

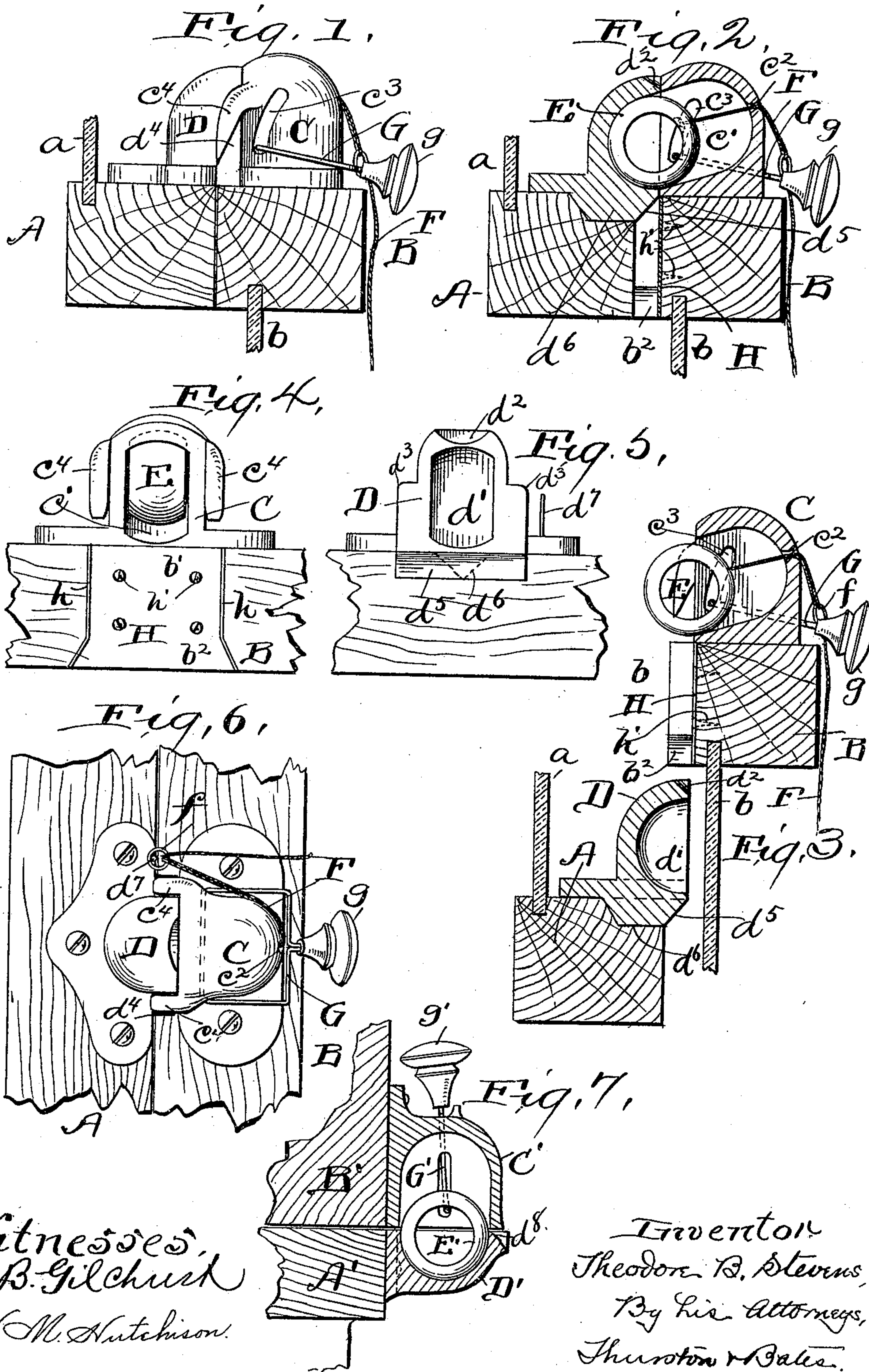
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T. B. STEVENS.
SASH FASTENER.

(Application filed Aug. 23, 1897.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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SASH-FASTENER.

SPECIFICATION forming part of Letters Patent No. 616,027, dated December 13, 1898.

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To all whom it may concern:

Be it known that I, THEODORE B. STEVENS, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Locks for Sashes and Kindred Purposes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to locks adapted to be attached to window-sashes or other structures having relatively movable members and lock them together.

