

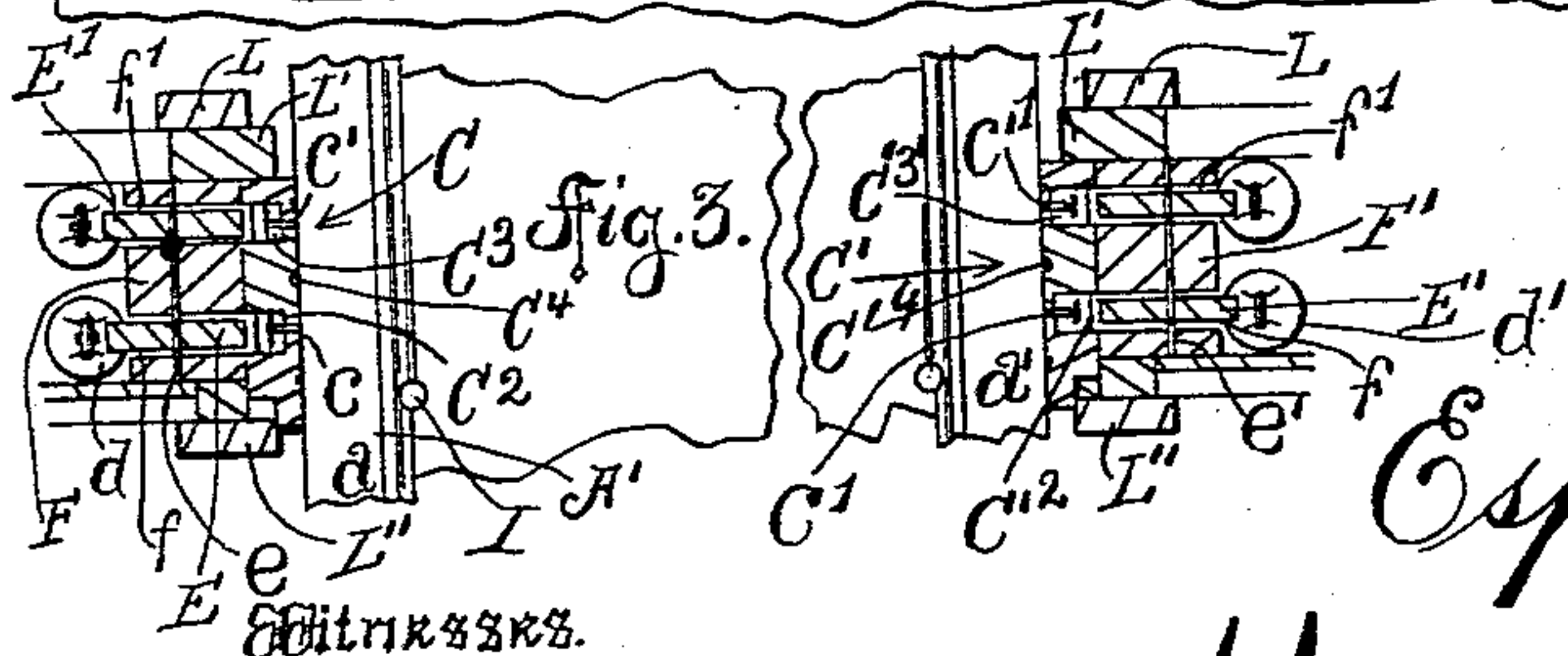
