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C. J. CALEY & H. G. VOIGHT.

CYLINDER LOCK.

APPLICATION FILED NOV. 29, 1907.

Fig. 1.

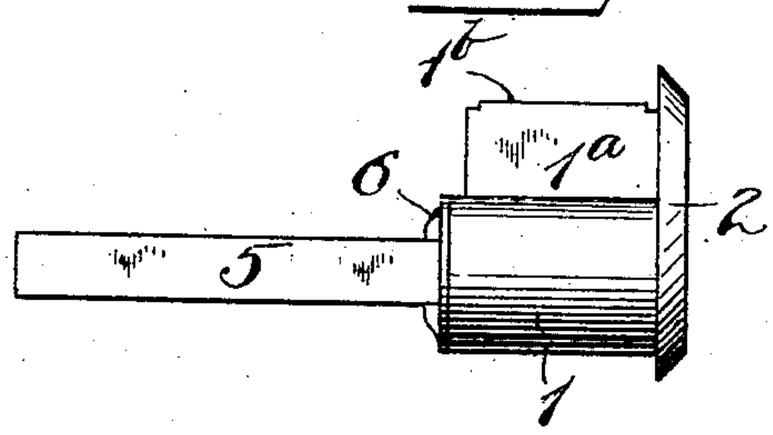


Fig. 2.

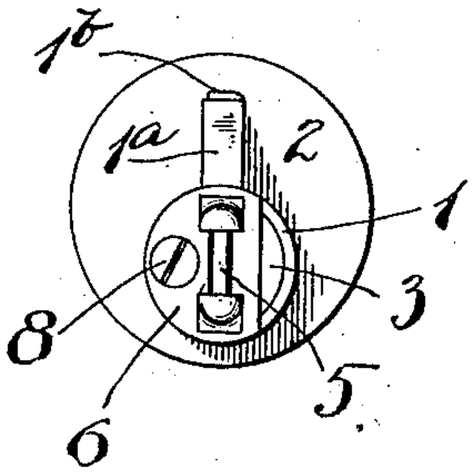


Fig. 4.

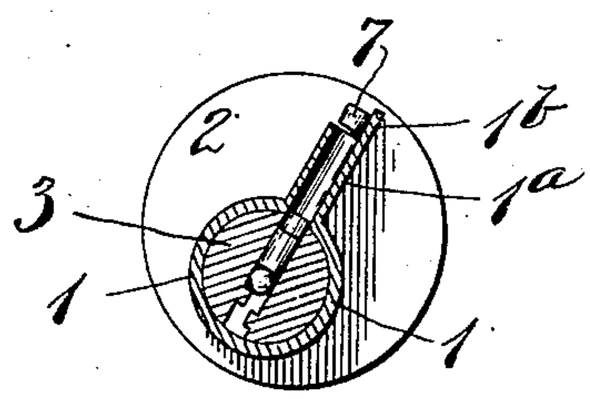


Fig. 3.

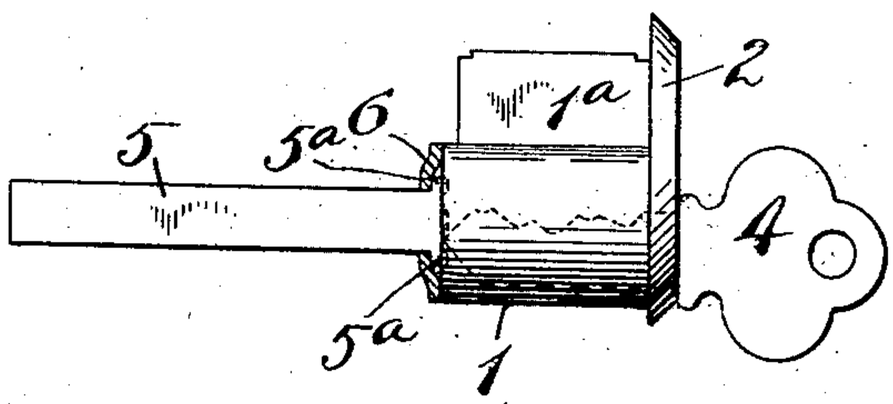


Fig. 5.