The object of the invention is to supply a neat and cheap lock which shall be very efficient in operation, possessing the capacity of being practically burglar-proof, and shall not be liable to get out of order.

The invention includes, in addition to the locking means proper, means for drawing together the two cooperating members of the structure to which the lock is attached, thereby preventing looseness or play of the members from rendering the lock inoperative.

The invention consists of a pair of cooperating casings and a locking member adapted to stand part in one casing and part in the other, and thereby lock the two together or to be withdrawn substantially entirely into one casing, (thus disengaging the casings,) combined with a permanent loose connection between the locking member and the casing, into which it may be withdrawn, whereby the locking member is prevented from leaving that casing after the movement thereof has entirely freed the latter.

The invention consists, likewise, of the means hereinafter described for accomplishing this object, for drawing the two members of the structure together, for preventing picking or tampering with the lock, and for generally increasing the effectiveness of the lock, all as enumerated in the claims. I do not wish to be understood, however, as limiting myself to the specific form shown further than the claims require.

The drawings show the best embodiment of my invention at present known to me.

Figure 1 is an end elevation of the lock attached to the meeting-beams of a pair of win-

dow-sashes. Fig. 2 is a vertical central section through the two members of the lock in the position shown in Fig. 1. Fig. 3 is a similar section of the lock after the sashes have been separated. Figs. 4 and 5 are side elevations of the two cooperating members of the lock, the former being the member shown at the right hand in the preceding figures and the latter being that at the left, the faces shown being opposite each other in operation. Fig. 6 is a plan of the lock shown in the preceding figures. Fig. 7 is a vertical central section of the lock as applied to a vertically-swinging window or similar structure.

In Figs. 1 to 6, inclusive, A and B represent the meeting beams of a pair of window-sashes, *a* and *b* respectively indicating the corresponding panes. Secured to the beam B by screws *c* or in other suitable manner is the casing C. The cooperating casing (indicated by D) is attached by screws *d* or otherwise to the sash-beam A.

Cooperating recesses *c'* and *d'* are formed in the members C and D, respectively, as shown. The recess *c'* is about twice as deep as the recess *d'*, and a locking member E, which occupies the cavity furnished by these cooperating recesses, is adapted to stand part in recess *d'* and part in the recess *c'*, and thus lock the two members, or may be withdrawn entirely into the recess *c'*, and thus free the members. This locking member is preferably in the form of a crowned ring, as shown, though it might be a plane cylinder or sphere or other shaped body. The recess *c'* inclines downward, so that this locking member E naturally rolls or passes to the lower end of this recess, and hence stands partially in it and partially in the recess *d'*, which latter is made, preferably, just a little larger than half the locking member. The operation of the locking member E in locking the two members together when it stands partly in one casing and partly in the other and of freeing them when it is entirely within one casing will be readily understood. It will also be seen that when the locking member has the shape of a body of revolution it will roll by gravity to its lowest position, and that hence this is the preferred form in which to make it.

Passing loosely through the hole *e* in the locking member and through the slots *c³* in

the casing C is the bail G, which is bent into the approximately square form shown and has its ends terminating in the knob or handle *g*. When this bail is drawn upward, it
 5 withdraws the locking member from the locking position. After the locking member has been so withdrawn and the elevation of the lower sash frees the casing C from its coöperating casing the locking member rolls back
 10 to its former position, but the bail prevents it from passing out of this casing and holds it in position to properly engage the member D when the sash is lowered. To facilitate this engagement, I bevel the top surface of
 15 the casing D, as shown at d^2 , and when the locking member strikes this bevel in the lowering of the beam B the bevel forces it into the recess c' until that recess has come opposite the recess d' , when the locking member
 20 passes by gravity as far as it can into the recess d' , and hence lies in both recesses and prevents relative movement of the two casings and their attached parts.

I prefer to attach a cord or chain F (preferably a stout light fish-line) to the locking member, as shown in the drawings, and this cord, passing through a hole c^2 in the casing C and hanging down, furnishes convenient means for withdrawing the locking member
 30 without the necessity of reaching up to the lock—a convenient feature on high windows.

