G. L. Damon,

Safe Bolt.

No. 102,780. Patented May 10. 1870.

Fig. 1.

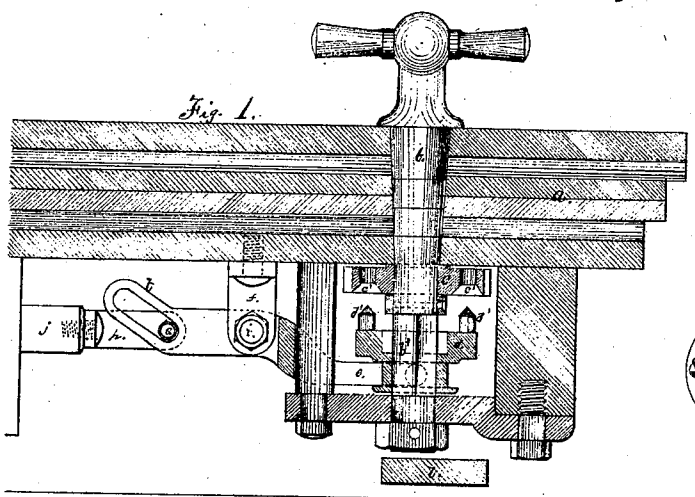


Fig. 3.

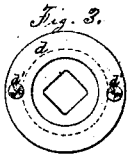
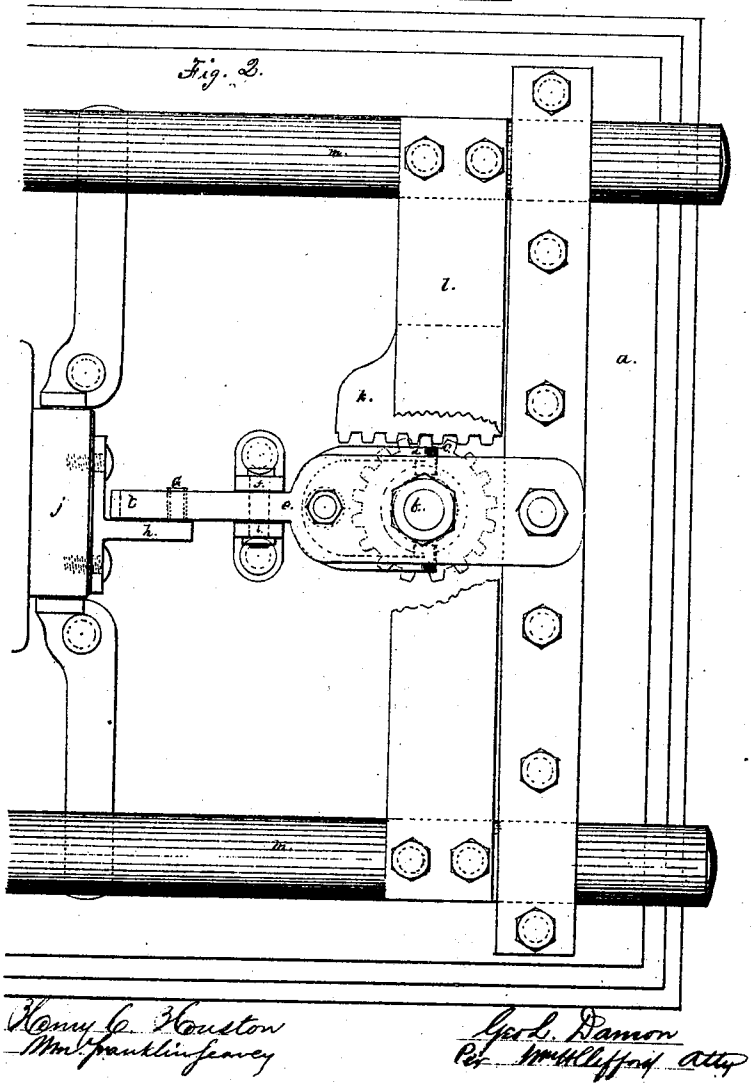


Fig. 2.



