Oct. 13, 1959 G. D. PRESTON 2,908,156

KEY CASE FOR RETRACTABLE KEYS

Filed Sept. 20, 1957

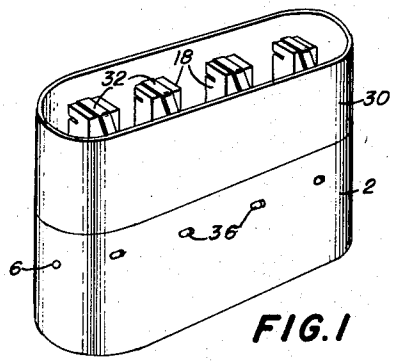


FIG. 1

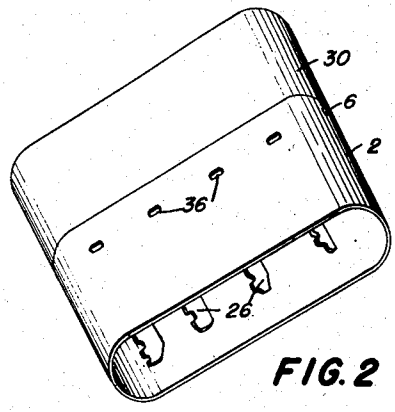


FIG. 2

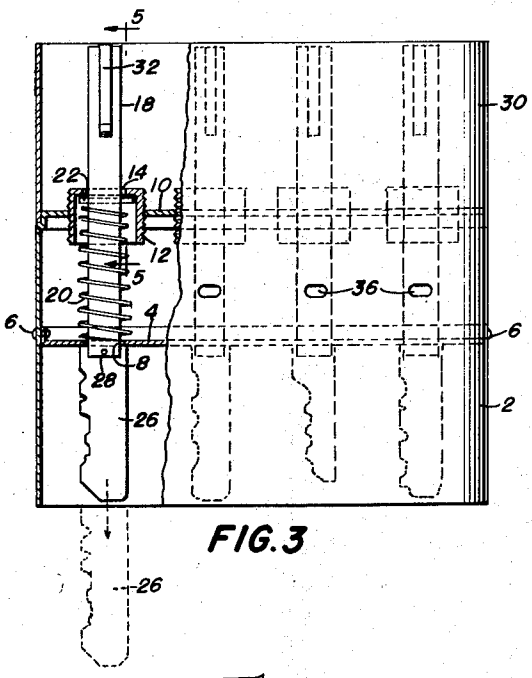


FIG. 3

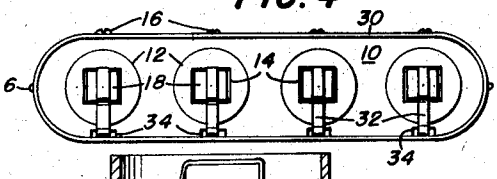


FIG. 4

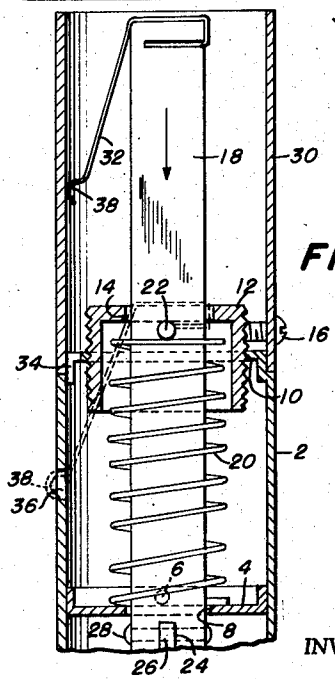


FIG. 5

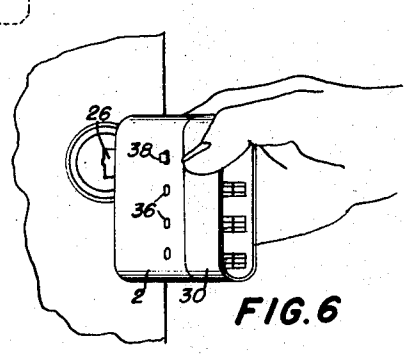


FIG. 6

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United States Patent Office 2,908,156 Patented Oct. 13, 1959

2,908,156

KEY CASE FOR RETRACTABLE KEYS

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Application September 20, 1957, Serial No. 685,253

6 Claims. (Cl. 70—456)

This invention is a key case for housing a series of keys.