In order that the two sash-beams or other meeting members may be snugly drawn together by the lock, I provide the casings C
 35 and D each with a pair of coöperating beveled wings c^4 and d^4 , as shown. The casings are so placed with reference to the edges of the meeting beams that these bevels will have drawn these beams tightly together when they
 40 have come into their final position. In order that the wings c^4 shall not be in the way of the upper beam of the top sash when the lower sash is elevated to its highest point, I set the casing C back on the beam B, as shown, the
 45 front edge of the wings c^4 being on a line with the edge of the beam B, and I make the casing D overhang its beam a corresponding amount, cutting a channel b' into the beam B to receive this overhanging portion. The
 50 upper portion of this channel I make of substantially the same width as that of the casing D from the outside of one wing d^4 to the outside of the other, while the lower portion is beveled outwardly, as shown at b^2 . This
 55 outward bevel allows play for the sash crosswise of the window without rendering the lock inoperative, while it and the upper portion of the channel insure the casings C and D coming into proper longitudinal position.
 60 I prefer to line the channel b' with a plate H, having flanges h , as shown, and secured by screws h' or in other proper manner. I also prefer to round off the corners of the wings d^4 , as shown at d^3 , so that they may easily en-
 65 gage the beveled sides of the channel at b^2 .

In order to minimize the danger of any drilling instrument inserted in the channel b'

being forced through the bottom of the casing D into the recess d' and thereby affording means for ejecting the locking member
 70 from the recess d' , I form the overhanging portion of the casing D with the bevel d^5 on its under side, which stands in the channel b' and guides such drilling-tool to the front edge of the casing and away from the recess d' .
 75 To prevent such drilling instrument from being passed into the recess d' through the sash member A, I form a bevel d^6 back of the bevel d^5 and at right angles thereto. This bevel occupies a recess formed for it in the sash-
 80 beam A and operates to deflect the drilling-tool passed up through that sash member. Thus the sash-lock is rendered practically burglar-proof.

In operation when the sashes are closed the
 85 locking member E stands as shown in Fig. 2 and the sashes are locked. When it is desired to elevate the lower sash, the bail G is lifted or the cord F is pulled, withdrawing the locking member into the recess c' , and if
 90 it is desired to use both hands in raising the sash the locking member may be retained in that position by hooking the ring f , formed on the cord F, on a pin d^7 , which projects from the base-plate of the casing D. The
 95 locking member being now withdrawn from the casing D, the lower sash may be elevated. This elevation causes the ring f to pass off of the pin d^7 , thus freeing the locking member, which as the member clears the casing D rolls
 100 back into its former position, as shown in Fig. 3, the bail G preventing it from passing out of the casing. When the lower sash is drawn down, the locking member E strikes the bevel
 105 d^2 and rolls back into the recess c' , and when the latter has come opposite the recess d' passes partly into that recess, and thus locks together the casings and with them the two sashes.

Fig. 7 shows the lock as applied to a win-
 110 dowed hinged at its top and closing when swung downward into a vertical position. Here A' represents the window, and B' the sill. Secured to these, respectively, are the casings C' and D', which correspond to the similar cas-
 115 ings applied to the sashes and hereinbefore described. E' represents the locking member, and G' the lifting and retaining bail. As the window is being closed the locking member engages with the bevel d^8 on the casing
 120 D' and is forced up into the casing C', and as the recess in the latter comes opposite that in the casing D' passes partly into the casing D', as shown in the figure, and locks the two parts together, and thereby holds the window
 125 closed. When it is desired to open the window, the bail is simply raised, thus withdrawing the locking member from the casing D'.

It will be understood that the particular application of my lock which I have shown is
 130 simply illustrative and that it is adapted for many similar uses.

I am aware that it is old to lock sliding doors by means of a pair of coöperating cas-

ings and a locking member adapted to stand entirely within one casing or part in one and part in the other; but the prior devices with which I am familiar have not been adaptable for use on the meeting beams or sashes or as a swinging window or door lock, for they have no means for withdrawing the locking member from one casing into the other and for retaining it in the latter in proper position for reengagement after that casing has become entirely free. Neither have such prior devices had the cooperating bevels or the burglar-proof features which I have shown and described.

In those claims herein where reference-letters are used I mean to include such construction as is shown in Fig. 7, where the claims can be read upon that figure, though for convenience of description I have given different exponents to the reference-letters when used on that figure.

