Dec. 11, 1923. 1,476,841

H. RAYMOND

KEY LOCK

Filed Feb. 7, 1923

Fig. 1.

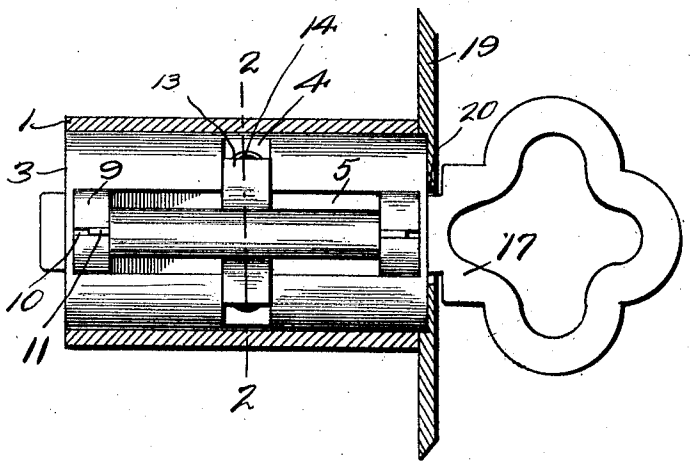


Fig. 2.

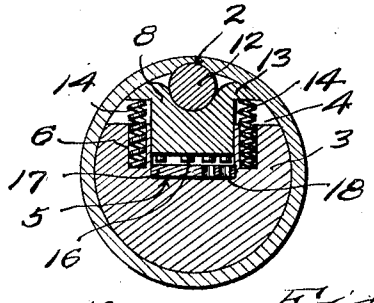


Fig. 3.

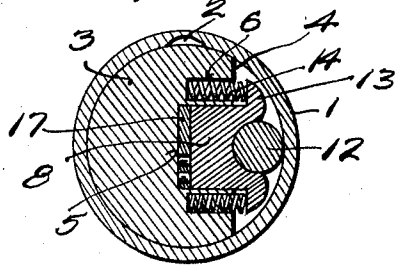


Fig. 5.

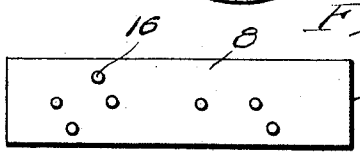


Fig. 4.

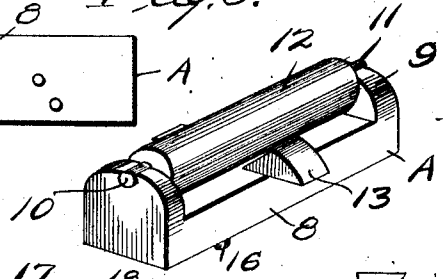
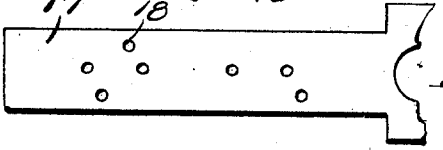


Fig. 6



Inventor

Harry Raymond

Witness

By Richard B. Owen

Attorney

Patented Dec. 11, 1923. 1,476,841

UNITED STATES PATENT OFFICE.

HARRY RAYMOND, OF EAST SYRACUSE, NEW YORK.

KEY LOCK.

Application filed February 7, 1923. Serial No. 617,564.

To all whom it may concern:

Be it known that I, HARRY RAYMOND, a citizen of the United States, residing at East Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in a Key Lock, of which the following is a specification.

The present invention relates to a key lock of the cylindrical form adapted to be inserted through a door for operation of a latch and has for its principal object to provide a simple and efficient mechanism for holding the proper key within the lock while it is being operated and preventing any but the proper key being utilized for turning the lock so as to operate the latch associated therewith.

A further object of the invention is to generally improve upon locks of this nature by providing a device which is comparatively inexpensive to manufacture, one which is reliable in operation and well adapted to the purpose for which it is designed.

With the above and numerous other objects in view as will appear as the description progresses, the invention resides in certain novel features of construction, and the combination and arrangement of parts as will be hereinafter more fully described and claimed.

