

PIVOTED SLIDING WINDOW.  
APPLICATION FILED JUNE 8, 1910.

Patented Oct. 3, 1911.

Fig. 1 is a front view of a double door assembly. It features a transom window (A) at the top and two doors (B) below. The assembly is framed by a frame (2). The transom window (A) has a frame (13) and a glass pane (14). The doors (B) have frames (58) and glass panes (50). The doors are hinged to the frame (2) at the top (59) and bottom (62). A locking mechanism is shown on the right door (B), consisting of a handle (66) and a lock (68, 69, 70). The doors are also equipped with weatherstripping (71, 78, 86, 79) at the bottom and sides.

Fig. 2 is a side elevation view of the door assembly, showing the internal components and the relationship between the doors (B) and the frame (2). It illustrates the hinge mechanism (52, 53, 54, 55) and the locking mechanism (56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86).

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1,004,873.

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3 SHEETS—SHEET 2.

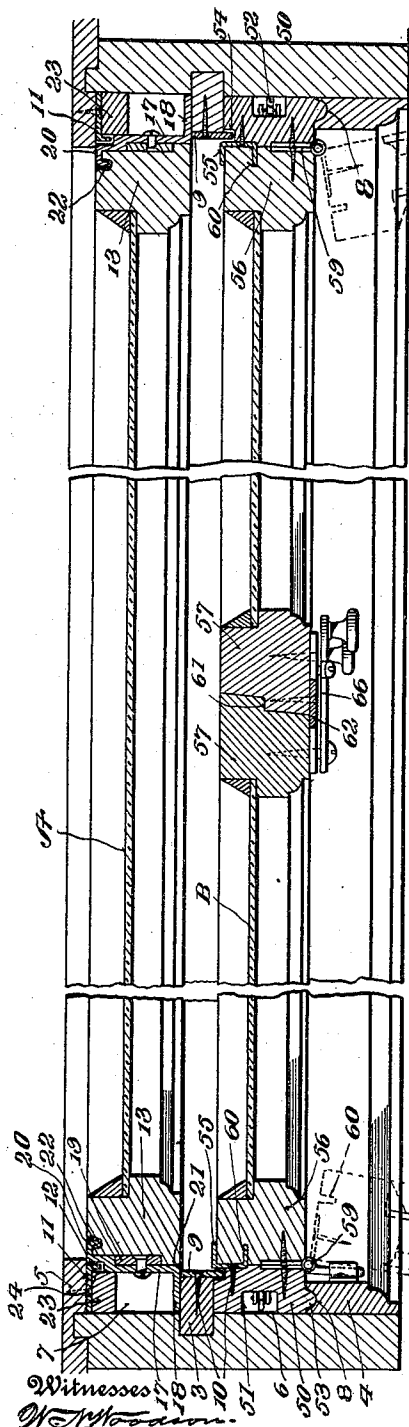


Fig. 3.

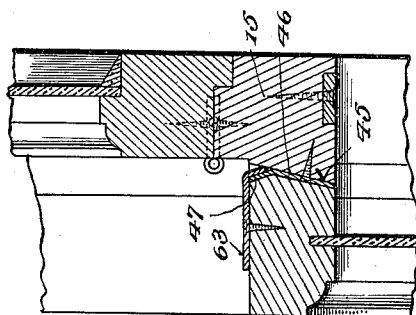


Fig. 5.

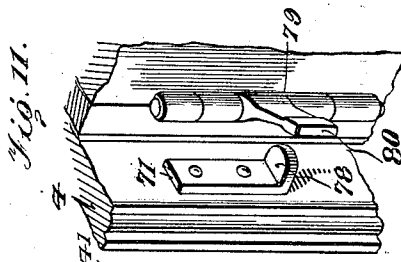


Fig. 11.

