(No Model.) 3 Sheets—Sheet 1.

N. CARTUS.

WINDOW FRAME.

No. 548,034. Patented Oct. 15, 1895.

Fig. 1.

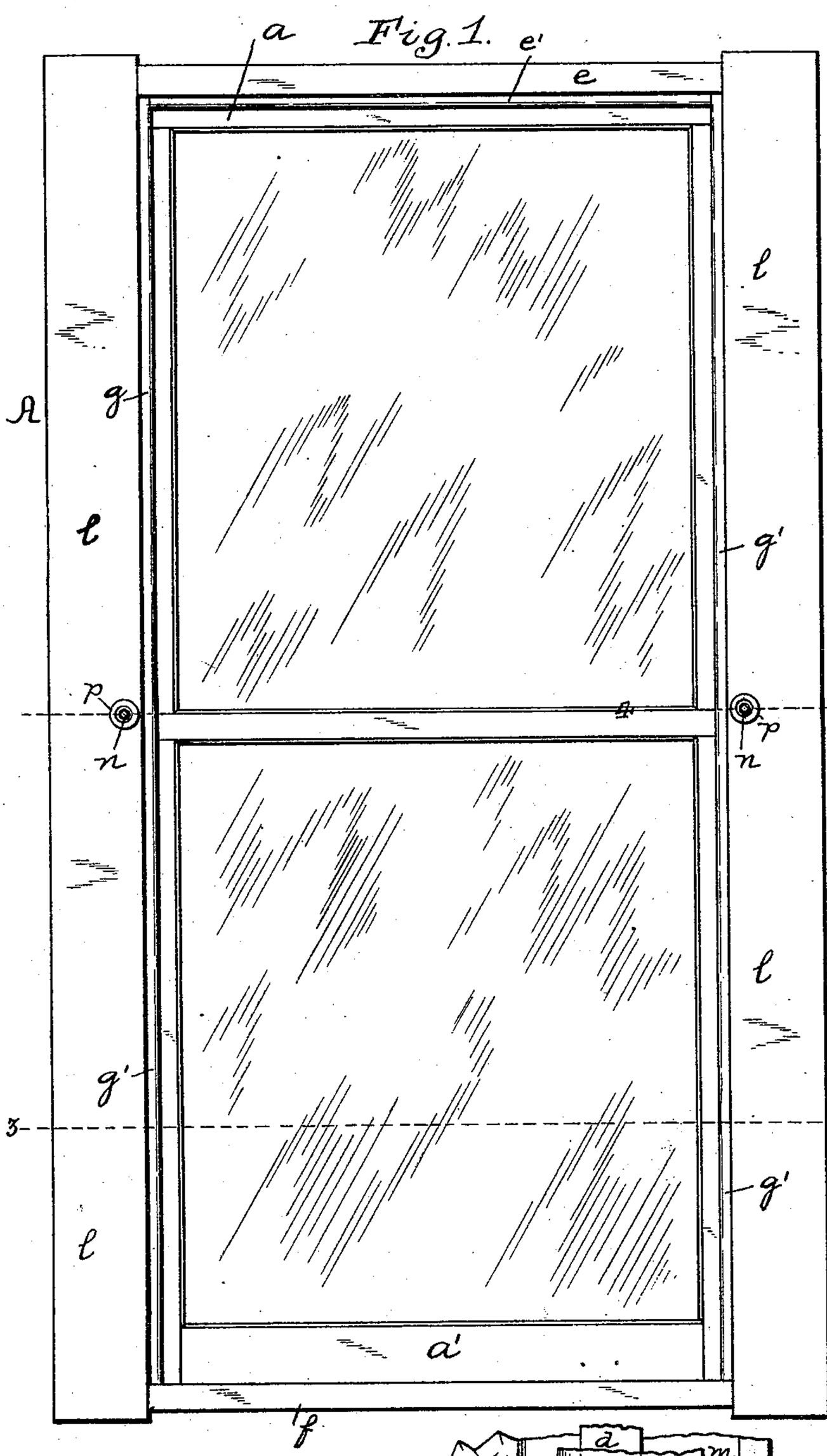


Fig. 2.

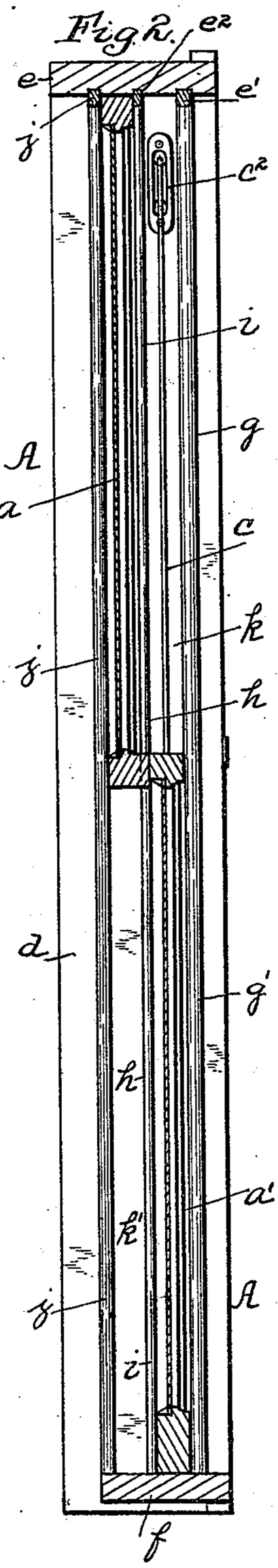
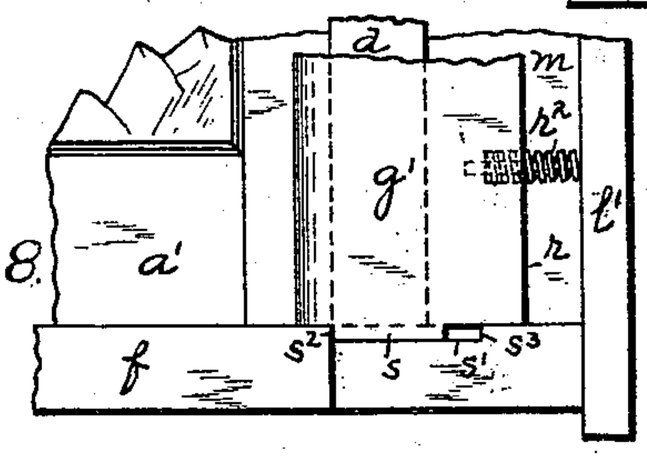


Fig. 8.



