49-173

(No Model.) 2 Sheets—Sheet 1.

L. M. BOLLES.

SUPPORT FOR WINDOW SASHES.

No. 571,551. Patented Nov. 17, 1896.

FIG. 1.

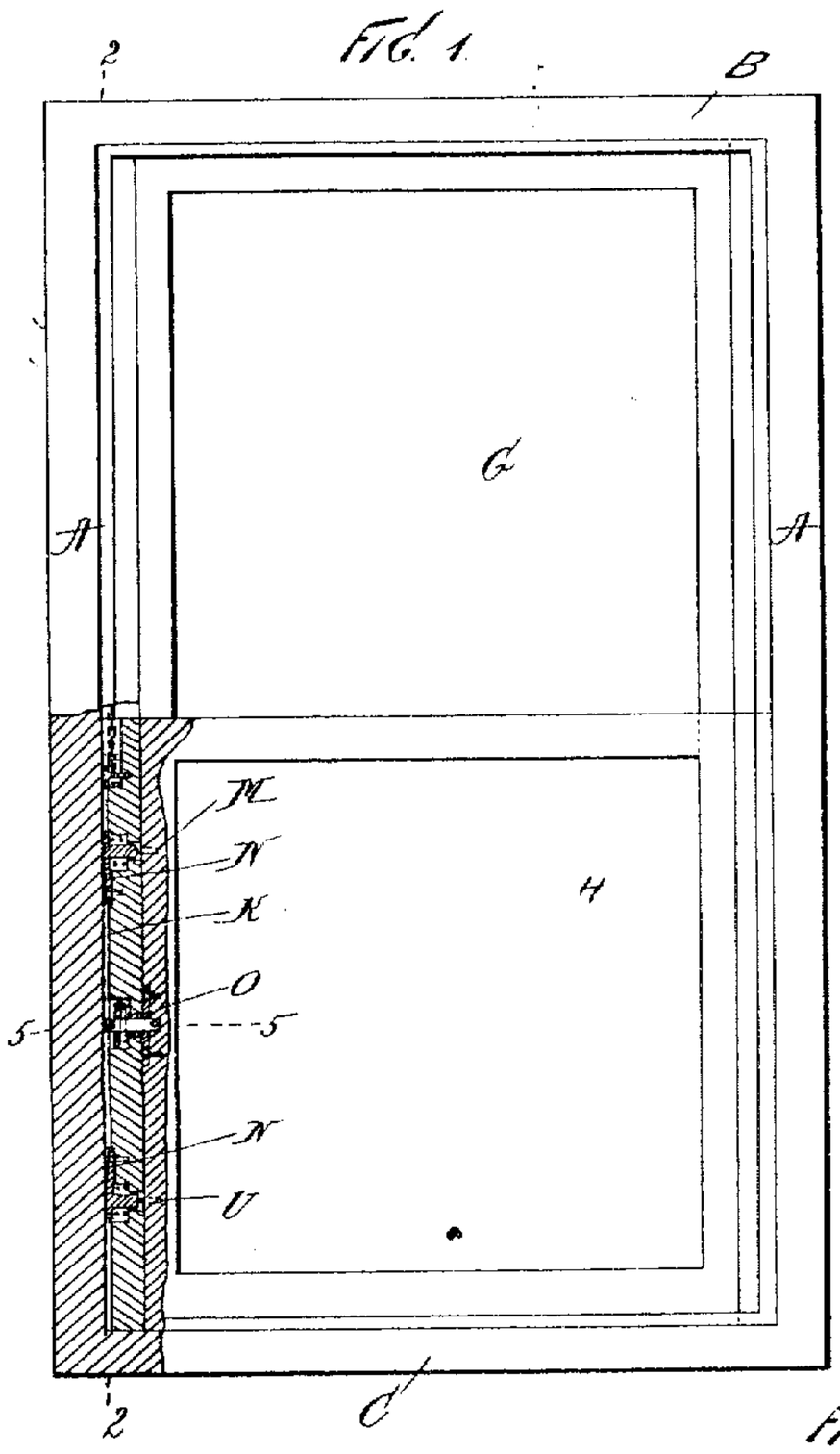


FIG. 2.

