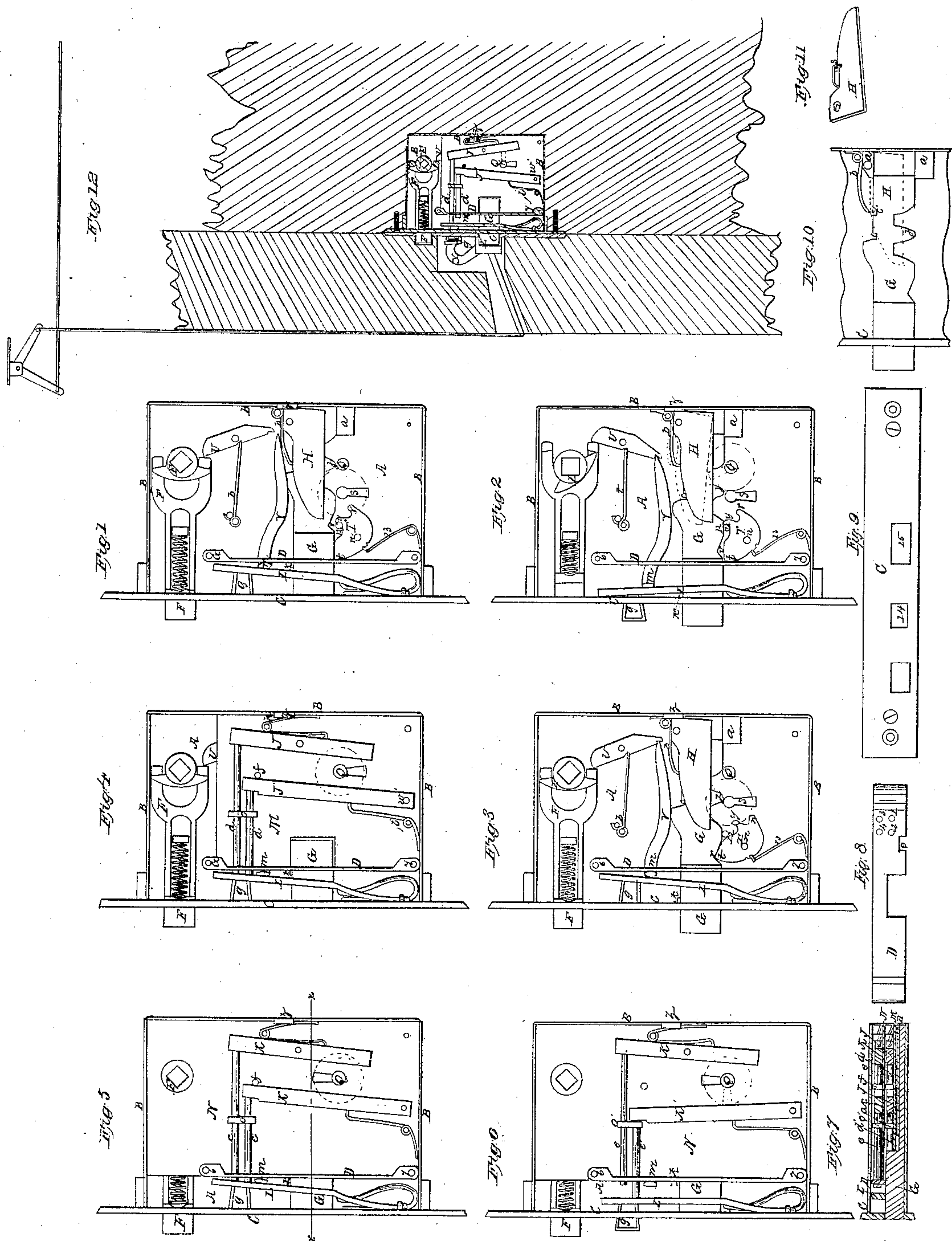


*Alarm Lock,*

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N<sup>o</sup> 38,556.

*Patented May 19, 1863.*



Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN ALARM-LOCKS.

