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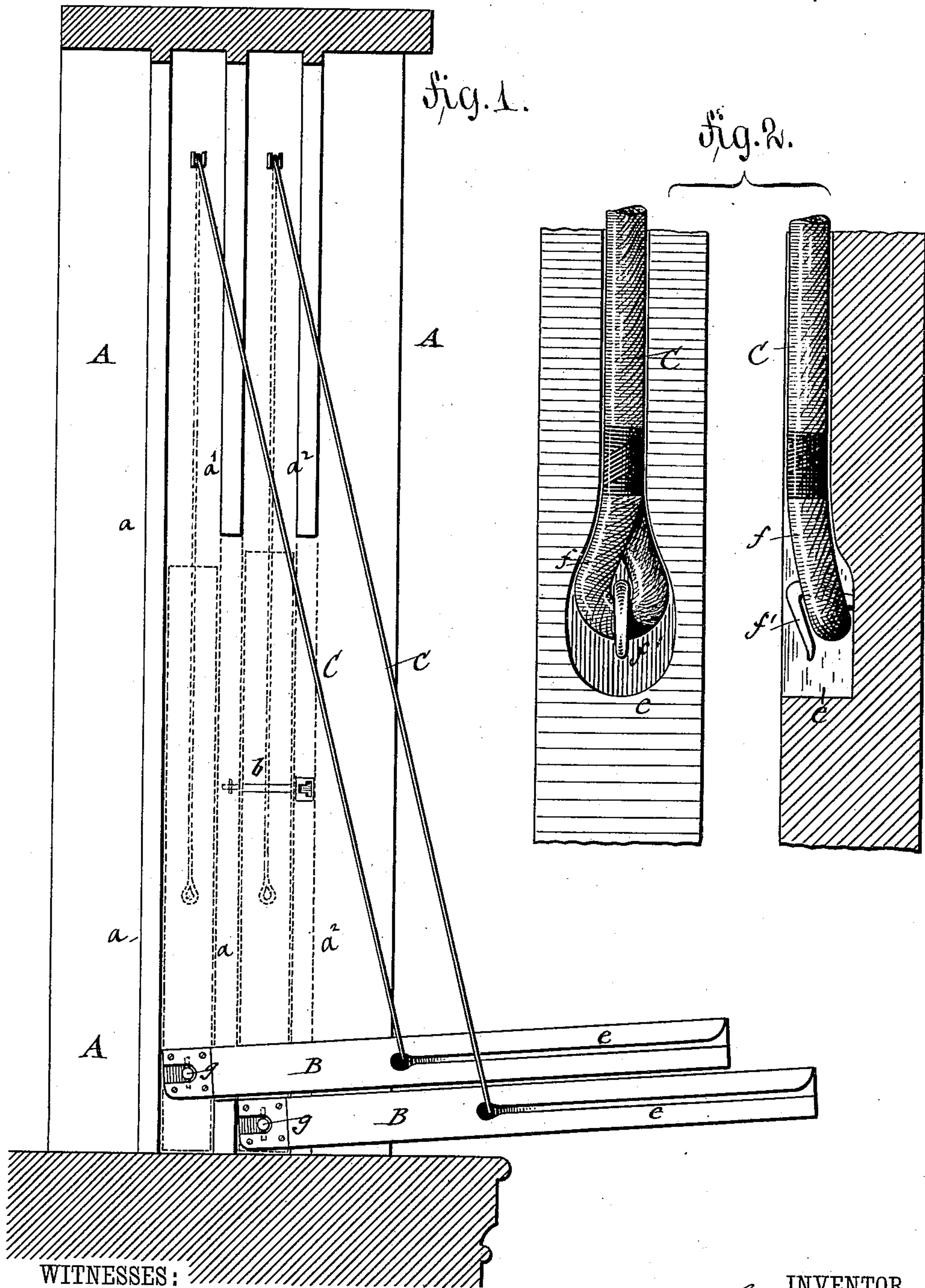
2 Sheets—Sheet 1.