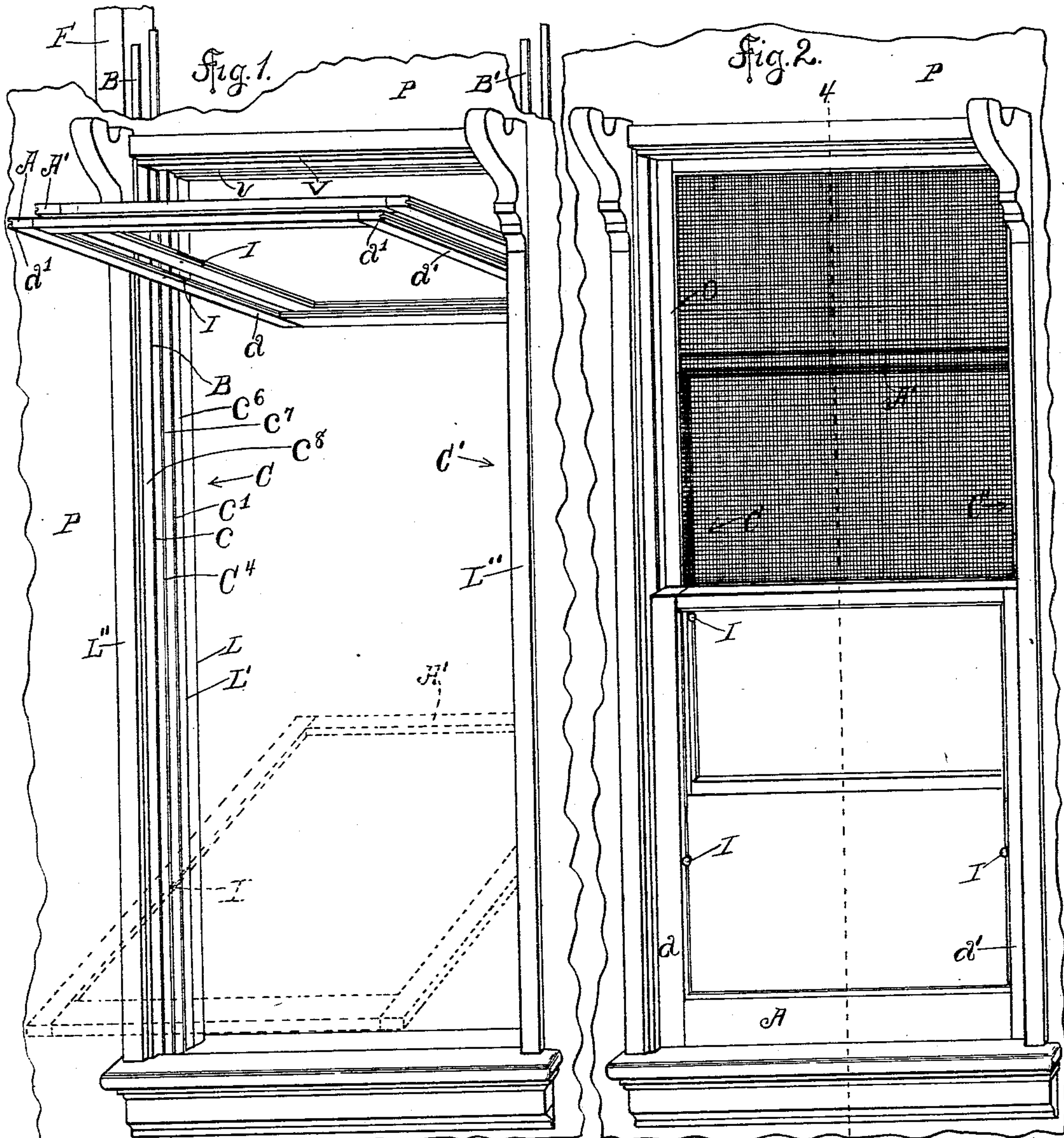
(No Model.)

