

No. 817,284.

PATENTED APR. 10, 1906.

W. J. D. THOMPSON & W. BENTLEY.

SLIDING WINDOW.

APPLICATION FILED JUNE 16, 1904.

2 SHEETS—SHEET 1.

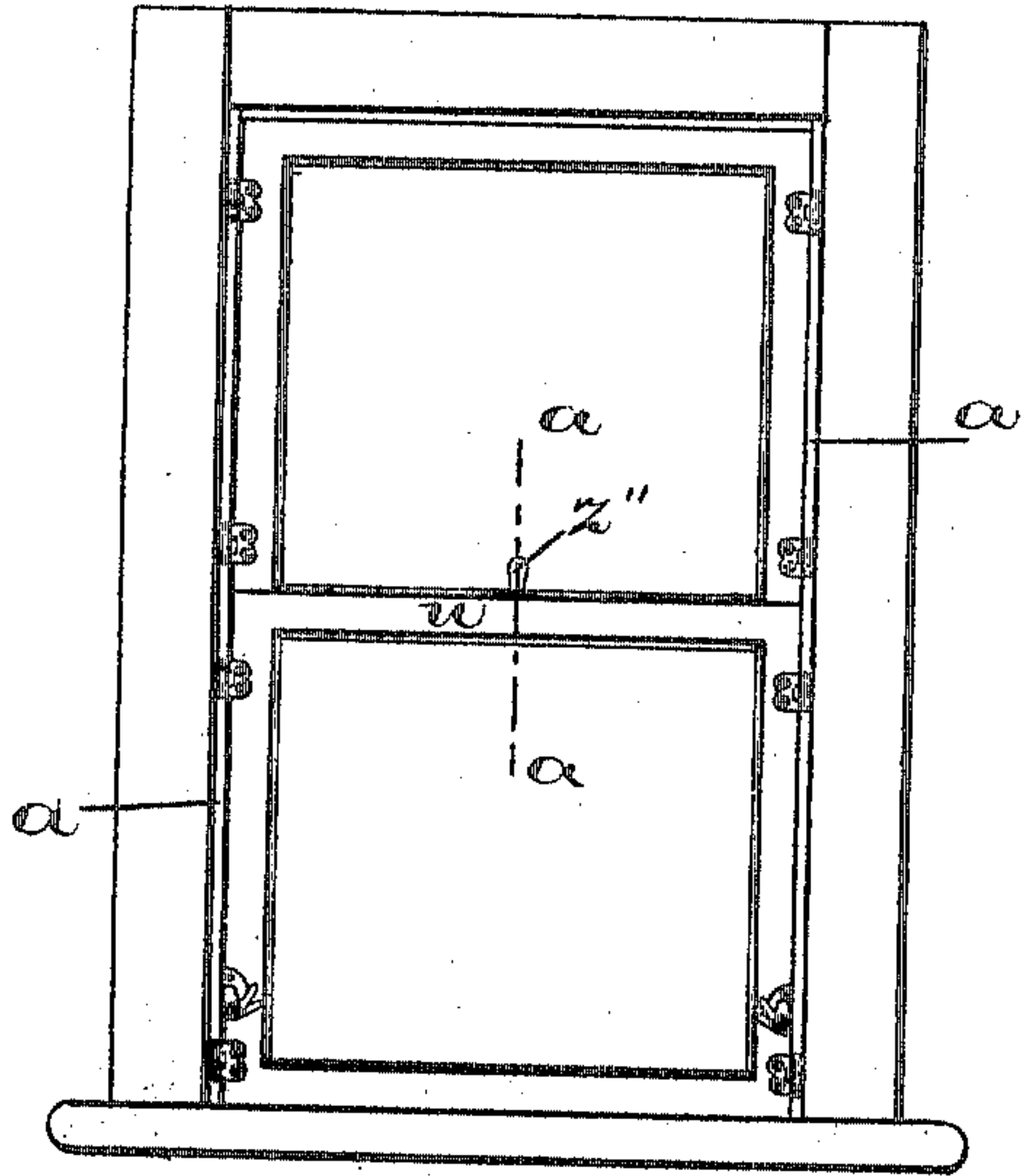


Fig. 1.

