Oct. 6, 1925.

1,556,242

J. J. MURPHY

PIN TUMBLER LOCK

Filed Dec. 8, 1923

Fig. 1.

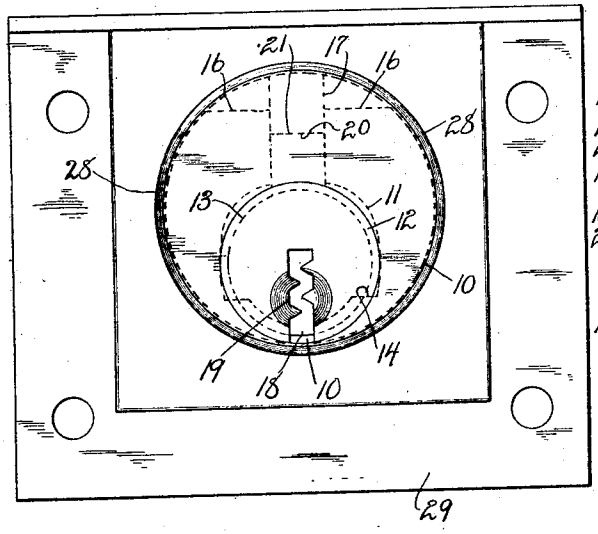


Fig. 2.

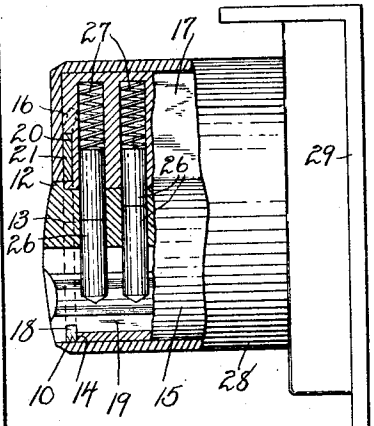


Fig. 3.

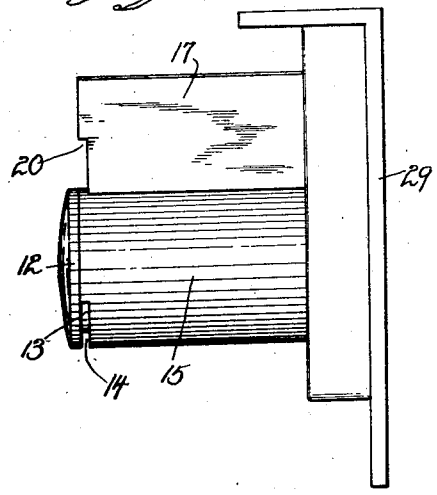


Fig. 4.

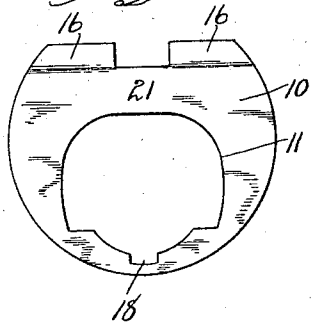


Fig. 5.

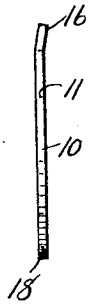
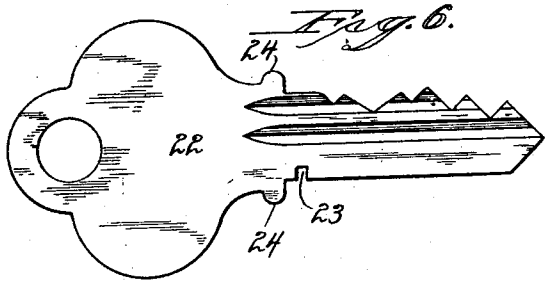


Fig. 6.



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UNITED STATES PATENT OFFICE.

JAMES J. MURPHY, OF TERRYVILLE, CONNECTICUT, ASSIGNOR TO THE EAGLE LOCK CO., OF TERRYVILLE, CONNECTICUT, A CORPORATION.

PIN-TUMBLER LOCK.

Application filed December 8, 1923. Serial No. 679,299.

To all whom it may concern:

Be it known that I, JAMES J. MURPHY, a citizen of the United States, residing at Terryville, in the county of Litchfield and State of Connecticut, have invented a new and useful Improvement in Pin-Tumbler Locks; and I 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 application, and represent in—

Fig. 1 a view in front elevation of a pin-tumbler lock embodying my invention.

Fig. 2 a view thereof, partly in side elevation and partly in vertical, central section.

Fig. 3 a view of the lock in side elevation, with its cylindrical shell or casing removed.

Fig. 4 a detached view in front elevation of the guard of my improved lock.

