

R. J. MITCHELL.
WINDOW.

No. 520,327.

Patented May 22, 1894.

Fig. 1.

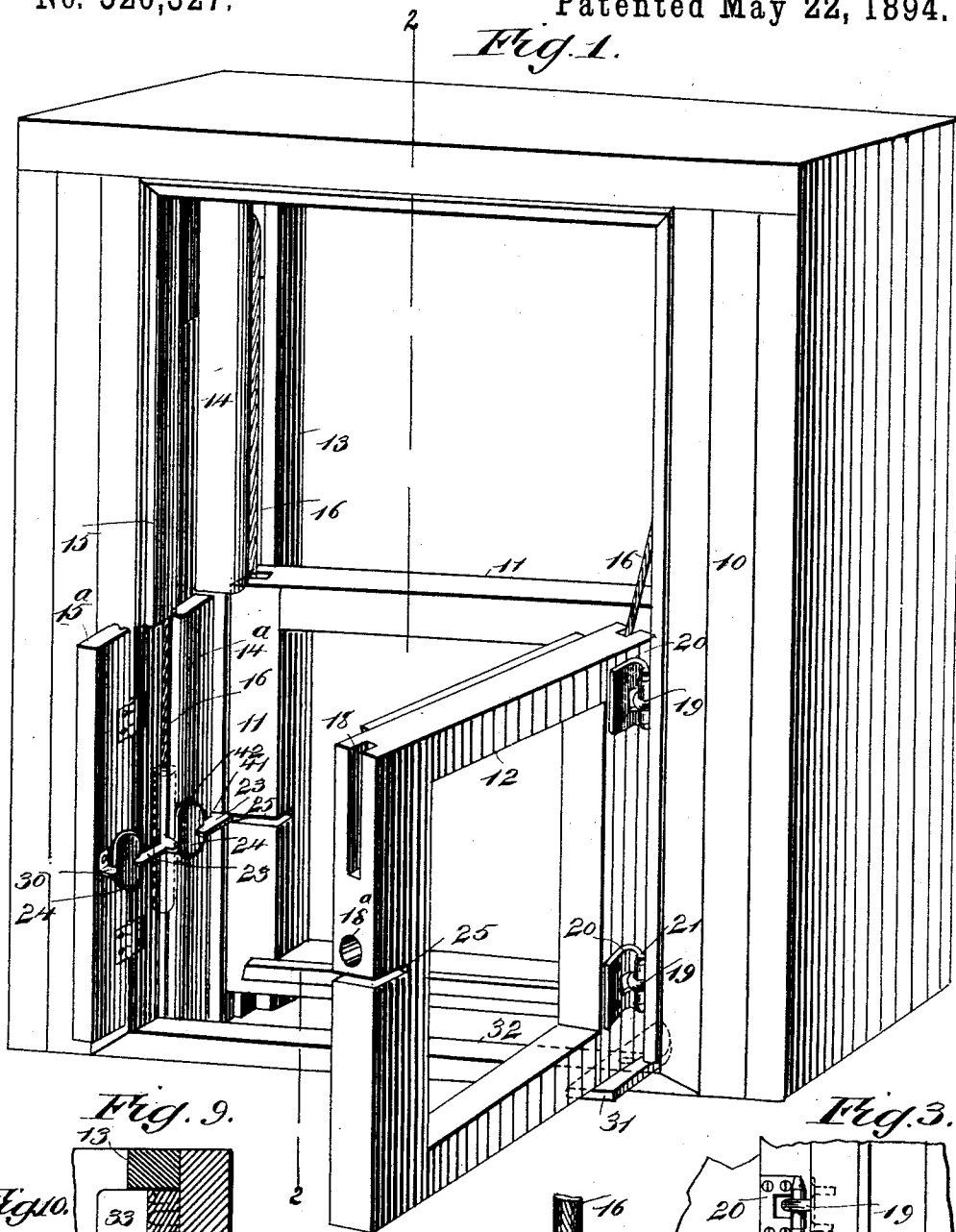


Fig. 9.