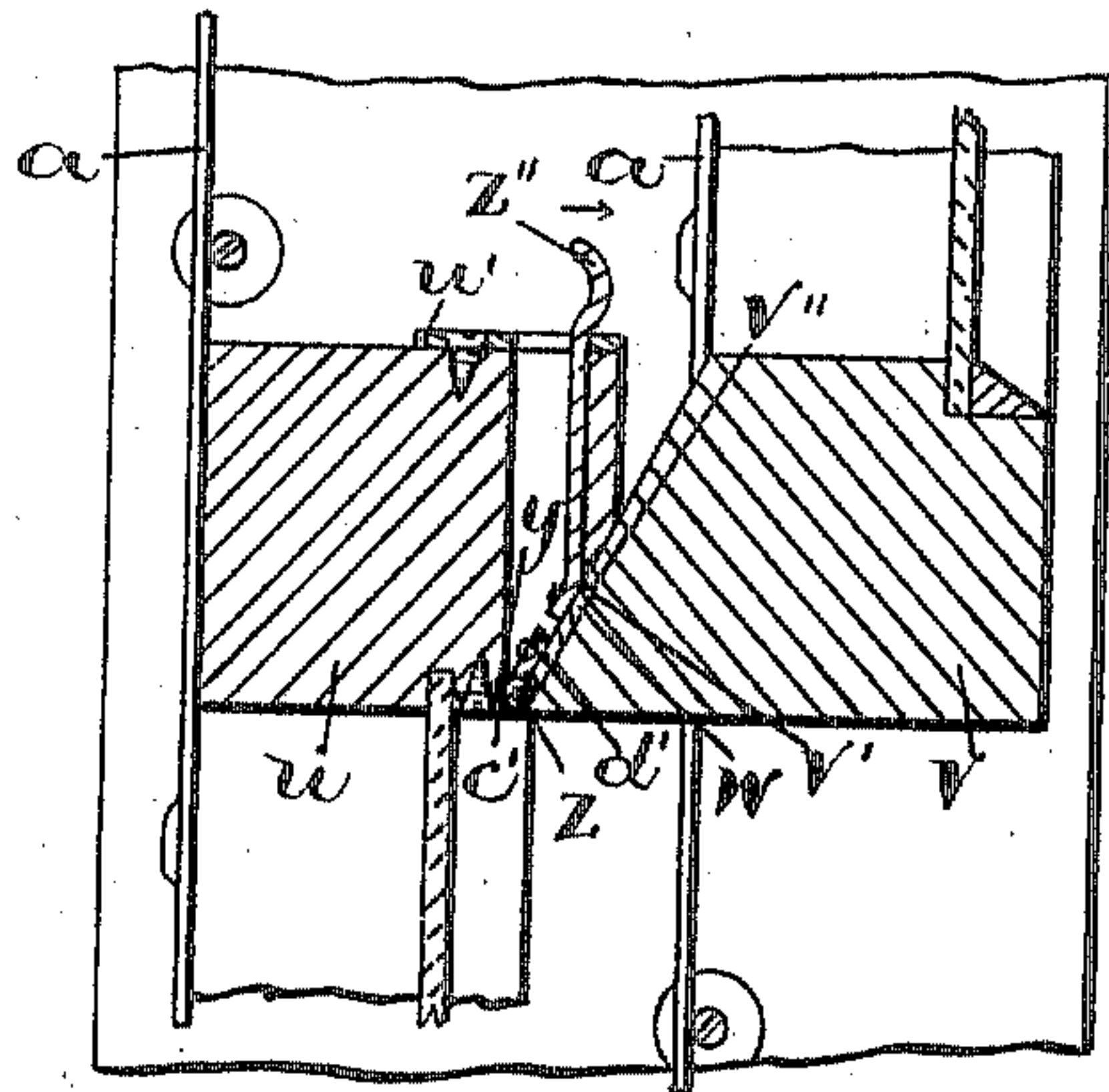


Fig. 3.

