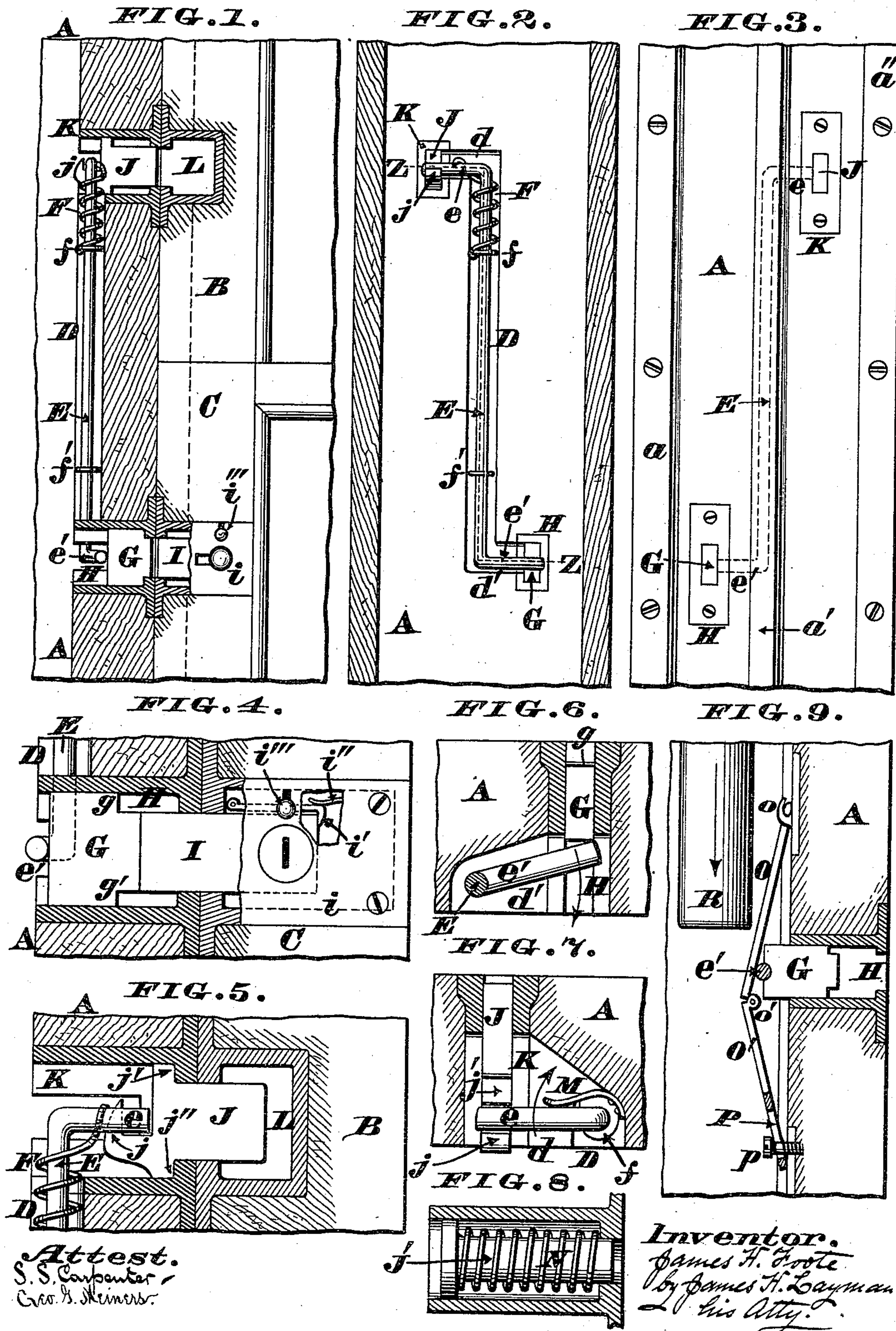


(No Model.)

J. H. FOOTE.
SASH FASTENER.

No. 426,794.

Patented Apr. 29, 1890.



UNITED STATES PATENT OFFICE.