The principal object of the invention is to provide an attractive and ornamental key case in which one or more keys are housed and in which a particular key may be projected out of the case to an operating position and thereafter moved backwardly into the key case.

The several keys are individually operated, and the user will soon learn the identity and location of a particular key, such as his house key or office key or car key, so that he may project that key outwardly of the casing to operative position quickly and expeditiously.

After use, the key is retracted into the casing so that it does not wear out the pocket or pocketbook of the owner.

More particularly, the key case of this invention comprises a series of plungers mounted to reciprocate in suitable guide means within the housing or case. Each plunger carries one key. When a particular key is desired, the plunger is moved out of the casing and the entire casing is turned to operate the key. The plunger carrying the key preferably has one or more flattened faces cooperating with flattened portions in their respective guides, so that while the plungers can move longitudinally with respect to the guides, they are firmly held against rotation within the guides thereby restricting rotation when the key case is rotated.

Respective plungers have cooperating springs associated with them and are operated in a manner similar to the operation of ballpoint pens. Preferably, the plungers of this invention are moved in one direction by a spring and moved manually in the other direction to their respective positions.

In the preferred form, a spring cooperates with each plunger and a particular plunger is projected manually outwardly of the casing. In order to latch the plunger in projected position and to hold the key in operative position, each plunger is provided with a spring latch which snaps outwardly through an aperture in the casing to hold the plunger in projected position. After the lock has been operated, this latch is pressed inwardly to release it, whereupon the spring moves the plunger back into the casing.

The invention will be described in more detail in connection with the accompanying drawings, illustrating one way of carrying out the invention.

In these drawings:

Fig. 1 is a perspective view of the key case of the present invention showing the top portion thereof.

Fig. 2 is a perspective view showing the bottom portion thereof.

Fig. 3 is an enlarged vertical cross section of the key case.

Fig. 4 is a top plan view.

Fig. 5 is an enlarged vertical cross section on line 5—5 of Fig. 3, showing one of the key carrying plungers and associated parts; and

Fig. 6 is a perspective view showing key case in use.

Referring now to these drawings, the key case comprises a housing 2, generally flat and provided with rounded ends for a better ornamental appearance.

Positioned transversely in the housing is a lower guide or rack member 4 secured as by rivets 6 in the housing. This guide or rack member 4 is provided with a series of apertures 8.

The upper part of the housing is provided with a fixed, transversely extending guide or rack member 10 positioned parallel to member 4 and spaced therefrom, as shown in Fig. 3.

Guide or rack member 10 is provided with a series of threaded thimbles 12, the tops of which are provided with apertures 14 of about the same size as apertures 8 in the lower guide and in line therewith. The thimbles 12 are secured in place and secured against turning by set screws 16.

The described apertures 8 and 14 are non-circular and are preferably polygonal, preferably square.

Mounted to move longitudinally in each pair of guide members 4 and 12 is a key carrying plunger 18 which is noncircular and of the same polygonal shape as apertures 8 and 14, preferably square. This provides in effect a splined effect, wherein the plungers move longitudinally through their guides, but must rotate therewith.

A compression spring 20 surrounds each plunger 18, one end bearing against member 4 while the other end bears against a transverse pin 22 carried by the plunger 18.

The lower end of each plunger 18 is slotted as at 24 to receive a key 26 which may be welded in place or secured in place by a rivet 28. The side portions of the enlarged ends of the keys 26 are cut off prior to securing them in the plungers, so as to be only a little wider than the plunger.

