Nov. 16, 1926. 1,607,039

J. BARON

CLOSURE LOCK

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Fig. 2.

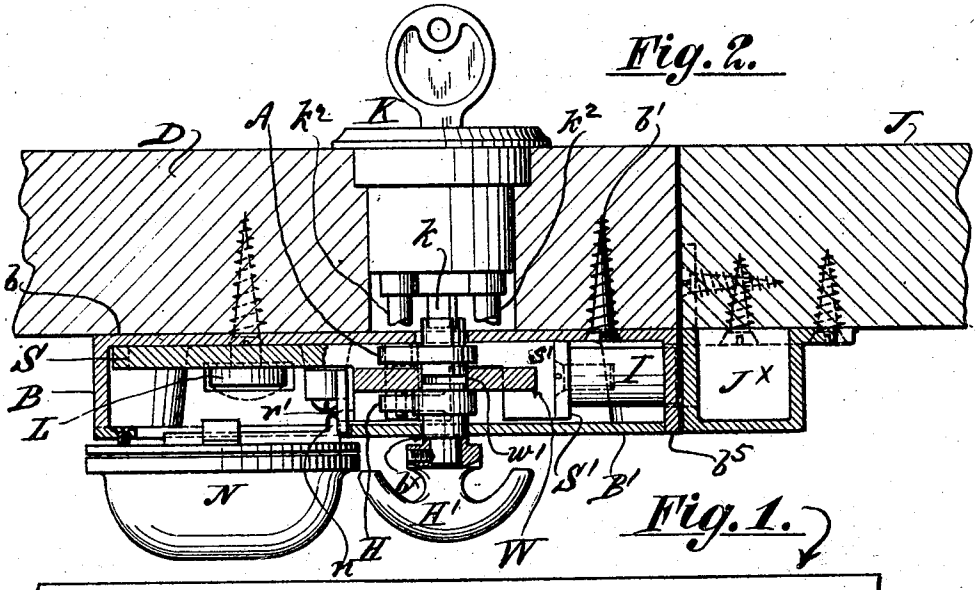
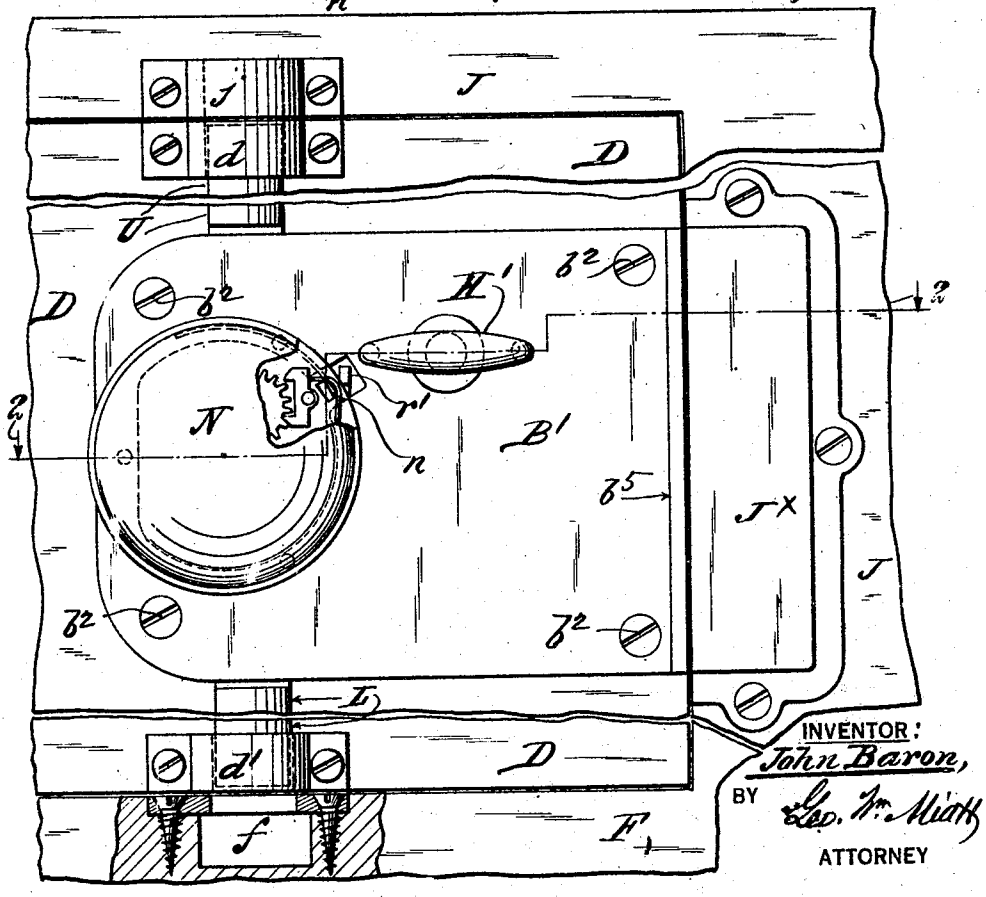