Witnesses:
Jean Alexander.
Lucy D. Lamb.

Inventor:
Nicholas Cartus.
By J. N. Cooke
Attorney

(No Model.)

3 Sheets—Sheet 2.

N. CARTUS.

WINDOW FRAME.

No. 548,034.

Patented Oct. 15, 1895.

Fig. 6.

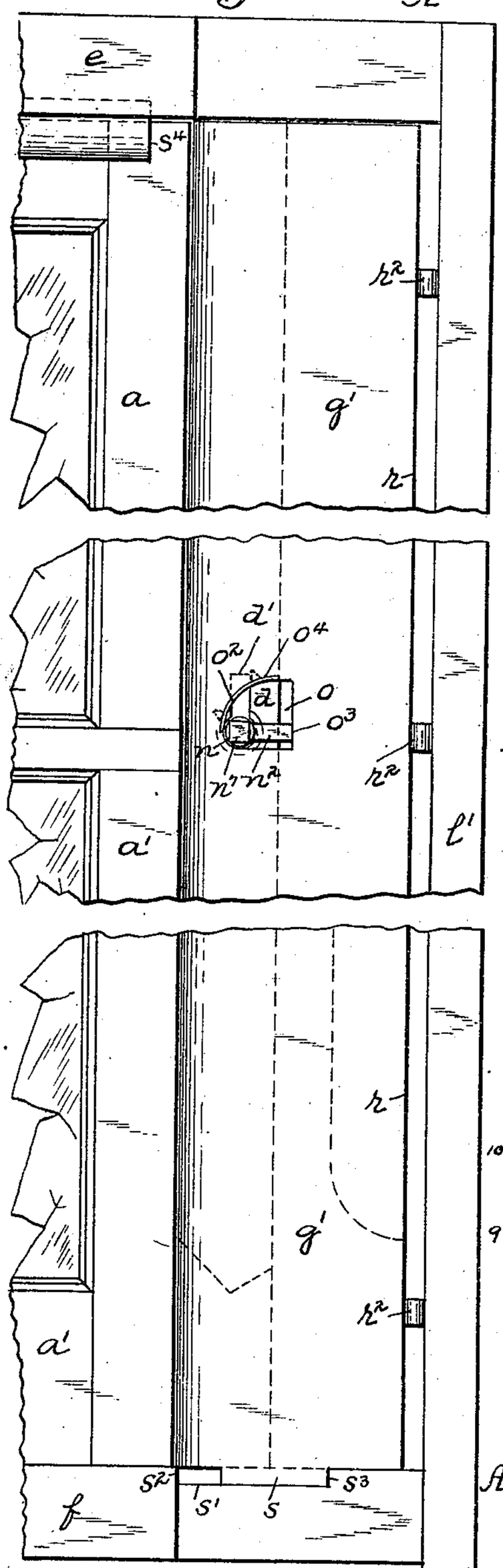


Fig. 3.

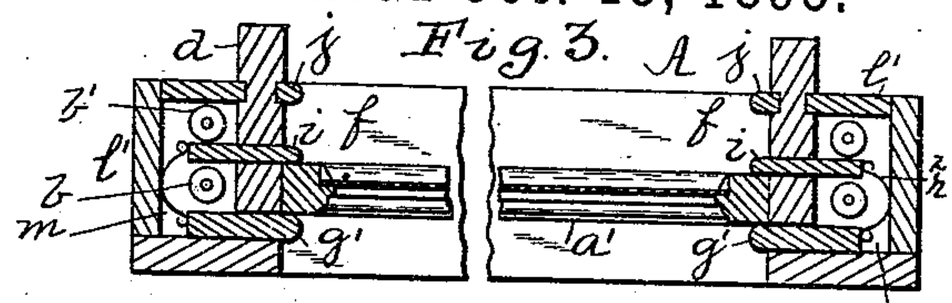


Fig. 4.

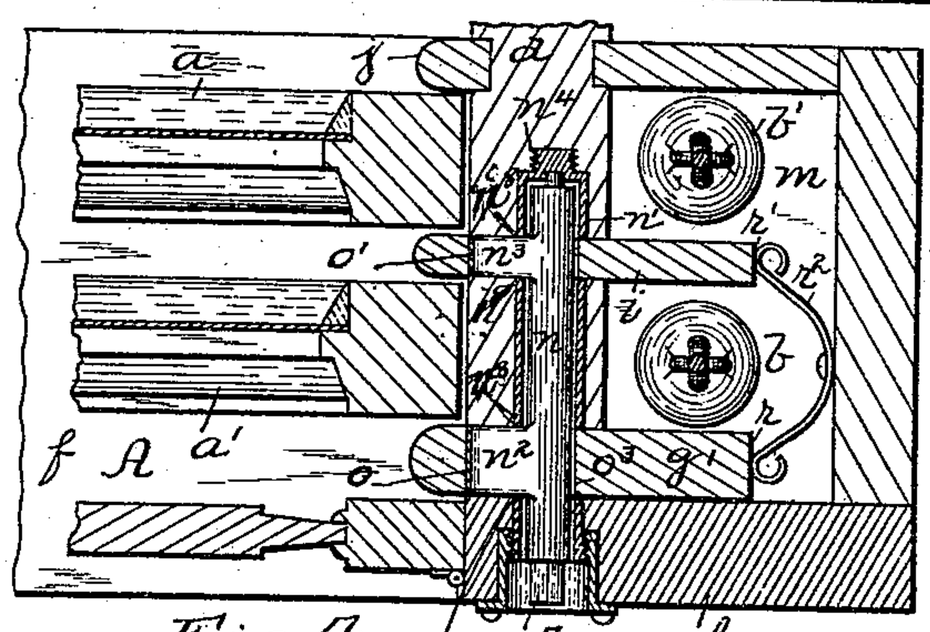


Fig. 9.