Having described my invention, I claim—

1. In a lock, a pair of cooperating casings having recesses therein, a ring or roller adapted to stand substantially entirely within one casing or partially within each casing, the recess in one casing being large enough to receive only a portion of the ring or roller and in the other casing to receive substantially the whole of it, slots through the side walls of the latter casing and a bail extending into said ring or roller and having portions which lie in said slots, substantially as described.

2. In a lock, in combination, a casing, a recess therein of substantially semicircular cross-section, a cooperating casing inclosing by its top, bottom, sides and back a recess which is substantially U-shaped both in horizontal and vertical cross-section, said casings being adapted to fit snugly together and thus substantially inclose a joint continuous recess the ends of which are substantially semicircles and the sides straight lines, a ring or roller within such joint-recess adapted to have relative movement therein and when at one end of the recess being in both casings and when at the other end entirely within one casing, means for withdrawing the ring or roller into the recess in the latter casing, and means for preventing the roller passing entirely from the U-shaped recess when the casings are separated, substantially as described.

3. In a lock, in combination, the following parts substantially as shown, viz., first, a casing C inclosing by its top, bottom, sides and back a recess c' which is of substantially U shape both in horizontal and vertical cross-section, a plate at the base of said casing projecting in opposite directions outside thereof and furnishing means by which it is adapted to be secured to one member of a structure having relative movement, wings c^4 projecting from the sides of said casing and having beveled inner edges, said parts being all made integral; second, a casing D having a recess therein of less depth than the recess in cas-

ing C, having a plate at its base extending outwardly in each direction by which it may be secured to a member of a structure, wings d^4 carried by said casing at its sides and having beveled faces, said parts being all made integral; third, a roller within the casing C and adapted to stand substantially entirely within that casing or partly within that casing and partly within the casing D; and, fourth, suitable means for withdrawing said roller substantially entirely into the casing C and for holding it from leaving that casing when that casing is separated from the casing D, substantially as described.

4. In a lock, in combination, a casing C, a cooperating casing D, each of said casings having recesses, a roller E within the recess in the casing C and adapted to stand substantially entirely within that recess or partly in that recess and partly in the recess in the casing D, bevels on the outside of the casing D at its base running in two directions at an angle to each other as at d^5 and d^6 whereby a tool passed up to the base of said casing will be deflected, and suitable means for withdrawing the roller substantially into the casing C and for preventing it from passing from that casing when the casings are separated, substantially as described.

5. The combination with a pair of meeting beams A B, between which there is a relative up-and-down movement, and a lock adapted to be attached to the top of said beams, the portion of the lock attached to the beam B standing back from the edge thereof and the portion attached to the beam A projecting beyond its edge and the edge of the beam B, there being a channel b' in the beam B to allow the passage of the overhanging portion attached to the beam A, the upper portion of said channel being substantially the width of that overhanging portion and the lower portion, of the channel being wider, whereby the channel draws the beam A into proper position laterally as it rises, and means for connecting together the two portions of the lock, substantially as described.

6. In a lock, in combination, the casing C, the casing D, the locking member E, said casing C having a recess large enough to receive the locking member and having a hole c^2 at the back of the recess, and said casing D having a cooperating recess large enough to receive only a portion of the locking member, and the cord or chain F attached to the locking member and passing through the hole c^2 in the casing C and furnishing means for withdrawing the locking member into the latter casing, there being means for limiting the outward movement of the locking member from that casing, substantially as described.

7. In a lock, in combination, a casing C, a casing D, the locking member E, said casing C having a recess large enough to receive the locking member and said casing D having a cooperating recess only large enough to receive a portion of the locking member, said

casing C having slots c^3 through its sides and a hole c^2 through its back, a bail G passing through said slots and into the locking member and furnishing means for preventing the
5 latter from leaving the casing C, a cord or chain F attached to the locking member and passing through the hole c^2 and furnishing means for withdrawing the locking member into the casing C, substantially as described.
10 8. In a lock, in combination, the casing D having the recess d' , the pin d^7 , the casing C having the recess c' and the hole c^2 , said recesses d' and c' being of substantially the

relative proportions shown, a locking member E, a chain or cord F attached thereto and
15 passing through the hole c^2 and having a ring or equivalent device adapted to be engaged by the pin d^7 when the casings are in locking position and the locking member withdrawn from the recess d' , substantially as described. 20

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

THEODORE B. STEVENS.

Witnesses:

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