No. 838,585. PATENTED DEC. 18, 1906.

J. G. ROBBE.

REVERSIBLE WINDOW SASH.

APPLICATION FILED OCT. 22, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

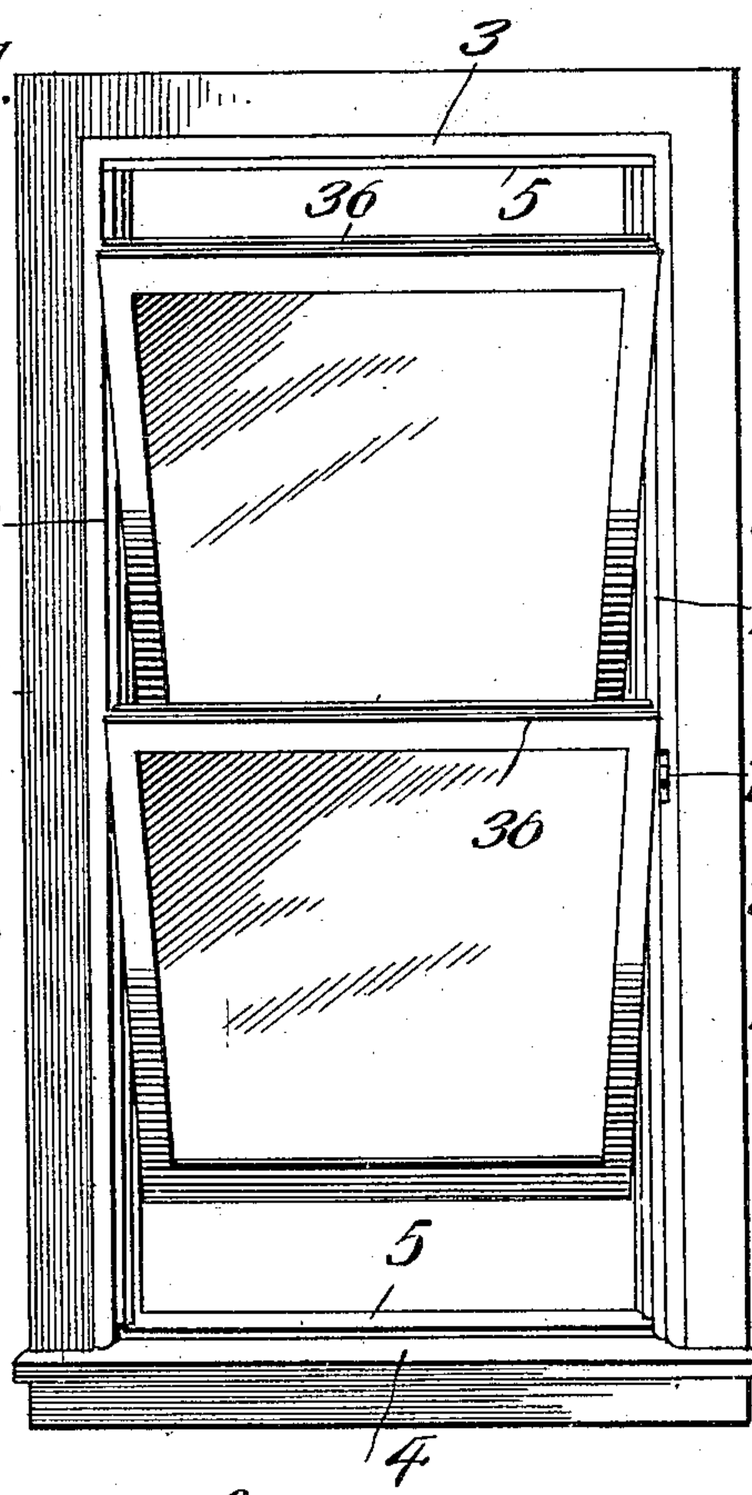


Fig. 2.

