

G. B. EVANS.

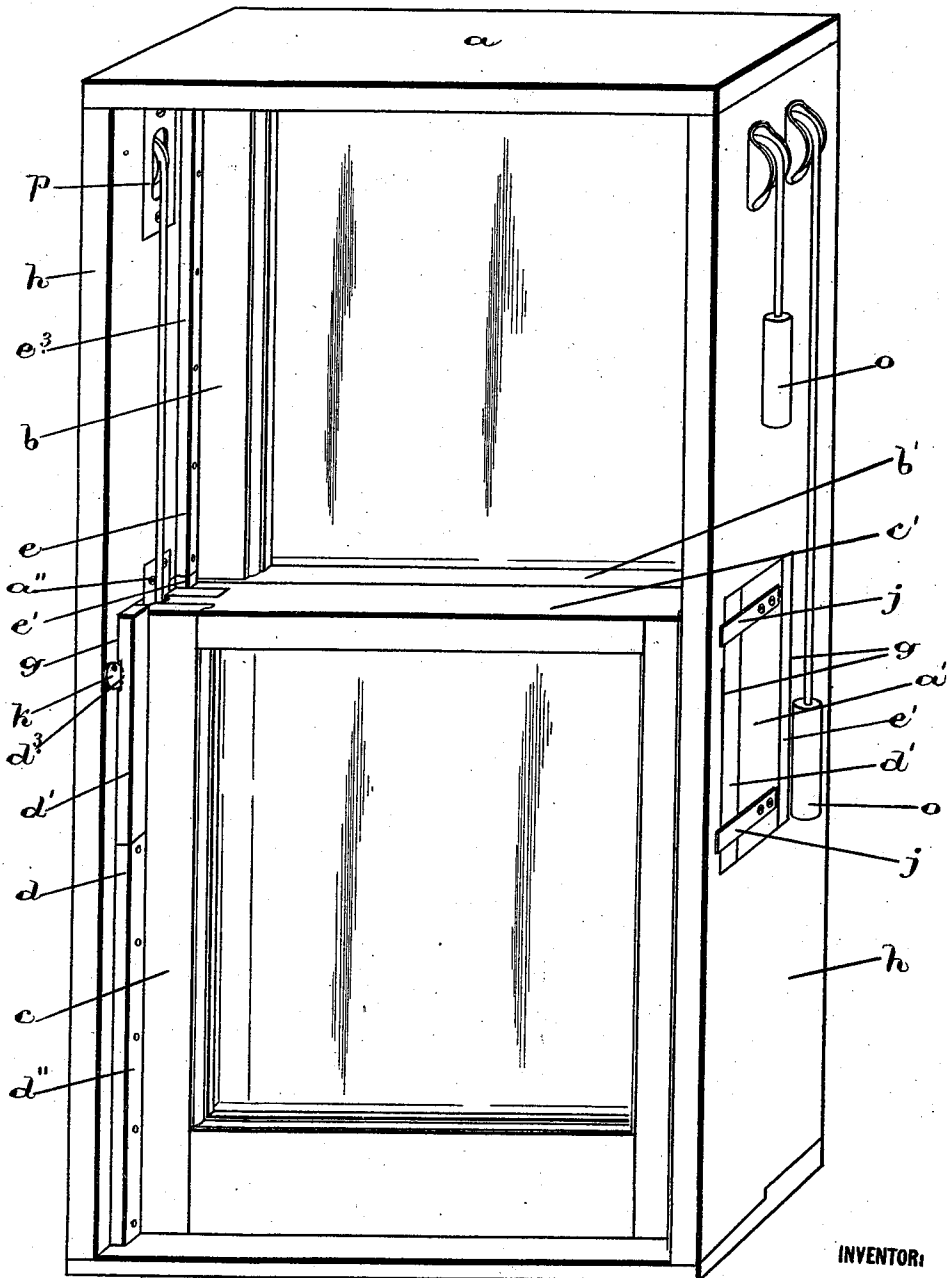
WINDOW.

APPLICATION FILED NOV. 19, 1910.

1,001,006.

Patented Aug. 22, 1911.

3 SHEETS—SHEET 1.



INVENTOR:

George B Evans.