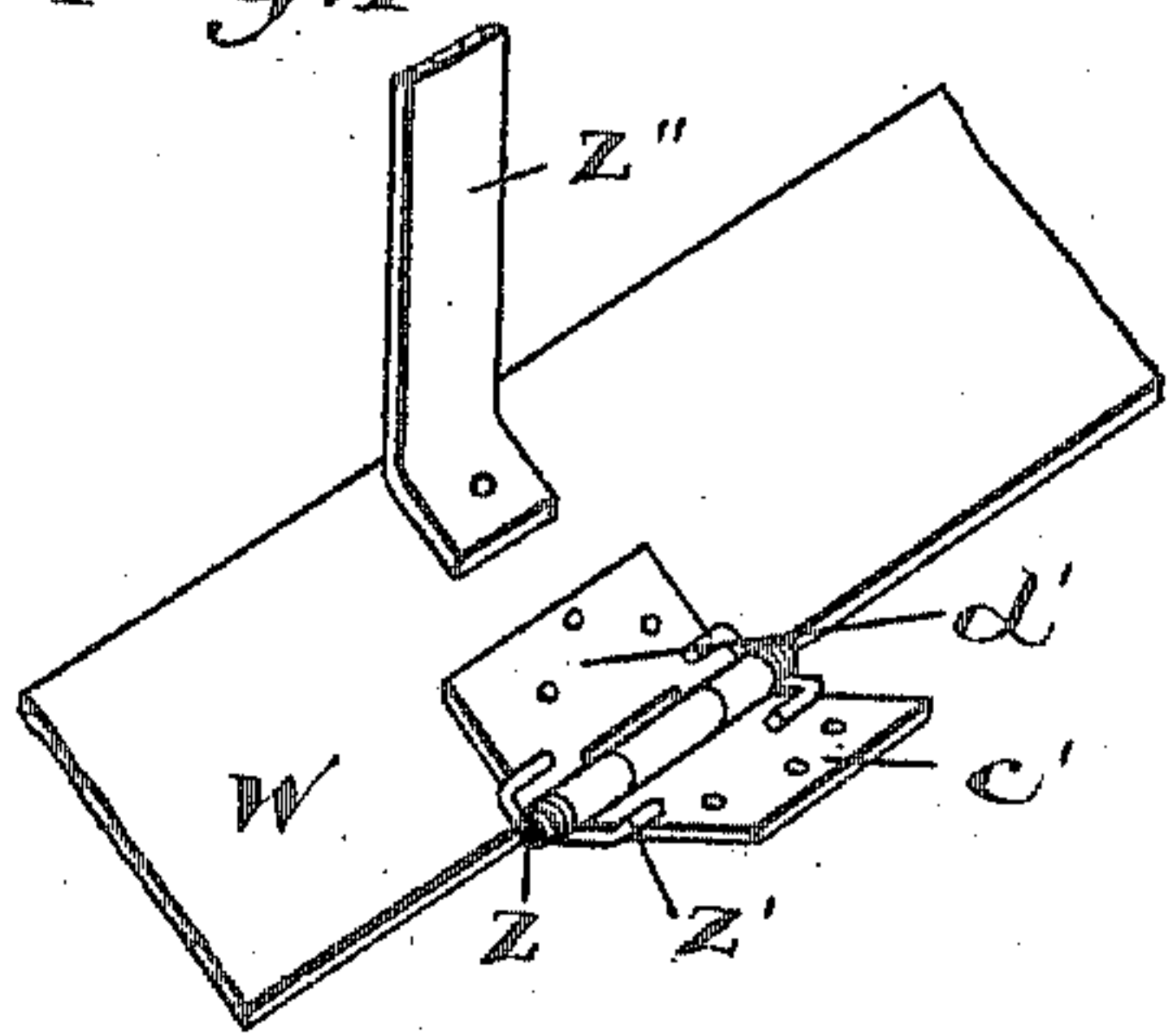


Fig. 5.