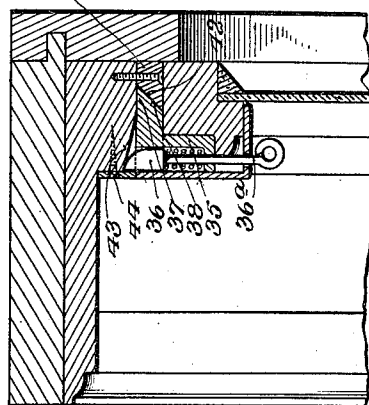


Fig. 4.

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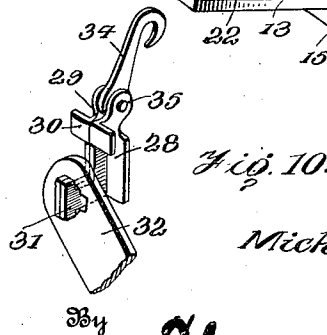
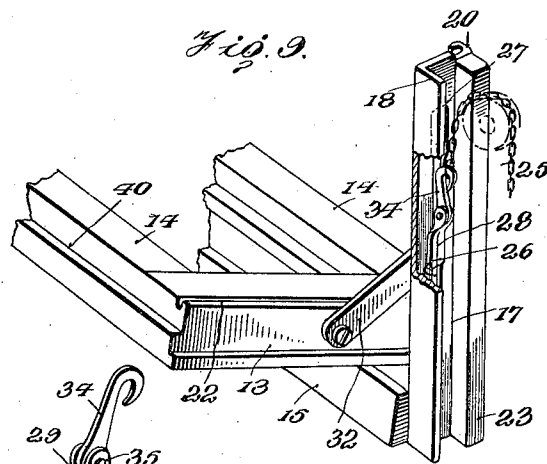
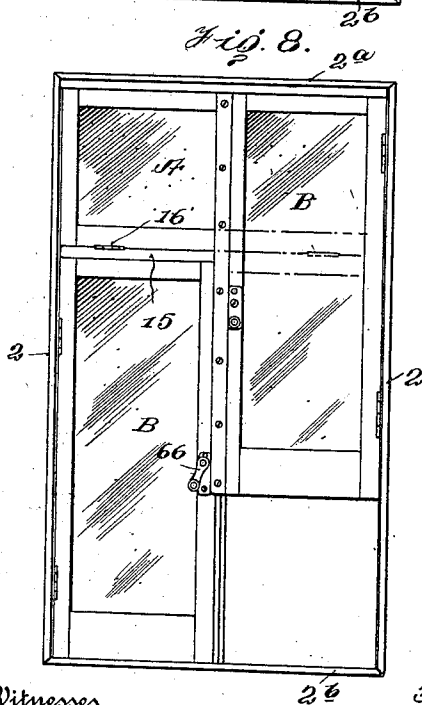
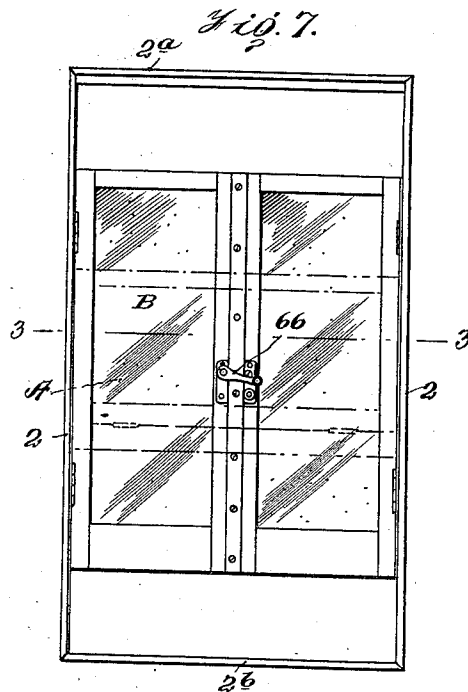
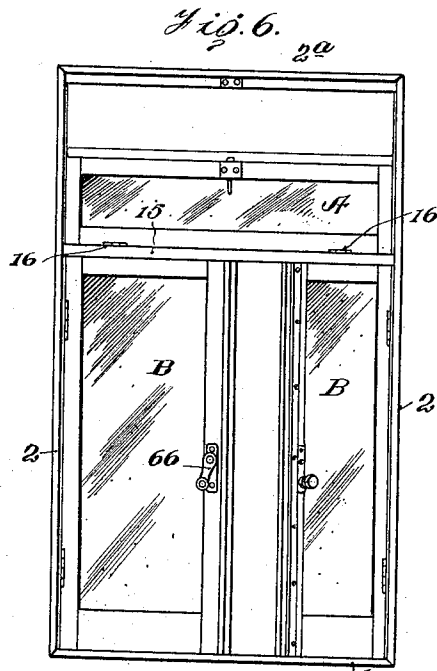
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3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

