

W. C. McGILL.
Padlock.

No. 213,918.

Patented April 1, 1879.

Fig. 1.

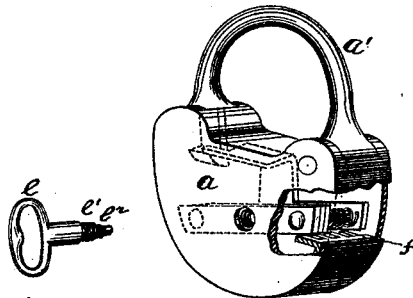


Fig. 2.

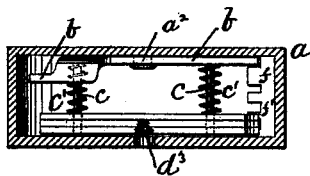


Fig. 3.

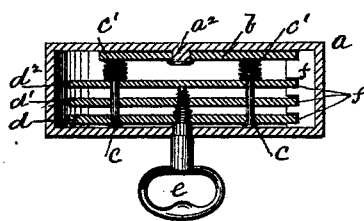
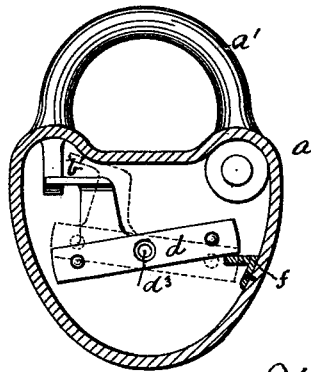


Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN PADLOCKS.

Specification forming part of Letters Patent No. **213,918**, dated April 1, 1879; application filed February 15, 1879.

To all whom it may concern:

Be it known that I, WILLIAM C. MCGILL, of Washington, in the county of Washington and District of Columbia, have invented certain new and useful Improvements in Locks; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in locks having a series of tumblers or plates operated by means of a screw-key.

In the drawings I have represented my invention as being applied to a padlock; but I do not confine its use to this special kind of lock. It may be applied to various other kinds of locks, as will be readily understood by locksmiths and all others familiar with such devices.

In the drawings, Figure 1 shows a side elevation with a portion of the casing broken away. Figs. 2 and 3 are cross-sections of the same, and Fig. 4 is an elevation with the side plate of casing removed.

a is the casing, having the hasp or bar *a'*, of ordinary form and arrangement. *b* is the lever-plate for operating the bolt *b'*. The plate *b* is pivoted to the casing *a* by, and turns on, the pin *a²*. To the end of the lever-plate *b* is attached the bolt *b'*, which, in the drawings, I have represented as being an extension of the said plate, turned inwardly and adapted to engage the notch in the end of the hasp *a'*; but it will be understood that the bolt may be made in a separate piece and pivoted to the end of said lever.

Secured to the lever *b*, and on opposite sides of the pivot *a²*, are the guides or pins *c c*, which extend across the casing *a*, and have small heads or flanges, which prevent the tumblers (hereinafter described) from sliding off. On these guides *c* are placed the springs *c' c'* and the tumblers *d d¹ d²*, which are moved back and forth thereon in the operation of unlocking and locking.

The outer plate, *d*, and the next plate, *d¹*, are provided with round key-holes *d³*, as shown,

within which are cut threads for the reception of the key *e*. The outer plate has a larger key-hole and has cut in it a coarser thread than is formed in the next plate. The object of this difference is that a different rate of movement may be given to the two tumblers when the key is being inserted.

The inner tumbler, *d²*, is, by preference, left without a key-hole, and is actuated by the end of the key turning against its side. It will be understood, however, that all the tumblers can be formed with key-holes and threads, and operated in the same manner by threads on the shank of the key.

The key *e* has its end tapered and made in sections of different diameter, the larger section, *e'*, having a thread cut on it to fit the thread in the key-hole in the outer tumbler, *d*, the next section having a thread and fitting the key-hole in tumbler *d¹*, and so on for any number of tumblers.

In the construction shown in the drawings I have represented the coarser thread on the larger section, *e'*; but this is done by preference only. The coarser thread may be cut on any desired section, according to the arrangement of the wards in the lock.

f is the ward-plate, having slots *f'*, which permits the turning of the tumblers when unlocking.

In Fig. 2 the device is locked. The key being turned into the tumblers, the latter are forced inward on the guides *c* until their ends come opposite the slots *f'* in the ward-plate *f*. The tumblers then turn down, and their movement downward turns the lever-bar *b*, which draws the bolt *b'*. A reverse movement of the key turns the bar *b*, and throws the bolt *b'* into the notch of the hasp and brings the ends of the tumblers above the ward-plate. As the key is removed the springs *c'* force the tumblers together, as shown in Fig. 2, against the flange on the ends of the guides *c*.

It will be readily understood that a series of two tumblers can be operated by a screw-key, the same as when there are three or more. If two should be used, the thread may be cut in the first only, and the end of the key made to move the second or lower one, as hereinbefore explained.

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

1. In a tumbler-lock, the series of tumblers constructed each with a round key-hole different in size, and having cut therein a screw-thread of different pitch or degree of fineness from each of the others, and operated by a key having sections and threads adapted to be turned into the several different tumblers, substantially as set forth.

2. The combination, with the bolt *b'* and lever *b*, pivoted to the casing *a*, and ward-plate *f*, having slots *f'*, of the guides *c* and the series of tumblers provided with female screws of different degrees of fineness and operated by a key, *c*, constructed as described, substantially as set forth.

3. The key *c*, constructed with a series of sections on which are formed threads of different degrees of fineness and adapted to be turned into and actuate a series of tumblers in a lock, substantially as set forth.

4. In a tumbler-lock, a series of tumblers, one or more of which have threaded key-holes, and all of which are actuated by a key, on the shank of which threads are cut corresponding to the threads in the tumblers, substantially as herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WM. C. MCGILL.

Witnesses:

P. B. TURPIN,

A. P. LACEY.