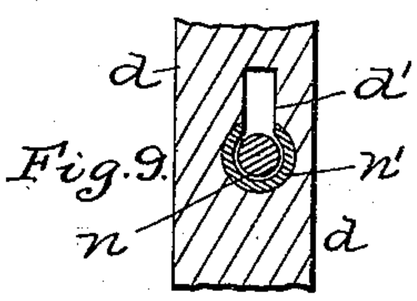


Fig. 7.

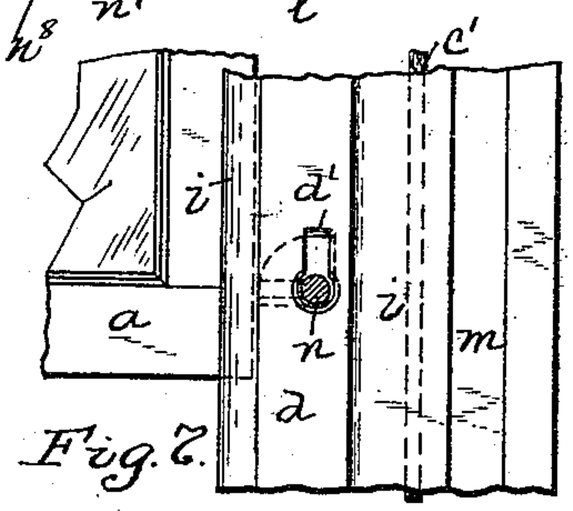


Fig. 5.

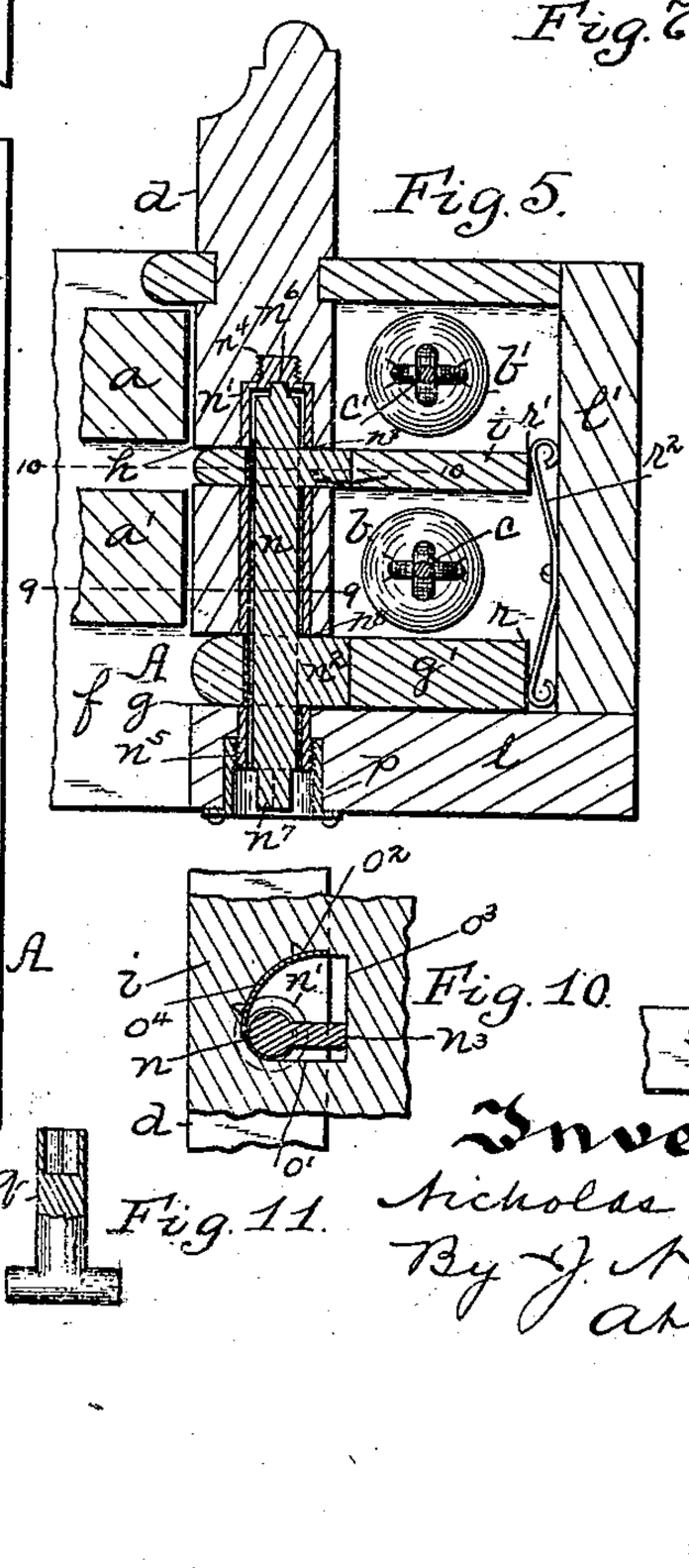
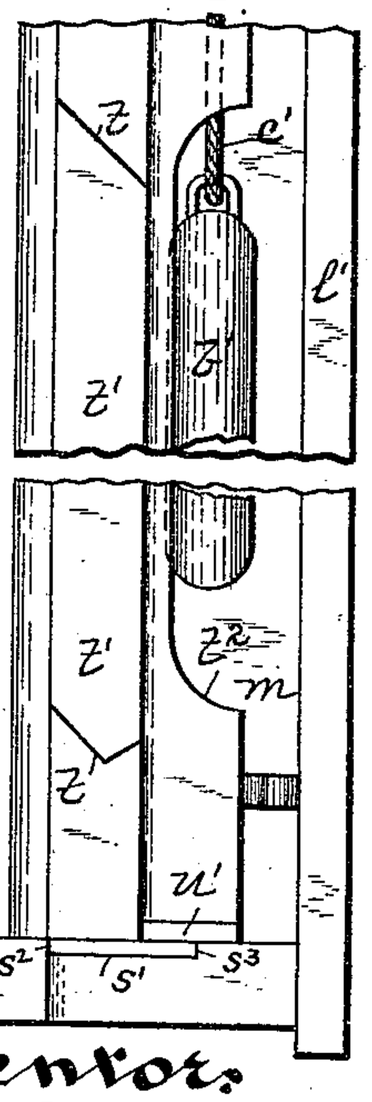


Fig. 10.