Specification forming part of Letters Patent No. 38,556, dated May 19, 1863.

*To all whom it may concern:*

Be it known that I, GEORGE N. BRUSTER, of Factoryville, in the county of Tioga and State of New York, have invented a new and useful Improvement in Burglar-Alarm Locks; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan of the locking compartment of my improved mortise alarm-lock with the lock-bolt G drawn back and the remaining movements in their proper position relative thereto when the door is unlocked. Fig. 2 is a view of the same compartment, showing the various movements of the lock contained therein in the position which they will properly assume when the bolt G is shot forward and the door locked by a key from the outside, and illustrating also the manner in which the latch-bolt is thereby thrown into connection with the alarm apparatus. Fig. 3 also represents the locking-compartment, but gives a plan of the position of the parts thereof as they appear when the bolt G is shot forward by a key from the inside of the door through the inner key-hole, S. Figs. 4 and 5 are views of the first and second alarm compartments of my improved lock, illustrating the devices by which the movement of a key introduced from the outside of the door springs the alarm. Fig. 6 is an additional view of the second alarm-compartment, Fig. 5, showing the position of the alarm levers and rods when operated upon by the key. Fig. 7 is a transverse section of lock through the line *xx* of Fig. 1. Fig. 8 is a side view of the outer face of the upright guiding-plate D of Fig. 1 in the lock. Fig. 9 is a front view of the outer face of the casing of my improved mortise-lock. Fig. 10 is a view of a detached portion of the lock, showing the arrangement and operation of the holding plate or lever H upon the lock-bolt G. Fig. 11 is a perspective view of the under side of the holding plate or lever H, showing the arrangement and position of the holding-tooth *s* thereon; and Fig. 12 illustrates the manner of arranging the lock in the door and connecting it with an alarm apparatus.

The arrangement of my improved mortise alarm-lock is such that when placed in its proper position within the door, if the bolt is

shot forward and the door thereby fastened and secured, any movement of the latch-knob or any attempt to unlock the door from the outside will at once spring an alarm-bell, which may be placed in any part of the house. The lock is divided vertically into three principal compartments, separated from each other by division-plates M and N, Figs. 4, 5, and 7, and is arranged and inclosed within a metallic casing, Fig. 1, made in the usual manner. The bed-plate or inner side, A, Figs. 1, 2, and 3, of the lock, as well as the edges of the top, bottom, and rear casing-plates, B B B, are seen in Figs. 1, 2, and 3. The remaining (outer) side plate, A', corresponding to the plate A, and which completes the casing, is shown only in Fig. 7 of the accompanying drawings, being removed in the remaining figures to illustrate the interior arrangements of the lock.

In the upper part of my lock is arranged an ordinary forked latch-bolt, F, controlled by a spiral spring and actuated by a tumbler, E, as is clearly illustrated in Figs. 1 and 2.

The front end of the lock-bolt G of my improved lock is supported by means of a notch in the vertical guiding-plate D, Fig. 8, and passes out through an aperture, 15, in the facing-plate C, Fig. 9, of the lock-casing. The after flat end of the bolt is supported and slides between guides *a a*, Fig. 10, which embrace its upper and lower edges or sides. The movements of the lock-bolt are controlled and limited by the holding plate or lever H, Figs. 2 and 10, and by a small stop, *k*, upon the upper side of the front end of the bolt G. This holding plate or lever H rests against the outer side of the flat rear end of the lock-bolt G, and a portion of its upper edge is turned in to form a tooth, *s*, Fig. 11, which catches in notches *c* and *c'*, formed for the purpose in the upper side of the bolt. It vibrates upon a pivot passing through an aperture pierced in its upper remote corner, and its toothed edge is kept securely against the side or top of the bolt by means of a small spring, *b*.

