A. F. CIZEK.

WINDOW.

APPLICATION FILED OCT. 30, 1909.

958,596.

Patented May 17, 1910.

3 SHEETS—SHEET 1.

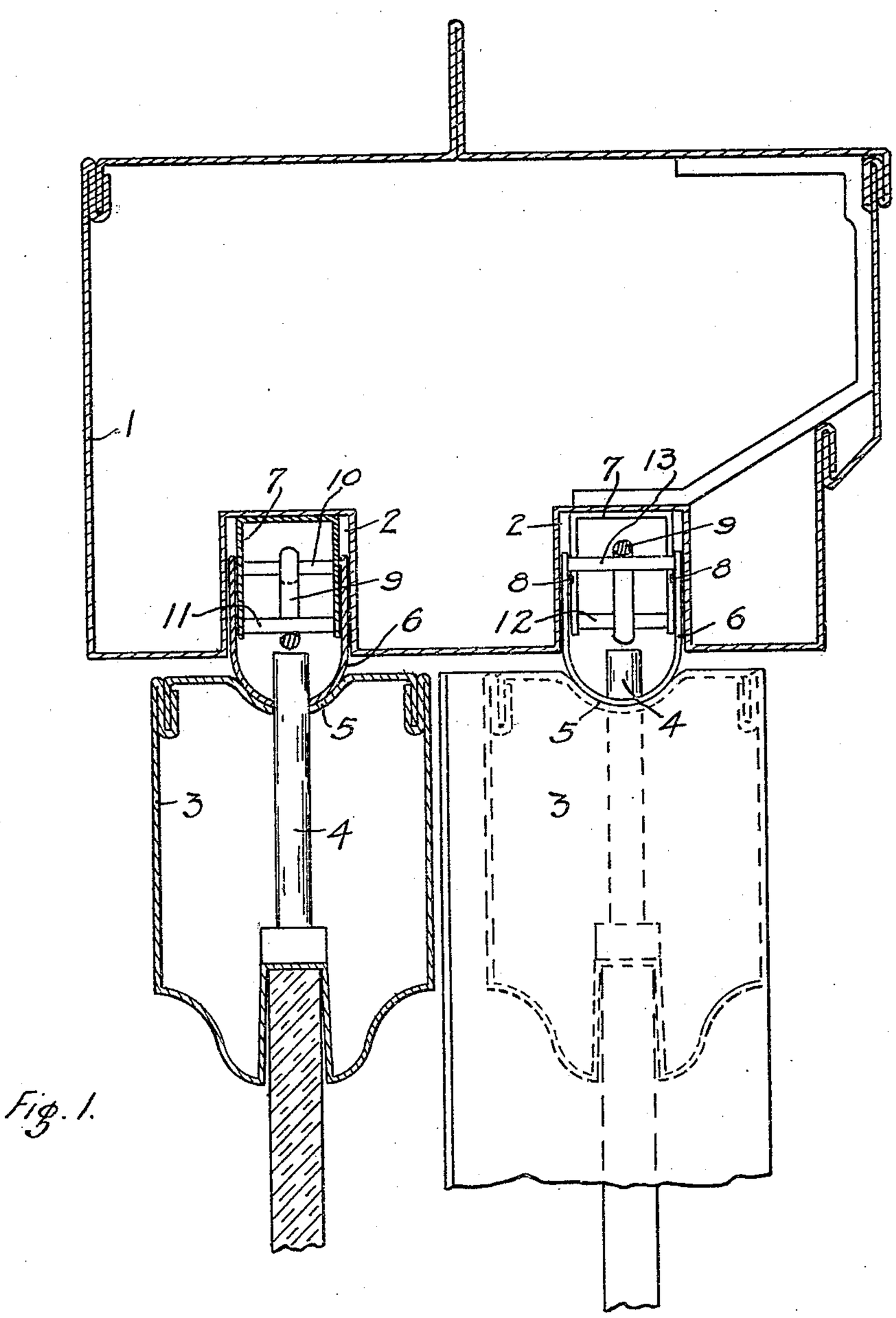

Fig. 1.

WITNESSES:

Harry E. Young

J. L. Ellsworth

INVENTOR

Albert F. Cizek

BY

P. L. Elliott

Attorney

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

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3 SHEETS—SHEET 2.

