

E. D. FARMER & H. B. CHURCH.

SASH LOCK.

APPLICATION FILED NOV. 1, 1907.

936,616.

Patented Oct. 12, 1909.

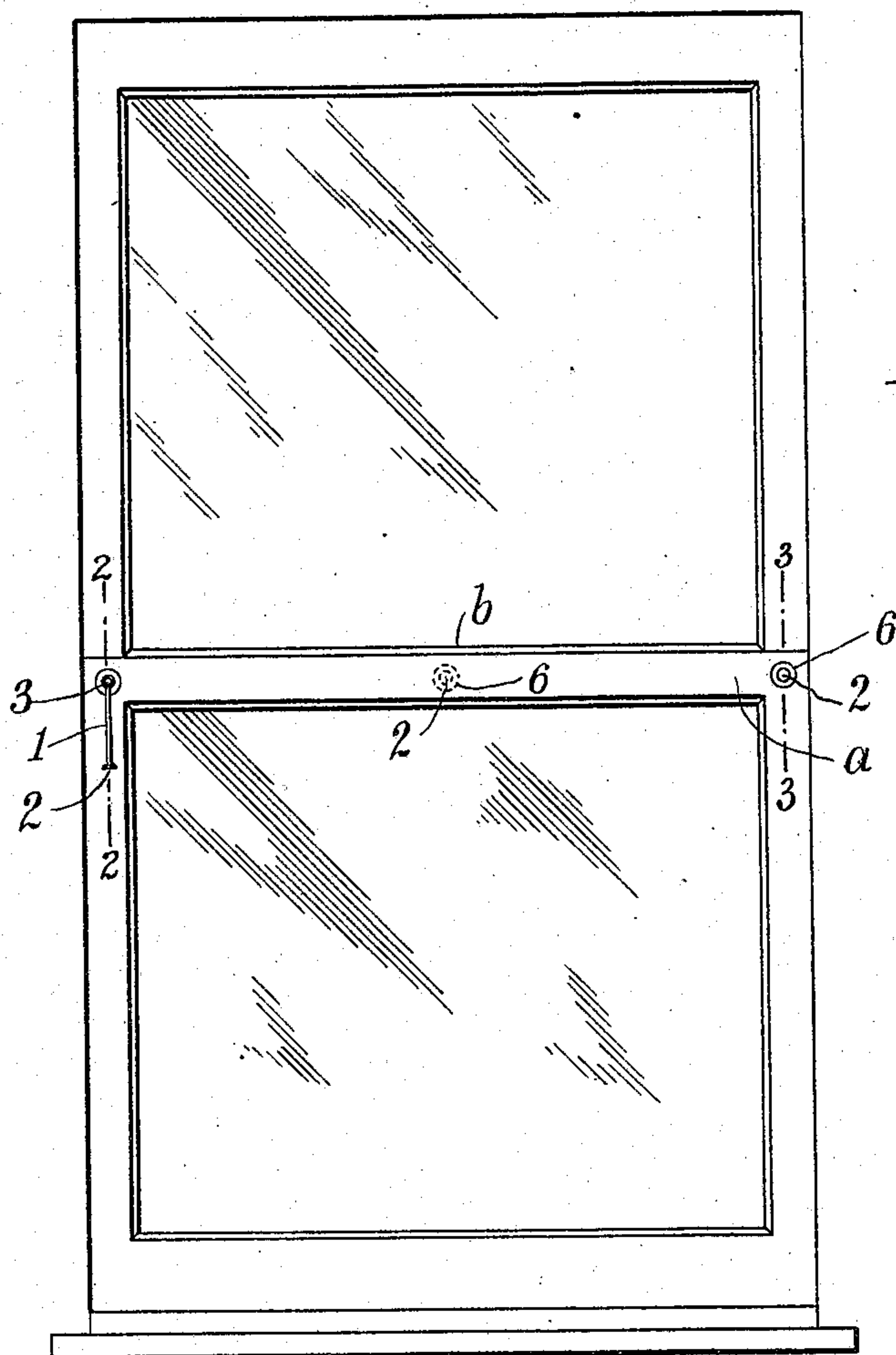


Fig. 1

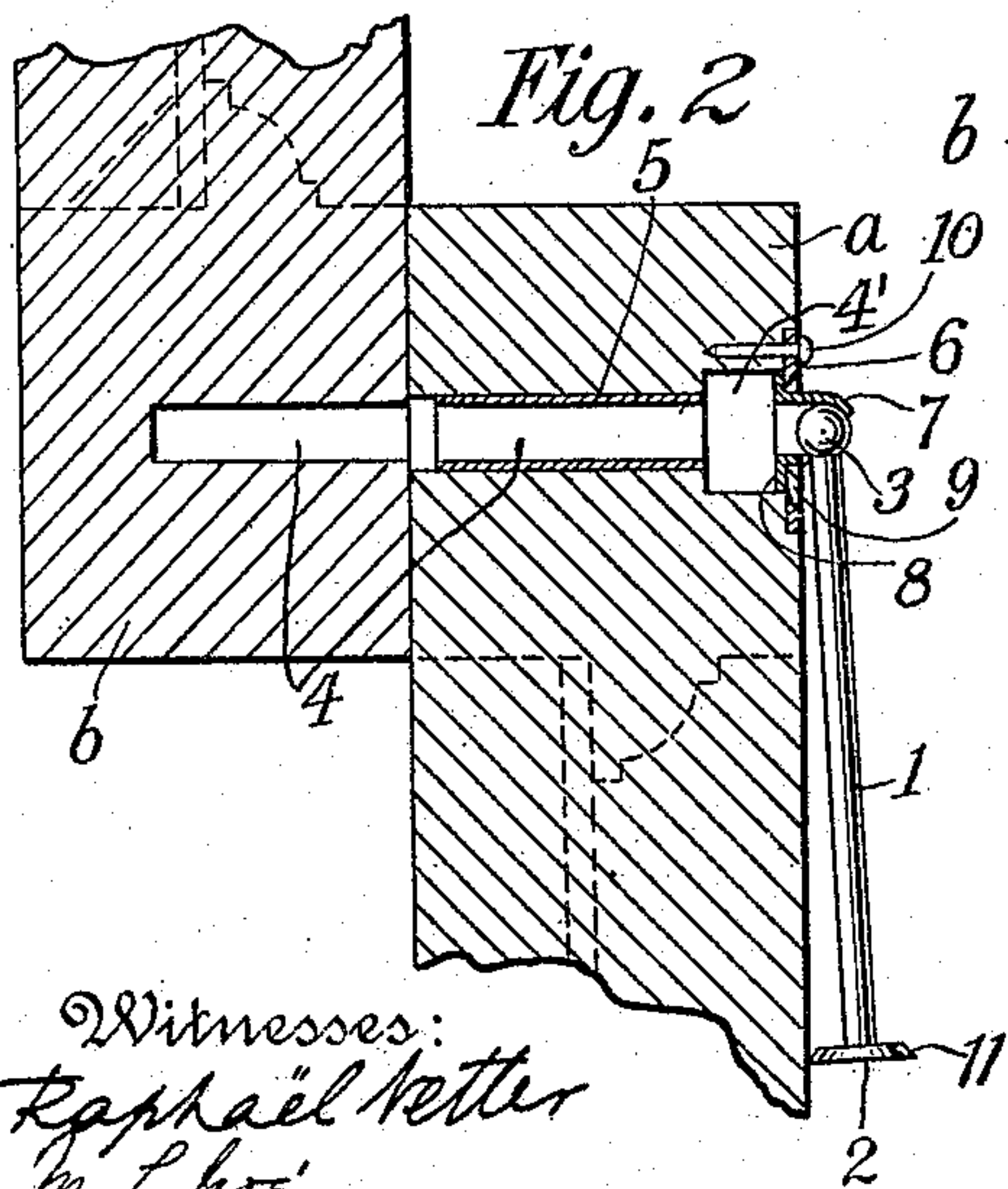


Fig. 2

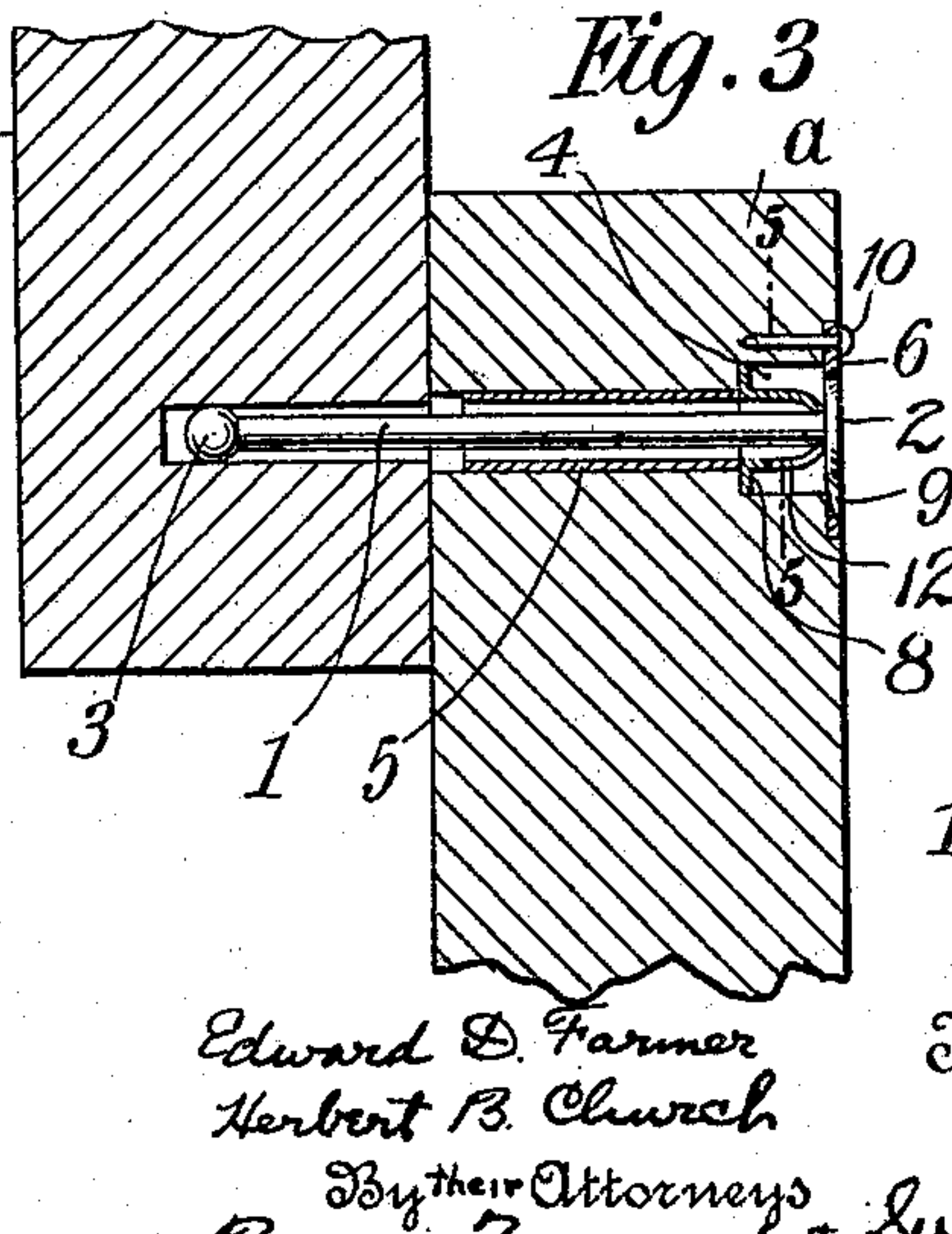


Fig. 3

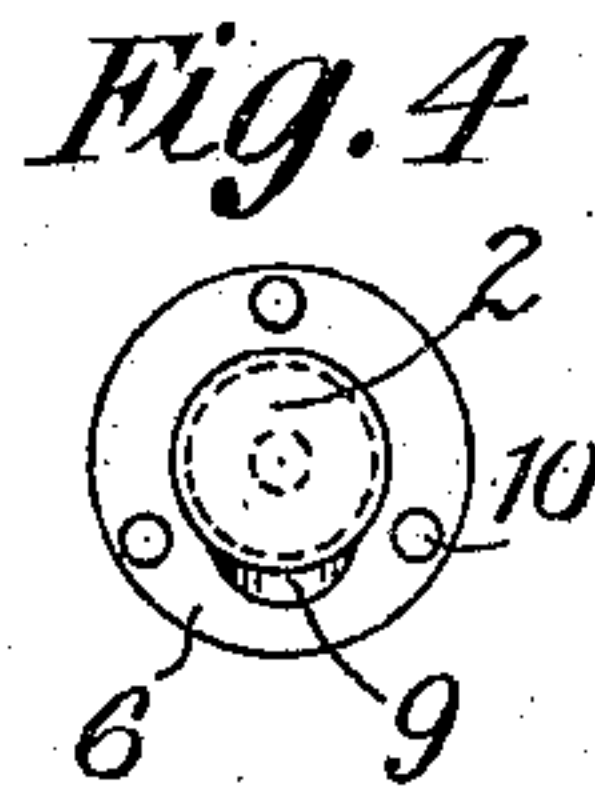


Fig. 4

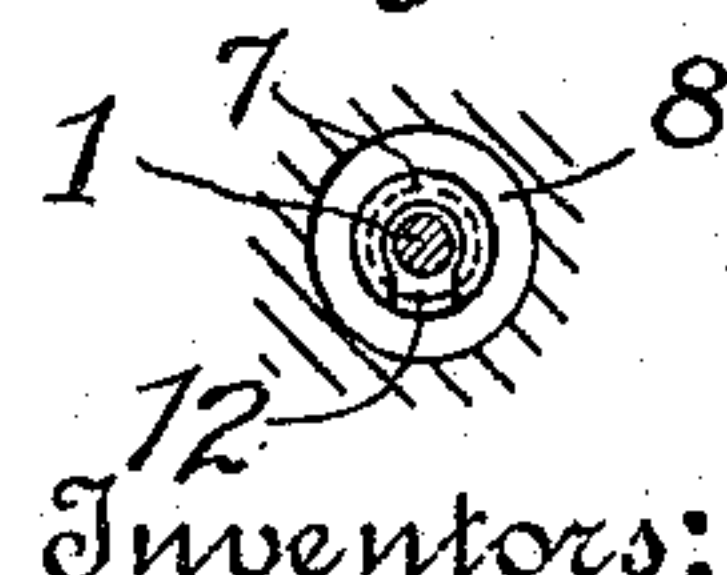


Fig. 5

Witnesses:
Raphaël Ketter
M. F. Ketz.

Edward D. Farmer
Herbert B. Church
By their Attorneys
Byrnes, Townsend & Swenarton.

UNITED STATES PATENT OFFICE.

EDWARD D. FARMER, OF MONTCLAIR, AND HERBERT B. CHURCH, OF BLOOMFIELD,
NEW JERSEY.

SASH-LOCK.