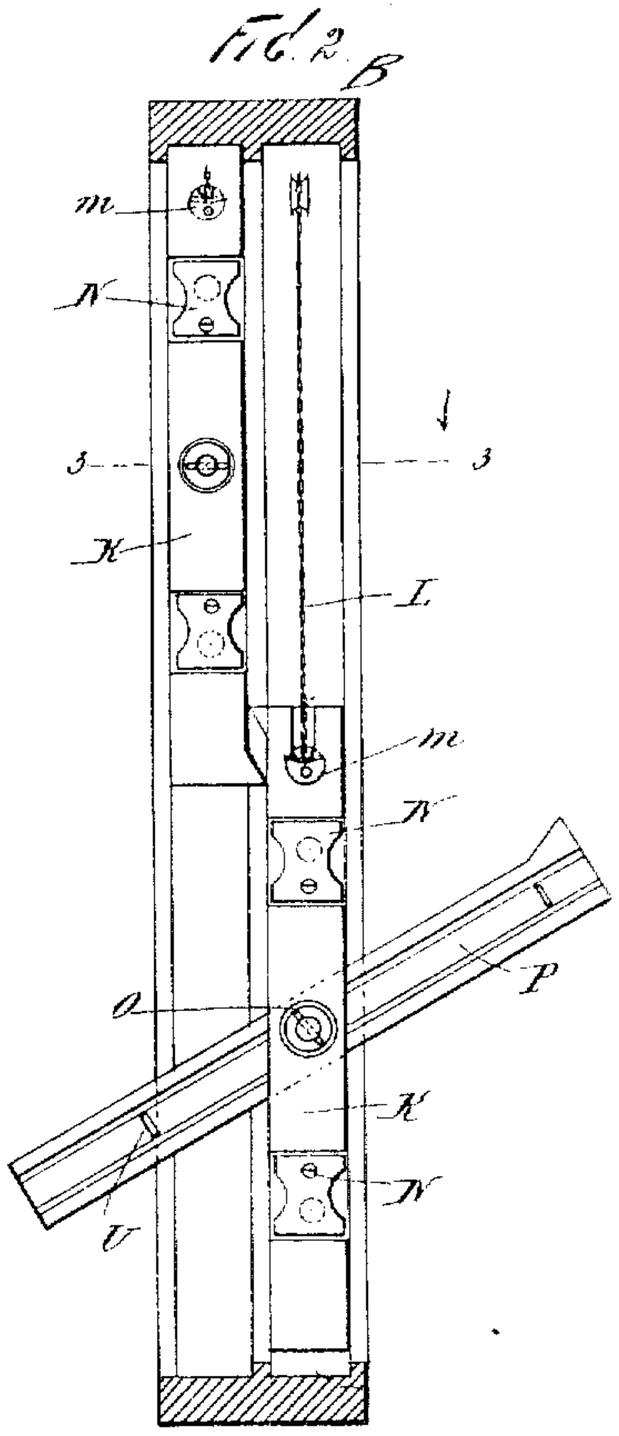
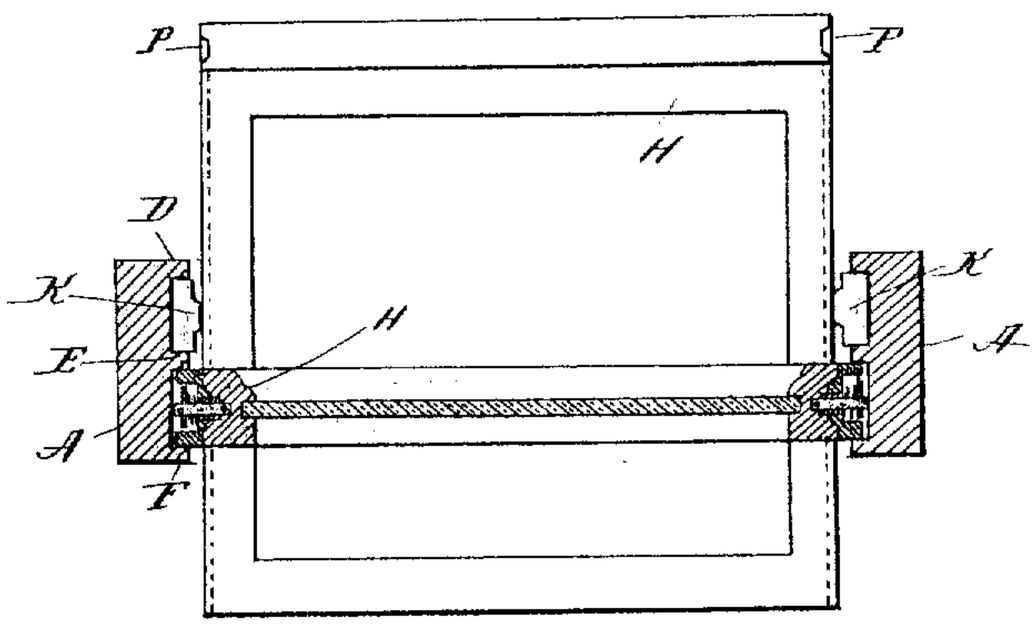


FIG. 3.



