March 25, 1924. 1,487,900

E. L. TEICH

PIN TUMBLER LOCK

Filed May 3, 1922

Fig. 1.

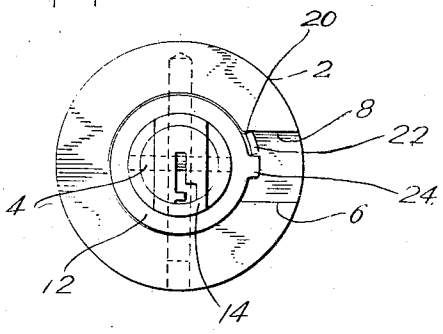


Fig. 2.

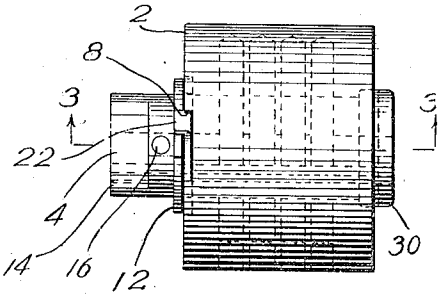


Fig. 3.

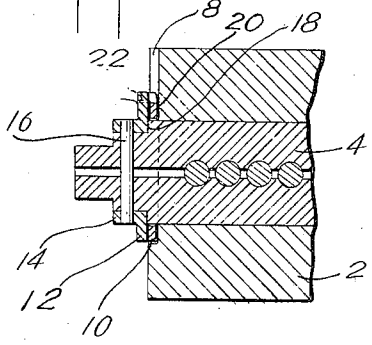


Fig. 4.

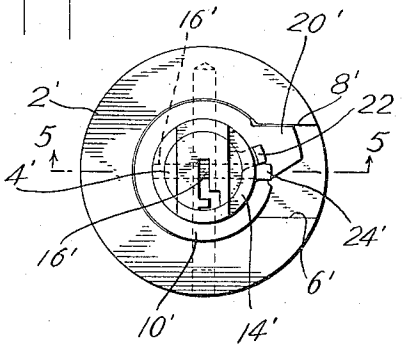


Fig. 5.

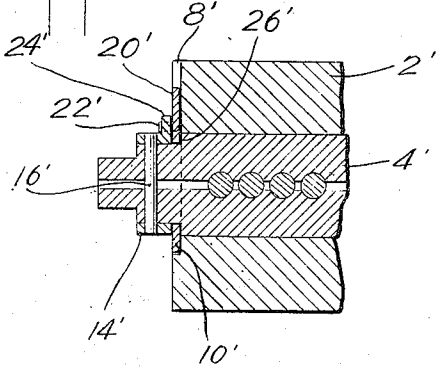
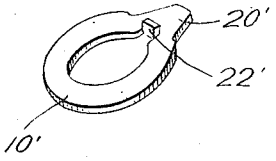


Fig. 6.



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By his Attorneys

Bartlett & Brownell

Patented Mar. 25, 1924. 1,487,900

UNITED STATES PATENT OFFICE.

ERNEST L. TEICH, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE AMERICAN HARDWARE CORPORATION, OF NEW BRITAIN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

PIN-TUMBLER LOCK.

Application filed May 3, 1922. Serial No. 558,177.

To all whom it may concern:

Be it known that I, ERNEST L. TEICH, a citizen of the United States, residing at New Britain, county of Hartford, State of Connecticut, have invented a certain new and useful Improvement in Pin-Tumbler Locks, of which the following is a full, clear, and exact description.

The present invention relates to locks and more particularly to locks of the pin tumbler type in which the key operated plug is adapted to be turned one complete revolution in either direction to a fixed angular position.

An object of the invention is to provide novel and improved means in a lock of this character for preventing the plug from being turned in either direction beyond said fixed angular position.

Another object of the invention is to provide novel and improved means in a pin tumbler lock for holding the key operated plug from axial movement.

The several features of the invention will be clearly understood from the following description and accompanying drawings, in which—

Figures 1 and 2 are rear end and side elevations of one form of my improved lock;

Fig. 3 is a sectional view taken on the line 3—3 of Fig 2;

Fig. 4 is a rear end view of the lock in its preferred form;

Fig. 5 is a sectional view taken on the line 5—5 of Fig. 4; and

Fig. 6 is a detail perspective view of a component part of the stopping devices for the key operated plug of the lock.