936,616.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed November 1, 1907. Serial No. 400,316.

To all whom it may concern:

Be it known that we, EDWARD D. FARMER and HERBERT B. CHURCH, both citizens of the United States, and residing at Montclair and Bloomfield, respectively, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Sash-Locks, of which the following is a specification.

Our invention relates to window fasteners, and particularly to that type which is adapted to securely lock the upper and lower sashes of a window together.

The object of our invention is to provide an inexpensive and practically indestructible latch that combines maximum strength with minimum weight.

Heretofore it has been customary to attach cumbersome window locks to the top of the opposing rails of the respective lower and upper sashes of the window, and often to further strengthen the same, additional plates or stops have been secured to the frame of the window itself in proximity to the aforesaid locks. Such locks or fasteners, in addition to being complicated and expensive, were directly dependent upon the attaching-nails or screws, were incapable of offering greater resistance to pressure than that offered by the said retaining means and thus were subject to being readily pried off by intruders.

We have discovered that by the provision of a draw-bolt which is received by registering recesses in the opposing rails of the two sashes, that not only is the fastening means or latch rendered entirely invisible from without, but that we are thus enabled to employ a simple and extraordinarily light construction, which, when locked, will effectually resist relative movement of the respective sashes up to the point of rupture of the sash-rails in which said draw-bolt is inserted.

Having thus indicated the nature and objects of our invention we will now proceed to particularly describe the same, reference being had to the accompanying drawings forming a part of this specification.