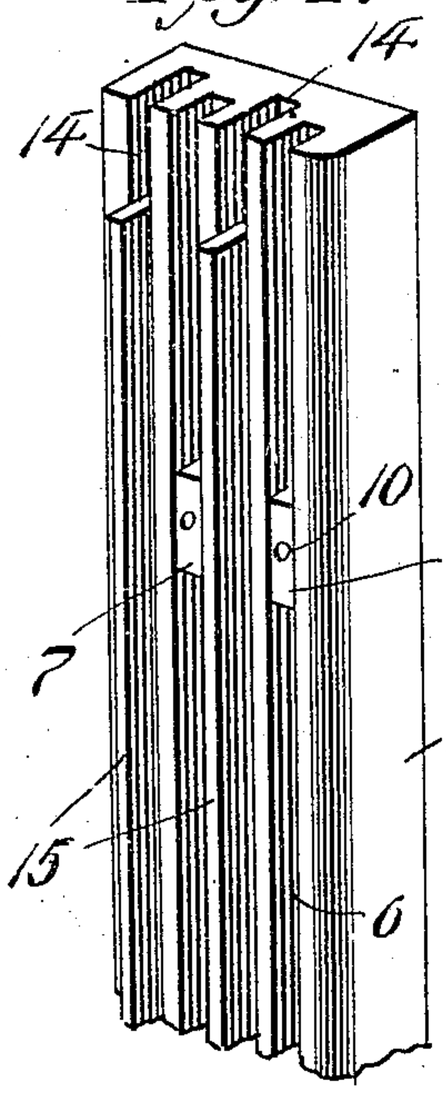


Fig. 3.

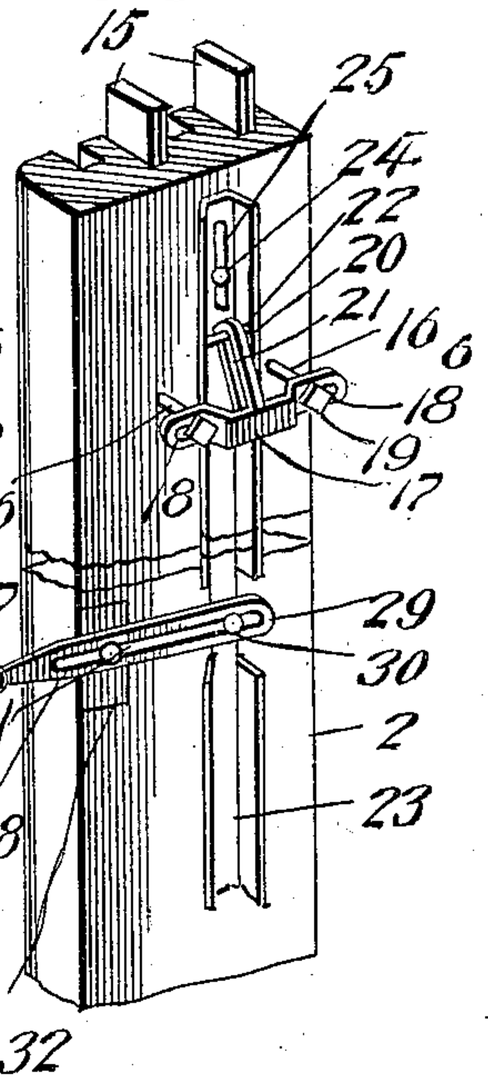


Fig. 4.

