April 28, 1936. C. B. LOWE 2,039,244

LOCK

Filed Dec. 18, 1931

Fig 1

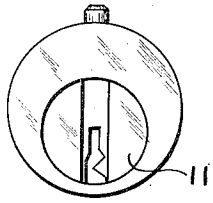


Fig 2

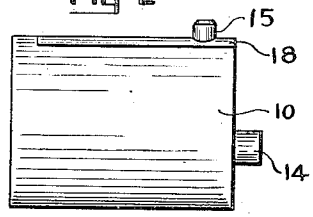


Fig 3

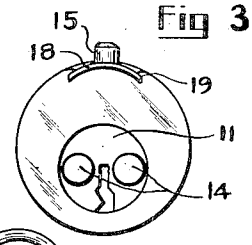


Fig 4

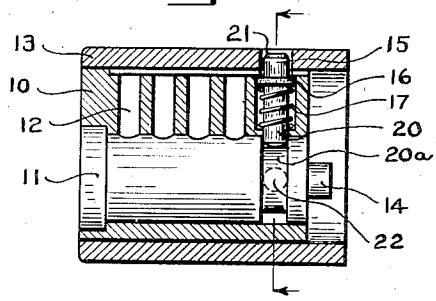


Fig 5

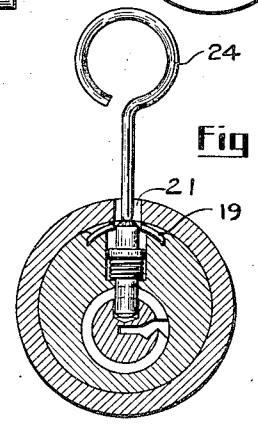


Fig 6

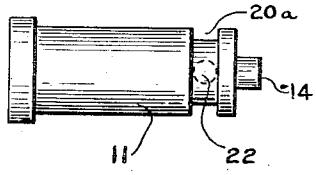


Fig 7

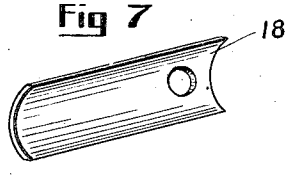
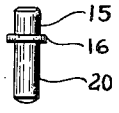


Fig 8



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LOCK

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Application December 18, 1931, Serial No. 581,888

6 Claims. (Cl. 70—46)

This invention relates to locks, and especially to cylinder locks adapted to be retained within a lock housing for locking operation in said housing.

Of recent years, it has become increasingly more desirable to arrange locking cylinders so that they can be readily inserted into and out of the housings in which they operate. This is especially so in the automobile business wherein it is desirable to be able to service locking devices by simply removing them from the locking housing and inserting new mechanisms. There is also a demand for such devices in locks adapted for houses and offices.

My invention contemplates the use of a locking cylinder which is adapted to be maintained by a retainer within a locking housing. The retainer is adapted to be operated so that the cylinder may be removed from the locking housing at the will of the owner. In order to control the removal of the cylinder from the housing, so that it cannot be done surreptitiously, and to prevent the removal except by one having the proper key for the lock, I so arrange my mechanism that it is necessary to rotate the usual locking plug of the cylinder to a definite position before the retainer may be depressed or otherwise operated for the removal of the cylinder.

It is a further object of my invention to so arrange the retainer for the cylinder, that the retainer will function to retain the key operating plug within the cylinder, while at the same time, retaining the cylinder in the locking housing.

For a detailed description of my invention, I shall refer to the drawing, wherein Fig. 1 is a front view of a cylinder showing my invention applied thereto. Figs. 2 and 3 are respectively side and rear views of the cylinder of Fig. 1. Fig. 4 is a section taken longitudinally of my cylinder showing the key plug and the retaining mechanism adapted to retain the housing within a lock housing. Fig. 5 shows the operation wherein the retainer is operated to release the cylinder from its housing. Fig. 6 shows a key plug constituting the controlling element of my retainer mechanism. Fig. 7 is a view showing the retainer and tumbler maintaining plate. Fig. 8 is a view of the retainer.

Referring now more particularly to the drawings, my invention comprises a cylinder lock 10 having a key operated plug 11 equipped with the usual tumbler mechanism cooperable with the usual drivers maintained in the driver chambers 12 as will be readily appreciated by those skilled in the art.