WITNESSES:

John Buckler,

Victor A. Klebaur

INVENTOR

Lucerne M. Bolles

BY

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ATTORNEYS.

20 WOODEN BUILDINGS,
Windows,
Sliding Stile,
Horizontally Pivoted Sash.

(No Model.) 2 Sheets—Sheet 2.

L. M. BOLLES.

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FIG. 4.

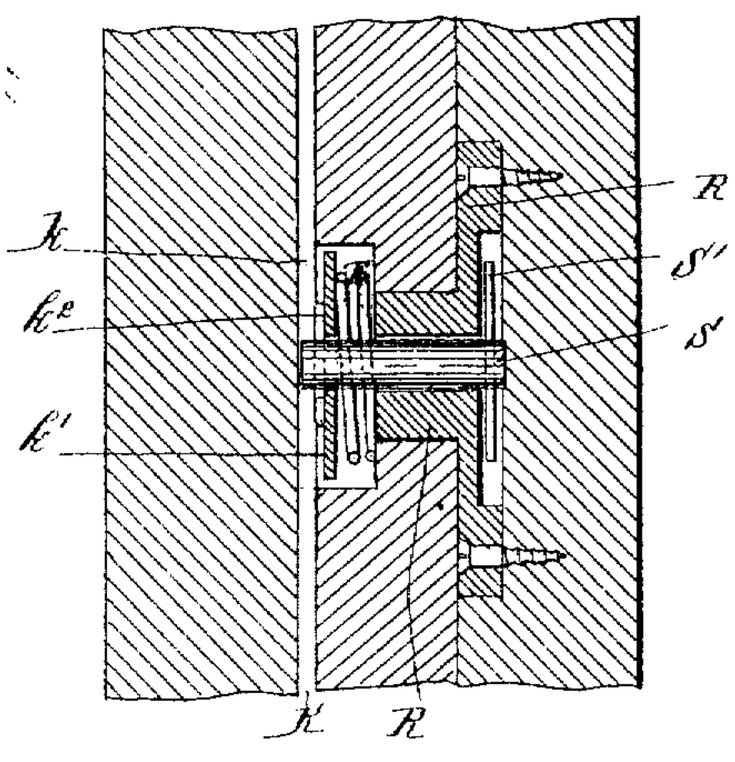


FIG. 6.