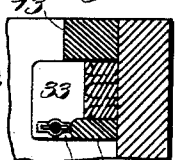


Fig. 10.



WITNESSES:

F. M. Andle
C. Sedgwick

Fig. 8.

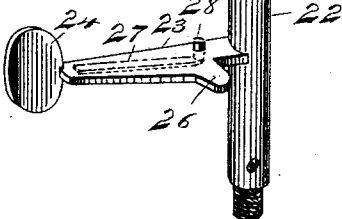
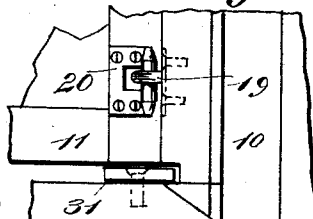


Fig. 3.



INVENTOR

R. J. Mitchell

BY

Munn & Co

ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

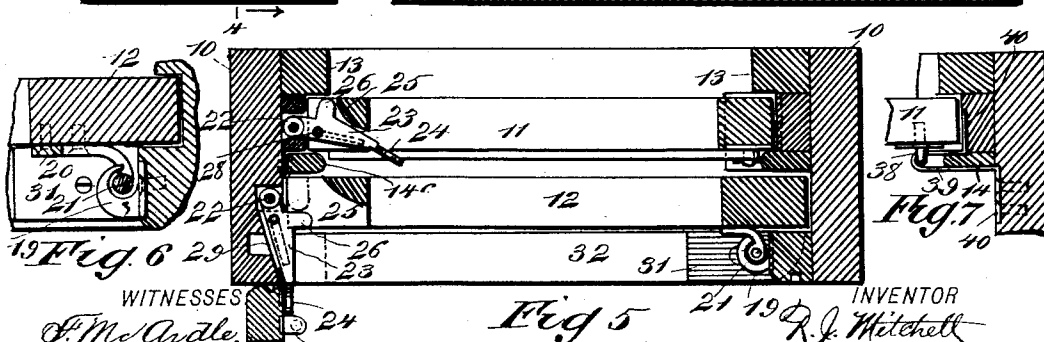
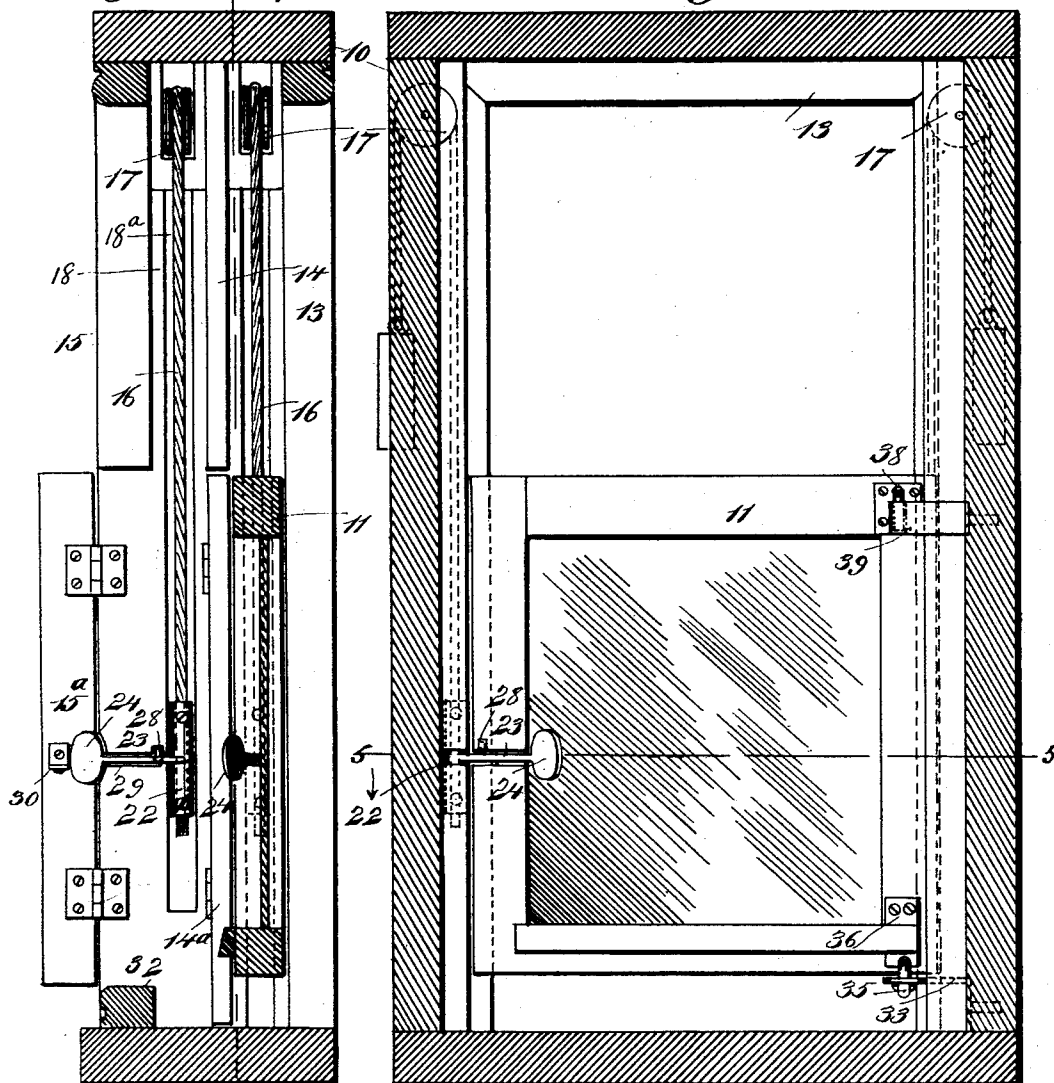
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Fig. 2.

