

(Model.)

B. DEMMING.

LOCK.

No. 303,498.

Fig. 1. Patented Aug. 12, 1884.

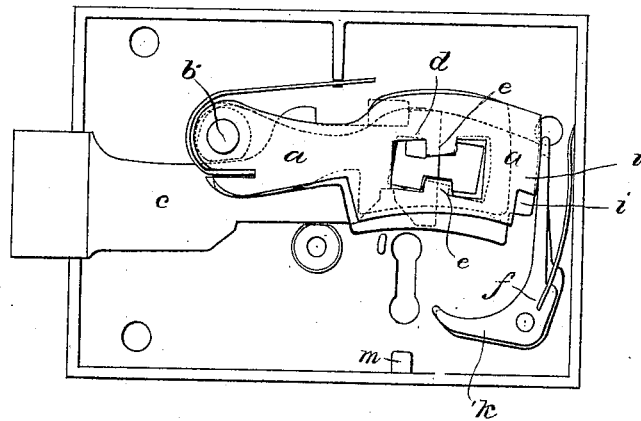


Fig. 2.

Fig. 5.



Fig. 6.

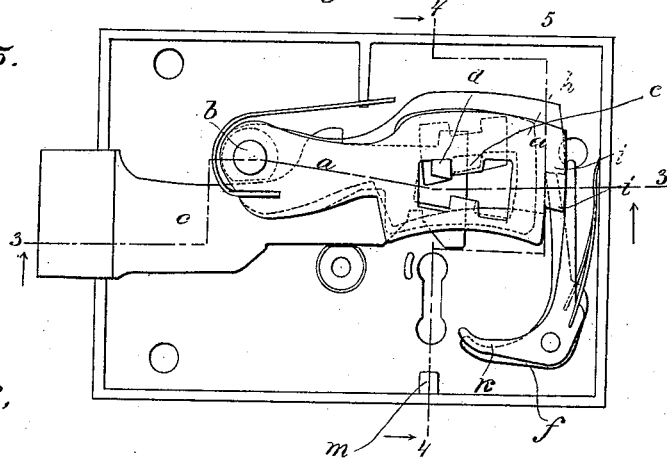
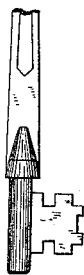
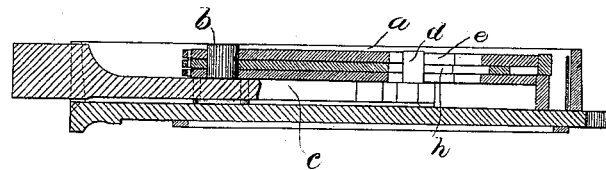
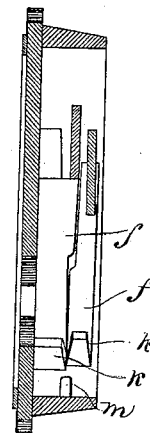


Fig. 3.

Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

BERNARD DEMMING, OF CLEVELAND, OHIO, ASSIGNOR TO ALFRED ADAMS,
OF SAME PLACE.

LOCK.

SPECIFICATION forming part of Letters Patent No. 303,498, dated August 12, 1884.

Application filed June 22, 1883. (Model.)

To all whom it may concern:

Be it known that I, BERNARD DEMMING, 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, of which the following is a specification.

The object of my invention is to prevent the picking of locks by false keys or other means, and to indicate to the rightful person who holds the proper key when the lock has been tampered with.

My invention is applicable to all of the ordinary forms of tumbler-locks now in general use, and the construction and application of the improvement is so simple that locks possessing the valuable characteristics of being secure against picking and tell-tales of attempts at picking may be produced with little, if any, additional expense.

In the accompanying drawings, Figure 1 is a front view with the cover removed, showing the bolt shot and the lock in a condition to be unlocked by the proper key; Fig. 2, a similar view showing one of the tumblers dogged after an attempt to improperly open the lock; Fig. 3, a vertical transverse section on the line 3 3 of Fig. 2; Fig. 4, a vertical transverse section; Fig. 5, a view, say, of the proper key to open the lock; and Fig. 6, a view of a key which will not open the lock but will cause a tumbler or tumblers to be dogged when the attempt is made.

The lock illustrated in the drawings is an ordinary tumbler-lock of the well-known Chubb type. The spring-actuated tumblers *a* are pivoted upon a common post, *b*, and are normally pressed toward the key-hole by their springs. The bolt *c* slides beneath the tumblers, and its post or stump *d* projects into the openings of the tumblers and can move back and forth therein between the tumbler-shoulders *e e* as the bolt is shot back and forth by a proper key, or will abut against the stops *e* and prevent the bolt being moved when the tumblers are not brought into the proper position by a suitable key.