2 Sheets—Sheet 1.

E. HIPOLITO.  
WINDOW.

No. 560,063.

Patented May 12, 1896.



Witnesses.  
P. H. Harbeson,  
Alfred Townsend

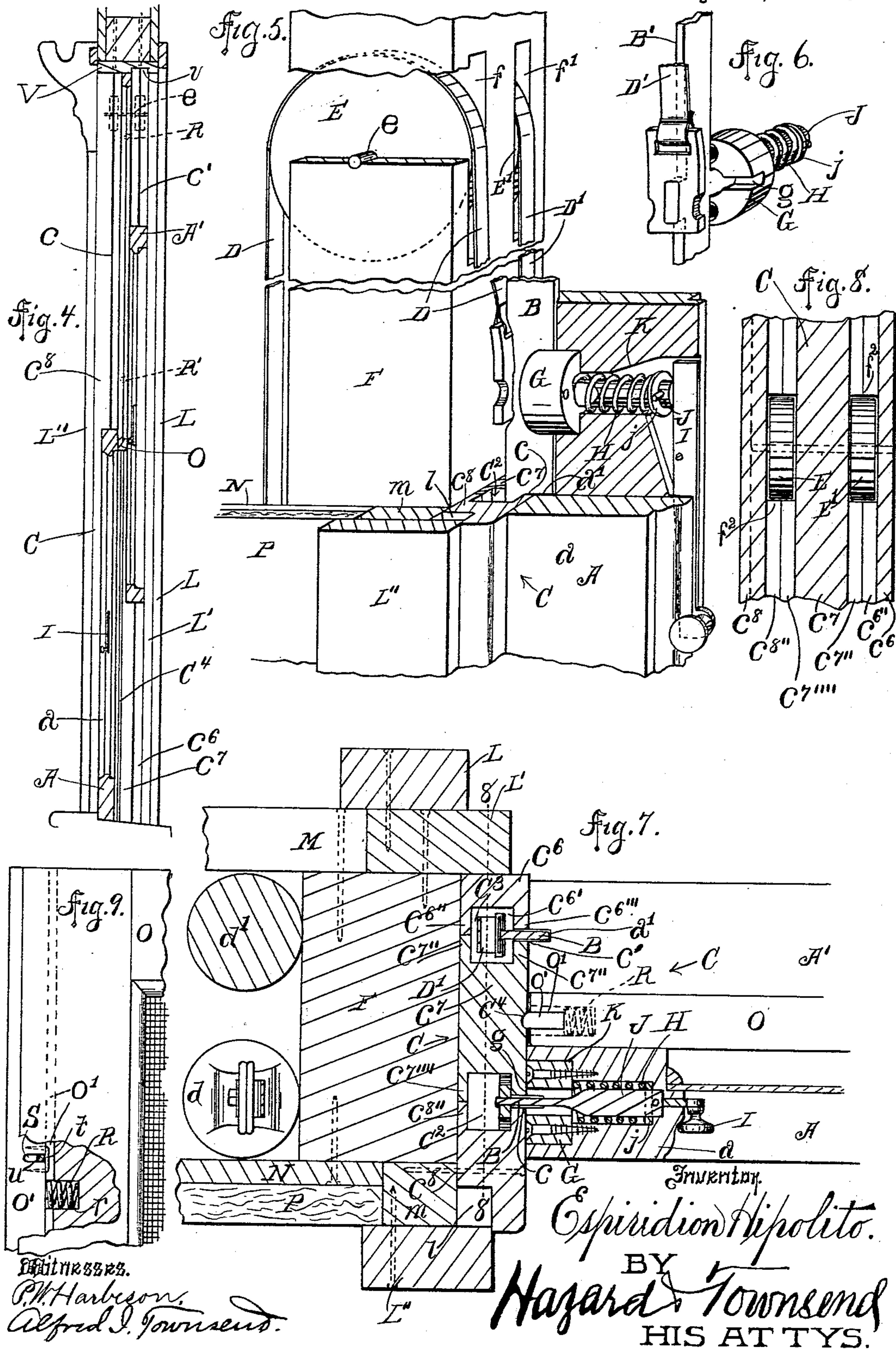
Inventor.  
Espiridion Hipolito  
BY  
Hazard & Townsend  
HIS ATTYS.



2 Sheets—Sheet 2.

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# UNITED STATES PATENT OFFICE.

ESPIRIDION HIPOLITO, OF SAN JOSÉ, CALIFORNIA.

## WINDOW.

SPECIFICATION forming part of Letters Patent No. 560,063, dated May 12, 1896.

Application filed March 11, 1895. Serial No. 541,380. (No model.)

*To all whom it may concern:*

Be it known that I, ESPIRIDION HIPOLITO, a citizen of the United States, residing at San José, in the county of Santa Clara and State of California, have invented new and useful Improvements in Windows, of which the following is a specification.

My invention relates to improvements in windows of the class in which the sash can be lowered, practically, to the bottom of the window and turned into a horizontal position and made reversible, so that it can be brought to an especially convenient position and turned for cleaning without danger of soiling lace-curtains or other drapery of the window, and without the necessity of removing the same, and in which the sash can be slid, practically, to the top of the opening, so as to be out of the way in case it is desired to use the window for putting in or taking out a piano, mattress, or other large furniture, thus to avoid going through long hallways, or to enable such articles to be taken into and out of rooms into which they could not otherwise be put, or to allow quick and convenient removal of furniture in case of fire.