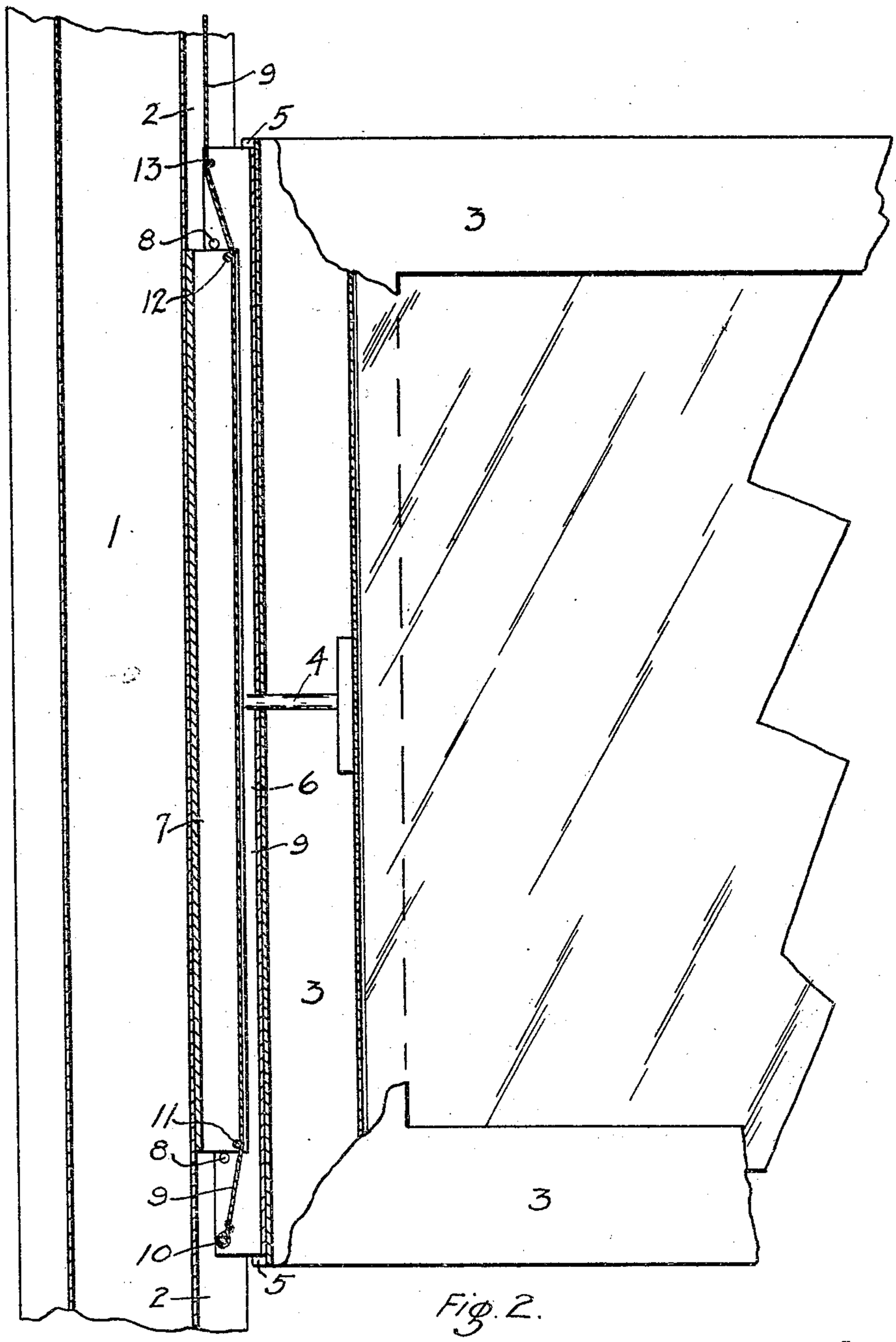

Fig. 2.

WITNESSES:

Harry E. Young

J. E. Ellsworth

INVENTOR

Albert F. Cizek

BY

P. P. Elliott

Attorney

A. F. CIZEK.

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3 SHEETS—SHEET 3.