JAMES H. FOOTE, OF CINCINNATI, OHIO.

SASH-FASTENER.

SPECIFICATION forming part of Letters Patent No. 426,794, dated April 29, 1890.

Application filed July 27, 1889. Serial No. 318,871. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. FOOTE, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Duplex Sash-Lock; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the annexed drawings, which form part of this specification.

The object of my invention is to provide a cheap and secure fastener that will simultaneously lock both the upper and lower sashes of a window of the simple advancement of a main bolt, which latter is attached to one of the stiles of the lower sash. When this bolt is advanced by hand, it enters a box fitted within the window-frame and comes in contact with a slide of said box, which slide is thus forced back a distance equal to the stroke of said bolt, thereby imparting a slight turning motion to a vertical rock-shaft journaled in said frame. This turning of said shaft advances a secondary bolt and causes it to protrude from the frame and enter a box of the upper sash, thereby preventing any clandestine opening of the window, as hereinafter more fully described.

In the annexed drawings, Figure 1 is a sectioned elevation of a duplex sash-lock embodying my improvements, said section being taken at the dotted line *z z* of Fig. 2, and both sashes being free to be raised and lowered. Fig. 2 is an elevation of that portion of the frame to which the lock is applied. Fig. 3 is an elevation of the corresponding portion of said frame traversed by the sashes. Fig. 4 is an enlarged vertical section showing the lower or main bolt advanced. Fig. 5 is a similar view of the secondary bolt. Fig. 6 is an enlarged horizontal section showing the slide that operates the rock-shaft in its normal position. Fig. 7 is a similar view of the upper or secondary bolt. Figs. 8 and 9 are modifications of my invention.

A represents part of a window frame or casing; B C, portions of the upper or lower sash, respectively, and *a a' a''* in Fig. 3 the customary strips that guide these sashes in a vertical path. Furthermore, these sashes may be suspended from cords passing over

pulleys and carrying weights, or they may be held in place by springs or other catches, as my lock is not limited in its use to any special form of sash or window-frame.

Frame A is grooved vertically at D, which groove terminates with horizontal or lateral branches *d d'*, that admit levers *e e'* at the opposite ends of a rock-shaft E. This shaft is housed within the vertical groove D, being confined therein by the staples *f f'* or other bearings, and being maintained in its normal position by a suitable spring. I prefer, however, to use a coiled spring F, having one end secured to the upper staple *f*, while its other end bears against the lever *e*. The tension of this spring is such as to keep the lower lever *e'* of said shaft at all times in contact with a slide G, that traverses a box H, secured within a mortise of the window-frame, said slide having shoulders *g g'*, that limit its advance or outward movement.

Slide G is in line with the main bolt I, traversing a case *i*, secured to a stile of the lower sash C, which bolt may be operated by a knob, as seen in Fig. 1, or it can be thrown by a key, as suggested in Fig. 4. This main bolt when advanced must have some means for resisting the pressure brought to bear against the slide G by the spring F, a dog *i'* being seen in Fig. 4, which dog is operated by a spring *i''* and is liberated by a knob *i'''*. The upper lever *e* of the rock-shaft engages over a hook *j* at the inner end of the secondary bolt J, that traverses a case K, fitted within the frame A, shoulders *j' j''* being formed on said bolt to limit its advance. When protruded, this bolt enters a box L of the upper sash B.

In arranging this lock the grooves D *d d'* and the mortises for the boxes H K are first cut in the frame A, and the rock-shaft E and spring F are fitted to said frame before the latter is nailed together. Slide G is then placed within the box H, and the latter is secured within the appropriate mortise of the frame. The secondary bolt J is then placed within the box K, and the latter secured within its proper mortise, the incline at the end of hook *j* of said bolt serving as a wedge that slightly elevates the lever *e* and causes it to engage over said hook, this elevation of the