In the drawings which serve to illustrate the preferred form of our invention, Figure 1 is a front elevation of a sash window-frame provided with a pair of our improved sash-fasteners, or latches, arranged on opposite sides of the window. A single cen-

trally disposed latch is also indicated thereon, in dotted lines. Figs. 2 and 3 are transverse sectional views taken along the lines 2—2 and 3—3 of Fig. 1. Fig. 4 is an enlarged detail elevation of the latch in the position shown in Fig. 3 and Fig. 5 is a sectional view of the same along the line 5—5 of Fig. 3.

Referring to the specific latch or sash-fastening means and the drawings in detail, the opposing rails *a* and *b* of the lower and upper sashes respectively, are adapted to receive a draw-bolt 1 consisting of a shank of uniform cross section intermediate its ends and a flat circular head 2 and a ball-member 3 at opposite ends of said shank.

When it is desired to lock the opposing sashes against relative movement, the draw-bolt 1 is thrust into cylindrical recesses 4 which are positioned in said opposing sashes so as to exactly register with each other when the window is closed. The bore of the recess 4 in the upper rail of the lower sash is considerably enlarged at its outer end as shown at 4' and preferably a bushing 5 is inserted to further strengthen the construction. As shown, the inner diameter of the bushing corresponds to that of the recess in the opposing sash rail. It is evident that if desired a bushing may be inserted in the enlarged recess 4' and also a bushing of corresponding diameter to the bushing 5, may be inserted within the opposing recess, by slightly enlarging the said recess, to permit of the reception of said additional bushing. A circular retaining plate 6 is counter-sunk in the face of the rail *a*, and is secured thereto in such a manner that the central aperture in said plate is in register with the enlarged recess 4'. The said opening in the plate 6 being of smaller diameter than the bore of the recess 4', the inner beveled edge of the cap projects slightly beyond the edge of recess 4' and serves to limit the outward movement of a socket-member 7, provided with an annular flange 8 adapted to impinge against the said plate, which is thereby confined within the recess 4'. The flange 8, moreover, limits the inward movement of the socket-member and thus it is permanently confined within the recess 4', which is of sufficient depth to receive the entire socket-member.

The ball-member 3 on the inner end of the draw-bolt is of greater cross sectional area

than the shank thereof, but is of slightly less than the cross sectional area of the socket-member, the bore of bushing 5 and the recess 4 of the sash rail *b*, all of which are preferably substantially equal. It is evident, therefore, that the ball-member 3 is adapted to be received by both said socket-member as well as the bushing and the recess in the sash rail *b*.

The plate 6 is provided with a niche 9, and is lightly secured to the sash rail by brads 10, which are ample to retain the said plate or cap in position, in spite of powerful vertical pressure exerted on either sash, owing to the fact that the strains are dissipated throughout the body of the respective sash rails and are not directly imparted to the aforesaid brads.

In order that the latch may present an attractive appearance, and particularly also that the same may not interfere with screens or shades, either when locked or unlocked, the head 2 is provided with a bevel corresponding to the opposing beveled inner edge of the plate 6, and the socket-member 7 is provided with a circumferential slot 12 of width sufficient to receive the shank of the draw-bolt without permitting the escape of the ball-member from the socket-member. Thus, as clearly indicated in Figs. 2, 3 and 4, we are enabled to provide a sash-fastener with a bolt which, when inserted within the recesses of the opposing sashes, is entirely invisible, even the head end merging into a counter-sunk retaining plate, whereby no projections exist. On the other hand, when the latch is unlocked, the draw-bolt, owing to the fact that it is mounted in a universal joint, readily assumes a position substantially parallel with the sash-frame, the same being either vertical or horizontal, depending upon the presence or absence of a screw, or other means, to support in a horizontal position, the shank which otherwise usually assumes a vertical position. The niche 9, as is evident, permits of the removal of the head 2 from its flush position on the plate 6, when the latch is locked. It is evident also that the centrally disposed latch indicated in dotted lines in Fig. 1 may be substituted for a pair of latches disposed at opposing corners of a sash, if desired, and in fact the remarkable strength possessed by latches of the type herein described, necessitates the employment of but a single one of them in any case, although usually when a latch is disposed at the upper corner of a lower sash of a window, for the sake of appearance, a companion latch is disposed at the opposing corner.