My invention is distinguished from other windows of this character in that the sliding tongue slides in a narrow slot in the window-jamb, and is provided at the edge which projects outward from such slot with a pivot which is connected with the window-sash, and in that the tongue is also provided on the edge which projects inwardly from such slot with a cord-fastening device to which the counterbalance-cord is attached, and the pivot and cord-fastening device are arranged on the opposite edges of the tongue at such a distance apart that there is sufficient play of the tongue edgewise in the slot to allow the tongue to be inserted into and withdrawn from the groove in the window-sash in which it is ordinarily seated. By this arrangement the suspending-cord is always hidden from view and the pivoted window-sash slides in virtually smooth jambs, the only breaks in the face of which are narrow and practically unnoticeable slots, and yet the parts are adapted to be readily adjusted, so that the sash can be turned on its pivot.

An object of my invention is to provide novel and improved means for turning the window-sash within its frame on a pivot at any point in the frame and to allow the sash

to be moved up and down freely in the frame when turned out of its vertical position, and also for conveniently locking the sash in and unlocking it from its vertical position in the frame.

Another object of my invention is to provide an improved window in which the casing is very simple, consisting simply of a jamb fastened to the ordinary studding of a frame house, and avoiding the necessity of building a window-frame separate from the wall of the building. The casing of my improved window consists of strips which can be made in lengths at the mill and simply require to be cut to the proper sizes and nailed in place when put into the building. I dispense with all weight-boxes and hang the weight in the wall between the studding. My invention, however, may be applied in a window-frame built separate from the building ready to be set into place in the same way as ordinary windows.

Another object is to introduce an improved construction by which to do away with the unsightly parting-beads and stops which are used in common windows, and also to provide simple and inexpensive means by which the cord is hidden from view.

Another object is to so construct the window as to allow the casing in ordinary wooden buildings to be made narrow and more artistic than the broad casings, which are necessary in the ordinary construction in which the window-frame has a weight-box within each side.

Another object is to make the window practically air-tight and to avoid any opening between the rustic or weather boarding and the window-frame.

By my improvement I am enabled to mount the cord-pulleys in the studding of the building, thus enabling me to use a cheaper and simpler mounting for my pulleys than those which are ordinarily necessary where the pulleys are mounted in the jambs.

Another object is to provide an improvement in windows having a movable screen, which, when not in use, can be adjusted so as to be protected by the glazed sash. In my window such screen is between the two glazed sash, thus allowing the sash and screen to be adjusted to leave a screened opening of any desired width at either the top or bottom of the window without leaving any opening through which flies can enter the house. It



is desirable that the wire screen of a window should be protected from the weather as much as possible, and for this reason it is customary to mount the screens within the house inside of both glazed sashes; but in such case, when the glazed sash are thrown only partly open for the purpose of allowing a limited draft of air—that is, less than what would be produced with the sash thrown fully open—a free passage for flies is left between the screen-gauze and the lower rail of the inner sash and between the rail of the screen and the glass of the sash, thus allowing flies to enter the room, and in case flies settle upon the gauze and remain there until it is desired to close the window, as frequently occurs on summer evenings, then, if the window is closed, the flies will be inclosed between the screen and the glazed sash, and then when morning comes they will light upon the glass, so that the window cannot be opened without bringing flies into the room. With my window it is possible to always keep the flies outside and to never leave an opening for them to enter into the room. In this regard my improved window comprises the combination of two window-jambs, the faces of which are plain and respectively provided with two slots for receiving the side tongues of two glazed sash, and also provided with a groove arranged between such slots to seat the side tongues of a screen-sash, a screen-sash having side tongues seated, respectively, in the grooves therefor in the jambs, and two glazed sash having side tongues, respectively, and arranged one on each side of and fitting to the screen-sash with their side tongues in their respective slots in the jambs.

Another object of my invention is to provide for removing the cheeks of the window-sash without having to remove the ornamental casing.

The accompanying drawings illustrate my invention.