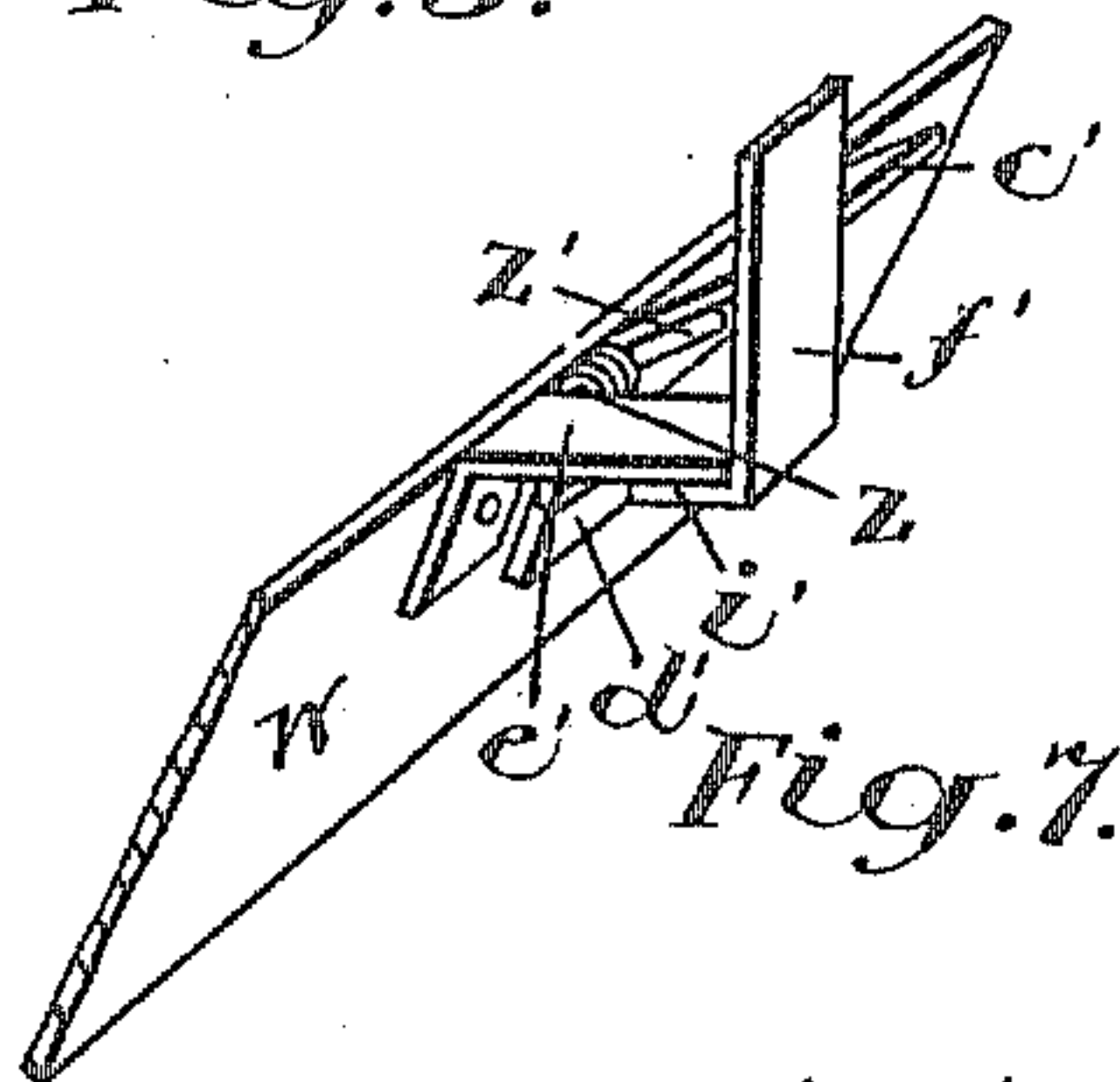


Fig. 7.