In the drawing

Figure 1 is a longitudinal section through the lock embodying my invention,

Figure 2 is a transverse section taken therethrough substantially on the line 2—2 of Figure 1,

Figure 3 is a similar view showing the lock partially turned,

Figure 4 is a detail perspective of the tumbler.

Figure 5 is a plan view of the base of the tumbler, and

Figure 6 is a fragmentary plan view of the key for operation of the lock.

Referring to the drawing in detail it will be seen that a cylindrical casing 1 is constructed with a longitudinally extending interior groove 2. A cylindrical block 3 is rotatable within the cylindrical casing 1 and is provided with a longitudinally extending channel 5 which is constructed with a pair of oppositely disposed extensions 4 and a pair of recesses 6 one in each extension 4 of the channel 5 and slightly spaced from the channel and preferably being located midway between the ends of the block 3.

Disposed within the longitudinally extending channel 5 is the tumbler indicated generally at A. This tumbler A consists of an elongated block body 8 having ears 9 at its ends suitably recessed as at 10 for forming seats to receive trunnions 11 extending from the ends of roller 12. A pair of lugs 13 extend laterally from the surface of the block body 8 adjacent the roller 12, one extending beyond each side thereof so as to engage compressible coil springs 14 disposed in the recesses 6 and to move in extensions 4. Thus it will be seen that the tumbler is normally positioned in raised or separated association with the bottom of the channel 5 when the roller 12 is disposed in the groove 2. A plurality of pin projections 16 extend from the base of the tumbler A on the block body 8 thereof and when the roller 12 is in the groove 2 the terminals of these pin projections 16 are spaced from the bottom of the channel 5 so that a key 17 may be inserted in the channel.

This key 17 which is disclosed particularly in Figure 6 is provided with a plurality of apertures 18 disposed in coincident arrangement with the pin projection 16. Thus the key 17 may be inserted in the channel of the block 3 and by turning the same with the key the block 3 may be turned within the cylindrical casing 2 thereby causing the roller 12 to leave the groove 2 and depress the tumbler and at the same time causing the pin projections 16 to pierce the apertures 18 so that the key cannot be removed from the block until the roller is again engaged with the groove 3. It is also evident that only a key having its apertures in coincident arrangement with the pins 16 can be successfully used for operation of the lock.

The forward end of the cylindrical casing is provided with the usual cover plate 19 having an opening 20 therein so that the key may be inserted therethrough for insertion in the channel 5. The key 17 is constructed so as to protrude through the end of the block when inserted therein for engagement with any suitable latch mechanism. It will readily be seen that the lock thus formed is durable, reliable, and of comparative simple construction. The lock also has the advantage of ready accessibility to the parts thereof so that it may be assembled and disassembled with comparative ease

whereby the cost of repairs may be minimized as well as the cost of the initial manufacture of the device.

Although I have described the device with a certain degree of particularity it is to be understood that numerous changes in the details of construction and in the combination and arrangement of parts may be resorted to without departing from the spirit of the invention as hereinafter claimed.

Having thus described my invention, what I claim as new is:—

1. In a lock of the class described, a casing, a block rotatable in the casing and provided with a channel, a tumbler slidable in the channel and provided with projecting pins extending toward the bottom of the channel, a key insertable in the channel having apertures therein to receive the pins, said casing provided with a groove, a roller journaled on the tumbler, and spring means normally holding the tumbler in a position whereby the roller engages the interior of the casing, said pins piercing the apertures of the key when the roller is out of the groove of the casing and vice versa.

2. In a lock of the class described, a cylindrical casing, a cylindrical block rotatable in the casing and provided with a flat portion, a channel extending longitudinally of the flat portion, said block provided with recesses one on each side of the channel opening into the flat portion, a tumbler slidable in the channel and provided with lugs extending over the recesses, compressible coil springs disposed in the recesses for engagement with the lugs thereby holding the tumbler in a raised position in the recess, said casing provided with a longitudinally extending groove, a roller journaled on the tumbler for engagement with the groove and the interior of the casing and means on the tumbler for engaging a key inserted in the channel when the roller of the tumbler is out of engagement with the groove of the casing.

In testimony whereof I affix my signature in presence of two witnesses.

HARRY RAYMOND.

Witnesses:
J. L. DODGE,
E. H. DODGE.