Figure 1 is a perspective view of a window embodying my invention. In this view the sash are shown turned into a horizontal position and slid to the top of the window to leave the lower part unobstructed. Dotted lines indicate a position to which the sash can be moved for convenience in washing. Fig. 2 is a perspective view showing the window with the sash and screen adjusted to admit air and keep out flies. Fig. 3 is a fragmental horizontal section across the top of Fig. 1. Fig. 4 is a vertical mid-section on line 44 of Fig. 2. Fig. 5 is a fragmental perspective detail, partly in section, illustrating the construction and arrangement of parts of the window. In this view the parts are shown in the position they occupy when the sash is vertical and about half raised. Fig. 6 is a fragmental detail showing the position of the pivotal parts when the tongue is thrown out of the groove of the stile and the sash turned. Fig. 7 is a fragmental sectional plan showing the various parts in position with the window

closed. Fig. 8 is a vertical section on line 8-8, Fig. 7, of a fragment of the jamb-strips. The pulleys are shown also. Fig. 9 is a detail of the screen construction.

The glazed sash of my improved window are substantially alike, and in the drawings I have marked them, respectively, A and A'. I will in the following description refer more particularly to the sash A. The sash has both its stiles *a a'* pivoted to movable slides or tongues B B' and is arranged between the cheeks C C' to slide from top to bottom thereof. Suitable counterbalancing means are connected with the slides for counterbalancing the slides and sash. In the drawings these means consist of tapes D D', attached to the slides or tongues B B', respectively, and carried over pulleys E E', respectively, and provided with the ordinary weights *d d'* to counterbalance the sash. It is to be understood that springs instead of weights may be used to operate the sash tapes or cords without departing from the spirit of my invention. The cheeks of the window are respectively provided with slots *c c'* and *c' c'*, in which the tongues or slides are fitted and along which they slide. I provide pivotal connections between the sash and the slides, respectively, so that when unlocked for that purpose the sash may be turned in a vertical plane, thus to bring the sash into horizontal position or vertical position or any intermediate angle at pleasure. I also provide means for locking the sash when it is in its vertical position. The tongues or slides B B' are equal in length to the stiles, respectively, to which they are pivoted and the stiles are grooved and the tongues B B' fit into the grooves when the sash is in its locked position, so that when the sash is in that position there is no passage for air between the sash and the free edge of the tongue, which is inside the slot and to which the cord is attached. The cheeks of the window are provided with channels C<sup>2</sup> C<sup>3</sup> and C'<sup>2</sup> C'<sup>3</sup>, which communicate with the window-opening through the slots. The tongues extend through the slots of their cheeks, respectively, and the counterbalancing cords or tapes are attached to the tongues at the inner or free edge of the tongues and move up and down along the channel within the jambs behind the faces of their cheeks, respectively. By this arrangement the cords or tapes are wholly hidden from view, and the jamb is flat-faced and plain, with the exception of the slots in the cheek, and excepting, also, the screen-grooves C<sup>4</sup> C<sup>4</sup> when the window is provided with a screen.

The cheek is preferably nailed or otherwise secured directly to the studding F F' of the building, thus to form the complete window-jamb. This is made possible by the construction of the jamb which I have shown, and I mortise pulley-holes *f f'* in each of the studding at the point at which the pulleys are to be placed, and secure the two pulleys in each



studding by plain brass pivot-rods  $e e'$ , inserted, respectively, through the studding and passing through the mortised holes and through the pulleys, thus doing away with the necessity of any pulley-bearings except a plain round brass pivot-rod upon which the wheel is journaled. By using a flat tape I am enabled to use a very cheap pulley, which I make by sawing off sections of a hardwood roller and perforating the same at the center to receive the pivot-rod. The flat face of the pulley as thus constructed is especially adapted for use with the ordinary metal tapes which are used in sash-counterbalances. The hardwood pulleys journaled on the brass pivot-rods are very free from friction.