The distance from the lower guide 4 to the bottom edge of the casing is approximately equal to the length of a key, as shown in Fig. 3.

The upper ends of the respective plungers 18 project upwardly above thimbles 12, a distance about equal to the length of a key and the upper part of the housing is provided with a shield 30 of a height such that its upper edge is about level with the top of plungers 18.

Each plunger 18 is provided with a spring latch 32 which tends to push outwardly, and is adapted when the plunger is pressed downwardly, to pass through a clearance slot 34 in members 10 and 12 and then to snap outwardly through an appropriate aperture 36 in the housing and thereby hold the plunger and its key in projected position.

The operation of the device is as follows:

The user presses downwardly on top of selected plunger 18 which carries the key he wants to use. This projects the key below the lower end of the housing to the operative position, as shown in Fig. 3, and the plunger and key are latched in such extended position by the latch 32 engaging in aperture 36. The user then inserts the key into the lock and twists or turns the housing which operates the lock, and then withdraws the key. The polygonal non-circular shape of the plungers and their cooperating non-circular apertures 8 and 14 in guide members 4 and 12, respectively, prevent the plunger from turning. Then the portion 38 of latch 32, which projects out of the housing is pressed inwardly, thereby releasing the latch, whereupon the compression spring 20 retracts the key within the key case.

The plunger could be moved in both directions by a spring as is the case with some ballpoint pens, but the preferred arrangement is as described, wherein the plunger is pushed out manually and retracted by spring 20 upon release of the latch 32.

While the preferred embodiment of the invention has been described in some detail, it should be understood

that it can be carried out in other ways as fall within the scope of the claims.

I claim as my invention:

1. A key case comprising an elongated housing, a pair of apertured spaced guide collars mounted in said housing intermediate the ends thereof, a key carrying plunger passing through the apertures in said collars and reciprocable therethrough, a key carried at one end of said plunger, the combined length of the key and plunger being such that in projected position the key is clear of said housing and in retracted position the key is within said housing, a spring confined between said collars for moving said plunger in one direction, latch means cooperating with said reciprocable plunger for holding the plunger at one end of its path of travel, and means cooperating with one of said collars and with said plunger for causing the plunger and the key carried thereby to rotate axially when the key is in projected position clear of the housing and when the housing is turned about the axis of said plunger.

2. The combination of claim 1, wherein the housing is provided with an aperture, said latch means comprised of a manually releasable spring latch adapted to snap outwardly through said aperture in the housing to hold the plunger in outwardly projected position, with the key clear of said housing, manual release of said latch causing said spring to retract the plunger and key into and within said housing.

3. A key case for holding a plurality of keys, comprising an elongated housing, a pair of spaced transversely extending apertured guide means mounted in said housing intermediate the ends thereof, a plurality of plungers, each having a key mounted in one thereof, said plungers being reciprocable through respective pairs of said apertured guide means, the combined length of each key and its associated plunger being such that

when the key is in projected position it is clear of said housing, and when in retracted position is within said housing, springs respectively engageable with each plunger, positioned between said guide means, said plungers and guide means being provided with cooperating means for causing the plungers to rotate axially when the housing and said apertured guide means are rotated to operate a particular key when said key is in projected position clear of said housing.

4. The combination of claim 3, wherein the inner edges of the apertures in said guide means, and the adjacent faces of the plungers, are non-circular, for thereby causing a plunger and the key carried thereby when in projected position to be rotated axially when the housing and the guide means are turned.

5. The combination of claim 3, further including latch means for each plunger, each of said latch means cooperating with its plunger for holding its plunger at one end of the path of travel of the plunger when its associated key is clear of said housing.

6. The combination of claim 3, wherein the housing is provided with a series of apertures, a manually releasable spring latch carried by each plunger, co-operating with respective apertures, each said latch adapted to snap outwardly through the corresponding aperture to hold its plunger in outwardly projected position, against the tension of the corresponding spring and with its associated key clear of said housing.

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