Fig. 11.



Witnesses:
Jesse Alexander.
Lucy S. Dames

Inventor:
Nicholas Cartus.
By J. N. Cooke
Attorney.

(No Model.) 3 Sheets—Sheet 3.

N. CARTUS.

WINDOW FRAME.

No. 548,034. Patented Oct. 15, 1895.

Fig. 12.

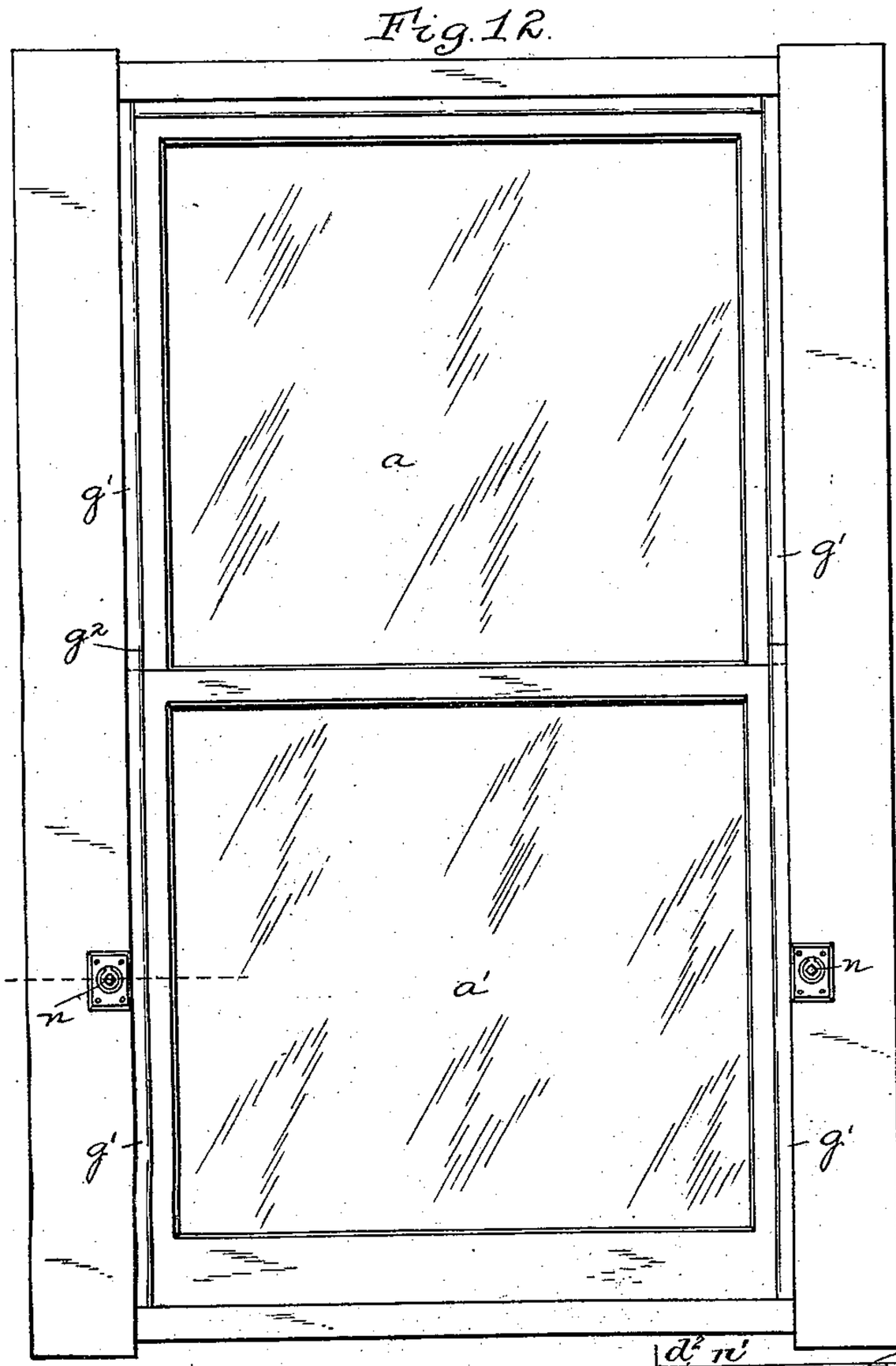


Fig. 13.