Fig. 1.



INVENTOR:
John Baron,
BY Leo. W. Mieth
ATTORNEY

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J. BARON

CLOSURE LOCK

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Fig. 3.

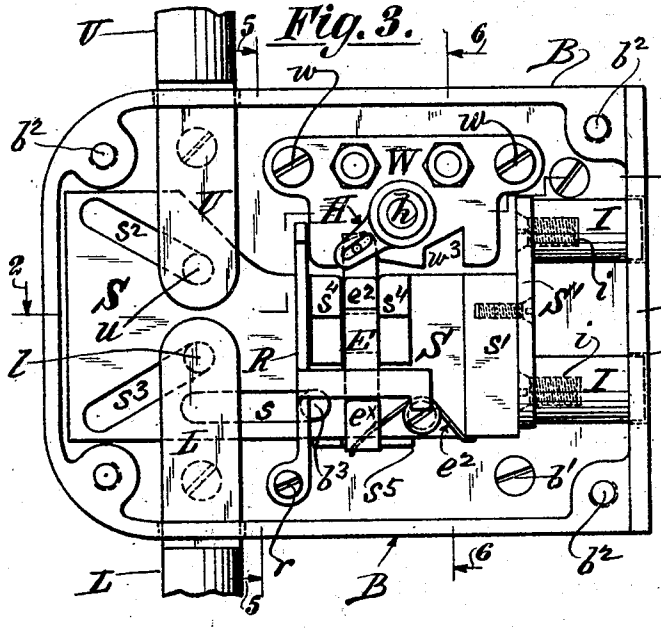


Fig. 5.

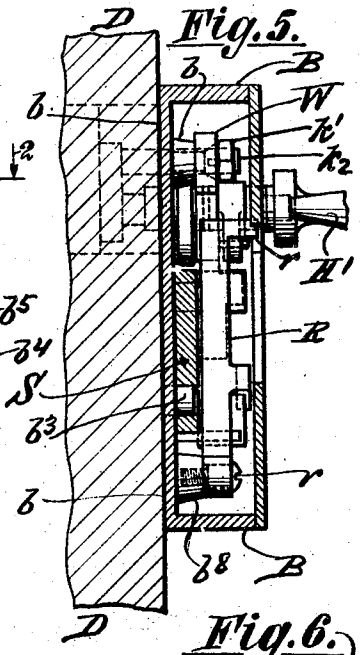


Fig. 4.