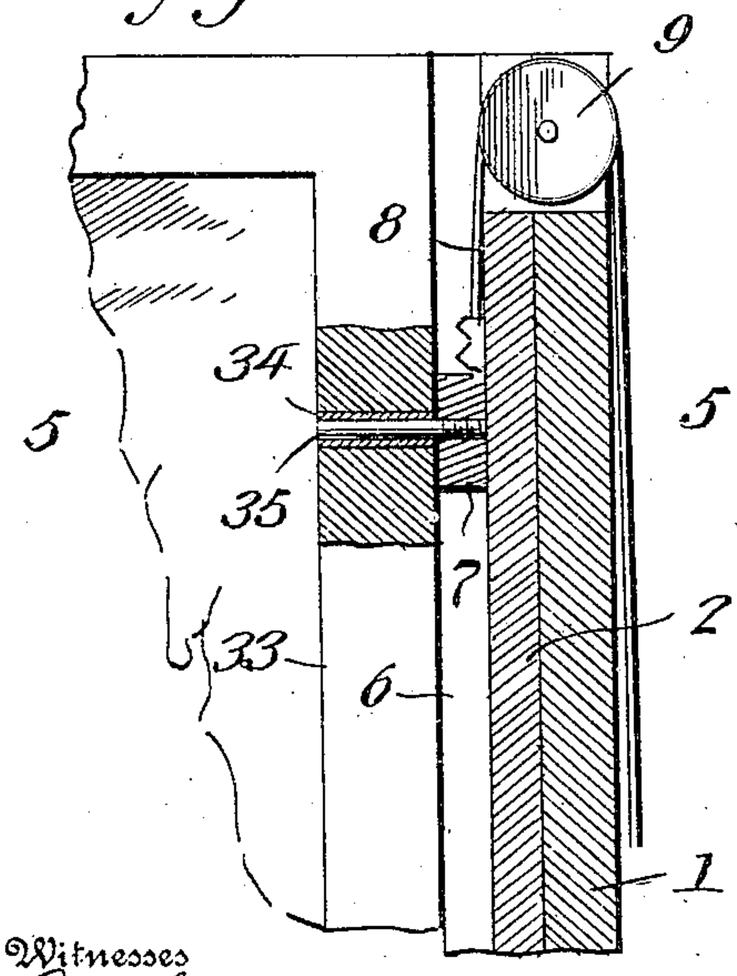
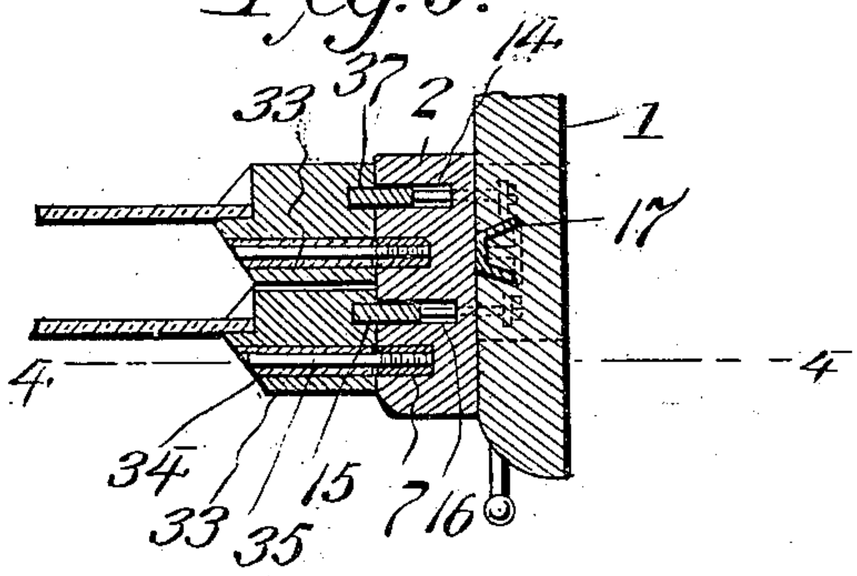


Fig. 5.



Witnesses

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2 SHEETS—SHEET 2.

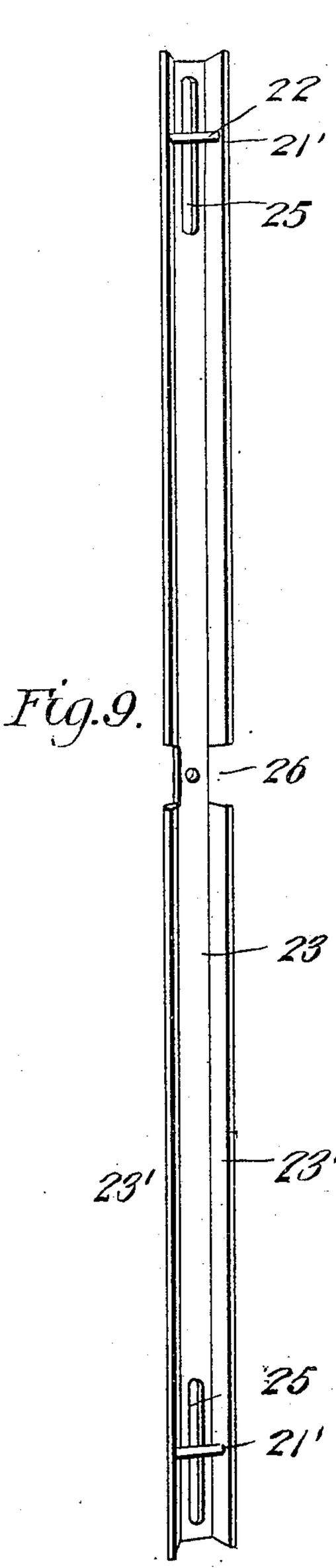

Fig. 9.