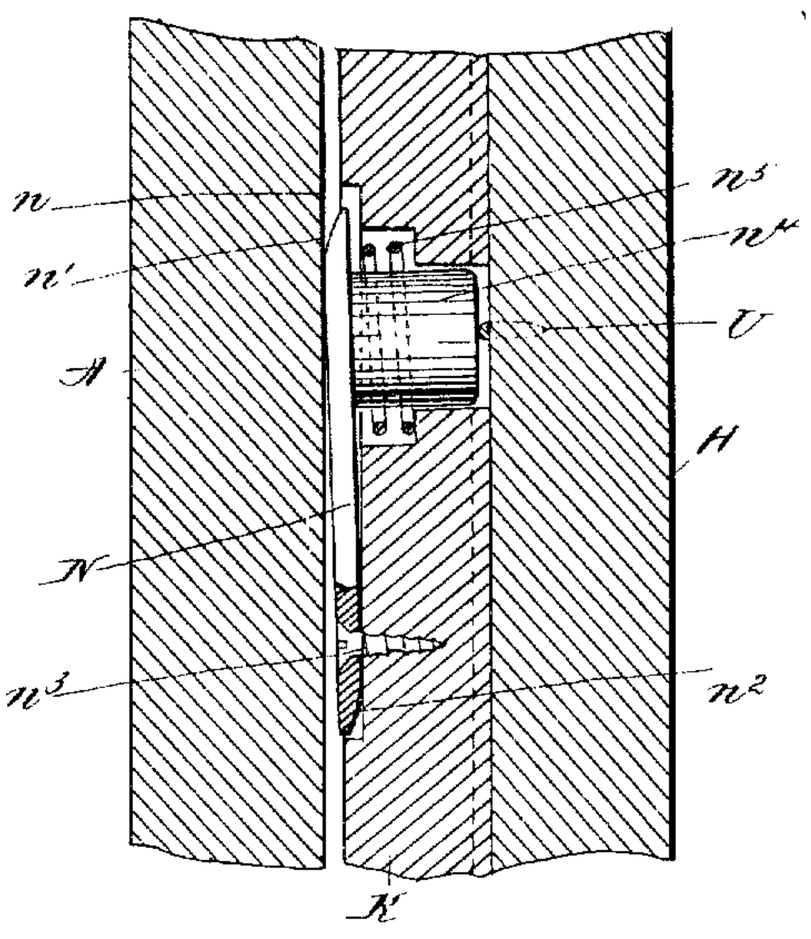


FIG. 5.

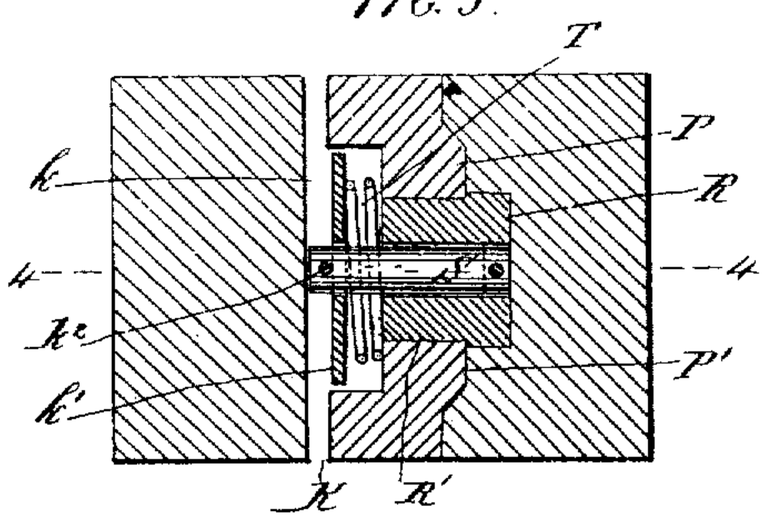


FIG. 7.

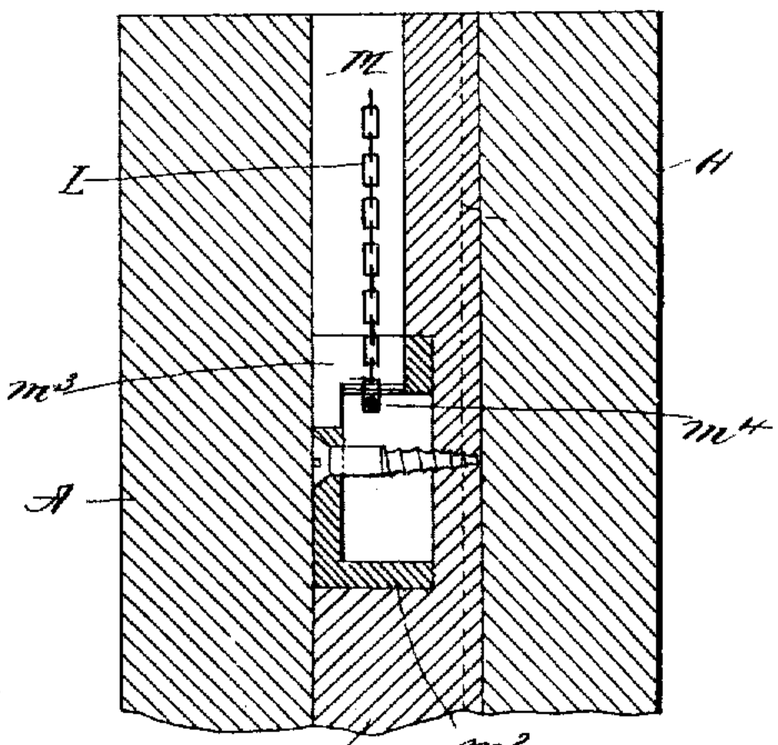
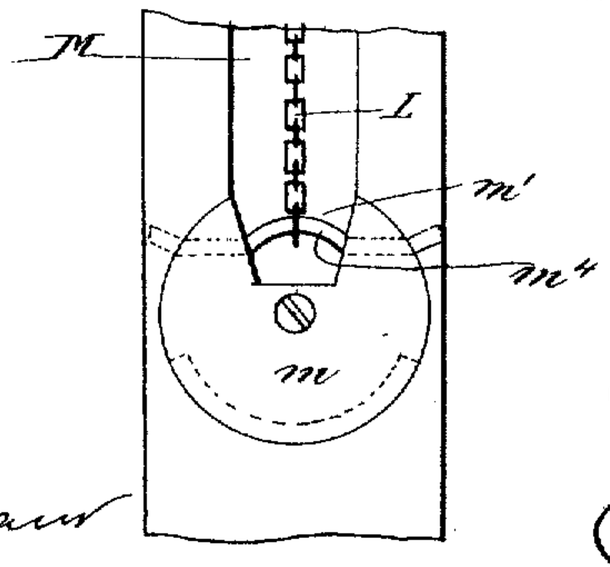