*Fig. 1. by Chas. H. Riches
Attor*

WITNESSES:
*H. L. Trimble,
Oliver S. Sattman*

G. B. EVANS.

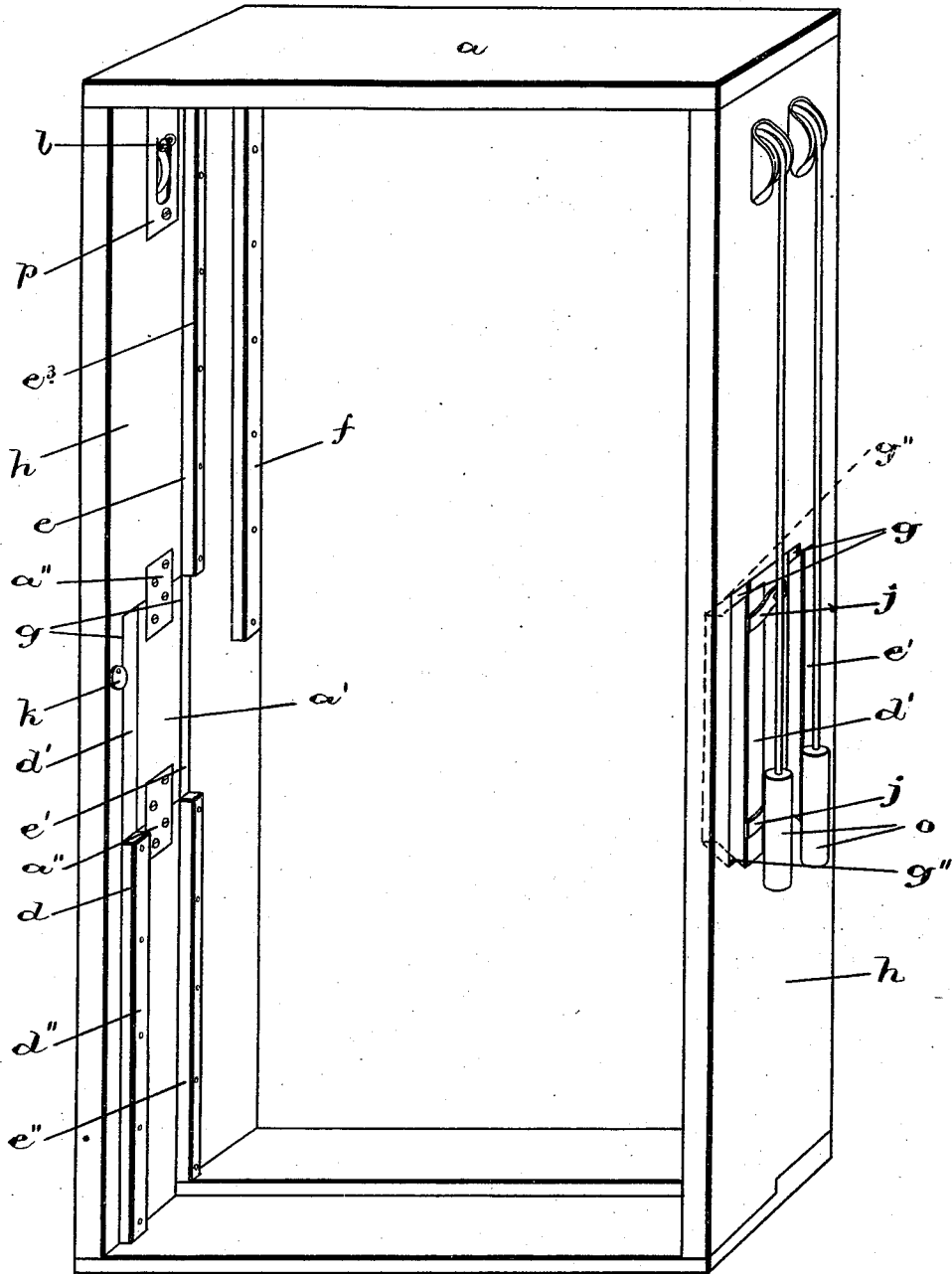
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3 SHEETS—SHEET 2.



WITNESSES:

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Fig 2. George B Evans
by Chas H Risher
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3 SHEETS—SHEET 3.

