W. S. WARREN.

WINDOW.

APPLICATION FILED SEPT. 8, 1913.

1,139,244.

Patented May 11, 1915.

2 SHEETS—SHEET 1.

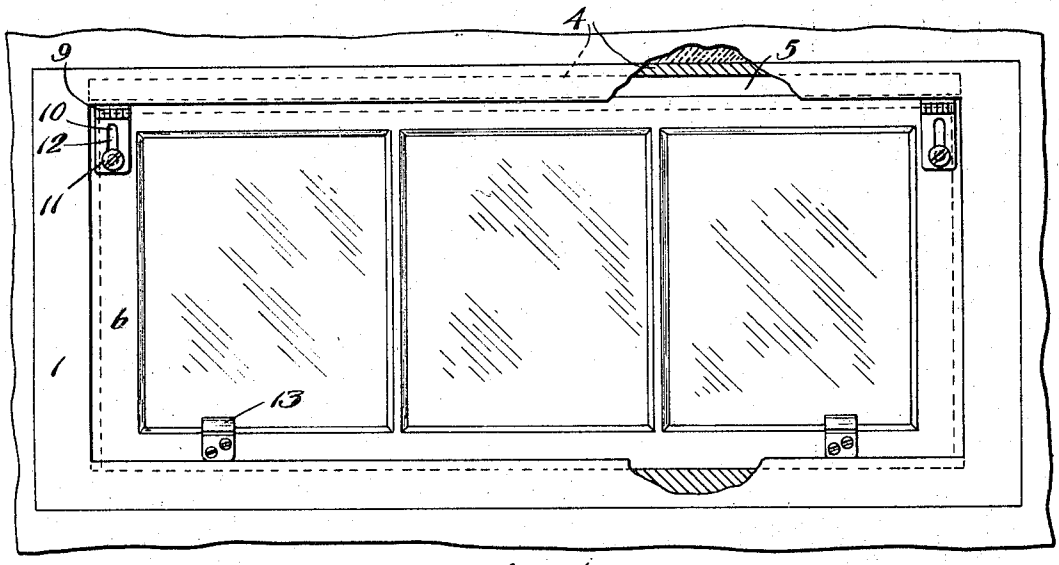


Fig. 1.