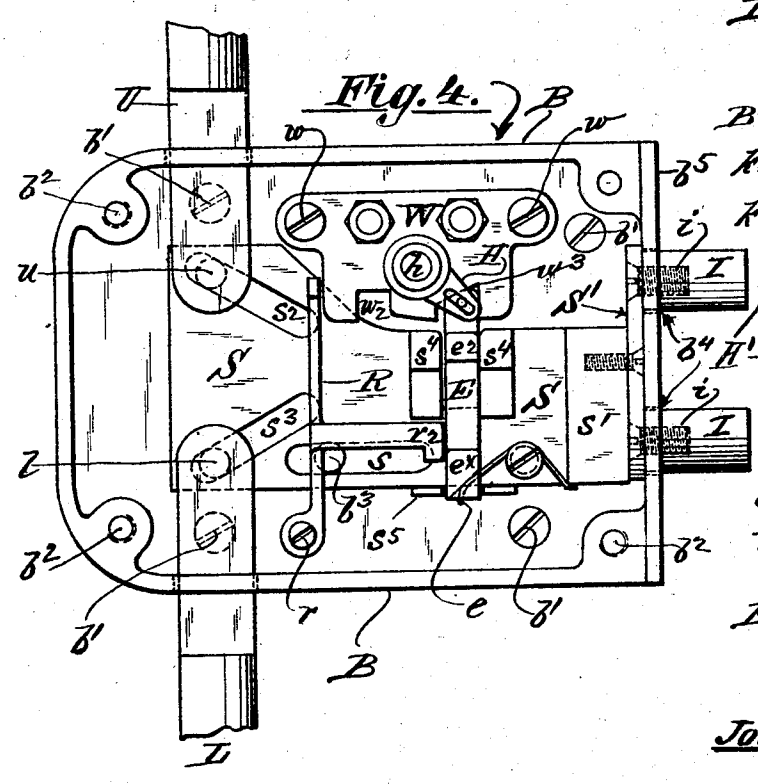
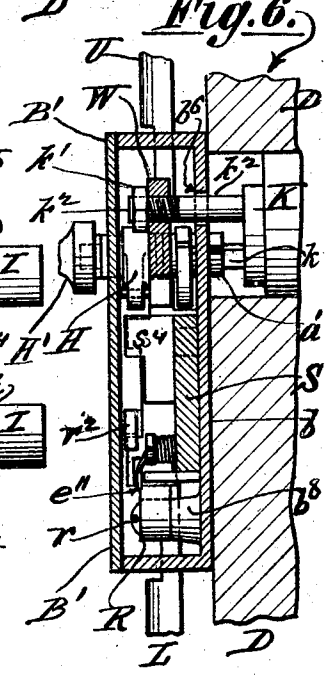


Fig. 6.



INVENTOR:
John Baron,
BY Leo. Wm. Mack
ATTORNEY

Nov. 16, 1926. 1,607,039

J. BARON

CLOSURE LOCK

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Fig. 7.

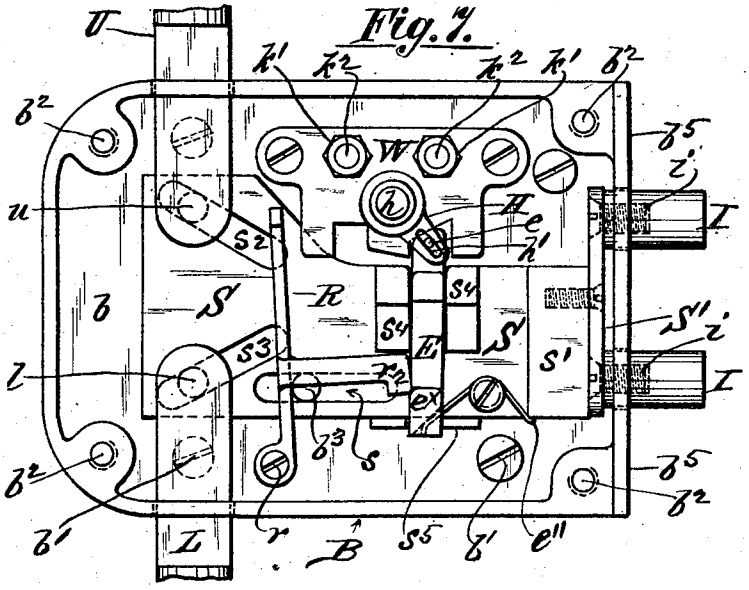


Fig. 8.



Fig. 9.



Fig. 10.

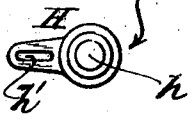


Fig. 12.

