Dec. 2, 1924. 1,517,976

J. B. FREYSINGER

LOCK

Filed Aug. 15, 1922

Fig. 1.

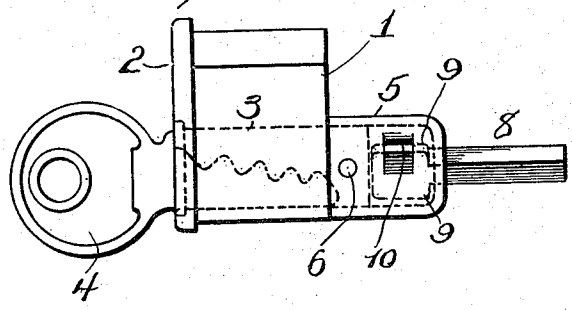


Fig. 2.

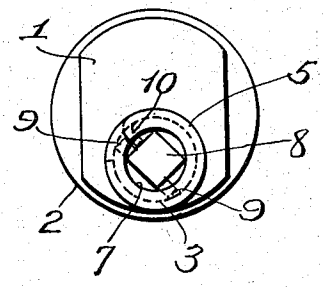


Fig. 3.

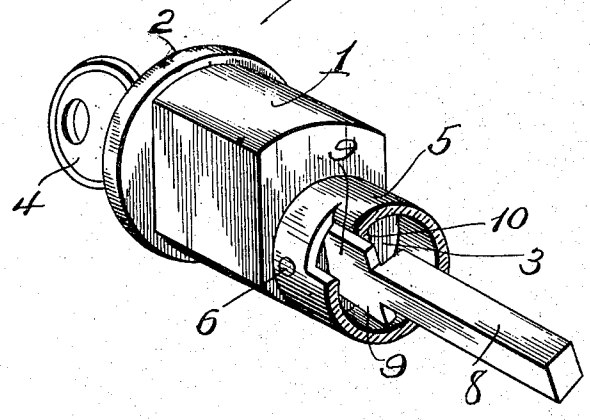


Fig. 4.

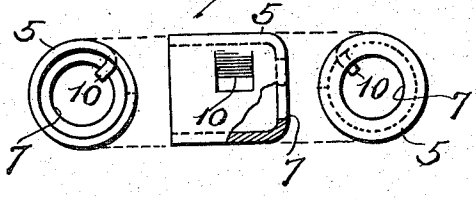
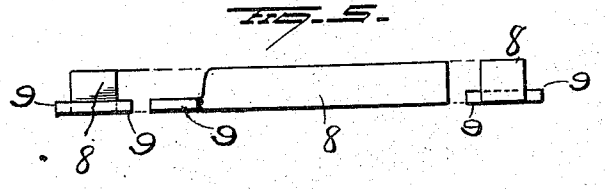


Fig. 5.



Inventor

J. B. Freysinger

By Seymour & Bright

Attorneys

Patented Dec. 2, 1924. 1,517,976

UNITED STATES PATENT OFFICE.

JOHN B. FREYSINGER, OF STAMFORD, CONNECTICUT, ASSIGNOR TO THE YALE & TOWNE MANUFACTURING COMPANY, OF STAMFORD, CONNECTICUT.

LOCK.

Application filed August 15, 1922. Serial No. 581,969.

To all whom it may concern:

Be it known that I, JOHN B. FREYSINGER, a citizen of the United States, and a resident of Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Locks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in locks of the cylinder or pin tumbler type, and more particularly to connections between the key plug and the lock spindle or connecting bar,—one object of the invention being to provide simple and efficient means whereby sufficient lost motion between the key plug and the spindle or connecting bar shall be effected to permit partial rotation of said spindle or connecting bar.

A further object is to provide simple means whereby a complete rotation of the key plug shall cause less than a complete rotation of the spindle.

A further object is to so construct connections between a key plug and spindle that the same will operate to cause a partial rotation of the spindle during a full rotation of the key plug and at the same time prevent endwise displacement of the latter.

