No. 782,080. PATENTED FEB. 7, 1905.

W. C. STEPHENS.

PIN TUMBLER LOCK.

APPLICATION FILED APR. 16, 1904.

Fig. 1.

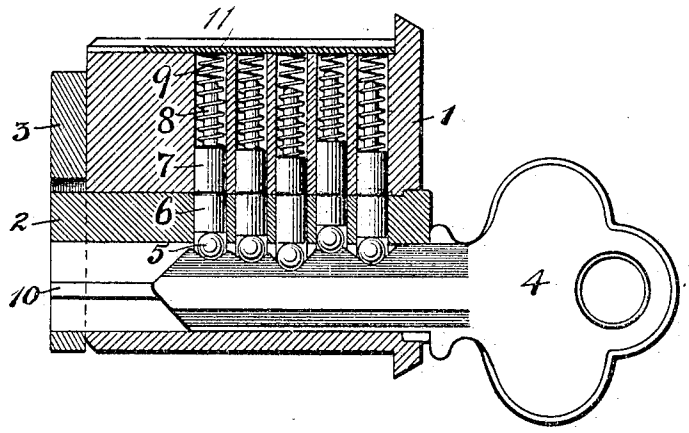


Fig. 2.

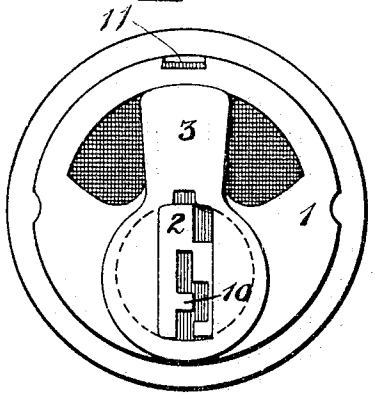
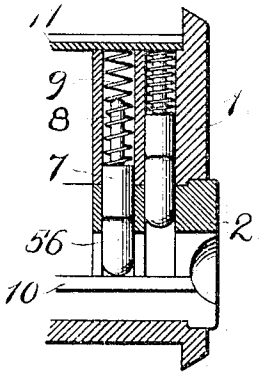


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM C. STEPHENS, OF CHICAGO, ILLINOIS, ASSIGNOR TO P. & F. CORBIN, OF NEW BRITAIN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

PIN-TUMBLER LOCK.

SPECIFICATION forming part of Letters Patent No. 782,080, dated February 7, 1905.

Application filed April 16, 1904. Serial No. 203,446.

To all whom it may concern.

Be it known that I, WILLIAM C. STEPHENS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pin-Tumbler Locks, of which the following is a full, clear, and exact description.

My invention relates to improvements in locks, and particularly to the construction of what is known as a "pin-tumbler" lock.

The object of the invention is to perfect the construction of a pin-tumbler lock and make it absolutely proof against "picking" or opening in any other way than by the use of the regular and proper key.

The invention will be readily understood from an inspection of the accompanying sheet of drawings, in which—

Figure 1 is a longitudinal cross-section of a lock embodying the improvements of my invention with the key in place for opening the lock in the proper manner. Fig. 2 is a rear end elevation of the lock. Fig. 3 is a fragmentary cross-section similar to Fig. 1, showing two pin-tumblers, one in the normal position and the other raised to its full height.

1 indicates what is termed the "cylinder" of the lock.

2 is the "plug."

3 is a "roll-back" secured in the usual manner to the rear end of the plug.

4 is a key for opening the lock.

The tumblers may be provided in any number desired and are arranged in a series of pockets in the cylinder transversely of the axis of the key-plug. I have shown in the drawings a lock with five pin-tumblers arranged in suitable pockets or chambers in the cylinder. The description applied to one tumbler will also apply to the others. The tumbler consists in the form shown in Fig. 1 of a ball 5, a pin 6, a driver 7, and a stop 8. The stop 8 extends from the driver in the nature of a projection or elongation. 9 is a spring which surrounds the stop portion and abuts against the top of the cylinder and against the tumbler for holding the parts in their operative position. In the particular construction shown the stop portion is formed integrally with the driver; but it may be a separate piece.

In Fig. 3 a fragmentary detail view is shown, in which the pin 56 is substituted for the ball and pin portions 5 and 6 of Fig. 1. The parts of one tumbler are shown with the pin resting on the ledge 10 with the key withdrawn. The other tumbler is raised as it would be in an attempt to pick the lock.

11 is a cover-plate which constitutes the top of the pin-chamber in the cylinder.

The length of the tumbler (regarding the stop 8 as a part thereof) will be seen to be greater than the length of the pin pocket or chamber in the cylinder. Hence said tumbler cannot be pushed out of the plug and entirely into the pocket in the cylinder. This is of particular importance in a lock in which a ball-bearing is provided at the lower end of the tumbler. In such a construction the tumbler is necessarily shortened to an extent corresponding to the diameter of the ball, and hence it would be all the more easy in the absence of the stop 8 to repress the tumbler and push it entirely into the pin-plug and so as to bring the joint between the ball and the pin portion of the tumbler coincident with the breaking-line between the plug and the cylinder. By my invention, however, this is absolutely prevented.

What I claim is—

1. In a lock of the pin-cylinder type, a cylinder, a plug, a series of chambers in said cylinder and said plug the said chambers being arranged transversely of the axis of said plug, tumblers in said chambers, each tumbler including a pin and a driver, springs for actuating said tumblers, and a stop arranged between the inner end of one of said tumblers and the end of its respective chamber, the length of said stop being sufficient to prevent the projection of the pin portion of said tumbler out of said plug.

2. In a lock of the pin-cylinder type, a cylinder, a plug, a series of chambers in said cylinder and said plug the said chambers being arranged transversely of the axis of said plug, tumblers in said chambers, each tumbler including a pin and a driver, springs for actu-

ating said tumblers, and a stop arranged between the inner end of one of said tumblers and the end of its respective chamber, the length of said stop being sufficient to prevent the projection of the pin portion of said tumbler out of said plug, and a ball at the lower end of each tumbler.

Signed at Chicago, Illinois, this 5th day of April, 1904.

WILLIAM C. STEPHENS.

Witnesses:
E. A. WOODS,
S. E. WHEELOCK.