The division-plate M, which separates the locking-compartment, Fig. 1, from the first alarm-compartment, Fig. 4, fits closely to the rear and lower sides, B B, of the casing or box of the lock and rests against the guiding-plate D and the various pivot-pins in the locking-compartment. Its upper edge is made to terminate near the upper end of the



guiding-plate D, so that it shall not interfere with the latch-bolt F, and it is notched to receive and embrace the enlarged front end of the lock-bolt G. Against this division-plate M two vibrating alarm-levers, J and J', are pivoted at W and W', on either side of the key-hole Q, at such a distance therefrom as to be actuated and moved by the revolution of a key therein, as indicated by the red dotted lines in Fig. 4. The movements of these alarm-levers J and J' are controlled by the springs *h* and *i*, and limited in the one, J, by the retaining-pin of the spring *h*, and in the other J' by the stop *f*. By means of rods *d* and *d'* the movement of either of the levers J or J' is communicated to an alarm spring-lever, L, which is secured at its lower extremity to the inner side of the face *c* of the casing of the lock, and plays or vibrates within the space between the guiding-plate D and front plate, C, of the lock-casing, as is clearly illustrated in the accompanying drawings. The rods *d* and *d'* pass longitudinally through apertures 1 and 2, Fig. 8, pierced to receive them, in the guiding-plate D and in the supporting-ear *o*, as seen in Fig. 4.

The second alarm-compartment, formed in the lock by the additional division-plate N, Fig. 5, is precisely similar in its arrangement to the first above described. A second series of vibrating alarm-levers, K and K', being arranged to operate upon the alarm-lever L through rods *e* and *e'*, passing through apertures (3 and 4 of Fig. 8) in the guiding-plate D, and supported by similar apertures in a supporting-ear, *o'*. The division-plate N extends, however, over and covers both the enlarged portion of the lock-bolt G and the latch-bolt F, and hence fits closely within the three sides B B B of the casing and the inner side of the guiding-plate D, as illustrated in Figs. 5 and 6. The outer plate of the lock A', which is represented in Fig. 7 of the drawings, being fitted under the lug or lip *z*, formed upon the edge of the rear end of the plate of the lock-casing and fastened by screws driven into the screw-apertures 6 and 7 in the guiding-plate D, (which is itself secured in a similar manner to the opposite bed-plate A,) securely incloses and retains the several parts of the lock in their proper positions. The latch-bolt of the lock and knob of the door are placed in connection with the alarm apparatus by the instrumentality of a rocking lever, U, Figs. 1, 2, and 3, and a curved sliding arm, V. The upper arm of the lever U is kept in position against the lower arm of the forked latch-bolt F, by means of a small spring, *l*, and its lower arm is notched to catch the pointed inner end of the curved sliding arm V. The outer end of the sliding arm V passes through a notch, 9, cut in the side of the guiding-plate D, (see Fig. 8,) and is turned up to form an angular projection or stop, *m*, which prevents it from being forced back into the locking-compartment by the movement of the alarm-lever L. Its inner end (which extends

back into the locking-compartment) rests upon a projection formed upon the upper edge or side of the lock-bolt G, Fig. 1, and is so curved downward, as shown in the drawings, as that its point of support upon the projection of the bolt lies, when the bolt is shot back and the door unlocked, between its point of greatest curvature and the lower end of the rocking lever U. In this position its end rests too low to be caught by the notch in the lever U, vibrating under the influence of the movement of the latch-bolt F; hence when the door is unlocked no connection exists between the door-knob and the alarm apparatus. When, however, the bolt is moved forward and the door locked, the projection on the lock-bolt G, sliding against the curved face of the arm V, gradually bears it up, until the point of greatest curvature rests upon the projection, and the end of the arm is thereby thrown up within the sweep of the lever U, and is thereby made to communicate the motion of the lever to the alarm-lever L.