lever being provided for by making the grooves $d d'$ somewhat wider than is actually necessary for the levers $e e'$ to swing in. Case i being then secured to the lower sash C, and the box L fitted within the upper sash B, the duplex lock is at once ready for use. In the normal position of all its parts the spring F so turns the rock-shaft E as to cause the lower lever e' to advance the slide G as far as the shoulders $g g'$ will permit, but not so far as to protrude said slide beyond the end of box H, which normal position of the lock is seen in Fig. 6. Furthermore, in this normal position of the lock the secondary bolt J is retracted, so as not to protrude beyond the end of its box K. (See Fig. 7.) Therefore, as there are now no projections from the frame A, it is evident the sashes B C can be operated in the usual manner; but when they are to be locked the upper sash must be completely raised and the lower sash pulled down to the sill, which act causes the box i to be in line with the box H and the other box or socket L to be in line with the box K. Main bolt I is now advanced or shot, and striking directly against the end of slide G drives the latter back within its box H, as seen in Fig. 4. This retraction of said slide throws the lever e' around in the direction of the arrow seen in Fig. 6, thereby slightly turning the rock-shaft E and causing its upper lever e to swing in the direction of the arrow represented in Fig. 7. Consequently the secondary bolt J is advanced as far as its shoulders $j' j''$ will permit, or, in other words, until said bolt is properly engaged with the box L, as seen in Fig. 5; hence it is evident that the lower sash is locked by the main bolt I engaging with the box H, while the upper sash is locked by the secondary bolt J engaging with the box or socket L. When thus locked, the dog i' or its equivalent device comes into action and prevents the bolt I being forced back by the pressure of lever e' against the slide G; but the instant this dog is disengaged and the bolt I retracted the tension of spring F restores all the operative parts to their normal positions, as previously explained.

The above is a description of the preferred construction of my duplex sash-lock; but the details thereof may be greatly varied without departing from the spirit of the invention, one evident modification being seen in Fig. 7, where a plate-spring M is arranged to bear against the upper lever e , and thus hold the

rock-shaft E and its connections in their proper or normal positions.

Another modification is seen in Fig. 8, where the secondary bolt of the lock takes the shape of a cylindrical plug J' , which is normally retracted by a spring N coiled around it.

A more complex form is seen in Fig. 9, where the advancing end of slide G comes in contact with the upper one of a pair of narrow plates or bars O O' and causes them to assume a bowed position, because they are hung from a bearing o and are jointed together at o' . P is a longitudinal slot near the lower end of plate O' to admit a guide screw or pin p . In this form of lock the lever e' is inserted between slide G and plate O, and said plate, lever, and slide are forced back to their normal positions by the descending sash-weight R, which weight performs the duty of the springs F M N seen in the other illustrations.

My duplex sash-lock can be readily applied to ordinary windows after first attaching the operative parts to a board about a foot long and then securing this board in a similar opening cut in the old frame.

I claim as my invention—

1. A duplex sash-lock consisting of a main bolt attached to the lower sash and operating a slide fitted within the window-frame, a rock-shaft applied to said frame and turned by said slide, a secondary bolt fitted within said frame and actuated by said rock-shaft, a socket in the upper sash to admit the secondary bolt, and a device for restoring the lock to its normal position, substantially as herein described.

2. The combination, in a duplex sash-lock, of the main bolt I, slide G, vertical rock-shaft E, levers $e e'$, spring F, secondary bolt J, boxes H K, and socket L, for the purpose described.

3. The combination, in a duplex sash-lock, of a secondary fastener that engages with the upper sash, a rock-shaft fitted to the window-frame and operating said fastener, and a main fastener secured to the lower sash and actuating said rock-shaft, substantially as herein described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES H. FOOTE.

Witnesses:

JAMES H. LAYMAN,
W. G. CAMERON.

It is hereby certified that in Letters Patent No. 426,794, granted April 29, 1890, upon the application of James H. Foote, of Cincinnati, Ohio, for an improvement in "Sash-Fasteners," an error appears in the printed specification requiring correction as follows: In line 14, page 1, the word "of" after the word "window" should read *by*, and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 20th day of January, A. D. 1891.

[SEAL.]

CYRUS BUSSEY,

Assistant Secretary of the Interior.

Countersigned:

C. E. MITCHELL,

Commissioner of Patents.