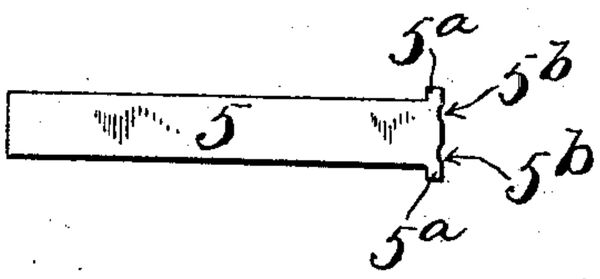


Fig. 6.

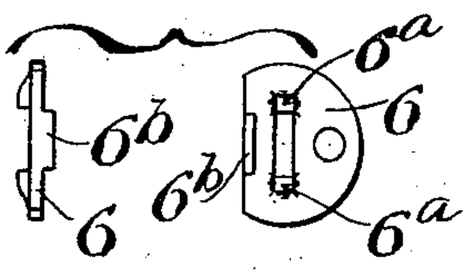
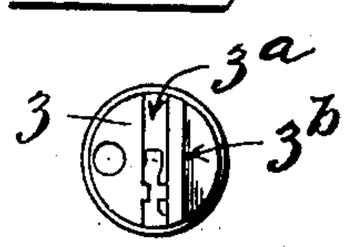


Fig. 7.



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UNITED STATES PATENT OFFICE.

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CYLINDER-LOCK.

No. 883,857. Specification of Letters Patent. Patented April 7, 1908.

Application filed November 29, 1907. Serial No. 404,291.

To all whom it may concern:

Be it known that we, CHARLES J. CALEY and HENRY G. VOIGHT, citizens of the United States, residing at New Britain, Hartford county, Connecticut, have invented certain new and useful Improvements in Cylinder-Locks, of which the following is a full, clear, and exact description.

This invention relates to improvements in pin-tumbler lock construction.

The object of the invention is to provide certain features of improvement, whereby great economies are effected in both material and labor in production. These and other advantages will be apparent to the mechanic skilled in the art from a reading of the following description.

In the drawings, Figure 1 is a side elevation of a pin-tumbler lock, constructed to embody our invention. Fig. 2 is a view of the inner end thereof. Fig. 3 is a view similar to Fig. 1, only partly in section, and showing a key. Fig. 4 is a section through the plug and pin casing. Fig. 5 is a side view of a detached detail. Fig. 6 shows an edge and an inside view of another detail. Fig. 7 is a view of the inner end of another detail.

1 represents a cylinder having a chambered offset portion 1^a with the usual borings to receive the pin-tumbler sections.

2 is the usual finishing front plate.

3 is a key operated plug rotatably mounted in cylinder 1 and having bores corresponding to the bores in the chamber 1^a to receive the pin-tumblers in the usual manner. The usual key 4 is passed into the plug in the ordinary manner to operate the tumblers, so that the plug may be freed for rotation relatively to the cylinder 1.

5 is what we term a plug extension, the same being a bar by which the plug is connected to the means to be operated by the turning of the key. This extension 5 is coupled to the plug in a unique and compact manner. As shown in Fig. 5, the bar 5 has lateral offsets 5^a 5^a and notches 5^b, which latter when the parts are assembled, face up with the point of the key. These notches 5^b are not essential, though preferable, in order to secure the greatest compactness and saving in material.

6 is a coupling member having a central slot through which the body of the bar 5 passes. This slot is arranged to be secured to the end of the plug, as by screw 8. At the ends of the slot the metal of the coupling device 6 is struck back to form recesses 6^a 6^a to receive the extensions 5^a 5^a of the bar, so that the rear end of said bar will lie practically flush with the rear surface of the coupling, although if desired it may engage, to a slight extent, in a slot 3^a in said plug. To simplify the connection of coupling 6 to plug 3 so as to require only one fastening screw, we may recess the side of the plug at 3^b and turn down a slight lip 6^b on the coupling device to stand in said recess, thus providing a lug to prevent, in connection with screw 8, any looseness of the coupling. The greatest strain that is ever applied to the coupling is in a twisting strain, and by this arrangement this strain is most effectively resisted.

