

(No Model.)

2 Sheets—Sheet 1.

J. H. GIESEY.
WINDOW.

No. 580,127.

Patented Apr. 6, 1897.

FIG. 1.

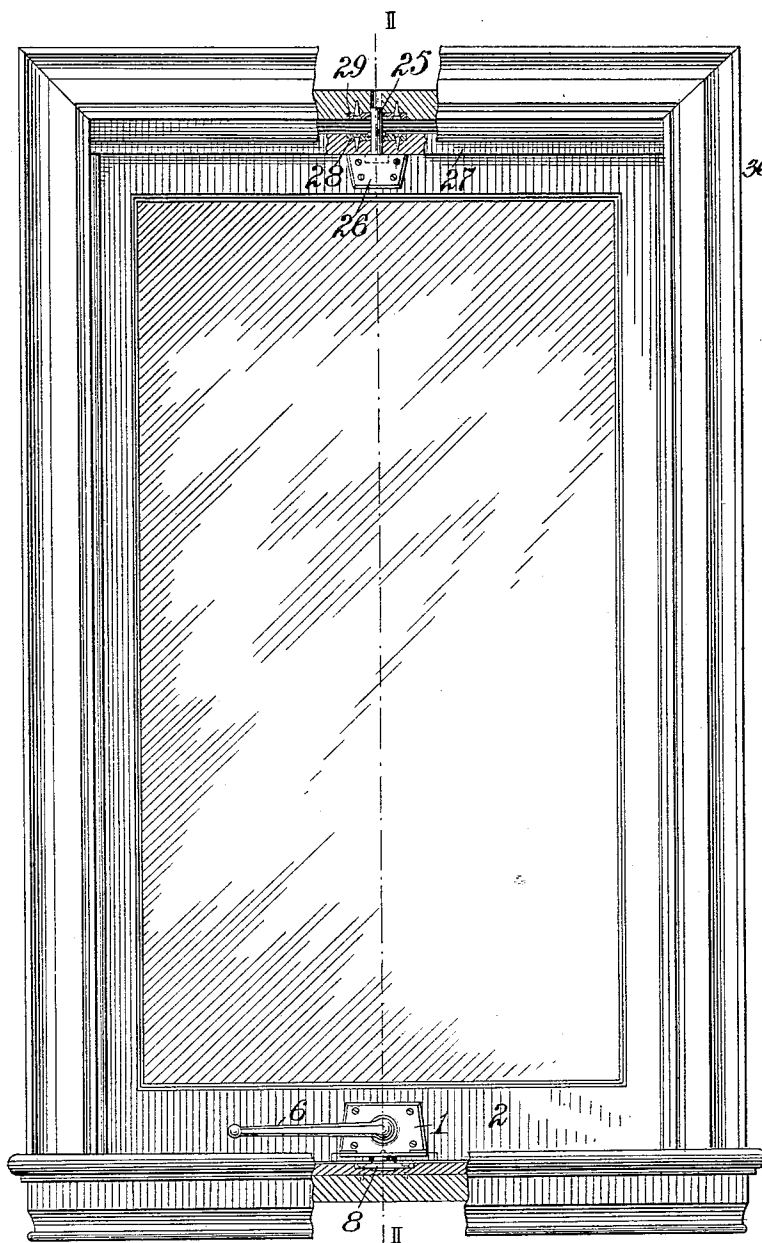


FIG. 2.

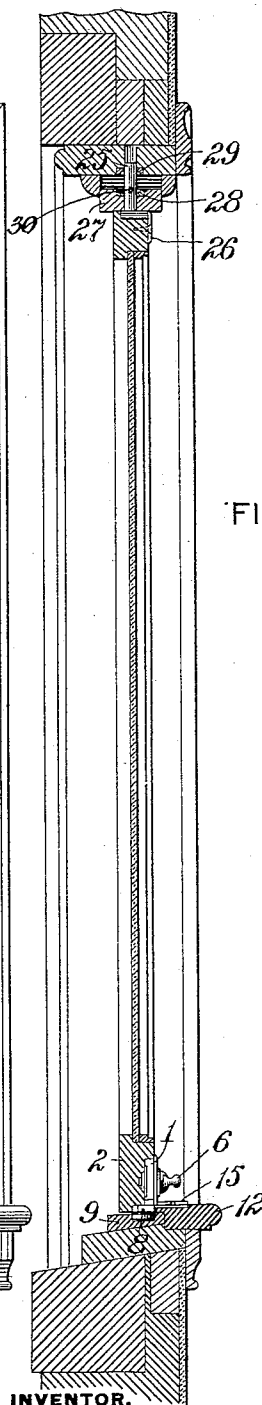
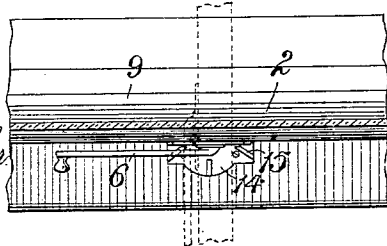


FIG. 3.

