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M. FALK

1,990,934

PLUG HOLDING DEVICE FOR LOCKS

Original Filed Dec. 22, 1931

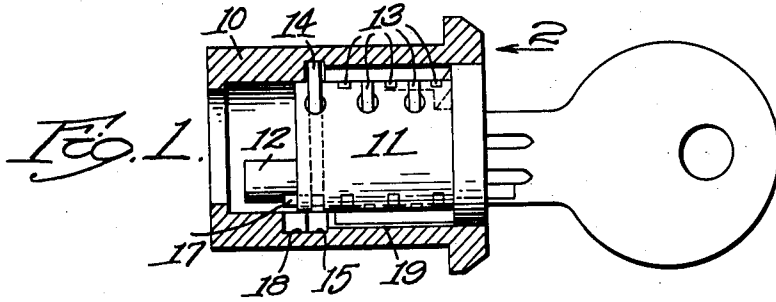


Fig. 1.

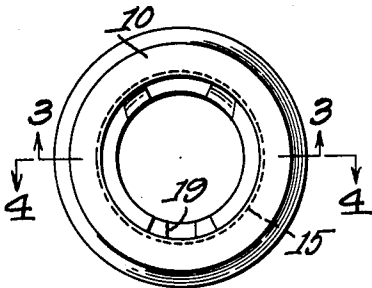


Fig. 2.

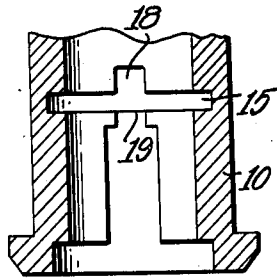


Fig. 4.

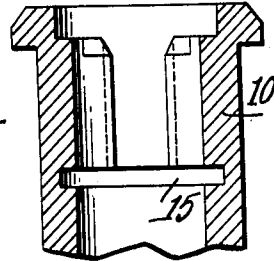


Fig. 5.

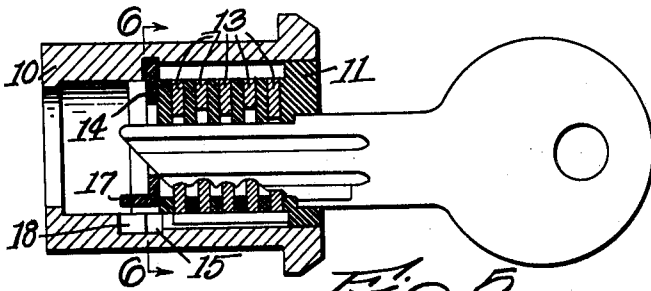


Fig. 6.

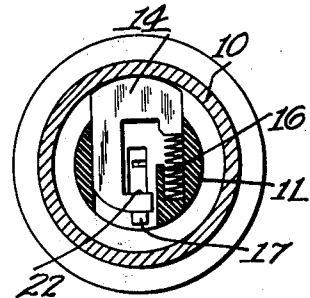


Fig. 7.

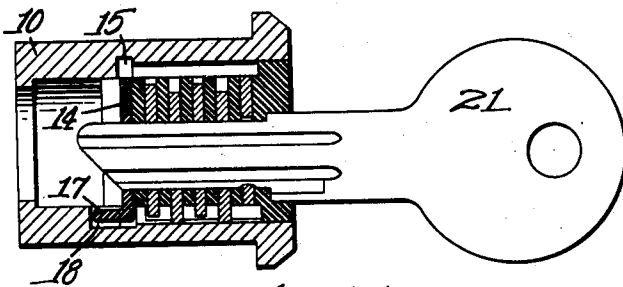


Fig. 8.

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UNITED STATES PATENT OFFICE

1,990,934

PLUG HOLDING DEVICE FOR LOCKS

Morris Falk, Fitchburg, Mass.

Continuation of Application Serial No. 582,562,
December 22, 1931. This application August
30, 1934, Serial No. 742,127

4 Claims. (Cl. 70-46)

This is a continuation of my application Serial No. 582,562 filed December 22, 1931.

This invention relates to a type of lock involving a plug having the usual tumblers and in which the plug is removable from the cylinder.