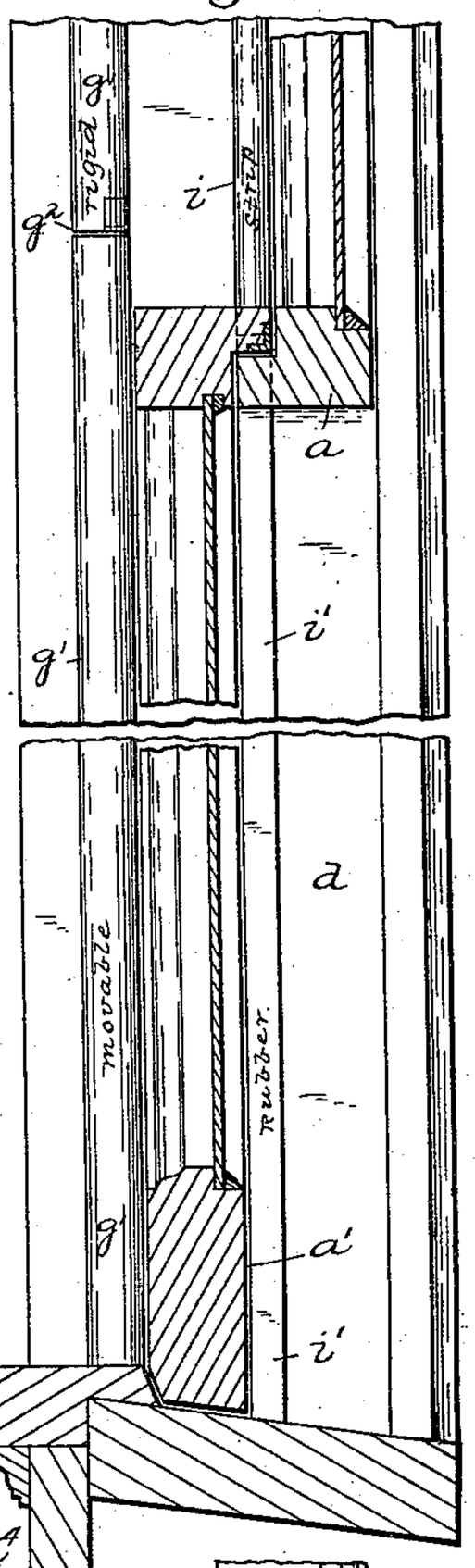


Fig. 14.

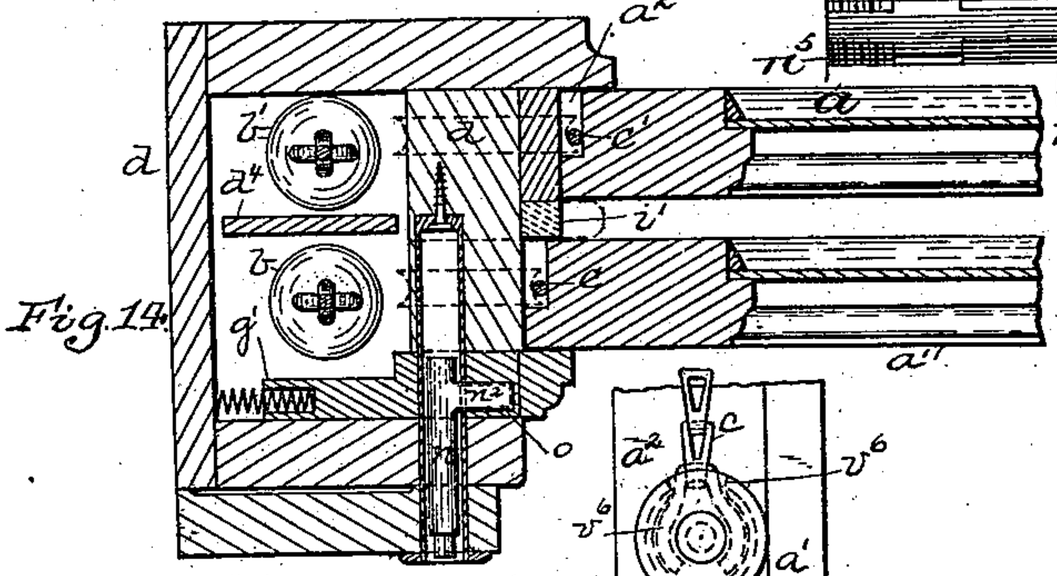


Fig. 18.

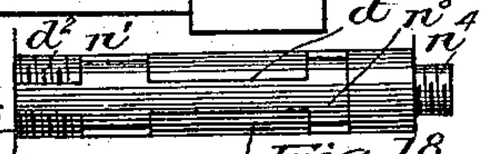


Fig. 15.

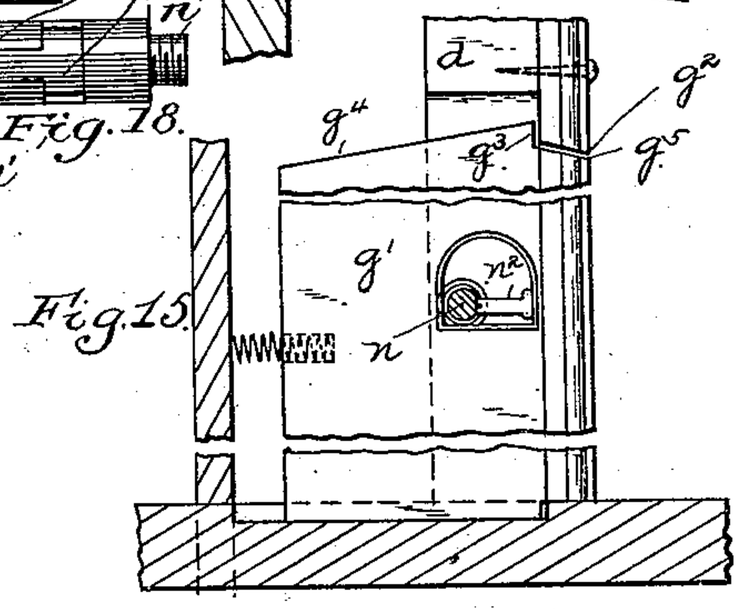
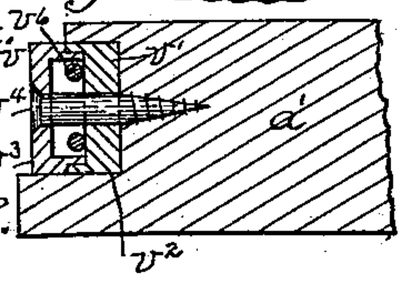


Fig. 16.

Fig. 17.



WITNESSES:

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Lucy D. Sands

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Nicholas Cartus.

BY

J. N. Cooke

ATTORNEY.