Fig. 4.



WITNESSES
F. McAule,
C. Sedgwick

Fig. 5

INVENTOR

R. J. Mitchell
BY Nunn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

RUDOLPH J. MITCHELL, OF JENKINTOWN, PENNSYLVANIA.

WINDOW.

SPECIFICATION forming part of Letters Patent No. 520,327, dated May 22, 1894.

Application filed January 5, 1894. Serial No. 495,824. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH J. MITCHELL, of Jenkintown, in the county of Montgomery and State of Pennsylvania, have invented a new and Improved Window, of which the following is a full, clear, and exact description.

My invention relates to improvements in window construction; and the object of my invention is to produce a window in which the sashes slide vertically in the ordinary way, and which is also arranged in such a manner that the sashes may be swung inward so as to throw open the whole casement and bring the sashes into position where they may be conveniently repaired or the glass washed or removed.

A further object of my invention is to arrange the details and accessories of my improved window construction, in such a manner that the improvements may be applied to an ordinary window in an old building, as well as to new constructions.

To these ends, my invention consists of certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of a window, showing the improved construction, the lower sash being shown as swung inward. Fig. 2 is a vertical section on the line 2—2 of Fig. 1. Fig. 3 is a broken detail front elevation, illustrating the arrangement of the button which holds the lower sash at the right height to be opened. Fig. 4 is a vertical section on the line 4—4 of Fig. 2. Fig. 5 is a sectional plan view on the line 5—5 of Fig. 4. Fig. 6 is a detail sectional plan of one of the lower sash hinges. Fig. 7 is a sectional plan view showing the arrangement of the upper hinge of the upper sash. Fig. 8 is a detail perspective view of one of the sash latches which also engages the sash cord. Fig. 9 is a detail sectional plan of the lower hinge of the upper sash; and Fig. 10 is a detail perspective view of the lower hinge pin-tle on the upper sash.

