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H. J. FELDMANN

2,585,643

COMPARTMENT LOCK

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Fig. 1.

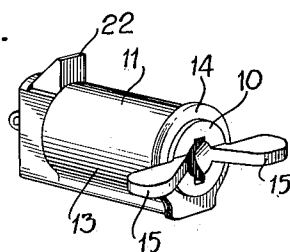


Fig. 4.

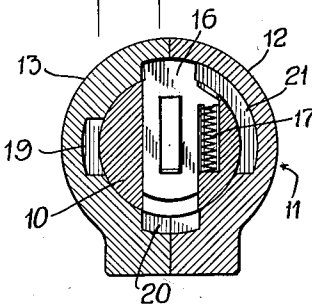


Fig. 2.

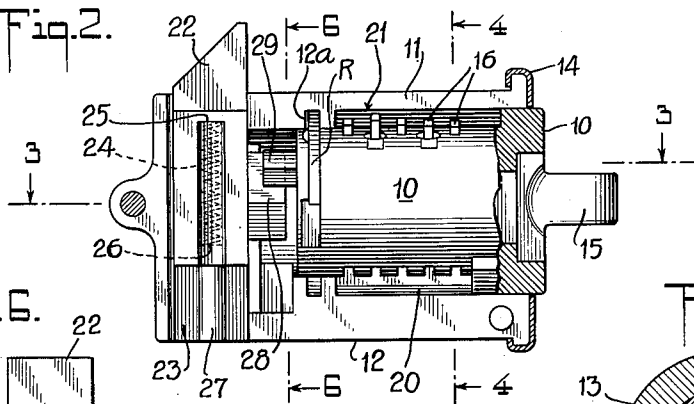


Fig. 6.

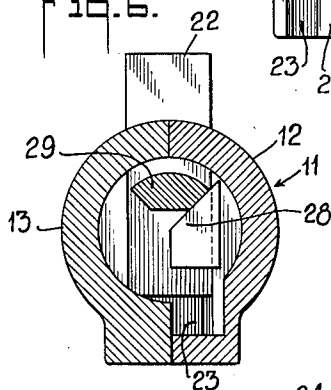


Fig. 5.

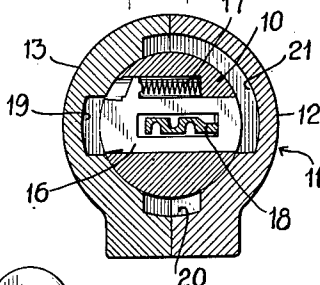
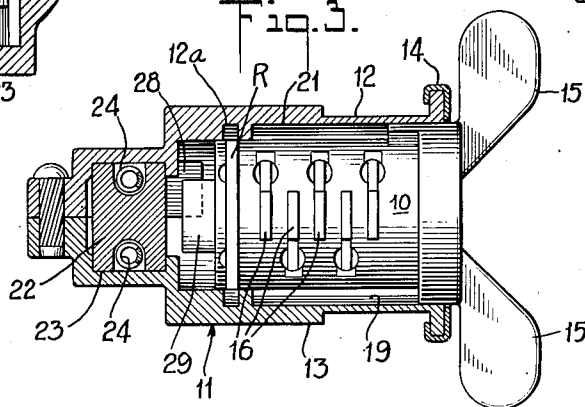


Fig. 3.



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COMPARTMENT LOCK

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1 Claim. (Cl. 70-81)

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This invention relates to a lock, and more particularly to a type of lock adapted for use in an automobile for locking the usual glove compartment found in modern cars. Of course, the lock of my invention may be used in other places, as will hereinafter appear and my invention should not be considered therefore as limited to use on automobiles.

It is highly desirable that an automotive compartment lock be rendered manually operable under certain conditions, and key operable under other conditions. Thus, it is frequently desirable that the compartment be readily accessible through simple manual operation, while on the other hand, it may become desirable that the lock be operable only by key.

At the present time, the particular operations indicated are generally contributed by locks in which a key plug, suitably controlled by tumblers and a key, is manually actuated by inward pressure when, in one rotated position. Upon locking of the key plug in a second rotated position by the tumblers, inward pressure will no longer move the key plug and key operation is necessary if access is to be obtained to the compartment. Generally, the lock is mounted on the door of the compartment so that inward pressure of the key plug is directly opposed to the unlocking movement of the door on which the compartment lock is installed. For the particular reason, an automobile compartment door is generally equipped with strong springs tending to move the door to open position upon retraction of the latchbolt. It is therefore against the pressure of this spring action that the entire door is moved when the finger depresses the key plug to release the latchbolt. Those skilled in the art readily understand the disadvantage of this type of construction on which the manual pressure is always directed toward closing the door when opening movement of the door is desired.

It is the object of my invention to contribute a compartment lock in which the operation may be manual or by key, with both operations under the control of a key and tumblers, the manual operation being through rotation of the key plug rather than by push-in movement. Therefore, it is possible to use my lock on doors that are spring pressed either to open position or to closed position, or on compartment doors that are not pressed by spring into either position.

As one feature of my invention, I utilize a key plug equipped with locking tumblers and having a finger piece as an integral part thereof so that the key plug may be rotated readily either by the fingers or by key.

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As a more particular feature of my invention, I utilize a lock in which the key plug may be held in one position in which it is readily rotatable against the pressure of a spring to a limited degree, whereas in a second rotated position, it is maintained against any rotation whatsoever. As a still further feature of this part of the invention, tumblers movable within the key plug itself are utilized to lock the key plug against any rotation whatsoever or to maintain the key plug for limited rotation, preferably against spring pressure.