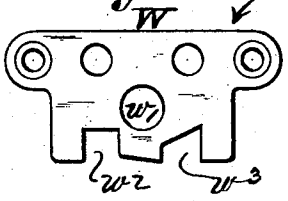


Fig. 13.

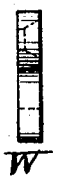


Fig. 11.

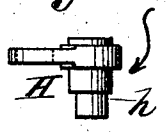


Fig. 16.

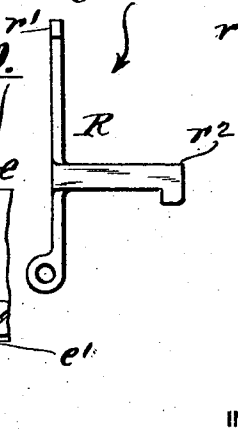


Fig. 17.

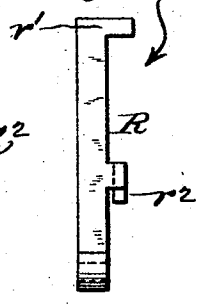


Fig. 14.

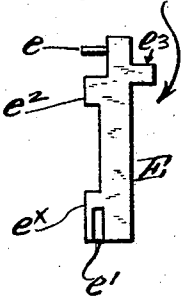


Fig. 15.

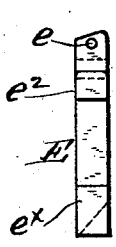


Fig. 29.

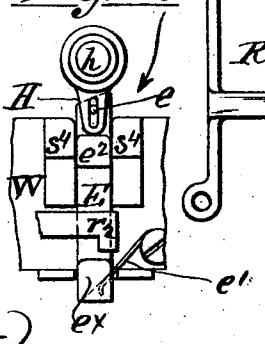
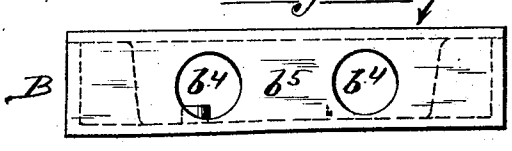


Fig. 28.



INVENTOR:
John Baron,
BY
Leo. W. Miatt
ATTORNEY

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J. BARON

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Fig. 18.

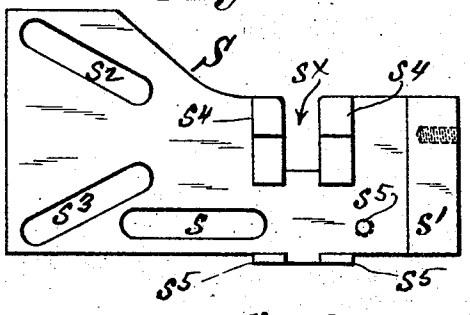


Fig. 19.

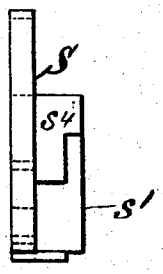


Fig. 20.

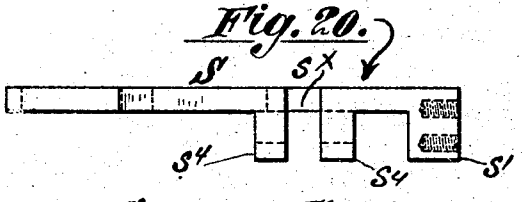


Fig. 21.

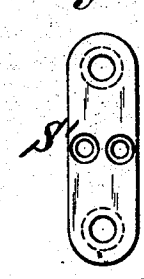


Fig. 22.



Fig. 23.

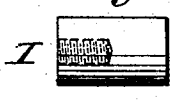


Fig. 24.

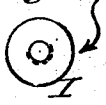


Fig. 25.