L. L. ARNOLD.

WINDOW SASH.

No. 333,438.

Patented Dec. 29, 1885.



WITNESSES:

*F. H. Rosenbaum.*  
*Carl Kapp*

INVENTOR  
*Louis L. Arnold.*  
BY *Joseph Raegen.*  
ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

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WINDOW SASH.

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fig. 3.

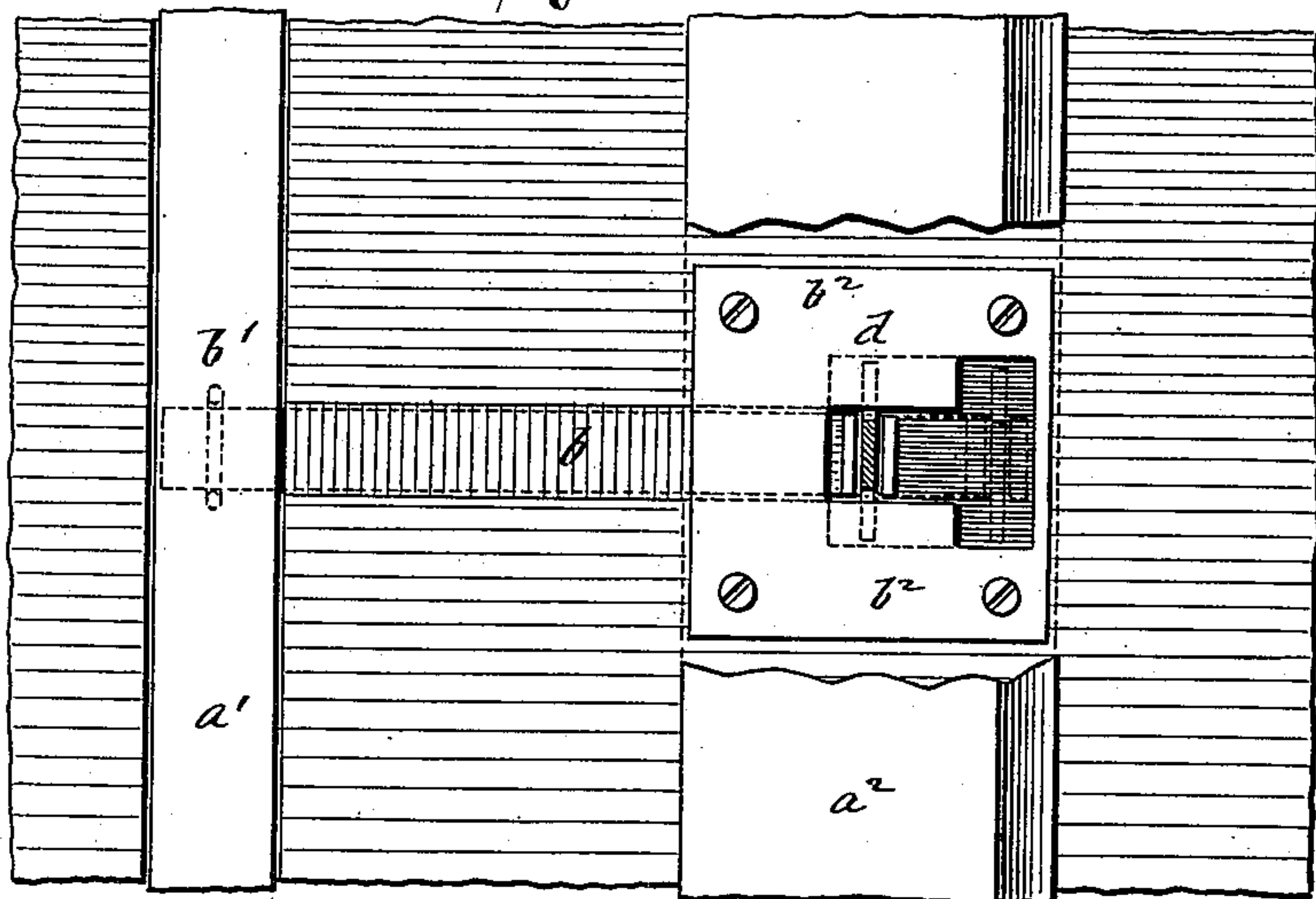


fig. 4.