The window frame 10 may be of any usual kind and in it are held the sliding sashes 11

and 12, which also may be of any approved construction, except for certain details to be hereinafter described; and these sashes slide in the customary manner, the upper sash being held in place by the outer bead 13, the sashes being separated by the parting strip 14, and the lower sash being held also by the inner bead 15. The parting strip 14 and inner bead 15 are arranged in substantially the usual way, but the lower sections 14^a and 15^a respectively of said parts are hinged, as shown clearly in Fig. 2, so that they may swing inward and thus make way for the swinging of the sashes, as hereinafter described. If desired, the hinges of the section 15^a may be of such construction as to permit the section to be lifted off the hinges and thus removed.

The sashes are provided with the usual sash cords 16, and with the customary grooves 18 and mortises 18^a to receive the cords. The cords 16 run over the usual pulleys 17 and are provided with the customary sash weights, and one cord of each is attached to the hinged edge of the sash in the customary manner, while the other cord is attached to the latch of the sash, as described below.

The hinges of the lower sash each comprise an eye 19 which is secured to the window frame, adjacent to the sash stile, the eye being open on its inner side, as shown clearly in Fig. 6, and a hook which is secured to the sash stile and comprises a plate 20, bent outward at one edge and merging in a rod 21, which is adapted to slide through the eye, the plate 20 being slotted, so that when the sash swings open, as in Fig. 1, the eye 19 may swing through the slot of the plate. The rod 21 is of greater diameter than the width of the opening in the eye 19, while the said opening is of greater diameter than the thickness of the plate 20, hence the sash may be raised vertically when it is in its normal position, as the bent end of the plate 20 slides through the opening in the eye, but the sash cannot be accidentally removed from its hinges. When the sash 12 is swung open, the eyes 19 enter the slots of the plates 20 and effectually prevent the sash from being removed from its hinges. The swinging or free edge of each sash 11 and 12 is provided with a latch to which the sash cord 16 is secured, which latch is held normally in the sash but may be

detached so as to permit the swinging of the latter. The latch has a tube 22 at its inner end, in which the sash cord is held, and a laterally-extending arm 23 on the tube, which arm terminates at its outer end in a thumb piece 24 to facilitate its easy turning. The latch lies normally in a mortise 25 made transversely in the stile of the sash, and it is provided with an extension 26 which, when the latch is swung outward, is adapted to hold the sash sufficiently to prevent it from being raised, and this extension or toe 26 is adapted to swing around the inner portion of the mortise wall, as shown in Fig. 5, so as to prevent the too easy displacement of the latch. On the under side of the arm 23 of the latch is a spring 27, which is secured at one end, and its opposite end 28 is bent upward through a hole in the latch, see Fig. 8, and this end bears against the upper wall of the groove or mortise 25 sufficiently to hold the latch in place in the sash, and it is also adapted to press against the wall of the groove 29 in the frame 10, see Fig. 5, sufficiently to hold the latch open when it is swung outward into the said groove. To open the latch and also the sash, it is of course necessary to have the arm 23 of the latch register with the groove 29, and to enable this to be accurately and quickly done, a button 31 is arranged on the lower bead 32 of the window frame, which button may be turned beneath the sash 12, and thus, by raising the sash and then turning in the button, the sash will be stopped when it strikes the button, and the height of the button is such that the arm 23 of the latch will, at this time, register with the groove 29, so that the latch may be easily opened. The groove 29, besides serving to receive the arm 23 of the latch, receives also a catch 30 on the section 15^a of the bead 15, so that when the said section is closed the catch will keep it so.

The upper sash is adapted to swing inward like the lower sash, the section 14^a of the parting strip being first opened, and to bring the latch of the upper sash at the right height and also to support the sash when it swings, a rest 33 is arranged in the window frame in the path of the upper sash, this rest being perforated, as shown at 34, to receive the pintle 35 of a plate 36 which is attached to the upper sash, near the bottom and one edge, as shown in Fig. 4. The pintle has projecting barbs 37 near its lower end which, when in alignment with the slot 34, as is the case when the sash is in its normal position, can pass through the slot, but as soon as the sash is swung open, the barbs extend at an angle to the slot and below the rest, thus preventing the lifting of the sash. This arrangement forms the lower hinge of the upper sash, and to form the upper hinge the following construction is used.

