from the inside of the window.

Another object is to provide control and operating structure by which the window is adjusted to any desired degree of opening with dispatch and facility, and which also can be used to lock the sash to retain the window in a closed relation.

Yet another object and purpose is to provide operating mechanism that can be conveniently installed and which possesses great strength and rigidity to hold and support the window sashes and to retain the same in any desired position of adjustment, either opened or closed.

With the above and other objects in view, which will be apparent to those skilled in the art, our present invention includes and embraces certain novel features of construction and combinations of parts which will be hereinafter set forth in connection with the drawing and then pointed out in the claims.

In the drawing:

Figure 1 is a vertical sectional view through a window structure embodying our invention, substantially along the line of 1—1 of Fig. 2.

Fig. 2 is a view in elevation taken from the inner side of the window and with fragmentary parts in section.

Fig. 3 is a horizontal sectional view substantially on line 3—3 of Fig. 2.

Fig. 4 is a view similar to Fig. 3 showing the window sashes closed.

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

Fig. 6 is a detail fragmentary sectional view through one edge of the sash on line 6—6 of Fig. 4.

Fig. 7 is a fragmentary broken sectional view on line 7—7 of Fig. 2.

Fig. 8 is a fragmentary detail view in section on line 8—8 of Fig. 5.

Figs. 9 and 10 are fragmentary views in elevation showing the end of the operating rod.

Fig. 11 is a view similar to Fig. 6 showing a modified construction.

The casing structure, generally indicated at 1, can be fitted in any window opening, or the like, in a frame, masonry or other wall or structure, and this frame and its associated parts can be made of wood, metal, or any other desired suitable material. It is perhaps preferable that a channel be provided, as at 2, around the inner opening of the frame 1, and at the top and bottom within the channel suitable guide or trackways 3 can be mounted. Extending from top to bottom and substantially centrally between the sides of the casing 1 we provide a supporting bar 4 disposed and mounted somewhat after the manner of a mullion, but having its outer face terminating in line with the inside of the channel way 2.

The window sashes 5 and 6 are of combined size to fill the opening within the frame 1 substantially as this is defined by the channel portion 2 and the trackways 3, and these two sashes are connected together foldably at their adjacent edges by means of hinges 7. The sashes 5 and 6 are provided on their upper and lower edges, and adjacent to their outer corners, with projecting pin portions 8 received in the slots of the guide tracks 3, and preferably provided with rollers 9 to reduce friction.

A bearing sleeve 10 is fitted through an opening in the supporting bar 4 and an operating rod 11 is mounted therethrough for free endwise sliding movement. This operating rod is provided at one end with an operating handle 12, and at its other end has a toggle link 13 pivotally mounted. This toggle link is provided at its outer end with a bearing portion 14 adapted to serve as a bearing part of a hinge 15 by which the two sashes 5 and 6 are connected together, and as shown in Fig. 5, the butt pin 16 of the hinge fits through this bearing portion 14.

It is perhaps preferable that a drag-spring 17, or other means, be provided to frictionally engage the rod 11 to retain the same against casual sliding through the sleeve 10, and as the rod 11 is movable through this sleeve and through the toggle link 13 has direct connection with the hinge 15 at the line of swinging mounting of the two sashes, as the rod 11 is pushed out or pulled in the two sashes 5 and 6 will be opened or closed, respectively. When the rod 11 is pulled in to its full extent so that the two sashes 5 and 6 are entirely shut, the pivotally jointed connection with

the toggle link 13 is on the inside of the supporting rail 4 and the rod 11 can then be swung down to be dependent below the sleeve and substantially parallel with the inner face of this bar 4. A spring clip 19 is conveniently provided to resiliently receive and to retain the rod 11 in this position, and it will of course be appreciated that in this relation of the parts the window sashes are positively locked and retained against being opened in even the slightest degree.

In Fig. 11, we have shown a modification of the structure illustrated in Fig. 6, and here the spindle 8' has a roller 9a thereon provided with ball bearings or other suitable antifriction bearing structures. Obviously, many forms and types of roller and antifriction bearing structures can be provided and employed to give ease and facility of operation where heavy or large windows are mounted.

Since the two sashes 5 and 6 open out and close in over the trackways 3, it will be apparent that various forms of cleats, flanges, or other types of weather stripping can be employed to insure water and weather tight closing of the windows.

While we have herein shown and described only certain specific embodiments of our invention and have suggested only certain possible modifications, it will be understood that many changes can be made in the form, construction, assembly, installation and use of the window and associated portions, without departing from the spirit and scope of our invention.

We claim:

1. A window comprising, a frame having guideways at top and bottom and provided with a middle supporting rail having an opening therethrough, a pair of window sashes combining to close the opening of the frame, hinge means swingably connecting said window sashes together at their adjacent edges, spindle means at the top and bottom outer edges of each sash cooperating with the guideways to slidably hold the outer edges of the sashes, a guide sleeve carried by said supporting bar within the opening thereof, and an operating rod fitted slidably through said guide sleeve and consequently through said opening and connected with said sashes substantially along the line of hinging thereof to be moved endwise slidably through said sleeve and opening to open and close said window sashes.

2. A window comprising, a frame having guideways at top and bottom and provided with a middle supporting rail having an opening extending substantially horizontally therethrough, a pair of window sashes combining to close the opening of the frame, hinge means connecting said window sashes swingably together at their adjacent edges, spindle means at the top and bottom outer edges of each sash cooperating with the guideways to slidably hold the outer edges of the sashes, a guide sleeve carried by said supporting bar within the opening thereof, an operating rod fitted slidably through said guide sleeve and connected with said sashes substantially along the line of hinging thereof to be moved endwise slidably through said sleeve and opening to open and close said window sashes, means to hold said rod frictionally within the sleeve to maintain adjusted positionings of the sashes and a toggle link associated with the operating rod to allow said rod to be swung down on the inner side of the sleeve and supporting bar to lock and retain the sashes in closed relation.

3. A window comprising, a frame having guideways at the top and the bottom thereof and provided with a middle supporting rail having an opening therethrough near its lower end, a pair of window sashes combining to close the opening of the frame, hinge means swingably connecting said window sashes together at their adjacent edges, spindle means at the top and the bottom outer edges of each sash cooperating with the guideways to slidably hold the outer edges of the sashes, a guide sleeve mounted in the opening of the middle supporting rail in substantially horizontal relation and in alignment with the swingably mounted edges of the two sashes, a jointed operating rod slidably fitted through said sleeve and hingedly connected at its outer end with said sashes, friction means to resist free sliding movement of the operating rod through the sleeve, the joint of the operating rod being such that the main portion thereof can be swung downwardly when the sashes have been drawn to a closed position to thus retain the sashes in this closed position, and means to engage and retain the swung down end of the operating rod to hold the same in place.

LOUIS EPSTEIN.  
HENRY W. MILLER.