The key-holes Q Q Q, through which the key is introduced into the locking-compartment from the outside, are made in each division-plate alternately above and below the circular aperture, which receives the end of the key-shank, and are in the same register throughout all the plates; hence in reaching the locking-compartment from the outside of the door a semi-revolution of the key must be made in each of the alarm-compartments to pass it through the next division-plate. In making this partial revolution the key must necessarily move one of the alarm-levers and strike the alarm. When the key has reached the locking-compartment its operation is simple. By its revolution the holding-plate or lever H, Fig. 2, is elevated sufficiently to raise the tooth *s* in its upper edge out of the notch *c* in the bolt, and the bolt G, being thus released, is shot forward by the action of the key upon the projection *j*. By the movement of the lock-bolt G the sliding arm V is thrown up, and the latch-bolt thus placed in direct communication with the alarm, so that any movement of the door-knob and latch-bolt will cause it to strike. When the lock-bolt G is thus thrown forward, the tooth *s* of the holding-plate H drops into a second notch, *c'*, formed for the purpose upon the upper edge of the bolt, and thus secures it in that position until it is released by a proper movement of the key. To reach the bolt and lock or unlock the door from the inside, a distinct key-hole, S, is made in the inner or bed plate, A, and in order to prevent the movement of the lock-bolt or unlocking of the door from the outside when it has been locked from the inside a cam guard or lever, T, may be added to the lock. This cam is made in the shape shown in the accompanying drawings, Figs. 1, 2, and 3. When the lock-bolt G is shot forward by a movement of the key introduced into the locking-compartment from the inside of the door through the key-hole at S,



the key, striking in its revolution the projection *r* upon the cam, will cause it to turn (upon its pivot at *n*) until its opposite projection *t* catches in the notch *v* formed in the lower side of the lock-bolt *G* for this purpose, and securely holds the bolt until a reverse movement, by pressing against the projection *y* of the cam, throws the end *t* out of its engaging notch *v*, and releases the bolt. The movements of the cam-guard *T* are limited by the stop 12, and controlled by a wire spring, 13. The alarm-lever *L* is fitted with an alarm-tooth, *g*, which passes through an aperture, 14, formed for the purpose in the face of the casing *C*, Fig. 9. When the lever is thrown back and at rest, the outer end of the tooth is flush and even with the exterior surface of the front plate, *C*, of the casing, but when the lever *L* is pushed forward by the action either of the key-levers *J J'* or *K K'*, or of the sliding arm *V*, the tooth *g* projects outwardly and when the door is shut strikes against the end of the upper arm of a crank or angular lever, *X*, Fig. 12, fitted within the frame of the door, as represented in Fig. 12. A wire attached to the lower arm of this lever *X* and carried in the usual manner to any desirable point in the house, being pulled by the movement of the lever under the influence of the pressure exerted upon its upper arm by the tooth *g*, raises and releases a pawl which controls an ordinary alarm apparatus. The alarm, operated by a weight or spring, is thus allowed to ring so long as the pawl is kept elevated by the tension of the wire.

An electric circuit communicating with an alarm apparatus may be substituted for the arrangement of wires and levers illustrated in the drawings and the movement of the lever *X* be made to connect and complete the electric circuit and thereby ring the alarm.

In a lock constructed with two alarm-compartments, Figs. 4 and 5, as herein described, the door cannot be locked or unlocked from the outside without ringing the alarm twice; but the operation of the alarm from a movement of the key in either compartment can be at pleasure avoided by simply taking off the front casing-plate, *C*, of the lock and removing either set of the rods *d d'* or *e e'*, which project through the apertures 1 2 and 3 4 in the guiding-plate *D*, and which may be done without deranging any other movements of the lock.

Having thus fully described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

1. Combining an alarm-lever, *L*, with a lock in such a manner that it can be operated upon by the key of said lock through the medium of either single or double sets of lever and sliding connections, substantially in the manner herein set forth.

2. Arranging the rocking lever *U* and sliding arm *V*, or their equivalents, in such a position relatively to the latch-bolt *F* and lock-bolt *G* of any suitable lock as that the outward and inward movements of the lock-bolt will respectively connect and disconnect the alarm-lever with the latch-bolt.

3. Combining with each other the several parts and movements of an alarm-lock, as hereinbefore described, when said parts or movements are formed and arranged substantially in and for the purpose herein set forth.

The foregoing specification of my improved mortise alarm-lock signed by me this 24th day of March, A. D. 1863.

GEO. N. BRUSTER.

In presence of—

A. G. ALLEN,

O. H. P. KINNEY.