

(No Model.)

G. L. BARNES.

FASTENER FOR MEETING RAILS OF SASHES.

No. 366,756.

Patented July 19, 1887.

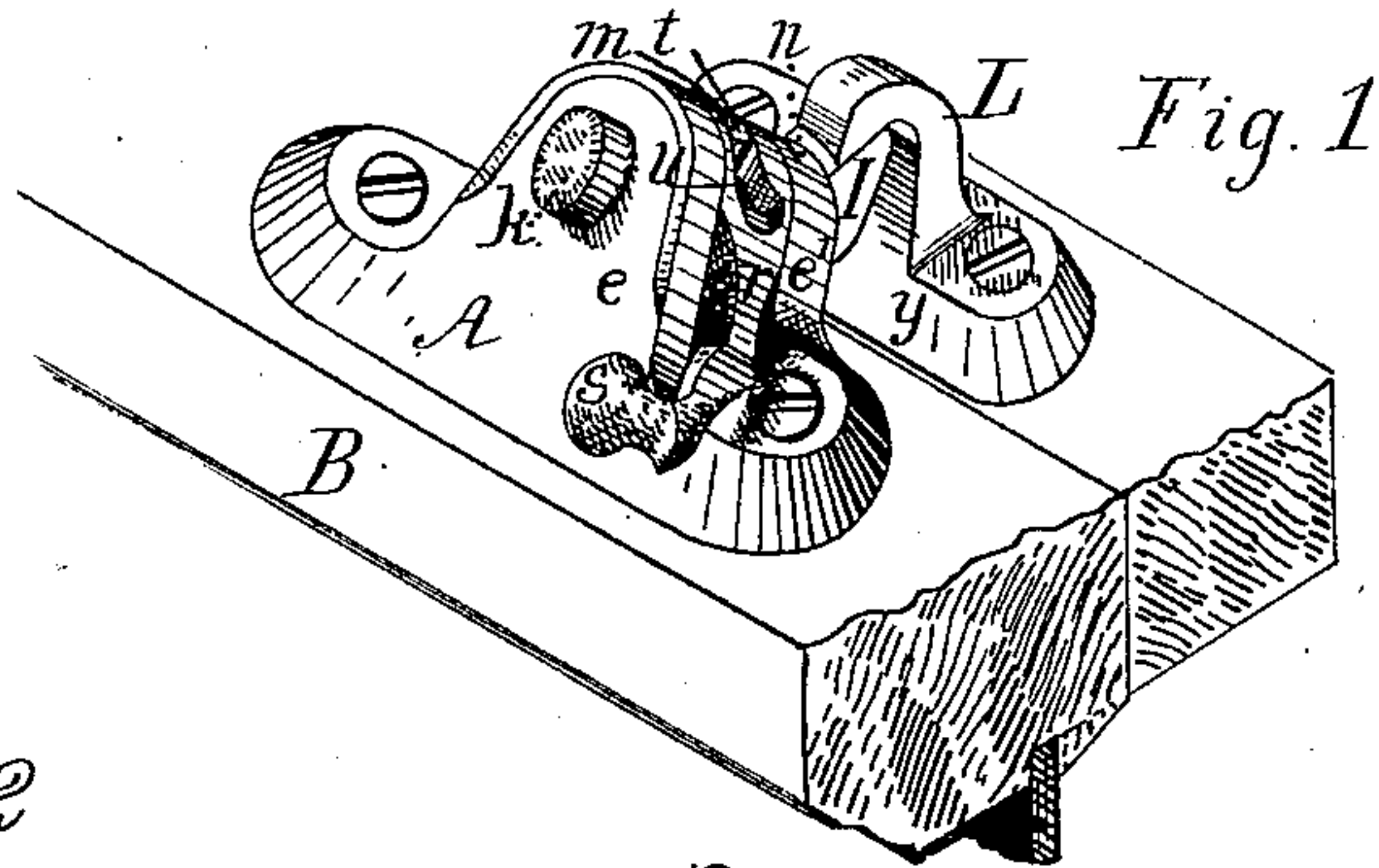


Fig. 2

Fig. 3

Fig. 4

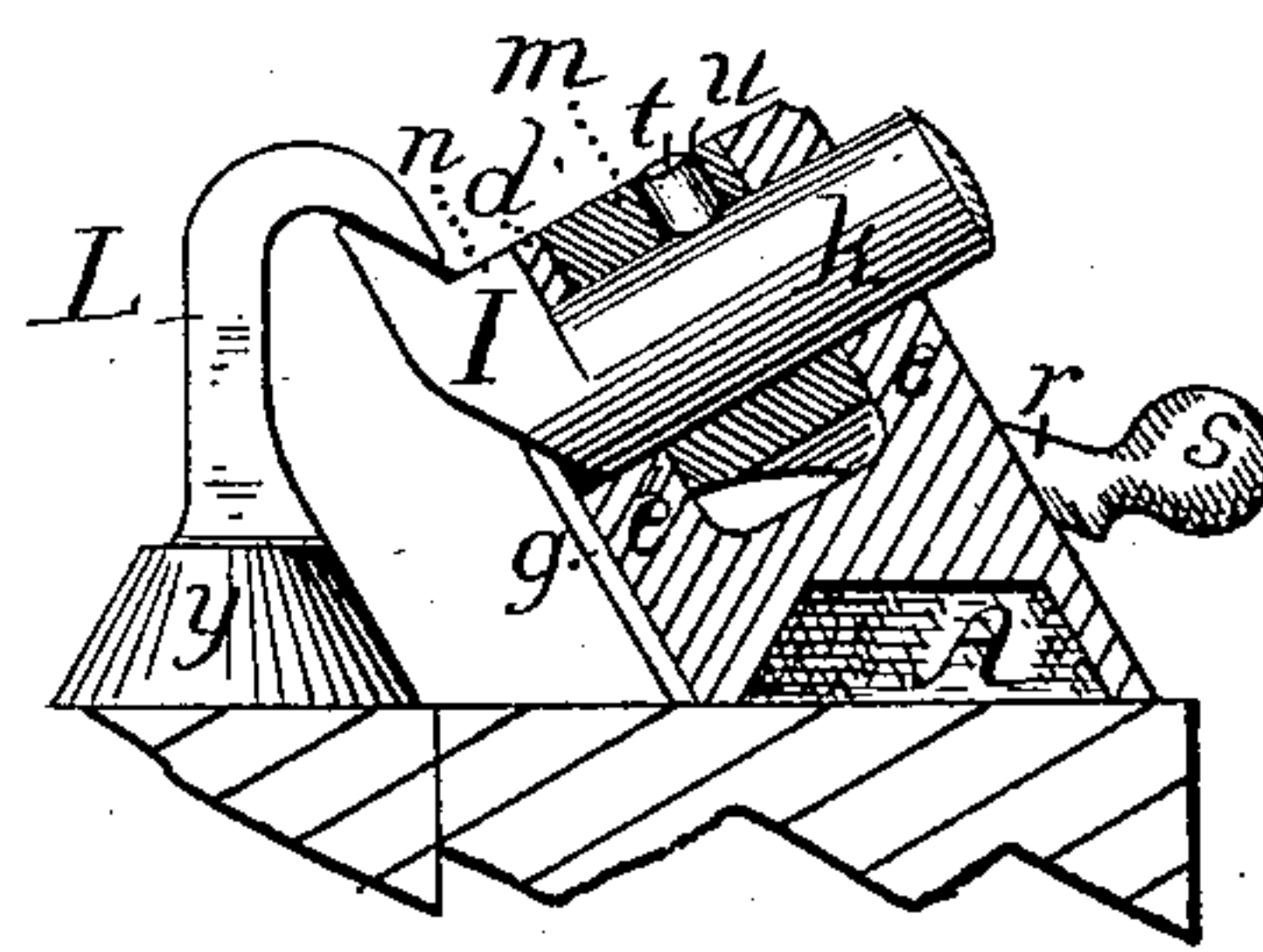
