A. MacKINNON.

WINDOW CONSTRUCTION.

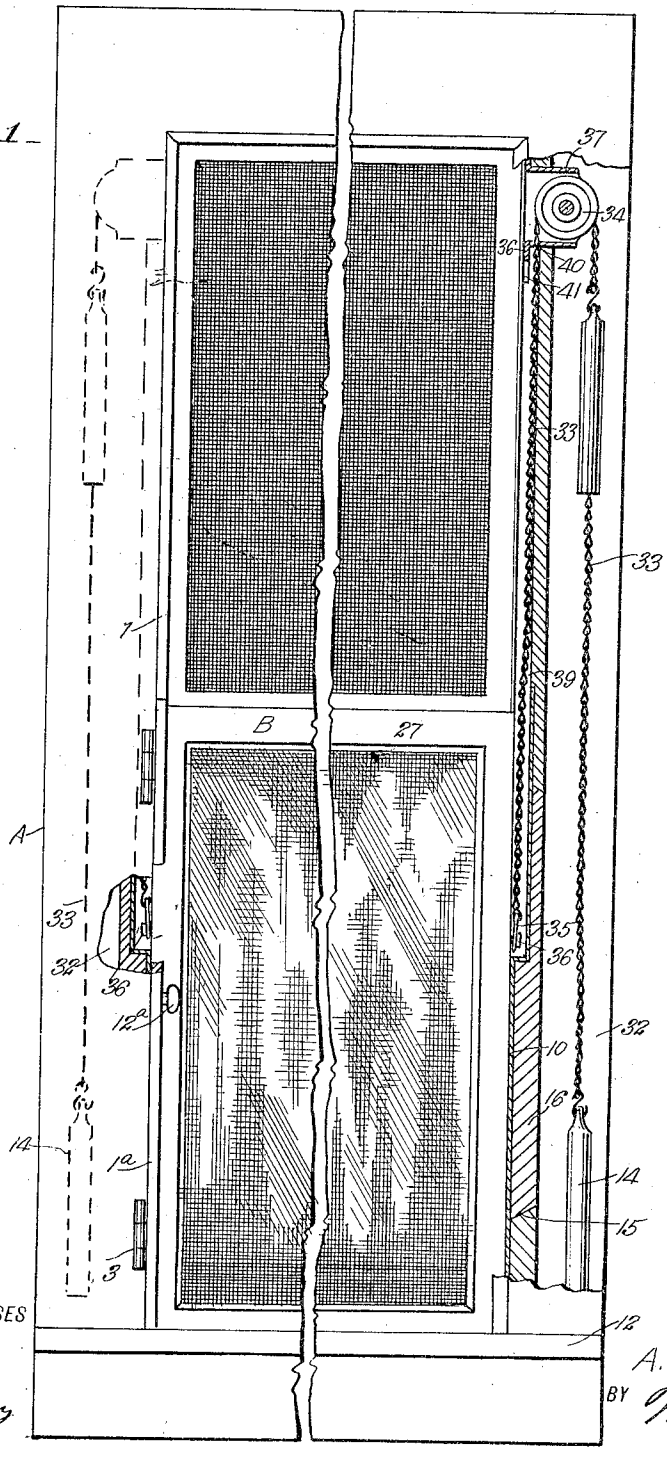
APPLICATION FILED JUNE 27, 1918.

1,330,714.

Patented Feb. 10, 1920.

3 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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3 SHEETS—SHEET 2.

Fig. 2.