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GEORGE L. DAMON, OF PORTLAND, MAINE.

Letters Patent No. 102,780, *dated May* 10, 1870.

IMPROVEMENT IN BOLTS FOR SAFES, &c.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, GEORGE L. DAMON, of Portland, county of Cumberland and State of Maine, have invented a new and useful improved Detachable Revolving Shaft and Gear for Safes, &c.; and I hereby declare the following to be a full and exact description thereof, which will enable others to make and use my invention, reference being had to the accompanying drawings forming a part of this specification, in which—

Figure 1 is an edge section of a safe door, with my improvement thereon;

Figure 2 is an inside view of a door, with an end view of my improvement in the shaft, and a view of the bolts of the safe operated by it; and

Figure 3 is a side view of the sleeve.

In most safes there is a shaft, with a knob projecting from the outside of the door, by which, when the safe is unlocked, the bolts are thrown. Such a one is intended to be illustrated by fig. 1 in the accompanying drawing.

When the bolts are thrown and the safe locked, however, this shaft and knob still have a bearing upon and connection with the bolts, and, by grasping the knob in the hand, the bolts may be felt by the person so doing. This is generally by certain points or studs which fit into holes in the arm that moves the bolts, the same fitting loosely, so that when grasped by the hand a slight vibrating motion may be given to the knob. This has been proved to have several disadvantages. In case of a burglar attempting to force the safe or pick its lock he can always feel the bolts by means of this shaft. He can then, by exerting some little force in attempting to turn the shaft, break off the points or projections, and thus put the owner to great expense in reopening his safe, since the door must be removed in order to get in and make the necessary repairs.

My invention seeks to obviate this difficulty. With this view I make my shaft *b* capable of revolving freely in the wall of the safe, and having no operative connection with the bolts except when the lock-bolt is drawn back or when the lock is unlocked. But, when the bolt is thrown and the safe locked, the shaft will freely rotate in its socket, but no force from it can be exerted on the bolts. This, as will be seen, relieves the shaft from the liability to be broken by being tampered with, and deprives the burglar of a very important aid and means of forming his calculation in an attempt upon the safe.

The pinion *c* is fitted to the shaft *b* so as to turn freely thereon, and is held in place by the ring *n*, which is securely fastened to the shaft.

The teeth of the pinion *c* engage with the rack *k*, on the bar *l*, said bar being rigidly attached to the bolts *m*.

The sleeve *d* has a square opening through its center, which fits upon the square portion *b'* of the shaft *b*, so as to slide upon, but must turn with it.

It is also provided with projecting pins *d'*, which, when the sleeve is pressed against the pinion *c*, enter holes *c'* therein. Then, by turning the shaft, the pinion is made to revolve and actuate the bolts *m*.

This sleeve is operated by the pivoted lever *e*, which has a stud projecting into the sleeve, and so moving it up or back as the lever is moved.

The lever *e* is pivoted to the projecting piece *f* by the pivot *i*. This piece is bolted to the inside of the door, as illustrated.

The lever has also the inclined slotted piece *t*, in which moves the stud G, attached to the lock-bolt *h*.

Now, when the lock is unlocked or the bolt *h* drawn back, the stud G moving to the upper end of the slot in *t* swings the lever *e* on its pivot and slips the sleeve along the shaft *b'*, and causes the projections *d'* to enter the holes *c'* in *c*, by which position the bolts can be felt and moved by *b*. But after the bolt *h* is thrown and locked, the stud G moves to the position seen in fig. 1, and moves back the lever on its pivot, and the projections *d'* are withdrawn from the holes *c'*, thus allowing the shaft *b* to be turned at will, but not allowing it to effect or press up or exert any force upon the bolts. When unlocked, however, the sleeve is again slipped upon the shaft, the projections upon *d* are thrown into the holes *c'*, and then the bolts can be moved.

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

The combination, in a safe-lock, of the attaching and detaching device, to wit, the pinion *c*, the sleeve *d*, and pivoted slotted lever *e*, as described.

GEORGE L. DAMON.

Witnesses:

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