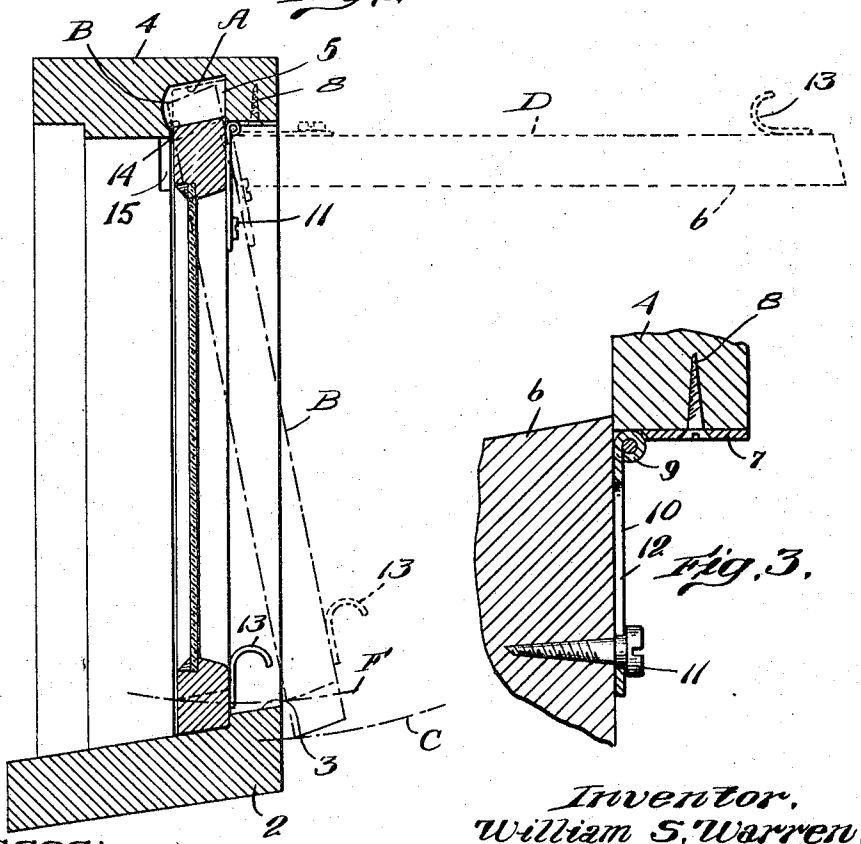


Fig. 2.

Fig. 3.

Witnesses;
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2 SHEETS—SHEET 2.

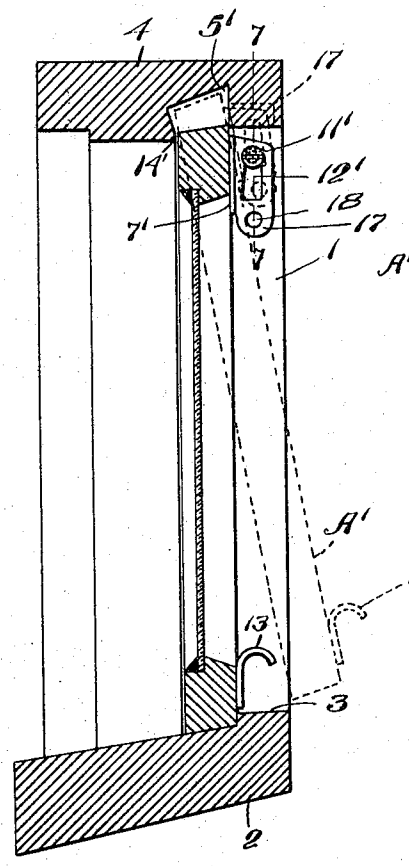


Fig. 4.

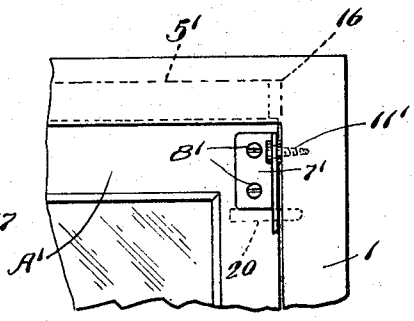


Fig. 5.

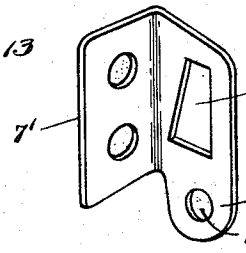


Fig. 6.

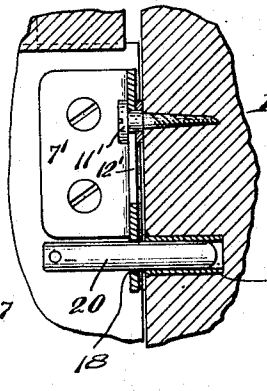


Fig. 7.

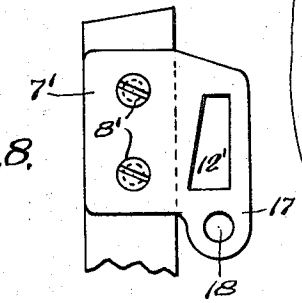


Fig. 8.

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UNITED STATES PATENT OFFICE.

WILLIAM S. WARREN, OF CAMBRIDGE, MASSACHUSETTS.

WINDOW.

1,139,244. Specification of Letters Patent. Patented May 11, 1915.

Application filed September 8, 1913. Serial No. 788,554.