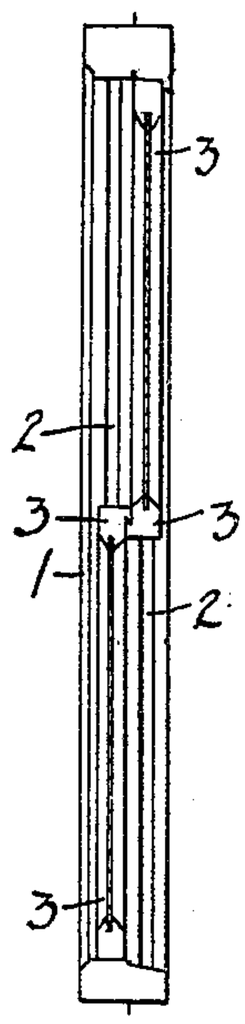

Fig. 3

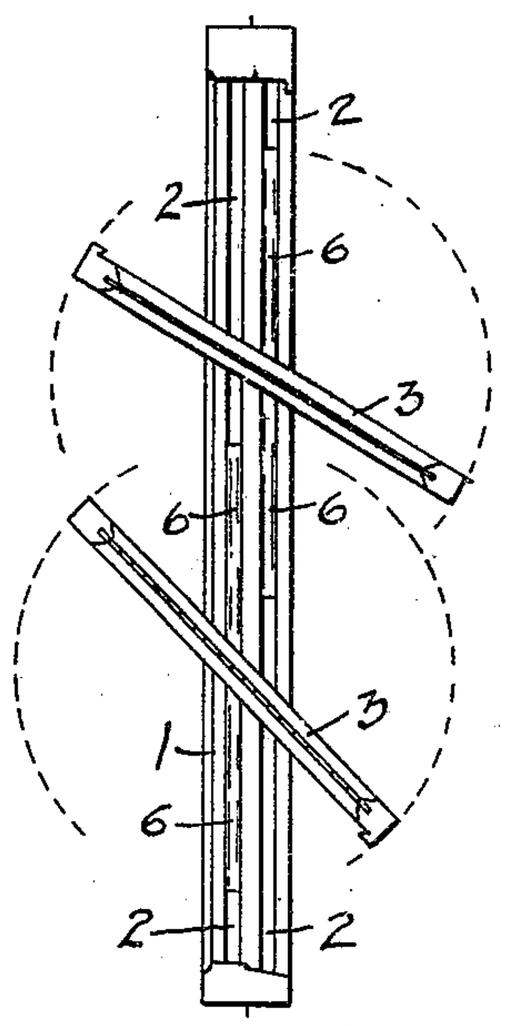

Fig. 4.

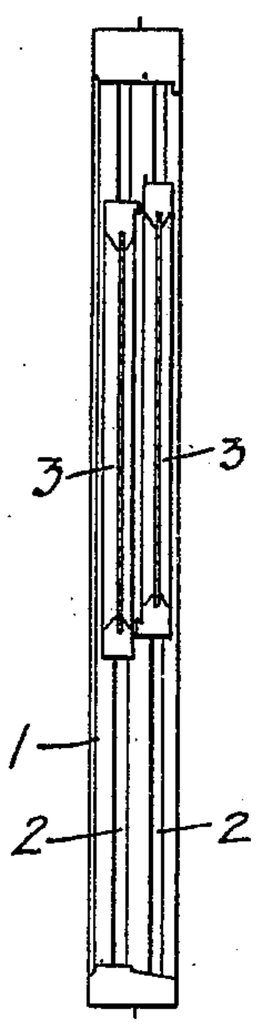

Fig. 5.