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## PIVOTED SLIDING WINDOW.

1,004,873.

Specification of Letters Patent.

Patented Oct. 3, 1911.

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*To all whom it may concern:*

Be it known that I, MICHAEL HÄBERLE, citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Pivoted Sliding Windows, of which the following is a specification.

My invention relates to windows, and particularly to that class of windows wherein sashes are adapted to slide up and down in the window-frame, and are also so mounted that the sashes may be opened inward.

The primary object of the invention is to provide a window which may be entirely opened from top to bottom, entirely closed both at top and bottom, opened at either top or bottom, opened at the top and bottom but closed in the middle, or opened at each side and either at top or bottom.

Another object is to provide means in connection with a window of the character above described, whereby the several sashes may be held in close engagement with the window-frame and with each other, so as to prevent drafts, and so as to lock the window sashes in their closed position.

Still another object is to provide in connection with the window sashes above described, means whereby the sashes shall be weather-stripped to prevent the passage of air around the side bars on the sashes.

A still further object is to provide a hook of a particularly convenient character whereby the sashes may be connected to the weight chains or cords.

The invention consists in general terms in a window having an upper sash movable the whole length of the window-frame and pivoted so as to open inward, and a lower sash composed of hinged sections, both sections being vertically movable as a whole the entire length of the window, or independently movable either to open the sections on their hinges, or to raise or lower either section.

My invention is shown in the accompanying drawings wherein:

Figure 1 is an inside elevation of a window constructed in accordance with my invention. Fig. 2 is a longitudinal section thereof on the line 2—2 of Fig. 1. Fig. 3 is an enlarged transverse section on the line 3—3 of Fig. 7. Fig. 4 is a fragmentary enlarged vertical section showing the means

of latching the upper or transom sash in its closed position. Fig. 5 is an enlarged vertical section through the meeting rails of the upper and lower sashes. Fig. 6 is a face view showing the sashes in their ordinary position but partly open. Fig. 7 is a like view but showing the sashes shifted to open the upper and lower portions of the window. Fig. 8 is a like view showing the sashes so shifted that only a relatively small portion of the window opening is unclosed. Fig. 9 is a fragmentary perspective detail view of the upper or transom sash lowered, the slide for the transom sash being broken away. Fig. 10 is a perspective detail view of the means for attaching the supporting chain to the slide and sash. Fig. 11 is a perspective view of the locking means for the lower sash.

Referring to these views A designates a transom sash which extends across the entire width of the window-frame and B—B designate casements which together form the lower sash of the window. The transom sash A as shown has a width equal to about one-third the depth of the window, the casement sashes having a length equal to two-thirds of the window opening.

The window-frame as usual is composed of the jambs 2 and the lintel and sill 2<sup>a</sup> and 2<sup>b</sup>. The jambs are provided with the parting strip 3, the inner stop 4 and the outer stop 5, these stops and parting strip 3 defining the sash channels 6 and 7, the channel 6 being used for the lower sash of the window, while the sash channel 7 is used for the transom sash or upper sash A. The inner stop 4 is formed with a recess 8, for a purpose later to be described, while the parting strip 3 is provided on its face with the metallic strip 9 which extends the whole length of the parting strip 3 and is wider than the parting strip so as to project over the sash channel 6. This strip 9 is held in place by screws 10 or in any other suitable manner. Attached to the outer stop 5 on the inside face thereof, is the metallic strip 11 having the angularly bent margin 12 which extends toward the front of the window.