The principal objects of the invention are to provide means for holding the plug in the casing or shell under ordinary circumstances and at the same time enable the plug to be removed therefrom by pressing the holding tumbler by access through the keyhole by a special key or pick; to prevent pressure on the tumbler from releasing the plug in any position except one, preferably the unlocked position, and to provide a construction which, when the plug is turned even slightly from the unlocked position, it will be impossible to remove the plug.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawing, in which

Fig. 1 is a diametrical sectional view of a lock shell or casing, constructed according to this invention, showing a plug locked therein and in elevation;

Fig. 2 is an end view of the same as indicated by the arrow 2 in Fig. 1;

Figs. 3 and 4 are diametrical sectional views looking in the opposite direction as indicated by the lines 3-3 and 4-4 of Fig. 2;

Fig. 5 is a diametrical sectional view through the entire lock showing the usual locking key in position and the lock unlocked but the plug not in condition to be removed;

Fig. 6 is a sectional view on the line 6-6 of Fig. 5 and

Fig. 7 is a view similar to Fig. 5 but showing the plug manipulated by another key so as to be removable.

The invention is shown as applied to a lock having a shell 10 of the usual character and a key plug 11 therein provided with an eccentric 12 for operating the bolt. This plug is provided with the usual tumblers 13 adapted to be operated by the key for drawing them into the plug and permitting the plug to be turned to unlock the door. This plug is also provided with an additional tumbler 14 which extends normally out into an inner circumferential groove 15 around the inside of the shell. This tumbler projects to the bottom of the groove being pressed outwardly by a spring 16 and thereby in all positions prevents the withdrawal of the plug.

The tumbler 14 is provided with an extension 17 which may extend laterally in either direction

from the tumbler 14 longitudinally of the key plug. In the shell, preferably at one point and also preferably at the point where the projection 17 will enter it when the plug has been turned to unlocked position, is a longitudinal recess 18 adapted to receive the projection 17. On both sides of this recess 18 the walls are solid and consequently when the projection 17 is not in registration with this recess the tumbler 14 cannot be depressed in any way as it will come up against the cylindrical internal walls of the shell. There is a longitudinal groove 19 through which the projection 17 can be drawn out with the plug when it once enters the recess 18.

In Fig. 7 is shown a master key 21 or at least a special key which, when the pass key has been inserted, and turned to unlocking position, as in Fig. 5, can be inserted as shown in Fig. 7 to engage the surface 22 of the tumbler 14 and depress that tumbler as shown to bring the upper end of it down out of the groove 15 and of course, the projection 17 down into the recess 18. With the parts in this position the plug can be drawn out longitudinally. The same operation can be performed by a pick.

It will be seen that as soon as the plug is turned slightly from unlocked position, this projection 17 will bear against the cylindrical inside surface of the shell and there is no way to remove the plug without turning it.

In cases of some other removable plug locks where a tumbler is used for retaining the plug, if the recess, groove and shell, are not of sufficient depth, the plug may fall out or the friction of the walls of the groove of the shell, running on the walls of the retaining tumbler, will cause the tumbler to be pressed down and the plug to be released. In the present case, even if the locking groove and projection are not of sufficient depth, the tumbler cannot be pressed down if the plug has been turned away from the recess 18 provided for receiving the bottom of the tumbler.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:—

1. In a rotatable plug lock of the character described, the combination with the usual locking tumblers, of a plug retaining tumbler having an extension on one side and a shell provided with an internal circumferential groove provided with a longitudinal recess for receiving the extension so that the plug cannot be removed unless the extension projects into the recess.
2. As an article of manufacture, a lock having

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a shell and a plug therein provided with locking devices, a tumbler reciprocally mounted in the plug having its end projecting beyond the plug to hold the plug in the shell and provided with
5 a longitudinal projection on one side opposite said end, the shell having a recess for said projection and a solid wall around the interior of the shell from one edge of said recess to the other to prevent the said tumbler from being depressed
10 out of the groove, except when in registration with the recess.

3. As an article of manufacture, a lock comprising a shell, a plug therein, a plug retaining tumbler carried by the plug, said tumbler having
15 a longitudinal projection at one end, the other end normally extending beyond the circumference

of the plug and the shell having a circumferential groove for receiving the last named end of the tumbler and preventing the removal of the plug, the shell also having a recess for receiving
5 said projection in one position of the plug.

4. As an article of manufacture, a lock comprising a shell, the shell having an internal circumferential groove and a recess communicating therewith at one point, and a plug having a plug retaining tumbler normally extending at one end
10 into said groove to prevent the removal of the plug but adapted to be pressed into said recess at the other end, in an unlocked position, to allow the plug to be removed.

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