My improved device consists, primarily, broadly, in a latch, detent, or pawl, or a series

of them, which locks one or more of the tumblers when it is moved past the proper point to permit the movement of the bolt, and means by which the detents may be tripped by acting directly on them to restore the lock to its normal condition. When any one of the tumblers is thus locked or dogged in such an abnormal position, it is obvious that the bolt cannot be retracted even by the use of the proper key. The dogs or pawls *f* are pivoted upon a suitable post in the lock-case and are pressed against the ends of the tumblers by springs. I prefer to employ a separate detent or pawl, *f*, for each alternate tumbler, and to shorten the intermediate tumblers so as to insure the proper movement of the pawl to dog the tumbler whenever it is raised.

In the accompanying drawings I have illustrated a lock having three tumblers, and have shown a pawl for dogging the bottom tumbler, and one for dogging the top tumbler. The middle tumbler, *h*, is shortened so as to insure the proper operation of the dogs. The ends of the upper and lower tumblers are provided with notches *i* so cut relatively to the dogs that any motion of either of the tumblers beyond that to allow the passage of the bolt permits the dog *f* to drop into the notch and prevent the opening of the lock by any key. The use, therefore, of a key having improper wards which raise the tumblers too far causes them to be locked in their elevated position. With a tumbler in this position the lock is not only secure against further attempts at opening, but is also in such a condition as to inform the proper person that an attempt has been made upon the lock.

In order to restore the lock to its normal working position, I provide the following means: The dogs *f* are extended at an angle from their pivot-pin toward the key-hole, and are so placed that when the proper key is put into the lock in an inverted position and turned until it comes against the under sides of the extensions *k* of the dogs, the latter may be turned upon their pivot and withdrawn against the force of their springs out of the notches of the tumblers, thus permitting the tumblers to return to their normal positions, when the

lock may be opened. In order to prevent any one from restoring the lock to its normal condition, and thus destroying the information that it had been tampered with, I place a post or gate, *m*, in such a position as only to permit the turning of the proper key to undog the elevated tumbler or tumblers. Several such parts may be used, if desired. This device gives absolute security against the picking of a lock, because it would be practically impossible for any one working upon the lock not to raise one or more of the tumblers slightly beyond the proper point, and thus cause it to be dogged in its elevated position. Obviously a dog may be provided for each tumbler, care being taken that the adjoining tumblers do not interfere with the free movement of either of the dogs relatively to its own tumbler. The notches in the ends of the tumblers can be so related to their dogs or detents that the tumblers will be dogged or locked at different points when moved past the proper position to permit the motion of the bolt—that is, one tumbler may be arranged to be locked the moment it passes the proper position, while another may be permitted to move some distance past the proper point before being locked. If all the tumblers were locked by the detents the moment they had passed the proper point, an expert picker of locks would then know that the tumblers were all arranged in order, and that they only needed to be brought down together to permit the withdrawal of the bolt; and by tripping the detent, as described, he might succeed in bringing the tumblers down without disturbing their relative position and opening the lock; but when they are dogged in different positions such an operation would be impossible.

The principle of operation herein set forth may be obviously applied to various styles of tumbler-locks differing in general organization from that herein shown.

I claim as my invention—

1. The combination, substantially as set forth, of the bolt, the pivoted tumbler or tumblers notched on their rear ends, and detents or dogs which engage with one or more of the tumblers when they are moved past the proper point to permit the passage of the bolt, and the extended ends of the dogs, by which the dogs may be thrown out of engagement with the tumblers, as described.

2. The combination of the lock-case, the bolt, the notched pivoted tumbler or tumblers, the detent or detents, lying in proximity to the key-hole and within the sweep of the key, which engage with one or more of the tumblers when they are moved past the proper point to permit the passage of the bolt, and the bearings or pivots of the detents, substantially as and for the purpose set forth.

3. The combination, substantially as set forth, of the lock-case, the bolt, the tumbler or tumblers, a detent or detents for locking one or more of the tumblers in an abnormal position when it has been moved past the proper point to permit the movement of the bolt, and a post or guard, *m*, on the lock-case, which permits only the proper key to be rotated to trip the detent, as described.

In testimony whereof I have hereunto subscribed my name this 14th day of May, A. D. 1883.

B. DEMMING.

Witnesses:

NELSON MOSES,
C. M. CORR.