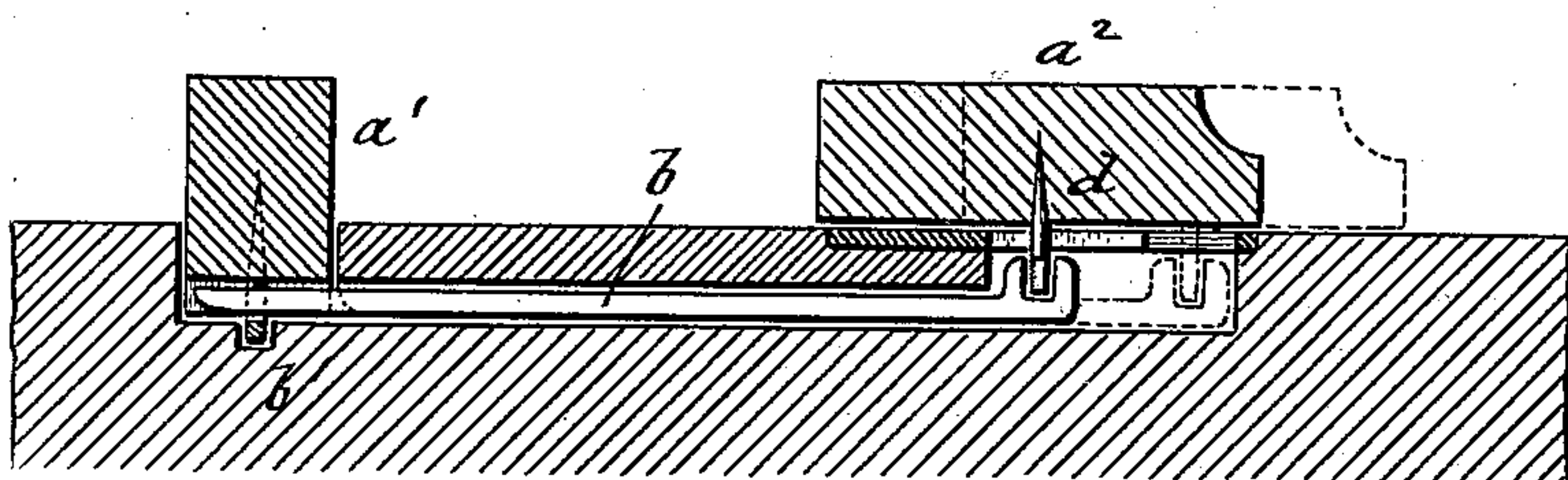
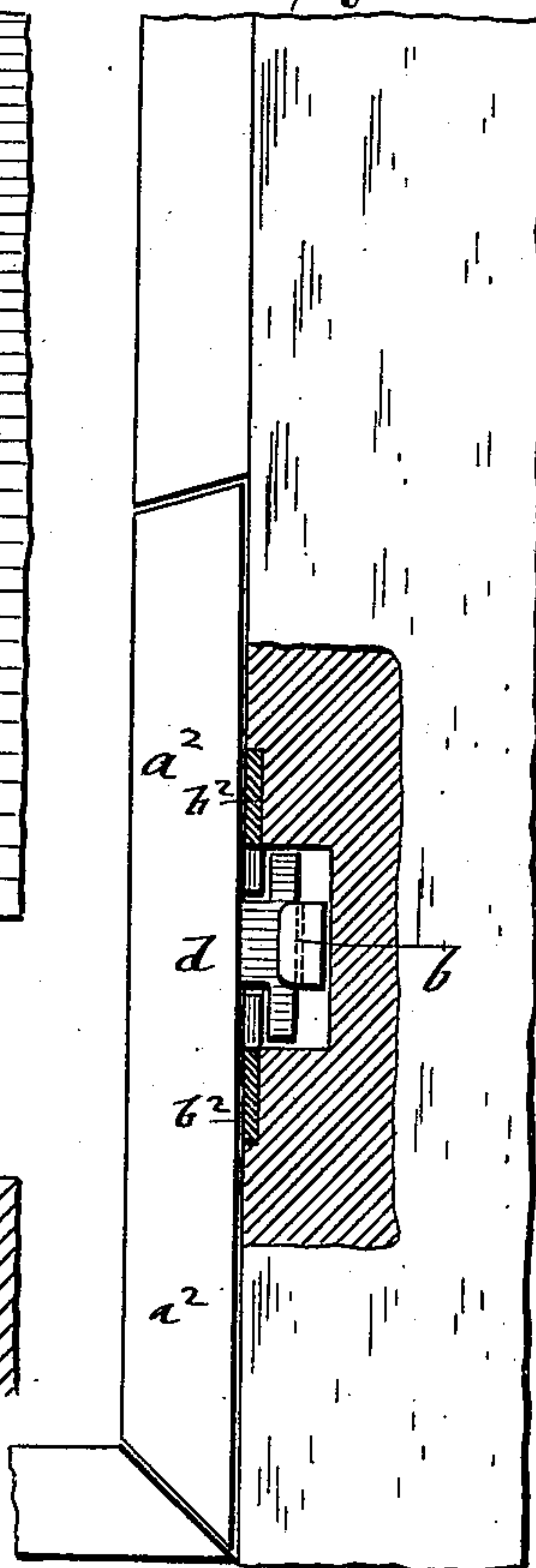


