F. I. KIMBALL & C. H. DAUM.

DUPLEX PIN TUMBLER LOCK.

APPLICATION FILED DEC. 23, 1911.

1,044,186. Patented Nov. 12, 1912.

Fig. 1.

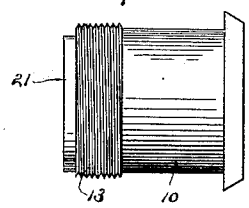


Fig. 2.

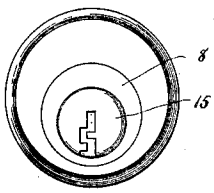


Fig. 3.

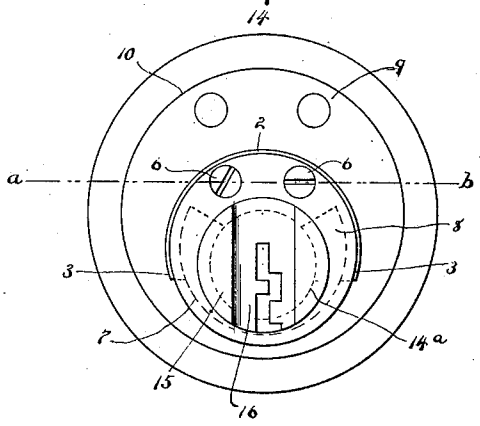


Fig. 4.

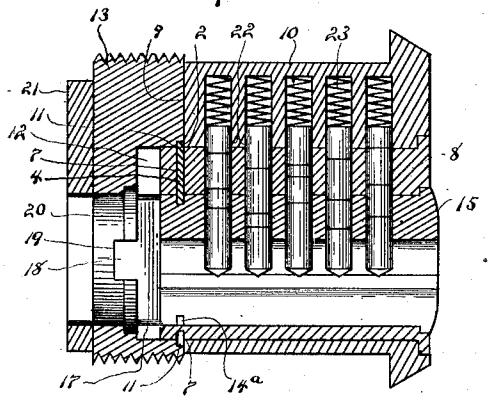


Fig. 5.

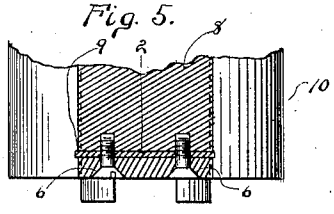


Fig. 6.

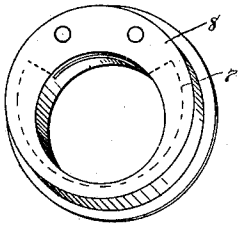


Fig. 7.

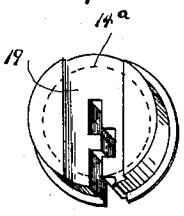
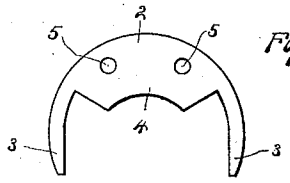


Fig. 8.



Witnesses
C. L. Reed
M. P. Nichols.

Inventors
Frank I. Kimball
and Charles H. Daum
by Seymour & Earle
Atty

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRANK I. KIMBALL AND CHARLES H. DAUM, OF WEST HAVEN, CONNECTICUT, ASSIGNORS TO SARGENT & CO., OF NEW HAVEN, CONNECTICUT, A CORPORATION.

DUPLEX PIN-TUMBLER LOCK.

1,044,186. Specification of Letters Patent. Patented Nov. 12, 1912.

Application filed December 23, 1911. Serial No. 667,476.

To all whom it may concern:

Be it known that we, FRANK I. KIMBALL and CHARLES H. DAUM, citizens of the United States, residing at West Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Duplex Pin-Tumbler Locks; and we do hereby declare the following, when taken in connection with the accompanying drawings and the characters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1 a view in side elevation of a duplex, extension cylinder pin-tumbler lock constructed in accordance with our invention. Fig. 2 a view thereof in front elevation. Fig. 3 a view thereof in rear elevation on an enlarged scale, with the extension removed to show the plate employed for holding the outer or eccentric plug and the inner or key-plug against endwise displacement with respect to each other and to the cylinder. Fig. 4 a view of the lock in vertical longitudinal section. Fig. 5 a broken view in horizontal section on the line *a*—*b* of Fig. 3 looking downward and showing the retaining-plate. Fig. 6 a perspective view of the outer or eccentric plug looking from the rear end thereof. Fig. 7 a corresponding view of the inner or key-plug. Fig. 8 a detached plan view of the retaining-plate.