With these and other objects in view, the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation showing my improvements. Figure 2 is an end view. Figure 3 is a perspective view, partly in section. Figure 4 illustrates the shell or extension for the key plug, and Figure 5 represents the spindle or connecting bar.

The cylinder of a pin tumbler lock is illustrated at 1, the same having a suitable escutcheon 2 at its outer end, and the plug 3 of the lock, which receives the key 4, extends through the cylinder,—said plug being made sufficient in length to project beyond the inner end of the cylinder as shown by dotted lines in Figure 1.

Upon the inner projecting end of the plug, a shell 5 is fitted and rigidly secured thereto by means of one or more pins, such as shown at 6. The shell 5 is so located on and secured to the projecting portion of the plug that its forward end may abut against the inner end of the cylinder and thus constitute means to prevent outward displacement of the plug.

The rear or inner end of the shell 5 is provided with a circular opening 7 in which a rotary spindle or connecting bar 8 for bolt mechanism (not shown) has its bearing. The spindle or connecting bar is provided at its forward end, within the shell 5, with diametrically opposite lateral wings or lugs 9, 9, forming, in effect, a cross-head within the shell and preferably at one side of the longitudinal axis of the spindle. A lug 10, preferably cut and bent from the metal of the shell 5, projects inwardly from the wall of the latter and is so disposed as to engage one or the other of the lugs or wings 9 of the spindle and turn the latter during the turning of the key plug.

It will be seen that when the parts are in the positions shown in Figure 3 with the lug 10 in the shell in engagement with one of the lugs or wings 9 of the spindle and the key plug is turned counter-clockwise, the lug 10 will travel away from the spindle lug until the plug shall have made one-half of a rotation. The lug 10 will then engage the diametrically opposite spindle lug or wing 9 and, during the remainder of a complete rotation of the plug, the spindle will be given a one-half rotation to operate the bolt mechanism.

From the above, it is apparent that the lost-motion between the key plug and the spindle is equal to one-half rotation of the spindle during a complete or full rotation of the key plug, and thus the key may be inserted into the plug; given a complete rotation to operate the bolt mechanism through the medium of the spindle or connecting bar, and then withdrawn from the plug. It is apparent that when the plug is turned in clock-wise direction the same relative movements of the plug and spindle will occur, viz—the spindle will be given a half rotation during a complete rotation of the plug.

Changes might be made in the details of construction of my invention without departing from the spirit of the latter or limiting its scope, and hence I do not wish to restrict myself to the precise details herein set forth.

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is:

1. The combination with the casing and plug of a cylinder lock, of a hollow member secured to said plug and provided with a single inwardly projecting lug, a spindle entering said hollow member and having means within said member and in the path of movement of said inwardly projecting lug on said hollow member whereby a partial rotation of the spindle may be effected during a complete rotation of the plug.

2. The combination with the casing and plug of a lock, of a shell secured to said plug and engaging one end of the casing, a lug carried by and projecting into said shell, a spindle entering said shell, and a lateral projection on said spindle within said shell in position to be engaged by the lug in said shell, whereby a complete rotation of the plug will effect a partial rotation of the spindle.

3. The combination with the casing and plug of a lock, of a shell secured to said plug and engaging one end of the casing, a lug carried by said shell and entering the same, a spindle having a bearing in one end portion of said shell, and lateral wings projecting in opposite directions from said spindle within the shell and in the path of movement of the lug within the latter.

4. The combination with a lock cylinder and a key plug mounted therein, and projecting beyond the inner end of the cylinder, of a shell secured upon the projecting end portion of the plug and adapted to abut against the inner end of the cylinder, a spindle entering said shell and having wings projecting therefrom in opposite directions, and a lug carried by and projecting inwardly from the wall of said shell and adapted to engage one or the other wing of the spindle, whereby a complete rotation of the plug will effect a partial rotation of the spindle.

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

JOHN B. FREYSINGER.

Witnesses:
JAMES L. INGALLS,
CHARLES A. BERRY.