FIG. 8.



WITNESSES:
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INVENTOR
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BY
Edgar Tate & Co
ATTORNEYS.

UNITED STATES PATENT OFFICE.

LUZERNE M. BOLLES, OF BROOKLYN, NEW YORK.

SUPPORT FOR WINDOW-SASHES.

SPECIFICATION forming part of Letters Patent No. 571,551, dated November 17, 1896.

Application filed November 13, 1895. Serial No. 568,751. (No model.)

To all whom it may concern:

Be it known that I, LUZERNE M. BOLLES, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Supports for Window-Sashes, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to improvements in supports for window-sashes, and the object thereof is to provide improved means whereby the sashes of a window may be revolved on their supports, so as to provide means for the proper ventilation of apartments, a further object being to provide sliding stiles or bars by which the window-sashes are supported, said stiles or bars being provided with counterbalance-weights by means of which they, together with the window-sashes which are pivotally connected therewith, may be raised or lowered to any desired point; and with these and other objects in view the invention consists in the construction, combination, and arrangement of parts hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a side elevation of a window-frame, together with the window-sashes mounted thereon, said window-sashes being supported according to my invention and a portion of the construction being shown in section; Fig. 2, a section on the line 2 2 of Fig. 1, showing the outer sides of the stiles or bars between which the window-sashes are pivoted, one of said sashes being tilted on its pivots; Fig. 3, a section on the line 3 3 of Fig. 2; Fig. 4, a section on the line 4 4 of Fig. 5; Fig. 5, a section on the line 5 5 of Fig. 1; Fig. 6, a vertical section through a portion of the frame, a portion of one of the sliding stiles or bars, and a portion of one of the sashes, showing the construction of one of the springs employed in connection with the sliding stiles or bars; Fig. 7, a similar section showing the means by which the sliding stiles or bars are supported, and Fig. 8 a side view of said stile or bar.

In the drawings forming part of this application, A represents the usual side bars of a window-frame, B the top thereof, and C the bottom, and the sides A are provided with the usual beads or strips D, E, and F, between which the separate sashes are mounted; and in the practice of my invention I support the separate sashes of the window, which are shown at G and H, in the following manner: The separate vertical beads or strips D, E, and F form two vertical spaces, and in each of these vertical spaces I place vertically-movable stiles or bars K, two being employed in connection with each sash, one on each side thereof, and these stiles or bars are preferably of the same length as the window-sashes with which they are connected, and secured to these stiles or bars are the cords or chains L by which they are supported, said cords or chains being connected with weights (not shown) by which the stiles or bars and the window-sashes are counterbalanced in the usual manner. In connecting these chains or cords with the stiles or bars K, I form in the outer sides of the upper ends thereof vertical slots or grooves M, as shown in Figs. 7 and 8, and at the lower ends of these slots or grooves M, I set into the stiles or bars a circular plate m, the upper side of which is cut away, so as to form an angular notch or recess m', and said circular plate m is provided on its lower edge with an inwardly-directed segmental flange m^2 and at each side of the angular notch or recess m' with inwardly-directed lugs or shoulders m^3, and the chains or cords L are secured in place by means of a cross-bar m^4, which is passed behind these shoulders or projections m^3, as shown in Figs. 7 and 8.