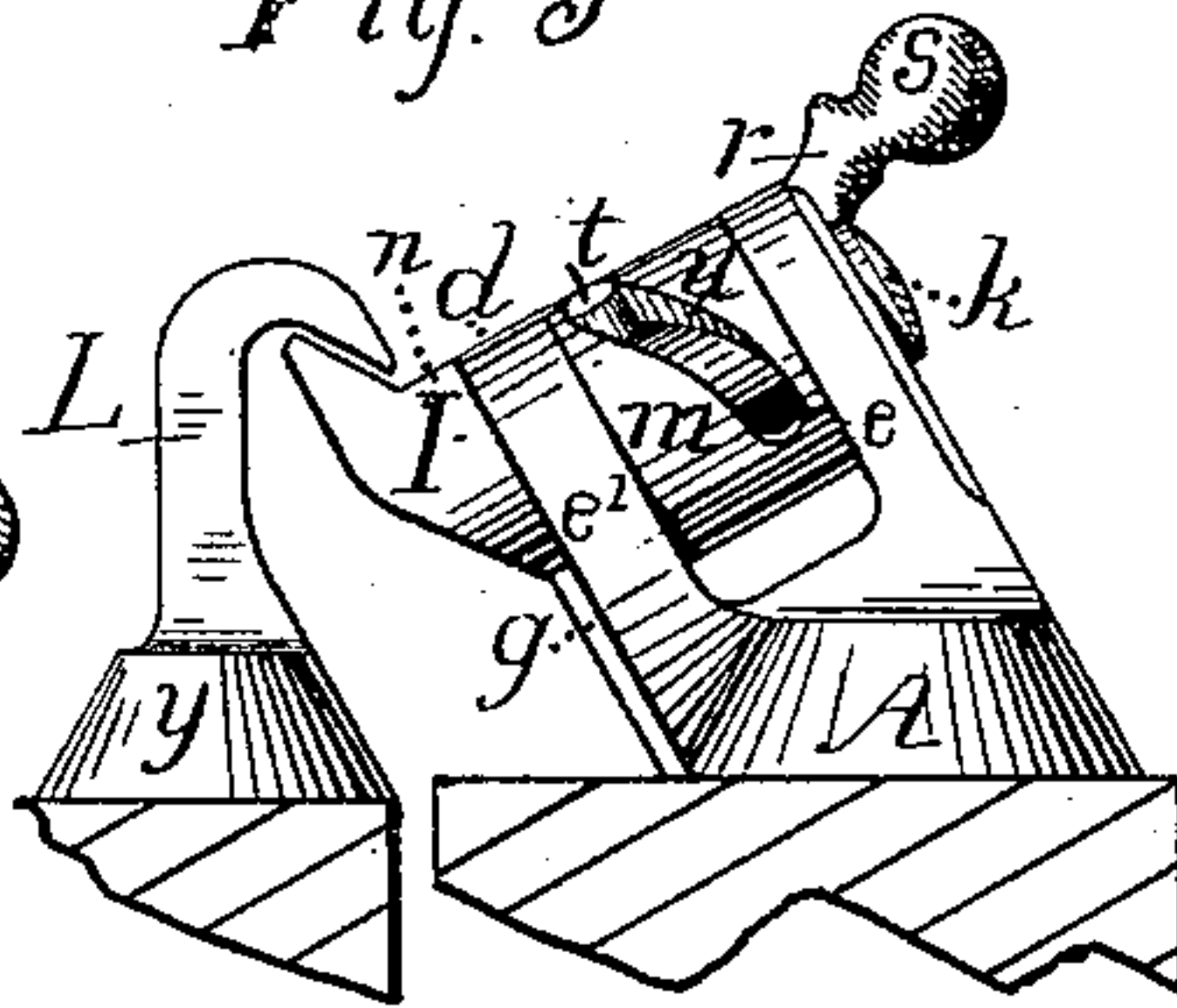
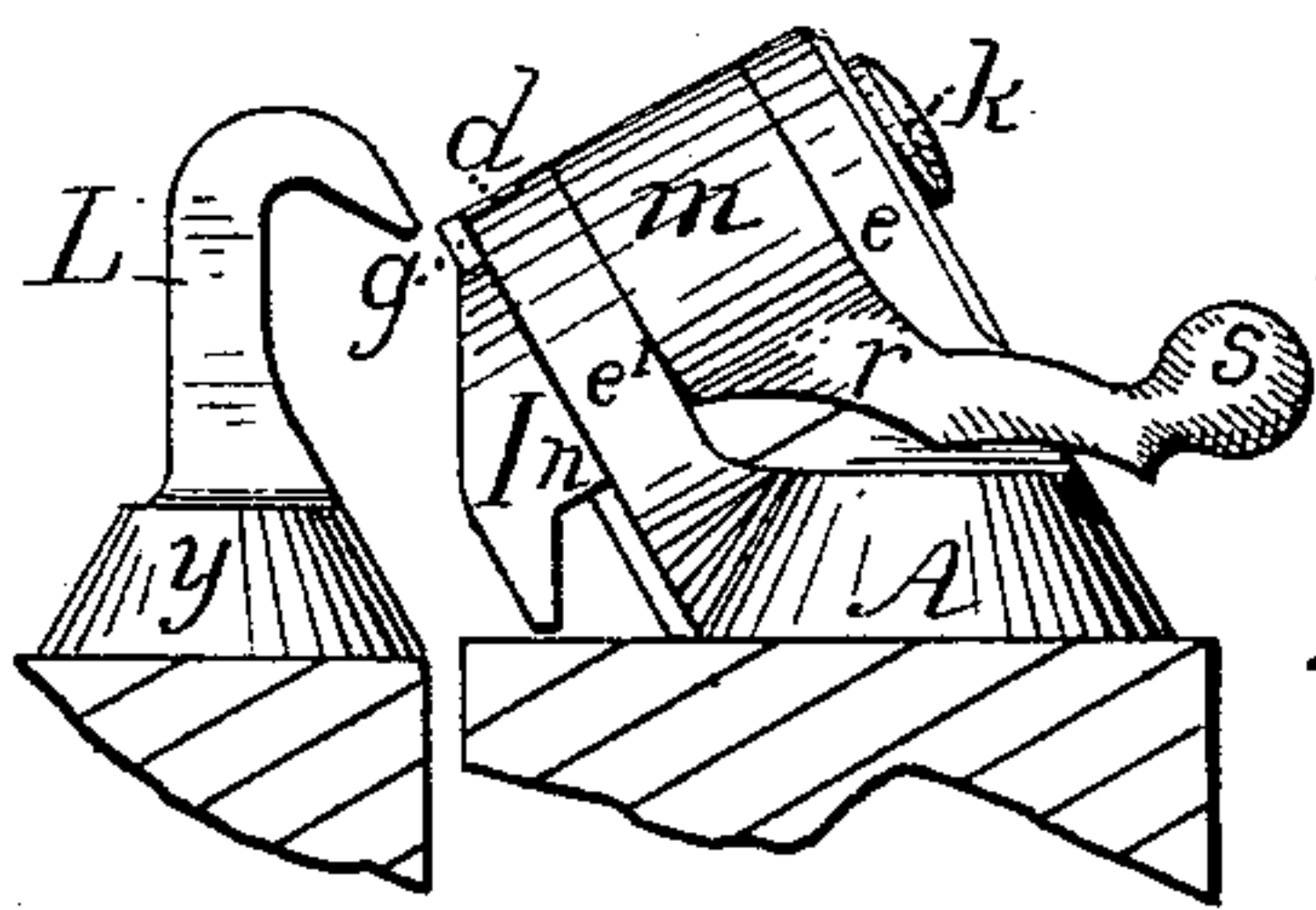