fig. 6.

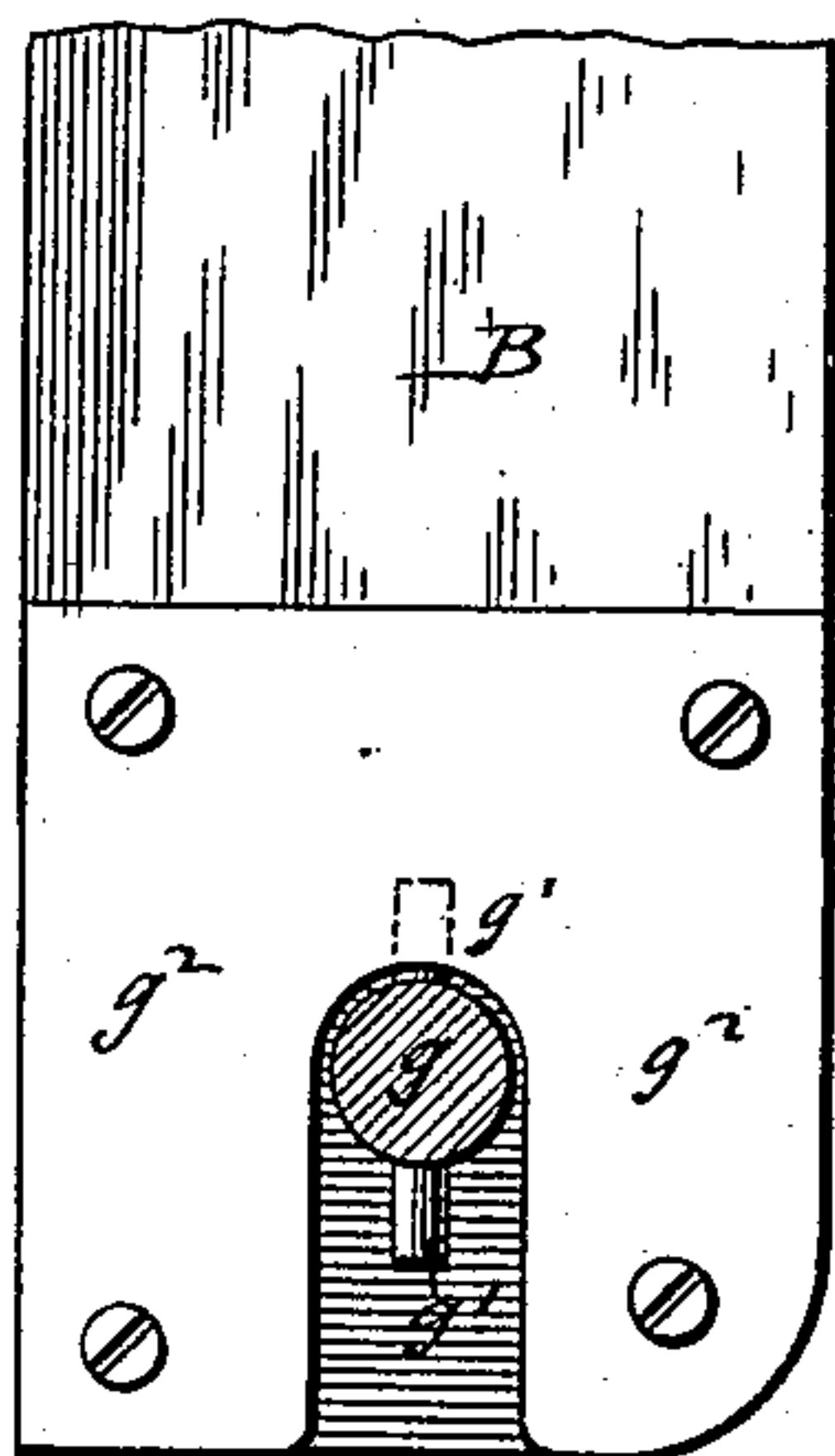


fig. 5.