Each of the stiles or bars K is provided on its outer side and near its upper and lower ends with spring-operated plates N, set into oblong slots or recesses n, formed in the sides of the stiles or bars. The outer surface of these plates is beveled at the upper ends thereof, as shown at n', and the inner surface thereof is beveled at the lower end, as shown at n^2, and the lower ends of said plates are secured to the stiles or bars by a screw n^3, or in any preferred manner.

Secured to the inner side of the free or upper end of the plates N is an inwardly-di-

rected cylinder n^4, which passes through the stile or bar, and formed around the same is an annular chamber, in which is mounted a spiral spring n^5, the object of which is to force the plate N outward against the sides A of the window-frame, and thus force the stiles or bars inwardly.

The sash-frames are pivotally connected with the stiles or bars K at the center thereof, as shown at O in Figs. 1 and 2, and this pivotal connection is made in the following manner: The vertical sides of the sash-frames are provided on their outer surfaces with longitudinal grooves P, which may be of any desired shape in cross-section, and the adjacent surfaces of the stiles or bars K are provided with corresponding longitudinal beads or beveled portions P′, which are adapted to fit therein, and sunk into the sides of the sashes in the bottom of the longitudinal grooves P are plates R, which are provided centrally with outwardly-directed cylindrical extensions R′, which extend part way through the stiles or bars K, as shown in Figs. 4 and 5, and said stiles or bars K are provided at this point on their outer surfaces with cavities or recesses k.

Passing through the cylindrical extension R of the plates K are pivot-pins S, through the inner end of which is passed a pin S′, which rests in a chamber beneath the plates R, and mounted on the outer ends of said pivot-pins within the cavities or recesses K is a plate k', which is held in place by a pin k^2, and between the plate k' and the end of the cylindrical extension R′ of the plate R is a spiral spring T.

It will be understood that the sashes are free to revolve on the pivot-pins S and between the stiles or bars K, and that said stiles or bars project beyond the beads or strips D, E, and F, and when the sashes are closed or in the normal position the said stiles or bars are forced inwardly, so that the longitudinal rib or convex portion P′ enters the longitudinal groove or concave portion P of the sashes, and thus forms a close fit and air-tight connection between said sashes and the stiles or bars.

The longitudinal grooves P or concave portions of the sides of the sashes may be of any desired form in cross-section, and the corresponding longitudinal convex portion of the stiles or bars must be adapted to fit therein, and when the sashes are closed, as hereinbefore stated, these parts are forced together by the action of the springs n^5 on the plates N, as hereinbefore described, and when the sashes are tilted on their pivotal connection, as shown in Figs. 2 and 3, the stiles or bars are forced outwardly by reason of the formation of the joint between said stiles and bars, said joint comprising the longitudinal grooves P or concave portion of the sashes and the longitudinal bead or concave portion P′ of the stiles or bars.

Whenever it is desired to open or revolve one of the sashes, it is only necessary to catch hold of either the lower or upper end thereof and to pull inwardly or shove outwardly thereon, as will be readily understood, and this operation will result in turning the sash on its pivotal supports, as shown in Figs. 2 and 3, and in this operation the stiles or bars K are forced outwardly, so as to fill or nearly fill the space between the same and the sides of the window-frame, and by reversing this operation the sash may be turned to the closed position, in which position the stiles or bars K will be forced inwardly by the springs n^5, as hereinbefore described.

It will be understood, of course, that either of the sashes, the upper or the lower one, may be turned or revolved independently of the other, or that both of said sashes may be turned or revolved together, and it will be also understood that when it is desired to revolve the lower sash it must be raised, so that the lower side thereof will be free from the strip or bead at the bottom of the frame, and when it is desired to revolve the upper sash the same must be lowered, so that it will be free from the strip or bead at the top of the frame.

From the foregoing description it will be seen that the window-sashes are supported entirely and solely by the vertically-movable stiles or bars K and that these stiles or bars are provided with the usual counterbalance weights and cords, and my invention is not limited to the exact form, construction, and arrangement of parts herein shown and described; and I therefore reserve the right to make all such alterations therein and modifications thereof as fairly come within the scope of the invention.

In the construction herein shown and described I also employ loops or staples U, which are set into the side of the sashes H and in the bottoms of the concave portions or grooves P, and the object of these staples or loops is to provide a bearing-surface against which the ends of the cylinders n^4 strike, as shown in Figs. 1 and 6, and which serve to press the plates N outwardly and to prevent the shaking or rattling of the sashes when the latter are closed.