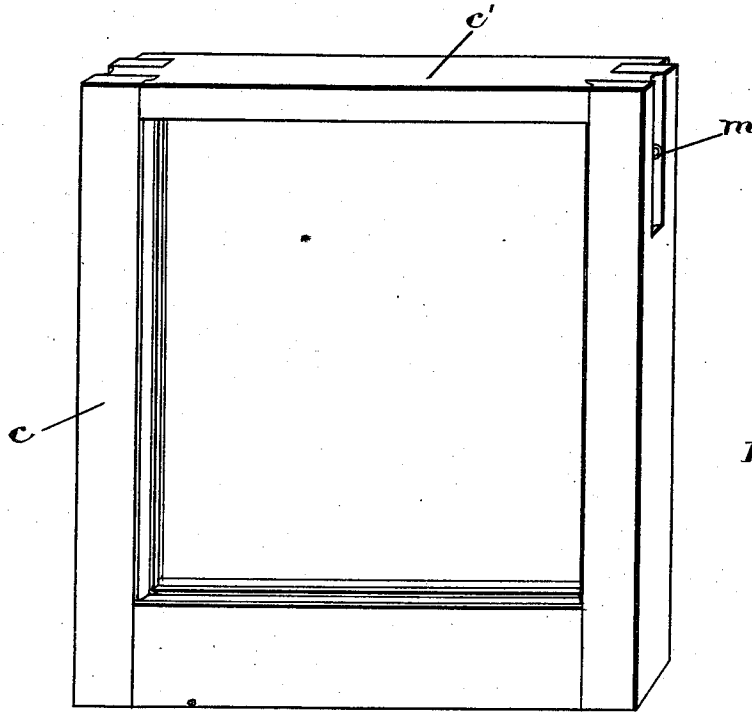


Fig. 3.

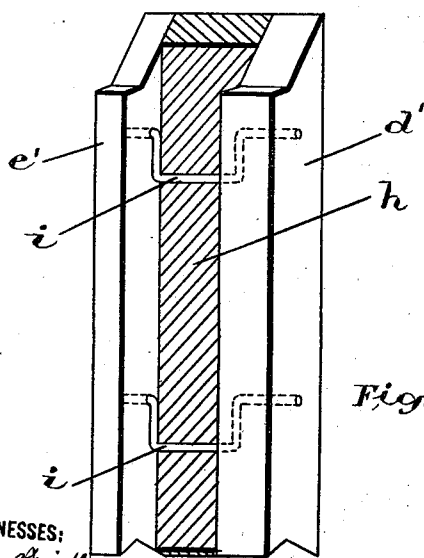


Fig. 4.

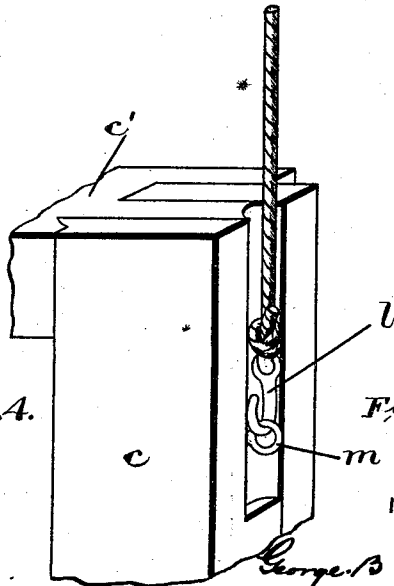


Fig. 5.

INVENTOR:

George B. Evans
by Chas. H. Reides
Att'y

WITNESSES:
H. A. Prindle
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UNITED STATES PATENT OFFICE.

GEORGE BENJAMIN EVANS, OF TORONTO, ONTARIO, CANADA.

WINDOW.

1,001,006.

Specification of Letters Patent. Patented Aug. 22, 1911.

Application filed November 19, 1910. Serial No. 593,293.

To all whom it may concern:

Be it known that I, GEORGE BENJAMIN EVANS, of the city of Toronto, in the county of York and Province of Ontario, Canada, have invented certain new and useful Improvements in Windows; and I hereby declare that the following is a full, clear, and exact description of the same.

It is customary, in that class of windows in which the window sashes slide vertically to provide two sets of window stops extending from the top to the bottom of the window frame and permanently secured thereto, one set being provided for the sliding movement of the upper sash, and the other set being provided for the sliding movement of the lower sash, suitable sash ropes, passing over pulleys set in the window frame, being permanently connected, at one end to the window sashes, and, at the other end to suitable sash weights for counterbalancing purposes, but this arrangement of stops and attachment of sash ropes renders it impossible to easily remove either of the window sashes from the window frame for cleaning or repairing purposes.

My present invention therefore relates to the construction of the window frame and window stops, whereby the window sashes can be easily removed from the window frame, and it comprises movable stop sections which, when in their normal or operative position, securely hold the upper and lower sashes in their respective slideways, and which, when moved into their inoperative position, will permit of the removal of the window sashes from the window frame, and it also relates to a means for detachably fastening the sash ropes to the window sashes.

For an understanding of the invention reference is to be had to the following description and to the accompanying drawings in which:

Figure 1, is a perspective view showing the construction of the window frame and window sashes. Fig. 2, is a perspective view of the window frame with the window sashes removed. Fig. 3, is a perspective view of the lower window sash. Fig. 4, is a perspective view of a movable section of the window stops, and, Fig. 5, is a perspective view of the fastening means connecting the sash rope to the window sash.

Like characters of reference refer to like

parts throughout the specification and drawings.