I have thus outlined rather broadly the more important features of my invention in order that the detailed description thereof that follows may be better understood, and in order that my contribution to the art may be better appreciated. There are, of course, additional features of my invention that will be described hereinafter and which will form the subject of the claim appended hereto. Those skilled in the art will appreciate that the conception on which my disclosure is based may readily be utilized as a basis for the designing of other structures for carrying out the several purposes of my invention.

Referring now to the drawings, Fig. 1 is a perspective view of a lock embodying my invention. Fig. 2 is a vertical section of the lock of Fig. 1. Figs. 3, 4, and 6 are sections taken respectively along lines 3-3, 4-4, and 6-6 of Fig. 2. Fig. 5 is a section similar to Fig. 4, but showing the key plug rotated 90° counterclockwise through the insertion of the key for setting the several tumblers.

Referring now more particularly to the drawings, the lock of my invention utilizes a key plug 10 adapted for rotation in a cylinder or housing 11, preferably formed of two parts 12 and 13 suitably united as is clearly shown in the drawings. For retaining the key plug 10 within the cylinder or housing 11 there is utilized a retainer slide R of a type well-known in the art and adapted to fit within a slot 12a of the housing 11. Covering the forward end of the housing or cylinder 11 is what is termed a scalp 14, the scalp 14 serving as a decorative member and also to assist in holding the parts 12 and 13 assembled.

The forward end of the key plug 10 is formed with a pair of integral arms 15 that function as a finger piece whereby the key plug 10 may be readily rotated manually. Key plug 10 houses a series of sliding plate tumblers 16 spring pressed outwardly of the key plug by a series of springs 17, and adapted for retraction entirely within the key plug by a key 18 shown in section in Fig. 5. Cooperating with the tumblers 16 are three slots

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formed in housing 11 designated by reference numerals 19, 20, and 21 and best seen in Figs. 4 and 5. Slots 19 and 20 are of the same width and extend longitudinally of the housing or cylinder 11 while slot 21 is of rather considerable length, and also extends longitudinally of the cylinder or housing 11.

It is obvious that when the tumblers 16 are projected into the slot 19 which is the case when the key 18 is removed in Fig. 5, the key plug 10 will be held against any rotation whatsoever relatively to the cylinder or housing 11. Incidentally, when the parts are in the position of Fig. 5, the two arms 15 are vertical instead of horizontal as in Figs. 1 and 2. If the key 18 is now inserted into the key plug 10 as seen in Fig. 5, tumblers 16 are all retracted to lie entirely within the said key plug and the key plug may then be rotated to its position of Fig. 4. If the key is now removed, the tumblers 16 will all move to the position indicated in Fig. 4 with their locking ends projected into the long slot 21. It is obvious that key plug 10 may now rotate within the limits permitted by the relative widths of the locking ends of the tumblers 16 and the length of the slot 21.

This rotation of the key plug is utilized to retract a latchbolt 22 mounted for sliding movement in a bore 23 formed at the end of the housing 11. The latchbolt 22 is normally projected upwardly into its position of Fig. 2 by a pair of springs 24 operating between surfaces 25 of the latchbolt 22 and the ends 26 of guide ribs 27 formed on the housing 11. A cam lug 28 is formed on the latchbolt 22 as best seen in Fig. 6 and cooperable with this cam lug is a retracting lug 29 integral with the key plug 10. It is the function of the two springs 24 to project the latchbolt 22 and to bring the cam lug 28 against the retracting lug 29, thereby to maintain the key plug 10 in its position illustrated in Fig. 4. If the key plug is rotated in a clockwise direction in Fig. 4 and therefore in a clockwise direction in Fig. 6, it is obvious that the retracting lug 29 will operate against the cam lug 28 to retract the latchbolt 22. This will be the operation of the key plug 10 when the key is withdrawn in the position of Fig. 4 and the key plug made operable by the arms 15.

If it is now desired to lock the key plug against manual rotation, a key is inserted in Fig. 4, moving the tumblers entirely within key plug 10. Rotation of the key plug counterclockwise 90° will now bring the tumblers 16 opposite the slot 19 as seen in Fig. 5. Removal of the key 18 will now allow the several tumblers to be projected into the slot 19 and the key plug 10 will be held

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against any rotation whatsoever. Thus, it is readily seen that the key plug may be locked at any time so as to be inoperative except by key, or so as to be operative manually for a limited degree as required to retract the latchbolt 22.

I believe that the operation and construction of my invention will now be apparent to those skilled in the art.

I now claim:

10 In a lock of the class described, a cylinder, a bolt slidably mounted in a transverse bore at the end of said cylinder, a spring pressing said bolt into a locking position relatively to said cylinder, a key plug rotatably mounted in a bore of said cylinder in communication with said transverse bore, a finger piece on said key plug outside said cylinder whereby said key plug is manually rotatable in said cylinder, spring pressed tumblers mounted in said key plug and adapted to be pressed into a first slot in said cylinder to prevent rotation of said key plug relatively to said cylinder from a first position, said tumblers being adapted to be withdrawn into said key plug by a suitable key inserted into a keyway of said key plug whereby said key plug is released for rotation relatively to said cylinder to a second position, the removal of said key from the keyway when said key plug is in said second position then effecting the projection of said tumblers into a second slot of said cylinder, a part at the inner end of said key plug spaced from said bolt when said key plug is in said first position and moving into juxtaposed relation to a part of said bolt when said key plug is moved into said second position, said second slot being of sufficient size to allow rotation of the key plug and tumblers from said second position by said finger piece and without retraction of said tumblers, and said key plug part having camming relationship with said bolt part within said key plug bore during said rotation of the key plug from said second position for retracting said spring pressed bolt against the resistance of said spring.

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