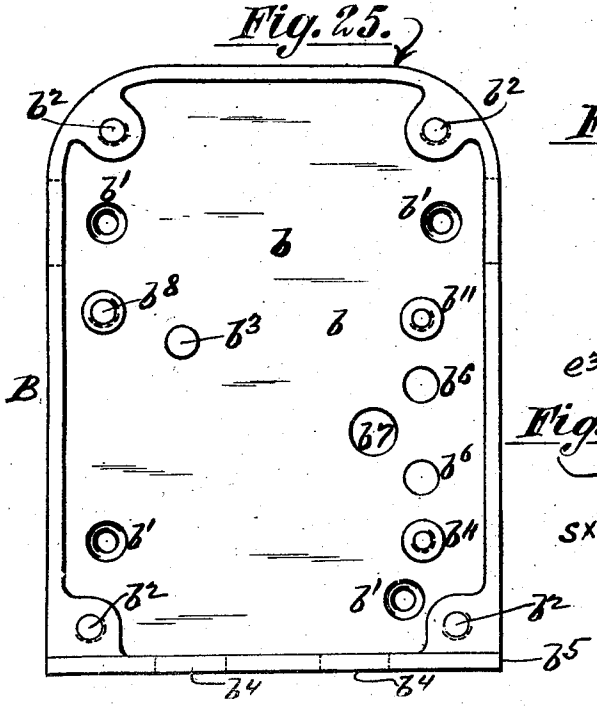


Fig. 26.

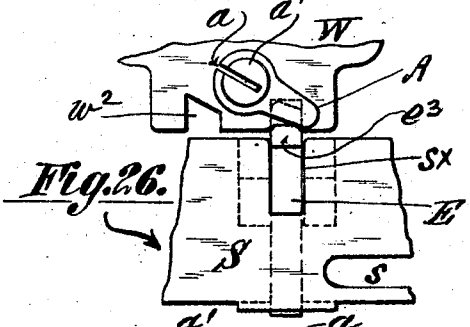
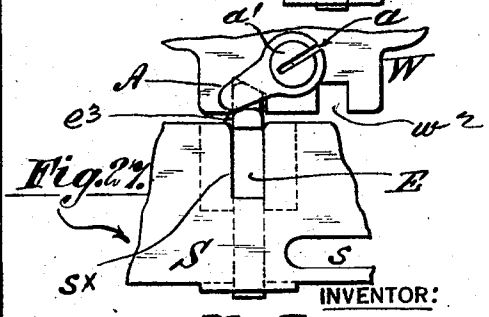


Fig. 27.



INVENTOR:
John Baron,
BY Leo. W. Miatt
ATTORNEY

Patented Nov. 16, 1926. 1,607,039

UNITED STATES PATENT OFFICE.

JOHN BARON, OF NEW YORK, N. Y., ASSIGNOR TO LOUIS LAXER AND CHARLES YOUNG.

CLOSURE LOCK.

Application filed June 24, 1925. Serial No. 39,202.

My present invention is, in a measure, co-related to that described in my concurrent application Serial No. 34,773 filed June 4th, 1925, in that the object is to afford substantial and effective locking means for doors and analogous closures, said locking means being not only practically burglar proof in character, but also embodying alarm mechanism whereby ample notice is assured in the event of any attempt at tampering with the door or locking means. My said concurrent application relates, however, more particularly to door mortise lock mechanism, whereas the improvements herein set forth are designed primarily for embodiment in an interior or rim lock for possible use, either alone, or in conjunction with door mortise locks generally, other than my aforesaid specific mortise lock,—this invention consisting in the specific combination, construction and arrangement of component parts and appurtenances described and claimed, whereby these and other advantageous results are attained substantially as hereinafter explained.

In the accompanying drawings I illustrate a practical embodiment of the essential features of my invention as incorporated in what may be designated as a rim or exterior auxiliary lock as applied to the inner side of a door in conjunction with an outside latch key lock of the "Yale" or equivalent type, although I do not limit myself to the identical form of component parts herein shown by way of exemplification, since changes may be made in minor details, and equivalent mechanical expedients resorted to with like results, and without departing from the spirit and intent of my invention in this respect.