UNITED STATES PATENT OFFICE.

NICHOLAS CARTUS, OF PITTSBURG, PENNSYLVANIA.

WINDOW-FRAME.

SPECIFICATION forming part of Letters Patent No. 548,034, dated October 15, 1895.

Application filed March 26, 1895. Serial No. 543,219. (No model.)

To all whom it may concern:

Be it known that I, NICHOLAS CARTUS, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Window-Frames; and I do declare the following to be a full, clear, and exact description thereof.

My invention relates to window-frames and has special reference to the beads which separate the window sash.

As is well known, it has been exceedingly difficult to remove the sash in the window-frames for the purpose of cleaning or repairing the same, especially in large buildings, where the window-sash are heavy and cumbersome, it generally being necessary to take off the strips or beads for the purpose of removing the sash, which was very inconvenient and occasioned considerable loss of time. It was also very inconvenient to clean these windows, especially on the outside surface, and, besides being very dangerous, it required the greatest caution to prevent loss of life and injury.

The object of my invention is to overcome these difficulties and to provide a window-frame in which the sash therein can be removed or tilted for the purpose of cleaning or repairing the same without any great inconvenience or loss of time.

My invention consists, generally stated, in a window-frame having seats therein, movable strips or beads fitting within said seats, openings within the body of said strips or beads, a shaft in said window-frame passing through the strips or beads, lugs on said shaft engaging with the openings in said strips or beads and adapted to project the strips or beads to and from said seats, and a cylinder or casing surrounding said shaft.

It also consists in certain other details and combination of parts, all of which will be more fully hereinafter set forth and claimed.

To enable others skilled in the art to make and use my invention, I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a face view of the window-frame embodying my invention and showing the beads in their normal position. Fig. 2 is a longitudinal central section thereof. Fig. 3 is a cross-section on the line 3 3, Fig. 1. Fig. 4 is an enlarged cross-section on the line 4 4, Fig. 1, showing the beads in their normal position. Fig. 5 is a like view showing the beads drawn back into the window-frame. Fig. 6 is an enlarged face view of one side of the window-frame with the inside casing removed, and showing the beads drawn back into the window-frame. Fig. 7 is a like view with the inside beads removed and the lower sash taken out of the frame. Fig. 8 is an enlarged face view of the lower end of one side of the window-frame, showing the beads in their normal position. Fig. 9 is a cross-section on the line 9 9, Fig. 5. Fig. 10 is a cross-section on the line 10 10, Fig. 5. Fig. 11 is a view of the key or wrench employed. Fig. 12 is a side view of another form of my invention. Fig. 13 is a vertical central section thereof. Fig. 14 is a cross-section through the shaft. Fig. 15 is a detail sectional view. Figs. 16 and 17 are detail views of other forms of my invention, and Fig. 18 is a detail plan view of one of the cylinders removed.

Like letters here indicate like parts in each of the figures of the drawings.

My improved window-frame is shown at A and has the sash $a\ a'$ fitting or sliding therein, said sash being counterbalanced in each side of the window-frame by the weights $b\ b'$, attached to the cords $c\ c'$, which travel over the pulleys c^2 and connected to the sash $a\ a'$ in the ordinary manner.

The window-frame A is provided with the frame-jamb d, which extends on each side thereof and against which the sash $a\ a'$ bears so as to be movable therein. At the top of the window-frame A is the top piece e and at the bottom is the sill f, the top piece e having inserted therein the stationary strips or beads $e'\ e^2$. Fitting within the openings or seats g in the frame-jamb d on each side of the window-frame A are the movable inside strips or beads g', and between the sash $a\ a'$ and fitting within openings or seats h on each side of the window-frame A in the frame-jamb d are the movable parting strips or beads i. An outside strip or bead j is also rigidly secured in the jamb d and top piece e, and these beads e', e^2, g, i, and j act to form the guides $k\ k'$ for the sash $a\ a'$ to move up and down therein when they are placed in position in the window-frame.

The window-frame A has the inside casing l on each side thereof, which, with the back-frame l' and jamb d, forms the chambers m, which contain the weights $b\,b'$, moving up and down in the said chambers m, according to the position of the sash. In order to move the beads g' and i, there is provided the shafts n on each side of the window-frame A, said shafts being journaled within cylinders or casings n', mounted in the jamb d and casing l and having the lugs n^2 n^3 thereon. These shafts n are located about midway on the sides of the window-frame A, one on each side, although any number may be employed, as desired. The lugs n^2 on the shafts n engage with the openings o in the bead g', and the lugs n^3 on the said shafts n engage with the openings o' in the beads i, as shown in Figs. 5 and 6, and act to move said beads g' and i backward and forward, as desired. The openings $o\,o'$ in the beads g' and i have the curved portions o^2 on their front faces and the vertical portions o^3 on their rear faces, and the curved portions o^2 are provided with the wearing-plates o^4 for taking up the wear in said openings $o\,o'$. The cylinders or casings n' have their rear ends threaded, as at n^4, and are adapted to be screwed into the frame-jamb d, while the forward ends of said cylinders n' are threaded, as at n^5, to receive the hollow caps p, which engage with the cylinders n' at the point where said cylinders enter the inside casing l. The shafts n are journaled in the rear of the cylinders n' by means of a pin n^6, and their outer ends extend into the hollow caps or escutcheons p, and are provided with the square portions n^7, onto which a key or wrench q—such as shown in Fig. 11—is adapted to be placed, in order to operate the movable beads g' and i in the window-frame. The casings or cylinders n' are cut away at n^8, in order to permit the free movement of the lugs n^2 n^3 on the shafts n against the openings $o\,o'$ within the beads g' and i. The rear ends $r\,r'$ of the beads g' and i engage with springs r^2, located in the chambers m. Said springs r^2 may be attached to the window-frame A or to the beads g' and i, as desired.

In order to limit the movement of the beads g', a tongue s is provided at the bottom thereof, which fits within a groove s' in the sill f, said groove having the stops s^2 s^3 at each end to limit the forward and backward movement of the beads g'.