The side of my improved window, so far as the same applies to holding one sash, is composed of a studding  $F$ , having an opening  $f'$  therethrough for the counterbalance-pulley  $E'$  and cord or tape  $D'$ , a jamb-strip  $c^6$ , attached to the studding and having in its edge a rabbet  $c^6$ , the inner wall  $c^{6''}$  of which is wider than the outer wall  $c^{6'''}$ , and is offset, as at  $f^2$ , at the opening through the studding, and another jamb-strip  $c^7$ , rabbeted and offset in its wider wall  $c^{7''}$  in like manner and attached to the studding with the wider wall of its rabbeted edge joined to the wider wall of the rabbeted edge of the other jamb-strip, so that the two rabbets form the channel  $C^3$ , opening outward through the slot  $c'$  on one side and communicating inward, on its other side, through the offsets with the opening  $f'$  in its studding. It also comprises the combination of the studding having the two openings  $f f'$  therethrough for counterbalance cords or tapes and their pulleys; the middle jamb-strip  $c^7$ , attached to the studding between the said openings and having its edges rabbeted alike, the inner wall of each rabbet, respectively, being wider than the outer wall, respectively, and offset at the opening through the studding which adjoins it; a side jamb-strip  $c^6$ , rabbeted and offset in like manner on one edge and attached to the studding with the wider wall  $c^{6''}$  of its rabbeted edge joined to the wider wall  $c^{7''}$  of the rabbeted edge of the middle jamb-strip, and another side jamb-strip  $c^8$ , rabbeted and offset in like manner on one edge and attached to the studding with the wider wall  $c^{8''}$  of its rabbeted edge joined to the wider wall  $c^{7'''}$  of the rabbeted edge of the middle jamb-strip. The cheeks  $C C'$  are thus preferably formed of a plurality of strips for economy and facility of construction.

The tongues are pivoted to the stile by means hereinafter specified and are adapted to fit in and are arranged to move into and out of the groove  $a'$  in the side of the member or stile  $a$  of the sash, and a spring  $H$  is arranged to normally hold the tongue in the groove in the stile, and I provide suitable means, such as the lever  $I$ , for throwing the tongue out of the groove.

The slide-tongue  $B (B')$  is pivoted to the stile by means of the pivot  $J$ , attached to the

tongue and extending through and beyond the grooved plug, plate, block, or member  $G$  and provided with a seat  $j$  for the spring, and the spiral spring  $H$  is arranged surrounding the pivot between the seat and the plug to press against such seat and plug to press them apart, thus to hold the tongue against the plug.

The plug, pivot, and spring are seated in a mortise  $K$  in the stile, and I provide some suitable means for pressing against the pivot to force the tongue away from the plug. These means, as shown, consist of the lever  $I$ , pivoted in the stile and arranged to press against the end of the pivot  $J$ . The plug is grooved, as at  $g$ , to correspond with the groove in the stile, and when the tongue and stile are parallel the spring  $H$  will force the tongue into the grooves in the plug and stile, and thus prevent the sash from turning on the pivot. The tongue is always held in a vertical position by the groove  $c$ , &c., in the jamb in which the tongue slides; but when the tongues are pushed out of their respective grooves in their stiles the sash can be turned.

In order to turn the window-sash, the levers on each side of the sash are pulled out, thus operating the pivots to force the slide-tongues  $B B'$  out of the grooves in the stiles and into the channels in the jambs. The channels in the jamb-strips are deep enough to allow this lateral movement, and when the tongues have been fully moved out of the grooves in the stiles the sash is free to turn in a vertical plane and can be brought into a horizontal position or adjusted at any other desired angle, and at the same time the sash is free to be slid up and down from one end to the other of the opening. In order to allow the sash to be moved fully to the top or bottom of the opening, a passage may be provided in the casing to allow the tongue to extend through the casing above or below the opening, as indicated by the upwardly-projecting tongues in Fig. 1.

It is to be observed that in the preferred form of my improved window the sides of the casing are almost wholly for ornamental purposes alone and can be made as narrow as desired, so as to give to the window an ornamental appearance different from any that can be given in frames in which a wide casing is required to box the weights, as in the ordinary construction. By my improvement the casing can be nailed immediately to the studding and the jamb-strips fit in between the outside casing  $L L'$  and inside casing  $L''$ , and such outside casings cover the joints between the cheek and studding and siding and studding.

The siding  $M$  is nailed directly to the studding, which forms a part of the window-frame, and the outmost casing  $L$  is made to cover the joint between the siding  $M$  and the outermost casing  $L'$ , while the outer casing  $L'$  covers the joint between the cheek and the studding.