Fig. 5

Fig. 6

Fig. 7

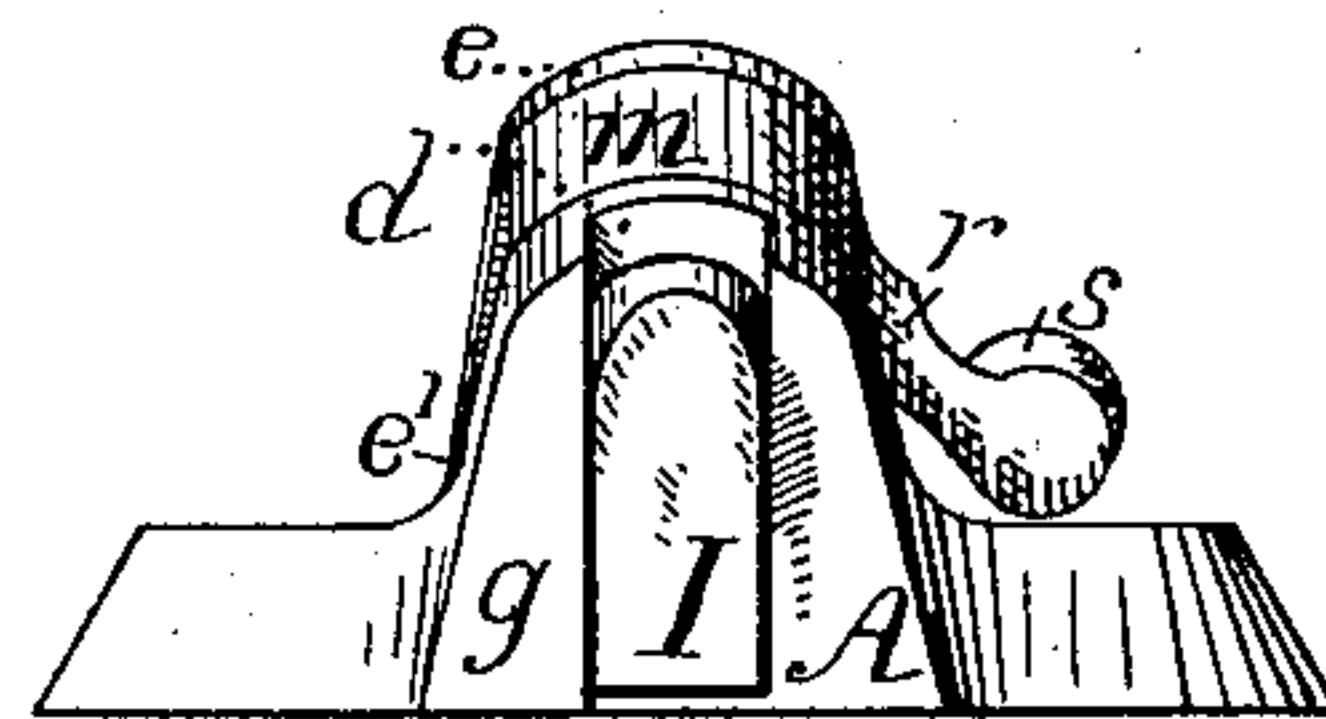