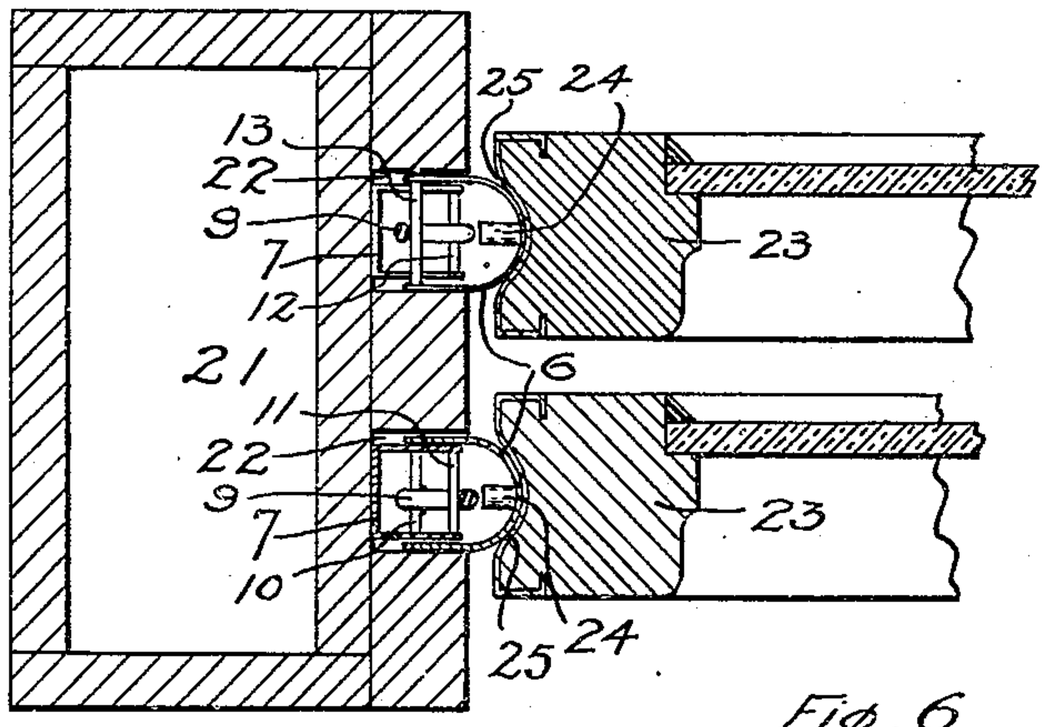

Fig. 6

WITNESSES:

Harry E. Young

J. L. Ellsworth

INVENTOR

Albert F. Cizek

BY

P. D. Elliott

Attorney

UNITED STATES PATENT OFFICE.

ALBERT F. CIZEK, OF TACOMA, WASHINGTON.

WINDOW.

958,596. Specification of Letters Patent. Patented May 17, 1910.

Application filed October 30, 1909. Serial No. 525,452.

To all whom it may concern:

Be it known that I, ALBERT F. CIZEK, a citizen of the United States of America, residing at Tacoma, in the county of Pierce and State of Washington, have invented certain new and useful Improvements in Windows, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to windows and especially to that class in which the sash is adapted to slide vertically for ordinary use and to turn on horizontal pivots for cleaning or other special use.

The objects of my invention are to produce such a window which shall be free from all expensive or complicated parts; which shall be simple to make and to operate; and which can be made either in the metallic fireproof form or in the ordinary wooden construction commonly used in residences. I attain these and other objects by the devices illustrated in the accompanying drawings, in which—

Figure 1 is a horizontal section of one side of a fireproof window showing one sash in section and the other in plan; Fig. 2 is a vertical section thereof; Figs. 3, 4, and 5 are cross-sectional views showing respectively, a pair of sashes closed, the sashes slid vertically and swung on their pivots, and the sashes simply slid vertically; and Fig. 6 is a section similar to Fig. 1 in which my invention is illustrated as applied to an ordinary wooden window frame and sash.

Similar numerals of reference refer to similar parts throughout the several views.

The frame 1 is provided with two parallel rectangular recesses or grooves 2 formed therein on each side thereof, said grooves being adapted to guide the two sashes as they are slid vertically in their ordinary use. Each sash 3 is provided with a pair of horizontal pivots 4 suitably secured thereto in its middle axis. The sashes 3 are narrower than the distance between the inner faces of the two sides of the frame, and the pivots 4 project slightly beyond the sides of the sashes. The central vertical line of each side of each sash is curved inward at 5, thus forming a shallow groove or depression from top to bottom thereof, and the said pivot 4 projects from the center of this groove 5.