Fig. 5 an edge view thereof.

Fig. 6 a detached view in side elevation of a key adapted to function with my improved guard.

My invention relates to an improvement in pin-tumbler locks, the object being to provide such locks with simple and effective means to guard against their being surreptitiously or accidentally unlocked by the partial or incomplete introduction of an alien key of the same type as that specially fitted to the lock, and the bittings of which sufficiently approximate the bittings of the true key to open the lock under certain conditions not heretofore guarded against.

With these ends in view, my invention consists in a pin-tumbler lock characterized by its provision with a guard positioned to co-act with a notch in the back of the key-shank, and permit the key to be turned when and only when the key is pushed completely home into the lock, thus preventing the lock from being opened by a partially-introduced alien key.

My invention further consists in a pin-tumbler lock having certain details of construction and combinations of parts as will be hereinafter described and particularly pointed out in the claims.

In carrying out my invention, as herein shown, I employ a guard in the form of a substantially circular, flat, sheet-metal plate 10 formed with a relatively large opening 11 adapting it to be snapped over the flanged head 12 of the pin-tumbler cylinder 13, so as to be entered into a segmental clearance-slot 14 formed in the cylinder-housing 15 at a point directly back of the lower portion of the flanged head 12 aforesaid. The upper portion of the guard 10 is formed with two corresponding, rearwardly-bent fingers 16 which respectively engage with the extreme forward ends of the opposite faces of the rib 17 upstanding from the housing 15 aforesaid, whereby the guard 10 is prevented from rotation on the housing 15, and whereby the clearance-notch 18, leading centrally out of the bottom of the opening 11 in the guard, is prevented from being carried out of alignment, in either direction, with the key-passage 19 in the flanged head 12 and in the cylinder 13. The forward end of the rib 17 is formed with a clearance-notch 20 clearing the portion 21 of the guard.

For co-action with the guard 10, the back-edge of the corrugated key 22 is formed with a guard-notch 23, located adjacent to the stop-lugs 24 of the key when the guard 10 is mounted, as shown, at the extreme outer end of the cylinder of the lock. It is designed that the notch 23 in the key shall register with the guard 10 when the key is at the limit of its inward movement and at no other time, or, in other words, when all of the bittings of the key are in full co-operation with the pin-tumblers of the lock, but at no other time. It will be apparent that if the key is only partially inserted into its key-slot, the side walls of the notch 18 of the guard 10 will prevent it from being turned in either direction in the cylinder, which can only take place when the notch 23 in the key is registered with the guard.

As shown, the lock is provided with the usual tumblers 26, springs 27 and shell 28, and is mounted upon a flanged plate 29 for use as a cabinet lock.

By my improvement, therefore, an alien key, as I may characterize any key other than the key specially fitted to the lock, will be prevented by the guard from turning in the lock, unless the key is provided with an appropriately located guard-notch and is fully inserted into the lock, and if fully inserted into the lock, the chances are overwhelmingly against its co-action with the tumblers thereof, so as to release the cylinder for rotation.

The location of the guard, with respect to the length of the cylinder, may be varied, according to the dictation of circumstances, in which case, the safety-notch 23 in the back of the key will be correspondingly shifted, so that the notch in the back of the key will not register with the guard unless the key is at the limit of its inward movement into the cylinder.

I claim:

1. In a sliding tumbler-lock, the combination with the lock-structure and the tumblers thereof, of a special key-obstruction forming a part of the fixed lock-structure, a key cut to align the tumblers when the key is fully inserted and also having a special cut to co-act with the said special key-obstruction which is constructed and positioned to prevent the revolution of the key except when the same is fully inserted into the lock when its special cut is brought into alignment with the said special obstruction.

2. In a sliding tumbler-lock, the combination with the lock-structure and the tumblers thereof, of a special key-obstruction forming a part of the fixed lock-structure, a key cut on one side to align the tumblers when the key is fully inserted in the lock and also having a special cut on the opposite side to co-act with the said obstruction which is constructed and positioned to prevent the revolution of the key except when the same is fully inserted into the lock when its special cut is brought into alignment with the said special obstruction.

3. A pin-tumbler lock having a cylinder formed at its forward end with a flanged head, a housing for the said cylinder formed at its forward end with a segmental slot, a guard in the form of a plate having an opening adapting it to be passed over the said flanged head of the cylinder and entered into the segmental slot in the said housing and formed with a clearance-notch registering with the key-passage in the cylinder, the said notch being positioned to co-act with a notch in the back of the key of the lock, to prevent the key from being turned in the lock except when fully introduced thereinto.

In testimony whereof, I have signed this specification.

JAMES J. MURPHY.