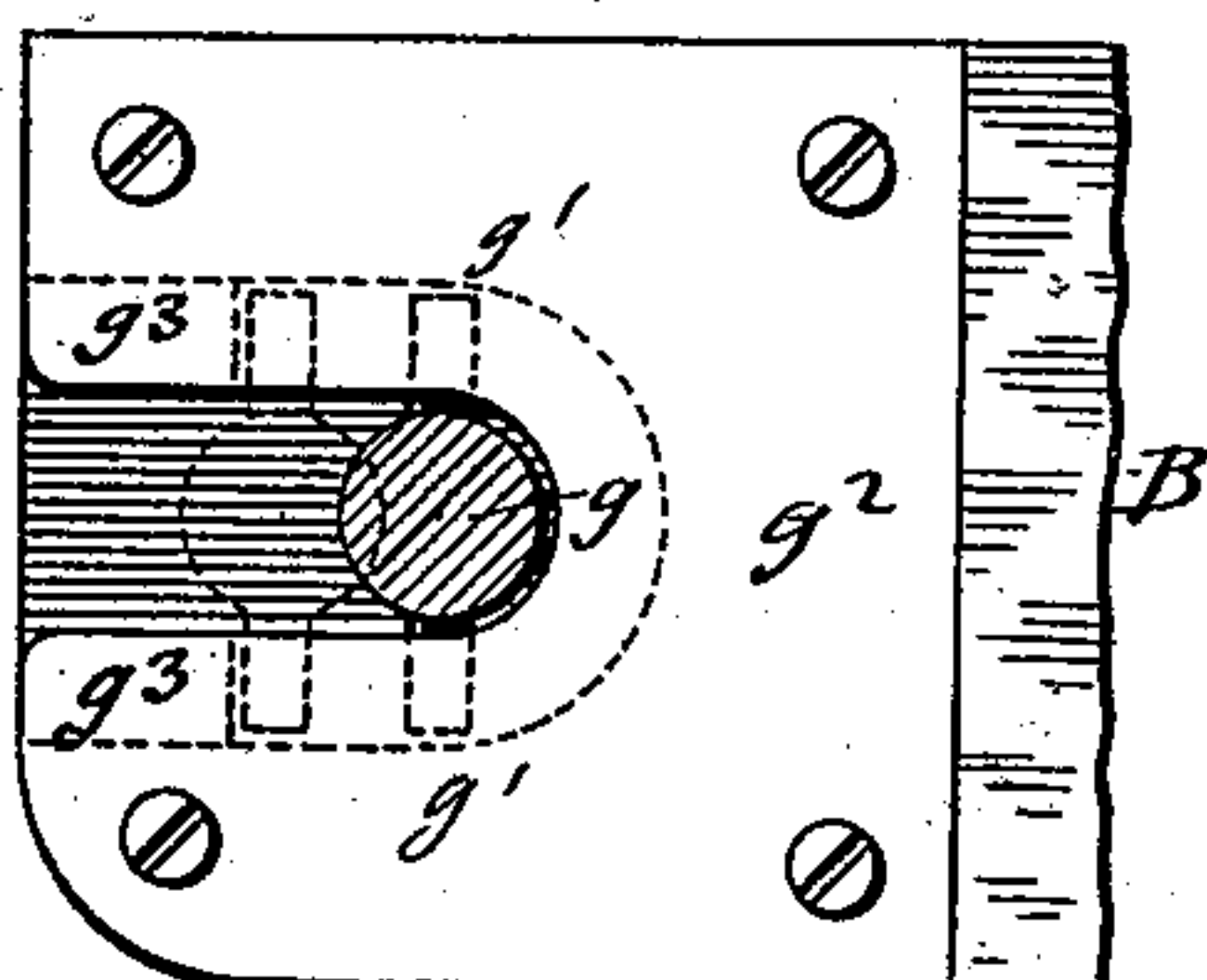
