

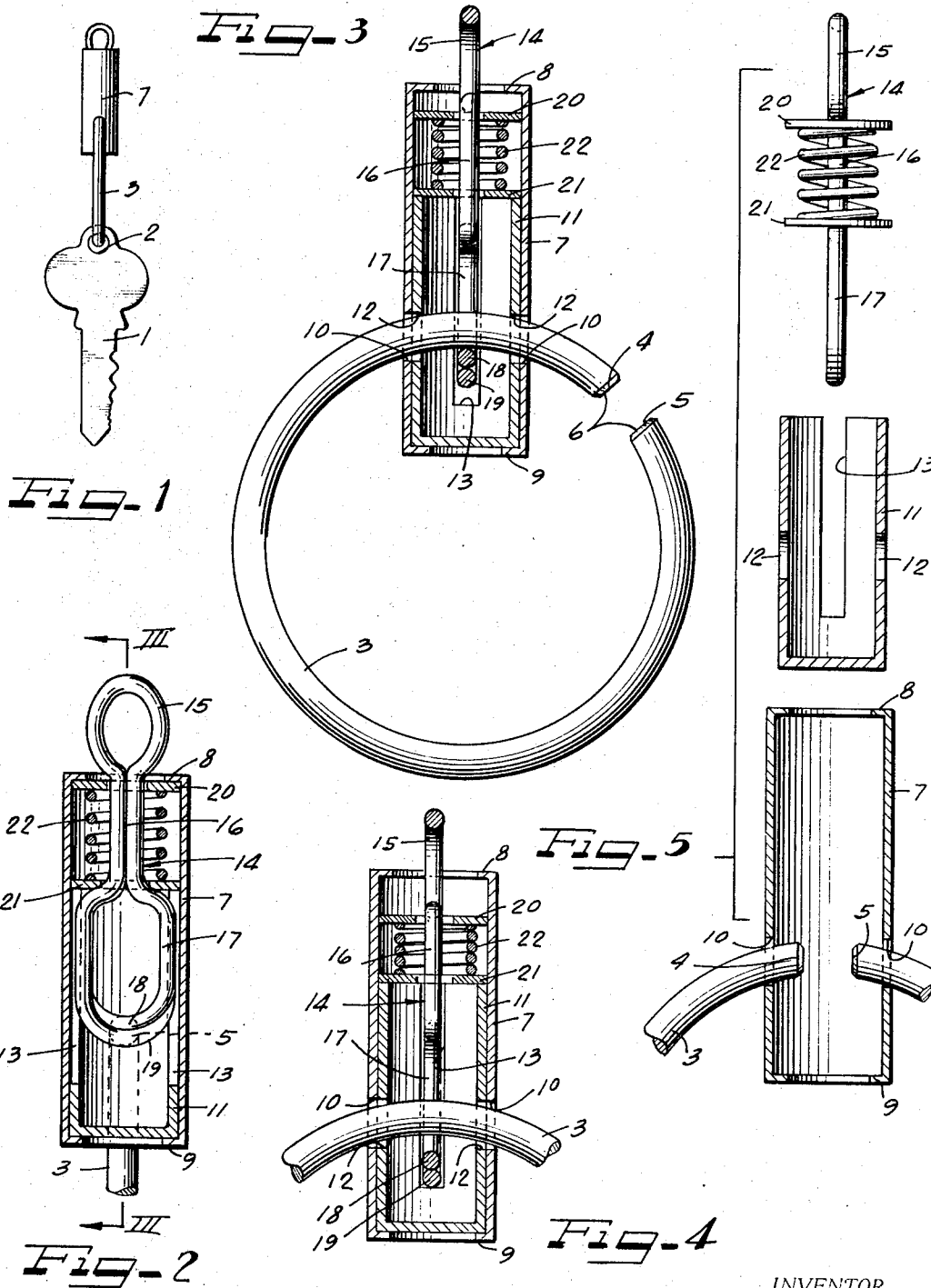
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KEY HOLDER

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3,362,201

KEY HOLDER

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## ABSTRACT OF THE DISCLOSURE

A key holder having an open-ended ring upon which keys may be threaded with means enclosing the open ends and a releasable catch disposed between the open ends of the ring within the enclosing means.

This invention or discovery relates to improvements in a key holder, and more particularly to a key holder easily carried in the pocket or handbag or a user and which is provided with a sturdy ring or loop on which a key or plurality of keys may be threaded, although the invention may have other uses and purposes as will be apparent to one skilled in the art.

Many and various types of key rings, key holders, key containers, and other devices for holding or carrying a plurality of keys have been developed. These formerly known devices, however, have not been satisfactorily durable in that breakage was too frequent resulting in a scattering of the keys or possible loss thereof; not satisfactorily easy to manipulate, thread or attach keys thereto; were objectionably bulky or objectionably heavy; and in many cases were so constructed that injury to the fingers of the user resulted when attempting to remove or attach keys to the device. For example, shot chains too frequently broke or became open at the connector; split key rings offered extreme difficulty to threading a key thereon or removing a key therefrom and often resulted in injured fingers; key cases having foldable cover flaps were objectionably bulky; and various other devices had one or more of the above objectionable features.