The window frame *a* is provided with the usual, upper window sash *b*, and, lower window sash *c*, slidable vertically in slide-ways formed by the window stops *d e* and *f*.

As the general construction of the window frame and window sashes is similar to that of windows in common use, it will not be necessary to describe these parts in detail.

The window stops *d* placed on the inner side of the lower window sash *c*, extend from the window sill to approximately the top of, or slightly above, the meeting bar *c'* to prevent the inward movement of the lower sash when in its closed position, and when sliding vertically in the window frame. The lower section *d''* of each window stop *d* is permanently connected to the window frame, but the upper section *d'* is movable into and out of line with the permanent section.

The window stops *e*, extending from the bottom to the top of the window frame, consist of movable sections *e'*, corresponding in location with the movable sections *d'*, and permanent sections *e'' e^s* below and above the movable sections.

The window frame sides *h* have vertical slots *g* for the action of the movable stop sections *d' e'*, the top and bottom sides *g''* of the slots converging toward the inner sides of the window frame and engaging with the top and bottom sides of the movable stop sections to limit their inward movement.

The stop *f* extends from the top of the window frame to approximately the bottom of, or slightly lower than, the meeting bar *b'* of the upper sash *b*.

The movable sections *d'* and *e'* are mounted upon the cranked ends of the rocker shafts *i* journaled in the window frame sides *h* and move unitedly into and out of line with the permanent stop sections of the window stops *d* and *e*.

To remove the window sashes, the movable stop sections *d'* and *e'* are pressed outwardly until their inner faces are at least flush with the inner faces of the window frame sides. The lower sash is then raised until its lower edge is above the top of the permanent stop sections *d''* and is then drawn inward clear of the window frame.

The upper window sash is then lowered toward the bottom of the window frame until its upper edge is free to swing through the gap formed by the displacement of the movable sections d' e' and is then drawn inward through the gap, top first, until clear of the window frame.

To replace the window sashes, the upper sash is passed outward through the gap formed by the displacement of the movable sections d' e' and then turned into a vertical position in the slideways between the stops f and e . The lower sash is then raised in the window frame until its lower edge is above the permanent stop sections d'' and then lowered in the slideways formed by the permanent stop sections d'' and e'' . The movable stop sections are then permitted to move inward until they are in line with the permanent stop sections, completing the window stops d and e to enable them to guide the vertical movement of the upper and lower window sashes and to prevent their lateral movement.

Various means may be provided for restoring the movable stop sections to their normal or operative positions but I find it convenient to use springs j for this purpose, these springs being contained in the window frame sides h so as to yield when the movable stop sections are pressed outward, and to restore them to their normal or operative position when the outward pressure is removed.

Various means may be provided for retaining the movable stop sections in their in-operative or outward position, one means which I prefer to use, consisting of buttons k pivoted to the inner faces of the window frame sides h to overlap the movable stop sections d' when in their outwardly pressed position, these buttons being also used to engage in slots d^3 in the movable stop sections d' and lock them in their normal or operative position.

To provide a detachable means for connecting the sash ropes to the window sashes, I find it advisable to provide the sash ropes with hooks l engaging with screw eyes m in the usual rope channels in the sides of the window sashes. By disconnecting the

hooks from the screw eyes, the sash ropes can be detached from the window sashes when the latter are removed from the window frame, the sash ropes then being drawn over the pulleys by the sash weights o until arrested by the hooks coming into contact with the pulley casing p .

In the construction of window frames for new work the window frame sides may be slotted as above described to receive the movable stop sections, but to adapt the device to old window frames, and in some cases, new ones, it is necessary to cut out the section a' of the window frame between the movable stop sections d' and e' , and to provide these removable frame sections a' with fastening plate a'' which are set in countersunk seats in the adjacent parts of the window frame sides. By this latter construction it is possible to assemble the movable stop sections d' and e' , rocker shaft i , springs j , and removable frame sections a' , place them in position in the window frame, and then secure them to the window frame sides by fastening the plates thereto.

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

In combination, a window frame, two inner stops extending from the window sill to approximately the top of the lower window sash, each of the inner window stops consisting of a lower section fixedly attached to the window frame, and an upper section yieldingly held to move into and out of line vertically with the lower section, two middle stops each comprising a yielding middle section in line laterally with the yielding section of the inner stop, and two other sections fixedly attached to the window frame above and below the yielding section and two fixedly attached outer stops extending from the top of the window frame to below the top of the yielding sections, but not to the bottom of the same.

Toronto, November 10th, 1910.

GEORGE BENJAMIN EVANS.

Signed in the presence of—

C. H. RICHES,
H. L. TRIMBLE.