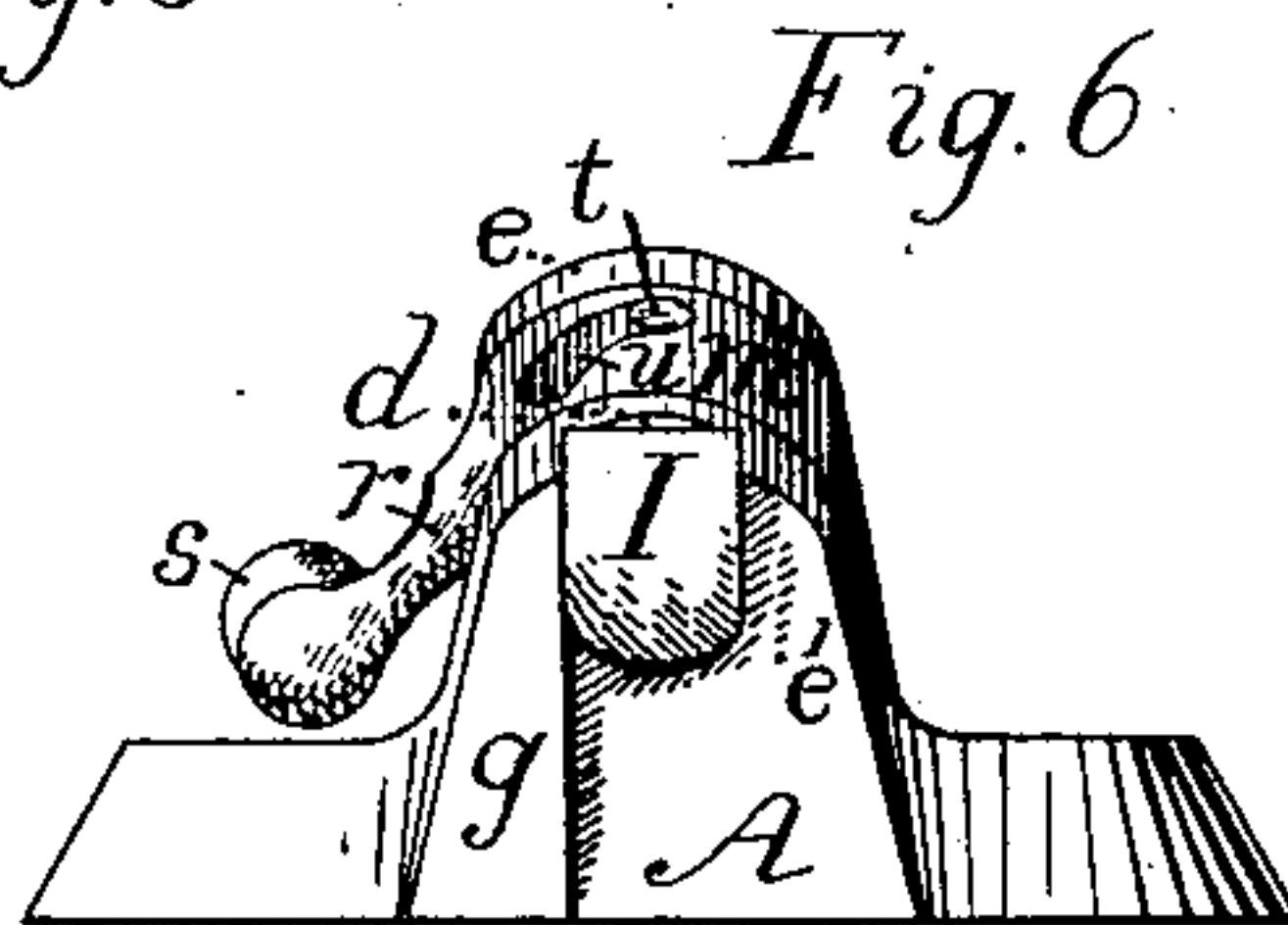
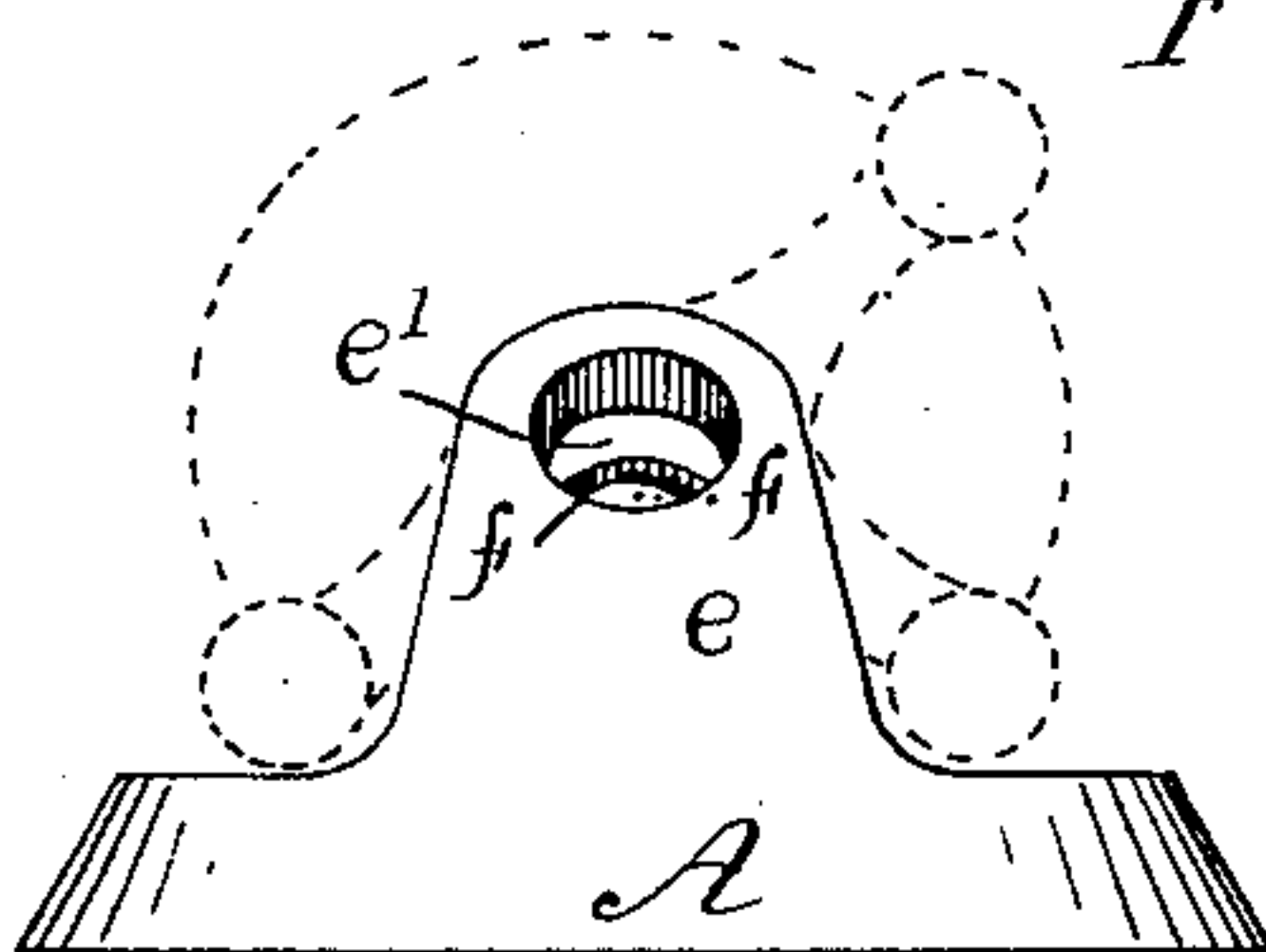