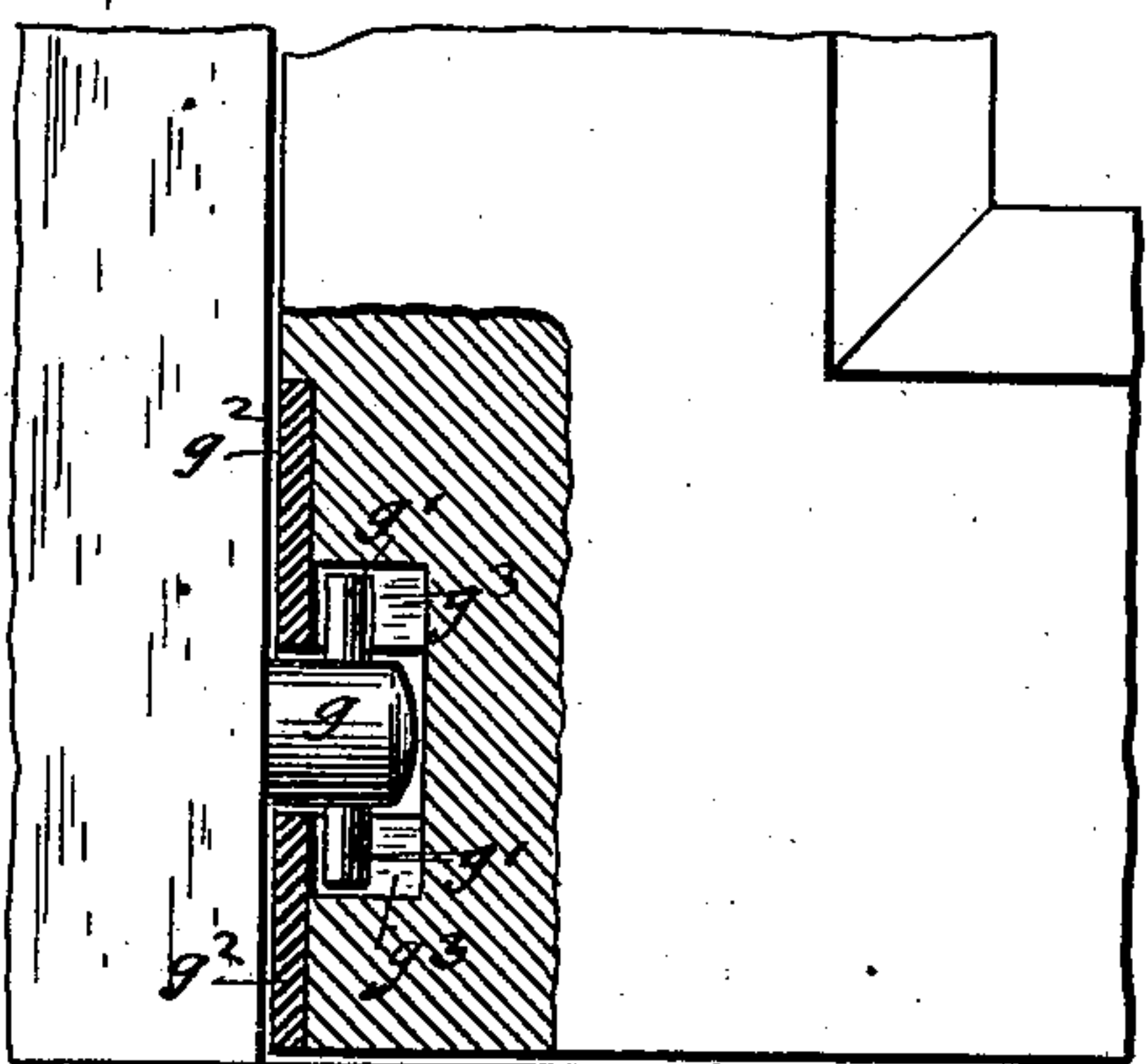