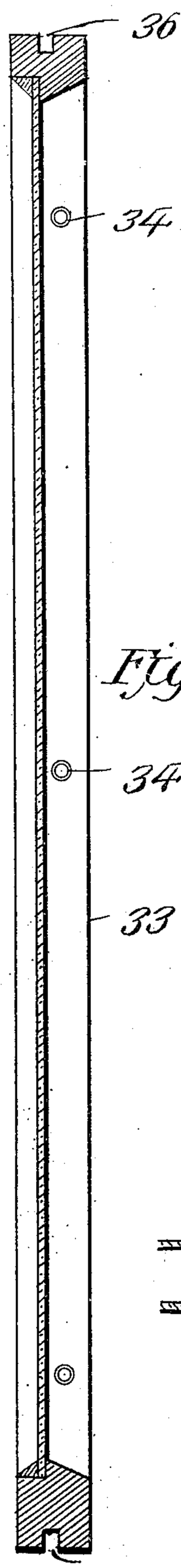

Fig. 10.

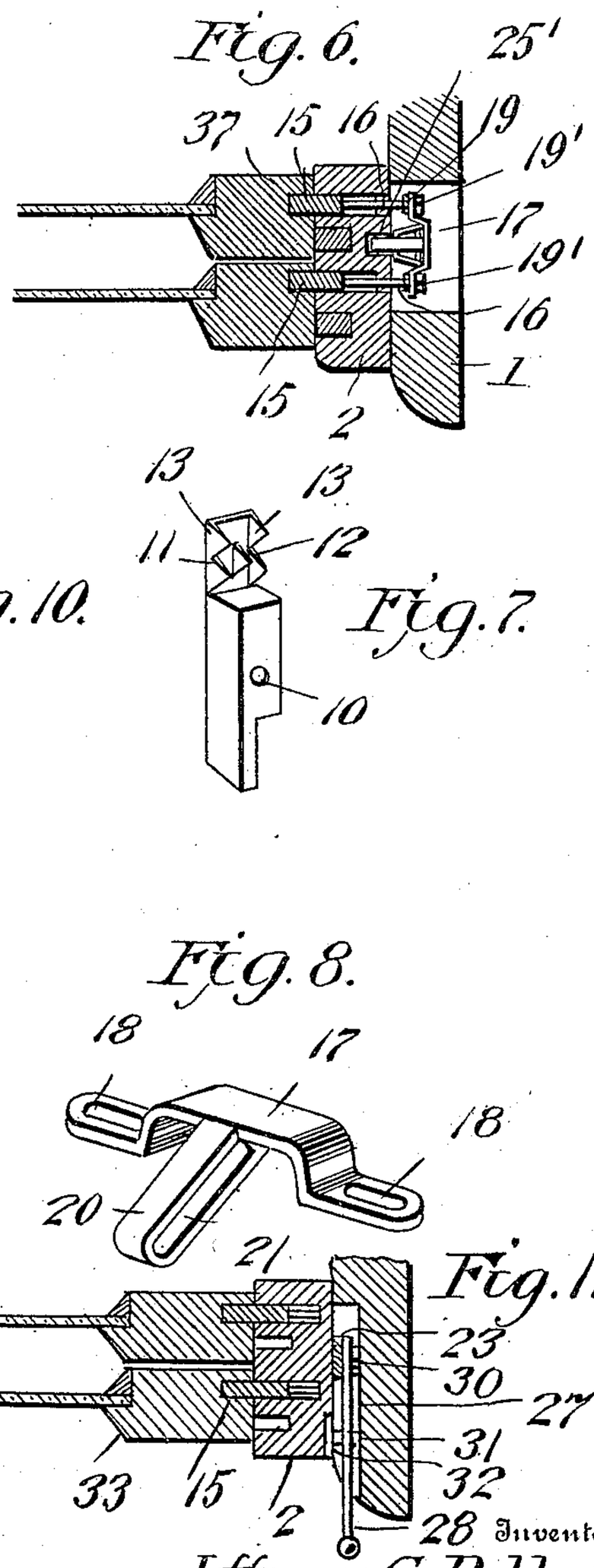

Fig. 6.

Fig. 7.

Fig. 8.