The upper transom sash A consists of the longitudinal frame bars 14 and the side bars 13. The lower frame bar 14 is hinged as at 16 to a transverse supporting bar 15. This bar 15 is rigidly attached to the lower ends of opposed slides 17 which are pref-

erably made of metal angular in cross section, as shown in Fig. 3, each slide being provided with an angularly projecting flange 18 on one edge. The face of the slide is rabbeted as at 19, and the edge of the slide opposite to the flanged edge 18 is formed with a flange 20 which extends toward the sash and is slightly hook-shaped in cross section. The adjacent side bar 13 of the transom sash B is provided with a shoulder 21 which contacts with the face of the slide 17, while the outer face of each of the bars 13 is provided with a longitudinal groove 22 into which the inwardly turned end or hook-shaped flange 20 engages when the window sash is in alinement with the slides 17. Carried upon the inner face of the slide 17 is the strip 23 whose outer face is in the same plane with the inner face of the flange 20.

It will be seen that a longitudinal recess 24 is left between the base of the flange 20 and the face of the strip 23, this recess accommodating the inwardly turned margin 12 of the metallic weather-strip 11. This inwardly turned edge or margin 12 prevents the entrance of air between the outer margin of the slide and the rear face of the slide, and further acts to hold the slide in proper sliding engagement with the window-frame, permitting this slide to move vertically but preventing it from moving out of its proper position in the window-frame, unless the metallic strip 11 is removed. The space back of the slide and between the flange 18 and the strip 23 forms a chain space from which a chain passes up over the usual pulleys to a weight or spring as desired for counterbalancing the window sash. The slide is provided with means for the attachment of the chain 25, said means consisting of a hook mounted upon a movable member having sliding engagement with the slide, and to which movable member a brace is attached.

In detail the slide is provided with a longitudinally extending slot 26 enlarged at its upper end as at 27. The sliding member comprises a body 28 having a shank 29 projecting through the slot 26 and formed with a head 30 on its upper end. The lower end of the member 28 is also provided with an inwardly projecting headed shank 31 which passes through the slot and forms means for the attachment of a pivoted brace 32 which extends down and is pivoted to the side bars 13 of the transom sash A. The upper portion of the body 28 is provided with the outwardly extending ears 35 between which is pivoted a hook 34 shown in detail in Fig. 10 over which the chain 25 is hooked. It will be seen that the weight or spring attached to the chain 25 acts to counterbalance the sliding transom window A, and also acts to counterbalance the tran-

som sash when it is turned upon its hinges. It will also be seen that the transom sash may move along the sash channels 7 from the top to the bottom of the window-frame.

In order to hold the transom section in its closed position and prevent its being either pushed in from outside or pulled down, I provide the upper rail or bar of the transom sash at its middle with the bolt casing 35 in which is located the sliding bolt 36 which is spring-impelled so that the end of the bolt projects upward above the face of the upper rail of the sash. This upper end of the sliding bolt is beveled downwardly and toward the front of the window, as shown in Fig. 4. The upper end of the bolt casing is formed with a rearwardly projecting flange 37, the under face of which is upwardly beveled as at 38. This upwardly beveled end projects beyond the upper rabbeted face of the upper sash bar. The lintel of the window at its middle is formed with a longitudinally extending shoulder which engages with the corresponding, longitudinally extending shoulder 40 on the upper face of the upper bar of the sash, and the shoulder on the lintel is cut away at one point for the reception of a plate 41 of metal, the upper inner face of which is beveled as at 42 to correspond with the beveled end 38 of the plate 37. The under face of the lintel just forward of the cut away portion 40 is also cut away as at 43, and the open end of this cut away portion is closed by a plate 44, thus forming a recess in which the projecting end 36 of the latching bolt is received.