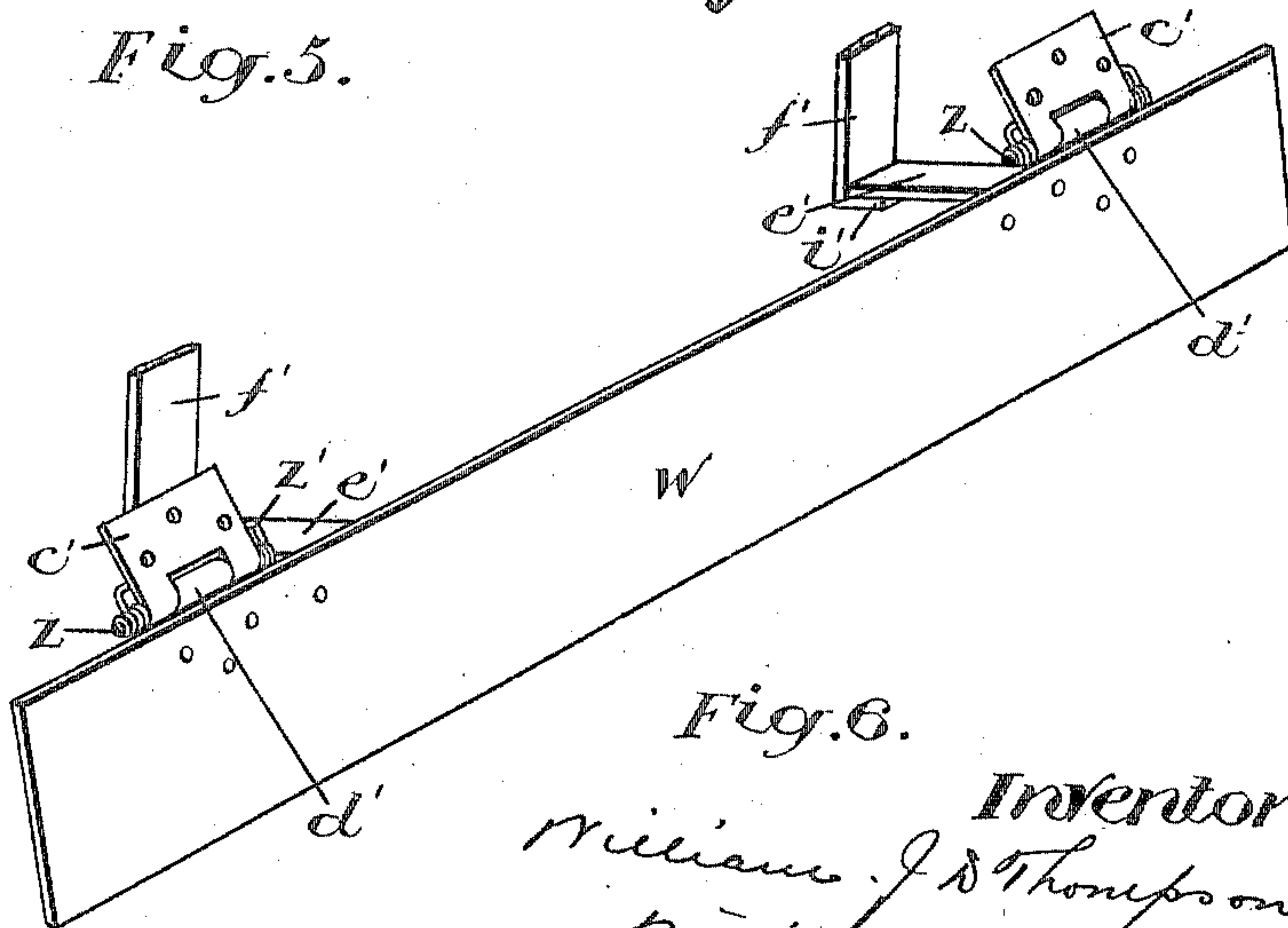


Fig. 6.

Witnesses.
H. L. Trimble.
L. F. Brock.

Inventors
William J. D. Thompson
William Bentley
by C. H. S. 14 Reels
their attorney

No. 817,284.

PATENTED APR. 10, 1906.

W. J. D. THOMPSON & W. BENTLEY.

SLIDING WINDOW.

APPLICATION FILED JUNE 16, 1904.