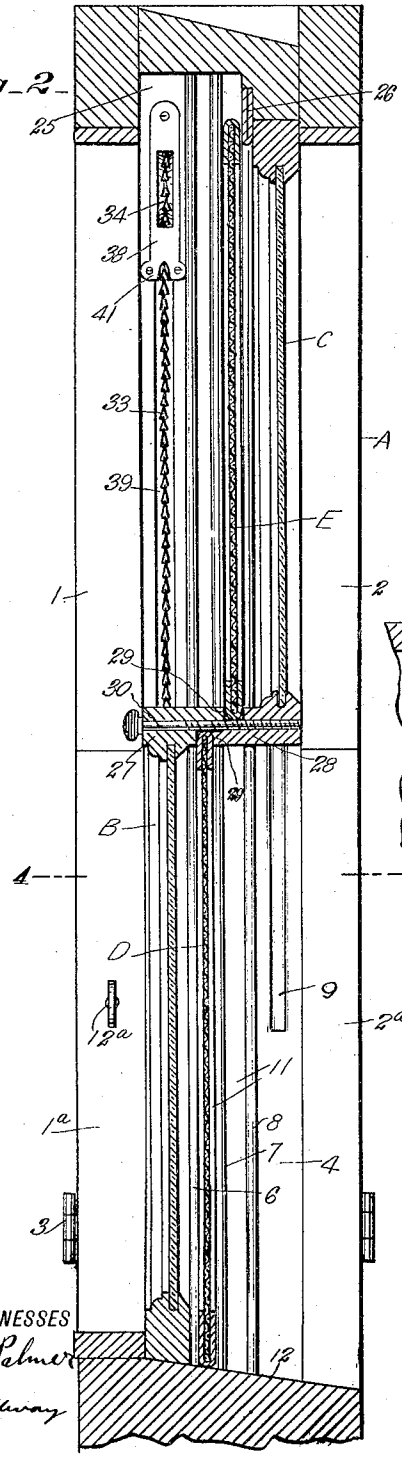


Fig. 5.

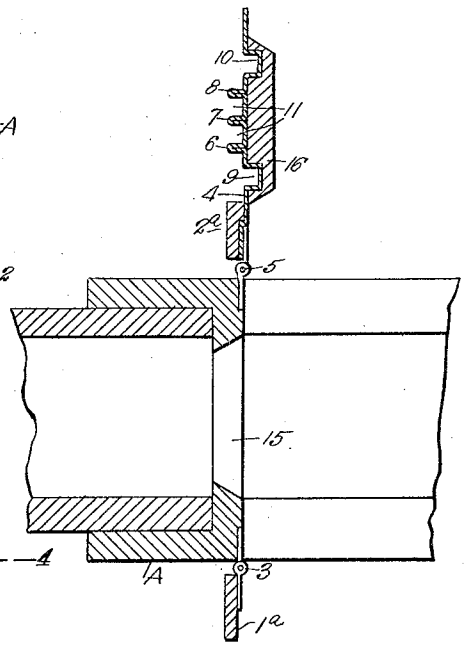
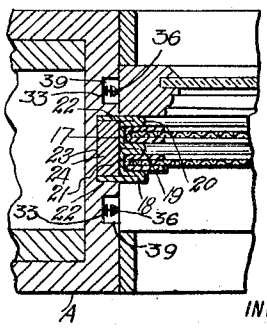


Fig. 6.



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3 SHEETS—SHEET 3.

Fig. 3.

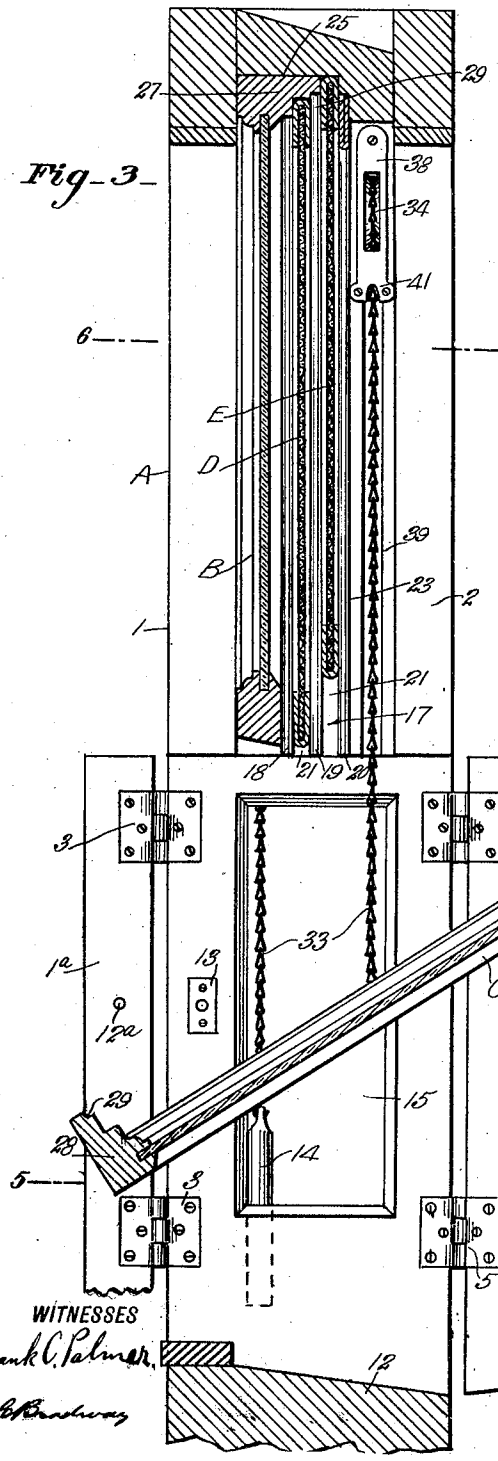


Fig. 4.