The cylinder lock 10 is adapted to be inserted into a housing 13 shown in Figs. 4 and 5. Rotation of the key plug 11 relatively to the cylinder, while the cylinder is maintained in the housing, will control the cam 14 or other means so as to operate any required mechanism in a manner well known to those skilled in the art. For maintaining the cylinder within the housing 13, I utilize, preferably, a retainer bolt 15 which may be spring-pressed, and having a flange 16 against which a spring 17 operates to press the retainer in an outward direction from the cylinder. A plate 18 shown in Fig. 7 is adapted to lie within the grooved portion 19 of the cylinder, so as to cooperate with the flange 16 of the retainer bolt 15 to limit outward movement of the retainer bolt from the cylinder. The plate 18 may also be utilized to retain the drivers in the driver chambers 12 in a manner well known in the art; this feature being not shown more fully since it forms no part of the present invention.

The retainer bolt 15 has a lower shaft portion 20 which extends into a groove 20a in the key plug 11, while the head of the retainer bolt extends into the bore 21 in the cylinder lock housing 13. Thus, the retainer bolt 15 maintains the cylinder in the housing, while at the same time maintaining the plug 11 in the cylinder.

As will be readily appreciated from an examination of the drawing, it is impossible in the position of Fig. 4, to move the retainer bolt 15 entirely into the cylinder and out of the housing bore 21, so that the cylinder may be removed from the housing, due to the obstructing action of the body of plug 11. However, the key plug 11 has a bore 22 which may be moved into alignment with the lower shaft portion 20 of the retainer bolt 15 by key operation of the plug. When the bore 22 is thus aligned with the shaft portion 21, it will be possible to utilize the tool 24 to depress the retainer bolt against pressure of the spring 17 and entirely out of the retainer bore 21 of the cylinder housing 13 as is shown in Fig. 5. It will then be possible to remove the cylinder from the housing, and to reinsert a new cylinder set to a particular desired key.

The operation of my device will be clear from the description set forth, it having been demonstrated that the retainer bolt will normally retain the cylinder within its housing, and the key plug within the cylinder, a particular operation of the key plug 11 acting to permit operation of

the retainer bolt, thus liberating the cylinder for movement out of its housing. While I have shown a preferred embodiment of my invention, it should be understood that modifications of the same will readily occur to those skilled in the art, and I do not wish the scope of my patent monopoly to be limited except as defined by the claims annexed hereto.

I claim:

1. In a lock housing, a cylinder, a key operated plug in said cylinder, means movably mounted relatively to the cylinder and plug operating to retain the plug in said cylinder and the cylinder in the housing, and means controlled by the plug for preventing movement of said retainer means to a position where said cylinder may be removed from said housing.

2. In a lock housing, a cylinder, a key operated plug, a single means movably mounted relatively to the cylinder and plug and adapted to retain the plug in said cylinder and the cylinder in said housing, said means being operable to permit release of the cylinder from said housing.

3. In a lock housing, a cylinder, a key operated plug in said cylinder, and a spring pressed plunger cooperable with the plug to maintain the same in the cylinder, said plunger being cooperable also with the housing to maintain the cylinder within the housing.

4. In a lock housing, a cylinder, a key operated plug in said cylinder, a retainer operable to retain the cylinder in the housing, and the plug in the cylinder, said retainer movably mounted relatively to the cylinder and plug and being operable to release the cylinder for removal from the housing, the plug being operable to control the operation of the retainer to release position.

5. In a lock housing, a cylinder, a key plug in said cylinder, a retainer cooperable with the cylinder and housing to maintain the cylinder in said housing, means whereby the retainer may be operated from outside the housing for releasing the cylinder from the housing, and means controlled by the key operation of said plug for blocking the movement of the retainer to release position.

6. In a lock housing, a cylinder, a key plug in said cylinder, a retainer carried by said cylinder and cooperable with the housing to maintain the cylinder in the housing, a part of said retainer being cooperable with the key plug for maintaining the same in the cylinder, said retainer being depressible to release the cylinder from the housing, means on said plug obstructing the depression of the retainer, said plug being key operable to remove said obstructing portion and permit release operation of the retainer.

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