With the foregoing in mind, it is an important object of the instant invention to provide a key holder that is extremely easy to manipulate when attaching or removing keys, which is extremely light in weight yet sturdy, highly durable, and long lived.

Another important object of this invention is to provide a key holder comprising an open ended loop or ring connected with a casing, the parts being inseparable in normal use, and the casing containing an easily operable locking or latching mechanism to hold the ring against rotation relatively to the casing.

Also an object of this invention is the provision of a key holder in the form of a loop or ring having spaced ends held within a casing when the key holder is in use by suitable latching means within the casing, said latching means being also effective to hold the ring against unintentional rotation relatively to the casing when the ring is in position to add or remove keys, and the latching means may be actuated to an extent permitting free rotation of the ring in either direction relatively to the casing when changing its position for the purpose of removing or adding keys.

It is also a feature of this invention to provide a key holder comprising an open ended ring or loop, the ends of which are maintained within a casing when the device is in use, there being suitable latching means within the casing and concealed therein with the exception of a

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simple projecting portion by which the latching means are operated.

While some of the more salient features, characteristics and advantages of the instant invention have been above pointed out, others will become apparent from the following disclosures, taken in conjunction with the accompanying drawing, in which:

FIGURE 1 is an elevation of a key holder embodying principles of the instant invention, showing a key attached thereto in operative position, this figure showing the invention in approximately natural size, while FIGURES 2, 3, 4 and 5 are greatly enlarged for clarity;

FIGURE 2 is a fragmentary vertical sectional view through the structure of FIGURE 1, with a part shown in elevation;

FIGURE 3 is a vertical sectional view taken substantially as indicated by the line III—III of FIGURE 2, looking in the direction of the arrows, and showing the key holder in position for the addition or removal of keys;

FIGURE 4 is a fragmentary vertical sectional view taken in the same plane as FIGURE 3, but illustrating the device in position for free rotation of the ring or loop; and

FIGURE 5 is a fragmentary part sectional, part elevation exploded view illustrating the salient parts of the device.

As shown on the drawings:

While the instant invention may obviously be made in various sizes, depending upon the demands of circumstances, in most instances it is made approximately the size of the illustration in FIGURE 1 and is preferably made of sturdy but light weight metal, such as aluminum, "Duralumin," or the equivalent, with the possible exception of the spring. Accordingly, the entire holder actually weighs approximately the same as a commonly used door key, such as the key 1 shown in FIGURE 1. For use with the instant invention, the key will have the well known aperture 2 in the head thereof.

The illustrated embodiment of the instant invention embodies an open-ended ring or loop 3 which may be formed of relatively stiff wire, and is shaped to provide spaced end portions 4 and 5 respectively with a space 6 therebetween as indicated clearly in FIGURE 3. The space 6 is of sufficient width to permit keys to be threaded on or removed from the ring 3 therethrough.

Locking or latching means are associated with the ring 3 to maintain the space 6 closed when the key holder is in use with one or more keys on the ring. These means are contained within a casing 7 which is shown cylindrical in the drawings, but which could have any of many other configurations, if so desired. The casing or cylinder 7 is open ended with an annular marginal portion 8 turned inwardly at the top and a similar marginal portion 9 turned inwardly at the bottom. This cylinder 7 is provided with diametrically opposed apertures 10—10 in the wall thereof below the center, these apertures being of a size to permit free rotation of the ring 3 relatively to the cylinder as seen clearly in FIGURES 4 and 5.

Inside the cylinder 7 is a plunger guide 11 in the form of an elongated closed-bottom cup of a size to intimately slip inside the cylinder 7. This plunger guide has diametrically opposed apertures 12—12 therein of the same size as and disposed in register with the apertures 10—10 in the cylinder. Spaced 90° from the apertures 12—12 the plunger guide is provided with diametrically opposed elongated guide slots 13—13 to hold a plunger, generally indicated by numeral 14, in proper position within the casing against any rotary movement while permitting the plunger to reciprocate.

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The plunger 14 is shaped to provide a loop 15 at the upper end thereof which projects out of the cylinder or casing 7. Beneath that loop 15 is a straight shank portion 16 of reduced width, and below the shank portion there is a wider substantially rectangular loop 17 having straight side portions to ride inside the guide slots 13—13, as seen best in FIGURE 2. The plunger may be made in various ways, as will be apparent to one skilled in the art, but in the illustrated showing it is shaped from a single strand of wire. This wire may be bent substantially in the center thereof to form the loop 15, and then the two side portions brought together to form the narrow shank 16, and then the wire may be bent on each side below the shank to form the rectangular loop 17. Preferably, the ends 18 and 19 of the wire are overlapped vertically at the lower end of the plunger to provide a greater width at this point where the plunger is in contact with the ends 4 and 5 of the ring 3 when the device is in use. A centrally apertured washer 20 is disposed immediately beneath the top loop 15 of the plunger, and a similar washer 21 is disposed immediately above the rectangular loop 17 surrounding the shank 16 of the plunger. Between these washers is a coil spring 22 that constantly tends to separate the washers. This results in a constant urging of the plunger upwardly since the washer 21 rests upon the upper edge of the guide member 11 and cannot be moved downwardly.