Each of the locks illustrated in the drawings is provided with a cylindrical lock case 2, and a key operated plug 4 which is capable of being turned one complete revolution in either direction to a fixed angular position, in which position the key may be inserted and removed. Each of the locks is also provided with stopping devices for positively preventing the key operated plug from being turned in either direction beyond said fixed angular position. In the construction illustrated in Figs. 1, 2 and 3 the stopping devices comprise a radial slot in the rear end of the lock case forming opposed stop shoulders 6 and 8 that are spaced apart. A collar or washer 10 is loosely mounted on the key operated plug 4 and is held from axial movement thereon by being interposed between the rear end of the lock case and the flange 12 of a collar 14 secured by a pin 16 on the rear end of the plug which is reduced in diameter so as to form a shoulder 18 against which the collar is held. The rear end of the lock case is countersunk to receive the washer 10 so that the rear face of the washer is substantially flush with the rear end of the lock case. The washer 10 is provided with a radially extending stop lug 20 that projects between the stop shoulders 6 and 8, the stop shoulders cooperating with the stop lug 20 to define the limits of movement of the washer 10. The end of the stop lug 20 is turned rearwardly at right angles to form a stop 22 which is adapted to be engaged by a stop lug 24 projecting radially from the collar flange 12. With this construction it will be apparent that the extent of rotation of the key operated plug in a clockwise direction, viewing Fig. 1, will be limited by the stop shoulder 6 through the stop lugs 20 and 24, and that the extent of rotation of the key operated plug in a counter-clockwise direction will be limited by the stop shoulder 8 through the stop lugs 20 and 24. As shown the spacing of the stop shoulders 6 and 8 and the width of the stop lugs 20 and 24 are such that the plug is permitted to be turned one complete revolution in either direction to a fixed angular position and is positively prevented from being turned in either direction beyond said position, the key being adapted to be inserted and removed when the plug is in this position.

In the construction illustrated in Figs. 4, 5 and 6 of the drawings the projecting rear end portion of the key operated plug is reduced in diameter to form a shoulder 26 and both a washer 10′ and a flangeless collar 14′ are mounted on this reduced portion, the washer being loosely mounted and the collar being fixed by a pin 16′. The washer is provided with a radially extending lug 20′ that extends between the stop shoulders 6′ and 8′ on the rear end of the casing. The washer is also provided with a rearwardly projecting stop lug 22′ that is struck up from the washer in radial alinement with the stop lug 20′. The stop lug 22′ is arranged in the path of movement of a stop lug 24′ pro-

jecting radially from the collar 16'. The arrangement of the stop shoulders 6' and 8' and the stop lugs 20', 22' and 24' are such as to prevent the plug from being turned beyond the fixed angular position that permits the key to be inserted and removed. It may be noted that the lug 24' does not project out so far as the lug 24 of the lock shown in the preceding figures, the lug 24 being formed on a flange on the collar 14, and for this reason the form of lock shown in Figs. 4, 5 and 6 is found preferable in some cases.

It will be apparent that in both forms of locks that the collar and washer on the rear end of the key operated plug cooperate with the usual head 30 on the front end of the plug to hold the plug from axial movement.

As will be evident to those skilled in the art my invention permits of various modifications without departing from the spirit thereof or the scope of the appended claims.

What I claim is:

1. A pin tumbler lock having, in combination, a pin tumbler lock case, means comprising a key operated plug adapted to be turned in opposite directions to a fixed angular position and permitting the removal of the key when the plug is in said position, and stopping devices comprising fixed stops on said pin tumbler lock case arranged exteriorly of and adjacent to the rear end of the lock case for preventing the plug from being turned in either direction beyond said position.

2. A pin tumbler lock having, in combination, a pin tumbler lock case, means comprising a key operated plug adapted to be turned in opposite directions to a fixed angular position and permitting the removal of the key when the plug is in said position, said lock case and plug having co-operating stops for preventing the plug from being turned in either direction beyond said fixed angular position, and said plug having its inner end projecting beyond the inner end of the lock case.

3. A pin tumbler lock having, in combination, a pin tumbler lock case having spaced stop members on its rear end, a key operated plug adapted to be turned in opposite directions to a fixed angular position and permitting the removal of the key when the plug is in said position, a collar carried by the rear end of the plug having a radially extending stop member, and a washer loosely mounted on the plug between the collar and rear end of the casing and having a stop member extending between said stop members on the casing and having a stop member arranged to be engaged by the stop member on the collar when said plug is turned in either direction to said fixed angular position, said stop members on the casing, washer and collar constructed and arranged to cooperate to prevent the plug from being turned in either direction beyond said fixed angular position.

4. A pin tumbler lock having, in combination, a pin tumbler lock case having a radial slot in its rear end forming spaced stop shoulders, a key operated plug adapted to be turned in opposite directions to a fixed angular position and permitting the removal of the key when the plug is in said position, a collar carried by the rear end of the plug having a radially extending stop member, and a washer loosely mounted on the plug between the collar and the rear end of the casing having a radially extending stop member extending between said stop shoulders and a stop member struck up therefrom and arranged to be engaged by said stop member on the collar when said plug is turned in either direction to said fixed angular position, said stop shoulders on the casing and said stop members on the collar and washer constructed and arranged to prevent the plug from being turned in either direction beyond said fixed angular position.

5. A pin tumbler lock having, in combination a pin tumbler lock case having spaced stop members thereon, a stop member movable in opposite directions having the limits of its movements defined by the stop members on the casing, respectively, a key operated plug adapted to be turned in opposite directions to a fixed angular position and permitting the removal of the key when the plug is in said position, and a stop member carried by the plug to cooperate with said movable stop member to prevent the plug from being turned in either direction beyond said fixed angular position.

ERNEST L. TEICH.