To all whom it may concern:

Be it known that I, WILLIAM S. WARREN, a citizen of the United States, residing at Cambridge, county of Middlesex, Commonwealth of Massachusetts, have invented certain new and useful Improvements in Windows, of which the following is a specification.

This invention relates to windows and particularly to a combined sliding and swinging window especially adapted for use in cellars, basements and the like where the physical limitations are such that the ordinary sash of the vertically sliding type can not be used.

My invention involves certain improvements over the construction of the patent to Watkins, 674,490, dated May 21, 1901, to which reference is made as illustrating the type involved herein.

The nature of my improvements will be more fully discussed in the specification which follows.

Reference is made to the foregoing patent to illustrate the type of window, the object of which is to prevent water from driving or leaking under the sash. This is one of the objects of my invention although other features are also included as will more fully appear in the following specification.

As illustrative of my invention, I have shown in the annexed drawings a window which I have found well adapted for the purposes intended.

Throughout specification and drawings like reference numerals will indicate corresponding parts and in these drawings:

Figure 1 is an elevation of a window in accordance with my invention, viewed from the inside and parts being broken away. Fig. 2 is a vertical section through the window showing in full lines its position when closed and in dotted lines its position when open. Fig. 3 is an enlarged detail view of one of the hinges. Fig. 4 is a vertical section of a slightly modified type of window. Fig. 5 is a partial front view thereof. Fig. 6 is a detail of the hinge seen in Figs. 4 and 5. Fig. 7 is a detail section on the line 7—7 of Fig. 4, and Fig. 8 is a detail showing the hinge fastened to the side instead of the front face of the sash as in Fig. 5.

I have indicated at 1 a window casing, at 2 a window sill, at 3 a window ledge, at 4 a cap piece, at 5 a longitudinally extending groove in said cap piece, and at 6 a window sash having its upper sash bar lying just within the groove 5 and its lower sash bar resting on the window sill and abutting against the ledge 3. The position of the sash just referred to represents its closed position and the upper sash bar is bearing against the edge 14 of the cap piece. This edge 14 is formed by the juncture of the curved rear wall of the groove 5 and the horizontal inner edge of the cap piece 4 and also serves as a second bearing for the sash when open as will be explained hereinafter.

Opposite the edge 14 and adjacent to each end of the upper bar the sash is hinged to the casing. The hinges used are of special construction in order that the sash as a whole may be raised vertically to clear the ledge 3 and then be swung inwardly away from the ledge to the dotted line position marked D in Fig. 2. One leaf 7 of each hinge is fastened by a screw 8 to the cap piece 4 and is engaged over a pintle 9. The other leaf 10 is also engaged over the pintle 9 and is fastened to the upper sash bar by a screw 11. This leaf has an elongated slot 12 in which the screw 11 works when the sash is raised by lifting upon the hand pulls 13 of the lower sash bar. In this movement of the sash the screw 11 traverses the slot a distance commensurate with the depth of the groove 5, and the sash bar moves up into the groove 5 and assumes the position marked A in Fig. 2. This raises the lower sash bar sufficiently high to clear the ledge 3 which is accomplished by swinging the sash inwardly into the position marked B in Fig. 2, the sash describing in this movement a path which is part of the arc marked F. The sash is now clear of the window ledge and may be dropped down to or slightly below its normal level to return the upper sash bar to its normal position after which the sash is swung upwardly in an arcual path marked C in Fig. 2. When fully opened the window has assumed the position marked D and the screws 11 are again at their original positions at the ends of their slots. In this position the sash lies substantially horizontal to the ground and at right angles to the cap piece. With the sash in this position it is desirable to hold it against accidental displacement. The casing 1 is therefore provided with a longitudinally extending groove 15 which is arranged below the groove 5 and in line with the upper sash bar when the sash is in the position marked D. A relative transverse movement of the sash

will therefore seat the upper sash bar within the groove 15, which is deep enough to support the sash, the screws 11 in this movement working along the slots 12 until they have reached the opposite ends.