2 SHEETS—SHEET 2.

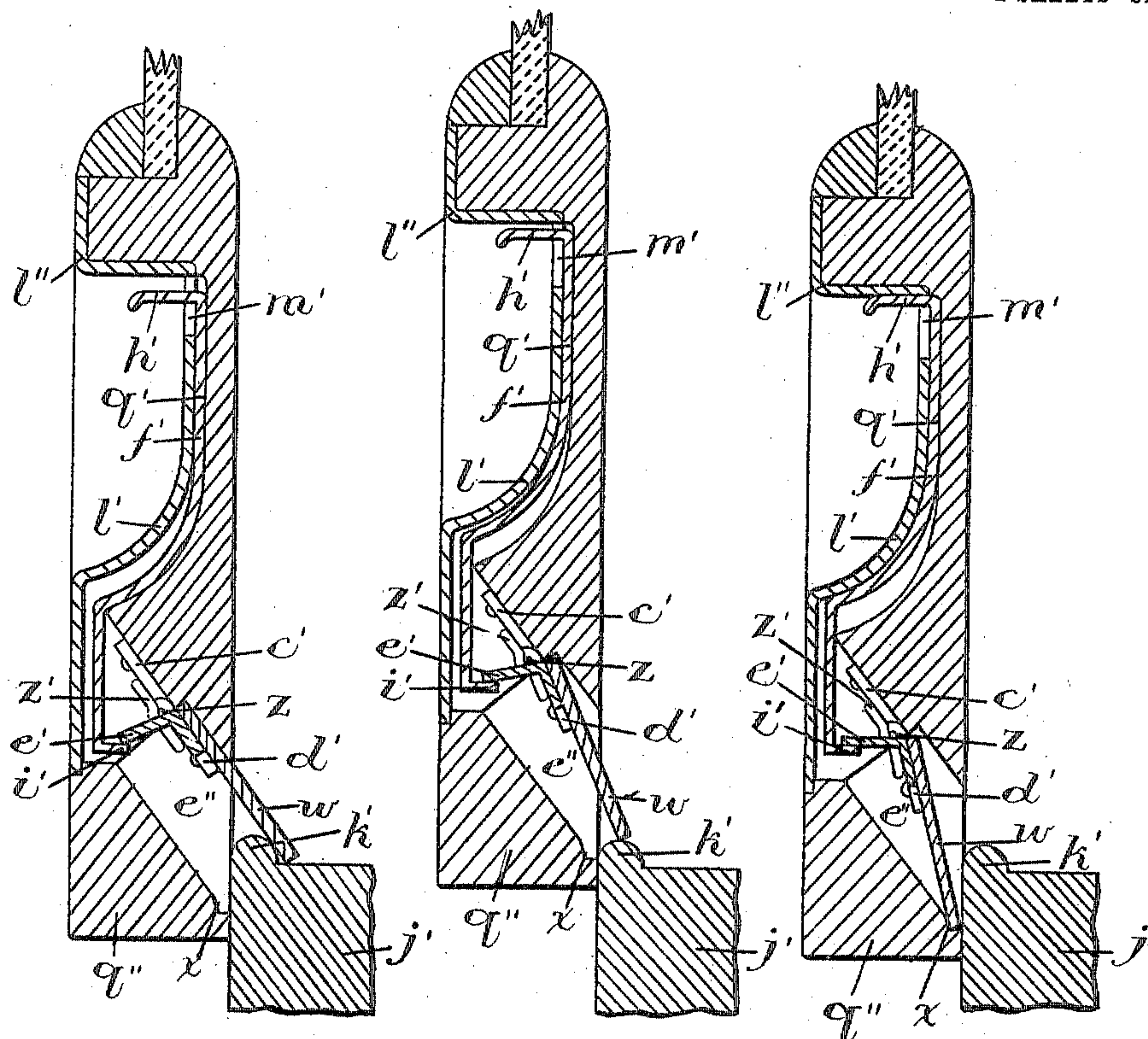
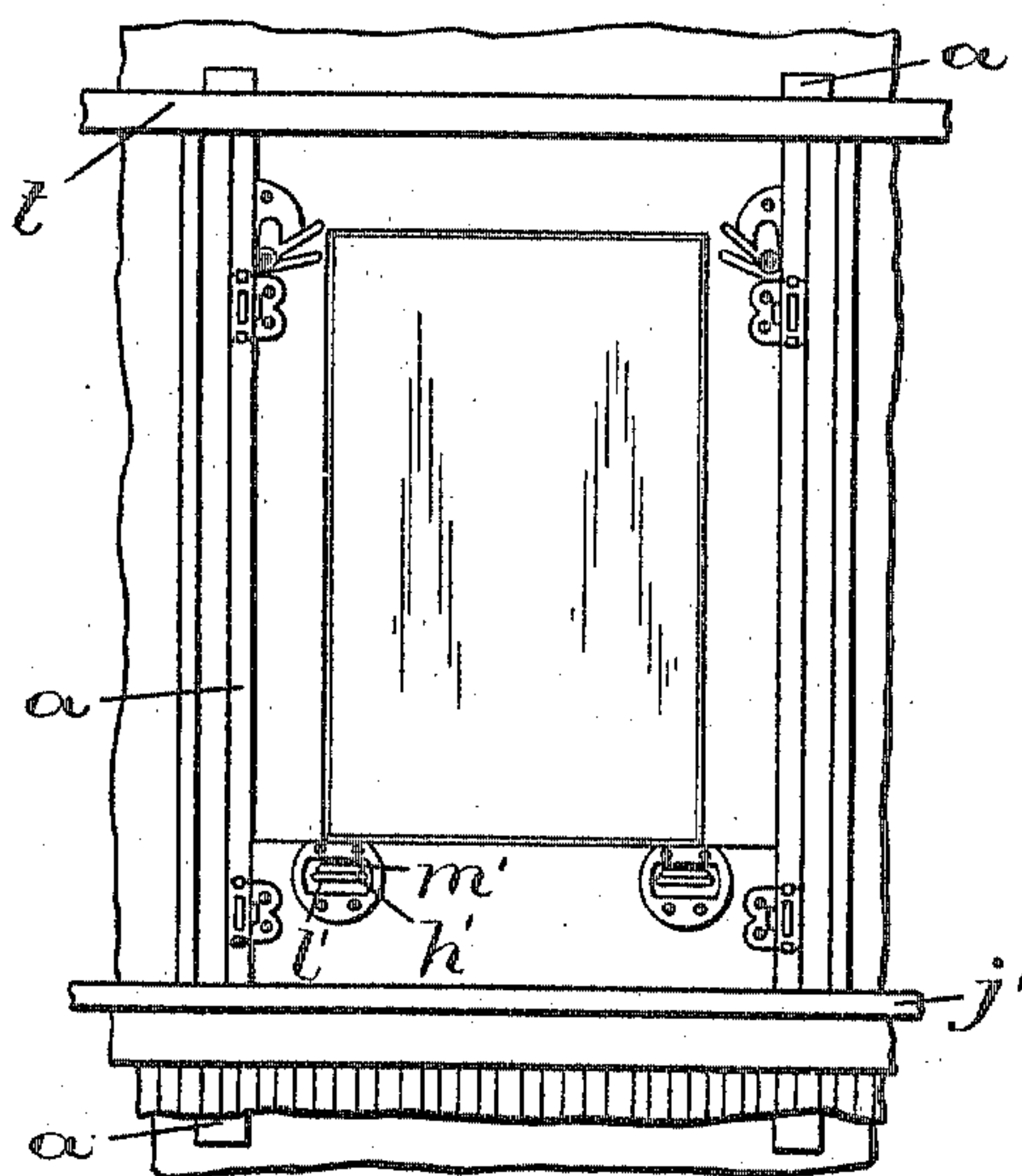


Fig. 4.

Fig. 4a.

Fig. 46.



Witnesses.

H. L. Trimble.

L. F. Brock

Inventors

William J. Thompson.

William Brewster
by Charles D. Smith

by 8 hrs. & make
them Astorney.

Ther. Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM J. D. THOMPSON AND WILLIAM BENTLEY, OF TORONTO, CANADA.

SLIDING WINDOW.

No. 817,284.

Specification of Letters Patent.

Patented April 10, 1906.

