

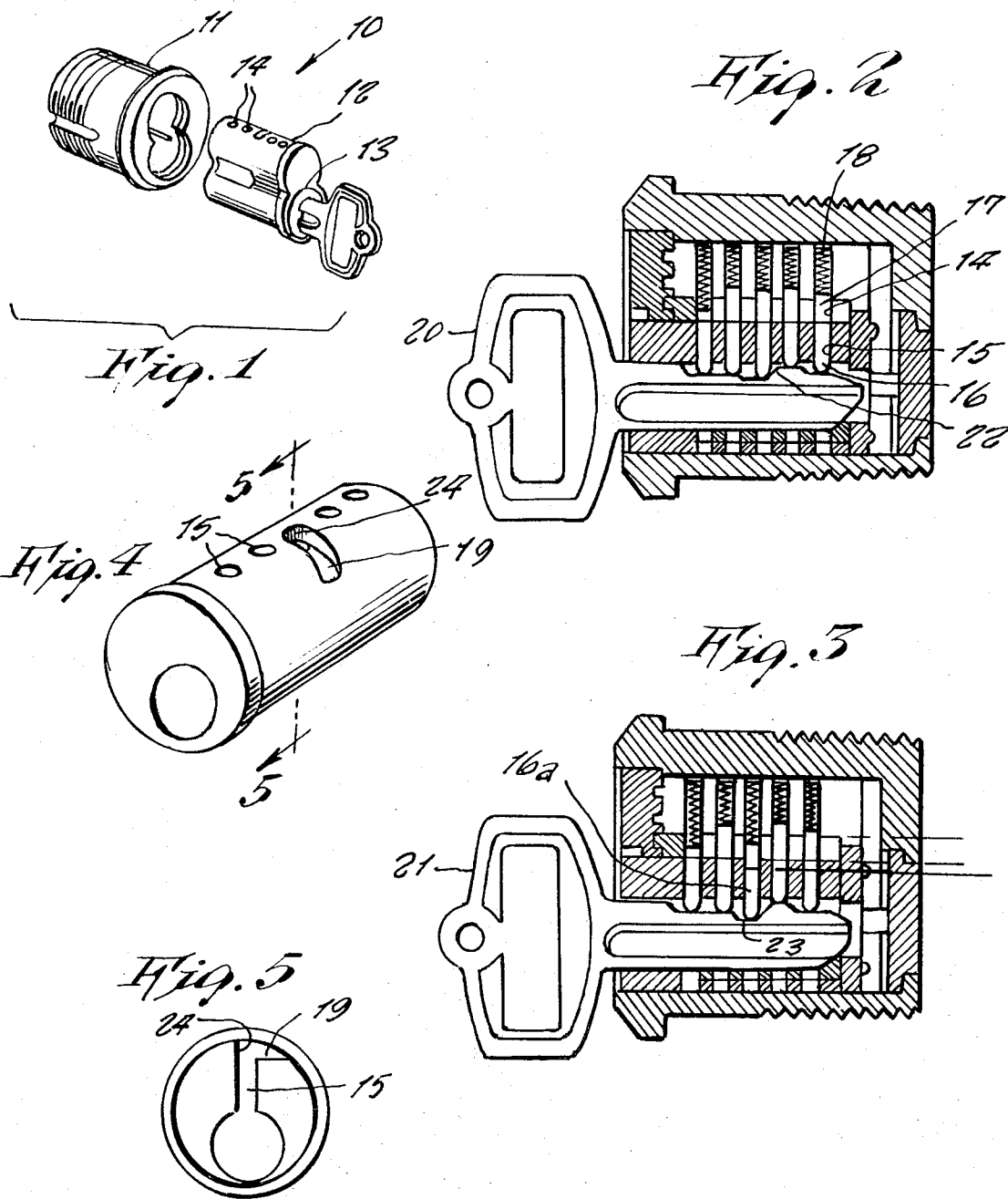
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ONE WAY KEY OPERATED LOCKING MECHANISM

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**ONE WAY KEY OPERATED LOCKING
MECHANISM**

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2 Claims

ABSTRACT OF THE DISCLOSURE

A locking mechanism which is one way key operated, the device comprising a lock consisting of a cylinder in which a core is inserted, the core being structurally modified so that when a regular operating key is inserted, the lock will rotate fully in either direction but wherein with a special key the core is rotatable only one way around in either direction to which it is designed.

This invention relates generally to locking mechanisms. More specifically it relates to locking mechanisms that are operated by removable keys.

A principal object of the present invention is to provide a locking mechanism having a self-contained means whereby the locking mechanism is key operated in one way.

Another object of the present invention is to provide a one way key operated locking mechanism having a rotatable core which can be operated by a normal key or a special key, the normal key permitting a full rotation of the core in either direction while the special key permits a one way around rotation of the core.

Yet another object of the present invention is to provide a one way key operated locking mechanism which accordingly is adaptable for use wherein a regular key is provided for one person whereas a special key is provided for other persons, the one person thus having a means for locking and unlocking the mechanism whereas the persons having the special key are able to only work the locking mechanism in one direction only.