When the window is moved upward and it is desired to lock the window in its closed position, the pivoted sash formed by the bars 13 and 14 is closed, thus forcing the beveled tongue 37 into engagement with the beveled end of the plate 41. At the same time the beveled upper end of the bolt 36 strikes against the lower edge of the plate 44, the bolt is depressed and then springs back into engagement after it has passed the plate 44, thus locking the sash against any outward movement, and inasmuch as outward movement is prevented, any downward movement is also prevented unless the bolt 36 be actuated or withdrawn by means of the projecting shank 36<sup>a</sup>. The lower bar 15 has a downwardly and inwardly beveled face 45 which is provided at its middle with a plate 46 of metal, the upper margin of which is outwardly bent or angled as at 47 to engage with certain locking devices upon the sections of the lower sash.

Located in each of the sash channels 6 is the longitudinally extending slide 50, this slide having a length equal to the length of the lower sash and being cut away at its upper end as at 51 for the accommodation of a chain 52 whereby the lower sash is sup-

ported. The front face of the slide 50 is formed with a rounded molding 53 which extends into the groove 8 formed in the stop 4. The rear face of the slide 50 is formed on its margin with a recess 54 for the reception of the strip 9 on the parting strip 3. Attached to the face of the slide 50 at its rear edge and extending over the recess 54 is the U-shaped metallic strip 55 which is attached in any suitable manner to the face of the slide 50.

The lower sash is formed in two sections B, B practically alike and each composed of the side bars 56 and 57 and the end bars 58. The side bars 56 are hinged to the forward edge of the slides 50 by means of the hinges 59 and are each provided with a longitudinally extending recess 60 for the reception of one flange of the U-shaped strip 55, the other flange of said strip normally contacting with the outer face of the bar 56 when the sash is in its closed position as shown in Fig. 3. This U-shaped strip 55 acts as a weather-strip and prevents the entrance of air between the hinged sash and the slide 50. The bars 57 are rabbeted as at 61 so that when the two sections of the window are closed against each other the joint between the windows will be broken as shown in Fig. 3. The front face of one of the bars 57 is provided with the metallic strip 62 which is attached in any suitable manner thereto and overlaps the other bar 57 so as to form a weather-stripped joint preventing the passage of air. The upper faces of the uppermost cross bars 58 are provided at their meeting edges with the angularly bent catches 63, the downwardly and outwardly extending ends of which engage with the angularly turned end of the plate 46 on the inside face of the lower bar of the upper window sash. Thus when the sections of the lower sash have been closed and the transom sashes forced upward, this plate 46 will engage with the downwardly extending ends of the plates 63 and will draw the meeting rails of the two sashes together, thus preventing the passage of air between the meeting rails of the two sashes.

In order to hold the two sections of the lower sash together, I may use any desired locking device but I have shown for this purpose a pivoted latching member 66 pivoted on a plate 67 attached to the longitudinal bar of one sash and of such length as to extend across the plate and engage with a screw stud 68 on a face plate 69. This plate 69 may be also provided with a handle 70, whereby the sash may be easily opened. It will be obvious that when the latch member 66 is turned across the sections that it will prevent the sections from being opened, though not preventing the sections from being raised or lowered together. When, however, the latching member is turned outward

the sections of the lower sash may be opened in the manner common to casement windows.

I may use any means for preventing the raising of the lower sash, or the sections of the lower sash, but I have shown for this purpose a stop 71 attached to the stop strip 4, and having a projecting end 78. Attached to and forming part of the lower hinge of the sash section is a pivoted bar 79 having an enlarged head 80 which is adapted to be turned outward so as to engage beneath the angular end 78, or to be turned inward so as to be disengaged from this angular end and permit the lower sash or the sash section to which the bar 79 is attached to be raised or lowered.