On the upper part of the sash 11 and near one edge is a pintle 38, substantially like the pintle 35 described above, except that the

barbs 37 are omitted, and this pintle is adapted to engage a staple or eye 39 on the parting strip 14, the eye or staple having its ends bent laterally, as shown at 40, and countersunk in the frame so as to offer no obstruction to the free sliding of the sashes.

It will be seen from the above description that the sash 11 may be raised freely, in which case the pintles 38 and 35 slide from their respective supports, but when the sash is lowered, the pintles 38 and 35 engage the eye 39 and slot 34 so that the sash may then be swung inward. The latch arm 23 of the upper sash 11 is adapted to lie, when opened, in a groove 41 of the frame, see Fig. 1, and in a recess 42 on the inner side of the parting strip section 14^a. When the sashes are in their normal positions, and the sections 14^a and 15^a are closed, the latch arms 23 lie in the grooves or mortises 25, the window has essentially the appearance of an ordinary window, and the sashes may be raised or lowered in the usual manner.

When the lower sash is to be opened it is first raised, the button 31 turned beneath it, and the sash then pushed downward until it strikes the button. This swings the arm 23 of the latch opposite the groove 29 of the window frame. The section 15^a of the bead 15 is then swung open, as shown in Fig. 1, the latch arm 23 turned inward so as to lie in the groove 29, and the window sash may then be swung open while the latch 23 is retained, as described, thus holding the sash cord in place; and when the sash is closed, the latch again engages it and may be turned back to position, thus enabling the sash to be raised and lowered, as described.

If the upper sash is to be opened inward, the lower sash is first opened, the upper sash pulled down until it strikes the rest 33, the section 14^a of the parting strip is swung open, the latch arm 23 of the upper sash swung inward, as shown in Fig. 1, and the sash 11 may then be swung inward against the sash 12.

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

1. The combination with the window frame and sash cords, of the vertically-movable and inwardly-swinging sash having its hinged edge directly secured to a sash cord, and a latch secured to the opposite sash cord and adapted to be swung into engagement with the free edge of the sash or out of engagement with the same, substantially as described.

2. The combination, with the window frame, of swinging sections forming the lower ends of the inner bead and parting strip, the sliding sashes hinged at one edge and adapted to slide vertically, the hinged edges of the sashes being connected directly to the sash cords, secured to the opposite sash cords and adapted to be swung into and out of engagement with the free edge of the sash, and means for retaining the latches in a fixed position

when freed from the sashes, substantially as described.

3. The combination, with the window frame having a transverse groove therein and the usual sash cords, of the swinging sash having one edge secured directly to a sash cord, and a groove or mortise in its free edge, a latch secured to the other cord and adapted to lie in the mortise of the sash and swing into the groove of the frame, and a stop or button on the frame opposite the sash, substantially as described.

4. The combination, with the window frame and the vertically-sliding and inwardly-swinging sash, of eyes on the frame having openings on their inner sides, and plates on the sash, the plates being slotted and curved outward and terminating in rods adapted to slide through and swing on the eyes, the said rods being of greater diameter than the openings in the eyes and the said openings of greater diameter than the thickness of the plates, substantially as described.

5. In a window, the combination with the

frame and the inwardly-swinging and vertically-sliding upper sash, of a latch on the free edge of the sash adapted to be detached and held in the frame, a slotted rest in the frame in the path of the sash, an eye on the parting strip, and pintles on the sash adapted to engage the slot in the rest and the eye on the parting strip, substantially as described.

6. The combination, with the window frame and the sliding and swinging sash having a groove or mortise in its free edge, of the latch having a tube to engage a sash cord, and a laterally-extending arm to lie in the mortise of the sash, substantially as described.

7. The combination of the grooved or mortised sash, the latch having a tube to engage the sash cord and an arm to lie in the groove or mortise, and a spring catch on the arm to engage the sash, substantially as described.

RUDOLPH J. MITCHELL.

Witnesses:

HENRY A. NOBLE,
CLARENCE DEVEREUX.