Accordingly another object of the present invention is to provide a one way key operated locking mechanism which in one instance may be employed in the door of a business establishment and wherein the employer has a regular key but wherein employees working after hours without the presence of an employer are able to close the door after leaving the establishment, but wherein the employees are not able to reopen the door again thereafter, after leaving.

Other objects of the present invention are to provide a one way key operated locking mechanism which is simple in design, inexpensive to manufacture, rugged in construction, easy to use and efficient in operation.

These and other objects will be readily evident upon a study of the following specification and the accompanying drawing wherein:

FIG. 1 is a perspective view of the components comprising the one way key operated locking mechanism,

FIG. 2 is a cross-sectional view of the locking mechanism showing a regular key inserted therein,

FIG. 3 is a view similar to FIG. 2 and showing a special key inserted into the locking mechanism,

FIG. 4 is a perspective view of the modified core which comprises a component of the present invention, and

FIG. 5 is a cross-sectional view taken on the line 5—5 of FIG. 4.

Referring now to the drawing in detail, the reference numeral 10 represents a one way key operated locking mechanism according to the present invention wherein there is an externally threaded cylinder 11, the cylinder

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receiving a member 12 comprising a conventional key plug and wherein there is fitted a rotatable core 13.

In the present invention all of the components are identical to conventional locks with exception of a minor alteration.

Thus the member 12 is provided with a series of openings 14 in alignment with a plurality of radially extending openings 15 in the core 13, the core openings 15 carrying master pins or tumblers 16 in end abutment with driver pins 17 carried in openings 14 of the member 12, the driver pins 17 being urged by means of compression coil springs 18 against the tumblers 16.

When a conventional key is inserted into a key opening in the core, a properly grooved core will cause the line of separation between the tumblers and driver pins to fall on the diametrical edge of the core, thereby permitting the core to be rotated and then allowing the core to slide a conventional lock bolt. All of this is well known in lock art and accordingly needs no further amplification in explanation.

In the present form of the invention, the core 12 is slightly modified from a conventional core by having a groove 19 filed opposite one of the tumbler pin openings 14, as shown in FIG. 4 of the drawing. This groove may be provided on any one of the tumbler pin openings 14, and in the example illustrated in the drawing a central one of the openings 14 is provided with their groove 19.

In the present invention, there is also incorporated a regular key 20 and a special key 21. Both of the keys are provided with a like grooved profile 22 for operating the tumbler pins 16 except that a special notch 23 is additionally included on the special key 21 which thus becomes a one way key for operation of the locking mechanism.

It will now be evident that in operative use, the groove 19 allows the central pin 16a to rotate on its own shear line and utilizing the existing shear line of the remaining pins. The special notch 23 in the one way key 21 will allow this pin to drop into this shear line while if the regular key is inserted, it will operate the regular shear line not to drop this pin. The one way key will operate on its own shear line only one direction because of the surface 24 of the groove stopping the pin from rotating when being backed up.

Thus the lock consists of a cylinder in which the core is altered so that when a regular operating key is inserted, the lock will operate normally by rotating three hundred and sixty degrees in either direction and opening the lock by throwing the bolt works to the open position, but when a special key is inserted into the same core and cylinder, this special key will only operate the core to rotate in one direction the three hundred and sixty degrees.

Depending on which side of the core the groove is made, the core may be made to be rotatable either to the right or to the left. Thus a lock may be made to be only operated for closing or only for opening up.

The present invention could be utilized in many practical instances one of which is such as an installed lock in an office door and wherein two persons are involved in securing the office. The employer would have the regular operating key which permits him to lock or unlock the door while the other person could be provided a one way key with which he could only lock individually or unlock individually.

What I now claim is:

1. In a one-way key operated locking mechanism, the combination of a lock incorporating a cylinder, said cylinder receiving a member therewithin, said member containing a rotatable core, said core having a key slot therein, said key slot being adaptable for receiving either a regular key or a special key, said regular key permitting

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said locking mechanism to be operated in both directions for locking and unlocking while said special key permits only one of the locking or unlocking operations and not the other, said core being provided with a plurality of radially extending openings receiving master pins or tumblers, the inner ends of which are in alignment for radial movement due to the profile of either of said keys, said member being provided with a like number of radially extending openings containing driver pins in alignment with said tumblers, the outer ends of said driver pins being adjacent compression coil springs for normally urging said driver pins against said tumbler pins, one of said radially extending openings of said tumbler core being additionally provided with a sidewardly extending groove on the cylindrical periphery thereof, said groove extending toward one sidewardly direction only so to permit said core to be rotated in one direction only, said groove having an end wall at one end to restrict rotation of said core in an opposite direction.

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2. The combination as set forth in claim 1, wherein said regular key and said special key each have a like tumbler pin operating profile, except said special key is provided with an additional notch in alignment with a tumbler pin moveable in said core opening having said groove.

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