The inside casing  $L''$  covers the joint be-



tween the studding and the cheek. In order to enable me to remove the sash and cheeks without removing the ornamental casing, I provide the movable jamb-strip  $c^8$  with the offset  $l$  at its outer edge and in that face of the cheek next to the studding, and the outer edge of such offset cheek laps a little over and is fitted upon the edge of the casing  $L''$ . The inside casing  $L''$  extends into the offset  $l$  and covers the joint between the studding and the cheek and the cheek extends beyond the studding just a little more than the thickness of the plastering  $P$ , and the inside casing is laid on the plaster and nailed to the studding and covers the joint between the cheek and the plaster as well as the joint between the cheek and the studding. The lathing  $N$  are nailed directly to the studding  $F$ , which forms a part of the window-frame. By this arrangement of the joints the unsightly parts are covered and the jamb-strip is free to move into the room or building to the extent of the offset  $l$ .  $m$  indicates a stop between the plastering and the jamb-strip to form a more even joint for the jamb-strip. The jamb-strip may be fastened to this stop by nails or screws. To remove the cheeks and sash, the screws or nails which hold the inner side jamb-strips in place are removed, and such jamb-strips can then be slid away from the sash and toward the casing the full length of the offset  $l$ , which is sufficient to allow the strips to clear the sash and allow the jamb-strip to be removed. This releases the inner sash and its cords, and the same can then be swung out from the casing and the cords can be detached from the sash and the sash removed. Then the middle jamb-strips can be removed sidewise, thus leaving the outer sash and its cords free to be drawn out of the casing. To replace the sash, the operation is reversed.

Ordinarily my improved window will have two glazed sash and the screen-sash between them, as indicated in Fig. 2. The screen-sash  $O$  is normally placed either fully to the top or fully to the bottom of the window. When the screen is lowered fully to the bottom of the window, the lower sash can be raised to any height desired without any regard to the screen-gauze, for the top rail of the screen-sash fits snugly against the bottom rail of the top sash. If it is desired to change the position and leave the window open at the top, the screen is pushed to the top, and the outer sash is then free to be moved without regard to the screen-gauze. The bottom rail of the screen forms a close joint with the top rail of the inner sash. It is thus immaterial whether flies are upon the screen or not when it is desired to close the window at night, for if the flies are resting on the outside of the screen when the upper sash is pushed up to close the window, then the flies can be liberated in the morning by lowering the upper sash, thus leaving the flies free to fly away without allowing them to enter the house.

The screen, when applied to my window as

shown in Fig. 2, must be removable, and to this end one of its tongues  $o'$  is made adjustable laterally and is held in its extended position by means of springs  $R R'$ . When the screen-sash is in place, its tongues fit in the grooves  $C^4 C'^4$  in the jambs. To remove the screen, it is pressed toward the side provided with the adjustable tongue  $o'$ , thus withdrawing the other or fixed tongue from its groove in the jamb and leaving that edge of the screen free to be swung in a horizontal plane out of the frame and removed. Then one of the glazed sash can be brought into position with its pivots below the lower rail of the other sash or above the upper rail of the other sash, as the case may be, and the levers  $I$  are then drawn out, thus to force the tongues out of the grooves in the stiles. After this is done the sash can be turned and brought into a horizontal position or any other desired position, and the other sash can then be treated in the same manner, so that both sash are turned at the same time and the two sash while thus turned can be slid fully to the top or fully to the bottom or brought into any intermediate position at the pleasure of the operator. To readjust the sash, they are simply turned to a vertical position, and then the springs immediately return the tongues to the grooves in the stiles, thus locking the sash in a vertical position.

The window can be constructed without the screen, if desired, and in that case the middle jamb-strip is preferably made devoid of the groove and is of such width as to cause the two glazed sash to fit together properly. When it is desired to construct a window provided with the screen-sash, the middle jamb-strip is made of such width as to accommodate the screen-sash between the two glazed sash.

The screen-springs  $R R'$  are seated in sockets  $r$ , bored into the edge of the screen-stile to receive them. The adjustable tongue  $o'$  is provided with two transverse slots or sawkerfs  $s s'$ , and across the mouth of each I set a staple  $t$ , the legs or points of which are set into the tongue. The tongue is set into the groove  $o'$  and pressed thereinto to compress the springs, and escutcheon-pins  $u$  are inserted through the stile and through the transverse slots, and the tongue is then allowed to be pressed outward by the springs  $R R'$  until the pins intercept the staples. The tongue is then free to be pressed in against the springs and to be pressed out by the springs to form a tight joint and frictional contact with the jamb. The crown  $V$  of the frame is provided with a groove or seat  $v$  for the outer sash, so that when the outer sash is fully raised it will form a tight joint to prevent the entrance of wind or rain.

I do not wish my claim to be limited strictly to the exact construction shown, but wish to reserve the right to use my invention in all the forms in which it may be applied.