Fig. 8

Fig. 9

Fig. 10

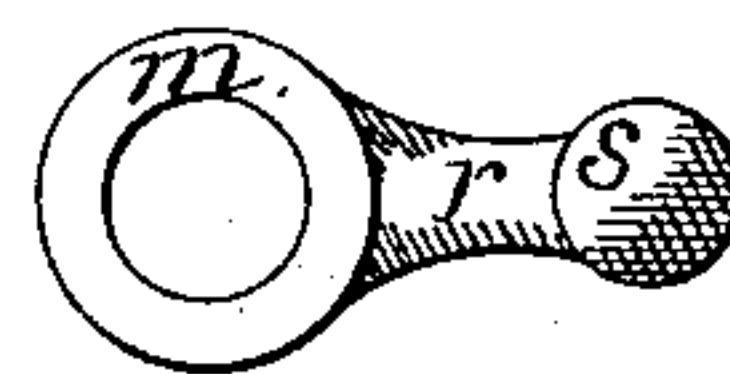
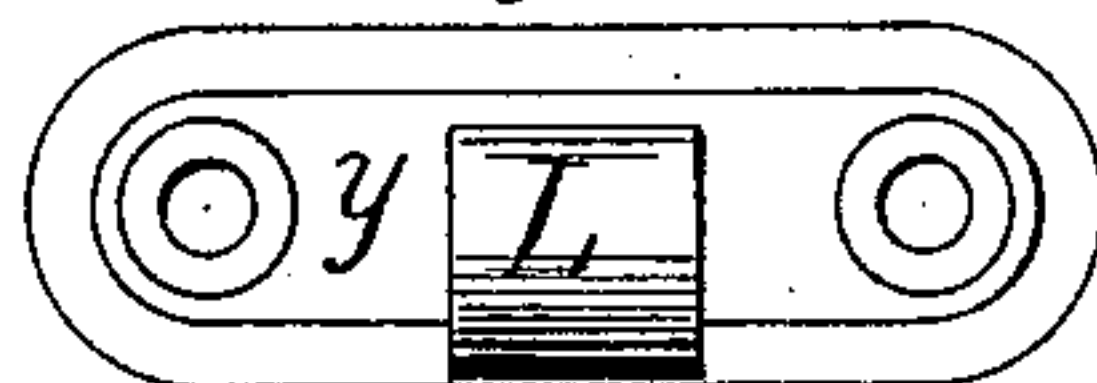
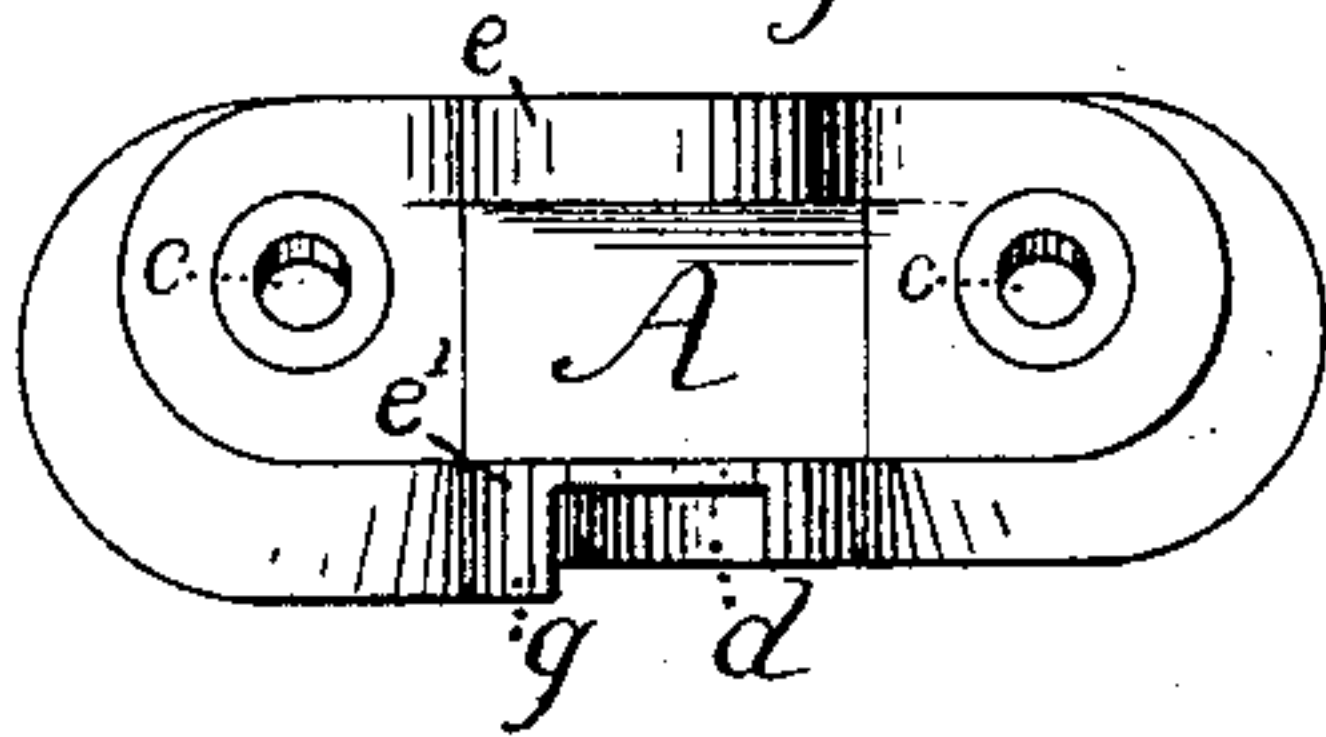
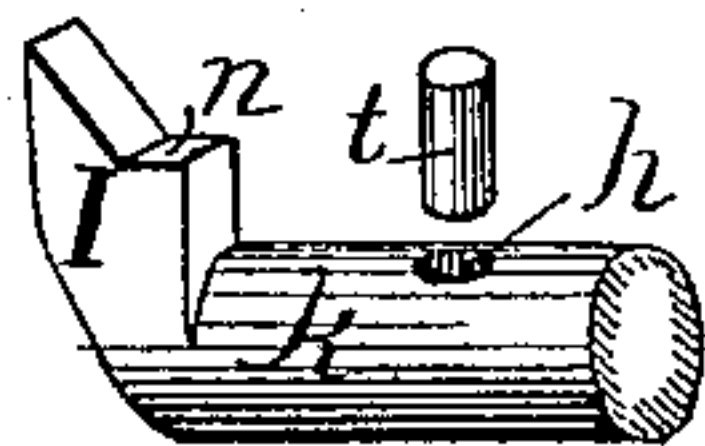


Fig. 11



WITNESSES:

Julius Drees.  
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# UNITED STATES PATENT OFFICE.