The operation of my invention is as follows: It will be seen that the transom section A may be raised or lowered the full length of the window-frame, and that the lower sash formed by the sections B—B may also be raised or lowered. Hence the transom sash may be moved to the upper end of the window, which is its normal position, may be shifted to the lower end of the window, or to any point between the upper and lower ends as may be desired. When the transom section is at either the lower or upper end of the window-frame, the sash may be swung outward upon its hinges to the position shown in Fig. 6. As the pivoted sash is supported by means of weights, it will be held counterbalanced in any desired angular position, and hence may be opened to a small extent or opened to its full extent as desired. This permits the transom window to be easily washed or permits it to be opened to a slight degree for ventilation. The lower sash, composed of sections B—B, may also be raised or lowered to any desired position. Thus the lower sash may be raised to the top of the window casing, while the transom sash is lowered to the bottom. Either one of the sections may be closed or either one opened, or the lower sash and the transom sash may be moved to the middle of the window, thus leaving an opening at the top of the window and at the bottom thereof as in Fig. 7. If it is desired, one of the lower sash sections B may be kept closed while the other may be opened, either by turning the sash section upon its pivot or raising the sash section as in Fig. 8. Inasmuch as the upper sash is about equal to one-third of the window opening, and the lower sash is equal to about two-thirds of the window opening, it is obvious that when the upper sash is closed and one section of the lower sash is lowered and while the other section of the lower sash is raised, that there will be an air space of one-sixth of the entire window opening as in Fig. 8. It will also be obvious that by lowering the pivoted section of the upper transom sash to its full

extent, and by opening the sections of the lower sash to their full extent, that the entire window space may be left free and unobstructed.

5 While I have shown certain details of construction which I believe to be preferable, I do not wish to be limited to these details as it is obvious that many changes might be made in the arrangement of parts  
10 and said details of construction without departing in any manner from the spirit of the invention.

What I claim is:

1. The combination with a window frame  
15 having pairs of parallel sash channels, of oppositely disposed slides in each channel, means for counterbalancing the slides, a transversely extending bar connecting one of said pairs of slides, a sash section hinged  
20 to said bar for movement in a vertical plane, said section extending entirely across the window opening, and laterally disposed vertically extending independent sash sections, each hingedly connected at its outer edge  
25 to one of the other pair of slides, said sash sections being adapted to close against each other to close the window or to rotate in a horizontal plane to open the window and each of said last-named sections having independent vertical movement.  
30

2. The combination with a window-frame having pairs of parallel sash channels, of oppositely disposed slides in each channel, a transversely extending bar connecting one  
35 of said pairs of slides, a sash section hinged to said bar for movement in a vertical plane, counterbalancing weights connected to each

of said slides, adjusting arms pivoted to the hinged sash section and connected at their other ends to said weights, laterally disposed, vertically extending, independent  
40 sash sections, each hinged at its outer edge to one of the other pair of slides, said sash sections adapted to close against each other to close the window or to rotate in a horizontal plane to open the window, means for  
45 holding said sash sections closed, and counterbalancing weights connected to said last named slides.

3. The combination with a window-frame  
50 having oppositely disposed sash channels, of a pair of slides, one in each sash channel, a transversely extending bar rigidly connecting said slides, means for counterbalancing said slides, a sash section hinged to  
55 the upper face of said bar for movement in a vertical plane, a spring-impelled locking bolt carried on the upper edge of the sash section, having an upper end beveled outwardly and upwardly, a tongue projecting  
60 rearward from said locking bolt having a beveled under face, a locking plate located in the lintel of the window-frame immediately above the locking bolt and having a beveled upper face, and a vertically extending  
65 locking plate with which said bolt engages.

In testimony whereof, I affix my signature in presence of two witnesses.

MICHAEL HÄBERLE. [L. s.]

Witnesses:

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GUSTAV BAUER.