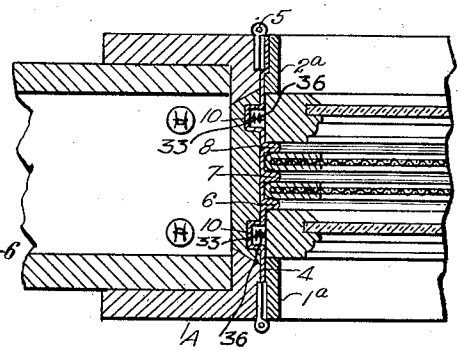


Fig. 7.

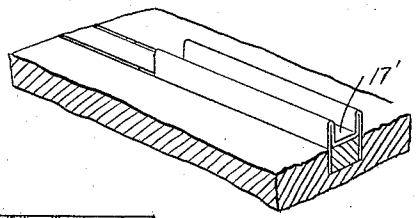
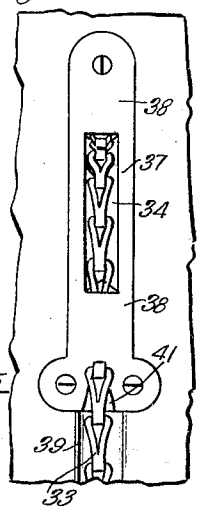


Fig. 8.



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UNITED STATES PATENT OFFICE.

ARCHIBALD MacKINNON, OF TUCKAHOE, NEW YORK.

WINDOW CONSTRUCTION.

1,330,714. Specification of Letters Patent. **Patented Feb. 10, 1920.**

Application filed June 27, 1918. Serial No. 242,276.

To all whom it may concern:

Be it known that I, ARCHIBALD MacKINNON, a subject of the King of Great Britain, and a resident of Tuckahoe, in the county of Westchester and State of New York, have invented a new and Improved Window Construction, of which the following is a full, clear, and exact description.

This invention relates to a window construction of that type having reversible window sashes and screens between the sashes.

The invention has for its general objects to improve the construction and operation of structures of this character so as to be reliable and efficient in use, comparatively simple and inexpensive to manufacture, and so designed as to be easily manipulated.

A more specific object of the invention is the provision of a novel construction of the lower half of each side of the window frame, whereby either sash when in lowered position can be reversed, and whereby the sash weights are easily accessible.

Another object of the invention is the provision of a novel arrangement of sashes, screens and guide bars and grooves, whereby the window is made air, dust and stormproof when the sashes are closed.

With such and other objects in view, the invention comprises various novel features of construction and arrangement of parts which will be set forth with particularity in the following description and claim appended hereto.

In the accompanying drawings, which illustrate one embodiment of the invention and wherein similar characters of reference indicate corresponding parts in all the views,

Figure 1 is an inside view of a window frame with portions broken away and in section to illustrate details of construction;

Fig. 2 is a vertical section of the window frame with the sashes closed;

Fig. 3 is a similar view showing the window frame adjusted and the upper sash in reversed position;

Fig. 4 is a detail sectional view on the line 4—4, Fig. 2, with both sashes and both screens down;

Fig. 5 is a horizontal section on the line 5—5, Fig. 3;

Fig. 6 is a horizontal section on the line 6—6, Fig. 3, with the sashes in normal position;

Fig. 7 is a perspective view of a modified form of screen guide bar; and

Fig. 8 is a detail view of one of the sash pulleys.

Referring to the drawing, A designates a window frame, B and C the lower and upper sashes, respectively, and D and E the lower and upper screens, respectively. The inner stop of the window frame is made in upper and lower sections 1 and 1^a, and the outer stop is made in two sections 2 and 2^a. The section 1^a is fastened to the window frame by hinges 3, so that it can be swung laterally from the closed position shown in Fig. 4 to the open position shown in Fig. 5. The stop section 2^a is mounted on a plate 4 which is attached to the window frame by hinges 5, whereby the said plate can swing from the position shown in Fig. 4 to that shown in Figs. 3 and 5. This plate 4 is preferably made of sheet metal and is pressed or formed with a plurality of vertically extending ribs 6, 7 and 8, and with grooves 9 and 10, the spaces 11 between the ribs serving as guide grooves for the window screens D and E when the said screens are in lowered position. The ribs 6 and 8 operate with the stops 2^a and 1^a to form guide grooves for the sashes when in lowered position. The hinge plates 4 extend approximately half the height of the window frame from the sill 12 upwardly, and by throwing both plates outwardly clearance is provided at the sides of the window frame for permitting either sash to be reversed. The plates which are locked in normal position by the hinge stop sections 1^a fold over them, and the stop sections 1^a are held in position by locking screws 12^a which are swiveled in the stop sections 1^a and screw into the socket plates 13 fastened to the window frame, as shown in Fig. 3.