An outwardly projecting side-bar 6 fits loosely in the vertical guide groove 2 in the frame and is adapted to enter and seal the vertical groove 5 in the side of the sash. This bar 6 is substantially as long as is the side of the sash 2 and is secured to the sash by the pivot 4 which passes loosely through the bar 6. The bar 6 is free to move into the groove 2 a sufficient distance to clear the sides of the sash but not sufficient to allow the pivot 4 to become disengaged therefrom. An inner side-bar 7 fits loosely in the bar 6 and is adapted to engage the inner face of the guide groove 2. This bar 7 is shorter than the bar 6 and is loosely held from vertical movement relatively thereto by means of pins 8 above and below the said bar 7 or by other suitable connection. The two bars 6 and 7 therefore move together vertically but are free to slide on each other horizontally to alter the extent that the bar 6 projects from the side of the frame.

The sash 2 is supported, and the bars 6 are kept pressed against the sides of the sash 2, by means of the supporting cords or chains 9, one on each side, in the following manner:—A pin 10 is secured to the lower inner corner of the bar 6; pins 11 and 12 are secured respectively at the lower and upper outer corners of the bar 7; and the pin 13 is secured to the upper inner corner of the bar 6. The position of these pins is such that when the bar 6 is in engagement with the groove 5 in the sash the pins 11 and 12 are offset outside of the vertical line of the pins 10 and 13. The cord or chain 9 passes, from above, inside of the pin 13 (pressing it outward) and outside of the pins 12 and 11 (pressing them inward) and is secured to the pin 10 (drawing it outward) so that the weight of the window tends to make the offset, thus made in the cord, to straighten and therefore presses the bars 7 against the inner faces of the grooves 2 and they react on the bars 6 and press them against the sides of the sash 3. This action keeps the window always tight and yet allows it to be perfectly freely swung on its pivot by the very simple action of pulling or pushing on either the upper or lower bars of the sash and thus causing the grooved parts 5 to slip out of engagement with the bars 6 and forcing the bars 6 into the grooves 2 in the frame. Another effect of this construction is found in that the counterbalance weight can be slightly less than is ordinarily used because the friction between the bar 7 and the inner face of the groove 2 will be less when the

window is being raised and greater while it is being lowered.

The form shown in Fig. 6 is identical in principle with that above described but is adapted for a wooden construction. The frame 21 is provided with vertical guide grooves 22 which guide the sashes 23. The pivot pins 24 extend out from the central point of the sides of the sash 23. Each side of the sash is provided with a metal lined vertical groove 25 adapted to be engaged by a side bar 6. The rest of the device used in this form of construction is the same as that described above for the fireproof form of construction.

Having described my invention what I claim is:

1. In a window, the combination with a frame having a vertical guide groove therein; an inner side-bar engaging said groove and vertically movable therein; an outer side-bar moving vertically with said inner side-bar and extending outward from said groove; a sash having a central pivot extending from its side and passing through said side-bar and supported thereby; and a flexible sash cord for supporting the side-bars and the sash, and secured to the outer side-bar, and engaging the ends of the outer- and inner-side-bars by offset engagement, whereby the weight of the sash will press the inner bar inward against the frame and the outer bar outward against the sash.

2. In a window, the combination with a frame having vertical guide grooves therein; a sash narrower than the space between the side faces of said frame and having pivots extending from the centers of its sides; side-bars engaging the sides of the sash and engaging the guide grooves in the frame and supporting the sash by the pivots; flexible sash cords adapted to support the sash and the side-bars and each secured to the lower ends of the side-bars and engaging the upper ends thereof; and means carried by the side-bars but transversely movable relatively thereto and engaging the inner faces of the grooves and reacting therefrom to force the sash cords out of alinement outward between the top and bottom of said side-bars, whereby said side-bars are yieldingly pressed against the sides of said sash.

3. In a window, the combination with a frame having vertical guide grooves therein; a sash narrower than the space between the side faces of said frame and having pivots extending from the centers of its sides; outer side-bars engaging the sides of the sash and engaging the guide grooves in the frame and supporting the sash by the pivots; flexible sash cords adapted to support the sash and the side-bars and each secured to the lower ends of the side-bars and engaging the upper ends thereof; and inner side-bars moving vertically with said outer side-bars, but transversely movable relatively thereto, and engaging the sash cords between the top and bottom of said outer side-bars and reacting from the inner faces of said grooves to force the sash cords out of alinement outward, whereby said outer side-bars are yieldingly pressed against the sides of said sash.

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

ALBERT F. CIZEK.

Witnesses:
M. F. McNeil,
T. S. Fretz.