If at any time the screen and sash should be in the position shown in Fig. 4 and should



become covered with flies on the outside of both the glass and screen, so that the flies would be liable to enter if any opening through the window were to be made in the operation of closing the window, the attendant should go outside the house and push up the outer sash A' without disturbing the inner sash or screen. Then when it is again desired to open the window such outer sash can be again lowered and the flies which have been imprisoned between the screen and the outer sash will be released. Ordinarily it will not be necessary to manipulate the sash from the outside of the house, for the reason that the flies are seldom if ever attracted to the closed portion of the window when another portion of the window is open, but they will be attracted to the screened opening, so that the attendant will ordinarily be able to raise the inner sash and reach through the window and adjust the outer sash without admitting any flies.

Now, having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a window having a sash the stiles of which are grooved to respectively seat the outer edge of a sliding tongue, the combination of such sash; the jambs respectively provided with a narrow slot; the sliding tongue arranged to slide in the narrow slot and provided, on the edge which projects outward from such slot, with a pivot which is connected with the window-sash, and provided on the edge which projects inward from such slot with a cord-fastening device to which the counterbalance-cord is attached; such pivot and cord-fastening device arranged on opposite edges of the tongue at such distance apart that there is sufficient play of the tongue edgewise in such slot to allow the tongue to be inserted into and withdrawn from the groove in the window-sash in which it is normally seated; the cord fastened to the cord-fastening device, and means for operating the cord.

2. The combination of the studding; the cheek fastened against the studding and provided on its inner face with a channel and also provided with a slot extending from the outer face of the cheek to the channel; a pulley mounted in the studding and extending approximately to the channel; a sash-carrying slide-tongue arranged in the slot and extending into the channel; and a flexible connection fastened to the slide within the channel and passed along the channel and over the pulley to operate the sash.

3. A window, the side of which is composed of a studding having an opening therethrough for the counterbalance-cord; a jamb-strip attached to the studding and having in its edge a rabbet, the inner wall of which is wider than the outer wall and is offset at the opening through the studding; and another jamb-strip rabbeted and offset in its wider edge in

like manner and attached to the studding with the wider wall of its rabbeted edge joined to the wider wall of the rabbeted edge of the other jamb-strip so that the two rabbets form a channel-opening outward through a slot on one side and communicating inward on its other side with the opening in the studding.

4. A window, the side of which is composed of a studding having two openings there-through for counterbalance-cords; the middle jamb-strip attached to the studding between the said openings and having in each edge a rabbet the inner walls of which are wider than the outer walls, respectively and are each offset at the openings through the studding which adjoins it; a side jamb-strip rabbeted and offset in like manner on one edge and attached to the studding with the wider wall of its rabbeted edge joined to the wider wall of the rabbeted edge of the middle jamb-strip; and another side jamb-strip rabbeted and offset in like manner on one edge and attached to the studding with the wider wall of its rabbeted edge joined to the wider wall of the rabbeted edge of the middle jamb-strip substantially as set forth.

5. In a window, the combination with the studding and the casing, of the removable jamb-strip rabbeted on one edge to receive the slide-tongue and cord of the window-sash and provided with an offset on the other edge fitted upon the casing and detachably fastened to the studding and adapted, when detached to be slid out from the window-sash substantially as set forth.

6. The combination of the grooved stile; the tongue adapted to fit in and arranged to move into and out of the groove; a spring arranged to normally hold the tongue in the groove; means for throwing the tongue out of the groove; and a pivot connecting the tongue with the stile and arranged to allow the tongue to be withdrawn from the groove and turned.

7. The combination of the stile; the pivot-plug secured thereto; the tongue; a pivot attached to the tongue and extending through the plug and provided with a seat for a spring; a spring arranged to press against such seat and plug; a stop to prevent the tongue from turning; and means adapted and arranged to force the tongue against the pressure of the spring to release it from such stop.

8. The combination of the stile; the pivot-plug secured thereto; the tongue; a pivot attached to the tongue and extending through the plug and provided with a seat for a spring; a spring arranged to press against such seat and plug; a stop to prevent the tongue from turning; and a lever pivoted to the stile and arranged to operate the pivot against the action of the spring.

ESPIRIDION HIPOLITO.

Witnesses:

JAMES R. TOWNSEND,  
C. F. FRETAG.