The purpose of forming the groove 5 with a curved rear wall and of a width greater than the width of the sash bar is now apparent. When the sash is raised to clear the ledge, the upper sash bar rides up to the top wall of the groove by reason of the sliding connection. When the sash is dropped down into the position B the upper sash bar finds clearance in the groove so that when the sash is raised into the position marked D the upper sash has cleared the edge 14 and is now free to be moved back into the groove 15. This movement is permitted by the length of the slots 12 in the hinge leaves 10, which permit the screws 11 and thus the sash bar to move rearwardly sufficiently far to engage the groove 15.

In the modification shown in Figs. 4 to 8 inclusive, the groove 5^1 of the window casing has its rear wall inclined inwardly instead of curved as in Fig. 2 and the window cap has a small cross recess 16 at each end to receive the sliding connection at each upper corner of the sash when the window is raised to clear the ledge. These sliding connections work on the same principle as in the other embodiment with the exception that in the present case the screws 11^1 are shouldered and are fixed in the casing and the hinges move with the window. One leaf 7^1 of each hinge is therefore fastened to either the front face as in Fig. 5 or to the side face of the sash as in Fig. 7 by small screws 8^1 and the other leaf 10^1 has a trapezoidal slot 12^1 in which the screw 11^1 fits and over which screw said slot engages as a guide. Each leaf 10^1 has a depending lug 17 provided with a hole 18 registering with a hole in the casing, a metal ferrule 19 being fitted in said last named hole. In these holes a pin 20 is adapted to be inserted to lock the window.

The normal position of the parts is that shown in full lines in Fig. 4 wherein the window is closed and the upper restricted end of the slot tightly engages the screw. When the sash is raised, the upper sash bar rides up into the groove 5^1, a distance proportionate to the length of the slot and its hinges are received within the groove 16. In this position, the lower, wider end of each slot is loosely engaging the screw and a sufficient lateral play is permitted thereby to allow the sash to be tilted inwardly into the dotted line position A^1 wherein the upper sash bar finds clearance in the groove 5^1 and bearing against the edge 14^1 on the rear wall of said groove. In this movement the sash has been moved from the outside to the inside of the ledge 3 whereupon it is dropped down to substantially its normal position but on the inside of the ledge and is then swung inwardly to substantially horizontally open position.

Various other modifications in the construction and form of my invention, coming within its spirit and scope may obviously be resorted to if found within the limits of the appended claims.

What I therefore claim and desire to secure by Letters Patent is:

1. In a device of the class described in combination with a window casing having a water excluding ledge and a groove in its cap piece said groove having an outer bearing edge, a sash having hinged connection to said casing, said connection permitting a relative movement sufficient to allow said sash to be entered into said groove and to be engaged under said bearing edge after it has been swung into open position.

2. In a device of the class described in combination with a window casing having a water excluding ledge and a recess in its cap piece, said recess providing an outer bearing edge, a sash normally bearing in closing position outside of said water excluding ledge and a hinge member connecting said sash and casing, said hinge member having a slot, a fixed element in said sash and working in said slot by which said sash may be either raised in said recess to clear said ledge when in closed position or be engaged under said bearing when in open position.

3. In a device of the class described, a window casing having a water excluding ledge, a lateral shoulder at the top of the casing, a sash having hinged connection to said casing, said connection permitting a relative movement sufficient to allow the upper edge of said sash to be engaged under said lateral shoulder after it has been swung into open position.

4. In combination with a window casing having a water excluding ledge on its sill and a lateral shoulder near its top, a sash, a slotted connecting element on said sash and a pivot element on said casing below said shoulder and entering said slot and having a lateral play therein sufficient to permit the engagement of said sash with said shoulder when said window is open.

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

WILLIAM S. WARREN.

Witnesses:
GEO. B. RAWLINGS,
I. S. CLEMENT.