With this understanding:—

Fig. 1, represents an elevation of my auxiliary rim lock and adjacent parts of a door and jamb, the alarm bell being broken away in part to show the end of the actuating pressure arm;

Fig. 2, is a sectional elevation taken upon plane of line 2—2, Figs. 1 and 3;

Fig. 3, is an elevation of my lock with the cover plate removed and showing the mechanism as positioned with the bolts retracted;

Fig. 4, is a view like unto Fig. 3, showing the mechanism as positioned when the bolts are shot;

Fig. 5, is a transverse sectional elevation taken upon plane of line 5—5, Fig. 3, looking in the direction of the arrows;

Fig. 6, is a transverse sectional elevation taken upon plane of line 6—6, Fig. 3, looking in the direction indicated by the arrows;

Fig. 7, is a view like unto Fig. 4, illustrating the effect resultant from pressure exerted against any of the bolts to force them back by extraneous means;

Fig. 8, is an elevation of the key-actuated shift arm;

Fig. 9, is an elevation thereof taken at right angles to Fig. 8;

Fig. 10, is an elevation of the hand shift arm;

Fig. 11, an elevation thereof taken at right angles to Fig. 10;

Fig. 12, is an elevation of the lock ward plate;

Fig. 13, is an edge elevation thereof;

Fig. 14, is an elevation of the spring latch;

Fig. 15, an elevation thereof taken at right angles to Fig. 14;

Fig. 16, is an elevation of the alarm actuating rock lever;

Fig. 17, is an elevation thereof taken at right angles to Fig. 16;

Fig. 18, is an elevation of the bolt slide plate;

Fig. 19, an end elevation thereof, looking in the direction of the arrow 19, Fig. 18;

Fig. 20, is a top edge view of said bolt slide plate;

Fig. 21, is a face view of the horizontal bolt bracket;

Fig. 22, an edge elevation thereof;

Figs. 23 and 24, are detail views of one of the horizontal bolts;

Fig. 25, is an elevation of the base plate of the lock casing;

Figs. 26 and 27, are detail views taken upon a plane coincident with the inner surface of the base plate of the casing illustrating the co-relation and cooperation of the key shift arm, spring latch, and bolt slide plate;

Fig. 28, is an elevation of the right hand end of the casing box showing the guide flange for the twin jamb bolts;

Fig. 29, is a detail view showing the

spring latch depressed and the relation thereto of the push arm of the alarm-actuating rock lever.

As indicated in Figs. 1, 2, 5 and 6, of the drawings, my rim lock, so called, is applied to the inner side of a door D, or analogous closure, J, J, representing adjacent portions of the jamb or frame work thereof, and F, the floor, K, is a latch key lock of any well known type positioned in the door D, and accessible from the exterior side thereof, as shown more particularly in Fig. 2, of the drawings, by reference to which it will be seen that the key lock spindle terminal k, is in alignment and engagement with a slot a, formed for the purpose in the hub of the key shift arm A, as and for the purpose hereinafter set forth.

The operative parts of my lock mechanism are inclosed in a box casing B, and cover plate B′, the base plate b, of the box B, being screwed, as at b', b', b', b', to the door D, and the cover B′, to the box B, as at b^2, b^2, b^2, b^2.

A horizontally slidable bolt plate S, is supported on the back or base plate b, of the casing box B, by any suitable means, as by a stud b^3, in said base plate b, extending through a longitudinal slot s, formed for the purpose in the slide plate S, and by the engagement of its twin horizontal jamb bolts I, I, with bearing apertures b^4, b^4, in the guide flange b^5, which forms one end wall of the casing box B,—said twin jamb bolts I, I, being adapted for locking engagement, when shot with the door D, in closed position, with the jamb socket plate J^x, which is rigidly secured to the vertical jamb J, of the door in a position coincident with said guide flange b^5, of the casing box B, when the door is closed, as will be obvious by reference more particularly to Figs. 1, 2, and 4, of the drawings.

Said horizontal twin jamb bolts I, I, are rigidly mounted, as by screws i, i, on a bracket plate S′, which is in turn rigidly screwed to the end abutment s', of the slidable bolt plate S. The latter is formed at its other extremity with centrally convergent slots s^2, s^3, for engagement, respectively, with fulcrum studs on the inner ends of the supplementary vertical brace bolts U and L.