Fig. 11.

Witnesses

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UNITED STATES PATENT OFFICE.

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REVERSIBLE WINDOW-SASH.

No. 838,585. Specification of Letters Patent. Patented Dec. 18, 1906.

Application filed October 22, 1904. Serial No. 229,636.

To all whom it may concern:

Be it known that I, JEFFERSON GRANT ROBBE, a citizen of the United States, residing at Canon City, in the county of Fremont and State of Colorado, have invented new and useful Improvements in Reversible Window-Sashes, of which the following is a specification.

This invention relates to windows, and has for its object to produce a comparatively simple, inexpensive device of this character in which the window-sections may be moved upward and downward, as usual, in the window-casing and readily turned to a horizontal or any desired angular position or completely reversed and one wherein the window when in closed position will be practically air-tight and dust-proof.

A further object of the invention is to provide a simple and effective mechanism for moving the weather-strips within the casing into and out of engagement with the window-sash for maintaining the window in its closed position or permitting of its sections being turned upon their pivotal axes, as heretofore mentioned.

To these ends the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a front perspective view of a window and its casing embodying the invention and disclosing the window-sections turned to partially open position. Fig. 2 is a front perspective view of one of the stiles, showing the sash-guides and weather-strips arranged therein. Fig. 3 is a rear perspective view of the same and illustrating the mechanism for operating the weather-strips. Fig. 4 is a detail view, partly in section, of a portion of one of the stiles and window-sashes and showing the sash as pivotally engaged with the hanger. Fig. 5 is a section taken on the line 5 5 of Fig. 4 and showing the sashes arranged in juxtaposition. Fig. 6 is a similar view taken on the line 6 6 of Fig. 3. Fig. 7 is a perspective view of one of the hangers. Fig. 8 is a perspective view of one of the cam members employed in the strip-operating mechanism. Fig. 9 is a perspective view of the channel-iron included in the strip-operating mechanism. Fig. 10 is a detail view of one of the sashes.

Referring to the drawings, 1 designates a window casing or frame comprising vertical side stiles 2, an upper rail 3, and a sill 4, the rail and sill being provided with fixed projecting weather-strips 5 for a purpose which will later appear.

Each of the vertical stiles 2 is provided, as illustrated in Fig. 2, with a pair of spaced vertical guideways or grooves 6, each having arranged for travel therein a hanger block or member 7, fixed to one end of and operated by a cable or other appropriate flexible element 8, arranged for travel over a guide-pulley 9 and having attached to its other end a weight (not shown) arranged for travel as usual within a well or recess provided in the casing 1. The hanger-blocks 7 are preferably of the form illustrated in Fig. 7, having a central solid portion in which is formed a threaded opening 10, while at the upper end of the block there is formed an extended portion 11, having a central tooth 12 and marginal teeth 13, arranged at opposite points upon the side edges of the extension 11. It may here be mentioned that when this form of block is employed it is attached to the cable 8 by pressing the end of the latter onto the central tooth 12 and bending or folding the lateral teeth 13 downward thereover, or if a chain be used instead of the cable, one link of the chain may be engaged with the tooth 12 and the teeth 13 folded into engagement with the chain. By this means the block is securely attached to the weighted element, but may be readily detached when circumstances require. Each of the stiles 2 is further provided with a pair of appropriately-spaced longitudinal grooves or recesses 14, designed to receive movable weather-strips 15, which extend longitudinally of the stile throughout its entire length and are each provided adjacent its upper and lower ends with pins or members 16, which project rearwardly therefrom through the stile and have their rear ends threaded. The pins on one strip are in horizontal alinement with those on the other, whereby these pins are arranged in pairs, and each pair of pins receive upon their rear ends a substantially T-shaped cam member 17, the horizontal portion or head of which is slotted at its opposite ends, as at 18, for the reception of the threaded ends of the pins 16, to which the

member 17 is secured by means of inner and outer nuts 19 19′, respectively, while the vertical portion or stem 20 of each member is disposed at an inward angle or inclination relative to the plane of the adjacent face of the stile 2 and provided with a longitudinal slot 21, which receives and in which moves a fastening pin or key 22, fixed to and extending transversely through suitable openings 22′ in a longitudinally-reciprocatory actuating member 23, preferably in the form of an angle-plate fixed for sliding movement upon the inner or rear face of the stile 2 by means of screws or other fastening devices 24, engaging longitudinal slots 25, formed in the plate, the stile being mortised at points 25′ coincident with the slots 25 for the reception of the slotted arms or stems 20, as and for the purpose hereinafter explained.