WITNESSES:

Chas. F. Miller
J. E. Gaither



INVENTOR,

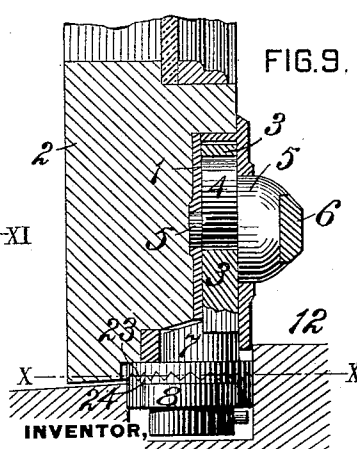
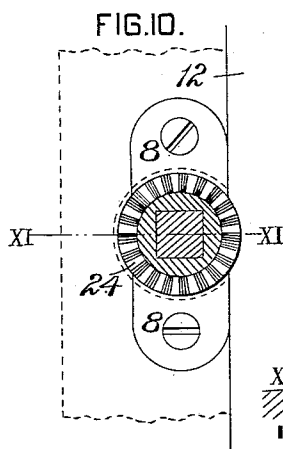
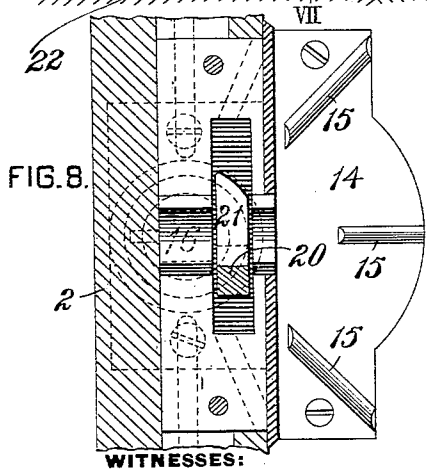
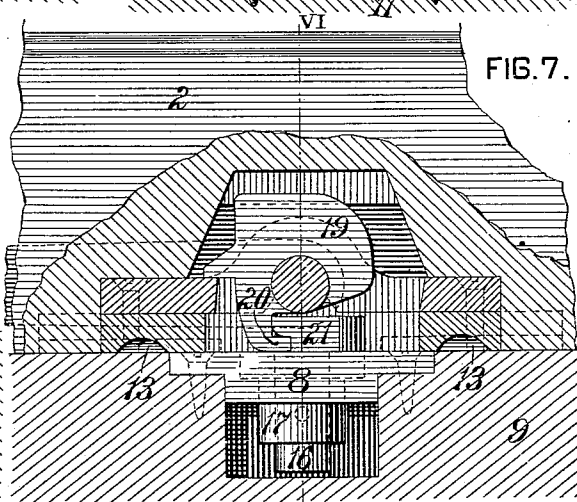
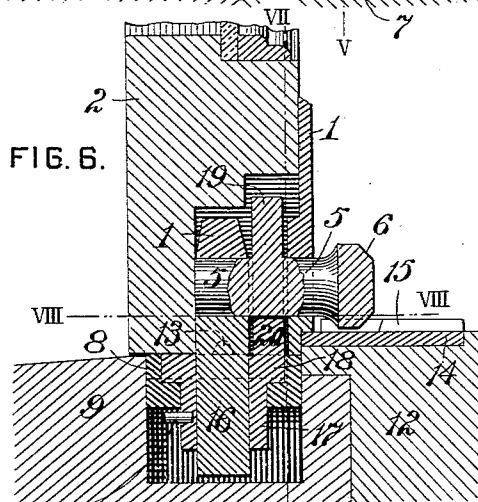
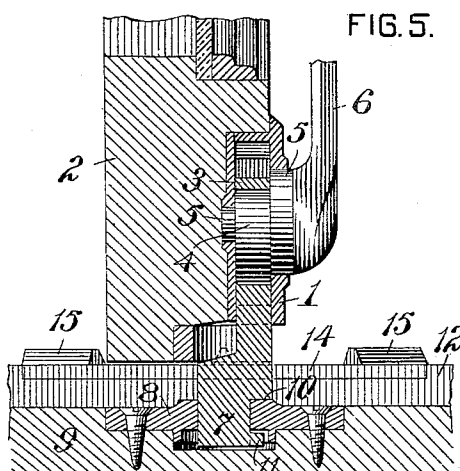
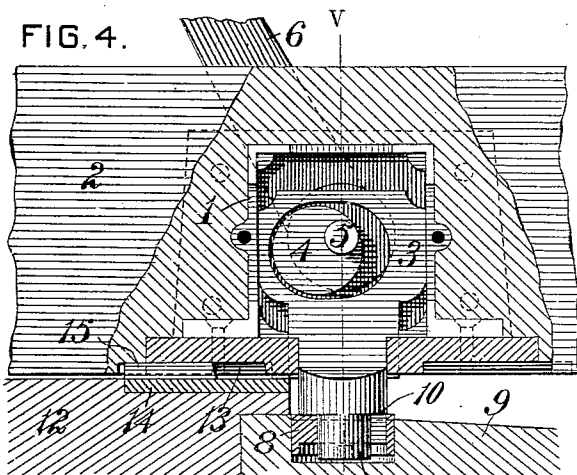
James H. Giesey
by Dennis B. Wolcott

Att'y.