The stationary bead e' at the top of the window-frame is cut away on each side so as to form a stop s^4 to limit the forward movement of the beads g at the top thereof, and the stationary bead e^2 at the top of the window-frame A is also cut away in a like manner to limit the movement of the beads i. A lug u' is provided on the bottom of the beads i, which strikes against the jamb d to further limit the movement of the beads i' in their forward position.

At the bottom of the jamb d on each side of the window-frame A is the pocket t, leading into the chambers m, said pocket t being for the purpose of inserting or repairing the weights $b\,b'$ in the chambers m and having the cover t therein to close the same. The movable parting-beads i are cut away, as at t^2, in order to enable the more convenient handling or repairing of the weights $b\,b'$ in the frame. The openings d' in the jamb d are elongated and the cylinders or casings n' are longitudinally slotted for a portion of their length, as at d^2, for the reception of the lugs $n^2\,n^3$ in the insertion and withdrawal of the shaft from the window-frame.

The operation of my improved window-frames is as follows: After the parts are all in position and the sash have been put in the window-frame A and balanced therein by the weights $b\,b'$, in order to draw back the movable strips or beads g' and i all that is necessary is to apply the key or wrench q to one of the square portions n^7 on one of the shafts n and turn the same rearward, which causes the lugs n^2 n^3 on the shaft n to travel up the curved portions o^2 in the openings $o\,o'$ of the beads g' and i until the said lugs n^2 n^3 reach the vertical portions o^3 in the openings $o\,o'$, and traveling down the same will act to draw back the beads g and i in their seats g and h into the window-frame. The beads g' and i in moving back act to compress the springs r^2 against the window-frame A, and also causes the tongue s on the bead g' to strike against the stop s^3. After this is accomplished the key or wrench q can be applied to the other shaft n and turned in like manner to operate the beads g' and i on the opposite side of the window-frame, and the shafts n being held in this position the sash $a\,a'$ can be taken out for repairing or tilted for cleaning purposes. In order to return the beads g' and i to their normal position after the sash $a\,a'$ are put in the window-frame, the key or wrench q, which is on one of the shafts n, is turned forward or toward the sash $a\,a'$, which causes the lugs n^2 n^3 on said shaft n to travel up the vertical portions o^3 of the openings $o\,o'$, in the beads g' and i, until they reach the curved portions o^2 of the openings $o\,o'$, said lugs $n^2\,n^3$ traveling down said curved portions o^2 until they assume a horizontal position, which throws or moves forward the beads g' and i and causes their tops to strike against the stops s^4 and u on the stationary beads $e^2\,e^3$ and the tongue s on the bottom of the bead g' to strike against the stop s^2, while the lug u' on the bottom of the bead i strikes against the jamb d, so allowing the beads g' and i to assume their horizontal position. The beads g' and i, being in this position, form the guides $k\,k$ for the sash $a\,a'$, and the beads g' and i in moving forward are assisted by the springs r^2, which have been relieved from the pressure thereon. In Figs. 12, 13, 14, and 15, I have shown another form of my invention, in which the movable inside beads g' are the only ones movable and that only for a short distance

above the lower sash a', as at the parting g^2, above which point the stationary inside beads extend to the top of the window-frame. The shafts n in this case are located about midway of the length of the lower sash and only having the one lug n^2 thereon working in the openings o in the beads g' to operate the same. The movable inside beads g' are provided with the lugs g^3 and the inclined portions g^4 g^5, in order that the beads g' can be tilted and taken out when desired. The parting strips or beads i only extend from the upper part of the window-frame down to a short distance below the parting g^2, from which point down to the bottom of the window-frame a strip of rubber i' is inserted. The upper sash a is not so wide as the lower sash a', and each has the grooves or recesses a^2 formed on its side face for the cords c c', which connect with the pulleys c^2, attached to the weights b b' in the frame-jamb d. A flexible strip d^4 separates the weights b b'.

In Figs. 16 and 17 I have shown, in connection with my improved window-frame, the manner of attaching the cords or chains c c' to the sash a a', so that when the sash a a' are taken out of the window-frame, the cords or chains c c' can assume any position taken by the windows and prevent the twisting of the same. The sash is provided with the seat v^2, within which is inserted the bottom v' of the box v, said box v having the cap v^3 fitting therein, and the said box v being held together and within the sash by the screw v^4, which passes through the box v into the sash and allows the box v to pivot itself and swing thereon. The box v is provided with the opening v^5, through which passes the link v^6, which connects with the cord or chain c. This mechanism allows the box v to turn around, so enabling the cords or chains to assume any position of the windows.

My improved devices can be applied to the operation of a window-frame having only one sash therein instead of two, as shown, without materially changing or departing from my invention.

It will thus be seen that the parts composing my improved window-frame can be easily adjusted in the frame and operated by any unskilled person and are not liable to get out of order. They can easily be repaired and are positive in their movement. They are not expensive and can be applied to any window-frame and are not in the way of the shutters, &c. The sash can be easily taken out when necessary and without any inconvenience, thereby saving a great amount of time and possible injury to the housekeeper in cleaning or repairing the windows.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A window frame having seats therein, movable strips or beads fitting within said seats, openings within the body of said strips or beads, a shaft in said window frame passing through the strips or beads, lugs on said shaft engaging with the openings in said strips or beads and adapted to project the strips or beads to and from said seats, and a cylinder or casing surrounding said shaft, substantially as and for the purposes set forth.

2. A window frame having seats therein, movable strips or beads fitting within said seats, openings within the body of said strips or beads, a shaft in said window frame passing through the strips or beads, lugs on said shaft engaging with the openings in said strips or beads and adapted to project the strips or beads to and from said seats, a cylinder or casing surrounding said shaft having a longitudinal slot therein, and cut away portions within said cylinder or casing to permit the free movement of the lugs on the shaft within the openings in the strips or beads, substantially as and for the purposes set forth.