The plate 23, the side flanges 23′ of which seat in and are guided by suitable kerfs formed in the casing 1, has these flanges cut away at a suitable point, as at 26, to register with a corresponding mortise 27, formed in the casing at the rear face of the stile 2, and in this mortise is seated an operating member or lever 28, having a longitudinal slot 29, designed to receive a screw or other fastening device 30, by which the lever is attached to the plate 23, the slot 29 being also adapted to receive a projecting pintle 31, formed on a plate 32, attached by screws or otherwise to the inner face of the stile 2, whereby the lever is pivoted and is also susceptible of longitudinal movement, thus permitting of its being drawn outward for operation or moved to a normally-unobstructing position.

Each side of the sash-frame 33 has formed therethrough a series of openings 34, arranged, respectively, adjacent to the longitudinal center and ends of the sash, these perforations being designed for the reception of a pivoting pintle or axle 35, which has its inner end tapped into the threaded opening 10 within the hanger or guide-block 7 and ordinarily engaged through the central opening 34 of the sash, thus centrally pivoting the latter. When, however, the window-opening is barred or screened upon its outer side, the pivoting-pins 35 may be extended through either the upper or lower openings 34 to permit of the sash swinging on its axis without interfering with the bars or screen.

At the upper and lower ends of the sash-frames 33 are formed grooves or kerfs 36 to receive the weather-strips 5, while the side bars of the sash-frames are provided with longitudinal kerfs 37 to receive the weather-strips 15.

In practice when the window is in closed position the strips 15 will seat within the kerfs 37 and serve to maintain the window-sections vertically within the window-opening and guide said sections during vertical opening and closing movements within the casing and, as usual, this movement of the window-section being effected owing to travel of the blocks 7 within the guide 6 under the influence of the weighted cords or elements 8. When, however, it is desired to swing the window-sections on their pivots, as indicated in Fig. 1, for adjusting them to a horizontal or angular position or for completely reversing them, the lever 28 is first drawn outward and its outer end pressed downward, thereby moving the strip 23 vertically upward and causing the pins 22 thereof to travel upwardly and outwardly in the slots 21, thereby forcing the cam member 17 rearwardly relative to the stiles 2 and drawing the weather-strips 15 into their reats 14 and flush with the adjacent outer faces of the stiles 2, whereupon the window sections or sashes may be readily rotated on their pivots 35. After the sashes are again returned to closed position the outer end of the lever is lifted, thereby moving the strip 23 downward and causing the pins 22 to act in the slots 21 for drawing the members 17 inward and moving the strips 15 outward into the recesses 37.

It is to be particularly observed that under my improved construction the window-sections can be turned to a horizontal position and in such position raised to the top of or lowered to the bottom of the window-casing to thus wholly open the latter and obtain increased ventilation or that the windows may be moved to any desired position facilitating cleaning or reversed when needful during the latter operation.

From the foregoing it is apparent that I produce a comparatively simple efficient device admirably adapted for the attainment of the ends in view, it being understood that minor changes in the details herein set forth may be resorted to without departing from the spirit of the invention.

Having thus fully described the invention, what is claimed as new is—

1. In a device of the class described, a window-casing, movable weather-strips carried thereby, said strips being coextensive in length with the height of the casing, a sash-frame pivotally mounted within the casing and having seats for the reception of the weather-strips, a cam member connected with the weather-strips and having a cam-way, a reciprocatory member operable independently of the movements of the sash and having a fixed portion engaging the way, and manually-operated means for reciprocating the member to actuate the cam member for retracting the weather-strip.

2. In a device of the class described, a window-casing, a movable weather-strip seated therein, a sash-frame mounted for movement within the casing and having a seat to receive the weather-strip, and means for retracting the strip comprising a member

operatively connected with the latter and having a camway, a longitudinally-reciprocatory member operable independently of the movements of the sash and having a fixed portion arranged to work in the camway, and a pivoted lever connected with the reciprocatory member for operating the same.

In testimony whereof I affix my signature in presence of two witnesses.

JEFFERSON GRANT ROBBE.

Witnesses:
W. P. NELAN,
DAVID F. FOX.