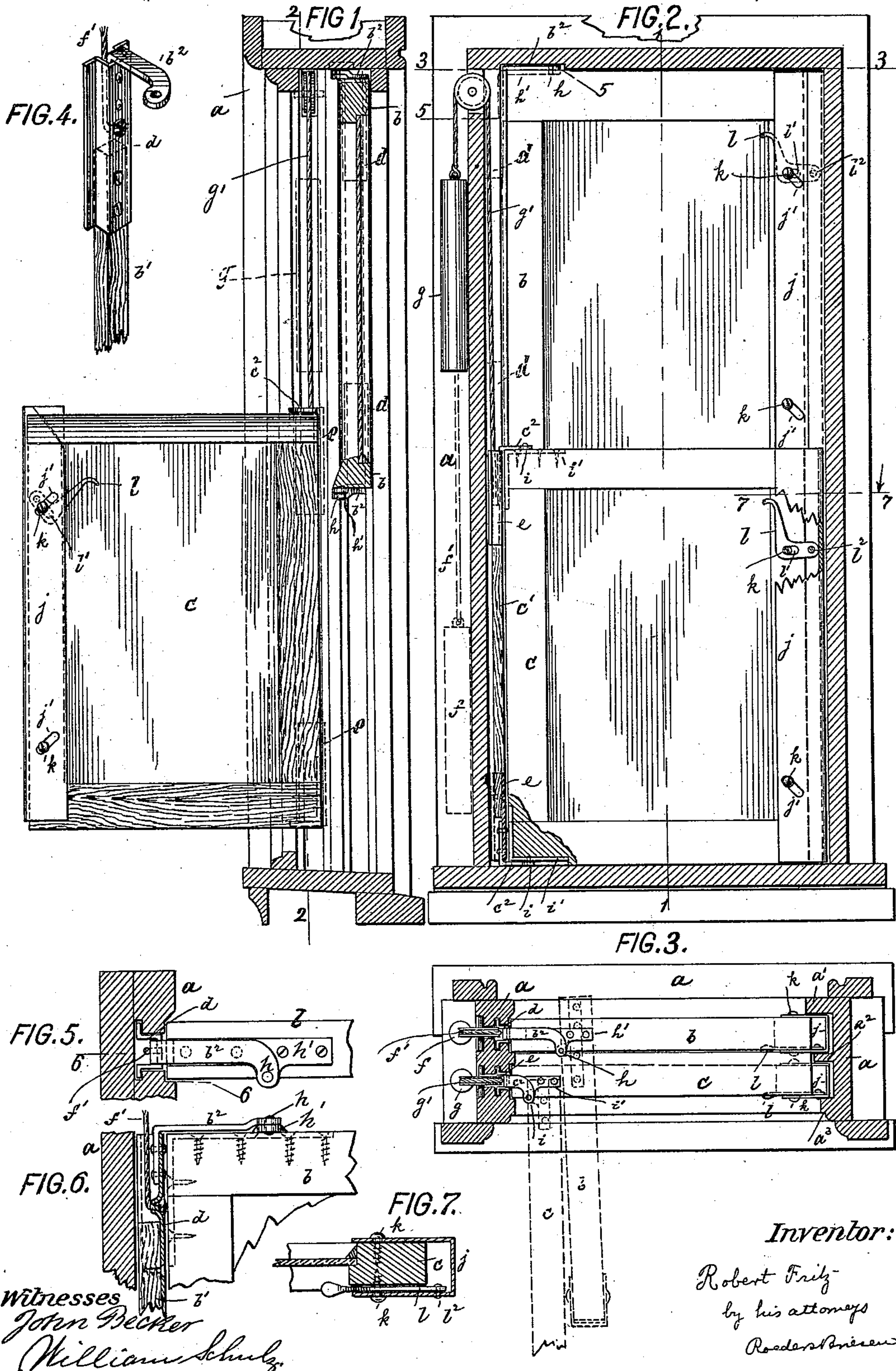


(No Model.)

