(Model.)

H. GILLES & D. STERN.

ALARM LOCK.

No. 382,971. Patented May 15, 1888.

Fig. 1.

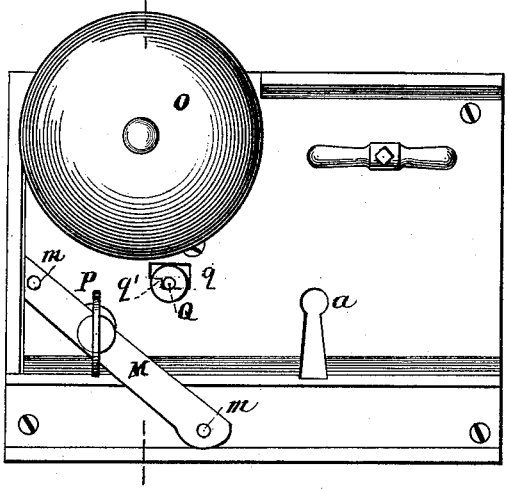


Fig. 7.

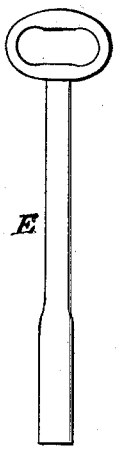


Fig. 6.

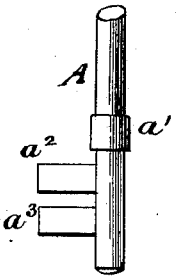


Fig. 2.

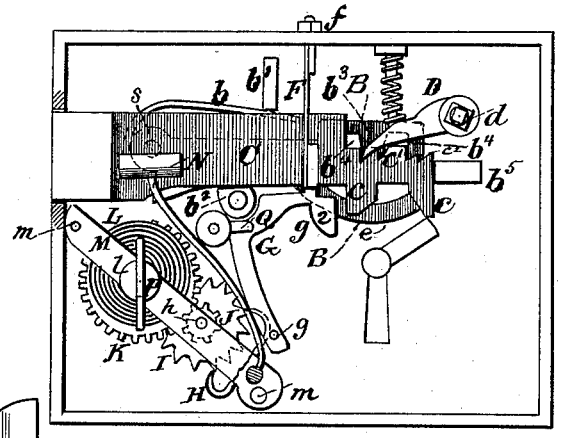


Fig. 8.

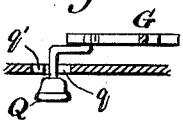


Fig. 3.

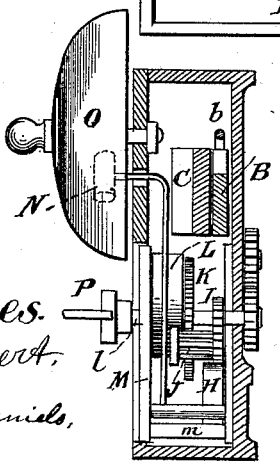
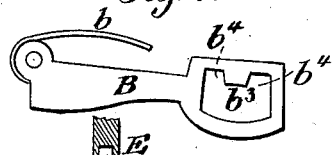


Fig. 4.



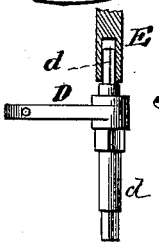


Fig 5.

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UNITED STATES PATENT OFFICE.

HERMAN GILLES AND DAVID STERN, OF MEADVILLE, PENNSYLVANIA.

ALARM-LOCK.

SPECIFICATION forming part of Letters Patent No. 382,971, dated May 15, 1888.

Application filed May 13, 1887. Serial No. 238,045. (Model.)

To all whom it may concern:

Be it known that we, HERMAN GILLES and DAVID STERN, of Meadville, in the county of Crawford and State of Pennsylvania, have invented an Improved Dead and Alarm Lock, of which the following is a specification.

The invention will first be described in connection with the drawings, and then pointed out in the claims.

Figure 1 of the drawings is an elevation showing the inner side of lock; Fig. 2, a similar view of the outer side with the covering-plate removed. Fig. 3 is a vertical section on line *x x* of Fig. 1. Figs. 4, 5, 6, and 7 are detail views. Fig. 8 illustrates in plan the arm G, provided with arm Q, herein described.

In the drawings, A represents the main key, which enters the key-hole *a* up to the collar *a'*. The said key has two parallel bits, a^2 and a^3, of which the bit a^2 lifts the spring-pressed pivoted bolt-lock B, while the bit a^3 moves against one or the other of the downward projections *c c* of the main bolt C as said bolt is shot or retracted.