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

1. The combination with a window-frame provided with the usual beads or strips at each side thereof between which the window-sashes are mounted, of vertically-movable stiles or bars mounted in the spaces formed by said beads or strips, and provided with counterbalance-weights, which are secured thereto by means of plates as m, which are set into the sides of said stiles or bars, said plates being provided with notches or recesses in their upper sides and with inwardly-directed shoulders or projections behind which are placed bars or rods with which are connected cords or chains which are also connected with said

weights, said stiles or bars being provided with longitudinal grooves or slots in which said cords or chains are placed, substantially as shown and described.

2. The combination with a window-frame provided with the usual strips or beads at each side thereof, between which the window-sashes are mounted, of vertically-movable stiles or bars mounted in the spaces formed by said beads or strips, and provided with counterbalance-weights, which are secured thereto by means of plates as *m*, which are set into the sides of said stiles or bars, said plates being provided with notches or recesses in their upper sides and with inwardly-directed shoulders or projections behind which are placed bars or rods with which are connected cords or chains which are also connected with said weights, said stiles or bars being provided with longitudinal grooves or slots in which said cords or chains are placed, and window-sashes pivotally connected with said stiles or bars, and adapted to be turned on their pivots, substantially as shown and described.

3. The combination with a window-frame provided with the usual beads or strips at each side thereof between which the window-sashes are mounted, of vertically-movable stiles or bars mounted in the spaces formed by said beads or strips, and provided with counterbalance weights and cords, said stiles or bars being so formed as to project beyond said beads or strips, and said stiles or bars being also provided with vertical convex portions on their outer surfaces, and with window-sashes pivotally connected therewith, centrally thereof, the sides of the frames of said window-sashes being also provided with vertical concave portions, or grooves into which the convex portion of the stiles or bars are adapted to fit, said stiles or bars being provided with springs on their outer sides, which are adapted to operate in connection with the frame of the window, to force said stiles or bars inwardly, said springs being set into said stiles or bars, and adapted to operate in connection with plates which are secured thereto, substantially as shown and described.

4. The combination with a window-frame provided with the usual beads or strips, at each side thereof between which the window-sashes are mounted, of vertically-movable stiles or bars mounted in the spaces formed by said beads or strips, and provided with counterbalance weights or cords, said stiles or bars being so formed as to project beyond the said beads or strips, and being also provided with vertical convex portions or beads on their outer surfaces, and window-sashes pivotally connected therewith and centrally thereof, the sides of the frames of said sashes being also provided with vertical concave portions or grooves into which the convex portions or beads of the stiles or bars are adapted to fit, said stiles or bars being provided with spring-operated plates on their outer sides, which are adapted to press against the frame of the window, and the pivotal connection of said window-sash and said stiles or bars being made by means of pivot-pins which pass through plates secured to the sashes and also through extensions or cylindrical portions formed on said plates which project into the stiles or bars, said pins being provided at their outer ends with plates mounted thereon in cavities or recesses formed in the stiles or bars, and also with spiral springs which are mounted thereon between said plates and the cylindrical extension through which said pins pass, substantially as shown and described.

5. The combination with a window-frame, provided with the usual bead at each side thereof, between which the window-sashes are mounted, of vertically-movable stiles mounted in the space formed by said beads or strips, and provided with counterbalanced weights or cords, said stiles being pivotally connected with the stiles of the sash, and plates secured upon the outer side of said stiles, and provided with an inwardly-directed portion, upon which is secured a spring adapted to force the stile away from the frame, and a loop or staple secured in the sides of the sashes opposite the inwardly-directed portion of the plates and adapted to force said plates outwardly against the window-frame to prevent the rattling of the sash, substantially as described.

6. The combination with a frame provided with a sash, stiles or bars, having a longitudinal rib or extension secured to each side of said frame within the recessed or rabbeted portion thereof; spring-operated plates secured to said stiles or bars at each end thereof, and having an inwardly-directed cylindrical portion secured to the inner surface of the same, which projects into a corresponding recess in the stiles, said sash having a longitudinal groove or recess formed in the edges thereof in which the longitudinal rib of the stiles projects, a staple adapted to register with said cylindrical extension on the plates to force the same against the sash, and pivotal connection between said sash and stiles to permit of the revolution of the former, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 11th day of November, 1895.

LUZERNE M. BOLLES.

Witnesses:
VICTOR A. KLEBAUR,
EUNICE KEENE.