Thus a stud u, on the lower extremity of the upper supplementary brace bolt U, protrudes into the upper inclined slot s^2, of the slide plate S, said upper supplementary brace bolt U, extending through the top flange of the casing box B, and to a guide cap d, on the top of the door D, as shown in Fig. 1, of the drawings, said guide cap d, when the door is closed, being in alignment with the socket plate j, on the upper member of the door jamb J, so that when said supplementary brace bolt U, is shot upward, it will engage said socket plate j, thereby reinforcing and securing the upper portion of the door against external pressure.

In like manner, a stud l, on the upper extremity of the lower supplementary brace bolt L, protrudes into the lower inclined slot s^3, of the slide plate S, said lower supplementary brace bolt L, extending through the lower side flange of the casing box B, and to a guide cap d', on the bottom of the door D, also as shown in said Fig. 1, of the drawings, said guide cap d', when the door is closed, being in alignment with the mortise plate and socket f, countersunk in the floor F, so that when the said supplementary lower brace bolt L, is shot downward it will engage with said mortise plate and socket f, thereby reinforcing and securing the lower portion of the door against external pressure.

Thus the two supplementary brace bolts U and L, are adapted to positively secure the door D, in closed and bolted position independent of, although co-related to, the horizontal twin jamb bolts I, I, and intervening mechanism. In the accompanying drawings these supplementary brace bolts U and L, are shown as positioned and operating vertically, although they may be otherwise positioned and operated with substantially like results in adapting them to special requirements of use, as may be found most expedient.

A ward lock plate W, is rigidly attached by means of screws w, w, to female-threaded bosses b^2, b^2, on the base plate b, of the casing B, said bosses b^2, b^2, being protuberant from said base plate b, a sufficient distance to position the ward lock plate W, beyond the plane of the bolt slide plate S. In this connection it may be explained that the nuts k', k', engage the inner ends of the bolts k^2, k^2, by which the exterior latch lock K, is secured in position on and in the door D, as will be understood by reference more particularly to Figs. 2, 3, 4 and 6, of the drawings, the said bolts k^2, k^2, extending through apertures b^6, b^6, formed for the purpose in the aforesaid base plate b, of the casing B.

b^7, Fig. 25, is the aperture in the base plate b, of the casing B, through which the hub a', of the key-actuated shift arm A, protrudes, the outer extremity of said hub a', being supported in the central circular bearing aperture w', of the ward lock plate W, as shown more particularly in Fig. 2, of the drawings, in connection with Fig. 12, thereof. The said bearing aperture w', in the ward lock plate W, also affords support for the inner end of the hub h, of the hand shift arm H, the outer extremity of said hub h, being seated and supported in a bearing aperture b^x, formed for the purpose in the

casing cover B′, as shown in Fig. 2, of the drawings. A manipulative knob or handle H′, is rigidly attached to the protuberant outer extremity of said hub h of the hand shift arm H, also as indicated more particularly in said Fig. 2, of the drawings.

The ward lock plate W, is formed with ward notches or recesses w^2, w^3, in its lower edge, for alternate engagement with the upper end of a spring latch E, slidably mounted on the bolt slide plate S, between lateral shoulders s^4, and s^4,—said spring latch E, being provided at its upper extremity with a pin e, which protrudes into the slot h', in hand shift arm H.

The lower end of the spring latch E, is formed with a recess e', (Fig. 14) for the reception of one end of a retractile spring e^2, the coil of which is supported on the shank of a screw s^4, engaging with a female screw thread s^5, (Fig. 18) formed for the purpose in the slidable bolt plate S, the other end of said retractile spring e^2, bearing against the abutment s', on said slidable bolt plate S, as shown in Figs. 3, 4 and 7, of the drawings. This retractile spring e^2, tends constantly to thrust the latch E, upward with its upper extremity in engagement with the stationary ward plate W, and normally in one or the other of the wards w^2, w^3.