In assembling the plunger, it is a simple expedient to first form the top loop 15, then with the side portions of the wire in abutment as they are in the shank 16, thread on the washers with the spring therebetween, hold the washers clamped as closely together as possible over the spring, and thereafter expand the side portions of the wire to form the loop 17. In assembling the entire device it is simply necessary to insert the guide element 11 inside the cylinder 7 before the annular flange 8 is rolled over. The assembled plunger, washers and spring may then be dropped as a unit into the cylinder 7 with the straight sides of the lower loop 17 riding inside the opposed guide grooves 13—13. The spring is then compressed in any suitable manner while the annular flange 8 is rolled over at the top of the cylinder 7 to the position seen in in FIGURES 2, 3 and 4 to hold the upper washer 20 inside the casing 7. It is then a simple expedient to take the ring 3 in an expanded condition, insert the ends 4 and 5 thereof through the apertures 10 and 12 and then forcibly compress the ring to acquire the correct spacing 6 between the ends thereof. At that time the ends will be within the casing 7, and since the ring is preferably made of comparatively stiff material it will not be possible during ordinary usage of the device to ever separate the ring from the cylinder 7. It is intended that all parts remain connected as shown throughout the life of the key holder.

In use, the instant invention is extremely simple to manipulate. When the device is holding one or more keys and is in use, the parts will be in the position seen in FIGURE 2. It will be noted that the end portions 18 and 19 of the plunger are disposed directly between the ends 4 and 5 of the ring 3, thereby blocking any rotation of the ring about its center relatively to the cylinder 7 and, in effect, the keys are retained on a solid ring. The end portions 18 and 19 of the plunger function as a latch that is held firmly in place by the spring 23, the washer 20 being against the inturned margin 8 at the top of the cylinder 7. When it is desired to remove a key from or attach a key to the ring 3, the loop 15 at the top of the plunger is depressed by a finger with the thumb resting on the bottom of the cylinder 7 to the position seen in FIGURE 4 which moves the plunger downwardly and the ring may be rotated around its center relatively to the spring, there being a slight clearance on each side of the ring in the apertures 10 and 12, permitting free and easy movement of the ring. From the position seen in FIGURE 5, the ring is turned to either side of the

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cylinder to the position seen in FIGURE 3 with the spaced ends 4 and 5 of the ring exposed in a position of free excess. The plunger is released, and the ring is held against further rotation relatively to the plunger because the lower portion of the loop 17 has engaged beneath the ring forcing the ring against the inner edges of the apertures 12—12, effectively locking the ring in position against accidental and unexpected movement relatively to the cylinder 7. When the keys have been removed or attached, the plunger is again depressed and the ring moved to bring the ends 4 and 5 thereof inside the cylinder, the plunger release, and the lower end of the plunger loop 17 will again be positioned between the ring ends as seen in FIGURE 2, effectively securing the keys in place on the ring. The top loop 15 of the plunger affords a means for carrying an individual key, such as a garage key, separate and apart from the others, the individual key being attachable to the loop 15 by means of a snap-hook or the equivalent.

It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the present invention.

I claim as my invention:

1. In a key holder,

a casing having a bottom and having opposed apertures in the wall thereof near said bottom, an open-ended key carrying ring extending through said apertures, the space between the ends of said ring being less than the width of said casing,

a plunger reciprocal in said casing with the end farthest from said apertures projecting out of the casing in the form of a loop to hold an auxiliary key, the opposite and inner end of the plunger having a flat loop formation with the end thereof in a position between the ends of said ring, and

resilient means urging said plunger to such position, whereby when said plunger is moved against the action of said resilient means by pressing upon the projecting loop said ring is free to rotate through said apertures and said loop to expose the ends of the ring outside the casing, and if the plunger is released the loop end thereof will clamp the ring against edges of said apertures and hold the same to facilitate adding or removing keys.

2. In a key holder,

a casing having opposed apertures in the wall thereof, an open-ended key carrying ring extending through said apertures, the space between the ends of said ring being less than the width of said casing,

a plunger in said casing made of a wire bent and shaped to define a loop which extends outside said casing, a shank portion and a larger loop inside said casing,

resilient means urging said plunger in a direction such that a part of the larger loop is disposed between the ends of said ring, and

guide means in said casing in engagement with said larger loop to prevent rotation but permit reciprocation of the plunger along the guide means.

3. In a key holder,

a casing having opposed apertures in the wall thereof, an open-ended key carrying ring extending through said apertures, the space between the ends of said ring being less than the width of said casing,

a plunger in said casing resiliently biased to a position with a part of the plunger disposed between the ends of said ring,

the lower part of said plunger being in the form of a flat loop the end of which enters between the ends of said ring, and

guide means in said casing to prevent rotary movement of the plunger relatively to said casing while permitting the plunger to reciprocate,

said guide means comprising an elongated cup in said casing and having opposed apertures coinciding with

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said casing apertures, said cup having opposed guide slots therein into which opposed portions of said flat loop extend.

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