The bolt C and bolt-locking piece B are arranged alongside of each other, as shown, the piece B being pivoted at *s* and bolt C moving between the projections *b'* and b^2. On the bolt C are formed ratchet-teeth c^2, with which a spring-pawl, D, engages, said pawl being on a shaft, *d*, the ends of which are squared to enter an additional key, E, by means of which the pawl is raised. From the outside the key E is used at the same time with the main key A, as the pawl D must be lifted from bolt C before the bolt can be retracted.

The piece B is pressed downward by the spring *b*, which extends under and bears against the projection *b'*. It also has an opening, the upper part of which is divided by a projection, b^3, forming notches b^4 to receive the tooth *c'*, which projects laterally from bolt C, and when the latter is shot the tooth *c'* enters the forward notch b^4, and when retracted the tooth enters the rearward notch, the bolt being thus locked forward or backward. This necessitates the lifting of the piece B from engagement with bolt C before the bolt can be moved in either direction, and such lifting is effected as the key A is turned by the bit a^2 of the key bearing upward against the lower curved bar, *e*, of piece B. At the same time the other bit, a^3, moves in between the projections *c* of the bolt, bearing against one of them, the beveled edges of the projections allowing the movement of bit a^3 between them. The stop b^5 on the front plate limits the rearward movement of the bolt C.

G indicates a crooked arm, somewhat in the form of an inverted L, which is carried by a spring, F, which is fastened to the casing at *f*. The said arm G has at its lower end a laterally-projecting stud, *g*, which bears against one end of the pallet H, which engages with a spur-wheel, I, which is thus locked until the stud *g* is raised from the pallet, as hereinafter stated. On the same shaft with spur-wheel I is a pinion, J, that meshes with a gear-wheel, K, on the shaft *l*, which is journaled in the casing, and in a plate, M, supported by the pillars *m*. To the shaft *h*, which carries the pallet H, is secured the rod of the hammer N, the rod being bent and extended through an opening in the casing to hold the hammer in position to strike the bell O. On shaft *l* is secured a coil-spring, L, which actuates the alarm mechanism, the said shaft being extended and provided with a thumb-piece, P, by means of which the spring may be wound up after the manner of winding the spring of a clock.

When the spring-arm G is moved from the pallet H, as hereinafter stated, the spring L, through the mechanism referred to, causes the pallet to vibrate, raising and bringing down the hammer N, which strikes the bell O, thus sounding an alarm.

The arm G has on its upper part a downward projection, g^2, and the arm is so arranged in position in relation to the parts B and C that when the key A is turned in the lock the bits a^2 and a^3 act against the piece B and bolt C, respectively, but do not come in contact with the projection g^2 of arm G, the space between the two bits forming a passage for the projection.

Q indicates an arm which extends from the spring-arm G, and, taking the form of a crank, projects through an aperture, *q*, in the inside case-plate, and when arm G is in its usual position the arm Q rests at the forward end of the aperture and above the shoulder *q'*; but when arm G is moved from the pallet H the arm Q is consequently drawn rearward and falls

into the lower part of the aperture q, where it is retained by the shoulder q', and thus serves to hold arm G, with stud g, from contact with the pallet.

Should an effort be made to pick the lock or to unlock with a key different in construction from the key A, the bit of such key in turning would be very likely to impinge against the projection g^2, and thus move arm g from the pallet, when the latter would instantly be caused to vibrate and the hammer N to repeatedly strike the bell and sound an alarm, and the arm Q resting against shoulder q' and preventing arm G returning to the pallet, the alarm would be continuous until the spring L ceased to actuate the pallet.

We claim—

1. In a lock, the lock-bolt provided with beveled projections c and laterally-projecting tooth c', and pivoted piece B, provided with curved bar e and notches b^4, the said bolt and the piece B being placed in parallel planes in position to be operated by a key having bits a^2 a^3, in combination with spring-arm G, provided with projection g^2 in position near said bolt and piece B, and in a plane between the said parallel planes, and adapted to engage with pallet H, and an alarm mechanism provided with a pallet and an actuating-spring, substantially as and for the purposes described.

2. In combination with a lock-casing provided with an aperture, q, formed with a shoulder, q', a spring-arm, G, adapted to connect with an alarm mechanism and provided with a projection, g^2, which is held in position, as shown, to connect with an ordinary key in the lock, and a bent arm, Q, extending through aperture q, and an alarm mechanism, substantially as set forth and described.

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