fig. 8.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

LOUIS L. ARNOLD, OF BUFFALO, NEW YORK.

## WINDOW-SASH.

SPECIFICATION forming part of Letters Patent No. 333,438, dated December 29, 1885.

Application filed January 9, 1885. Serial No. 152,376. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS L. ARNOLD, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Window-Sashes, of which the following is a specification.

This invention relates to improvements in the window-sashes for which Letters Patent have been granted to me heretofore, numbered 299,944, dated June 10, 1884; and the invention consists of a window-frame having detachable parting-strips and front stop-bead and fixed pivots at the lower corners, and sashes having recessed plates at their lower corners and longitudinal recesses in the upper part of their side rails, said recesses having fixed hooks at their lower ends for engaging the loop-shaped ends of the detachable sash-cords. The parting-strips are connected to the window-casing by means of a covered slide-bolt, which engages a staple of the parting-strip and is engaged at its forked front end by the T-shaped lug of the front stop-bead, which latter engages the slide-bolt and moves it into position for locking or releasing the beads.

In the accompanying drawings, Figure 1 represents a vertical transverse section of a window-casing with my improved sashes, shown in lowered position. Fig. 2 are details showing the connection of the sash-cords with the sash. Figs. 3, 4, and 5 are details of the means by which the removable stop-beads and parting-strips are held in place, and Figs. 6, 7, and 8 are details showing the connection of the sashes with the window-casing.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the window-casing, and  $a$   $a'$   $a^2$ , respectively, the rear stop-bead, parting-strip, and front stop-bead. The lower halves of the parting-strips  $a'$  and front stop-beads,  $a^2$ , are removable, they being attached to the casing by means of a slide-bolt,  $b$ , that is made tapering at the rear end and forked at the front end, as shown in Figs. 3, 4, and 5. The tapering rear end engages a staple,  $b'$ , arranged in a recess of the parting-strip  $a'$ , while the forked front end of the bolt  $b$  is engaged by a T-shaped lug,  $d$ , of the front stop-bead,  $a^2$ . The slide-bolt  $b$  is

retained in a recess of the window-casing by a face-plate,  $b^2$ , while the shank of the lug  $d$  is guided in a horizontal slot of the face-plate  $b^2$ , the slot being provided with a T-shaped extension, through which the lug  $d$  is removed when the front bead is detached from the window-casing.

To detach the parting-strip  $a'$  and front bead,  $a^2$ , from the window-casing, the front bead,  $a^2$ , is taken hold of and moved forward, so that the lug  $d$  carries the slide-bolt  $b$  along until the forked end of the same is back of the recess of the plate  $b^2$ . The lug can then clear the T-shaped recess, so that the front bead,  $a^2$ , can be detached from the window-casing. As the bolt  $b$  has also released the staple  $b'$  of the parting-strip  $a'$ , the latter can also be removed.