Application filed June 16, 1904. Serial No. 212,846.

To all whom it may concern:

Be it known that we, WILLIAM J. D. THOMPSON and WILLIAM BENTLEY, of the city of Toronto, in the county of York and Province of Ontario, Canada, have invented certain new and useful Improvements in Sliding Windows; and we hereby declare that the following is a full, clear, and exact description of the same.

10 In our concurrent application, Serial No. 195,312, filed February 25, 1904, we have shown and described a window and window-frame in which the necessity of allowing for the swelling and shrinking of the window-sash and its guideways may be dispensed with by fitting each side of the window-frame with a single window-guide and providing the window-sash with guiding members, each having two contact-points to engage the opposite sides of the window-guides and hold the window-sash relatively thereto when stationary and during its sliding movements, and to effect a substantially tight contact of the window-sash when closed with the window-guides the latter have on their outer surfaces raised offsets onto which ride the outer contact-points of the guiding members as the window-sash slides into its closed position to draw it tightly against the inner or adjacent faces of the window-guides and not only prevent the inlet of air-currents between the window-sash and guideways, but also render it impossible for the window-sash to vibrate under ordinary conditions. When opening the window, the outer contact-points move from the raised offsets as the window-sash begins to slide into its open position, and the inner contact-points then exert themselves upon the inner surfaces of the window-guides to press the window-sash away from them, so that by being clear of contact with the window-guides it may slide freely in its fixed pathway.

To prevent the inlet of air-currents through the space between the meeting-rails of the upper and lower window-sashes is the object of the present invention, and to attain this object one of them is fitted with a weather-shield positioned by an actuating mechanism when the window-sashes are in their closed position to engage the other window-sash and cover the space between their meeting-rails, the actuating mechanism being arranged to position the weather-shield against the adjacent part of the window-sash to

which it is affixed to allow of the window-sash being opened or closed.

In street-cars and other transportation-vehicles each window consists of a single window-sash arranged when closed to sit upon an inclined window-sill extending to or beyond its inner surface for the purpose of shedding the water to the outside of such vehicle. To provide for the sliding movement of a window-sash of this character, it has heretofore been necessary to arrange its guideways so that the front window-guide will be substantially straight or parallel with the front of the car or vehicle and the other inclined or divergent from the front one, so that while holding the top end of the window-sash between them they will permit its lower end to move laterally from and then slide downwardly past the window-sill when the window is being moved into an open position, the lower edge of the window-sash when closed being maintained in position upon the window-sill by window-holding springs engaging the adjacent faces of the divergent window-guide.

By constructing the window-frame and window-sash according to our principle as outlined above and hinging to the outer surface along the lower edge of the window-sash a spring-tensioned weather-shield to engage the window-sill when the window-sash is in its closed position we are able to slide the window-sash in a vertical pathway parallel with the front of the car or vehicle, and by fitting it with suitable window-holding locks we are able to maintain it in any adjusted position and avoid the necessity of seating it when closed upon the window-sill.

In the drawings, Figure 1 is a front elevation of a window-frame and sliding window-sash adapted for building purposes. Fig. 2 is a similar view of a window-frame and sliding window adapted for cars and boats. Fig. 3 is a vertical section on the lines *a a*, Fig. 1. Fig. 4 is a sectional view of the lower part of the window-sash shown in Fig. 2, illustrating the position of the weather-shield and actuating mechanism when the weather-shield engages the window-sill. Fig. 4^a is a similar view to Fig. 4, showing the window-sash raised to enable the weather-shield to clear the top of the water-shed for the window-sill. Fig. 4^b is a similar view to Fig. 4, showing the window-sash moving downward past the window-sill. Figs. 5 and 6 are perspec-

tive views of the weather-shield and spring-tensioned hinges shown in Figs. 3 and 4, respectively. Fig. 7 is a perspective view of a portion of the weather-shield and one of the hinges shown in Fig. 6 looking at it from the opposite side to that shown in that view.

Like letters of reference refer to like parts throughout the specification and drawings.

To close the opening between the meeting-rails *u* and *v* of the upper and lower window-sashes, (shown in Fig. 3,) we employ a spring-tensioned weather-shield *w*, (shown in Fig. 5,) which extends completely across the meeting-rail *u* of the lower window-sash and is connected to the bottom surface of the meeting-rail by spring-tensioned hinges consisting of hinge members *c'* and *d'*, hinge-pins *z*, and tension-springs *z'*. The hinge members *c'* are attached to the meeting-rail *u* and are contained in countersunk recesses *y* therein, and the hinge members *d'* are riveted or otherwise attached to the weather-shield *w*, which swings with the hinge members *d'* upon the hinge-pins *z* when actuated by the pull-rod *z''* or the tension-springs *z'* to respectively displace it from the countersunk seat *v'* in the meeting-rail *v* when opening either of the window-sashes or to replace it in such seat when closing them. Attached to the top of the meeting-rail *u* is a slotted plate *u'*, through which projects the pull-rod *z''*, the slotted plate acting as a stop to limit the movement of the pull-rod *z''* in the direction indicated by arrow in Fig. 3, so that the weather-shield will not drop below the plane of the under side of the meeting-rail *u* when the window-sashes are opened.

