

W. D. SPENCER.
Pad Lock.

No. 201,564.

Patented March 19, 1878.

fig. 1

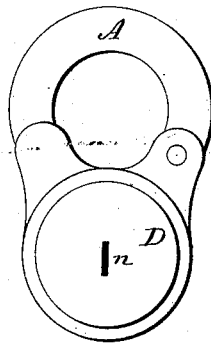


fig. 2

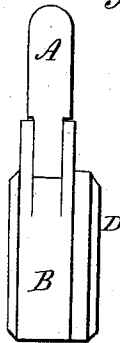
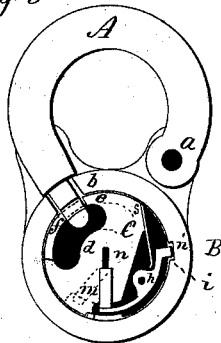


fig. 4



fig. 3



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UNITED STATES PATENT OFFICE

WILLIAM D. SPENCER, OF MIDDLETOWN, ASSIGNOR TO NORWALK LOCK COMPANY, OF SOUTH NORWALK, CONNECTICUT.

IMPROVEMENT IN PADLOCKS.

Specification forming part of Letters Patent No. **201,564**, dated March 19, 1878; application filed January 24, 1878.

To all whom it may concern:

Be it known that I, WILLIAM D. SPENCER, of Middletown, in the county of Middlesex and State of Connecticut, have invented a new Improvement in Locks; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, which said drawings constitute part of this specification, and represent, in—

Figure 1, a front view; Fig. 2, an edge view; Fig. 3, a horizontal section, and in Fig. 4 the key.

This invention relates to an improvement in that class of locks in which one cylinder is arranged within another, the inner containing several tumblers, which engage a slot or notch in the outer cylinder, and so that a key having an irregular edge introduced in the key-hole in the inner cylinder will force the said tumblers entirely within the inner cylinder, and disengage it from the outer cylinder. In the usual arrangement these tumblers have been substantially radial, with projections extending into the key-hole, over which the irregular edge of the key would pass to draw the several tumblers into the inner cylinder, and such substantially as known as the "Yale lock."

The object of the invention is to reduce the power or force necessary to draw the tumblers within the cylinder; and the invention consists in the construction and combination of mechanism as hereinafter described, and particularly recited in the claims.

In the illustration the invention is shown as applied to a padlock; but it will be understood that it applies equally to other classes of locks.

In this illustration, A is the shackle, hinged at one side to a pivot, *a*, the other end entering an opening, *b*, in the outer cylinder or case B, in substantially the usual manner. C is the inner cylinder, arranged in the outer cylinder B, and preferably extending outside, with a head, *d*, outside the case, by which the said cylinder C may be easily turned, the cylinder C being secured into the outer cylinder B so as to prevent its removal.

At the point adjacent to the opening *b* a recess, *d*, is made in the cylinder C, so as to form a hook or bolt, *e*, to enter a corresponding recess, *f*, in the end of the shackle A, as seen in Fig. 3, in which condition the shackle is engaged or locked, and if the cylinder C be turned as seen in broken lines, Fig. 3, then the shackle will be released or unlocked.

The turning of the cylinder C may be effected by means of the head D outside the case, by simply applying the thumb and fingers thereto.

To lock the cylinder C and prevent its disengagement from the shackle without the requisite key, one or more levers or tumblers, *h*, are hinged in the periphery of the cylinder C, each having a nose, *i*, to enter a corresponding recess, *n'*, on the inside of the outer cylinder.

When the cylinder C is in the locking position, as seen in Fig. 3, the tail of these tumblers extends around, preferably, to the vertical diameter of the cylinder. The levers may extend up to the key-hole, so that the key will act directly thereon, but preferably independent.

Pieces *m*, corresponding, respectively, to each of the levers, extend from the arm of the lever to the key-hole *n*.

The key is flat, as seen in Fig. 4, its edge irregular, and so that when inserted into the key-hole the projections will properly depress the pieces *m*, so as to turn their respective tumblers *h* sufficiently to take the noses *i* from the notch *n'* in the outer cylinder. In that condition the inner cylinder C may be turned by the fingers, as before described, or by the key, so as to unlock or disengage the shackle. When the cylinder is returned, so as to re-engage the shackle, the tumblers will re-engage the outer cylinder and hold it in its locked condition.

Suitable springs *s* are applied to the levers or tumblers to force an engagement of the cylinder with the case.

In other classes of locks the method of engaging the inner cylinder with the locking device will be of the usual arrangement—that is to say, that adaptation of the inner cylinder

or its connection with the locking device may be of any of the usual and well-known mechanisms.

The construction of the inner cylinder and its combination with the shackle may be used with tumblers of other form than such as hereinbefore mentioned.

I claim—

1. In a lock, the combination, substantially as described, of an outer cylinder having a notch or slot on its inner surface, an inner cylinder fitted to rotate within the outer cylinder, and having a key-hole longitudinally therein, a key having an irregular working edge, and one or more lever-tumblers arranged in said inner cylinder, in a plane at right angles to the axis of said cylinder, and so as to be moved with it, one point of the said levers

constructed to engage the said slot or notch in the outer cylinder, and one end of the said levers in such relative position to the key-hole that the insertion of the said key will cause the tumblers to be turned in the said plane and disengage the inner cylinder from the outer.

2. The combination of the outer cylinder, the shackle hinged thereto, the inner cylinder constructed so as to engage the shackle, and one or more tumblers arranged in said inner cylinder to engage the inner cylinder with the outer, and a key having an irregular edge, all substantially as described.

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Witnesses:

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