To permit of ready accessibility to the ash weights 14 the sides of the window frame at the bottom are provided with openings 15 which are normally closed by the hinge plates 4, and consequently when these plates are thrown to open position the weights 14 can be reached through the openings 15. On the inner face of each plate is a block of wood 16 which enters and fills the opening 15.

In the upper part of the window frame is fitted a guide bar 17 which is made of sheet metal and bent with parallel ribs 18, 19

and 20 which are spaced apart to form grooves 21 to accommodate the screens D and E, said grooves being in alinement with the grooves 11 of the plate 4. The outermost ribs 18 and 20 constitute a parting strip lying between the sashes. The bar 17 has parallel flanges 22 extending from the opposite side to the ribs 18, 19 and 20, and these flanges enter the usual groove 23 in the window frame that receives the parting strip, and to clamp the strip 17 in place a filler 24 may be used between the flanges 22. Where only a single screen is required the guide bar 17′, Fig. 7, is employed, this being the same as the guide bar 17, except that the middle rib is dispensed with.

The top of the window frame is formed with a chamber or box 25 which permits the lower sash to be raised to such a height that the bottom bar thereof will lie above the top edges of the hinge plates 4, so that the latter can be swung back and forth. Across the window frame at the top is a strip 26 which forms a stop for the upper sash and serves to provide wind, dust and weather-tightness.

The meeting bars 27 and 28 of the lower and upper sashes are so constructed that grooves 29 are formed for receiving the upper and lower edges of the lower and upper screens, respectively, as clearly shown in Fig. 2, and a clamping screw or equivalent fastening 30 passes through the bars 27 and 28 so as to draw them together to insure a tight joint, said screw also serving as a sash lock.

The sashes may be counterbalanced by weights 14 arranged in boxes 32 of the window frame, and the weights are suspended from chains 33 which pass over pulleys 34, and the chains are pivotally connected at 35 to pins 36 extending from the sides of the sashes, so that when a sash is in lowered position, as shown in Fig. 3, it can be turned on a horizontal axis. Each pulley 34 is mounted in a box 37 so constructed that the periphery of the pulley is set inwardly from the attaching plate 38 of the box, which permits of the chains 33 lying within the grooves 39 of the window frame, which grooves are necessary for the pivot pins 36 of the sashes. It is to be observed that the channels 9 and 10 in the hinged members 4 register with and form continuations of the grooves 39 when the members 4 are swung to their positions in the window frame and therefore coact with said grooves 39 in affording clearance for the pins 36 in the vertical movement of the sashes. When, however, the members 4 are swung outwardly to the position of Fig. 5 after the sashes have been raised above said hinge members, a sash may be lowered and turned about the pins 36 as an axis as shown by the sash C in Fig. 3. Since the ribs 6, 7 and 8 forming the guides for the screens are fixed on the hinged members 4 and since the registering ribs 18, 19 and 20 at the upper portion of the window frame are immovable, the swinging of the hinged members 4 affords the only means of permitting the screens to be slid into the channels 21 formed by the fixed ribs 18, 19 and 20. The bottom of the pulley box 37 has an opening 40 through which the chain passes.

A window constructed as herein shown has all the appearances of a standard window, but the sashes can be easily and quickly reversed for permitting convenient cleaning of the glass, and the window is completely screened, so that either one or both sashes can be opened for ventilation, and when the window sashes are closed the window is absolutely proof against the entrance of air, dust or rain. The attaching plate 38 has a notch 41 in its bottom with which a sash chain can be engaged to hold the chain against the pull of the weight when the sash is removed from the chain.

From the foregoing description taken in connection with the accompanying drawings, the advantages of the construction and method of operation will be readily understood by those skilled in the art to which the invention appertains, and while I have described the principle of operation, together with the structure which I now consider to be the best embodiment thereof, I desire to have it understood that the structure shown is merely illustrative and that such changes may be made when desired as fall within the scope of the appended claim.

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

The combination of a window frame, upper and lower sashes therein, members forming guides for the sashes, and window screens slidably mounted on the members and adapted to pass one another in planes between the sashes; the meeting rails of the said sashes being extended across the plane of travel of the screens to make the usual contact with each other and thereby controlling the movement of one screen in one direction by that of a sash while leaving the screen free to move independently of said sash in the opposite direction.

ARCHIBALD MacKINNON.