R. FRITZ.
WINDOW.

No. 549,911.

Patented Nov. 19, 1895.



UNITED STATES PATENT OFFICE.

ROBERT FRITZ, OF UNION, HUDSON COUNTY, NEW JERSEY.

WINDOW.

SPECIFICATION forming part of Letters Patent No. 549,911, dated November 19, 1895.

Application filed August 27, 1895. Serial No. 560,629. (No model.)

To all whom it may concern:

Be it known that I, ROBERT FRITZ, of the town of Union, Hudson county, New Jersey, have invented an Improved Window, of which the following is a specification.

This invention relates to various improvements on that class of windows in which the sashes may be raised and lowered within their frames and may be also opened by swinging them horizontally upon hinges.

In the accompanying drawings, Figure 1 is a vertical cross-section of the window on line 1 1, Fig. 2, showing the lower sash open. Fig. 2 is a vertical longitudinal section on line 2 2, Fig. 1, with the sashes closed; Fig. 3, a horizontal section on line 3 3, Fig. 2; Fig. 4, a perspective view of the hinge-arm and box; Fig. 5, a cross-section on line 5 5, Fig. 2; Fig. 6, a vertical section on line 6 6, Fig. 5; and Fig. 7, a horizontal section on line 7 7, Fig. 2.

The letter *a* represents a window-frame containing the upper and lower sliding sashes *b c*, which are supported or suspended at one edge only, while their other edge is left unsupported. To suspend the sashes I employ an upper and lower sliding rail *b' c'*, having a free vertical motion within grooves of the frame *a*. The sashes are connected at the top and bottom to these rails by means of the hinge-arms *b² c²*, which are pivoted at one end to the sashes and are at the other end connected to or made in one piece with the boxes *d e*, that embrace and are attached to the ends of the rails *b' c'*. The upper boxes *d e* are perforated to receive the knotted ends of the sash-cords *f' g'*, so that the sash-weights *f g* properly counterbalance the sashes. The pivots *h i* of the hinges *b² c²* project from bent straps *h' i'*, which are countersunk into the sashes, so that a durable connection is formed.

The free or unsupported edges of the sashes are surrounded by U-shaped slides *j*, which when projected outward enter the grooves of

the window-frame and thus hold the sashes in place and permit them to be raised and lowered in the usual manner. The rear bead *a'* of frame *a* is longer than the parting-strip *a³*, which is in turn longer than the front bead *a³*, Fig. 3. When the slides *j* are drawn inward and the upper sash is swung on its hinges, it will clear the beads *a³ a²*, but will be stopped by the rear bead *a'*. The lower sash turns on a shorter radius than the upper sash and when swung on its hinges will clear the bead *a³*, but will be stopped by the bead *a²*. Thus the sashes may be freely opened and closed, but cannot be swung outward beyond their seats.

The slides *j* are provided with inclined slits *j'*, engaged by pins *k*, driven into the sash-stiles. To the inner sides of the slides *j* are pivoted at *l²* small angular hand-levers *l*, having a slot *l'* within the pivoted arm, which slots are also engaged by the pins *k*. It will be seen that by swinging the lever *l* up it will push the slide *j* outward and that by swinging the lever down it will draw the slide inward. Thus the slides may be operated in a simple manner to lock or unlock the sashes and permit them to be revolved on their hinges.

What I claim is—

1. The combination of a window frame with sliding rails, a pair of sashes, arms pivoted to said sashes, and boxes connected to said arms and embracing the ends of the rails, substantially as specified.

2. The combination of a window frame with sliding rails, a pair of sashes pivoted to said rails, slotted slides engaging the free edges of the sashes, slotted levers pivoted to the slides, and with pins secured to the sashes and engaging the slotted levers and the slides, substantially as specified.

ROBERT FRITZ.

Witnesses:

F. V. BRIESEN,
WILLIAM SCHULZ.