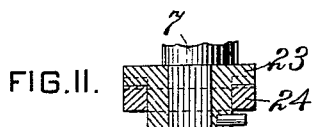
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No. 580,127.

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WITNESSES:
Chas. F. Miller.
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UNITED STATES PATENT OFFICE.

JAMES H. GIESEY, OF HIGHLAND CITY, OHIO.

WINDOW.

SPECIFICATION forming part of Letters Patent No. 580,127, dated April 6, 1897.

Application filed November 30, 1895. Serial No. 570,613. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. GIESEY, a citizen of the United States, residing at Highland City, in the county of Jefferson and State of Ohio, have invented or discovered certain new and useful Improvements in Windows, of which improvements the following is a specification.

The invention described herein relates to certain improvements in devices for lifting horizontally - swinging windows to such a height that the lower rail of the sash will clear the stool of the frame. In Letters Patent No. 488,761, dated December 27, 1892, I have shown and described a construction wherein the lifting devices rest upon a bearing-plate in the sill of the frame when the sash is raised, so that such lifting devices rub along the surface of the bearing-plate when the window is rotated, and thereby impede such rotation to a greater or less degree, dependent upon the weight of the sash.

The object of the present invention is to so construct the lifting device that the weight of the sash when raised will be upon the pivotal pin, which is so constructed and mounted as to present as small resistance as possible to the rotation of the sash.

It is a further object of the invention to provide for locking the sash when closed, and also, at different points, from its closed to full open position.

The invention is hereinafter more fully described and particularly claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a front elevation of a window frame and sash having my improvements applied thereto. Fig. 2 is a sectional elevation of the same, the plane of section being indicated by the line II II, Fig. 1. Fig. 3 is a plan view of the sill and the lower rail of the sash. Fig. 4 is a sectional elevation, on an enlarged scale, of one form of lifting device, showing the position of the parts when the sash is locked in full open position. Fig. 5 is a sectional elevation of the same, the plane of section being indicated by the line V V, Fig. 4. Fig. 6 is a sectional elevation illustrating another form of lifting device, showing the position of the parts when the sash is locked in closed position, the plane of section being indicated by the line VI VI.

Fig. 7 is a sectional elevation, the plane of section being indicated by the line VII VII, Fig. 6. Fig. 8 is a sectional plan view, the plane of section being indicated by the line VIII VIII, Fig. 6. Fig. 9 is a sectional elevation of the form of lifting device shown in Figs. 4 and 5 in connection with a modification in the construction of the sash-lock. Fig. 10 is a sectional plan view, the plane of section being indicated by the line X X, Fig. 9; and Fig. 11 is a sectional detail view, the plane of section being indicated by the line XI XI, Fig. 10.

As described in Letters Patent No. 488,761, the sash is made of less height than the opening in the frame, such difference in height being proportional to the upward movement of the sash necessary to clear the stool. The opening between the frame and the top of the sash, when closed and lowered, is closed by a movable follower.

In the construction shown in Figs. 4 and 5 the pin-operating mechanism is arranged within a metal case or frame 1, which is fitted within the lower rail 2 of the sash. This operating mechanism consists of a yoke 3 and an eccentric or cam 4, arranged within the yoke. The eccentric is provided on opposite sides with journals 5, which are preferably formed integral with the eccentric or cam and are mounted in suitable bearings formed in the side plates of the case or frame. One of the journals 5 projects beyond the side of the case and has secured thereto the operating handle or lever 6. The pivot-pin 7 is preferably formed integral with the sliding yoke 3 and projects through the front or face plate of the case or frame 1 and through an opening in the bearing-plate 8, which is secured by screws or other suitable means to the sill 9 of the window-frame. The pin 7 is provided with a shoulder 10, adapted to bear upon the plate and sustain the weight of the sash when the pin is forced out by the rotation of the cam or eccentric. The cam and handle or lever are arranged in such relation to each other that when the handle is in a horizontal position, as shown in Fig. 1, the point of greatest eccentricity of the cam will bear against the upper bar of the yoke in a plane passing through the axis of the cam and its point of contact with the yoke, which

is therefore held in its innermost position, and can be shifted therefrom only by a rotation of the cam. As the pin is prevented from being withdrawn from the bearing-plate by a lug 11 on the pin below the bearing-plate, as shown in Fig. 5, it follows that the sash must be in its lowest position, which it can assume only when closed, before the cam can be shifted to locking position, as described.