The spring latch E, may be depressed against the resistance of the retractile spring e^2, by means of either the hand shift arm H, or the key-actuated shift arm A, as the case may be. That is to say, as either is shifted from right to left, or vice versa, the arc of the circle traversed by the extremity of each as it passes beyond the medial line coincident with the axes of support, will push the said spring latch E, downward sufficiently to clear either of the wards w^2, w^3, of the stationary plate W, and shift the slidable bolt plate S, in one direction or the other,—the reciprocative movement of the bolt plate S, thus provided for being attained in the one case by reason of the contactual engagement of the end of the hand shift arm H, with the push shoulder e^2, on the front of the spring latch E, and with the lateral shoulders s^4, s^4, on the slidable bolt plate S, and in the other case by reason of the contactual engagement of the end of the key-actuated shift arm A, with the push shoulder e^3, on the rear side of said spring latch E, and with the side walls of the slot s^x, in the slidable bolt plate S, as will be understood by reference more particularly to Figs. 18, 20, 26 and 27, of the drawings.

The alarm-actuating rock lever R, is fulcrumed on the shank of a screw r, the threaded end of which engages with a female threaded boss b^8, on the base plate b, of the casing box B, the upper extremity of said alarm-actuating rock lever R, being formed with a push finger r', which is positioned in contactual relationship (see Fig. 1) to the release means n, of the otherwise automatic alarm sounding device N, the latter being of a noise-producing spring-operated type well known commercially, or any equivalent thereof adapted to the purpose.

The said alarm-actuating rock lever R, is also formed with a lateral push arm r^2, the free end of which, when the bolts are shot, as in Figs. 4 and 7, of the drawings, contacts with the protuberant lower portion e^x, of the rock lever. Hence, under the conditions shown particularly in Fig. 4, any attempt to force back either or any of the aforsaid bolts by means other than the manipulation lock mechanism herein designated, will result in pressure exerted upon and through the slidable bolt plate S, and by it to and through the spring latch E, to cause the latter to rock the alarm-actuating lever R, sufficiently to contact with and press against the alarm releasing means n, thus insuring the setting off of the alarm, and fustrating surreptitious entrance through the door or other closure thus protected. This action of back pressure on the slidable bolt plate, etc., while the bolts are shot is illustrated in Fig. 7, taken in conjunction with Figs. 1 and 4, of the drawings.

But this operative co-relation of alarm-actuating rock lever R, and spring latch E, under the circumstances of unlawful tampering with the bolt means, as above intimated does not interfere with the legitimate function and operation of the lock mechanism, because, when the spring latch E, is depressed by either the hand shift arm H, or by the key-actuated shift arm A, the protuberant lower portion e^x, of the spring latch E, is below the push arm r^2, of said alarm actuating rock lever R, and hence the slidable bolt plate S, may be freely reciprocated by either the key actuated shift arm A, or the hand shift H, without interference with the alarm sounding means.

What I claim as my invention and desire to secure by Letters Patent, is:—

1. In a locking mechanism of the character described, the combination of a slidable bolt plate, twin horizontal jamb bolts slidable with said plate, supplemental vertical brace bolts, said plate having centrally convergent slots, the vertical bolts having fulcrum studs engaged one in each of said slots, and means co-operating with the brace locks for securing the upper and lower portions of the door against external pressure.

2. In a locking mechanism of the character described, the combination of a slidable bolt plate, twin horizontal bolts slidable with said plate, supplemental vertical brace bolts, said plate having centrally convergent slots, the vertical bolts each having a fulcrum stud, one working in each of said slots, and a spring pressed latch slidably

mounted on said bolt plate, and a stationary ward plate for engagement with said latch.

3. In a locking mechanism of the character described, the combination of a slidable bolt plate, twin horizontal bolts slidable with said plate, supplemental vertical brace bolts, said plate having centrally convergent slots, extended outwardly from the centre of the plate, the vertical bolts having fulcrum studs one working in each of said slots, a spring pressed latch slidably mounted on said bolt plate, a stationary ward plate for engagement with said latch, and multiple means for releasing said latch from said plate.

JOHN BARON.