No. 649,255. Patented May 8, 1900.

C. O. NOACK.

PIN TUMBLER FOR CYLINDER LOCKS.

(Application filed Aug. 10, 1899.)

(No Model.)

Fig: 1.

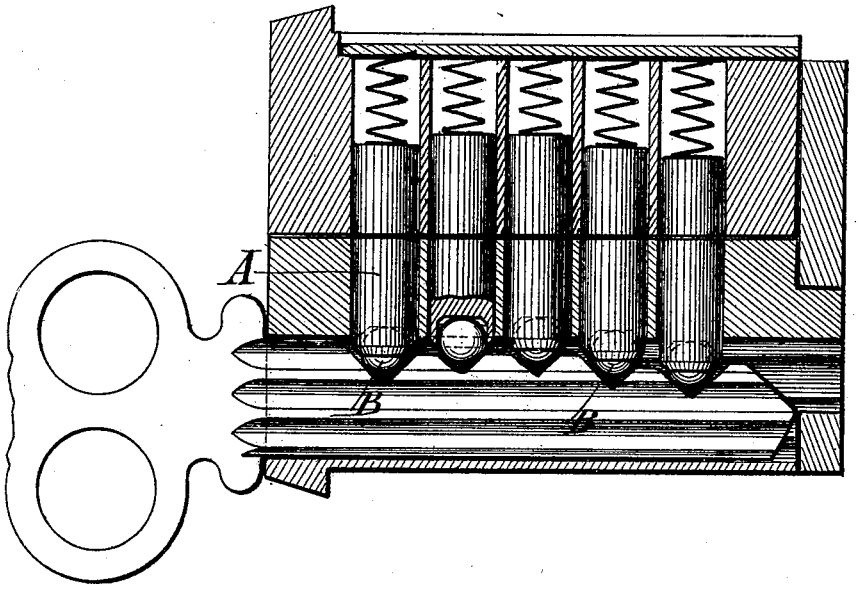


Fig: 2.

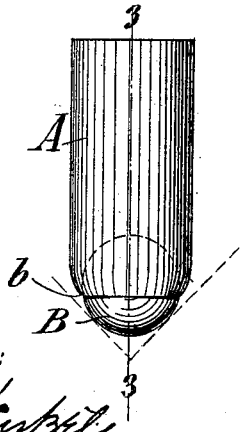
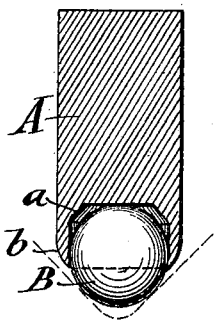


Fig: 3.



WITNESSES:

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CARL O. NOACK, OF STAMFORD, CONNECTICUT.

PIN-TUMBLER FOR CYLINDER-LOCKS.

SPECIFICATION forming part of Letters Patent No. 649,255, dated May 8, 1900.

Application filed August 10, 1899. Serial No. 726,748. (No model.)

To all whom it may concern:

Be it known that I, CARL O. NOACK, a citizen of the United States, residing in Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Pin-Tumblers for Cylinder-Locks, of which the following is a specification.

This invention relates to improvements in the construction of pin-tumblers for cylinder-locks, the object of the improvement being to facilitate the insertion or withdrawal of the key into or from cylinder-locks, so that the locks are operated in an easy manner, while the wear and friction are reduced to a minimum.

The invention consists, first, of a pin-tumbler for cylinder-locks having an antifriction-ball mounted in its lower end, and the invention consists, secondly, of a pin-tumbler for cylinder-locks having an antifriction-ball located in the recessed and contracted lower end of the tumbler.

In the accompanying drawings, Figure 1 represents a vertical longitudinal section of a cylinder-lock with my improved pin-tumblers. Fig. 2 is a side elevation of my pin-tumbler, drawn on a larger scale; and Fig. 3 is a vertical section of Fig. 2 on line 3 3.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents a pin-tumbler for cylinder-locks which is provided with a recess *a*, that is formed at its lower end. In the recess *a* is mounted an antifriction-ball B, which is retained by contracting the beveled edge of the lower end sufficiently to form a retaining-flange *b* for holding the ball in place. The recess *a* is formed in the lower end of the pin-tumbler by a suitable drill, after which the inner surface of the edge is beveled, so that when the ball B is inserted into the recess the lower edge can be readily contracted around the ball, so as to retain the same in place in the recess.

A cylinder-lock provided with pin-tumblers having antifriction-balls as described has the advantage that the key will work always upon antifriction-balls, so as to reduce the friction of the same when inserting or withdrawing the key, for the reason that the bittings of the key move over rolling surfaces, whereby the wear of the key is also greatly reduced.

My improved pin-tumblers can be used in any pin-tumbler cylinder-lock and can be operated by any form of key employed in such locks. The shape of the notches of the key may be varied, as well as the means by which the balls are held in place at the lower ends of the tumblers, as the invention consists mainly of a pin-tumbler having an antifriction-ball mounted in its lower end.

I am aware that it is old, broadly, to arrange ball-bearings in connection with the tumblers of a cylinder-lock, and I do not, therefore, broadly claim the same.

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

1. A pin-tumbler for cylinder-locks provided with an antifriction-ball mounted in its lower end, substantially as set forth.

2. A pin-tumbler for cylinder-locks, provided with an antifriction-ball located in a recess formed in the lower end of the tumbler, and retained by the contracted lower end of the tumbler, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

CARL O. NOACK.

Witnesses:
F. B. GURLEY,
WILLIAM F. WATERBURY.