The latches herein described are applicable in other relations in addition to windows, and without departing from our invention as herein claimed, they may be employed for locking together sliding doors or

for securing a single sliding door to its frame.

Having thus described our invention, we claim:

1. The combination, comprising a pair of slidable sashes having recesses adapted to register when said sashes are in a closed position, a draw-bolt, retaining means provided with an aperture capable of receiving the shank of said bolt and in register with one of said recesses, and means on the inner end of said draw-bolt capable of limiting the outward movement of the same, said means being of a size to admit of the free passage thereof throughout the length of both recesses, whereby the said draw-bolt may be entirely withdrawn from both of said recesses.

2. The combination, comprising a pair of overlapping members, one of said members being relatively slidable, transverse recesses in both of said members, a portion of the recess in one of said members being enlarged, a draw-bolt, a socket-member longitudinally slidable with respect to said draw-bolt, and adapted to lie wholly within the enlarged portion of said recess when said socket-member is in its innermost position, said socket-member being provided with an aperture adapted to receive the shank of said draw-bolt, and means on the inner end of said draw-bolt, capable of limiting the outward movement of the same, said means being of a size sufficient to admit of the free passage thereof throughout the length of both of said recesses when the same is withdrawn from the locked position, whereby the said draw-bolt may be entirely withdrawn from both of said recesses.

3. The combination, comprising a pair of overlapping members, one of said members being relatively slidable and being provided with a recess, a draw-bolt adapted to optionally project into said recess, retaining means embracing said draw-bolt and capable of limiting the travel thereof, and means for loosely securing said retaining means to one of said overlapping members to permit of sliding engagement of said retaining means both with said draw-bolt and with the member to which it is loosely secured.

4. A draw-bolt having a reduced shank and an enlarged inner end, a retaining-plate adapted to be permanently connected to a rigid support, and an apertured socket-member connected therewith and adapted to slidably engage said shank and to retain said enlarged end, whereby the outward movement of said draw bolt is limited.

5. A draw-bolt having a reduced shank and a ball-member on the inner end thereof, a retaining-plate adapted to be permanently connected to a rigid support and an apertured socket-member connected therewith and adapted to slidably engage said shank

and to retain said ball-member, whereby the outward movement of said draw-bolt is limited.

5 6. A draw-bolt having a reduced shank
and an enlarged inner end, a retaining-plate adapted to be permanently connected to a rigid support, means connected with said retaining-plate provided with an elongated slot adapted to receive the shank of said
10 draw-bolt and to retain said enlarged end, whereby the compound movement of said draw-bolt with respect to said retaining-plate, is permitted.

15 7. A draw-bolt having a reduced shank
and a ball-member on the inner end thereof, a retaining-plate adapted to be permanently connected to a rigid support, an apertured socket-member in slidable engagement with said retaining-plate embracing said shank
20 and adapted to retain said ball-member and means whereby movement of the shank of said draw-bolt in two planes is permitted.

25 8. A draw-bolt having a reduced shank
and a ball-member on the inner end thereof, an annular retaining-plate adapted to be permanently connected to a rigid support, a socket-member in slidable engagement with said retaining-plate and provided with a circumferential elongated slot, said slot being adapted to receive said shank and to prevent the passage therethrough of said ball-

member, whereby a longitudinal and transverse movement of said bolt is permitted within defined limits.

9. A draw-bolt having a reduced shank 35
and a ball-member on the inner end thereof, an annular retaining-plate having a beveled inner edge and adapted to be permanently connected to a rigid support, a niche positioned adjacent to said inner edge of the retaining-plate, a socket member in slidable 40
engagement with said retaining-plate and provided with a circumferential slot, said slot being adapted to receive said shank and to prevent the passage therethrough of said 45
ball-member, whereby a longitudinal and transverse movement of said bolt is permitted within defined limits, and means on the end of said bolt provided with an opposing bevel adapted to close the aperture in said 50
annular retaining-plate and to lie flush with said retaining-plate.

In testimony whereof, we have signed our names to this specification in the presence of two subscribing witnesses, this twenty-fourth 55
day of October, 1907.

EDWARD D. FARMER.
HERBERT B. CHURCH.

Witnesses:

ARTHUR RUSSELL,
N. E. MATTHEWS.