To open the window-sash, the pull-rod *z''* is drawn toward the meeting-rail *u* to lift the weather-shield *w* out of the countersunk seat in the meeting-rail *v*, so that the top of the meeting-rail will be disengaged from the abutting shoulder *v''*, which forms with the weather-shield when in the countersunk seat *v'* a lock to prevent the lower sash being raised or the upper sash lowered. When the weather-shield is displaced from the countersunk seat *v'*, either or both of the sashes may be moved into their open position, and when the sashes are both closed the spring-tensioned hinges replace the weather-shield in its seat *v'*.

In the construction shown in Fig. 4 the weather-shield is contained in a groove *e''*, formed in the bottom bar *q''* of the window-sash and is connected to it by spring-tensioned hinges consisting of hinge members *c'* and *d'*, hinge-pins *z*, and tension-springs *z'*, similar to those shown in Fig. 5. Attached to the weather-shield *w* are arms *e'* to be engaged by the hooked ends *i'* of the lifting-rods *f'*, which are slidably contained in a recess *q'*, formed between the bottom bar *q''* of the window-sash and a covering-plate *l'*, immovably connected to it so as to allow of the

free action of the pull-rods. The pull-rods *f'* have at their upper ends hand-grips *h'* to be engaged by the fingers of the operator when actuating the pull-rods to position the weather-shield within the groove *e''*. When the window-sash is closed, the spring-tensioned hinges press the weather-shield *w* into the position shown in Fig. 4, so that its lower edge will engage the top of the window-sill *j'* on the outer side of the water-shed *k'*. To open a window of this character, it is necessary that the window-frame *t* be so arranged that the window-sash will have a limited upward movement of a sufficient distance to allow the lower edge of the weather-shield to rise above the top of the water-shed *k'*, and to effect this movement of the window-sash its guideways *a* are extended a corresponding distance above the window-top. By lifting on the pull-rods when in the position shown in Fig. 4 the window-sash is raised into the position shown in Fig. 4^a, so that the lower edge of the weather-shield will rise above the top of the water-shed *k'* and then enter the chamber *e''*, as shown in Fig. 4^b, so that it will be within the plane of the outer surface of the window-sash to enable it to move freely past the window-sill during its downward movement. When it is necessary to close the window-sash, it is raised to the same height as shown in Fig. 4^a—that is, until the weather-shield rises to at least the level of the top of the water-shed, over which it moves and then descends into the position shown in Fig. 4. In the covering-plates *l'*, at or near their upper ends, are slots *m'*, through which extend the hand-grips *h'* of the pull-rods, the slots being of a sufficient depth to allow of the free movement of the pull-rods when actuating the weather-shields.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The herein-described article of manufacture comprising a sliding window having a longitudinally-disposed groove in one of the horizontal sash-rails, extending from one side to the other thereof, a weather-shield contained in and extending from end to end of said groove, spring-tensioned hinges connecting said weather-shield to the window-sash within said groove and a pull-rod to position the weather-shield within the groove during the sliding movement of the window-sash.

2. In a sliding window the combination of the window-sash having a recess along its outer surface contiguous to its lower edge, spring-tensioned hinge members contained in said recess, a weather-shield secured to the hinge members, a pull-rod to engage the weather-shield, a covering-plate for the pull-rod attached to the window-sash having at its upper end a slot through which projects the upper end of the pull-rod, said slot being of a sufficient depth to permit of the move-

ment of the pull-rod when positioning the weather-shield.

3. In a sliding window the combination of the window-sash having a recess along its outer surface contiguous to its lower edge, a weather-shield contained within said recess and connected to the window-sash by spring-tensioned hinges, projecting arms for the weather-shield, and pull-rods having hand-
10 grips and hooked-shaped ends to engage the projecting arms.

4. In a sliding window the combination of the window-sash having a recess along its outer surface contiguous to its lower edge,
15 spring-tensioned hinge members contained in

said recess, a weather-shield secured to the hinge members, a pull-rod to engage the weather-shield, a covering-plate for the pull-rod attached to the window-sash having at its upper end a slot through which projects 20 the upper end of the pull-rod, said slot being of a sufficient depth to permit of the movement of the pull-rod when positioning the weather-shield.

Toronto, April 26, 1904.

W. J. D. THOMPSON.

WM. BENTLEY.

In presence of—

C. H. RICHES,

L. F. BROCK.