Our invention relates to an improvement in duplex pin-tumbler locks, the object being to provide simple, convenient and effective means for holding the two plugs thereof against endwise displacement with respect to each other and to the cylinder.

With these ends in view, our invention consists in a lock having certain details of construction and combinations of parts as will be hereinafter described and pointed out in the claims.

In carrying out our invention as herein shown, we employ a segmental plug-retaining plate 2 having two bearing fingers 3 located opposite each other and conforming in external curvature to the curvature of the body of the plate which is also formed with a centrally arranged inward extension 4 and with two screw-holes 5 for the reception of screws 6 by means of which the plate is secured in place in a transversely arranged slot 7 formed for its reception in the projecting rear end of the outer or eccentric plug 8 of the lock. The said plate 2 is just enough larger than the diameter of the said plug to project beyond the periphery thereof and engage with the flat rear face 9 of the cylinder 10, as shown in Figs. 3 and 4. The projecting edge of the plate 2 also enters a rabbet 11 formed just within the edge of a circular chamber 12 in the forward face of a cylinder-extension 13 secured to the cylinder 10 by screws 14 and forming the subject matter of an application filed November 24, 1911, Serial Number 662,123.

Under the construction above described, the projecting edge of the plate 2 co-acts with the rear face 9 of the cylinder 10 and the bottom of the rabbet 11 to hold the outer plug 8 against endwise movement in either direction without interfering with its free rotation in either direction. The inward extension 4 of the said plate 2 enters a transverse groove 14^a in the rear end of the inner or key-plug 15 which is thus held against endwise displacement with respect to the outer plug 8 and hence also to the cylinder 10 but left free to rotate independently of the said plug 8 and cylinder 10. It will thus be seen that by means of the single plate 2 both the outer plug 8 and the key-plug 15 are held against endwise displacement with respect to each other and the cylinder 10, but left free to be independently rotated. At the same time the plate 2 is readily accessible for removal in taking down the lock as well as readily replaceable in assembling the lock.

In order to complete the description of the lock chosen for the illustration of our invention, we may add that in accordance with the showing of application, Serial No. 662,123 already referred to, the projecting rear end of the key-plug 15 is formed with a transverse slot 16 for the reception of a sliding coupler or dog 17 having a coupling-lug 18 entering a coupling-slot 19 extending transversely across the forward face of a supplemental plug 20 mounted in the cylinder-extension 13 and carrying a standard bit 21. The lock is furnished with the usual sectional pin-tumblers 22 and springs 23.

We make no broad claim herein to the removable cylinder-extension, nor do we limit

the use of our improved plug-retaining plate to duplex pin-tumbler locks having such extensions.

We claim:—

1. In a duplex pin-tumbler cylinder lock, the combination with the cylinder thereof, of an eccentric or outer plug mounted therein, an inner or key-plug mounted in the said outer plug, and a retaining-plate carried by the said outer plug and engaging with the said cylinder and with the said inner plug whereby the said retaining-plate performs the double office of holding both of the said plugs against endwise displacement, while permitting them to be rotated independently of each other.

2. In a duplex pin-tumbler cylinder lock, the combination with the cylinder thereof, of an outer or eccentric plug mounted therein, an inner or key-plug mounted in the said eccentric plug, and a plug-retaining plate located in a slot in the rear end of the said outer or eccentric plug, and extending into a slot in the said inner or key-plug and projecting beyond the outer or eccentric plug in position to engage with the said cylinder to hold the said plugs against endwise displacement with respect to each other and to the cylinder without interfering with their rotation independently of each other.

3. In a duplex extension-cylinder pin-tumbler lock, the combination with the cylinder thereof, of an extension cylinder removably applied to the rear end of the said cylinder proper, an outer or eccentric plug mounted in the said cylinder, an inner or key-plug mounted in the outer or eccentric plug, a plug-retaining plate mounted in the projecting rear end of the outer plug and engaging with the periphery of the rear end of the inner plug, the edge of the said plate coacting with the cylinder proper and with the extension cylinder to hold the plugs against endwise displacement, a bit mounted in the extension cylinder, and sliding connection between the said bit and the rear end of the inner or key-plug.

In testimony whereof, we have signed this specification in the presence of two subscribing witnesses.

FRANK I. KIMBALL.
CHAS. H. DAUM.

Witnesses:
JOHN H. SHAW,
BERTHA RAY.