As the sash drops behind the stool 12 of the window-frame when moved to its lowest position, as shown in Fig. 2, it cannot be rotated to open position until it has been raised, but this upward movement cannot be effected from the outside, as the yoke is locked within the case by the cam and is locked to the bearing-plate by the lug 11.

In order to hold the sash in different angular positions when open, one or more grooves 13 are formed in the front or face plate of the case or frame, and a plate 14, provided with a series of two or more ribs or projections 15, is secured on the stool 12 in such position that when the sash has been turned to the desired angle and lowered one of the ribs will engage one of the grooves and thereby lock the sash as against rotation until again raised.

In the construction shown in Figs. 6 and 7 the lower pivotal support or pin consists of an angular stem or shank 16, secured to the case or frame 1, and a sleeve 17, whose internal contour corresponds to that of the stem or shank, while its sectional contour is circular, so that it can freely rotate in the opening in the bearing-plate 8. The sleeve is provided at its upper end with a flange 18, corresponding in function to the shoulder 10 on the pin 7 in the construction shown in Figs. 4 and 5. The cam 19, whose journals are mounted in the case or frame 1, bears upon the upper side of the flange 18, whose lower side bears upon the plate 8, as before stated. When it is desired to open the window, the cam is rotated, thereby lifting the sash so that its lower rail will clear the stool 12, when the sash can be swung as desired. As the sash is rotated the sleeve or pivotal support is rotated in the bearing-plate by the angular stem or shank, so that the cam and sleeve do not change position with relation to each other.

In order to lock the sash in a closed position, the cam 19 is provided with a hook 20, adapted when the cam is rotated to lower the sash to engage a hook 21 on the sleeve and thereby lock the case or frame to the sleeve, which is held in position in the bearing-plate by the pin 22.

In lieu of the devices shown in connection with Figs. 4 to 7, inclusive, the under side of the bearing-shoulder of the pivotal support of the sash may be formed with teeth or serrations 23, which are adapted to engage corresponding teeth or serrations 24 on the upper face of the bearing-plate 8 adjacent to the opening through which the pivotal support of the sash passes. The sides of these teeth are

made with considerable inclination, so that the sash may be swung, and the pivotal support is allowed sufficient vertical movement in the bearing-plate to allow the teeth on the shoulder to move over those on the plate. This construction allows the sash to be locked open at almost any angle.

It is characteristic of the improvements shown and described herein that the cam operates in raising the sash directly or indirectly on the pivotal support, *i. e.*, the pin 7 or sleeve 17, which in turn rests upon the bearing-plate.

As shown in Figs. 1 and 2, the upper pivot-pin 25 is secured to an angle-plate 26, adapted to be attached to the upper rail of the sash. The pin passes loosely through the follower 27, employed for filling the gap between the frame and sash when the latter is closed, and guide-plate 28, attached to the upper side of the follower, and projects into the supporting-plate 29, which is attached to window-frame. In order to cause the follower to move down with the sash, the pin 25 is provided with a transverse pin or projection 30, above the guide-plate 28, with which the pin or projection 30 engages as the sash is lowered.

I claim herein as my invention—

1. The combination of a window-sash, pivotal supports for the upper and lower ends of the sash, means for raising the lower sash and a lock for holding the sash when open and arranged to be operated by the sash-raising device, substantially as set forth.

2. The combination of a pivotally-mounted window-sash, a lock consisting of grooves and ribs or projections arranged in lines radiating from the center of rotation of the sash, one member of the lock being placed on the sash and the other on the frame, and adapted, to be held in engagement with each other by the weight of the sash, to lock the sash in open position, substantially as set forth.

3. The combination of a window-sash, pivot-pins at the upper and lower ends of the sash, a sleeve surrounding the lower pivot-pin and loosely mounted in a bearing-plate secured to the window-frame and a rotating cam mounted on the sash and adapted to bear against the sleeve to raise the sash, substantially as set forth.

4. The combination of a window-sash, pivot-pins at the upper and lower ends of the sash, a sleeve surrounding the lower pivot-pin and loosely mounted in the bearing-plate secured to the window-frame and a rotating cam mounted on the sash and adapted to bear against the sleeve to raise the sash, and interlocking hooks on the sleeve and cam adapted to engage each other, when the cam is rotated to lower the sash in its closed position, substantially as set forth.

In testimony whereof I have hereunto set my hand.

JAMES H. GIESEY.

Witnesses:

F. E. GAITHER,
DARWIN S. WOLCOTT.