The sashes B B are provided in their side rails with recesses  $e e$  for the sash-cords C C, the recesses being made of greater length than the recesses for the sash-cords in common sashes. The upper rear corners of the recesses  $e$  of the side rails of the sashes B B are rounded off, as shown in Fig. 1, to facilitate the ready passing of the sash-cords in or out of the recesses. The sash-cords C C are connected detachably to the enlarged lower ends of the recesses  $e e$  of the sashes by means of an eye,  $f$ , formed at the ends of the sash-cords, which eyes  $f$  are attached to hooks  $f'$  in said recesses, as shown clearly in Fig. 2.

The recesses  $e e$  are made of the length described for the purpose of permitting the swinging down of the sashes B B into a horizontal or nearly horizontal position after the lower sections of the parting-strips and front beads have been removed. The increased length of the sash-cord recesses brings the connection of the sash-cords and sashes to a point somewhat below the middle of the sash-frame, so as to decrease the length of the sash-cords and prevent the balance-weights from reaching the bottom of the sash-boxes when the sashes are raised. The lower ends of the sashes B B are pivoted to the window-casing A, the pivot-connection being shown in detail in Figs. 6, 7, and 8. It consists of a fixed pivot,  $g$ , provided with diametrical lugs, which engage a recessed corner-plate, that is screwed to the lower corner of the side



rails of the sashes. The recessed plate  $g^2$  is provided at its inner side with stops  $g^3$ , that abut against the lugs  $g'$  when the sashes are lowered, and prevent the latter from getting detached from the pivots when in lowered position.

When it is desired to remove the sashes entirely, the parting-strips and front beads are removed, the sashes are partly swung down, the sash-cords removed from the hooks of the sash-frames, and a loop tied into the cords, upon which they are released, so that the balance-weights are allowed to drop as far as the loop will permit. The sashes are then placed, one after the other, in a nearly vertical position, so that the slotted corner-plates  $g^2$  clear the lugs  $g'$  and permit the removing of the sashes. The sashes can then be cleaned or repaired, as required. They are placed in the reverse order. The sashes may also be cleaned when in lowered position, as shown in Fig. 1.

My improved sash-construction has the advantage that the sashes can be swung with great facility into lowered position for cleaning without requiring the bending out of the window or otherwise exposing the person who cleans the window to danger.

Old sashes can be readily changed, at a small expense, to my improved construction, as all that is required is to elongate the recesses of the sash-cords, apply the pivot-connections, and make the parting-strips and front beads removable.

In cleaning the sashes both sections are first cleaned at the inside, after which the lower sash is lowered and cleaned at the outside. The upper sash is then lowered, first cleaned at the inside, and swung down on the lower sash and cleaned at the outside, after which the sashes are returned into their proper

position. The sashes may also be entirely detached from the sash-cords and window-casing, particularly when a thorough cleaning, painting, or repairing of the same is required.

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

1. The combination of a window-casing having detachable parting-strips and front stop-beads and fixed pivots at the lower corners, sashes having recessed plates at their lower corners and longitudinal recesses in the upper parts of their side rails, fixed hooks located in the lower enlarged parts of said recesses, and detachable sash-cords having loop-shaped ends, substantially as set forth.

2. The combination of a window-casing having detachable parting-strips and front stop-beads and fixed pivots with diametrical lugs with sashes having recessed corner-plates and interior stops and sash-cords attached detachably to the grooves of the sashes, substantially as set forth.

3. The combination of a window-casing having a horizontal recess, of a detachable parting-strip having a staple, a detachable front bead having a locking-lug, and a slide-bolt having a recessed front end engaged by the lug of the front bead and adapted to be moved backward or forward by the latter, so as to engage or to release the staple of the parting-strip, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

LOUIS L. ARNOLD.

Witnesses:

DAVID J. WINTON,  
CHARLES B. HILL.