GEORGE L. BARNES, OF NORTH HAVEN, CONNECTICUT.

## FASTENER FOR MEETING-RAILS OF SASHES.

SPECIFICATION forming part of Letters Patent No. 366,756, dated July 19, 1887.

Application filed April 4, 1887. Serial No. 233,642. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE L. BARNES, of the town of North Haven, in the State of Connecticut, have invented certain new and useful

5 Improvements in Fasteners for Meeting-Rails of Sashes, of which the following is a specification.

My invention relates to a fastener for the meeting-rails of sashes, and has for its object  
10 to provide a sash-fastening device adapted to simultaneously clamp the meeting-rails snugly together and force the respective sashes tightly to their seats against the horizontal parts of the window-jamb, with the fastening-arm posi-  
15 tively secure from unlocking, except by the movement of the operating-handle, whereby the sashes are held closely shut and secure from rattling, and cannot be unfastened from the outside of the window or by jarring action.

20 The invention consists in the novel arrangement and construction of an obliquely-journaled fastening-arm, which is adapted to swing on an incline into the plane of the upper sash to engage the holding-hook and draw axially  
25 to seat and clamp the sashes together, an operating-handle journaled concentric to and adapted to actuate the arm by the coaction of a radial pin and spiral cam on the respective parts, and a base-plate having inclined bear-  
30 ings to support the oscillating parts, and a locking-notch, all as hereinafter more fully described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of my sash-fastener mounted  
35 on the sash-rails and in locked position. Fig. 2 is a side elevation of the fastener in unlocked position, and Fig. 3 is a similar view showing the fastening-arm engaged with the holding-hook and in position to draw upward to force  
40 the sashes into place. Fig. 4 is a vertical central section through the fastener, with the parts shown in locked position. Fig. 5 is a front view of the base-plate, with dotted lines indicating the several positions of the operat-  
45 ing-handle as shown in Figs. 2, 3, and 4. Figs. 6 and 7 are rear views of the fastener with the holding-hook removed, respectively showing the parts in locked and unlocked positions. Fig. 8 is a plan of the base-plate  
50 viewed in a line at a right angle to the axis of the journal-bearings. Fig. 9 is a plan of the holding-hook and plate. Fig. 10 is a front

elevation of the operating-handle, and Fig. 11 is a view of the fastening-arm and its shaft.

Referring to the drawings, A designates the  
55 base-plate of the fastener, which is mounted upon the meeting-rail B of the lower sash and firmly secured at each end by suitable screws inserted through the vertical perforations c. The base-plate is hollowed out on its lower  
60 side to reduce its weight, and is formed with a pair of parallel brackets or ears, *e e'*, arranged, respectively, coincident with the front and rear edges of the casting, each sloping  
65 backward or rearward from the base, and thus leaning or inclining toward the upper sash, as shown. Each bracket is perforated through  
70 at right angles to its face, to form a journal-bearing, *f*, transverse to the base, and both bearings are in the same axial line and oblique to the plane of the sashes. The rear bracket  
is formed with a locking notch or recess, *d*, in  
its rear face, vertically over the journal-bearing, and preferably extending from the perforation to the upper edge of the bracket. A  
75 projecting shoulder or stop, *g*, is formed on the back of the rear bracket, *e'*, coincident with one side of the locking-notch *d*, and preferably extending the entire height of the bracket, to  
facilitate molding the casting; but the upper  
80 part only of the stop adjacent to the notch is required in the action of the parts.

I in the drawings designates the fastening-arm of the lock mechanism, or the part which  
85 fastens the sashes together. The fastening-arm is formed on the end of a cylindrical shaft or trunnion, *h*, which is fitted in the journal-bearings *f* of the base-plate A, with the fastening-arm on the rear side of the base. The  
fastening-arm is nearly as wide as the locking-  
90 notch *d*, and has a locking-projection, *n*, on its front side fitting the notch. The face of the projection is adapted to bear against and slide in contact with the rear face of the bracket  
95 as the arm turns from a position vertically downward through a semicircle to the opposite position vertically upward and coincident with the locking-notch. The shaft of the arm  
has a radial perforation, *h*, in which a pin or  
stud, *t*, is driven or otherwise secured, with  
100 one end projecting beyond the circumference of the shaft, as shown.