At the upper end of the chamber 1^a and at one edge thereof, is an integral lip 1^b. This lip is of sufficient height so that when turned down into the position shown in Fig. 2 it will retain the pin-tumbler sections and springs in their respective bores, thereby eliminating the necessity of separate closures, such as the slide or plugs. This lip 1^b is not only effective as a means to hold the tumblers in place, but it also may be utilized as a guide in assembling the lock, for, as will be seen in reference to Fig. 4, it may be used as a guiding shelf to prevent any loose tumbler section, such as 7, from being dropped or lost, as the assembler is about to insert said pin sections into the proper bore in the chamber 1^a. When the tumblers and tumbler springs are all inserted, the lip 1^b may be quickly turned down by any suitable tool and the process of assembling is completed. This lip may overstand one or more of the tumbler bores, but in its preferable construction it is of such length as to close all of the bores when turned down. When the lip is in one length it will be found all the more effective as a guiding shelf to prevent accidental dropping of the tumbler sections, thereby facilitating materially the assembling.

From the foregoing it will be seen that a minimum of metal is employed and much time is saved in assembling the lock.

The length of the plug may correspond only substantially to the length of the key. In case the rear end of the bar 5 is to project

into a groove, such as 3[a], in the end of the plug, it is merely necessary to provide a notch 5[b] in the end of bar 5 to line up with the point of the key, thereby affording a sufficient clearance.

In the preferred construction, the free end of the bar 5 has a slight amount of universal movement permitted by the depth of the recesses in the coupling and the width of the slot, in which the connected end of said bar stands. By varying the clearance at this point, the degree of universal movement for the free end of the bar is regulated so as to compensate for any failure on the part of the mechanic to apply the cylinder in exactly the right position. Failure in this respect, on the part of the mechanic who is to apply the lock, would otherwise cause a binding of the parts when the plug is rotated. By our invention this is avoided in a very simple and effective manner.

What we claim is:

1. In a pin-tumbler lock, a cylinder, a pin-tumbler casing projecting laterally therefrom, an integral lip at the free edge of said tumbler casing, a tumbler-bore extending into said casing adjacent to said lip to receive pin-tumbler sections, said lip being arranged to be folded down to retain said tumbler sections therein.

2. In a pin-tumbler lock, a cylinder, a tumbler casing extending laterally therefrom, a plurality of bores extending through said casing and into said cylinder to receive the pin-tumbler sections, a lip formed integrally with said casing at one side of said bores therein and arranged to be folded down to hold the tumblers in said bores.

3. In a pin-tumbler lock, a cylinder, a rotatable plug therein, a bar, a coupling arranged to connect said bar to the end of said plug, said bar passing through said coupling and being yieldingly mounted therein, and means for detachably connecting said coupling to said plug said connecting means including an integral interlocking projection on one of said parts arranged to enter a recess on the other part.

4. In a pin-tumbler lock, a cylinder, a rotatable plug therein, a bar projecting from the inner end of the plug, a coupling detachably secured to said plug, said bar being detachably secured to said coupling, means to prevent the rotation of the bar independently of the coupling said means being provided partly in the plug and partly in the coupling, and means to prevent the independent rotation of the coupling relatively to the plug.

5. In a pin-tumbler lock, a cylinder, a key controlled rotatable plug having a key slot therein, a bar, a coupling, means for securing said bar to the inner end of said plug, said bar having a recess in its end in line with the point of a key adapted to said plug.

6. In a pin-tumbler lock, a plug, a recess at one side of the inner end thereof, a bar arranged to be connected to the inner end of the plug, a coupling arranged to hold said bar, a lug on said coupling arranged to engage in the recess in said plug, and a screw for holding said coupling against the end of the plug.

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