3. A window frame having seats therein, movable strips or beads fitting within said seats, openings within the body of said strips or beads, a shaft in said window frame passing through the strips or beads, lugs on said shaft engaging with the openings in said strips or beads and adapted to project the strips or beads to and from said seats, a cylinder or casing surrounding said shaft having a longitudinal slot therein, cut away portions within said cylinder or casing to permit the free movement of the lugs on the shaft within the strips or beads, and elongated openings within the window frame for the cylinder or casing and to permit the insertion and withdrawal of the shaft from the frame, substantially as and for the purposes set forth.

4. A window frame having seats therein, movable strips or beads fitting within said seats, openings within the body of said strips or beads, a shaft in said window frame passing through the strips or beads, lugs on said shafts engaging with the openings in said strips or beads and adapted to project the strips or beads to or from said seats, a cylinder or casing surrounding said shaft having a longitudinal slot therein, cut away portions within said cylinder or casing to permit the free movement of the lugs on the shaft within the strips or beads, elongated openings within the window frame for the cylinder or casing and to permit the insertion and withdrawal of the shaft from the frame, and hollow caps or escutcheons connected to the end of the cylinder and the inside of the frame, substantially as and for the purposes set forth.

5. A window frame having seats therein, inside strips or beads fitting within said seats and movable for a portion of their length, an opening within the body of the strip or bead, a shaft within the frame and passing through the strip or bead having a lug thereon for engaging with said opening to project the strip or bead to and from its seat and a cylinder or casing surrounding said shaft, substantially as and for the purposes set forth.

6. A window frame having seats therein, inside strips or beads fitting within said seats

and movable for a portion of their length, an opening within the body of the strip or bead, a shaft within the frame and passing through the strip or bead having a lug thereon for engaging with said opening to project the strip or bead to and from its seat, and a cylinder or casing surrounding said shaft having an opening or cut away portion therein to permit the free movement of the lug on the shaft within the opening in the strip or bead, substantially as and for the purposes set forth.

7. A window frame having seats therein, inside strips or beads fitting within said seats and movable for a portion of their length, an opening within the body of the strip or bead, a shaft within the frame and passing through the strip or bead having a lug thereon for engaging with said opening to project the strip or bead to and from its seat; a cylinder or casing surrounding said shaft having an opening or cut away portion therein to permit the free movement of the lug on the shaft within the opening in the strip or bead, and a longitudinal slot in the cylinder or casing for the insertion and withdrawal of the shaft from the frame, substantially as and for the purposes set forth.

8. A window frame having seats therein, inside strips or beads fitting within said seats and movable for a portion of their length, an opening within the body of the strip or bead, a shaft within the frame and passing through the strip or bead having a lug thereon for engaging with said opening to project the strip or bead to and from its seat, a cylinder or casing surrounding said shaft having an opening or cut-away portion therein to permit the free movement of the lug on the shaft within the opening in the strip or bead, a longitudinal slot in the cylinder or casing, and an elongated opening in the frame opposite said longitudinal slot to permit the insertion and withdrawal of the shaft, substantially as and for the purposes set forth.

9. A window frame having seats therein, strips or beads fitting within said seats and movable for a portion of their length, an opening within the body of the strip or bead, a shaft within the frame and passing through the strip or bead having a lug thereon for engaging with said opening, a cylinder or casing surrounding said shaft having an opening or cut-away portion therein, a longitudinal slot in the cylinder or casing, an elongated opening in the frame opposite said longitudinal slot, and hollow caps or escutcheons connected to the end of the cylinder or casing, substantially as and for the purposes set forth.

10. A window frame having seats therein, strips or beads fitting within said seats and movable for a portion of their length, an opening within the body of the strip or bead a shaft journaled within the frame and passing through the strip or bead having a lug thereon for engaging with said opening, a cylinder or casing surrounding said shaft having an opening or cut-away portion therein, a longitudinal slot in the cylinder or casing an elongated opening in the frame opposite said longitudinal slot, and projections or stops on the top and bottom of said strip or bead adapted to come in contact with the fixed portion of said strip or bead and the lower end of the window frame, substantially as and for the purposes set forth.

11. A window frame having seats therein, strips or beads fitting within said seats and movable for a portion of their length, an opening in the body of the strip or bead, a shaft journaled within the frame and passing through the strip or bead having a lug thereon for engaging with said opening, a cylinder or casing surrounding said shaft having an opening or cut-away portion therein, a longitudinal slot in the cylinder or casing, an elongated opening in the frame opposite said longitudinal slot, projections or stops on the top and bottom of said strip or bead adapted to come in contact with the fixed portion of said strip or bead and the lower end of the window frame, and an inclined portion on the top of said strip or bead extending from said projection or stop to the rear to the strip or bead, substantially as and for the purposes set forth.

12. A window frame having sash therein, weights and pulleys within said frame, cords or chains connected to said weights and passing over said pulleys to and connected to the sash, said sash having a recess or seat formed in the side thereof, a box fitting within said seat, a cap fitting on said box having an opening therein, a screw bolt passing through the box and cap to form a bearing therefor and rigidly secured in the sash, and a link on the end of the cord or chain passing through the opening in the cap and fitting around the bolt, substantially as and for the purposes set forth.

13. A window frame having sash therein, weights and pulleys within said frame, cords or chains connected to said weights and passing over said pulleys to and connected to the sash, said sash having a recess or seat formed in the side thereof, a box fitting within said seat having a flange thereon, a cap fitting on said box having a flange thereon fitting against the flange on the box, said cap having an opening therein, a screw bolt passing through the box and cap to form a bearing therefor and rigidly secured in said sash, said bolt having a head thereon to fit against the cap, and a split link on the cord or chain passing through the opening in the cap and fitting around the bolt within the box and cap,—substantially as and for the purposes set forth.

In testimony whereof I, the said NICHOLAS CARTUS, have hereunto set my hand.

NICHOLAS CARTUS.

Witnesses:

ALBERT YORK SMITH,

J. N. COOKE.