A cylindrical sleeve or perforated hub, *m*, is received or journaled upon the shaft of the



fastening-arm between the brackets  $e e'$ , and is formed with an operating-handle,  $r$ , which projects radially and frontward, terminating in a knob,  $s$ , projecting clear of the front of the base. The sleeve is fitted to turn freely on the shaft and between the brackets, and has a cam-slot,  $u$ , on one side, extending spirally around the hub analogously to the thread of a nut. The slot opens entirely through to the inside of the sleeve and receives the radial pin  $t$  on the shaft. The spiral is preferably extended around the sleeve in the right-hand direction—that is, in the same direction as the threads of ordinary right-hand screws—and the shaft, pin, and slot are so placed that when the fastening-arm is vertically down and the operating-handle is at the back or left-hand extremity of its throw the pin will be at the leading end of the slot as the sleeve is turned over to the right. With this motion of the sleeve, therefore, the spiral cam-surface presses on the pin in the direction to draw the shaft axially forward; but as the fastening-arm bears against the face of the rear bracket,  $e'$ , the rotation of the operating-handle will cause the pin, shaft, and arm to revolve until the arm is arrested by the stop-shoulder  $g$ , coincident with the locking-notch, when with the further movement of the handle the spiral surface on the rear side of the slot will slide along the pin and draw the shaft axially forward, thus entering the projection  $n$  into the locking-notch. In this position the fastening-arm cannot be turned or moved except by the backward or reverse motion of the handle.

Mounted upon the meeting-rail of the upper sash opposite to the front base-plate is a holding-hook,  $L$ , formed integral with a base,  $y$ , which is held in place by common screws. The hook is bent over forward and downward in suitable form to interlock or hook over the fastening-arm  $I$  when the arm is uppermost. The front face of the hook is set just back of the plane of the joint between the sashes, and the fastening-arm is set to also just clear the joint-line when down. With the parts thus arranged the sash-rails will pass freely; but as the operating-handle  $r$  is turned from the position shown in Figs. 2 and 7 over to the right the fastening-arm will be swung on an incline into the plane of the upper sash and under the holding-hook  $L$ , as shown in Fig. 3, and thus drawn axially until the arm is locked in the notch  $d$ , as shown in Figs. 1 and 4, thus clamping and securing the sashes together, and seating them tightly against the horizontal parts of the window-jamb, effectually preventing rattling and excluding the wind or rain. The reverse motion of the handle unlocks the arm and swings it down out of the plane of the upper sash. The weight of the operating-handle holds it down at each extremity of its throw, and thus the parts can neither be fastened nor unfastened by jars or accidental causes. The fastening-arm may be made to lock in either direction, according as

the cam slot is made right or left handed; but the right-handed action shown is preferred. The slot is preferably made with a varying pitch, being almost circumferential to the shaft at the end where the pin  $t$  remains when locked, in order to prevent the arm from backing out of the notch  $d$ .

It is not necessary to arrange the fastening-arm so that it turns through an even half-revolution, as shown; but any fraction of a revolution that will conveniently swing the arm clear of the holding-hook or keeper is sufficient.

The angle of the incline of the axis of the fastening-arm may be varied considerably, if required, and the positions of the pin  $t$  and cam-slot may be reversed—that is, with the pin in the sleeve and the slot in the shaft; but it is most convenient to arrange them as shown. It is also preferable to place the pin in line with the fastening-arm, so that there will be very little cramping action on the shaft; but the pin may be placed anywhere around the circumference of the shaft, if required.

In situations where it is not required to lock the parts securely the handle may be rigidly fixed on the shaft of the fastening-arm, and the arm then merely swung into engagement with the holding-hook, but not locked. The base and the arm may be made so that the locking-notch and projection  $n$  are differently placed, and the fastening-arm may be formed on the sleeve and the operating-handle placed on the shaft, the sleeve being made with sufficient end-play to draw axially, and the shaft being held by thrust-collars, so that it cannot move endwise, which converse arrangement of the parts will fulfill the same functions as the preferred form; but the construction shown and described is very simple and impossible to get out of order, acts and holds positively and without the use of springs or friction devices, requires no skillful fitting or riveting together, as the pin  $t$ , when inserted, secures all the parts in place, and the lock may therefore be cheaply constructed, perfectly and easily operated, and is of neat and compact design.

What I claim, and desire to secure by Letters Patent, is—

1. In a sash-fastener, the combination, with a base-plate having the rearwardly-leaning brackets and inclined journal-bearings therein, of an inclined fastening-arm having its arbor or shaft journaled obliquely in the bearings of the base, and an operating arm or handle supported and carried upon the shaft and adapted to swing the fastening-arm in an oblique plane to engage the holding-hook, substantially as and for the purpose specified.

2. In a sash-fastener, the combination, with a base-plate having the rearwardly-leaning brackets and inclined journal-bearings therein and provided with a locking-notch and stop-shoulder, of an inclined fastening-arm provided with a locking-projection and having its arbor or shaft supported obliquely in



the bearings of the base, and operating means, substantially as described, for rotating the arm into engagement with the holding-hook and actuating it in the direction of its axis to  
5 seat and clamp the sashes together securely locked, as specified.

3. The combination, in a sash-fastener, of a front base-plate, as A, provided with inclined journal brackets or bearings, as *e e'*, perforated  
10 obliquely to or at an angle with the plane of the sash, and having a locking-notch, as *d*, and a raised stop or shoulder, as *g*, the holding-hook, as L, mounted upon the meeting-rail of the upper sash, a fastening-arm, as I, having  
15 a locking-projection, *n*, and provided with a

shaft or trunnion, *k*, journaled in the bearings of the base obliquely to the plane of the sash and carrying a radial pin or projection, as *t*, and an operating-handle, *r*, provided with a perforated hub or sleeve, *m*, fitted or journaled  
20 on the shaft of the fastening-arm and having a spiral cam-slot, *u*, which receives the shaft-pin, whereby the fastening-arm is turned to engage the holding-hook and thrust axially to seat and securely clamp the sashes together  
25 and lock the same, substantially as specified.

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Witnesses:

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